## A Suppleminh to the Survey of current Business



JNITED STATES DEPARTMENT OF COMMERCE FURGAU OFFOREFANAN OMESTGCOMMERE


# National Income and Product 

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PREPARED BY THE NATIONAL INCOME DIVISION george Jaszi, Chief CHARLES F. SCHWARTZ, ASSISTANT CHIEF


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$W_{\text {ork on }}$ the present volume was initiated by Milton Gilbert, former Chief of the National Income Division. It was carried through under the joint direction of George Jaszi, the present Chief of the National Income Division, and Charles F. Schwartz, the Assistant Chief.

The conceptual framework and statistical methodology discussed in this volume are those established in the National Income Supplement to the July 1947 Survey of Current Business. Mr. Gilbert directed the major undertaking of fundamentally recasting the official national income statistics for publication in the 1947 report. His principal assistants were Edward F. Denison, now Assistant Director of the Office of Business Economics, Mr. Jaszi, and Mr. Schwartz.

Part I of the present report, dealing with trends in national income and product, was prepared by Carl P. Blackwell. The accompanying charts were prepared under the direction of Edwin C. Warren, Chief Draftsman in the Printing Section of the Department of Commerce, with the cooperation of Anna M. Guindon of the Office of Business Economics.
Numerous staff members of the National Income Division participated in the writing of the various sections of the technical notes in Part III. Special credit is due to Harlow D. Osborne in connection with the sections on income of unincorporated farm enterprises, rental income of persons, corporate profits, new construction, net foreign investment, and capital consumption allowances.
Acknowledgments to other staff members are listed in the sequence in which the technical notes appear in Part III: wages and salaries-Franklin M. Aaronson and Lawrence Grose; supplements to wages and salaries, income of unincorporated enterprises-Lawrence Grose; interest-Elwyn T. Bonnell; personal consumption expenditures for commodities-Edward O. Bassett and Raymond Nassimbene; personal consumption expenditures for services-Carolyn G. Bernhard; producers' durable equipment-Robert C. Wasson and Raymond Nassimbene; change in business inventories-George M. Cobren; government receipts and expenditures-Carl P. Blackwell; transfer payments-Lawrence Grose; capital consumption allowances-Robert C. Wasson.

In addition, the Balance of Payments and Business Structure Divisions of the Office of Business Economics provided materials relating to the descriptions of net for-
eign investment and personal consumption expenditures for commodities, respectively.

In the preparation of Part IV, John W. Kendrick of the National Economics Division of the Office of Business Economics was principal assistant to Mr. Jaszi. Major contributions to this part of the report were also made by Edward O. Bassett, Carolyn G. Bernhard, Morris Cohen, Joseph B. Epstein, and Millard L. Gallop.

The vast statistical work underlying the estimation of the multiplicity of income and product series contained in this report is the result of the cooperation of all the members of the National Income Division and others in the Office of Business Economics, and is founded on their effort and experience. However, in a larger sense, the statistics rest upon the work of Government statistical agencies as a whole and of private agencies as well. These provide the basic source data and the considerable volume of supplementary information needed to construct the national income and product accounts. The statistical work of the Social Security Administration, the Bureau of the Census of the Department of Commerce, the Treasury, Agriculture, and Labor Departments, and the various regulatory commissions is of fundamental importance in this regard.

Certain of the estimates themselves are prepared outside the National Income Division: farm income by the Bureau of Agricultural Economics of the Department of Agriculture; direct estimates of personal saving by the Securities and Exchange Commission; new construction activity by the Building Materials Division, National Production Authority of the Department of Commerce, in cooperation with the Bureau of Labor Statistics of the Department of Labor; net foreign investment by the Balance of Payments Division; and personal consumption expenditures for commodities since 1940 by the Business Structure Division.

Progress in the national income field has been facilitated by the Bureau of the Budget, not only by its direct support, but by its continuing recognition and furtherance of the needs of the Office of Business Economics' national income work in the development of the Government's statistical program. Finally, it is recognized that what has been achieved has been possible only by the support and encouragement given by the Congress continuously since these studies were initiated at the direction of the 72 nd Congress.

THIS VOLUME marks a further major development in the work on United States national income statistics which was initiated in 1932 in response to Senate Resolution No. 220 of the 72nd Congress, and carried forward in the Office of Business Economics. The information presented in it is designed to meet in comprehensive fashion the needs of business and other users of national income data.

Originally, Congress directed the preparation of measures of the national income, its industrial origin, and its distribution in the form of wages, profits, and other types of payments. The initial report was published early in 1934 as Senate Document No. 124, 72nd Congress, and Session. National income estimates have been published annually since then. They were supplemented in the late nineteenthirties by estimates of the income flow to individuals, on a monthly basis for the Nation as a whole and on an annual basis for the various States.
The outbreak of the war expedited the measurement of the gross national product. This estimate of the value of the Nation's output of goods and services was essential for the establishment of goals designed to maximize total production and for the necessary diversion of production to war purposes, involving major changes in the structure of output. The product estimate was required also to supplemont the income measurements in the calculation of the inflationary pressures being generated.

The gross national product was added to the income series shortly after Pearl Harbor and was gradually expanded into an extensive body of information on the composition of the commodity flow. Quarterly estimates were developed for both national income and national product to provide comprehensive data on the current economic situation.

The year 1947 was a landmark in the national income work of the Office of Business Economics. In the National Income Supplement to the SURVEY of Current Business of July 1947 new estimates were published, basically recast into the framework of a comprehensive national economic accounting system designed to provide a systematic picture of the economic structure and process in terms of interrelated income and product flows. All statistical series back to 1929 were reworked to incorporate improvements in statistical methodology, and a brief explanation of the concepts underlying the estimates was provided.

The present volume meets the need for a detailed discussion of the conceptual framework and of the statistical sources and methods underlying the United States national income statistics. This makes up Parts II and III. In addition, the report contains, in Part I, a review of changes in national income and product since 1929; series on gross national product in constant dollars for the years 1929-50, in Part IV ; and, in the final section, a complete set of statistical tables for 1929-50.

Thus, the present report contains all the national income statistics of the Office of Business Economics with the exception of the annual series on State income payments. As such it will serve as a comprehensive base book superseding all previously published series, and the figures containe in it will be brought up to date in the monthly Survey of Current Business.
During the past two decades national income statistics have become firmly established as basic tools of economic analysis-not only in the United States but elsewhere as well. The present volume incorporates the great progress which has been made in national income measurement over this period. This process of development is not complete. Many unsettled problems remain and there will be further conceptual and statistical improvements. Particularly pointing up the need for the development of additional basic statistical data required for improved income measurement, the present report discusses very frankly those areas which call for further work. It is thought that in this manner a maximum contribution to progress in this field can be made.
The further progress required does not impair the utility of this volume as a source of integrated information on the functioning of the United States economy. It provides material equally essential for the production and marketing programs of business and for furthering the knowledge requisite for the formulation and development of Governmont economic programs.

Complete recognition of the theoretical and statistical contributions to the national income work which is embodied in this volume is not possible, but on the facing page we have endeavored to make partial acknowledgment, particularly to the staff and others who have had a major share in the production of this 1951 national income report.


Director

## From 1929 to 1950 THE NATIONAL OUTPUT of the

United States Increased . . .
$80 \%$ in Volume
$44 \%$ in Volume Per Capita

vi

# National Income and Product, 1929-50: A Review 

The national income statistics presented in this report cover nearly a quarter of a century of highly varied economic developments in the United States.

In broad outline, this period embraces the following sequence of events: The precipitous fall from the prosperity of 1929 into the deep depression of the early nine-teen-thirties; the subsequent recovery, interrupted by the brief recession of 1938, but then continuing through the remaining prewar years; the tremendous performance of the economy in the prosecution of World War II; reconversion and the postwar boom, with attendant inflationary strains; the mild business recession of 1949; and the rapid recovery of 1950 , merging in the latter half of that year into the partial mobilization effort now in progress.

The national income data provide a detailed statistical description of the way the economy has functioned under these widely diverse conditions. They reveal important fluctuations and long-term changes in the volume, composition, and use of the Nation's output, in the industrial structure through which it is produced, and in the distribution of the resultant income.

The nature of national income statistics is fully described in subsequent parts of this report. The following general summary highlights their major features as a prelude to an analysis of the functioning of the economy and of the path traversed in reaching current peak levels of income and production.

## National product: The flow of goods and services

Total output is measured from two principal points of view : As the summation of final products produced by the economy; and as the summation of costs incurred in producing those products. Both of these approaches yield comprehensive measures of economic activity, but the analytical breakdowns to which they most readily lend themselves throw light on different aspects of the economy.

The gross national product measures the Nation's output of goods and services in terms of its market value. When expressed in current prices, this series reflects the total dollar value of production; when expressed in constant dollars to eliminate the influence of price changes, it provides an over-all index of the physical volume of goods and services produced by the economy.

In both current and constant prices, the gross national product is broken down to show its disposition among broad groups of users-consumers, business, government, and foreign countries. The commodity and service composition of purchases by each of these major groups is delineated in considerable detail for the current dollar series and in summary fashion for the constant dollar series.

## National income: Earnings from production

Total output is also measured, in terms of the factor costs of producing it, by the national income-the aggregate earnings of labor and property which arise from current production. This measure differs from the gross
national product chiefly in that it is computed after deduction of indirect business taxes and of depreciation charges and other allowances for business consumption of durable capital goods.
The national income is broken down by distributive shares, by industry of origin, and by legal form of organization. The first of these breakdowns represents a classification of earnings according to the forms in which they accrue to residents of the Nation-compensation of employees, profits of corporate and unincorporated enterprises, net interest, and rental income of persons. The second indicates the use of economic resources and the contribution to total output by each of a number of industrial subdivisions, as measured by income originating in the respective industries. The third shows an important special aspect of the institutional structure of the econ-omy-the portions of total economic activity (also measured by income originating) conducted by various types of productive units, including corporations, sole proprietorships and partnerships, other private business, government and government enterprises, and households and institutions.

In addition to a summary account showing the national income and product, accounts are maintained for each of the major sectors of the economy. These consist of current income and outlay accounts for the business sector, for persons, for government, and for the rest of the world in its transactions with the United States. A consolidated saving and investment account for the economy as a whole is also provided. The system of accounts is designed to furnish a description of the economic process in terms of the expenditures and receipts of the various sectors, arranged to show their interactions upon each other. The nature and classification of the transactions recorded for each sector are governed to a considerable extent, of course, by the central objective of measuring total output.

## Personal income: Receipts of consumers

Particular interest centers upon the personal account, which covers the activities of the consuming public. On the one hand, it gives total personal income-the current income received by persons from all sources, inclusive of transfers from the government and from business; and on the other, it indicates the disposition of personal income for consumption, taxes, and saving. Personal income is a third major aggregate, generally coordinate in significance for economic analysis with the national income and the gross national product.

In general outline, then, this is the body of statistical information utilized in the following review of economic developments since 1929. While this framework permits a comprehensive study of such developments, it by no means covers all significant elements in the operation of the economy. It does not, for example, provide direct information regarding the monetary and credit system of the United States. In the discussion below, therefore, only incidental attention will be devoted to trends in that field -not because they are lacking in importance, but because they fall outside the scope of the statistics with which this
review is primarily concerned. Although a number of other relevant factors are similarly excluded, the picture of the economy in action which emerges from the national income accounts is a highly significant one.

## BASIC TRENDS IN THE ECONOMY

Despite the violence of the economic fluctuations which have occurred, the outstanding feature of economic developments over the past 22 years is the tremendous growth of the United States economy.

The population increased by one-fourth, from 122 million in 1929 to 152 million in 1950, and the number of persons engaged in production rose in roughly similar proportion. This larger work force was equipped with a greatly expanded volume and improved quality of machinery and plant facilities, as well as with such intangible assets as better education and advanced scientific knowledge. Through utilization of these enlarged human and material resources, the economy has been able to produce a vastly increased flow of goods and services, including a wide array of new products.

## Growth of the Economy

The gross national product amounted to $\$ 283$ billion in 1950, as compared with $\$ 104$ billion in 1929. This comparison reflects the combined influence on the current market value of total output of both greatly increased physical volume and much higher prices.

Chiefly as a result of the inflation associated with World War II and its aftermath, the general level of prices in 1950 was more than 50 percent above that of 1929. After allowance for this factor, the physical volume of the Nation's output, as measured by the gross national product in constant dollars, is found to have risen 80 percent over the period. In terms of real output per capita, the increase amounted to 44 percent.

Since 1929 and 1950 were both peacetime years of close-to-full utilization of productive resources, a simple and meaningful approximation of the long-term rate of growth in national production is provided by the average annual percentage increase in constant-dollar gross national product implied by comparison of these two terminal years. According to this calculation, the rate of expansion in the real volume of output has averaged over this 22 -year period slightly more than $23 / 4$ percent per year.

In part. this growth has reflected the gradual increase of the Nation's manpower resources. The advance in production, however, has outstripped this increase by a wide margin. owing to the achievement of sizable gains in productivity per unit of manpower utilized.

## Large advance in productivity

Trends in productivity may best be examined in terms of private-industry gross product, both because interest centers upon the private sector and for the technical reason that the method by which the contribution of government to constant-dollar national product is estimated makes no allowance for changes in productivity.

In the private sector of the economy as a whole, the real increase in output from 1929 to 1950 was about 75 percent. During the same period. the number of persons engaged in production in private industries-full-time equivalent employees plus active proprietors-rose by 22 percent, or about 1 percent per year on the average. An
annual rate of growth in real private product per person engaged averaging approximately $13 / 4$, percent is thus indicated.

Moreover, this rate of increase occurred during a span of years in which average hours worked per week in the private economy were reduced by about 10 percent. On a man-hour basis, accordingly, the rise in productivity has been considerably greater. Real private product per man-hour was well over half again as large last year as in 1929, implying an average annual rate of increase somewhat in excess of 2 percent.

## Many factors influence productivity

It is important to recognize that productivity increases as computed above, although expressed in terms of output per unit of labor input, are attributable not only to labor, but jointly to all of the factors influencing productivity. Foremost among these, undoubtedly, have been the technological improvements and increased amounts of capital equipment utilized by the Nation's industries. Better organization and management of productive operations have also contributed, as have advances in the education, training, and health of the population.

These types of influences affect directly the technical efficiency of particular productive processes. In addition, the productivity measures given above also register shifts within individual industries among products involving varying amounts of output per unit of labor input and, furthermore, shifts of workers between industries in which output per unit of labor input differs.

An appreciable part of the productivity rise since 1929 can be traced to a shift of the latter type. The proportion of the labor force engaged in farming-where real product per man-hour has averaged less than one-third of that in the private nonfarm sector-has declined markedly and almost continually. This shift of workers to nonfarm industries has in itself contributed more than one-fourth of a percentage point to the average annual rate of growth in real private product per man-hour, quite apart from the improvement of productivity in each of the sectors separately. Relative shifts of labor among industries within the nonfarm sector have probably affected total productivity in a similar fashion. While information is not available for precise calculation of the effects of these industrial shifts, indirect evidence suggests that in the aggregate they may compare in importance with the farm-nonfarm movement.

## Shifts in the Use of National Output

Along with the huge expansion of the pross national product since 1929, there have been significant changes in its disposition among major groups of users and in the composition of purchases by each of these groups.

The domestic sectors of the economy have all sharedthough to somewhat different degrees-in the increased volume of production. Net foreion investment. which measures net purchases of United States output by the rest of the world, is the only principal comoonent of national product to show a decline from 1929 to 1950.

The most notable change since 1929 in the use of the Nation's output is a shift from privato to government use. In terms of the current dollar estimates of gross national product, government purchases of goods and services, which absorbed 8 percent of the gross national product in 1929. took 15 percent in 1950. Personal consumption expenditures, on the other hand, dropned from 76 percent of the total in 1929 to $681 / 2$ percent last year.


## IN 1939 DOLLARS

The proportion of the value of output going into domestic and foreign investment was nearly the same in each of these years, as a small rise in the percentage share of the former offset the decrease of the latter.

These changes in the composition of the gross national product were in considerable measure the result of differential price movements. In terms of the constant-dollar gross national product, the shift to government use is substantially reduced, the share of government rising from 9 to 13 percent. Furthermore, it is seen to be at the expense of both personal consumption and of investment, rather than of personal consumption alone. These value and volume relationships are summarized in the table below.


## Consumption patterns reflect price shifts

Although the proportion of total national product going to consumers was smaller last year than in 1929, owing to the larger share used for public purposes, the absolute volume of goods and services purchased for personal consumption was, of course, vastly increased. In terms of constant (1939) dollars, the expansion amounted to 75 percent-a gain of nearly two-fifths in real consumption per capita.

Reflecting also a 41 percent rise in average prices, the dollar volume of total consumer outlays last year reached $\$ 194$ billion, as compared with $\$ 79$ billion in 1929 . The distribution of these outlays by major objects of expenditure shifted markedly over the two decades. Durable goods, which accounted for 12 percent of total consumer spending in 1929, represented more than 15 percent of the total last year. Nondurable commodities also absorbed a substantially larger share of the consumer expenditure dollar, while the proportion spent on services dropped from 40 percent in 1929 to 32 percent in 1950.

To a very considerable degree, these shifts reflect differential movements of prices for major items in the respective expenditure classes, rather than fundamental alterations of the consumption pattern in real terms. In particular, much of the relative decline in the importance of service outlays has stemmed from the marked
lag of rent and household utility charges behind the general upswing of consumer prices in the last decade, while most of the increased relative importance of nondurable commodities is traceable to the considerably above-average rise in prices for food and clothing.

Shifts in real spending, however, have also occurred. Such factors as the development and marketing of innumerable new products, increased reliance upon private automobile transportation, and the expanding use of household appliances have tended, on balance, to induce proportionately greater spending for commodities-especially durables. At the same time, demands for some classes of services-of which the employment of domestic servants is a conspicuous example-have tended to decline or to lag behind the general advance.

## Equipment share of investment higher

Gross private domestic investment last year amounted to $\$ 49$ billion, or $171 / 2$ percent of total gross national product, as compared with about $\$ 16$ billion, ór just over 15 percent, in 1929. The increased proportion of domestic investment reflected entirely a sharper rise in the prices of capital goods than of goods and services in general. In real terms, as shown in the table above, the share of domestic investment in the total was slightly lower last year than in 1929. With respect to these comparisons, it should be noted that a somewhat narrower basis for estimating new private construction has been employed for the earlier period, as explained in the section on New construction in Part III of this report.

There was a marked shift from 1929 to 1950 in the general composition of investment expenditures. New private construction put in place accounted for about half of the total in the earlier period, but for only 45 percent last year, while business purchases of durable equipment rose in relative importance from 41 to 46 percent. Net accumulations of business inventories differed little, percentagewise, in the two years.

The relative decline in construction activity was a net result of sharply divergent movements of its residential and nonresidential components. Outlays for new nonfarm dwelling units rose from about one-fifth of gross private domestic investment in 1929 to one-fourth last year, but there was a far more than offsetting decrease in the proportion of expenditures for other types of construction, consisting mainly of business outlays for plant expansion. Thus, an outstanding feature of the shift in investment was that business expenditures for fixed capital facilities in 1950 were concentrated much more heavily upon acquisition of new equipment, and proportionately less upon plant expansion, than they were in 1929. Over the two decades, these broad changes in the relative importance of construction and producers' durable equipment were even greater in real terms than in current dollars, since construction costs rose twice as much as equipment prices during the period.

## Foreign transactions show relative decrease

Net foreign investment was a relatively minor component of national product both in 1929 and in 1950. In large measure, the shift from a positive foreign balance of $\$ 1$ billion to a negative balance of $\$ 211 / 2$ billion reflects a change in the means by which foreign countries financed their net acquisitions of United States goods and services. In 1950, they obtained large quantities of American exports by grants from the United States Govern-
ment. Such amounts are recorded in the national income statistics as government, rather than foreign, purchases. Corresponding exports in 1929, being then financed through regular commercial channels, entered gross national product under the net foreign investment heading. Even with allowance for this factor, however, there remains a relative decline from 1929 to 1950 in the net flow of United States output to other countries.

The low ratio of net foreign investment to total production should not, of course, be interpreted as an indication of the importance of international trade to the domestic economy. Actually, its importance is much greater than is suggested by such a net concept. The net balance is a composite of much larger gross flows of United States output into export channels and of goods and services produced abroad into domestic consumption, capital formation, and government procurement. These gross flows in both directions, however, were also significantly smaller in relation to domestic economic activity last year than in 1929.

## Growth of government purchases

Combined Federal, State, and local purchases of goods and services rose from $\$ 81 / 2$ billion in 1929 to $\$ 421 / 2$ billion in 1950. As already noted, these purchases represented an increasing proportion of total national ouput.

Over the two decades, the entire increase in this proportion was attributable to expanded Federal Government activities. In the main, the expansion stemmed from the imposition upon the economy of a national defense burden much heavier in recent years than in the prewar period. Defense purchases, which constituted less than 1 percent of gross national product in 1929, represented more than 5 percent in 1950, and are now rising far above that figure.

Fully half of the remaining increase in the share of current production bought by the Federal Government may be traced to the large volume of foreign aid undertaken since the war-a type of activity which was nonexistent in 1929. Federal purchases of goods and services for all other purposes combined accounted for only a minor portion of the 1929-50 expansion.

## Changes in the Income Flow

Accompanying the expansion of the national output and the shifts in its composition and use since 1929, there have been marked changes in the size of the corresponding income flow, in its industrial origin, and in the form of its distribution to residents of the Nation.

The national income rose from $\$ 87$ billion in 1929 to $\$ 239$.billion last year-an increase of 175 percent. This rise, of course, reflected not only the expansion of the physical volume of production. but also the sharply higher prices prevailing in 1950.

## Shifts in industrial pattern

Perhaps the most important of the changes in the income flow since 1929 are those relating to its industrial origin. Such changes are indicative of the way in which the allocation of economic resources has been altered to meet the shifting character of demand for the Nation's output.
Income originating in each industry measures the earnings of the economic resources-both labor and property-utilized by it. Accordingly, the breakdown of the national income by industry of origin provides a
measure of the net contribution of each industrial segment of the economy to the total value, at factor cost, of the net national output.

In 1929, private nonagricultural domestic industries contributed 84 percent of the national income, while the remainder originated in three segments of somewhat different character-government and government enterprises; agriculture, forestry, and fisheries; and the rest of the world. With the expansion of government operations, the contribution of the private nonagricultural domestic sector to the total in 1950 was reduced to 82 percent.

## Large increase in manufacturing

Industrial shifts within the private nonagricultural domestic sector from 1929 to 1950 are illustrated in summary fashion in the accompanying chart, which shows for each of these years the proportionate contributions of several broad groups of industries. Since 1929 and 1950 were both prosperous, full-employment years, this comparison is little affected by cyclical influences. Corresponding data in somewhat greater detail, covering also the intervening years, are presented in the table on page 17.

The most striking feature of the 1929-50 comparison is the large increase in the relative importance of the manufacturing industries. From 30 percent in 1929, their contribution to private nonagricultural domestic income rose to $371 / 2$ percent last year. This rise is a direct reflection of the increasing degree to which demand for the output of private industries, and production to meet it, has centered upon commodities, in general requiring fabrication and processing of a progressively more complex character.

## Parallel growth in distribution

Also immediately affected by the relative increase in demand for commodities were the wholesale and retail trade industries, whose share of the private nonagricultural domestic total was 22 percent in 1950, as compared with 18 percent in 1929. This substantial expansion was closely allied with the growth of manufacturing output, the bulk of which is distributed to ultimate buyers through trade channels.

With the relative growth of manufacturing and trade, the percentages contributed by all other private industrial divisions declined except that for contract construction, which advanced from 5 to 6 percent of the total. By far the greatest decline in relative position from 1929 to 1950 was registered in the finance, insurance, and real estate division. Its share, which had matched that of wholesale and retail trade in the earlier period, was down to about 10 percent last year.

## Factors in decline of finance group

Two major factors contributed to this drop in the finance group. Earnings in the real estate industry-especially on residential property-were relatively depressed, both because the industry was little affected by the growth of commodity output and because rents did not keep up with the general price rise. In banking and other financial industries, income originating was much lower relative to the total than in 1929, owing mainly to an approximate halving of average interest rates and to the marked shift from external financing of business investment to financing out of retained earnings. The large expansion in public debt obligations held by banks
by no means compensated for the fact that the volume of private debt was sharply reduced in relation to total economic activity.

With reference to the real estate industry, it should be pointed out that the valuation of a large portion of its product-residential housing-has been held down by war and postwar rent controls. Most of the relative decline in real estate occurred, however, long before the imposition of such controls. Among the broad factors contributing to it was the necessarily slow adjustment of the supply conditions emerging from the building boom of the 1920's to the depressed housing demand of the prewar decade, when there was a temporary slackening in the rate of family formation and population growth.

## PERCENTAGE DISTRIBUTION OF PRIVATE NONAGRICULTURAL NATIONAL INCOME

Since 1929, some industries - notably manufacturing and trade have grown markedly in relative importance.
while others - such as finance, insurance, and real estate have not kept pace with the general expansion.


Two other major industrial divisions experiencing fairly substantial declines in relative importance from 1929 to 1950 were transportation and services. The share of the former in total private nonagricultural domestic income fell from 9 percent to $63 / 4$ percent, entirely as a result of the much below-average expansion of the railroad industry. In the case of services, the decreasefrom 14 percent to 11 percent-was centered in the private household segment, where the relative decline of domestic service was an important factor.

The proportions of income originating in the remaining industries-mining and communications and public utilities-declined only moderately. These are the two smallest divisions, contributing $21 / 2$ percent and $33 / 4$ percent, respectively, to the 1950 total.

## Increase in Federal employment

Outside of the private nonagricultural domestic sector, the most significant change over the period under review was the sizable increase in the contribution of government. As a percentage of total national income, it rose from 6 in 1929 to 10 in 1950. These percentages, it should be emphasized, represent only the return to resources (in this case, labor) directly employed by government and government enterprises-not the production of other industries whose output is purchased by government.

The increase was almost entirely in the Federal Government component, which expanded over the two decades from less than 2 percent to about $51 / 2$ percent of the national income. The compensation of military personnel accounted for half of this growth, and much of the remainder, of course, was in civilian payrolls associated with the expansion of the defense establishment.

## Income from agriculture

The share of the national income originating in agriculture, forestry, and fisheries, which consists almost wholly of income from farming, amounted to $71 / 2$ percent last year. This was appreciably below the 9 percent contribution of the agricultural sector in 1929. Because of the erratic annual movements which characterize farm income, however, no significant conclusions can be drawn from this comparison.

The decline in agriculture's percentage of the national income from 1929 to 1950 was by no means commensurate with the decrease over the same period in the proportion of the population engaged in agricultural production. Accordingly, the net value of output per person engaged in production rose by more than 180 percent in agriculture, as against about 100 percent in the private nonfarm sector.

The remaining segment of the economy, the "rest of the world", is not really an industry, but a balancing item consisting almost exclusively of net property income receipts from abroad. Amounting to less than 1 percent of the national income in 1929, it had declined to a still less consequential share by 1950.

## Changes in distributive shares

Along with the shifts in the industrial origin of the national income, there have been noteworthy alterations of its composition in terms of distributive shares. Some of these alterations have represented fundamental changes in the relative importance of various forms of income as such, while others have merely reflected the influence of industrial shifts in combination with the existing differences among the respective industries as to prevalent forms of organization and characteristic types of income arising therefrom. Both sorts of changes in the distributive-share pattern, of course, are of considerable interest.

This breakdown of the national income is simply a classification of total earnings, before deduction of direct taxes, according to the forms in which they accruecompensation of employees, corporate and unincorporated business profits, rental income of persons, and net interest. Such a classification, it should be realized, does
not reflect the relative distribution of total income among various groups in the population, since many of these have multiple sources of income. Nor do the distributive shares indicate the relative renumeration of the various factors of production in a theoretical sense; most of them include more than one element of factor cost, and each of them represents only a partial measure of the factor cost suggested by its caption.
Owing to the fact that the contribution of government to national income is measured solely by compensation of government employees, it is useful to confine the analysis of changes in the pattern of distributive shares to income originating in private industries. The table on page 17 contains relevant 1929-50 data.

Over these two decades, there has been a marked increase in the relative importance of employee compensation and corporate profits and a parallel decline in net interest and rental income of persons. The percentage of the total going to proprietors of unincorporated enterprises was about the same last year as in 1929, with, however, the share of farm proprietors somewhat lower.

## Employee share of private national income

Compensation of employees in private industries rose from $\$ 451 / 2$ billion in 1929 to $\$ 130$ billion in 1950 , or

Employees on a full-fime basis in all industries earned an average of 113 percent more in 1950 than in $1929 \ldots$

and after allowance for higher prices the purchasing power of this income was 52 percent larger.


1950 in 1929 prices
from 55 to 60 percent of total private national income. Essentially, this increase in the percentage share going to employees reflects merely a marked growth in the proportion of total economic activity conducted through regular business enterprises-corporations, proprietorships, and partnerships-as contrasted with that portion taking place in certain other economic entities, such as private households and incidental landlordships.

In prosperous peacetime years, employee compensation has represented over three-fifths of total income originating in regular business enterprises, but only a minor fraction of the total for the other types of units, where rent (including that imputed on owner-occupied homes) and interest have a very heavy weight. Accord. ingly, the much faster growth of business enterprises proper, especially in the nonfarm sector, than of these other private economic entities has had the effect of raising the relative importance of the income sharescorporate profits and nonfarm proprietors' earnings as well as employee compensation-which predominate in the former group. Within the regular business enterprise sphere. there was little change from 1929 to 1950 in the proportion of income paid out as compensation of employees.

There was, however, an internal shift in the composition of employee compensation, to a somewhat lower proportion of wages and salaries and a higher proportion in the form of supplements to wages and salaries. The latter were an inconsequential element in 1929, consisting chiefly of compensation for injuries. Their growth to significant proportions-nearly 3 percent of private national income in 1950-stems from the creation and expansion of the various social insurance programs, and from the marked growth in recent years of private pension and welfare funds. Employers' contributions to these funds, both public and private, are viewed as supplementary compensation of employees.

## Shifts in proprietors' and rental income

The advance of entrepreneurial earnings from $\$ 14$ billion in 1929 to $\$ 36$ billion last year was very nearly proportionate to the rise in private national income. Within this category, however, the movements of the farm and nonfarm components diverged to some extent.
For reasons already indicated in the discussion of total income originating in agriculture-of which farm proprietors' earnings constitute the bulk-little long-term significance can be attached to the decline of the farmers' percentage share from 7 in 1929 to $61 / 2$ in 1950. As an indication of the erratic behavior of this component, it may be noted that as recently as 1948, the percentage was far above that of 1929-or, indeed, of most years since then. In view of the 21 percent decline in the number of farm proprietors from 1929 to 1950, even the lower percentage share of the latter year represented a substantial relative improvement in the position of the average farmer.
Nonfarm business and professional proprietors' income was 10 percent of the private-industry total last year, about the same as two decades earlier. An appreciable rise in the relative importance of the retail and wholesale trade component was largely offset by the fact that entrepreneurial earnings in the service industries did not maintain their relative standing.

One of the two distributive shares exhibiting a sharp proportionate decline over the past 22 years was rental
income. The $\$ 53 / 4$ billion going to persons in this form in 1929 constituted 7 percent of private national income, while last year's $\$ 8$ billion represented only about half that much, percentagewise.

The principal reasons for the diminished importance of rental income in relation to the total are those outlined above in connection with the real estate industry as a whole. It should be remembered, however, that the rental income share-including imputed net rent on owner-occupied nonfarm dwellings-consists only of net rents and royalties accruing to persons not primarily engaged in the real estate business. Other rents are merged unidentifiably with noncorporate business earnings and with corporate profits.

## Combined profits and interest share

The corporate profits share of the national incomecorporate profits and inventory valuation adjustmentincreased from $\$ 101 / 2$ billion in 1929 to $\$ 36$ billion last year. In terms of percentages of private national income, the increase was from $121 / 2$ to nearly 17 . In large measure, however, this rise was simply a reflection of the greatly reduced burden of corporate debt, and does not signify a commensurate expansion of the property

CORPORATE PROFITS have exhibited much sharper cyclical
fluctuations than fotal income originating in corporate business. .
. . but the percentage share of profits in prosperous peacetime years has been relatively uniform.


# TAXES have taken an increasing share of both Individuals' and Corporate Incomes. 

PERSONAL INCOME AND TAXES


CORPORATE PROFITS AND TAXES


1929
\$9.8
Billion


1950
share of current income. In combination, profits and interest originating in corporate business rose from 1929 to 1950 by only half as much as profits alone in relation to total private national income.

Moreover, the rise which did occur in the combined corporate interest and profits share was a reflection primarily of the growing weight, already noted in connection with employee compensation, of regular business enterprises as contrasted with such other private economic entities as incidental landlordships. Neither within the whole business enterprise sector proper, nor within the corporate business segment alone, was the percentage of income taken by profits and interest together significantly higher in 1950 than in 1929. The combined property share of total income originating in corporate business has been remarkably uniform in prosperous peacetime years of the period under review. This uniformity is brought out in the chart on the preceding page, and contrasts with the extreme variability of the property income share during the business cycle.

## Influence of inventory profits and losses

The foregoing remarks are based upon measures of corporate profits after inventory valuation adjustment. Profits before tax as reported under prevalent inventory accounting practices, which generally charge goods to cost of sales in terms of prior-period inventory costs rather than current replacement costs, showed a somewhat greater increase from 1929 to 1950. These figures included moderate inventory losses in 1929, when-with prices falling-book costs of goods sold exceeded replacement costs, and included sizable inventory profits
last year, when-with prices rising rapidly-the reverse was true.

Such inventory profits and losses are eliminated, in order to secure an economically more meaningful measure of income, by application of the inventory valuation adjustment. In effect, this adjustment substitutes the current replacement cost of goods sold for their book cost in the computation of profits.

It is upon reported book profits, however, that corporate income taxes are based. Partly for this reason, but primarily because of the very large increase in Federal corporate income tax rates, the percentage of private national income taken by such taxes, in combination with similar State levies, rose fourfold from 1929 to 1950. The share of profits after tax (including inventory profits) changed little over the two decades.

One of the salient trends in corporate financing during this period-toward greater reliance upon internal funds -is reflected in the sharp divergence between the terminal years with respect to the disposition of profits after tax. In 1929, 70 percent was paid out as dividends and 30 percent retained, whereas in 1950 only 40 percent was distributed to stockholders and 60 percent was retained. It is significant to note, however, that this disparity between the two years is reduced if inventory profits and losses are excluded from the comparison. On this basis, undistributed profits rose from 35 percent of profits after tax in 1929 to 48 percent last year.

## Net interest

The remaining distributive share, net interest, was the only one to register an absolute decline from 1929
to 1950 . It fell from $\$ 61 / 2$ billion, or 8 percent of private national income, to $\$ 51 / 2$ billion, or only $21 / 2$ percent.

The major factors underlying this decline are those cited above to explain the diminished proportion of income originating in the financial industries-namely, the virtual halving of average interest rates and the relatively small expansion of private debt since 1929.

In addition, part of the decline is attributable to a statistical peculiarity of the series. To offset the inclusion in business incomes of government interest, which is viewed as a transfer in the national income accounts, government interest received by business is deducted from the interest component of national income. Had the statistically more difficult procedure of deducting it from business incomes been followed, the relative decline in net interest from 1929 to 1950 would have been less, while the other affected shares would have shown correspondingly smaller increases.

## Expansion of Personal Income

Personal income differs from national income by the exclusion of those portions of income earned in current production which are not paid out to persons, and by the inclusion of certain items not arising in current produc-tion-chiefly transfer payments and government interest.

In 1929, personal income totalled $\$ 85$ billion; by 1950, it had mounted to $\$ 225$ billion. On a per capita basis, the increase was from $\$ 700$ to $\$ 1480$, or more than 100 percent.

Along with this advance in the total, there were- significant shifts in its composition. Most of these-the increased relative importance of payrolls and the reduced proportions of interest, rental income, dividends, and farm proprietors' earnings-have already been noted in the discussion of distributive shares.

## Transfer payments increase in importance

In addition, there have been important changes, stemming from the expanded role of government in the economy, in other elements of personal income. Foremost among these developments is the growth of transfer payments. From $\$ 11 / 2$ billion, or less than 2 percent of personal income, in 1929 , they rose to $\$ 15$ billion, or nearly 7 percent, in 1950. They were inflated in the latter year by an extraordinary volume of special insurance dividend payments to veterans, but represented $51 / 2$ percent of the total even apart from this unusual factor.

Most of the rise was in the Federal Government component, which in 1929 consisted chiefly of military pensions and related items. By 1950, as a result of World War II, these payments were greatly enlarged, both absolutely and in relation to personal income, and new classes of veterans' benefits under the Servicemen's Readjustment Act were flowing in large volume. Moreover, payments from Federal social insurance funds, which in 1929 had been confined to civilian retirement and veterans' life insurance benefits, last year included not only increased amounts under these headings, but also close to $\$ 3$ billion of old-age and survivors', railroad retirement, and unemployment insurance benefits, as well as $\$ 23 / 4$ billion of the special National Service Life Insurance dividends mentioned above.

State and local government transfer payments, although overshadowed by those of the Federal Government, have also risen markedly since 1929. State veterans'
bonuses have contributed in recent years, but most of the increase has been in special types of public assistance for such groups as the blind, the aged, the disabled, and dependent children. It may be noted that while these payments are made by state and local governments, they are financed in part by Federal grants-in-aid.

## Growth of social insurance contributions

For the personal sector of the economy as a whole, the growth of transfer payments has been partly offset by the concomitant expansion of social insurance contributions. Confined in 1929 to a few public employee retirement systems and veterans' life insurance funds, but since extended by the establishment and development of

Per Capita real personal income in 1950 was 50 percent above 1929...

but because of higher taxes in 1950, per capita real disposable income was 41 percent above 1929

the various Social Security programs, these now take an appreciable portion of current personal earnings. To date, contributions for social insurance have consistently exceeded benefit payments from the funds-in most years by a sizable margin. On balance, however, the combined effect of social insurance transactions and transfer payments from general government funds has been a material net addition to currently earned personal income.

## Government interest increases with debt

Also of consequence in the expansion of personal income since 1929 has been the sharp increase of government interest payments associated with the tremendous growth, mainly during World War II, of the public debt. Owing to the inclusion of government interest, which is treated in the national income accounts as a transfer item, personal interest income declined much less in relative importance from 1929 to 1950 than did the net interest component of the national income.

## Real income up substantially

Each of the elements of personal income is measured without reference to the impact of direct personal taxes. Much of the increase in the total over the past two decades, however, has been absorbed by such taxes. Personal tax and nontax payments amounted to about $\$ 21 / 2$

## PERSONAL INCOME Increased from

$\$ 85$ Billion in 1929 to $\$ 225$ Billion in 1950

billion, or 3 percent of personal income, in 1929. In 1950 they were nearly 8 times as large, totalling $\$ 201 / 2$ billion and absorbing more than 9 percent of personal income. The relative increase was entirely in the Federal Government component, and resulted almost wholly from the broadened base and sharply higher rates of the individual income tax. State and local personal taxes, although doubling from 1929 to 1950, declined slightly as a percentage of personal income.

After deduction of these taxes, there remained disposable personal income of $\$ 204$ billion last year, as compared with $\$ 821 / 2$ billion in 1929. Corresponding figures on a per capita basis were approximately $\$ 1350$ and $\$ 680$, respectively. With consumer prices averaging 41 percent higher in 1950 than in 1929, the increase in real disposable income per capita was thus about 40 percent.

A slightly lower proportion of disposable income was spent for current consumption last year, when just over 5 percent went into personal saving, than in 1929, when $41 / 2$ percent was saved. However, significance cannot be attached to a difference of this magnitude, since the saving estimates-computed as residuals-are particularly sensitive to minor statistical imperfections in the measurement of personal income and consumption expenditures.

## FLUCTUATIONS IN ECONOMIC ACTIVITY

The substantial growth of the economy, as revealed by the foregoing summary comparison of national income and product data for 1929 and 1950, was extremely irregular. Likewise, the associated changes in the economic structure did not occur in smooth progression, but emerged from a series of fluctuations of unprecedented magnitude, including the great depression and the vast expansion of World War II. In order to illuminate the processes by which the economic scene has been transformed, it is desirable to trace in a general way the course of economic development during the period under review.

## Gross National Product Patterns

Before this summary is given, some of the major factors in the fluctuations of economic activity since 1929 will be highlighted with the aid of two interrelated percentage distributions of the gross national product-one by type of expenditure and one by type of receiptwhich are presented in tabular form on page 17.

The distribution by type of expenditure indicates the proportions of total output bought by each major sector of the economy-by persons, by business (for fixed investment and inventory accumulation), by the rest of the world (net), and by Federal, State, and local governments.

The percentage breakdown of gross national product by type of receipt reflects broadly the corresponding distribution of currently-generated purchasing power, exclusive of borrowing transactions. It shows the proportions of the gross income flow received by consumers as disposable personal income; by the business sector in the form of gross retained earnings, including capital consumption allowances; and by all levels of government in the form of tax and nontax receipts net of amounts transferred (such as interest and transfer payments) to other sectors.

Each of these breakdowns of gross national product is of interest in itself, but they provide particularly valuable insight into the functioning of the economy when studied in combination, with the respective expenditure and receipt shares of each major sector paired. Such an arrangement of the data is shown in the cnart on the opposite page.

In each panel of the chart are plotted the percentage receipt and expenditure shares of one of the major sectors, the rest of the world sector being included with the business sector for this purpose. The shaded areas between the lines measure, respectively, the government
surplus or deficit; personal saving or dissaving; and the excess or shortfall of gross investment in relation to gross business saving-each expressed as a percentage of gross national product. It will be noted that the three expenditure percentages, represented by the solid lines, add to 100 in every year, as do the three receipt percentages, except for the statistical discrepancy between the estimates of national income and national product.

THE PERCENTAGE DISTRIBUTION OF GROSS NATIONAL PRODUCT among major economic sectors has fluctuated widely over the period since 1929

## Government Sector

Percent


Private Sectors


## Strategic role of investment

The bottom panel strikingly displays the strategic role of investment expenditures in the business cycle. Clearly depicted are their disproportionate collapse in the great depression and their gradual rise in relative importance, briefly reversed in the 1938 recession, during recovery. Also illustrated is the severe cut in private capital formation required during World War II and its resurgence afterwards. In connection with the wartime figures, however, it should be remembered that sizable installations of plant and equipment undertaken directly by the Government are reflected in the top panel rather than as business investment.

The uniformity of the proportions of output going into investment in prosperous peacetime years is noteworthy, as is the contrast between these proportions, all in the neighborhood of 16 percent, and the limitation of investment to 2 or 3 percent of the gross national product at the bottom of the depression.

Gross business saving, while also showing a disproportionate swing in the major business cycle, has been a great deal steadier than investment, reflecting the relative stability of depreciation allowances. In the expanding United States economy, gross business saving has usually fallen short of gross investment. Apart from the war period, this has been true in all years except those of the great depression and 1938. The financing of the excess of investment has required funds made available by the other sectors, including those left on deposit with banks, as well as those provided through purchase of stocks or bonds.

## Cyclical stability of consumer spending

The percentage of output bought by consumerscharted in the middle panel-has exhibited a contracyclical tendency, as attested by its rise from 1929 to 1932, in 1938, and in 1949. It should be remembered, of course, that these were rising proportions of a diminishing total output. Except in the mild recession of 1949, they represented declining physical volumes and dollar values of consumption expenditures in absolute terms. Conversely, falling percentages are observable in most years of peacetime expansion in economic activity. These, however, have been associated with increases in the absolute volume and value of consumer spending.

Another outstanding feature of the middle panel is the broad picture it gives of the wartime characteristics of consumer finances. Disposable income was reduced by heavy taxation, but consumption expenditures were cut far more by the diversion of productive resources to war use, in combination with price controls and exhortations to save. The resultant extraordinary volume of personal saving is clearly illustrated.

## War generates large Government deficit

The counterpart to these wartime personal savings, as well as to the concurrent excess of gross business saving over investment, appears in the upper panel of the chart, where the huge wartime Government deficit stands out. Although government purchases reached a peak of about 45 percent of total output, government at no time claimed a commensurate proportion of currently-generated purchasing power. Net government receipts averaged 22 percent of gross national product at their relative maximum in 1943 and 1944.

The difference between the share of output bought by the Government and its share of receipts was financed by borrowing on an unprecedented scale. The inflationary impact of this deficit financing was restrained to a considerable extent during the war period itself, despite scarcities of civilian goods and services, by such factors as price control, rationing, and the willingness of the public not only to buy Government bonds, but also to accumulate other liquid assets. After the cessation of hostilities, however, the postponed effects of wartime deficit financing contributed to the postwar inflation.

It should be noted, especially in connection with the postwar figures, that the relative rise in total tax and nontax receipts of Federal, State, and local governments has been greater than that of the net receipts item plotted in the chart. There has been a material increase in the divergence between these two measures because of proportionate expansion of the volume of gross receipts required to finance veterans' benefits, interest on the public debt, and other transfers deducted in deriving the net figures.

## Basic expansion in role of government

A final feature of the three panels in combination is the shift from private to public consumption, which has already been noted in the foregoing discussion of long-run changes in the use of current-dollar gross national product. The shift is evidenced by comparison of the two upper panels, which show a distinct, although irregular, uptrend in the government share, whether in terms of purchases or of net receipts, together with a generally offsetting longterm decline in the personal share. The latter movement is reflected in disposable income, as well as in consumption expenditures, and does not appear to reveal any marked secular-as distinguished from cyclical and wartimechanges in the relative proportions of consumer spending and saving. Primarily, of course, the rising percentage share of government reflects the increasing responsibilities -especially with respect to national defense-assumed by the Federal Government.

Neither in gross investment nor in gross business saving has there been any noticeable long-term change in relative importance, despite extreme cyclical and wartime variations.

## Chronological Review: 1929-50

The year 1929 marked the end of an era of relatively full employment, business confidence, and general prosperity. Economic activity had been advancing strongly, with only minor interruptions, for eight years.

## Business decline: 1929-33

The 1929 downturn, the ultimate causes of which are still a matter of controversy, was most clearly reflected in the collapse of investment demand. Gross private domestic investment dropped about one-third from 1929 to 1930, as new construction and producers' purchases of durable equipment were cut sharply and the accumulation of nonfarm business inventories ceased. Foreign purchases also declined in 1930, although the drop was not reflected in net foreign investment because of a matching reduction in import demand.

With employment and incomes adversely affected by the sharp reduction of investment, consumer purchases also decreased, contributing to the general contraction and inducing still further cuts in outlays for investment.

Consumer purchases, however, held up much better in 1930 than investment demand. The aggregate income flow to individuals shrank less than production and the incomes generated by it, as undistributed corporate profits absorbed a disproportionate share of the over-all decrease in earned income. Also, consumers tended to spend a higher proportion of current income or to dissave in the attempt to preserve previous living standards.

Essentially the same pattern of cumulative decline persisted, and in fact accelerated, during 1931 and 1932. By the latter year, gross private domestic investment had fallen to the very low level of less than $\$ 1$ billion, as contrasted with $\$ 16$ billion in 1929. The further moderate decline of the gross national product in 1933 was in consumer purchases, where it reflected primarily lower average prices rather than a further decrease in volume.

## National product halved in value

Over the entire period of contraction from 1929 to 1933, the gross national product dropped by nearly one-half, from $\$ 104$ billion to $\$ 56$ billion. At the bottom of the depression less than 3 percent of the Nation's output went into business investment, as compared with 15 percent in 1929. Conversely, consumer purchases rose from threefourths of the total in 1929 to five-sixths in 1933. Government purchases, although little changed in absolute dollar volume, were considerably increased in relative importance by the collapse of private demand.

Roughly one-half of the 1929-33 decline in the market value of the national product stemmed from lower prices. As measured by the gross national product in constant (1939) dollars, real output fell by about one-fourth.

Foremost among the factors underlying the shrinkage of real output was the reduction of employment. At the depth of the depression, the number of persons engaged in production was almost one-fifth lower than in 1929, and unemployment exceeded 12 million-close to onefourth of the Nation's labor force. Moreover, average hours worked per week by those who remained employed were considerably reduced.

## Recovery: 1933-37

Some of the most serious deflationary forces underlying the post-1929 collapse were by 1932 beginning to spend themselves. Installations of new plant and equipment had virtually ceased in most segments of the economy, and such gross fixed business investment as did persist represented primarily the fulfillment of minimum replacement needs. As replacements had been cut to the bone for several years, the feasibility of further postponing them was rapidly diminishing by the end of 1932 . Business purchases of durable equipment, accordingly, fell no lower in 1933. Private construction activity did continue downward, but the drop was smaller than in any of the three preceding years, and it is noteworthy that the volume of industrial building turned up after 1932.
Sizable inventory liquidation continued in 1933, but as it had already carried working stocks close to a minimum even in relation to the low current volume of sales, the rate of liquidation was considerably reduced. It had previously been possible for businesses to meet the sagging volume of sales partly out of relatively excessive existing inventories, with the consequence that production-and hence total income-was reduced even more than consolidated business sales. Now, however, this possibility was vanishing, and it became necessary to keep output at least on a par with current demand. Here too, then, a weighty deflationary force was exhausting itself.

With the marked retardation of income declines stemming directly from reduced investment expenditures, the fall in consumer demand was measurably slowed in 1933. The stage was thus finally set for recovery. It was evidenced in a few industries as early as the fall of 1932, but appears to have dated generally from the spring of 1933. Monthly personal income data show the low point in March, after which there was a slow and uneven rise during the remainder of the year.

With its decline arrested in 1933, fixed business investment turned up moderately in 1934, when both construction and equipment outlays began to expand again. Nonfarm inventory liquidation ceased, and a general trend toward rebuilding of stocks depleted during the depression set in. It was stimulated not only by the emerging recovery of sales, but by the rise in prices already under way during 1933.

## Government supplements private recovery

In the meantime, the Federal Government had assumed an active role in the economy, and was making strenuous efforts to promote recovery. Along with the adoption of other measures, it entered the market directly on an expanding scale, especially in its work relief activities, and also provided substantial aid to State and local governments.
With the increase of incomes generated by the pick-up of business investment and the growth of government purchases, personal consumption expenditures also rose in 1934. Their expansion, in turn, fed the income stream and provided stimulus for a further upsurge of investment. This was at first mainly confined to long-deferred replacement of capital facilities which had deteriorated during the depression; but as profits reappeared and business confidence in future prospects was gradually restored, an increasing proportion went into wholly new plant and equipment, and inventories were expanded to meet the rising volume of sales. Residential building, spurred in part by Federal aid to homeowners, moved ahead once more, and total gross private domestic investment advanced steadily from only a little over $\$ 1$ billion in 1933 to $\$ 111 / 2$ billion in 1937.

Consumer purchases also continued to rise. At $\$ 67$ billion in 1937, they were 45 percent above the low mark of 1933. Although their rate of increase was proportionately smaller than that of domestic capital formation, they represented quantitatively the largest element in the upward spiral of employment, production, and incomes.

Apart from the newly expanded role of government, the whole mechanism of the recovery was thus very similar to that of the downswing, except that it operated in reverse and also more slowly. Of the $\$ 34$ billion increase in gross national product from 1933 to 1937, about 30 percent was in private domestic investment, raising it from $21 / 2$ to $121 / 2$ percent of the total. Consumer outlays accounted for about 60 percent of the change-substantially less than their share of total output-and government purchases, dropping slightly in relative importance, absorbed the remaining 10 percent of the increment.

## The recession of 1938

Incomplete as was the recovery of the economy by 1937, it was interrupted by a downturn beginning in the latter part of that year and extending through mid1938. Although of brief duration, this downturn was

Domestic investment per capita has shown the widest swings in the general business fluctuations since 1929 in real terms . .

while real consumption expenditures per capita have been relatively stable, but expanding substantially since mid-nineteen thirties.


Except for the World War II years, real government expenditures per capita have tended steadily upward.

relatively severe. Within a few months, unemployment rose sharply. Industrial production fell by nearly onethird from August, 1937 to January, 1938, and personal income dropped at a pace comparable to that prevailing in 1931-32. The decline tapered off thereafter, however, a-d production kegan to pick up again in the second half of 1938 . For the year as a whole, the decrease in gross national product was about 6 percent.

The 1937-38 recession was much steeper in its initial descent than the previous downswing, but it was of a less basic character. Of the $\$ 51 / 2$ billion decline in gross national product from 1937 to 1938 , three-fifths was attributable to a shift from accumulation to liquidation of business inventories. Inventory shifts accounted for only 14 percent of the drop in output from 1929 to 1930.

Business plant and equipment expenditures contracted about as sharply in 1938 as in 1930, but residential construction activity, contrastingly, continued to rise, and consumption expenditures, despite the drop in employment and personal income, declined by only 4 percent, as compared with 10 percent in 1930. The consuming public as a whole sustained its spending close to the 1937 rate by a $\$ 3$ billion cut in personal saving. Moreover, the moderate decline in consumer outlays which did occur was very largely counterbalanced by increased government buying and net foreign investment.

Altogether, purchases of goods and services by final users of the Nation's output declined by less than 3 percent in 1938, as compared with 11 percent in 1930 , and the major portion of the swing in production was absorbed by the change in inventories. Curtailment of production ceased as soon as the strength of final demand became apparent. The drop in fixed business investment proved to have been instigated by short-run considerations, rather than by any fundamental lack of investment opportunities. The basic underlying situation. in fact, was that large capital requirements accumulated during the depression still remained to be fulfilled, and that many new investment opportunities stemming from technological advances remained to be exploited.

## Renewed recovery: 1938-41

Following the jar of the 1938 recession, the recovery was renewed and continued steadily into 1941 , when it was merged with the first stages of military preparation for World War II.

All forms of business investment were expanding steadily during this period. Purchases of producers' durable equipment nearly doubled in dollar volume from 1938 to 1941, and private construction activity also rose strongly. Inventory liquidation ceased in 1939 , when production was brought back in line with current sales, and inventories were accumulated on a mounting scale in the next two years.

By 1941, total gross private domestic investment was not far from three times as large as in 1938. For the first time, it surpassed the 1929 total. both in value and in physical volume. Net foreign investment was also sizable in the three years following 1938, being especially stimulated in 1940 and 1941 by foreign demand for munitions and other supplies required for the Allied war effort.

Responding to the increased incomes generated by expanding employment-and contributing, in turn, to the advance of profits, business investment, employment, and incomes-personal consumption expenditures rose from $\$ 641 / 2$ billion in 1938 to over $\$ 82$ billion in 1941.

The rise was particularly marked-about two-thirdsin outlays for durable goods. Higher prices figured in the advancing rate of consumer spending, but the major portion represented enlarged quantities of goods and services. The real volume of personal consumption per capita increased 17 percent from 1938 to 1941 , and exceeded the 1929 figure from 1939 on.

## Military requirements become dominant

Government purchases were approximately stable until the latter part of 1940. After the fall of France, the national defense program got under way on a rapidlyexpanding scale with progressively greater influence upon economic conditions. Throughout 1941 and thereafter it was the dominant factor in the economy.

In this second stage of recovery from the depression, the dollar value of the Nation's output advanced by almost 50 percent, to $\$ 126$ billion. With a general price rise in the neighborhood of 8 percent, the increase in the physical volume of production was close to two-fifths.

The year 1941 was one of marked expansion, and on the average did not represent full peacetime capacity. During much of the year, there were idle manpower resources, as is attested by the fact that the proportion of the labor force unemployed was slightly higher than in 1930, the first year of the depression.

Nevertheless, the degree of recovery evidenced by 1941 was impressive. In constant dollars, the gross national product stood one-third higher than in 1929. This expansion of real output was achieved with an increase of only 15 percent in the total number of persons engaged in production. Moreover, average hours worked per week were reduced considerably over the 12 years. In the private sector, where the increase in output was 30 percent, total man-hours utilized were but little above those in 1929.

That so large an increase in the volume of output was nonetheless accomplished was attributable to the rise in real product per man-hour worked in the private economy. Although lagging in the depression, productivity had advanced rapidly after 1934, and by 1941 was near the level indicated by its long-term trend.

The larger output of 1941 was being distributed to maior economic groups in a somewhat different fashion from that of 1929. The most noteworthy chanee was in the share bought by government. With substantial military preparations getting under way, this share-including a slightly smaller portion for State and local governmentsamounted to roughly one-fifth of the gross national product as compared with less than one-tenth in 1929. The proportion purchased by consumers, on the other hand, was reduced from 76 to 65 percent, while the percentages going into gross private domestic and net foreign investment were little changed.

## The var economy: 1942-45

Preparations for war began at a time when the economy was operating at less than full capacity, with unemployed labor, plant, and equipment, and an abundance of raw materials. At first, because of the availability of these unused economic resources, war production could be superimposed upon the civilian economy. It acted as a stimulant, and civilian production increased concurrently. Gross private domestic investment proceeded at a high rate, and consumer purchases-especially of durable goods-were buoyant.

During most of 1941, the needs of the war program were thus compatible with expanding civilian produc-

# GROWTH in the volume of national output has been about three percent per year 


tion. Moreover, much of the capital equipment acquired during this period later proved to be readily convertible to war production. Also, the additions to the stock of capital, along with additions to the stock of durable consumer goods, subsequently permitted the diversion of more productive resources from civilian use than would otherwise have been possible except with sharper cuts in living standards.

## Emergence of war-time problems

As the dimensions of the war effort expanded, however, serious problems emerged. Although the rising volume of war production generated a rapid expansion of incomes, it provided no goods and services to satisfy the resultant growth of civilian demand. Instead, it impinged upon their availability as soon as the slack in the economy had been taken up. Shortages of specific labor skills, capital facilities, and raw materials began to be more and more frequently encountered. After Pearl Harbor, it became obvious that the war program would take proportions of output so huge that they could not be provided by enlarged production alone, and that civilian demand would have to be restricted.

During the period of transition to a full war economy, accordingly, a succession of measures was adopted with a view to ensuring maximum war production to-
gether with the optimum functioning of the civilian economy. Rates of taxation were steeply increased, not only to help finance Government war expenditures, but also to restrict the amount of civilian purchasing power available to bid for the limited volume of goods and services remaining after military requirements had been met. Fiscal measures were supplemented by the imposition of direct controls, including priorities, inventory limitation orders, allocations, manpower regulations, price and wage controls, and rationing. In addition, individuals were urged to restrict consumption voluntarily and to invest their surplus purchasing power in Government bonds.

On the whole, the flexibility of the economy in the transition to full-scale war production proved great and total production continued to rise rapidly despite conversion.

War peak reached in 1944
In 1944, the peak year of war production, the dollar value of the Nation's outout was $\$ 214$ billion- $\$ 87$ billion higher than in 1941. Because of the extreme changes in the nature and composition of output, it is difficult to measure how much of this dollar increase reflected physical volume. According to the constant-dollar gross national product series, the expansion of real output
from 1941 to 1944 was more than one-third. Whatever the precise figure, it is clear that there was a large rise in physical production during World War II. The major underlying factors were an extraordinary expansion of the labor force and employment, an increased stock of capital equipment, large-scale operations and technological progress in war production, and a better utilization of labor and productive capacity in many civilian industries.

The increase in physical output was by far the most important source of war output. Next in importance were reductions in gross fixed investment, consumer durables, and government nonwar purchases. According to available evidence, real consumption of nondurable goods and of services was more than maintained in total. While the wartime level of personal consumption is somewhat exaggerated in the constant dollar figures because of the impossibility of measuring fully the actual price rise which occurred during the war, it is evident that, in the aggregate, real consumption was not curtailed.

Although personal consumption held up during the war, it was much lower in relation to income than it would have been in ordinary peacetime years of high economic activity. An unprecedented proportion of wartime incomes was absorbed by taxes, and the saving rate was abnormally high. The latter reflected a combination of restricted civilian supplies regulated by price control and rationing and the response to patriotic appeals for investment in war bonds.

## War changes distribution of output

As a result of these wartime changes, the composition of gross national product in 1944 differed drastically from that in 1941. Government purchases amounted to 45 percent of the total in 1944. The comparable figure for 1941 was only 20 percent, including twice as large a proportion for civilian programs of Federal, State, and local governments.

All other major uses of output were reduced far below their usual relative importance, with the sharpest cuts being those in domestic and net foreign investment and in consumer durables. Private fixed capital formation fell to about 4 percent of the national product as compared with $111 / 2$ percent in 1941; and requirements were also met in part through a net drain upon both business inventories and foreign sources of supply. The proportion representing consumer outlays for durable goods was more than halved as compared with that of 1941, and the relative share of personal consumption expenditures for nondurables and services also decreasedthough by a much smaller margin.

## Reconversion and postwar boom: 1945-48

At the end of World War II, the Nation faced a set of economic problems which in some ways were the counterpart to those of the original mobilization. It was widely recognized that the transition from a situation in which roughly two-fifths of economic resources were being employed in war production to one in which most of the resources would again be devoted to civilian output could only be accomplished in an orderly fashion by widespread cooperation among all major groups in the economy. As in the mobilization itself, the striking flexibility of the economy was demonstrated.

A broad Government program designed to speed reconversion, and to ease its impact upon the returning soldier and upon business, was enacted. With the quick
resurgence of business, personal, and foreign demands, as well as the vast Government programs undertaken to aid in the rehabilitation of war devastated areas, the immediate postwar economic decline was held to moderate proportions.

Although war purchases of the Federal Government were cut back with great speed-from an annual rate of $\$ 90$ billion in the second quarter of 1945 to $\$ 28$ billion in the first quarter of 1946 -much of the slack was quickly taken up by the rapid expansion of private spending. Total gross national product dropped 11 percent over these three quarters, or by $\$ 25$ billion at annual rates; thus more than half of the drop in war expenditures was offset. Discharged servicemen and war plant workers were speedily absorbed in civilian pursuits, and at no time did unemployment rise appreciably above $21 / 2$ million.

After the first quarter of 1946, the buoyancy of private demand more than offset the moderate further declines in government purchases. Strong inflationary pressures characterized the 1945-46 reconversion, even before controls were eliminated, and continued to dominate the economic scene for the next two years.

## Influence of liquid saving and backlog demands

Several key factors underlay the strength of private demand. During the war, both consumers and businesses had accumulated an enormous volume of savings-much of it in liquid form. At the same time, they had built up a backlog of urgent demands for all types of civilian goods, and especially for durables.

As regards the purchasing power of consumers, it may be further noted that in the brief contraction from mid1945 to early 1946 the flow of disposable personal income was maintained. Undistributed corporate earnings absorbed a large share of the swing in total income arising from production, and the Government disbursed muster-ing-out payments and other veterans' benefits in large volume and lowered the wartime tax rates. Not only did the pent-up demand for durable consumer goods materialize as expected, but an insistent consumer demand for nondurables and services also became an active and powerful force in the economy.

## Business speeds investment

At the same time, business plant and equipment investment programs were pushed ahead fast in the immediate reconversion period and continued to expand strongly thereafter. Inventories, very low at the close of the war, had to be accumulated rapidly to bring working stocks into line with the heavy volume of business. The pace of residential building activity also accelerated steadily.
Moreover, net foreign investment assumed a relative importance far beyond its usual role. With financial support provided both by wartime accumulations of gold and dollar balances and by a large volume of United States Government loans, and under the stimulus of world-wide shortages stemming from the impairment of productive facilities abroad, net foreign purchases of American output reached unprecedented proportions.
In combination, these heavy demands placed a severe strain upon the productive capacity of the economy, which was reduced considerably below the wartime peak. Despite low unemployment, the number of persons engaged in production was 7 million, or 11 percent, lower in 1946 than in 1944. This was due to the withdrawal from the labor force of sizable classes of individuals-

## SURVEY OF CURRENT BUSINESS

Percentage Distributions of Gross National Product, 1929-50

|  | 1029 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1037 | 11938 | 1039 | 1940 | 19.41 | 1942 | 1943 | 1944 | 1949 | 19.46 | 19.9 | 1948 | 1349 | 1930 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| By type of expenditure |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.01 | 100.01 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Personal consumption expenditur | 75.9 | 77.9 | 80.5 | 84.3 | 83.1 | 80.0 | 77.8 | 75.8 | 74.4 | 76.2 | 73.9 | 71.0 | 65.1 | 56.1 |  | 52.2 | 37.2 | 69.6 | 71.0 | 18.7 | 70.0 | 68.5 |
| Gross private domestic investmen | 15.2 | 11.8 | 7.1 | 1.5 | 2.3 | 4.3 | 8.5 | 10.1 | 12.7 | 7.5 | 10.9 | 13.8 | 14.5 | 0.7 | 2.9 | 3.6 | 5.0 | 13.6 | 1:2 | 16.5 | 12.8 | 17.3 |
| Net foreign investment | 8. ${ }^{2}$ | 10.8 |  |  | $1+3$ |  | 13.7 | -14. 1 |  | 1.3 | 1.0 | 13.7 |  | - 1 | -1. 2 | -1.0 | - 7.7 | $2 \cdot 2$ | 13.88 |  |  | - 8.8 |
| Government purchases of Federal | 8.2 1.3 | 10.1 | $\underline{12.1}$ | 13.8 | $\begin{array}{r}14.3 \\ 3 \\ \hline 6\end{array}$ | 15.0 | 13.7 | 14.2 | 12.8 | 15.1 | 1.4 .3 | 13.7 | 19.5 | 37.0 | 4.56 | 45.8 | 38.5 | 14.6 | 12.3 | 1.4 .1 | 10.9 | 15.0 |
| State and local | 6.9 | 8.5 | 10.1 | 11.3 | 10.7 | 10.4 | 9.6 | 8.8 | 7.8 | 8.8 | 8.7 | 7.7 | 6. 2 | 4.8 | 3.8 | 3.5 | ${ }_{3.7}$ | 4.7 | 5.8 | 8.0 | 7.0 | 7.0 |
| By type of receipt |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Disposable personal incom | 79.5 | 81.1 | 82.9 | 82.0 | 81.0 | 79.6 | 80.3 | 80.1 | 78.8 | 77.3 | 76.8 | 74.7 | 72.7 | 72.3 | 68.1 | 68.8 | 70.2 | 75.3 | 72.7 | 72.7 | 72.4 | 72.3 |
| Gross business saving ${ }^{1}$ | 11.4 | 9.9 | 7.0 | 4.6 | 4.8 | 7.7 | 9.1 | 8.1 | 8.8 | 9.5 | 9.4 | 10.5 | 9.2 | 8.0 | 8.4 | 8.2 | 7.3 | 7.1 | 9.0 | 11.2 | 12.0 | 10.5 |
| Statistical discrepancy- | - 1 | $-.8$ | 1.6 | 2.5 | 2.2 | 1.3 | - 1.5 | 1.0 | -1.2 | -13. ${ }^{1}$ | 1.5 | 1.6 | 1.3 | 17.4 |  | 1.9 | 2.3 |  |  | -1.2 | $-{ }^{-3}$ | - 6 |
| Net government | 2.4 | 1.9 | 8.5 | 10.9 | 12.0 |  |  | 10.8 | 13.6 | 13.3 | 12 | 4.7 | 16.8 | 17.7 | 17.9 | 16.4 | 15.3 |  |  | 17.4 | 15.9 | 17.9 |
| State and local ${ }^{3}$ | 6.8 | 7.9 | 3.2 | 10.9 | 10.7 | 11.2 | 10.6 | 9.2 | 8.7 | 9.4 | 9.1 | 8.5 | 7.3 | 5.9 | 5.1 | 4.7 | 4.9 | 5.6 | 5.9 | 5.9 | 6.7 | 0.6 |

${ }^{1}$ Consists of undistributed corporate profits and corporate inventory valuation adjustment, capital consumption allowances, and excess of wage accruals over disbursements. 2 Consists of personal tax and nontax receipts, corporate profts tax aceruals, indirect bustness tax and nontax aceruals, contributions for social insurance, and current surplus of goverrimont enterprises, less subsidies, transfer payments, net interest paid, and grants to State and local governments.
${ }^{3}$ Consists of personal tax and nontax receipts, corporate profits tax aceruals, indirect busi oess tax and nontax accruals, contributions for social insurance, current surpus of gotermont enterprises, and Federal grants in aid, less transfer payments and net interest paid.

Percentage Distribution of Private National Income by Distributive Shares, 1929-50

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1930 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1940 | 1947 | 1948 | 1949 | 1050 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total private national income | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | $100 . \mathrm{C}$ | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100. | 10.0 |
| Compensation of emp | 55.5 | 59.1 | 63.7 | 70.3 | 70.0 | 65.6 | 60.7 | 61.0 | c0.6 | 61.5 | 61.4 | 59.3 | 57.6 | 50.7 | 57.5 |  |  |  |  |  |  | 60.3 |
| Wages and salaries | 55.0 | 58.5 | 62.9 | 69.3 | 69.1 | 64.8 | 59.9 | 59.8 | 58.4 | 58.8 | 58.6 | 56.7 | 55.2 | 54.5 | 55.3 | 55.8 | 56.5 | 57.6 | 58.2 | 56.7 | 58.0 | 57.4 |
| Supplements to wages and salaries.- | . 6 | . 7 | . 8 | 1.0 | . 9 | . 8 | . 7 | 1.2 | 2.2 | 2.8 | 2.7 | 2.6 | 2.4 | 2.2 | 2.2 | 2.3 | 2.4 | 2.4 | 2.6 | 2.4 | 2.6 | 2.9 |
| Income of unincorporated enter | 16.9 | 15.7 | 15.4 | 13.5 | 15.2 | 15.6 | 19.7 | 17.6 | 18.6 | 18.3 | 17.6 | 17.5 | 17.7 | 19.1 | 18.8 | 19.4 | 21.5 | 22.4 | 19.6 | 19.5 | 17.4 | 10.7 |
| Business and professional ${ }^{2}$ | 10.0 | 10.1 | 10.0 | 8.8 | 8.5 | 10.1 | 10.0 | 10.7 | 10.1 | 10.8 | 10.6 | 10.6 | 10.2 | 10.4 | 10.0 | 11.5 | 12.9 | 13.1 | 11.0 | 10.8 | 10.7 | 10.3 |
| Farm | 6.9 | 5.6 | 5.4 | 4.7 | 6.7 | 5.5 | 9.7 | 6.8 | 8.5 | 7.5 | 7.0 | 6.8 | 7.4 | 8.7 | 8.3 | 7.9 | 8.6 | 9.4 | 8.7 | 8.7 | 6.7 | 0.4 |
| Rental income of person | 7.1 | 6.9 | 6.8 | 6.9 | 5.9 | 5.0 | 4.6 | 4.7 | 4.8 | 5.6 | 5.4 | 5.0 | 4.6 | 4.5 | 4.3 | 4.3 | 4.3 | 4.2 | 3.9 | 3.7 | 3.9 | 3.7 |
| Corporate profits and inventory valuation adjustment. | 12.5 | 9.4 |  | -5.5 | -5.8 | 2.6 | 6.0 | 8.7 | 9.4 | 7.3 | 9.0 | 12.6 | 15.7 | 16.5 | 17.0 | 10.1 | 13.2 | 11.6 | 13.7 | 15.6 | 15.6 | 16.8 |
| Corporate profits before tax | 11.9 | 4.7 | 1.5 | . | 5 | 4.1 | 6.4 | 10.0 | 9.4 | 5.7 | 10.1 | 12.9 | 18.5 | 17.5 | 17.6 | 16.3 | 13.6 | 14.9 | 16.9 | 16.6 | 14.5 | 19.2 |
| Corporate profits tax liability -- | 1.7 | $\frac{1}{3.2}$ |  | . 0 | 1.5 | $\frac{1}{2} .8$ | 1.9 | 2.5 | 2.3 | 1.8 | 2.3 | 4.0 | 8.4 | 9.7 7 | 10.1 | 9.0 | 7.7 | 6.1 8.8 | 6.6 10.3 | 6.4 | 5.6 | ${ }^{8.6}$ |
| Corporate profits after tax.-.-- Dividends. | 10.2 | 3.5 | 7. 7.7 | 7.4 | 6.0 | 2.3 | 4.5 | 7.6 | 7.1 | 3.9 5.4 | 7.8 5.9 | 8.9 | 10.1 4.8 | 7.8 | 7.5 | 7.2 3.1 | 5.9 3.2 | 8.8 3.7 | 10.3 3.6 | 10.2 3.6 | 8.9 3.9 | 10.6 4.3 |
| Undistributed profits | 3.2 | 4.4 | 10.1 | 16.4 | 7.1 | 3. 8 | -1.2 | - ${ }^{\text {. }}$ 5 | . 0 | 1.5 | 1.9 | 3.3 | 5.3 | 4.3 | 4. | 4.1 | 2.6 | 5.1 | 6.7 | 6.6 | 5.0 | 4.3 6.3 |
| Inventory valuation adjustment---- |  | 4.7 | 4.5 | 2.9 | -6.3 | -1.5 | 5 | -1.3 | . 0 | 1.6 | 1.1 | -. 2 | -2.8 | -1.0 | -. 5 |  | 4 | -3.3 | -3.2 | -1.0 | 1.1 | -2.4 |
| Net interest. | 8.0 | 8.9 | 11.1 | 14.9 | 14.6 | 11.2 | 9.1 | 7.0 | 6.6 | 7.3 | 6.6 | 5.7 | 4.4 | 3.2 | 2.4 | 2.1 | 2.1 | 1.9 | 2.0 | 2.1 | 2.5 | 2.5 |

${ }^{1}$ National income excluding compensation of government and government enterprise employees.

Percentage Distribution of National Income by Sector of Origin, 1929-50

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1036 | 1937 | 1938 | 1939 | 1910 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | $19+8$ | 1949 | 1050 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| National income | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Government and goverament enterprises- | 5.9 | 7.1 | 9.3 | 12.4 | 13.5 | 13.0 | 11.9 | 12.6 | 10.6 | 12.7 | 11.8 | 10.8 | 10.1 | 12.0 | 16.1 | 18.6 | 20.5 | 12.6 | 9.3 | 8.8 | 10.1 | 9.8 |
| Agriculture, forestry, and fisheries-....- | 9.2 | 8.0 | 7.9 | 7.4 | 8.9 | 7.3 | 11.0 | 8.2 | 9.9 | 8.9 | 8.4 | 8.1 | 8.6 | 9.4 | 8.6 | 8.1 | 8.6 | 10.1 | 9.8 | 0.8 | 7.9 | 7.4 |
| Private nonagricultural industries...----- | 84.0 | 83.9 | 81.9 | 79.9 | 76.8 | 79.6 | 76.6 | 78.7 | 79.1 | 77.8 | 79:4 | 80.7 | 81.0 | 78.3 | 75.1 | 73.1 | 70.7 | 77.0 | 80.4 | 81.0 | 81.6 | 82.3 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Private nonagricultural ind | 100.0 |  | $100.0$ | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 00.0 | 100.0 | 100.0 | 100.0 |  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Mining | 2.9 | 2.6 | 2.1 | 2.1 | 2.2 |  |  | 3.0 | 3.3 |  |  | 2.9 | 2.8 | 2.4 | 2.2 | 2.2 | 2.2 | 2.2 | 2.7 | 3.0 |  | 2.6 |
| Contracteonstr | 5.0 | 4.9 | 4.4 | 3.1 | 2.4 | 2.7 | 2.9 | 3.8 | 3.5 | 3.7 | 3.9 | 4.0 | 5.2 | 6.2 | 4.3 | 3.3 | 3.5 | 4.8 | 5.3 | 5.8 | 6.0 | 6.2 |
| Manufacturing | 29.9 | 29.0 | ${ }^{25} 7$ | 21.7 | 24.8 | 28.4 | ${ }_{20.6}^{30.6}$ | 31.7 | 33.0 20. | 28.6 | 31.1 21.0 | 34.0 | 39.0 | 12.1 | 45.5 | 44.9 | 40.1 | 35.2 | 37.1 | 37.0 | 35.6 23.5 | 37.5 21.9 |
| Wholesale and retail t | 17.8 | 17.0 | 17.6 | 19.5 | 17.7 | 15.2 | 20.7 | 14.0 | 13.6 | 15.3 | 14.3 | 12.9 | 11.3 | 10.2 | 17.0 | 18.7 9.7 | 10.3 | 10.6 | 23.3 <br> 9.8 | 23.8 | 10.4 | 10.3 |
| Transportation | 8.9 | 8.8 | 8.9 | 9.5 | 9.7 | 8.6 | 8.3 | 8.2 | 7.8 | 7.5 | 7.9 | 7.5 | 7.4 | 7.9 | 8.4 | 8.3 | 8.1 | 7.3 | 7.2 | 7.0 | ${ }_{3}^{8.7}$ | 6.7 |
| Communications a | 3.9 | 14.4 | 5.4 | 6.9. | 17.6 | 5.7 | ${ }_{15}^{5.2}$ | 14.3 | 13.8 | 14.7 | 5.0 14.0 | 13.6 | 3.9 | 3.4 10.1 | 3.1 9.4 | 3.0 | 3.3 10.9 | ${ }_{1}^{3.5}$ | 13.2 | 3.3 | 3.7 | 3.7 |
| Services- | 13.8 | 14.3 | 16.0 | 18.2 | 17.9 | 15. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

such as adolescents, housewives, and persons past the normal retirement age-who are not ordinarily employed, but who had been induced by special wartime circumstances to accept employment. In addition, average hours worked per week fell off as overtime schedules were abandoned, and there appears to have been some loss during the reconversion period in real output per man-hour worked in private industries.

## Rapid price rise until 1948

With the physical volume of production thus pressing against capacity, much, if not most, of the pressure exerted by intensive consumer, business, and foreign buying was reflected in price movements. Prices were already advancing, though often in covert fashion, in the early reconversion period. After the termination of wartime controls in the latter half of 1946, they spurted up very sharply, and except for a brief interlude of hesitation in the spring of 1947, serious inflationary tendencies accompanied the postwar boom until 1948.

In that year a better balance between supply and demand emerged, and the price rise tapered off. This was brought about partly through an appreciable expansion of real output and partly through a diminution in the intensity of some of the demands, including those from abroad, from which the greatest pressures had emanated.
There was a break in agricultural prices early in 1948. Although these recovered briefly, their downward slide, influenced by the prospect of excellent domestic harvests and an improved crop situation abroad, was resumed after midyear. Agricultural prices are a substantial element in the total price picture, and their decline was an important factor shaping the course of economic developments during 1948.
More notable, however, was the increasing stability in consumer markets. The upsurge in personal consumption expenditures, stimulated by backlog demands and reinforced by large holdings of liquid assets and a low volume of consumer debt outstanding, had constituted one of the main foundations of the boom. As the more urgent backlog demands were satisfied, and as the abnormally high spending rate of 1947 made inroads into the liquid asset and debt positions of many consumers, the rising trend of consumption flattened out in 1948.
Closely allied with this tapering-off was the appearance of substantial inventory accumulations, prevented in 1947 largely by the intensity of consumer demand. These related developments, more than any others, slowed the price rise and brought the inflationary spiral to an end during 1948. Late that year, there came a general downturn in prices, and the postwar economy entered a new phase.

## Business readjustment and recovery: 1949-50

Businessmen adopted more cautious buying policies toward the end of 1948, and the large inventory accumulations of that year disappeared in the first quarter of 1949. Substantial inventory liquidation emerged in the next quarter, and the drain upon stocks persisted, though it did not deepen, during the remainder of the year. The shift in the inventory position was reflected in a curtailment of production, mainly in the manufacturing industries, where the bulk of all inventories held in the economy is produced.

By contrast, total final purchases-that is, elements of the gross national product other than the change in in-ventories-held up extremely well during 1949. Consumer
spending in the first quarter dropped but slightly below its dollar volume at the crest of the postwar boom, then climbed slowly upward again during the remainder of the year. Residential building activity decreased from a peak in the third quarter of 1948 but picked up again in the spring and advanced strongly thereafter. And government purchases, chiefly because of the expanding Federal foreign aid and farm price support programs, more than offset the moderate declines which occurred in business outlays for plant and equipment. For the year as a whole, total final purchases actually exceeded those of 1948.

That the curtailment of employment and payrolls in the manufacturing sector had no greater impact upon consumption expenditures in 1949 was attributable in part to the payment of sizable unemployment compensation benefits, and also in some degree to the cushioning effects upon disposable personal income of lower Federal income taxes as a result of the previous year's Revenue Act. It may also be noted that dividends were sustained on a better-than-even keel, notwithstanding the sharp fall in profits. Perhaps more important than any of these factors, however, was the apparent willingness of the consuming public as a whole to spend markedly increasing proportions of current income to maintain living standards during the recession.

It became apparent in the second half of 1949 that the curtailment of output had been excessive in relation to the existing stable volume of business sales. Accordingly, production was stepped back up, and the accumulation of inventories was resumed. Meanwhile, the recovery of residential construction had grown into a sustained building boom, and consumer demand, already strong, was being bolstered by large Government payments to veterans. These factors, moreover, were being reinforced by a renewed upturn in fixed business investment.

This widening resurgence of production generated increases in employment and incomes, adding further impetus to consumer purchasing. Before mid-1950, a business upswing of substantial dimensions was under way and was carrying the economy close to full-capacity operation.

## Impact of rearmament program

It was upon this expansionary situation that the economic forces unleashed by the Korean invasion were sulperimposed. With the decision to undertake large-scale rearmament, it became clear that the next phase of enonomic development would be one in which aggregate demand for the Nation's output would exceed available supplies. The Nation, therefore, was confronted with the major tasks of achieving maximum output, diverting an adequate proportion of it to military use, and restraining the attendant forces of inflation.

By the end of 1950, then, the economy--having recently demonstrated its flexibility in the war and postwar pe-riods-was being subjected to still another severe test. Output rose quickly to record heights. With inflationary pressures again a national problem, the reimposition of both direct and indirect controls became necessary. Personal consumption and business investment were expanding, with the Government gradually drawing an increasing share of national output to reestablish its military strength in line with the necessities of the international situation. Thus, at mid-century the economy was giving another impressive demonstration of its vast technical resources, its flexible adaptability to shifting demands made upon it, and its unparalleled capacity for expansion.

# The Conceptual Framework of National Income Statistics 

## NATURE AND SIGNIFICANCE OF NATIONAL INCOME STATISTICS

## Purpose of national income statistics

In the past two decades, particularly the latter, national income statistics have undergone a basic transformation. This is manifest in the considerably broadened scope of the field.

The traditional purpose of national income research is to provide information on the outcome of economic activity through comprehensive measures of the size, composition, and use of national output. In the more recent period, the measurement of national output has continued to be the basic aim. But, with the growing realization that they can furnish a statistical picture of the economic structure and process, national income statistics have been used also to an increasing extent to facilitate an understanding of the factors which determine the outcome of economic activity. Much more fully and systematically than in the past, national income statistics have been designed with the dual objective of measuring the national output and placing it against the background of the transactions which underlie its production and distribution.

The national income statistics for the United States contained in this report are constructed according to this broader plan. They are therefore a comprehensive single source of integrated information on the Nation's economic life.

## Uses of national income statistics

Because they reduce the voluminous detail of economic activity to intelligible proportions, national income statistics have become widely used as the factual background for economic analysis and the preparation of economic programs. They provide the basic statistical framework required for the study of long-term economic trends and of business fluctuations, and for the formulation of business and government economic policies. Needless to say, the statistics do not throw light on all aspects of the economy, and often must be supplemented by other bodies of economic information.

Two broad, practical uses of national income data may be cited. These data are needed, in the first place, when the automatic working of the market mechanism cannot be fully relied upon and steps must be taken to modify its functioning. The mitigation of business cycles in times of peace and the current planning for national defense are important instances in which an understanding of the economic mechanism, such as is facilitated by the use of national income statistics, is the prerequisite to intelligent action designed to improve its operation.

Secondly, even when active influencing of economic events is not the aim, it is desirable to have some knowledge of these events so that the best possible adjustments to them can be made. For example, the businessman wants to gauge the probable market for his output so as to obtain a more rational basis for determining his policies; and the tax administrator must estimate what governmental rev-
enues are likely to be so that intelligent decisions can be made about matters relating to the expenditure and revenue policies of the various levels of government.
Whether for the purpose of exerting active influence on economic events or for passive adaptation to them, national income statistics are the most important single tool for orientation in the economic world. They do not, of course, furnish direct answers to the economic problems involving their use, but they do provide the relevant, and often indispensable, statistical background for arriving at intelligent solutions. This statistical background consists of a quantitative description of the structure of the economy over a period of years. The framework of this description is a national economic accounting system which summarizes the transactions linking the economic units whose interplay determines the functioning of the economy.

## Economic.accounting system

The production and distribution of the Nation's output necessitate countless transactions of buying and selling, hiring labor, investing capital, renting property, paying taxes, and other operations inherent in the functioning of the economic system. The records of these transactions kept by the business, consumer, and governmental units participating in them obviously are highly relevant for obtaining a statistical view of the economy because they reflect the most concrete manifestations of the Nation's economic life. However, these innumerable records must be summarized into a limited number of significant categories if a comprehensible and useful description of the economic process is to emerge. This is the basic task of the national economic accounting system.

The plan of the accounting system underlying the United States estimates is based upon a division of the economy into four major sectors-business, consumers, government, and foreign. The economic behavior and motivation of these four sectors is quite different; to distinguish among them appears necessary for an understanding of the economy in terms of the interactions of its constituent parts.

In the construction of the economic accounting system, a national income and product account is first established. This account provides measures of total national output, which is the sum of the outputs produced by the four sectors of the economy.

Next, accounts are set up for the sectors. In addition to showing the portions of national output originating in each of them, they are designed to depict the economic structure in terms of the interrelated transactions of the four major economic groups.

Specifically, four current accounts are shown, one each for business, consumers, government, and the rest of the world. These trace the transactions determining the current income of each of the sectors, and what part of that income is used up and what part is devoted to saving. The sector account for business is in essence a consolidated profit and loss account for the business system as a whole. For the other sectors, the accounts represent current receipt and expenditure accounts, in conformance with the nonprofitmaking character of their transactions.

Most of the current transactions that appear in the account of one sector are matched by corresponding entries in another. However, this is not so with respect to the items of saving or investment. With these, the corresponding entry is found in the capital or gross saving and investment account, which shows on a consolidated basis the saving and investment for the economy as a whole. This is the sixth account in the national economic accounting system.

## Main advantage of accounting approach

The principal advantage of formulating and presenting national income statistics as a system of accounts has been intimated in the preceding discussion. Such a system yields a set of interrelated tables which are a tremendous aid in revealing the structure of the economy and thereby contribute toward a better understanding of its functioning. Two aspects of the analytical value of the accounting system may be considered.

It throws into clear relief the nature of accounting relations that must always hold true among the component transactions summarized. The sense in which saving and investment are necessarily equal is a prime example of such a relationship. The establishment of an economic accounting system displaying this and other accounting relationships has been an aid to simplicity and clarity in economic discussions.

Also, light has been thrown on the relative magnitudes of the component flows of the economic process, and the study of the functional relationships among them has been facilitated. In contrast to the accounting relationships, which are a matter of definition and must always hold, these functional relationships are regularities that hold by and large as a matter of economic experience, but which can and do change in response to technological, institutional, and psychological changes. Measurement and study of these relationships-such as those between consumption and disposable income and between wages and profits -are essential for an understanding of the working of the economy. However, because they cannot be counted upon to hold without fail, these relationships must be the object of continuing investigation.

## Technical uses of economic accounting system

The establishment of a system of national economic accounts has benefited also the producers of national income data. It has aided their work in both its theoretical and statistical phases.

With respect to the former, it must first be recognized that national economic accounting has been of some aid in improving the definition of national output. It is true that no genuinely new criteria for solving definitional problems have been provided, and also that many definitions of national output are compatible with the principles on which the system is based. Yet, it has helped the discussion in several ways.

A great deal of the discussion of definitions was obscured by the failure to distinguish clearly between the income and product measurements of output and by the lack of a clear grasp of the relation between them. The development of national income statistics in an economic accounting framework has made for clarity. Some of the larger issues involved in the definition of output were brought into better focus, and a powerful tool was provided for the consistent treatment of financial intermediaries, nonprofit institutions, imputed income and product, and similar problem areas in the formulation of national income concepts.

Economic accounting has contributed to problems of definition also by depriving them of some of their importance. In substantial part, these problems revolve around the question of whether or not certain items-such as gov--ernment interest, business taxes, transfer payments, and subsidies-should be included in the aggregate measures of national output. Prior to the establishment of the system of accounts, the decision to omit such moot items from total output meant that their record, insofar as national income statistics were concerned, was lost. Since the items are germane to economic investigations in which national income data are used, there often was reluctance to exclude them, even though this may have been indicated from the standpoint of measuring output. With the presentation of national income statistics in the form of a complete statistical picture, the record of transactions excluded from the principal aggregates is no longer lost. The problem of defining output can be faced squarely on its own merit.

Moreover, to the extent that fully satisfactory solutions. to definitional problems cannot be found, the economic accounting system has made it easier to live with them. Many of the controversial items (irrespective of whether defined as part of the output aggregates) are shown separately in the account tables, and alternative measures of output can be constructed depending on particular needs and preferences.

In two general ways, the accounting approach is an aid to the statistical aspect of national income work. To begin with, it is of considerable help in defining the task of statistical data collection. Once the particular accounting framework providing the most useful summary of the economic structure has been decided upon, a comprehensive list of requirements for economic statistics emerges rather automatically. A list obtained in this way provides a useful guide for planning the collection of primary statistical data so as to yield the information most relevant to economic analysis.

The use of the accounting approach also facilitates the estimation of the various national income aggregates and their components from the available statistical material. It does this by making clear that many items of information can be obtained from the records of either the buyer or the seller, and hence affords flexibility in adapting estimating methods to available information.

In addition, this approach enables one to check every account for internal consistency by comparing the debit and credit totals as well as the relations among the various debit and credit entries. It also enables one to derive as residuals components of the national economic accounts which cannot be estimated directly from available data.

## Improvements of the accounting system

In the derivation of the definitions and classifications used in the national economic accounting system, an attempt is made to set forth the distinctions that are most meaningful from the standpoint of economic analysis, taking account of the limitations imposed by the nature of the accounting data available for the four major economic groups. Fortunately, there is a great deal of parallelism between the requirements of economic analysis and those of the accounting systems used by business and other economic units. Over wide areas no conflict arises from the fact that economic questions have to be answered by reference to measures constructed from such accounting data. On the contrary, a major advantage of the system of national economic accounts is that it summarizes the actual transactions of economic units as reflected in their own accounting records.

However, some of the most difficult problems of national income estimation arise when the definitions underlying these records do not yield the type of information demanded by economic analysis. National income work is continually concerned with the modification of the basic accounting data in order to improve their economic significance. Often these data can be adjusted to meet the requirements of economic analysis, but when the transition cannot be accomplished supplementary information must be introduced to complete the picture.

Comprehensive national economic accounting is a recent development the potentialities of which have not yet been fully realized. The set of accounts presented in this report should not be regarded as the definitive system. Apart from possible improvements in the formal design of the accounts, several elaborations of the present system would be desirable.

For instance, only four major economic groups are distinguished, whereas, in view of their heterogeneity, further breakdowns would be useful for many types of analysis. Also, saving and investment accounts for each of the four major sectors would constitute an important supplement to the consolidated account for the economy as a whole. The construction of balance sheet accounts, showing the structure of the assets and liabilities of the various sectors, likewise would expand the scope and usefulness of the national economic accounting system.

It is to be emphasized, however, that further expansion of the national accounts must be made with due regard to the flow of statistical information (which would constitute a generally limiting factor) and to the danger of an over-elaboration that might add unduly to their complexity and not proportionately to their value.

Coordinate in importance to further work on the conceptual framework, articulation, and coverage of the economic accounting system is the improvement of its statistical reliability. For the entries in the national economic accounts represent estimates which are subject to error. The problem of statistical reliability is discussed in Part III of this report.

## The detailed statistics

In the preceding discussion the main emphasis was on the summary aspects of the economic accounting system underlying United States national income statistics. However, sight should not be lost of the wealth of statistical information that now exists to elaborate and supplement various aspects of this accounting system. For in many uses of the data it is specifically this information which is of primary interest and value.

Attention may be drawn first to the many statistical tables in Part V of this report, of which the six national account tables briefly described above are but highly condensed summaries. These detailed tables present further information on the breakdowns of the income flow by type of income and legal form of organization and of the product flow by type of product. Also given are breakdowns of national income and its constituent distributive shares by industry of origin.

Secondly, the conversion of gross national product and its components into constant dollars, which is presented in Part IV, represents an important addition to the current dollar series in terms of which the complete accounting system is stated. Prior to its completion and release in early 1951, this physical volume measure of national production was perhaps the top requirement for further elaboration and supplementation of the system of accounts.

Thirdly, the annual estimates of State income payments,
not included in this report, present considerable information on the income flows of the various States and may be regarded as the elaboration in a regional dimension of the depiction of the economic structure. Of a similar nature, as also involving further articulation of the consumer sector, are the estimates of the size distribution of income now in preparation in the National Income Division.

## Plan of the following discussion

In the following pages of this Part of the report, the conceptual framework of the United States national income statistics is explained in greater detail. Since the measurement of output totals is the prime objective of national income statistics and, moreover, is largely independent of the full-fledged economic accounting system depicting the economic structure, the derivation of these totals is first explained, in a summary manner. Next, the structure of the complete accounting system is developed. In the course of this discussion, the more detailed aspects of the definitions of the output totals are also covered. A final section provides, for convenient summarization. a series of definitions to which the national income and product aggregates and their components conform.

## SUMMARY CONSTRUCTION OF NATIONAL OUTPUT MEASURES

In this section the basic notions underlying national income and product are stated; the derivation of these measures in terms of their conceptual content is explained; and the adequacy of definition of the resulting aggregates is examined.

## Basic Notions Underlying National Output Measurement

## Economic production

In the definition of a measure of national output, the first task is to delimit economic production from the pursuit of other activities that resemble it in that they involve the use of human effort and other resources and are useful. For instance, the production of radio sets has its counterpart in the hobbies of the radio amateur, commercial shaves are akin to self-administered ones, and the educational services of teachers often are supplemented by those of parents. In spite of resemblances, a distinction must be drawn between economic production and non-economic pursuits. For a measure of national output must, broadly speaking, be confined to the former; it cannot, in any systematic way, take account of activities outside the economic sphere.

In the present report, the basic criterion used for distinguishing an activity as economic production is whether it is reflected in the sales and purchase transactions of the market economy. The exclusion of illegal transactions is a tradition-based convention which is an exception to this general rule.

## Product and income floves

A fundamental distinction relevant to the measurement of economic production so delinited is suggested by observation of the operations of a typical business firm. On the one hand, such a firm produces and sells a flow of product values. On the other hand, it pays out (or retains) incomes that accrue in the course of its operations. This double aspect of the activities of the single business firm suggests that the measurement of national output can be approached in a two-fold manner, either by summing product values or

## The VALUE of the



PLUS ( + )
Transfer Payments and Government Interest of $\$ 20$ Billion.....

## PERSONAL INCOME

OF
\$225 Billion
by summing income flows. It will be seen that the measure of national output in terms of product flows which is obtained by pursuing this approach is the gross national product and that the corresponding measure in terms of income flows is the national income.

## Final and intermediate products

In the measurement of national output via product flows, a further distinction, between "final" and "intermediate" products, must be made. A nonduplicative total is desired, one that is confined to the value of the final, or end, products of the economy and excludes all others, labelled intermediate. To use a simple example, if the production process during a year involves the production of wheat, its milling into flour, and the baking of bread which is sold to consumers, then the value of national output should equal the full value of the bread and should not count also the separate values of the wheat and flour which have been used up in the course of producing it. This result is obtained by counting only the value of the bread, as the end product, and ignoring the other product values.

A distinction between final and intermediate products cannot be drawn on the basis of the technical characteristics of the output involved. In the above example, for instance, flour is an intermediate product. If, however, the flour is sold not to bakeries, but directly to housewives for home baking, it becomes the final product of the economy, even though in a technical sense it is not fully fabricated.

However, an effective criterion for distinguishing between final and intermediate products can be established by reference to business practices followed in the production of goods and services. There emerges a working definition of final product as a purchase that is not resold, and of intermediate product as one that is resold. A more technical, but sometimes more convenient, phrasing of the same idea is that a final product is a purchase that is not charged to current cost whereas an intermediate product is one that is so charged. The phrase "during the accounting period" is sometimes appended to these formulations so as to make them more exact.

## Imputations

In the measures of national output shown in this report, the foregoing criteria are the basic tools for distinguishing economic production from non-economic pursuits and the part of economic production which is final from that which is intermediate. However, modifications in the definitions are made in certain instances to enhance the significance of the measurements.
The most important of these modifications concern the inclusion in national output of the so-called "imputations," or items of production and income "in kind." For instance, food furnished to employees would not become part of the national output if the initial definition were rigidly followed. It would be an intermediate product, since it is an element of the current cost charges of the employer furnishing the food. However, it seems desirable to count it as part of national production, if only to secure uniformity of treatment with respect to employees who buy food out of the correspondingly higher money wages given them. Other imputations that are made in measuring national output are for the value of food produced and consumed on farms, the rental value of owner-occupied houses, and for nonmonetary income and product flows arising in connection with financial intermediaries.

## Charges against final product

In this report, the product measure of national output is derived by adding the values of final products and omitting intermediate products, as in the bread and flour example. It is termed the gross national product. However, the same total could be obtained also by adding in the first instance the total product (final and intermediate) of each producing unit and then deducting for each the intermediate product it bought from other units. For the economy as a whole, purchases and sales of intermediate products would cancel, and what would remain would be the value of final products.
The total value of final products can thus be broken down into elements consisting of the total product of each producing unit less its purchases of intermediate products. However, for each producing unit the difference between the value of its product and its intermediate purchases consists of the incomes that accrue in the course of production (wages and salaries, interest, profits, etc.) plus certain "non-income" charges against the value of its production, the most important of which are taxes (such as property, excise, and sales taxes) and depreciation charges for the wear and tear and obsolescence of fixed capital.
Thus, since (1) the value of the final product of the economy equals the sum of the total product of each producing entity less its purchases of intermediate products, and (2) for each producing entity, product less intermediate purchases equals income plus non-income charges against the value of production, it follows that (3) for the economy as a whole the total value of final product equals the sum of incomes accruing in production plus non-income charges against the value of production.

## Factor incomes and other charges

A measure of national output in terms of total charges against the value of gross national product, and therefore numerically equivalent to it, can thus be obtained. However, this is not the income flow measure generally used. The common measure, national income, is derived by emphasizing the distinction, which has already been emerging, between two types of charges against the value of final product: factor costs and other costs.
Briefly, the sum of employee compensation, interest, and business incomes is considered to represent the remuneration of factors of production. In national income terminology, their aggregate measures the total factor cost incurred in producing the output of the Nation. By contrast, no factor incomes correspond to the other charges against gross national product. Indirect business taxes do not form the cost or income of any factor of production. Depreciation and kindred charges reflect allowances for the consumption of fixed capital, and not its net income or return. Thus, a further total is distinguished-the national income-which represents the sum of factor incomes or factor costs. This is the income measure of national output most widely used.
Two other magnitudes can be derived by recombining the components so far discussed. Net national product may be obtained as gross national product less depreciation and kindred allowances for the consumption of fixed capital. A corresponding measure of total charges against net national product may also be obtained by deducting these allowances from total charges against gross national product. These two aggregates are in a theoretical sense more clearly defined than the corresponding measures of gross national outnut. since snme dunlication is involved by the inclusion in the latter of the production of fixed capital which serves merely for replacement purposes. However, as a practical
matter, a meaningful measure of net capital formation, and hence of net national product, cannot be calculated since depreciation charges are not available on a basis of valuation comparable to that of the gross production of fixed capital.

## Personal and disposable income

Another aggregate, personal income, measures the actual current income receipts of persons from all sources. It differs from the national income in that it excludes certain types of income which accrue in production but are not received by persons (for instance, the undistributed part of corporate profits) and, on the other hand, includes certain types of income which do not arise in current productive activity but constitute personal receipts (such as relief and unemployment benefits). Hence personal income, unlike the national product and national income aggregates, is not a measure of national production. Since the bulk of personal income is derived from production, however, it can in ordinary circumstances be used as an indicator of productive activity and has, in fact, gained prominence in this use as the only comprehensive income or product total available on a monthly basis. Personal income net of taxes-disposable personal income-is another useful aggregate, being the closest over-all statistical approximation to consumer purchasing power derived from current incomes.

## National Income and Product Account

The foregoing basic notions underlying national output measurement are incorporated in the National Income and Product Account shown in table I, which presents for 1939 the several alternative measures of United States output.

The right side of this account shows the gross national product as the sum of final product flows. The summary listing includes personal consumption expenditures, gross private domestic investment (consisting of new construction, purchases of producers' durable equipment, and the change in business inventories), net foreign investment
(reflecting, in general, net purchases from abroad), and government purchases of goods and services. These components represent purchases of the four major sectors into which the economy has been divided and conform to the operational definition of final products as purchases not resold during the accounting period. However, certain modifications in this definition, especially with respect to imputed income and product, have been made in deriving the national income and national product measures.

On the left side of the account are listed the charges against the value of gross national product. In principle, the sum of these charges should numerically equal the value of gross national product. However, because of statistical estimating errors, the nature of which is discussed in Part III, this is not actually the case. To secure balance, an item termed "statistical discrepancy" is entered on the left side of the account.

Total charges are broken down into factor costs and other charges. The former, consisting of employee compensation, net interest, and the various types of business incomes, corporate and noncorporate, are added to obtain the national income. The other charges against the value of gross national product are arranged so as to permit a further subtotal of charges against net national product.

## Coverage of National Incomeand Product Account

The economy covered by this account, and hence by the various income and product aggregates, is the continental United States. Thus it does not coincide with the customs area of the Nation since territories and possessions are excluded. Also, it is important to note, the account measures the income and product attributable to factors of production supplied by residents of the country, rather than the income and product of factors physically located in the country.

Not only individuals who contribute their labor and property to the productive process, but nonprofit institutions

Table I.-National Income and Product Account, 1939
[Millions of dollars]

| $\begin{aligned} & 1 \\ & 2 \\ & 3 \end{aligned}$ | Compensation of employees: <br>  <br> Supplements $\qquad$ 2,075 | 22 | Personal consumption expenditures Gross private domestic investment | 67,466 9,917 |
| :---: | :---: | :---: | :---: | :---: |
| 4 | Income of unincorporated enterprises and inventory valua- <br>  | 24 | Net foreign investment | 888 |
| 5 |  | 25 | Government purchases of goods and services | 13,068 |
| 6 | Corporate profits and inventory valuation adjustment: |  |  |  |
| 7 | Corporate profits before tax: |  |  |  |
| 8 9 | Corporate profits tax liability----------------.-- 1,462 |  |  |  |
| 10 | Dividends |  |  |  |
| 11 |  |  |  |  |
| 12 |  |  |  |  |
| 13 |  |  |  |  |
| 14 |  |  |  |  |
| 15 | Indirect business tax and nontax liability .....-.-.-...-...... 0,365 |  |  |  |
| 16 17 |  |  |  |  |
| 18 |  |  |  |  |
| 19 | Charges against net national product . .-.............-.-.-...-- 83,238 |  |  |  |
| 20 |  |  |  |  |
| 21 | CHARGES AGAINST GROSS NATIONAL PRODUCT... | 26 | GROSS NATIONAL PRODUCT | 91,339 |

Table II.-Consolidated Business Income and Product Account, 1939
[Millions of dollars]

| 1 | Compensation of employees: | 26 | Consolidated net sales: |  |
| :---: | :---: | :---: | :---: | :---: |
| 2 | Wages and salaries: | 27 | To persons |  |
| 3 | Disbursements | 28 | To government. | 64,375 |
| 4 | Excess of accruals over disbursements..------------- 0 | 29 | To abroad.-.-. | 1,123 |
|  | Supplements: | 30 | To business on capital accoun | 9,476 |
| 6 7 | Employer contributions for social insurance.......- 1,330 <br>  | 31 | Change in inventories. | 441 |
| 8 | Income of unincorporated enterprises and inventory valua- <br>  |  |  |  |
| 9 |  |  |  |  |
| 10 | Corporate profits and inventory valuation adjustment |  |  |  |
| 11 12 | Corporate profits before tax: <br> Corporate profits tax liability |  |  |  |
| 13 14 14 | - Corporate profits after tax: - ----------------- 1,462 |  |  |  |
| 14 <br> 15 <br> 1 | Dividends |  |  |  |
| 16 |  |  |  |  |
| 17 |  |  |  |  |
| 18 |  |  |  |  |
| 19 20 |  |  |  |  |
| 21 | Statistical discrepancy |  |  |  |
| 22 | Less: Subsidies minus current surplus of government enter- <br>  |  |  |  |
| 23 | Charges against net product.-.-.-.-.------------------------72,317 |  |  |  |
| 24 | Capital consumption allowances....-.-.-.-.-.....---.......- 8 - 101 |  |  |  |
| 25 | CHARGES AGAINST BUSINESS GROSS PRODUCT - - 80,418 | 32 | BUSINESS GROSS PRODUCT | 80,418 |

and governmental bodies supplying capital resources are viewed as residents supplying factors of production. ${ }^{1}$ Corporate enterprises, as such, are not considered residents in this connection since corporate income is viewed as accruing ultimately to the holders of their securities.

## Anatomy of the Output Totals

The foregoing discussion has attempted to give a general notion of the major concepts underlying the measurement of national output and of the nature and relation of the major alternative output measures. However, it has passed over much that is essential to a precise understanding of the output concepts.
National income and national product are comprehensive measures of total national output. They include not only business production, but also production contributed by the nonbusiness sectors of the economy-households and institutions, government, and the rest of the world. Measurement of output in each of these sectors is subject to special problems of its own. The principles underlying the measurement of production in the various sectors are next explained. The sector measurements based on these principles are then added to obtain the national income and product totals shown in table I.

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## Measurement of business output

The bulk of national output originates in the business system, and the framework adopted for the measurement of business output sets a pattern for the whole. In deriving national output as the summation of the outputs originating in the several sectors of the economy, it is therefore convenient to start with the business sector.

The Consolidated Business Income and Product Account, presented in table II, shows the portion of national output originating in the business system. Business output is measured in terms of the concepts underlying the major income and product aggregates covered in table I and discussed in connection with it.

The right (or credit) side of the account shows the market value of the consolidated production of the business system. On the left side of the account appear the charges against this production. The two column totals are equal in principle, for reasons which have been stated in broad terms.

The nature of the equality can be understood in an alternative, and perhaps more precise manner, if it is realized that the business income and product account is similar to a profit and loss account for the business system as a whole from which intra-business sales and purchases on current account and intra-business flows of interest and dividends have been eliminated by a process of consolidation. The two sides of such an account must always balance because profits are derived as the residual of sales and costs. However, for statistical reasons equality is not achieved in practice, and in the estimates embodied in table II the "statistical discrepancy" is entered on the debit side as a reconciliation item.

In addition to consolidation, certain other operations have been performed to transform the column totals of the profit and loss account into a measure of business output. Capital gains and losses have been eliminated as not reflecting the value of current production. Inventory change has been entered on the right side of the account to convert sales into a measure of production, and subsidies have been transferred to the left side as not being part of the market value of the products shown on the right side. Further, certain items have been netted, also with the aim of obtaining column totals that measure the contribution of the domestic business system to national output.

In the first place, imports, which in a consolidated statement of domestic business would appear on the left side of the account, have been transferred to the right side and netted against exports (under consolidated net sales to abroad). Imports must be deducted from the credit side since they reflect foreign production included in the value of the column totals prior to the deduction. The fact that, in table II, they are netted against the export item is merely a matter of convenience.

The second netting which is made in table II is in connection with property income flows. In a consolidated account not further adjusted, receipts of interest and dividends from other sectors would appear on the credit side and would be reflected correspondingly in the total of the charges entered on the debit side. Since receipts of interest and dividends from other sectors do not represent output of the business system, it is necessary to remove them from the credit side of the account and to net them against elements of factor income in order to make the sum of factor incomes on the debit side of the account reflect the factor cost of business output. In practice, interest received is netted against interest paid under the heading "net interest," and dividends received are netted against dividends paid under the heading "dividends." In these instances also, the particular matching adopted is essentially a matter of convenience.
The components of business production listed on the credit side of table II conform to the definition of final product snecified in connection with table I. It may also be noted that the entries are very similar. Differences arise because table II is confined to business output, whereas table I provides a summary of national output which covers the nonbusiness sectors as well. Similar comments apply to the charges arainst the value of business product listed on the debit side of the account. Factor income charges differ from those in table I in magnitude only, because table I includes nonbusiness items. Nonfactor cost charges are identical, in magnitude as well as with respect to classification, because, as will be seen, these charges are confined to the business system.

## Treatment of taxes and subsidies

Some of the most important decisions that must be made in defining business output have to do with the classification of charges against the value of business product between factor-cost and nonfactor-cost charges. and involve in particular the treatment of taxes and subsidies.

According to the definitions used in this report, employment tnxes under the Social Security and related programs are included in the compensation of emplovees (the employers' share as a supplement to wages and salaries and the emplovees' share as a part of them). This is done on the ground that these taxes are an element of the cost of hiring labor and accordingly should be included in a measure of total factor costs. A supplementary argument is that social insurance contributions reflect a benefit received by the
employee in the wage bargain which should be taken into account in calculating total employee compensation. It may be noted that alternative classifications of employment taxes underlie many other national income estimates and cannot be ruled out as erroneous.
Secondly, a distinction is made in this report between corporate profits taxes, which are considered as part of factor cost-corporate profits are measured before deduction of these taxes-and other (indirect) business taxes, which are considered nonfactor charges-business incomes are calculated net of them. This distinction is based upon the following reasoning.

Since national income is designed to measure output in terms of the costs or incomes of the factors of production, it should change only if either the volume of factor services or their unit remuneration changes, and not because of a mere change in tax rates. If it is assumed that corporation profits taxes are not shifted and indirect business taxes are generally shifted forward, inclusion of corporate income taxes in national income and exclusion of indirect business taxes from it are clearly indicated, since on these assumptions mere changes in tax rates will not cause changes in an income total so defined.
The classification of business taxes in this report is dictated by the belief that the above assumptions about tax shifting are the most realistic summary ones that can be made. It may be noted, however, that the entire subject of tax shifting and incidence is a rather controversial one and that definitive and final conclusions are not available. Moreover, the operational definition of indirect taxes is drawn in a rather summary fashion. All taxes that are chargeable as business expense (other than employment taxes) are classified as indirect business taxes. Thus certain taxes-business property taxes, for instance-are included in this group even though a detailed study of their proper treatment from the standpoint of tax shifting and incidence might call for a different classification.
The classification of taxes in the national income represents an instance in which an accounting distinctionwhether a tax is chargeable to expense or not-is adopted as a basis for classification and yields, broadly speaking, satisfactory results. In instances in which it fails to do so and can be superseded by a superior distinction-as in the case of employment taxes-modifications are made. However, where the disadvantages of the accounting distinction are less apparent and less easily remediable because of conceptual or statistical difficulties, it is maintained.

Subsidies, which are a type of business receipt, appear on the debit side of the account (with a negative sign) because they are not part of the market value of business output; the subsidized products are included at their market values under business sales. As a matter of long-standing convention, subsidies are regarded as payments nacessary to elicit factor services. Accordingly, they are included in the sum of factor incomes (by considering them as a gross receipt in the calculation of business profits) and are deducted in reconciling the factor income originating in the business system with the market value of business output.

## Other aspects of business output

The measurement of business output has, in addition to the treatment of taxes and subsidies, many other aspects which must be discussed-such as the precise delimitation of the business sector; the classification of income shares and nonfactor charges; the measurement of capital formation and consumption, including inventory change; the imputations for wages and salaries in kind, food produced
pied dwellings; the imputations made in the case of financial institutions; and the special methods adopted in measuring the transactions of these institutions and of other organizations such as government enterprises.
Decisions that are made in these areas affect the definition of national output and hence are relevant to the present discussion. However, these decisions are regarded as less crucial to the definition of national output than those concerning taxes and subsidies that have been reviewed; also, the treatment of some of them is rather complex. Therefore, their discussion is postponed until later (to the detailed presentation of the business sector) so as not to interrupt unduly the derivation of the national output or to blur its outline by excessive detail.

## Measurement of nonbusiness output

Production included in the measures of national output. is not confined to the business system, but occurs also in each of the nonbusiness sectors of the economy: households and institutions, government, and the rest of the world. In the household sector, account is taken of certain services-such as domestic service-which, although of a market character, are better thought of as involving direct factor services rather than business production. In the government sector, the services provided by the government to the community are accounted for. In the rest-of-the-world sector, the production accruing to United States residents by virtue of their net claims on foreigners is measured.

For each of these sectors, the measurement of output differs basically from that employed for the business sector. The two-fold measurement of output in terms of product flows and factor costs is not available for the nonbusiness sectors of the economy, and factor cost must be used for both aspects of the value added by them to total output. A single measure must be used in these instances to depict both income and product originating because there is no sales transaction involving the output produced as distinguished from the purchase of the ingredient factors of production and supplies and materials. It may be noted parenthetically that the factor cost measurement of output in the nonbusiness sectors also conforms to the definition of final output underlying national income accounting: the factor services purchased, in terms of which output is measured, are not resold.

## Households and institutions

Exhibit 1 presents the measurement of output originating in the personal or consumer sector of the economy. Its measurement is in terms of the direct factor services bought by households and institutions, consisting of employee compensation and payments of interest. The latter represent payments by households to nonpersonal lenders and payments by institutions. As in the case of business production, discussion of more detailed points is postponed.

> Exhibit 1.-Income and Product Originating in Households and Institutions, 1939
> [Millions of dollars]

| Compensation of employees: Wages and salaries paid | 2,150 |
| :---: | :---: |
| Supplements paid: |  |
| Employer contributions for social insurance. | 11 |
| Other labor income.---.--------- | 17 |
| Interest paid. | 801 |
| Income originating and net and gross product | 2,979 |

## Government

The value added by government to total output is shown in exhibit 2. As in the case of households and institutions, it is measured by the value of factor services purchased, except that in this instance only payments for labor are considered payments for factor services. Interest paid by government is not counted.
Exhibit 2.—Income and Product Originating in Government, 1939 [Millions of dollars]

```
1. Compunsation of employees:
    Wages and salaries.-.....................
        Employer contributions for social
            insurance--------
```



```
    Itrome originating and met and gross
    product----------------.----.-.0.- 7,029
```

The accounting for government production in general and government interest in particular is, and probably will remain, a controversial point in national output measurement. Basically, this seems due to the fact that government activities are substantial and quite different in economic character from other types of production. Accordingly, they are difficult to put on a common denominator with other types of production in a summation designed to obtain a comprehensive measure of national output.

The exclusion of government interest paid from factor incomes stems, as a practical matter, from the fact that the bulk of government debt was created to finance wars and current expenditures. In no common sense use of the tern can interest payments on such debt be taken to represent currently produced goods and services or the current use of economic resources. For example, it seems sensible that a comparison of the prewar and postwar volumes of production should not be distorted by the continuing interest on the national debt that arose during the war. The treatment of government interest is given further consideration in the discussion of the government sector below.

## Rest of the world

Finally, account must be taken of United States production arising in the rest-of-the-world sector. As stated in connection with the National Income and Product Account, the output of the United States economy is defined as that accruing to factors of production supplied by residents of the United States, as distinguished from the alternative of defining national output in terms of the physical location of the factors of production.

Hence, to obtain a measure conforming to the definitions used in this report, there must be deducted from the components derived so far a measure of the output produced in the United States but accruing to foreign residents, and there must be added a measure of the value of output not produced in the United States but accruing to United States residents. The deduction and addition are accomplished, on a net basis, by the separate measurement of United States output originating in the rest of the world, equal to the net international inflow of factor incomes, as shown in exhibit 3.

Exhibit 3.-Income and Product Originating in the Rest of the World, 1939
[Millions of dollarx]

| 1. Wages and salaries | 2 |
| :---: | :---: |
| 2. Interest (net) | 7 |
| 3. Dividends (net) | 7 |
| 4. Branch profits (net) | 47 |
| 5. Income originat | 3 |

Table Ia.-National Income and Product Account, by Sector of Origin, 1939
[Millions of dollars]


## National income and product, by sector of origin

In table Ia the contributions of each of the four major sectors are summed to yield the totals of national output as shown in table I, in a breakdown, however, which displays more clearly their conceptual building blocks. The items in table Ia are cross-referenced to tables I and II and exhibits 1-3 so as to permit a precise tracing of how national output is derived from the component output series of the four sectors.

Little need be said about table Ia since it represents only a summary of the preceding discussion. However, certain of the major points may be repeated for emphasis.

In table Ia, the measures of national output given in table I are derived by summing the values added to total output by each of the four major sectors of origin. For the nonbusiness sectors-households and institutions, government, and the rest of the world-contribution to total output is measured identically in the product and factor income measures, since a distinction between the two is not possible. For the business sector, however, the product measure differs from the factor income measure. The difference represents nonfactor charges against the value of business production, which are entered in table Ia and reconcile the value of national income with that of the gross national product.

## Anatomy of Product and Income Components

A tolerably precise derivation of the measures of total output presented in table I has been obtained in table Ia. However, it will be noted that the components of output as given in the second table differ from the conventional classifications shown in table I. Those of table I are drawn up, on the credit side of the account, in terms of the purchases of product by the four sectors of the economy; and, on the debit side, they do not separate the costs incurred in production by each of the sectors. By contrast, the classifications in both sides of table Ia refer to sector of production.

As the next step in explaining the content of national income and national product, each of the components as given in table $I$ is derived from the measurements underlying table Ia. Product and income items are taken up in turn.

## Gross national product

## Personal consumption expenditures

The personal consumption expenditures shown in table I are derived as in exhibit 4. The bulk of them consists of purchases from the business system. Direct purchases of factor services by households and institutions account for another part. These two are entered as the first and second items in exhibit 4, with references to the previous tabulations in which they have been included. It will be apparent, upon reflection, that the sum of these two items falls short of a complete enumeration of consumer expenditures by the amount of direct purchases from abroad (mainly tourist expenditures). This item, which has not so far appeared in the derivation of national output, is entered as the third item in the exhibit.

Exhibit 4.-Derivation of Personal Consumption
Expenditures, 1939
[Millions of dollars]


## Gross private domestic investment

Gross private domestic investment as shown in table I is derived simply by combining consolidated net sales to business on capital account and the change in inventories, each as taken from the business account (table II). The derivation is given in exhibit 5 .

## Exhibit 5.-Derivation of Gross Private <br> Domestic Investment, 1939 <br> [Millions of dollars]



## Government purchases of goods and services

The derivation of government purchases of goods and services is indicated in exhibit 6. The procedure is similar to that employed for consumer expenditures. In addition to purchases from business and purchases of direct factor services, which are entered as the first and second items in exhibit 6, government makes purchases from abroad, which have not appeared so far in the accounting for national output. These purchases are entered as the third item in exhibit 6 to complete the enumeration of government purchases as shown in table I.

Exhibit 6.-Derivation of Government Purchases of Goods and Services, 1939
[Millions of dollars]

| Consolidated net business sales to government (table II, ite | 375 |
| :---: | :---: |
| Gross product originating in government (exhibit 2, item 6) | 7,629 |
| Net purchases of government from abroad | 64 |
| Government purchases of goods ond |  |

## Net foreign investment

With two exceptions, all of the elements.underlying the construction of gross national product by sector of origin in table Ia have now been used to derive components of gross national product as shown in table I. These two exceptions are "consolidated net business sales to abroad" and "gross product originating in the rest of the world." On the other hand, in the derivation of personal consumption expenditures and government purchases two items were added which have not appeared as components of gross national product by sector of origin. These are "net purchases of households and institutions from abroad" and "net purchases of government from abroad." Hence, adding the first two of these items to the components derived in exhibits 4,5 , and 6 and then subtracting the second two items will yield the correct total of gross national product.

But the difference between these additions and subtractions is numerically equal to "net foreign investment," the remaining component of gross national product in table I which has not yet been derived. This is so because the four items combined equal the net receipts of the United States from abroad, from factor incomes as well as from the sale of goods and services. These net receipts represent the balance of payments on current account, and their financing implies a change in the net international asset position of the United States, which is net foreign investment. ${ }^{2}$ The derivation of net foreign investment is shown in exhibit 7.

Exhibit 7.-Derivation of Net Foreign Investment, 1939 [Millions of dollars]

| Consolidated net business sales to abroad (table 11, item 29) | 1,123 |
| :---: | :---: |
| Gross product originating in rest of the world (exhibit 3, item 5) | 313 |
| Less: Net purchases of households and institutions from abroad | 484 |
| Less: Net purchases of covernment from abroad (from exhibit 6 ) | $\begin{array}{r}64 \\ \hline 64\end{array}$ |
| Net foreign investment (table I, item 24) | 888 |

The derivation of gross national product as shown on the credit side of table I is now complete. The next task is to derive the income flows shown in the breakdown on the debit side of that table.

[^1]
## National income

## Wages and salaries

This is done for wages and salaries in exhibit 8. They are obtained by summing wages and salaries accruing in the four sectors of the economy.

Exhibit 8.-Derivation of Wages and Salaries, 1939
[Millions of dollars]

| Business (table II, item 2) | 36,250 |
| :---: | :---: |
| Houscliolds and institutions (cxhib) | 2,150 |
| Government (exhibit 2, item 2). | 7,3-43 |
| Rest of the world (exhibit 3, item 1 | 2 |
| Wages and salarics (table 1, item 2) | 45,74t |

## Supplements to wages and salaries

Supplements to wages and salaries are obtained in a similar manner, as shown in exhibit 9.

Exhibit 9.-Derivation of Supplements, 1939
[Millions of dollars]

|  <br> Houscholds and institutions (exhibit 1, item 3)........ $\quad 28$ Government (exhibit 2, item 3) |
| :---: |
| Supplements (table I, item 3)-......................... 2,075 |

Income of unincorporated enterprises and inventory valuation adjustment, and rental income of persons
These two items are taken directly from table II.

## Corporate profits tax liability

This item is taken directly from table II.

## Dividends

The calculation for dividends is shown in exhibit 10.
Exhibit 10.-Derivation of Dividends, 1939
[Millions of dollars]

| Business (table II, item 14) | 3,659 |
| :---: | :---: |
| Rest of the world (exhibit 3, item 3). | 137 |
| Dicidends (table I, item 10). | 3,796 |

## Undistributed corporate profits

Undistributed corporate profits are obtained in exhibit 11.

> Exhibit 11.-Derivation of Undistributed
> Corporate Profits, 1939
> [Millions of dollars]

Business (table II, item 15)

| Branch profits (rest of the world) | (exhibit 3, item 4 ).- | 162 |
| :--- | :--- | :--- | :--- |

Undistributed profits (table I, item 11) .................. 1,209

## Corporate inventory valuation adjustment <br> This item is taken from table II.

## Net interest

The calculation necessary to derive net interest, as shown in table I , is given in exhibit 12.

Exhibit 12.-Derivation of Net Interest, 1939
[AItlions of doltars]


## Of the GROSS NATIONAL PRODUCT totaling $\$ 283$ billion in 1950 . . .

$\$ 194$ billion, or about two-thirds, was bought by consumers...
$\$ 47$ billion, or about
㭗 $\begin{aligned} & \text { one-sixth, went into } \\ & \text { domestic investmen } \\ & \text { (\$49 billion) and } \\ & \text { foreign investment } \\ & \text { (minus } \$ 2 \text { billion). }\end{aligned}$
one-sixth, went into
domestic investment
(\$49 billion) and
foreign investment
(minus $\$ 2$ billion). .

 (minus $\$ 2$ billion) . . . while the remaining $\$ 42$ billion was taken by Government.

.

## GOVERNMENT PURCHASES of Goods and Services Comprised . . .

$\$ 23$ billion by the
Federal Government. . .
and $\$ 20$ billion by State and Local Governments.


## Nonfactor cost charges

All the components of national income, as listed in table I, have now been derived by allocating the entire national income as constructed in table Ia. The nonfactor charges against the value of gross national product shown in table I are all taken directly from table II.

## The Output Measures Examined

The measures of national output have now been derived with sufficient precision to make possible their evaluation in terms of the basic concepts that underlie them-of the national product as an aggregate of final product values and the national income as an aggregate of factor costs. ${ }^{3}$

## The concept of final product

As noted earlier, measures of national output must be defined essentially in terms of the market economy. They cannot encompass the broad range of nonmarket activities that may bear some resemblance to economic production. In this report the market economy is taken as the area over which sales and purchase transactions occur. Once this criterion has been adopted, there remains the necessity of distinguishing between final and intermediate production within the market economy.
The operational definition of final product underlying the present national product measures rests on the obvious fact that purchases not resold do not become elements in the value of other goods and services, and that hence there is a presumption that they should be counted in a comprehensive enumeration of the value of the final output of the Nation's economy. It also takes cognizance of the corollary fact that purchases which are resold are used up in further production and included in the value of other goods and services, and hence may be presumed to be intermediate products which should not be counted separately in an unduplicated measure of production.
The practical consequence of this general definition is to enumerate capital formation and purchases by consumers and general government, and to exclude from final production the raw materials used up by business in the course of further production.
Capital formation is clearly a part of final product to the extent that it consists of items that are not used up but are added to wealth. (Only the inclusion in gross national product of capital formation for replacement purposes must be noted as a limitation in this connection.) The inclusion of consumer and government purchases and the exclusion of business current-account purchases also are broadly reasonable.
Since the expenditures of individual consumers and nonprofit institutions serving individuals are incurred largely to meet the needs of individuals, they consist in the main of goods and services that determine what is commonly regarded as the standard of living. Government purchases consist essentially of goods and services provided on behalf of the community as a whole, which it has been found better to secure collectively rather than individually. They should likewise be included in a measure of the total goods and services provided to satisfy the needs of the members of the community. In contrast, the bulk of business purchases of goods and services consists of items that are raw materials in the production process, rather than items that directly satisfy human needs. Their separate count is accordingly not necessary in enumerating the flow of final goods and services.

[^2]It is believed that this is a realistic description of the general nature of consumer, government, and business purchases and that the criteria employed in United States national income statistics for distinguishing between final and intermediate products are accordingly useful for segregating the major types of goods and services provided to satisfy the needs of individuals.

It is evident, however, that, because of different institutional arrangements, certain anomalies may result from the restriction of the national output measure to the market economy and from strict application of the pur-chase-not-for resale convention. Thus, the dividing line between the final products enumerated and similar nonmarket benefits excluded may not be appropriate. For instance, literal implementation of the operational definition of final product would count the services rendered by rental housing but would exclude those of owner-occupied housing. Moreover, within the market economy the distinction between final and intermediate product would sometimes be unsuitable. Food purchased by employees, for example, would be classified in national income and product whereas food furnished to them by their employers would not.

Peculiarities of this type can be dealt with to some extent by appropriate modification of the definitions, but the potentialities of this approach are limited. This is obvious with respect to the extension of output measures beyond the market economy, but it also holds true of modifications in the basic convention for distinguishing between final and intermediate production.

In the first place, it is not feasible from a purely physical standpoint to examine every purchase by consumers, government, and business so as to determine which were simply means of facilitating production, and hence intermediate, and which served an end use, and hence were final products. As a practical matter, one must generally deal with types of buyers and categories of goods and services.

But more important, one must place basic reliance on a broad convention because in most cases in point there is no alternative. No precise line can be drawn between final and intermediate products from mere observation of the nature of the products or the uses to which they are put. It would be easy, for example, if all consumer purchases were for goods like Sunday clothes and holiday dinners, which are obvious elements of the good life, and if all business purchases were raw materials for further processing, which are obvious intermediate goods. Between these two extremes, however, there is a wide range of purchases for which neither the motivation nor the use is so clear-cut and which must be placed in one category or the other by somewhat arbitrary rules.

For this reason any measure of total production must be somewhat conventional. For instance, it must overlook the fact that the expenditures of individuals in their business capacity are influenced by their standards as consumers, and that expenditures of consumers are influenced by their activities as producers. It must overlook also the fact that the conditions under which work is performed have an important bearing on the welfare of individuals. These conditions are affected by business expenditures on goods and services that are classified as intermediate just because there is no satisfactory way to take account of their benefits in a quantitative measure of final output.

## Adjustment by imputation

In the present estimates, adjustments have been made to take account of institutional peculiarities to the extent
of imputing factor returns in the form of income in kind and entering corresponding imputed items in personal consumption expenditures. Even in this direction cognizance has been taken, in the main, only of sizable and unequivocal types of factor income in kind which have come to be recognized through tradition as elements of real income. It is apparent that other additions to the national output could be made if the relevant information were available. For example, income and consumption expenditures could be imputed for health services and recreational facilities provided by business, which are not counted because they are charged to current cost by business.

The limitation of imputations to cases clearly associated with factor incomes serves to confine the field, but it is not a principle of selection which could be firmly defended on theoretical grounds. The services of the radio broadcasting and television industries are an outstanding example of an item which is not listed in the national product because it is financed by business via charges that are made to current cost. Yet radio broadcasting and television are important forms of recreation, similar to legitimate theaters and motion pictures for which explicit entries, representing admission fees, are made in consumer expenditures.

No imputation is made for radio broadcasting and television in measuring national product. Formal neatness can be given to this omission by general reference to the limitation of imputations to items that are associated with factor incomes, on the ground that broadcasting services do not accrue to a distinct factor of production, but to the consuming public owning receiving sets at large. However, it would seem preferable not to stress this point unduly and to recognize the essentially arbitrary and tradition-based nature of the decisions that must be made in this area.

## Quasi-intermediate products

The process of reclassification of intermediate products could be extended in the opposite direction by deducting from factor income, and hence shifting from consumption expenditures to business costs, business-type expenses incurred by individuals. As an example, "miners' expenditures for explosives, lamps, and smithing" (listed as a consumer expenditure in table 30, Part V) are certainly the sort of cost ordinarily borne by business rather than by the wage earner, and are unlike the vast bulk of consumption goods. It is a peculiarity of the coal mining industry that these materials customarily are paid for by the miner rather than purchased by the enterprise and charged to current cost.
No attempt has been made to adjust the pattern of consumer transactions along this line because there is no tradition of adjustment that provides an adequate standard of what is appropriate. In any event, it would appear that the magnitude of such adjustments would be very limited, unless the concept of "production expense" wery stretched far into the broad region of mixed motivations in which no useful and commonly accepted exclusions from final product can be made.

Similar considerations apply to government purchases as well as to consumer purchases. It is possible to think of cases in which the treatment of government purchases as final product would not necessarily be the best procedure. For example, if certain government purchases reflected clear-cut aid to business it might be preferable to view them as "subsidies in kind" and, in accord with
the handling of subsidies, to eliminate them from government purchases and the national product. Such a treatment, it should be recognized, would be somewhat artificial and statistically difficult, and would obscure the national economic accounts in their capacity as records of actual transactions, thus rendering them less meaningful for many purposes. Also, the feasibility of its application to government services used jointly by business and individuals, like the maintenance of highways, is highly questionable.

If government services consisted of the running of public recreation grounds on the one hand and of the provision of free raw materials to business on the other, a classification of the latter as subsidies in kind might be useful and important. This is not, however, the actual character of government operations. Clear-cut types of direct subsidies in kind that are of any quantitative importance have not come to attention. Even if account is taken of the more consequential cases of government services involving the use of a public service jointly by individuals and by business, the problem remains quantitatively small. It looms large only if the concrete notion of aid to business is stretched to cover the broad range of government services to the public which actually reflect a complexity of causes and purposes and cannot appropriately be classified under any such narrow head.
Neither government expenditures nor consumer expenditures, it is to be emphasized again, are susceptible in logic or statistical practice to any detailed, selective functional classification to add up those particular items which may be considered "final." However, when any sort of concrete, workable criterion of intermediate product is applied, it becomes evident that the present scheme of summary classification does not lead to significant distortion.

## Need for market-type measures of output

It is apparent that even if substantial departures from the present definition of final product were logically defensible and statistically feasible, they would not result in a measure of national product that could serve as a substitute for the present one. This measure is tied closely to the modern market-economy and is obtained, broadly speaking, by summing actual transactions of its major constituent economic groups. As such it is an important element of the economic accounting system designed to facilitate an understanding of the functioning of the economy in terms of the interaction of these groups.
For this purpose, the definition of the consumer and government purchases components of national product is generally appropriate, as is the exclusion of intermediate production according to the present definition of the term. Even if basic departures from these definitions could be justified on other grounds, the resulting measures of national output would probably not be useful in the study of business cycles, in problems of economic mobiilzation and fiscal policy, in market research, and in man! other types of investigations in which national income statistics are increasingly employed.

## The concept of factor cost

Underlying the definition of national income in terms of factor cost is the general idea that the output of the -nation is the result of the services rendered by agents of production who cooperate in the production of that out put. These agents of production are the labor and capl

## Of the NATIONAL INCOME amounting to $\$ 239$ billion in 1950 . . .



## Of the COMPENSATION OF EMPLOYEES . . .

$\$ 145.8$ was in the form of wages and salaries . . .

with $\$ 123.6$ billion in
private industries. . .
and $\$ 22.3$ billion
in Government...
while $\$ 7.5$ billion was in the form of supplements to wages and salaries.

Of PROPRIETORS' AND RENTAL INCOME . . .
$\$ 22.3$ billion represented nonfarm business and professional earnings...
$\$ 13.7$ billion went to farmers. . .
and $\$ 8.0$ billion was


The REMAINDER included . . .
$\$ 36.2$ billion of
Corporate Earnings* . . .
and $\$ 5.4$ billion
of Net Interest.


[^3]tal, the entrepreneurial ability and natural resources which are used in the production process. It is the services of these agents or factors as valued in the market by their earnings for which a quantification is sought in the national income, to the extent permitted by the data available as statistical raw material.

It is hardly necessary to stress the importance in studies of resource allocation of such a measure of the services rendered by productive agents. To give only a few examples, one may wish to know the incomes of the various factors of production used in each industry in order to compare the relative importance of industries, or to marshal information about the relative amounts of factors of production that are available for allocation to various uses, or to compare the relative importance of labor and property factors in the outputs of various industries.

It must be recognized, of course, that the concept of factors of production is not given precisely in economic theory but must, to some extent, be formulated with reference to the problem at hand. Furthermore, the use of factor returns for some problems of the type indicated is limited by such facts as the temporary or permanent non-transferability of factors to other uses, and by monopoly and imperfect competition. In addition, property income is only tenuously related to the type of measure of the contribution of property and enterprise which might be desired for problems involving resource allocation. This is because it includes a residual share, profits, which fluctuates widely over the business cycle.

In spite of these limitations and difficulties, the idea of factor costs has always been of fundamental importance in economic analysis, and national income defined as an aggregate of factor earnings is the only general measure by which the idea can be quantified.

It is true that difficulties are encountered in the course of this quantification. The assumptions about tax incidence that are made in the classification of taxes as between factor income and nonfactor cost, the somewhat conventional rationale that leads to the calculation of national income gross of subsidies, and the common sense consideration on which the exclusion of government interest is based are all open to criticism.

Yet it would appear that for the items that are large and of strategic importance in the dynamism of the United States economy, the assumptions made are sufficiently realistic to provide useful economic measurements. For instance, in spite of the theoretical uncertainty which surrounds the incidence of corporate profits taxes, it appears in statistical investigation that corporate profits before taxes are more invariant to mere changes in tax rates than are profits after tax, and that the beforetax series must be used in studying the economic regularities reflected in the movement of the various income shares. Nor would any realistic study of national output be advanced by the inclusion in national income and product of interest paid by the government.

One important aspect of the factor-cost definition of national income should be understood. The constituent income shares of national income so defined cannot be construed as measures of benefits accruing to the recipient groups. For instance, the definition of the income shares gross of direct taxes levied on them is necessary in order to reflect the factor costs of current production, but would not be appropriate for measuring benefits received.

## DETAILED STRUCTURE OF THE ACCOUNTS

As noted at the outset, an important recent development in national income research is the expansion of national income statistics from measures of the national output into an economic accounting system giving a statistical picture of the economy. The national output aggregates and their major components now having been derived in broad outline, and presented in the National Income and Product Account in table I, the groundwork has been laid for an explanation of how a comprehensive national economic accounting system is constructed. Incident to this explanation, further light will be shed on the definition of national output and its various components.

The plan is to derive a set of accounts which will summarize the economic process in terms of the interrelated transactions of the four major economic groups into which the economy can be divided-business, persons (households and institutions), government, and the rest of the world. This will involve the construction of a current account for each of the constituent economic groups or sectors and of a consolidated saving and investment account for the economy as a whole.

## The Business Sector

The business sector is defined broadly to include all organizations which produce goods and services for sale at a price intended at least to approximate costs of production. In the main, it covers all private enterprises organized for profit, both corporate and noncorporate, including farm operators, independent professional practitioners, and lessors of real property. Mutual financial institutions, cooperatives, and nonprofit organizations serving business are also included, as well as government enterprises. Owner-occupied houses and buildings used by nonprofit institutions serving individuals are considered to be business establishments selling their current services to their owners.

The business sector thus covers a wide variety of organizations, and for some purposes it would be desirable to distinguish further between corporations and unincorporated enterprises, financial institutions and nonfinancial business, and so forth. Also, it would be instructive to treat industries or industry groups as separate sectors in order to reveal the flow of intermediate output among them, and to show their complete sales, cost, and profit structures.

Such breakdowns of the business sector are not presented in this report, although important elements of them are contained in Part V. (See the tables on national income by legal form of organization and by industry of origin.) To regard the business system as an entity is sufficient for many purposes, and the statistical information for establishing further sectors within it either is unavailable or could be assembled and utilized only at the expense of disproportionate effort. However, a further development of national income statistics does lie along these lines and would serve to integrate them with other studies of the industrial structure, such as the interindustry relation studies now being conducted by various governmental and private agencies.

## The business account

The receipts of the business system and their disposition have already been exhibited in table II, in connection with the derivation of national income and product via the summation of sector incomes and products. This

Consolidated Business Income and Product Account serves as the current account for the business sector in the present economic accounting system. Several essential features of this account-its basic affinity to a consolidated profit and loss statement and the netting, transposition, and classification of items necessary to obtain significant measures of output originating in business-have already been explained. At this point further characteristics will be considered.

## Classification of business transactions

The right side of the business account consists of the consolidated net sales of the business system, adjusted for the change in inventories in order to measure business output. Since this account covers all types of enterprises that are included in the business sector, the definition of "sales" is broad. For instance, fees for professional services and gross rental receipts are included, although they are not always thought of as sales in the daily meaning of the term.
Sales are subdivided according to the four major purchaser groups: consumers, government, business (on capital account) and foreign nations. To a large extent the content of the items is adequately conveyed by their designations. Aspects needing further explanation will be taken up later, particularly in the discussions of capital formation (which concerns sales to business on capital account and the change in inventories) and of imputations and the treatment of financial institutions (which affect the definition of business sales to persons).

## Types of factor income

The left side of the business account lists the charges against the value of national product. These charges are classified into factor costs or incomes and nonfactor charges. The former are listed in five main categoriescompensation of employees, income of unincorporated enterprises and inventory valuation adjustment, rental income of persons, corporate profits and inventory valuation adjustment, and net interest.
The compensation of employees consists mainly of wages and salaries but includes additional forms of compensation under the heading of supplements to wages and salaries. Wages and salaries include payments received in kind in addition to monetary remuneration. They are subdivided into "disbursements" and "excess of accruals over disbursements" to take account of differences during any period of time between amounts charged to cost and actual disbursements to individuals.
Supplements to wages and salaries consist of employers' contributions for social insurance and of "other labor income." The former item comprises employer taxes, or contributions, under Social Security and kindred publicly administered schemes. The corresponding employee contributions are included in wages and salaries. Other labor income includes employer contributions to private pension funds, compensation for injuries, and certain minor items which are charged against the value of business production and can conveniently be classified as factor charges under the heading of supplements to wages and salaries.
Income of unincorporated enterprises and inventory valuation adjustment, rental income of persons, and corporate profits and inventory valuation adjustment cover the business incomes of the private enterprises that are counted as part of the business sector of the
economy. Within the noncorporate part of the business sector a distinction is drawn between unincorporated enterprise and rental income. The former covers the earnings of sole proprietorships and partnerships (including farm and nonfarm businesses as well as independent professional practitioners) and of producers' cooperatives; the latter consists of the net rentals of individual landlords who are not primarily engaged in the real estate business. The earnings of professional real estate operators are classified under income of unincorporated enterprises. Both the income of unincorporated enterprises and rental income include, in addition to monetary earnings, important items of income in kind.

The definition of monetary business earnings is in general accordance with Federal income tax regulations. Significant modifications are made, however, in the treatment of capital gains and losses, depletion charges, and receipts of property income.

Business incomes in the national income and product accounts are stated exclusive of capital gains and losses, because these do not represent a return for the current use of economic resources. The "inventory valuation adjustment" is designed to eliminate from corporate profits and the income of unincorporated enterprises an element which is very similar to capital gain or loss. The adjustment is often large and uncertain statistically, and there is a great deal of interest in the corporate profit figure prior to the adjustment. Hence the accounts are set up to give the unadjusted figures and the adjustment separately, with the two adding up to the proper total for purposes of national income measurement. By contrast, ordinary capital gains and losses are eliminated outright.

With respect to depletion charges, no deduction is made for them in computing business net incomes. The value of new discoveries of natural resources is not counted as part of capital formation or of profits, and consequently deduction of a capital consumption charge for impairment of the stock of natural resources would be inappropriate.
Finally, all corporate receipts of dividends are netted out of corporate profits (and dividends) to avoid double counting and to arrive at income originating in the business system; and interest and dividends received by the owners of unincorporated enterprises are considered to be received by them in their personal capacity, rather than treated as an element of business income, except in a few financial industries in which the earning of property incomes is an integral part of business operations.

In table II corporate profits before tax are broken down further to show tax liability, dividends, and undistributed profits. A similar breakdown is not presented for unincorporated business and rental incomes. With few exceptions, there are no taxes levied specifically against these types of income (business incomes are merged with other types of income in determining individuals' income tax liability). Moreover, in the noncorporate area a realistic distinction between distributed and undistributed business income is difficult to establish in principle and to measure statistically.

Net interest measures the excess of interest payments of the business system over its receipts. In addition to monetary interest flows, it covers imputed interest arising in connection with the operations of financial intermediaries.

Nonfactor charges listed in table II consist of indirect business tax and nontax liability, business transfer payments, the statistical discrepancy, subsidies minus the current surplus of government enterprises, and capital consumption allowances.

The classification of indirect business tax and nontax liability as a nonfactor charge already has been discussed in summarizing the derivation of national output.

## Business transfer payments

Business transfer payments represent transfers from business to persons which are charges against business product but for which no return in the form of factor services is received. Major items included are corporate gifts to nonprofit institutions and allowances for consumer bad debts. The nature of the latter item can be understood as follows. Sales to consumers, on the credit side of the account, are stated at full market value and are not (except in the case of professional fees) adjusted by an allowance for consumer defaults. However, the incomes of sellers and lenders, on the debit side, have been calculated net of these defaults. Hence, an accounting discrepancy between the two sides arises which can best be resolved by regarding the value of consumer bad debts as reflecting goods and services transferred from business to consumers with no quid pro quo.

Subsidies are listed as a (negative) nonfactor charge against the value of business output. They are not considered part of the value of product, but are included as receipts in calculating profits. The current surplus of government enterprises is an item akin to business profits earned in the course of making the sales listed on the credit side of the account. Hence it must be included on the debit side to ensure balance. However, for reasons to be noted later, it is classified as a nonfactor rather than a factor charge.

The foregoing nonfactor charges reconcile the income originating in business with the market value of business net product. To arrive at the total designated in table II as charges against business gross product, capital consumption allowances must be added.

## Capital consumption allowances

Capital consumption allowances consist of depreciation proper, capital outlays charged to current expense, and accidental damage to fixed capital. The first of these items measures the wear and tear and obsolescence of fixed capital and (with the exception of agricultural depreciation, which is on a replacement cost basis) is based on accounting practices used for tax purposes-largely straight-line amortization of original cost to the current owner.

Capital outlays charged to current expense are an entry in lieu of depreciation proper for items of durable capital listed on the credit side of the account (on the basis of the three-year durability definition there adopted) but charged to current cost in common business practice. It is apparent that the value of these items must be entered on the debit side also in order to preserve the balance of the accounts. In a stationary economy capital outlays charged to current expense would, for business as a whole, approximate the charges for depreciation which would have been made for these items had they been capitalized instead of expensed. In a situation in which net capital formation occurs, the entry will overstate actual depreciation; when capital formation falls below replacement needs, it will fall short of an adequate capital consumption allowance for the types of equipment involved.

Accidental damage to fixed business capital measures the value of such capital destroyed by accidents. The accounting necessity for an entry of this type stems from the fact that business profits are net of such losses on the
debit side while no corresponding entry appears on the credit side. Its classification as a species of capital consumption allowance is based on the practical fact that, for the business system as a whole, the magnitude of the item is steady and can be regarded as akin to regular depreciation. If there were large fluctuations in these losses, a strong argument could be made for treating them like other capital losses-that is, calculating profits and total income without deduction for them. This treatment would prevent fluctuations in national income due to the accidental destruction of fixed business property.

As has been noted, depletion charges are not deducted in calculating profits, since the value of the corresponding discoveries of natural resources is not an element of capital formation or profits. Similarly, these charges are not included with capital cónsumption allowances.

## interpretation of income share breakdown

The breakdown of the income shares given in table II reflects to a large extent the actual institutional, legal, and financial arrangements in force at any particular time which determine the form in which income accrues to individuals. An additional, broader grouping sometimes found helpful consists of employee compensation and net interest, which are contractual incomes, and of other incomes, all of which are residual shares.

The recording of earnings in the forms in which they accrue means, for example, that shifts in the legal form of organization as between corporations and unincorporated enterprises, or changes in the relative importance of internal and external business financing, will be reflected in the several income shares. In many economic investigations which deal with the concrete arrangements of economic society, a breakdown of this type will be appropriate. However, it will present handicaps in analyses in which it is desired to abstract from such arrangements.

The attempt to use the income share breakdown to study the ultimate factors which cooperate in production is a case in point. It deserves special mention because it is directly suggested by the definition of total income originating as the sum of factor incomes or factor costs. In the light of this general definition, one is tempted to go further-to make identifications of particular income shares with the various factors of production envisaged in economic theory.

Along these lines, it is possible to say that employee compensation consists of labor income, that unincorporated enterprise and rental incomes are mixed returns to labor and other productive factors, and that corporate profits and net interest are components which do not contain a labor return element, in any ordinary sense of the term. However, in view of difficulties attaching to the factor of production notion and in view of the lack of statistical information, one cannot go much further in the way of identifying factors with the income shares, and it is important to have in mind the limitations of the data for this general type of use.

With respect to a segregation of the returns to the factor of production "labor," it should be noted that employee compensation is heterogeneous in character. It includes the wages of the charwoman as well as the bonuses of the corporation executive: Moreover, it is not the only income share in which returns to labor are reflected. In the income of unincorporated enterprises and the rental income of persons the labor of the owner is an important element, although it cannot be quantified and segregated.

In connection with the classification of income shares other than employee compensation, it should be noted that no identification can be made between the rental income of persons and the rent concepts of economic theory. Rental income is confined to the net rentals of individual property holders (including imputed rentals on owneroccupied nonfarm homes) whose main occupation is not the renting of property. Rental income of professional real estate operators is classified under the income of unincorporated enterprises; gross rental receipts of corporations are merged with their other business receipts and transmuted into corporate profits; both the imputed net rental value of farm homes and agricultural net rents received by farmer landlords are included in the income of unincorporated farm enterprises; and the return on user-owned business real estate becomes a component either of the income of unincorporated enterprises or of corporate profits.
The dividing lines between profits and net interest also call for comment. First, net interest represents the payments less the receipts of the business system. An increase in corporate interest receipts from other sectors (most importantly from government) is therefore reflected in a decrease of net interest and an offsetting increase in profits, and vice versa, even though no change in the profit and interest flows that are an integral part of business operations has occurred.
Also, the breakdown of property income between interest and profits is affected by the manner in which interest flows are channelled through the economic system. For instance, if money is lent by corporate or other professional lenders the interest paid on it is counted in business receipts and reflected in profits. But if individual lenders are involved, the interest appears as such in the business account.
Finally, of course, the breakdown between profits and interest is influenced by the choice between external and internal financing. For all these reasons, it is more appropriate for some types of economic analysis to combine the interest and profit shares than to consider them in isolation.

## Fixed investment

Fixed investment by business (business purchases on capital account) includes new construction and durable equipment acquired by private business enterprises. New residential construction purchased by owner-occupants (as well as by business proper for rental purposes) is included because home-ownership is treated as a business in the national income accounts. Acquisitions of fixed capital by nonprofit institutions serving individuals also are included.

Fixed capital formation is defined, in the United States statistics, as including all newly produced durables (goods with an average life exceeding three years) acquired by their ultimate business users. Thus fixed capital formation is stated gross of capital consumption, and includes plant and equipment bought for replacement purposes.
From a theoretical standpoint, a net concept would be preferable. For the definition of gross capital formation must needs be somewhat arbitrary. The size of the category will depend on the particular definition of durability adopted-the shorter the average life used in defining durability, the larger the apparent volume of gross capital formation. In addition, the considerations dictating elimination of intermediate production to achieve output
measures without duplication also call for the statement of fixed capital formation on a net basis, since, broadly viewed, capital outlays for replacement purposes are really a species of intermediate product.

Measurement of fixed capital formation on a gross basis has been advocated as being more appropriate for certain types of analysis concerned mainly with the short-term availability of resources. If fixed capital need not be replaced in the short run, the total value of production available for alternative uses is measured better, it is contended, by the gross than by the net totals.

While this argument has some merit, there is no reason to believe that gross fixed capital formation as measured in the business account is appropriate for the purpose. It would give an exaggerated view of production available for alternative purposes in the short run if it included essential replacements that could not be postponed without interfering with the operations of the productive apparatus. On the other hand, it would fail to reveal the true short-run production potential if there were ways of utilizing the fixed capital more intensively than normal or of postponing maintenance and repair, as distinguished from replacement. In short, the use envisaged calls for estimation of the capital stock that is consumable in the short run, including the stock of business inventories as well as consumer and government held tangible assets; it cannot be served adequately by a fixed capital formation series defined on the gross basis used in the national income and product accounts.

Measurement of fixed capital formation gross of replacement may be preferable for certain purposes in business cycle and market analysis. Replacement demand is an important factor in aggregate demand and it is useful to have an explicit record including it. However, in this as in the preceding case, the present definition of gross capital formation is imperfectly adapted to the purpose envisaged. For instance, it excludes maintenance and repair outlays although these too have a significant bearing on cyclical fluctuations in demand.

In any event, in designing an unduplicative measure of national production these and related considerations must remain subsidiary. Defining fixed capital formation gross of capital consumption allowances must rather be justified on the ground that a meaningful net measure is not possible given the present state of theoretical and statistical knowledge.

The problem of what is meant by "keeping capital intact" is a most controversial one in economic theory, basically because in a dynamic economy the nature of capital equipment changes and the notion of replacing worn out capital consequently loses its simplicity. But even apart from theoretical difficulties, the statistical problem of estimating capital consumption in a manner consistent with gross capital formation is quite formidable. The bulk of the capital consumption allowances recorded in table II is derived from financial accounting records and is on an original cost basis. While from the standpoint of accounting consistency these allowances are appropriate for inclusion on the debit side of the business account-business profits are calculated as a residual consistent with themthey do not measure capital consumption on the same price basis which underlies the values shown for fixed capital formation on the credit side, and hence cannot be used to obtain a meaningful measure of net capital formation.

The statistical information, on prices and on the age composition of the capital reflected in depreciation charges, that would be necessary to convert these accounting
charges into a price level comparable to that of gross capital formation is deficient. Useful approximations in this direction have been made (see the pioneering study of Solomon Fabricant: Capital Consumption and Adjustment, National Bureau of Economic Research, 1938). However, in the national income and product accounts no revaluation of the accounting charges is attempted, and consequently a measure of fixed net capital formation is not presented.

It will be noted that business profits, income originating in business, and national income all incorporate the same depreciation charges which are considered inadequate as measures of capital consumption for the purpose of arriving at fixed net capital formation, business net product, and net national product. Net measures of income had long been established before the problem of valuing depreciation charges was met in particularly acute form in connection with fixed capital formation, and their continued use reflects in part the accident of this historical sequence.

## Inventory change and the inventory valuation adjustment

The measurement of inventory change in business accounting practice is subject to the same type of deficiency from the standpoint of national income and product as fixed capital depreciation. As a broad proposition, original cost instead of current replacement cost is used to value inventories consumed in the process of production, and hence a measure of net change based on business accounting records would be misleading for national income purposes.

In this instance, however, an adjustment is made in the national accounts to convert reported "book" value data to a current replacement cost valuation. The distortions that would result from failure to make such an adjustment would be more disturbing here. It is not possible to sidestep the issue by dealing with a gross concept, as in the case of fixed capital formation; also, short-term comparisons, for which national income data are frequently used, are particularly affected by the methods of inventory valuation.

Moreover, the conceptual and statistical difficulties that stand in the way of an adjustment, although formidable, are less overwhelming than in the case of depreciation. Use over a long period of years is not involved, as with fixed capital formation, and consequently the conceptual problem of defining replacement which stems from quality change and the emergence of new products looms less large. In addition, information on prices and age composition is more readily available for inventory goods than for capital goods.

## Nature of inventory valuation adjustment

According to the prevalent methods of business accountting, the book valuation of the physical volume of inventories used up in production differs from current replacement cost in times of changing prices. ${ }^{4}$ When prices are rising, book charges fall short of current replacement cost; when prices are falling, they exceed it.

No deviation from a current price valuation occurs with goods added to inventory during a given accounting period. These are valued at prices current in that period.

[^4]The change in the book value of inventories represents additions to inventories minus inventories used up. Hence it reflects not only (1) the change in the physical volume of inventories valued at current prices, but also (2) the excess of the replacement cost of inventories used up in production over their book valuation.

The former element of book value change is appropriate for inclusion as a component of national product, because it conforms to the principle of current price valuation applied to all the other components. To include, however, the "inventory gain" or "inventory loss" measured by the second element of book value change would be misleading. In extreme cases the inventory movement as indicated by the change in book values would differ in direction from that of the actual volume of inventories. Therefore, the "change in inventories" line in business and national product is derived by adjusting the reported book value change in inventories to exclude the inventory gain or loss element.

For similar reasons, business profits as initially calculated on the basis of business accounting methods of inventory valuation are, for purpose of inclusion in national income, adjusted to exclude inventory gain or loss. This is done in table II by adding the "inventory valuation adjustment" to corporate and noncorporate business profits as estimated from "book" data reported by business. When negative, the inventory valuation adjustment measures the inventory gain, and when positive, the inventory loss, which arises from the fact that inventories used up in production are not valued at current replacement costs. Its affinity to capital gains and losses; which also are eliminated in calculating national income and product, is readily evident.

The statistical methodology for estimating the inventory components of national income and product is explained in Part III of this report. The following numerical examples may serve to set forth more precisely the accounting principles involved.

## FIFO method

Suppose that a firm had beginning inventories of 1,000 units valued at $\$ 5$ each, that it purchased during the accounting period 400 units valued at $\$ 3$ each, and that it used up, in production and sale, 300 units of inventories. According to the first-in, first-out (FIFO) method of inventory valuation, which charges inventories to cost of sales in the order of their acquisition, inventories used up would be valued at $\$ 5$ each, at a total of $\$ 1,500$. The inventory change would be registered as minus $\$ 300$, the difference between $\$ 1,200$ of acquisition and the $\$ 1,500$ used up.

The book value change of minus $\$ 300$ is the algebraic sum of a physical volume change, in current prices, of $\$ 300$ ( 100 units at $\$ 3$ each) and an inventory loss of $\$ 600$, which measures the difference between the book cost and the current replacement cost of inventories used up ( $\$ 2$ on 300 units). Since purchases of inventory goods are valued at current prices, the departure from current valuation in the measure of inventory change reflects entirely the manner of valuing inventories used up.

For national output measurement it would be misleading to register an inventory decline of $\$ 300$ when the volume of inventories had actually increased. Accordingly, on the credit side of the business account, the change in business inventories is entered at plus $\$ 300$, equal to the physical change of 100 valued at the current price of $\$ 3$ each, in conformance with the valuation basis used for the other components of the product and income flow. Correspondingly, on the debit side an inventory valuation adjustment
of $\$ 600$ is added to business profits as based on the FIFO method of inventory valuation. This adjustment corrects profits for the difference between the book cost of goods sold ( $\$ 1,500$ ) and their current replacement cost ( $\$ 900$ ). Essential to note is that the adjustment is equivalent to the excess of the physical inventory change in current prices ( $\$ 300$ ) over the book value inventory change (minus $\$ 300$ ). Needless to say, if current prices exceed book cost prices an inventory gain instead of an inventory loss occurs, and the sign of the inventory valuation adjustment is negative.
The above example is based upon the straight cost variant of the FIFO method of inventory accounting. But a revaluation of the inventory change reported by business is also necessary for other business accounting methods in which the valuation of inventories used up departs from a current replacement cost basis. Consideration of two of these is pertinent: the "cost or market whichever is lower" practice of valuing year-end inventories and the last-in, first-out (LIFO) method of inventory accounting.

## Cost-or-market method

Under the cost-or-market method, year-end inventories are written down by businesses if market prices are below cost prices. This practice generally necessitates a revaluation of book value change for national income purposes. However, it should be recognized that the cost-or-market procedure is not the prime cause leading to revaluation of book value changes in the national income and product accounts. It represents only a special case in which revaluation is necessary because of a departure from the current replacement cost basis of valuing inventories used up in production.
For instance, if the cost-or-market method is used in the example given, the ending value of inventories will be reported as $\$ 3,300$ ( 1,100 units at $\$ 3$ each, the lower market price). The book value change of inventories will be minus $\$ 1,700$, and an inventory valuation adjustment of $\$ 2,000$ will be needed to adjust the change in book values to national income and product definitions. However, even without exercise of the method an inventory valuation adjustment (of $\$ 600$ ) is needed, as previously shown.

## The LIFO method

"The LIFO method of inventory accounting yields results most akin to national income practice. As a general proposition, it yields identical results when the physical volume of inventories increases, but divergent results when the physical volume decreases. In the former case no revaluation of the book value change is necessary, but in the latter an inventory valuation adjustment must be applied to inventories charged on a LIFO basis.
As long as the physical volume of inventories is increasing, inventories used up represent, according to the LIFO convention of assuming that units acquired last are charged out first, current acquisitions valued at current prices. There is no difference in this case between the LIFO and national income methods of inventory valuation. This can be seen by applying the LIFO method to the above numerical example. Inventories used up are valued at $\$ 900$, because they are assumed to represent the 300 units most recently acquired at their current price of $\$ 3$ each. The book value change therefore amounts to plus $\$ 300$ (purchases of $\$ 1,200$ minus $\$ 900$ of inventories used up), which is equal to the change as measured for national income purposes.
However, when the physical volume of inventories decreases "last-in" prices no longer represent current prices.

Inventories used up reflect past-period acquisitions valued at past-period prices, which in general differ from current prices. To illustrate this case numerically, it may be assumed that in the initial example 500 units rather than 300 units are used up, so that the physical volume of inventories decreases by 100 units. According to LIFO practice, the inventory change would be minus $\$ 500$. This represents acquisitions of 400 units valued at $\$ 1,200$, minus 400 units used up valued at $\$ 1,200$ (corresponding to the acquisitions), and minus 100 units valued at $\$ 500$, reflecting the cost price of the units included in the initial stock. According to the method adopted in this report, however, the inventory change would be valued at minus $\$ 300$, measuring the physical volume change at current prices, and an inventory valuation adjustment of $\$ 200$ would be necessary. This adjustment would account for the inventory loss which arises because the 100 units of inventories used up in excess of current acquisitions are valued at $\$ 5$ each, $\$ 2$ more than the current market price of $\$ 3$.

The foregoing summary treatment of the problem of inventory valuation should not create the impression that the subject is a settled one. On the contrary, there is a great deal of discussion among accountants and national income technicians both as to the broad principles and detail involved.

It should also be mentioned that many simplifying assumptions have been introduced into the summary in order to bring out more clearly the basic nature of the problem. In their absence, some of the generalizations made would have to be qualified, although not changed in essence. In particular, the assumption underlying the numerical examples, as well as some of the statements in the text, that the prices of inventory goods change discontinuously between accounting periods but remain constant within them, has permitted the neglect of some complicating factors which, although significant, are definitely of secondary importance. This assumption should be noted specifically, because the fact of continuous price change during the year is quite important from the standpoint of the statistical calculations described in the section on Change in business inventories in Part III.

## Imputations

As noted earlier, the measures of national output presented in this report cover not only output whose production and distribution give rise to explicit monetary transactions, but also certain types of income and product flows which do not take monetary form. It has also been pointed out that from a theoretical standpoint these imputations represent modifications of the operational concept of final output, and that they are made to correct for anomalies and other disturbing omissions that would otherwise result. The imputations made are the result of concrete considerations and of the traditions of national output measurement. They do not and cannot represent a logically clear-cut exhaustive list, but merely a pragmatic selection among a wide variety of possible imputations.

The general procedure for allowing for nonmonetary income and product flows in the national accounts is to imagine that the flows in question take monetary form and to reconstruct the accounts to reflect consistently these flows. The business account is affected by four imputations: wages and salaries paid in kind, the rental value of owner-occupied houses, food and fuel produced and consumed on farms, and nonmonetary income and product flows arising in connection with financial intermediaries. These will be discussed in turn.

## Wages and salaries paid in kind

An imputation is made for wages and salaries paid in kind in the form of food and lodging in industries in which this type of arrangement is of quantitative importance and is regarded as involving a clear supplement to monetary wages and salaries. Imputed items are valued at cost to the employer. Needless to say, difficult and somewhat arbitrary decisions are involved in delimiting the area of this imputation and in establishing the proper valuation.

In effect, the imputation takes the form of assuming that the employer, instead of furnishing his employees with free food and lodging, pays them corresponding amounts of wages, and that the employees in turn use them to buy the items previously purchased by the employer. Wages and salaries (in income originating in business) and sales to persons (in business product) are thus raised by corresponding amounts. In terms of the more technical implication of the procedure, intermediate purchases by the employer are converted into factor costs (wages and salaries) and final purchases (consumer expenditures).

## Rental value of owner-occupied homes

The imputation for the rental value of owner-occupied homes is made to provide comparable treatment between rented and owner-occupied housing. It assumes that home ownership is a business producing housing services which are sold to the home-owner in his capacity as tenant. These sales are estimated in terms of the sum for which the particular type of home could be rented, and the expenses of the home owners are deducted to obtain imputed net rent. The imputed gross total becomes a part of sales to persons, or consumer expenditures, and imputed net rent becomes a part of the rental income of persons.

It may be wondered how the balance of the accounts can be maintained if for imputed rents a gross item is entered on the credit side and a net item on the debit side. The inconsistency is only apparent. Adjustments corresponding to the expense items which constitute the difference between imputed gross and net rent are made simultaneously in several components of the gross income and product flow, and secure balance.

One of the expense items, depreciation on owner-occupied homes, is added to capital consumption allowances. In the absence of imputation, it would not enter the purview of the national accounts. Indirect business taxes are raised by the amount of property taxes included in the expenses of owner-occupants. Otherwise, these taxes would be classified as personal taxes (see the discussion of the personal account below). Mortgage interest serves to raise the "net interest" item in the business account. Without the imputation, it would be entered as interest paid by the personal sector. Finally, all other expenses, such as for supplies and materials necessary for the maintenance of owner-occupied homes, are classified as intermediate business purchases charged to current account. Without the imputation, they would be counted as final products, as elements of business sales to persons.

## Food and fuel produced and consumed on farms

The imputation for food and fuel produced and consumed on farms closely follows the scheme of the rental imputation. In this instance the accounts are reconstructed to conform to a situation in which the farmer sells the food and fuel to himself. An imputation for the full value of the food and fuel (at prices received by farmers for this type of product) is made in business sales to persons, and an imputed net profit on the production of this food
and fuel is included in the income of unincorporated farm enterprises. The apparent inconsistency of a gross imputation on the product side and a net imputation on the income side is resolved in a manner similar to that of the rental imputation.

## Commercial banks and investment trusts

Imputed income and product flows arising in connection with financial intermediaries involve some of the most complex constructions of national income and product measurement. Several distinct types of procedures are involved, and will be discussed in turn.

The ordinary methods of measuring value added to total output in terms of income and product flows break down in the case of commercial banking. This is because an element of the income and product in this area does not take monetary form. An imputation is introduced to make it explicit and, as a consequence, a much more satisfactory picture of value added emerges.

The situation is illustrated in exhibit 13 by means of an income and product account for a commercial bank, drawn up in conformity with the principles of the Consolidated Business Income and Product Account. Only a few transactions essential to the problem are covered, in order to simplify the presentation.
Exhibit 13.-Income and Product Account of a Commercial Bank, Monetary Transactions Only
[Thousands of dollars]

| Wages paid...-.-.-.-.-.-.-.-.-.-. - 50 | Service charge receipts................ 10 |
| :---: | :---: |
|  | Less: current account purchases from |
| Interest paid on deposits |  |
| Less: interest received.-.-.......- 100 |  |
|  |  |
| Income originating.---------------15 | Product originating-..-.-.-.-.-.-. - 15 |

On the credit side of this account, the value added to output by the commercial bank is calculated in terms of product flows by deducting from its sales, consisting of monetary service charges, its current account purchases from other firms. (It will be remembered that this netting yields the desired value of final production since sales and purchases of intermediate products cancel for the economy as a whole). In terms of income flows, value added is obtained on the debit side by summing the distributive shares, with interest netted.

Since monetary service charges made by commercial banks are low in relation to total costs incurred, incomes and product originating appears low-in the present example it is actually negative. It is evident that the conventional method fails to give a proper accounting of output originating in the commercial banking area. Some income and product flows not taking monetary form must occur, omission of which results in seriously incomplete measurement.
The product flows in question are identified as the services rendered by banks without explicit charge to their depositors, such as checking, bookkeeping, and investment services in connection with the handling of deposits. In lieu of monetary service charges, banks finance the cost of these services by retaining part of the property income earned by investing deposits instead of paying it out to the depositors. This retained income is assumed to represent the income flows not taking monetary form.
To obtain an adequate picture, the accounts are redrawn as they would appear if this short-circuiting of income and service flows had not occurred and, instead, commercial banks had (1) paid out to depositors all property income earned on the investment of their deposits and (2) charged them fully for the cost of the services rendered to them.

An item for imputed interest paid (equalling property income received minus interest paid on deposits) is entered on the debit side of the accounts. On the credit side, an entry is made for imputed service charges (equalling total operating expenses of banks, including profits, less monetary service charges). It can be seen by reference to exhibit 13 that the two must always balance : imputed service charges = wages paid (50) + current account purchases (25) + profits (30) - monetary service charges (10) $=$ imputed interest paid $=$ interest received (100) - interest paid on deposits (5) $=95$.

This imputation is added, in exhibit 14, to the data shown in exhibit 13.

Exhibit 14.-Income and Product Account of a Commercial Bank, Monetary and Imputed Transactions
[Thoussands of dollars]

| Wages paid.--------------------- 50 | Service charge receipts .....-.....-.-. $10 \pm$ |
| :---: | :---: |
| Net interest paid.....-.-.-.-.-.-.-.-.-.-. 0 | - Monetary----------.-.-.-.-.-. 10 |
| Monetary interest paid on de- | Imputed------------------ 95 |
| posits $\qquad$ 5 | Less: current account purchases from |
| Imputed interest paid on deposits ${ }_{\text {- }} 95$ | other firms---.------------------25 |
| Less: monetary interest received... 100 |  |
|  | Product originating.-...-.-.-.-.-.-...- 80 |

The nonmonetary income and product flows having been made explicit, a more adequate accounting of the value added by commercial banks appears. Also, these banks are revealed in their role of financial intermediaries. Interest is seen not to originate in banking, but to be transferred by banking from the industries in which it originates to the depositors to whom it accrues. (A minor complication is introduced if, in addition to receipts of interest income, receipts of dividends by commercial banks are taken into account. See Part III, section on Interest.)

Next, the imputed banking flows must be traced further through the economy to determine their ultimate effect on the size and structure of national income and product. This is done on the basis of the ownership of the deposits in connection with which the imputed flows arise. To the extent that these deposits are owned by businesses, matching debit and credit entries are made in their accounts-the debit for imputed service charges paid and credit for imputed interest received. The balance of the accounts is not disturbed; for businesses affected, purchases of intermediate products are increased by the amount of imputed service charges and net interest paid is decreased by the amount of imputed interest received.

Thus, to the extent that the deposits of commercial banks are held by business owners, there is no change in the size of national product or income. Imputed service charges cancel as intermediate products in the consolidation of the business system, and so do the inter-industry imputed interest flows. All that occurs is a redistribution in the industrial origin of output, in the process of which the share of banking is increased and that of other industries is reduced.

To the extent, however, that the ownership of bank deposits is vested in persons, the results are different. Imputed service charges made to persons constitute a final product and appear as a component of sales to persons under personal consumption expenditures for "services rendered without explicit charge by financial intermediaries, other than life insurance." Imputed interest paid by banks to persons serves to increase net interest by an identical amount. Both product and income originating are thus raised to reflect nonmonetary income and product received by persons from banking. (In this discussion, it will be noted, the accounting for imputed flows between
banking and government has been neglected. For this detail, see the section on Interest, in Part III.)

The above description of the measurement of imputed flows in banking is only a brief summary of a complex subject which is still the subject of lively discussion among technicians in the field. The procedure has been criticized in general as unduly complex and, more specifically, as based on certain assumptions of doubtful validity. Particular exception has been taken to the assumption that all banking services not explicitly charged for are rendered to depositors and that the borrowers of bank loans are not involved, as well as to the assumption that these services are distributed in proportion to the ownership of the volume of deposits irrespective of turnover.

While these and other objections have some merit and it is hoped that a simpler and more cogent solution may be found to deal with the underlying problem of measuring the value added to output by banking, it would appear that the present procedure, all things considered, is the most satisfactory devised so far. Whatever its particular limitations, it attempts to measure a real element of income and product in the business economy and permits a sensible solution to the problem of allocating income by industries.

An imputation essentially similar to that for banking is made in connection with investment trust type of financial institutions. The precise mechanism of this imputation can be traced in the light of the above discussion of banking on the basis of the additional detail provided in the section on Interest, in Part III.

## Life insurance and mutual financial intermediaries other than life insurance

The treatment of life insurance involves the second major type of imputation which is made in connection with financial intermediaries. Imputations are introduced because the standard national income and product classifications break down owing to the combined saving and insurance functions performed by life insurance. It is not possible to classify the explicit transactions which occur between life insurance companies and their policy holders into the conventional classifications of current receipts versus capital transfers and of consumption and saving. Accordingly, in the income and product accounts imputed transactions are substituted for the explicit transactions.

Specifically, claims and premiums are disregarded. Next, the property income of life insurance companies which is withheld to the account of policy holders is treated as if it were actually disbursed in the current period. This item becomes imputed interest in the net interest component of income. Finally, the companies are regarded as explicitly charging policy holders for their services, as measured by operating expenses. An imputation equal to these expenses is entered in the business account under sales to persons. It appears in personal consumption expenditures as "Expense of handling life insurance."

That a balance between the income and product accounts is secured if life insurance is treated in this manner can be seen most simply by realizing that, as far as the totals are concerned, life insurance companies have in effect been treated as individuals rather than businesses. Claims and premiums have been cancelled as though they constituted transfers among individuals; property income received by these companies has been converted via the interest imputation into property income received by policy holders; and operating expenses incurred by the companies have been converted by means of the service charge imputation into final purchases made by policy holders. The balance of the Consolidated Business Income and Product Account

Exhibit 15.-Illustration of Treatment of Mutual Life Insurance
[Thousands of dollare]

*Imputed
thus reflects, in essence, the balancing accounts of the business system other than life insurance.

The effect of the treatment of life insurance on personal saving may be anticipated at this stage. Since the property income and operating expenses of life insurance are imputed to policy holders, and receipts and payments of premiums and death claims are disregarded, a measure of personal saving results (in the personal income and expenditure account described later), which consolidates the saving of life insurance companies with that of policy holders.

An illustrative treatment involving mutual life insurance, shown in exhibit 15, may serve to make this summary more concrete.

The upper panel of the exhibit records the monetary transactions which occur in a simple economy involving life insurance companies, other businesses, and persons. The lower panel reflects the transactions that would be recorded in the national income and product accounts. (Since nonbusiness production does not occur in this example, a distinction between business output and national output need not be made.) The lower panel differs from the upper panel by excluding death claims and premiums and by including imputed income and service transactions.

Gross national product (2200) is obtained from the lower panel by adding sales (imputed) to persons by life insurance companies (600), sales to persons by other business (1100), and business capital formation (500). National income and personal income (also 2200) are obtained by adding wages paid by life insurance (200), wages paid by other business (1200), and (imputed) interest paid by life insurance (800). Personal saving (500) is obtained by deducting from personal income (2200) monetary and imputed personal consumption expenditures (1700). It can be seen that personal saving reflects the consolidated saving of persons and life insurance, as shown by the consolidated change in their net asset positions ( 400 for life insurance and 100 for persons, as indicated by the differences between the credit and debit totals in the upper panel).

The treatment of stock life insurance companies is essentially similar to that of mutual life insurance except that the operating expenses of life insurance companies are measured to include the companies' profits, which are correspondingly included in total income.
Further detail on the specific items entering the calculation of the property income flows (in the present example only interest was allowed for), together with information on somewhat similar imputations in connection with mu-.
tual financial intermediaries other than life insurance, is .given in Part III in the section on Interest. This should be read in the general framework provided above.

## Government enterprises

In addition to financial institutions, other types of business organizations require special treatment in the national income and product accounts. Government enterprises deserve explicit comment, not because they are important quantitatively in the United States economic structure, but because they complicate the accounts in a rather obtrusive way.

The distinction between government enterprises and general government can be understood readily even though it cannot be drawn with theoretical precision. Government enterprises are those agencies of government whose operating costs are at least to a substantial extent covered by the sale of goods and services, in contrast to the general activities of government which are financed mainly by tax revenues and debt creation. Government enterprises, in other words, conduct operations essentially commercial in character even though they perform them under the auspices of the State. The Post Office and public power systems are typical examples of government enterprises. On the other hand, State universities and public parks, where the fees and admissions collected cover only a nominal part of operating costs, are part of general government activities.

Since a choice must be made, it is preferable to consolidate government enterprises with business rather than with government. However, it seems desirable in handling these entities to introduce certain departures from the standard procedures adopted for ordinary business enterprises. (1) The profits of government enterprises are not included as part of factor cost in income originating in business, but instead are treated as a nonfactor charge against the value of output (see "subsidies minus current surplus of government enterprises" in table II). (2) The capital formation of these enterprises (including both fixed capital formation and inventory change) is classified in government purchases rather than gross private domestic investment. (3) The profits ("current surplus") of government enterprises are calculated without deduction either of net interest paid by them or of depreciation. Therefore, depreciation charges of government enterprises are not included in capital consumption allowances; and net interest payments by government enterprises are not counted as net interest payments by business. Since these modifications of the standard treatment of business
enterprises do not involve changes in the debit or credit totals, it can be seen that the balance of the business account is not disturbed.

The effect of the treatment of government enterprises on the government account (see table IV) may be anticipated at this stage by noting that net interest paid by these enterprises is combined with that paid by general government and that their current surplus is treated as a receipt in the government account. These steps, in conjunction with (2) above, serve to consolidate the surplus (or deficit) of general government with that of government enterprises. This is so because net interest paid plus capital formation less current surplus of government enterprises measures the net excess of their expenditures over their revenue.

Several considerations suggested the particular accounting for government enterprises adopted in this report. With respect to the profits ("current surplus") of government enterprises, it was thought desirable to exclude them from factor charges because, in a way too difficult to disentangle, they were recorded net of losses which in effect reflected government subsidy operations conducted through the medium of government enterprises, mainly in World War II. The inclusion of government enterprise losses due to subsidy operations would have offset the corresponding subsidies in total income originating, and would have run counter to the general procedure of treating government subsidies as part of total factor cost.

The decision not to count net interest paid by government enterprises as net interest paid by business (and, correspondingly, to calculate the current surplus of government enterprises before deduction of net interest paid by them) was closely related to the decision not to treat their profits as part of factor cost. In general, a meaningful total of factor cost with respect to property factors can be obtained only if profits and interest are combined, and the inclusion of net interest paid alone might have been misleading.

Next, government enterprise capital formation was combined with government purchases rather than with private investment because the dividing line between capital purchases by government enterprises and those by general government is quite arbitrary. For instance, the construction of post offices is recorded in the general budget of the United States rather than in the accounts of the Post Office. Pending an exhaustive classification of all government purchases of capital goods, it was thought preferable to merge government enterprise capital formation with government purchases.

Finally to be noted is that the government surplus or deficit (consolidating both government enterprises and general government) which is obtained by this general procedure is the most useful definition of government surplus or deficit for many types of economic analysis.

The main aspect of the handling of government enterprises is their treatment as business-type organizations in order to avoid the classification of their current expenses as final purchases. Beyond this aspect, however, the treatment of government enterprises is in essence not more than a convenient means of disposing of a type of operation that has not reached quantitative importance in the United States total income and product picture. Were government enterprise operations to assume greater importance in the United States economy, it is entirely possible that some modification of their treatment in the national income accounts would be called for.

## The Personal Sector

The personal sector of the economy covers essentially the consuming public. It consists chiefly of individuals in their capacity as income receivers and consumers, but it includes also nonprofit institutions, private trust funds, and private pension and welfare funds.

## Personal account

Unlike business transactions, which are summarized by a profit and loss type of statement exhibiting the profit or loss realized in the current period, personal transactions are summarized by a statement of current receipts and expenditures. This difference reflects, of course, the fundamentally dissimilar nature of the two sectors of the economy.

The personal account, shown in table 1II, represents a consolidation of the accounts of all the persons who constitute the personal sector, just as the business account presented in table II was derived by consolidating the accounts of all the firms included in the business sector.

The personal account shows, in general, the transactions of persons with the other sectors of the economy. Since nonprofit institutions, private trust funds, and private pension and welfare funds are regarded as part of the personal sector, income receipts of these entities from other sectors are included in personal receipts and their purchases from other sectors are included in personal expenditures.

Conversely, since the account is consolidated, most transactions between these entities and individuals, as well as among individuals, are cancelled out in the process of consolidation. This process of cancellation is not extended, however, to the transactions among persons that are regarded as purchases of the services of factors of production -for instance, wages paid to domestic servants and payments of wages and interest by nonprofit institutions. Instead, these transactions are reflected on both the receipt and expenditure sides of the account, in order to preserve a record of them which is needed in tracing the total flow of production in the economy.

## Classification of personal income

The classification of personal income on the right side of the personal account in table III follows closely the classification of the income items on the left side of the business account in table II. In addition, however, to the incomes originating in business, it also includes incomes received from general government and from abroad, as well as incomes derived from production within the personal sector.

The nature of the incomes derived by persons from the business system has been covered in the discussion of the business account. Separate entries for each of the items disbursed by the business system can be found in the personal account except for interest and dividend payments, which are included in the interest and dividend entries but not shown separately, for lack of statistical information.

It will be noticed that only incomes currently received by persons are included as receipts in the personal account. Thus, wage and salary receipts represent actual receipts and differ from wage and salary accruals during the same period by the excess of accruals over disbursements and by employee contributions for social insurance, which, along with similar employer contributions,

Table 1II.-Personal Income and Expenditure Account, 1939
[Millions of dollars]

| 1 | Personal consumption expenditures: | 15 | Wages and salary receipts: |  |
| :---: | :---: | :---: | :---: | :---: |
| 2 | Purchases of direet services: | 16 | Disbursements by: |  |
|  |  | 17 | Business.- | 36,250 7,343 |
| 3 4 4 | Compensation of employers: <br> Wages and salaries paid | 18 19 | Government. .-----------1-1 | 7,343 2,150 |
| 5 | Supplements paid: | 20 | Rest of the world --.-.- | - 2 |
| 6 | Employer contributions for social insurance $\qquad$ | 21 | Less: Employee contributions for social insuranee ------ | 596 |
| 7 |  | 22 | Other labor income: |  |
| 8 | 801 | 24 | Business ---- | 431 87 |
|  |  | 25 | Households and institutions | 17 |
| ${ }^{9}$ | Income originating in and net and gross product of houscholds and institutions. | 26 | Income of unincorporated enterprises and inventory valuation adjustment. | 11,282 |
| 10 |  | 27 | Rental income of persons. | 3,465 |
| 11 | Net purchases from abroad........-------.---.-....... 484 | 28 | Dividends | 3,796 |
| 12 | Personal tax and nontax payments.---. --------------- ${ }^{\text {- }}$ 2,440 | 29 | Personal interest incom |  |
| 13 |  |  | Personal interest |  |
|  |  | 30 | Government transfer payments. | 2,512 |
|  |  | 31 | Business transfer payments. | 451 |
| 14 | PERSONAL OUTLAY AND SAVING...-......-.....-... 72,607 | 32 | PERSONAL INCOME. | 72,607 |

constitute receipts to government rather than to individuals. Similarly, only corporate profits distributed in the form of dividends appear in the personal account. For unincorporated enterprises, no useful distinction can be made between distributed and undistributed income, and the entire amount is transferred to the personal account.

Income receipts from government consist of wages and salaries, other labor income, interest, and transfer payments. With the exception of interest payments, they are listed separately in table III. Government interest payments to persons are included in personal interest income.

The definition of each of these income receipts is similar to that of the corresponding receipts derived from business and does not require separate discussion. It should be kept in mind, however, that although the formal definitions of the items are similar their actual content may be very dissimilar owing to the different nature of government operations. For instance, wages and salaries received from government include military wages and salaries, a type of payment which is not made by the business sector. Similarly, government transfer payments include social security benefits, relief, and various payments to former members of the military establishment, all of which constitute payments that are unique to government operations and have no genuine counterpart in business.
Wage and salary receipts from abroad appear explicitly as receipts of the personal sector. They consist of the wages and salaries of American residents employed in the United States by foreign governments and international organizations. Personal interest and dividend receipts from abroad are included with other personal interest and dividend receipts under personal interest income and dividends.
Personal income derived from households and institutions consists of income receipts of individuals for productive services rendered within the personal sector of the
economy. Incomes included under this heading are those received for services rendered directly to households, such as domestic service, and the incomes received by employees of, and suppliers of capital funds to, nonprofit institutions. As has been noted, in order to maintain a comprehensive record of total productive activity these transactions are not cancelled in deriving the consolidated personal account even though they occur within the personal sector.

## Relation of national income and personal income

The bulk of personal income is derived from production, and personal income is therefore used widely as an indicator of economic activity. However, it is not a measure of the value of national output because it excludes certain incomes that accrue in production but are not distributed to persons and includes certain other income receipts that do not accrue in production. The relation between national income, which is a measure of output in terms of factor income flows, and personal income is shown in exhibit 16.

## Exhibit 16.-Re'ation of National Income and Personal Income, 1939 <br> [Millions of dollars]

| National income. | 72,532 |
| :---: | :---: |
| Less: Undistributed corporate profits, | 1,209 |
| Corporate profits tax liabilitv | 1,462 |
| Corporate inventory y alu ition tiustmer | -714 |
| Contributions for social insur nnap--.-. | 2,136 |
| Plus: Net interest phil he governen nt | 1,205 |
| Government transfor paymeats - | 2,512 |
| Busitiess transfer pay ${ }^{\text {a }}$ ntis. |  |
| Eq"als: Personal incrme | 72,607 |

In this exhibit, personal income is derived by deducting from national income all incomes earned in current production but not received by persons and by adding to it the incomes received by persons but not earned in cur-
rent production. The deductions consist of all elements of the "corporate profits and inventory valuation adjustment" component of national income except dividends (undistributed corporate profits, corporate profits tax liability, and corporate inventory valuation adjustment) and of the parts of employee compensation not distributed to individuals (contributions for social insurance and the excess of wage accruals over disbursements). The additions consist of transfer payments from government and business and of net interest paid by government. The latter item represents the excess of the total interest payments by government over its total interest receipts, and must be added to national income because the net interest component of national income falls short of the interest receipts of persons by that amount. (For a detailed tracing of interest flows, reference is again made to the Interest section of Part III).

## Personal outlay and saving

The debit side of the personal account contains three general categories: personal consumption expenditures, personal tax and nontax payments, and personal saving.
Personal consumption expenditures consist chiefly of net purchases from business, corresponding to the credit entry for consolidated net sales to persons in the business account. Also included are purchases made directly by persons from abroad (mainly while travelling abroad, but including also international remittances) and purchases of direct factor services.
Purchases by persons of direct factor services measure production originating in the personal account. They are entered at their full cost, which consists of the compensation of employees and interest payments. As already mentioned, much of this expense is matched by a receipt entry in the personal account itself. However, employer and employee contributions for social insurance appear as a receipt in the government account, while the interest cost of production in the personal sector is composed of payments to all sectors of the economy.
It will be noted that there is no entry for purchases of goods and services from government. This is simply because all government agencies which are conceived as selling their services for a market price are defined as government enterprises and classified in the business sector, so that consumer payments to them, such as for postage stamps, appear as purchases from business.
Payments by persons to general government, consisting chiefly of direct personal taxes, are classified as personal tax and nontax payments, the second general category on the left side of the personal account. This entry does not include contributions for social insurance. These are not actually received by persons and are excluded in the computation of personal income. It may be noted, however, that the total individual income tax, including the portion withheld at source, is treated as though initially received by the personal sector. In other words, personal income is measured before deduction of this tax. The different treatment of these two types of withholding is somewhat arbitrary. Disposable personal income, of course, is measured net of both of them.
The amount remaining out of personal income after the purchase of goods and services and payments to government is personal saving. It comprises the saving of individuals, including owners of unincorporated enterprises. and the saving of the organizations that are considered part of the personal sector, namely private pension and
welfare funds, private trust funds, and nonprofit institutions serving individuals. It is the sum of the saving and dissaving of these groups.

Seen from another aspect, personal saving measures the net change in the asset position of persons as between the beginning and end of the accounting period. Personal saving is made up of the net increase in all the kinds of assets in which recipients of personal income invest, offset by the net increase in all the kinds of liabilities which they incur.

Included are not only the items commonly thought of in connection with personal saving, such as changes in cash and deposits, in security holdings, and in personal indebtedness, but also the net investment of noncorporate business in realty, equipment, and inventories. Personal saving also includes changes in the reserves of life insurance companies and mutual financial institutions, as explained above in the discussion of the treatment of these entities in the national income and product accounts.

Assets are defined, of course, in the context of the conceptual framework underlying national income measurement. Capital gains and losses are not counted as changes in asset position, and all consumer purchases of goods except residences are classified as consumption rather than as investment.

## Imputations

As in the case of business output, the measurement of output in the personal sector is not confined to monetary transactions, but also takes into account imputed income and product flows. The most important of the imputations is for the value of food provided free to employees of households and nonprofit institutions. The imputation involves an increase in the wages and salaries of employees, equal to the cost of the food to the employer, on both the credit and debit sides of the personal account. The reconstructed account depicts the situation which would prevail if monetary wages were raised by the value of the imputation and the corresponding food were purchased by the employees rather than by their employers.

An imputation is also made for the value of free lodging furnished to clergymen, employees of nonprofit hospitals, and certain quantitatively unimportant groups. None is made in the case of domestic servants, because it is felt that, as a general proposition, they do not regard the lodging furnished them as an addition to income.

## Nonprofit institutions

Nonprofit institutions include religious organizations, social and athletic clubs, labor organizations, nonprofit schools and hospitals, charitable and welfare organizations, and other nonprofit organizations furnishing services to individuals. It has already been pointed out that they are consolidated with individuals in the personal account. While the principle of consolidation is clear, some fairly intricate manipulations of items are involved. These may be illustrated by reference to exhibits 17 and 18, which are designed to show the treatment of the major transactions involving nonprofit institutions. Certain simplifications have been made to keep the example to manageable proportions. Investment by nonprofit institutions (counted as part of private domestic investment) has been excluded, as have government payments to nonprofit institutions (included in government transfer payments).

Exhibit 17.-Illustration of Treatment of Nonprofit Institutions Serving Individuals
[Thousands of dollars]

| Nonprofit Institutions |  | Individuals |  | Corporations |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Debits | Credits | Debits | Credits | Debits | Credits |
|  |  | Gifts (6)......-...-.-. 11 | Wages (1) _-........-... 15 | Wages (13) ............. 45 | Interest (3) ............. 2 |
| Inagersest (2)................ | (iifts (7) | Dues (8) --7.-.- 8 | Wages (12)--.......-.-. 6 | Gifts (7) |  |
|  | णues (8) | Purchases (10)........... 40 | Wages (13) --............ 45 | Interest (9) -....-....- 7 | Sales (10) |
| P'urchaspe (4) ... $\ldots \ldots \ldots 12$ | Interest (9) $\ldots$. |  |  |  | Interest (11) ............ 1 |
| (ash reliel (\%) |  | agos | 7 |  | - |
| 36 | 31 | 66 |  |  | 85 |

Exhibit 17 shows a set of interrelated transactions of nonprofit institutions, individuals, and corporate business. Exhibit 18 gives the Personal Income and Expenditure Account corresponding to these transactions. In essence, the latter account is obtained by consolidating the transactions of nonprofit institutions and individuals. In this process, the transactions involving cash relief, gifts, and dues cancel out. However, cancellation is not extended to transactions between nonprofit institutions and individuals involving payments for factor services. The record of these transactions is preserved in the comprehensive accounting for national output.

Exhibit 18.-lersonal Income and Expenditure decount Based on Exhibit 17
[Thousands of dollars]


Thus, employee compensation [wages (1)] and interest paid by nonprofit institutions to individuals [interest (2) ] appear on both sides of the personal income and expenditure account and constitute components of "income originating and net and gross product of households and institutions," which measures the value added to national output by the personal sector. In addition, this measure includes the compensation of household employees [wages (12)] and interest paid to the business sector by nonprofit institutions [interest (3)] and by households [interest (11)].

Private trust funds and private pension and welfare funds are also consolidated with individuals in the personal sector. In these cases, however, the procedure is more straightforward since these entities do not produce.

## Further breakdowns of personal account

The personal account, like the business account, includes somewhat heterogeneous elements, and further breakdowns of it would be useful. Two, in particular, should be mentioned.
Individuals might be distinguished from the various types of quasi-individuals included in the personal account; and, more important, individuals might be sub-
divided into significant social groups, such as farmers, other businessmen, independent professional practitioners, and wage earners, showing separately the incomes of these groups and their disposition among consumption, taxes, and saving. At the present stage, inadequacy of statistical materials limits the development of comprehensive measures of this sort.
A second significant breakdown of the household portion of the personal account-now in preparation in the National Income Division-would be by size of income. The present breakdown of personal income receipts, as shown in table III, does not shed much light on the income distribution. In addition to their use in welfare studies, size distributions of income, taxes, consumption, and saving would be useful in functional economic analysis.

## The Government Sector

The government sector includes Federal and State and local general governments and the social insurance funds administered by them. These funds comprise those set up under the Social Security and Railroad Retirement programs, State health insurance funds, the retirement funds established for government employees, and military life insurance funds. The distinction drawn between general government and government enterprises, which are included in the business sector, has already been described.

## Government account

The transactions of government are summarized by a consolidated statement of receipts and expenditures, as presented in table IV. In many ways this statement resembles the conventional budgets of governmental bodies. However, there are several differences.
In the first place, the account shown in table IV is consolidated. All levels of American government, the social insurance funds administered by them, and the net expenditures of government enterprises are covered. (However, separate breakdowns for the Federal Government, State and local governments, and social insurance funds are given in tables 8, 9, and 10 in Part V.)
Second, the account excludes receipts from the sale of, and expenditures for the acquisition of, financial and second-hand fixed assets. Third, the timing of receipts and expenditures differs from that of conventional budget statements, being synchronized with the timing of the corresponding expenditures and receipts in the other accounts. Personal taxes are on a cash basis, other taxes are on an accrual basis, and purchase entries reflect time of acquisition rather than of payment. Finally, the classification of transactions differs from that of conventional budget statements, being adapted to the needs of national output measurement and general economic analysis.

## Classification of receipts and expenditures

Most of the transactions contained in the government account have already been discussed in connection with the business and personal accounts.

The labor cost items, which appeared on a receipt basis in the personal account, are on an accrual-cost basis in the government account. The difference consists of employers' and employees' contributions under retirement systems for government employees. In table IV the employer contribution is treated as a simultaneous government expenditure and receipt. The employee contribution appears as a deduction from wages and salaries in the personal account and as a receipt in the government account.

Transactions with abroad, not yet discussed, appear explicitly under "net purchases from abroad" and are included also in "net interest paid." The former entry measures the excess of government purchases from foreigners over government sales to them (cash gifts are treated like purchase and sale transactions in this connection, but loans are excluded). Net interest paid is defined as the excess of total interest payments by government to all sectors over total interest receipts from all sectors. Government enterprises are covered in both payments and receipts.

Most of the salient features of the classification of government receipts and expenditures have come to attention already, in connection with the construction of measures of total national output. However, certain points may be elaborated now that all government transactions have been assembled.

## The value of government output

Value added by government to national output, like value added in all other nonbusiness sectors of the economy, is measured by total factor cost incurred. In the case of the government, factor cost is confined to the compensation of government employees. Interest payments are not counted. Two issues should be considered as relevant to this treatment: first, the distinction between employee compensation and transfer payments; and, second, the exclusion of monetary interest and the question of substituting an imputed interest series for it.

## Employee compensation versus transfer payments

A distinction is made between two types of government payments to individuals in their nonbusiness capacityemployee compensation and transfer payments. The former is in return for current productive services rendered; to the latter no such services correspond. This distinction is a basic one, because it segregates flows which are taken as measures of value added to national output from flows which are not so regarded. Hence it is important to see how it is made in practice.

Difficulties arise in the concrete interpretation of the term "productive service." For instance, in the classification of work relief wages that were paid in the depression of the thirties, the question arose as to whether they should be classified as labor returns or as transfers. A more fundamental issue is raised by the national income estimates of some foreign countries, in which military employee compensation has been excluded from factor income and treated as a transfer on the basis of some more ultimate, philosophical notion of productiveness.

In the United States estimates, the criterion for classifying an item as employee compensation or as transfer hinges on the current performance of work. No attempt is made to probe into the issue of whether the work is performed efficiently or whether, in some more ultimate sense, it is "productive." The practical impossibility of drawing distinctions of this type has been covered inferentially in the evaluation of the basic notions underlying national output measurement.

But even on the basis of the simple current-work-performed criterion, a clear-cut distinction between wages and salaries and transfer payments does not emerge in all cases. For it is not always possible to say whether a specific payment is made for the current work that is ' performed or for other reasons. Allowances for soldiers' dependents presented a classification problem of this type. It was decided to classify them as employee compensation rather than transfer payments, although a case for the opposite decision also could have been made. On the other hand, terminal leave payments, bonuses, and other deferred payments (such as under the "G. I. Bill") to members of the armed forces of World War II were considered transfers, as they were disbursed at a date far removed

Table IV.-Consolidated Government Reecipts and Expenditures Account, 1939 [Millions of dollars]

| 1 | Purchases of goods and services: | 15 | Personál tax and nontax receipts. | 2,440 |
| :---: | :---: | :---: | :---: | :---: |
| 2 | Purchases of direct services: | 16 | Corporate profits tax accruals. | 1,462 |
| 3 | Compensation of employees: 7343 | 17 | Indirect business tax and nontax accruals. | !,365 |
| $\stackrel{4}{5}$ |  | 18 | Contributions for social insurance: |  |
|  | Employer contributions for social in- | 19 | Employee contributions. | 596 |
|  |  | 20 | Employer contributions: |  |
| 7 | Other labor income.------------------- 87 | 21 | Business. | 1,330 |
| 8 | Income originating and net and gross product .-....-- $\quad 7,629$ | 23 | Households and institutions | 190 |
| 9 |  | 24 | Deficit ( + ) or surplus ( - ) on income and product transactions. | 1,867 |
| 10 |  |  |  |  |
| 11 |  |  |  |  |
| 12 |  |  |  |  |
| 13 | Subsidies minus current surplus of government enterprises-.- 485 |  |  |  |
| 14 | GOVERNMENT EXPENDITURES.-.-.................. 17,270 | 25 | GOVERNMENT RECEIPTS AND DEFICIT. | 17,270 |

from the time the military service was performed. Counting these payments as compensation for services would have necessitated allocating them over past years on an accrual basis-a course which seemed artificial and would have involved continuous revisions of the national income and product estimates for the war period.

## Government interest

Government interest payments are not regarded as measuring value added to output by government because they are subject to fluctuations which in any common sense notion cannot be regarded as representing corresponding changes in the value of current production. It may be added that business interest can be included in a measure of national output without such explicit consideration of its behavior. Any fluctuations in it not reflecting productive activity are offset by opposite changes in business profits. Hence, the inclusion of business interest has no distortive effect on the output measure and, in fact, is necessary to secure the correct total.

Thus, value added by government takes account only of the services of the labor factor whereas the valuation of business output includes also returns to nonlabor factors. The question accordingly arises as to whether an allowance should be made for the services of governmentowned property by the imputation of a rate of return to it, somewhat analogous to the imputation of a return to owner-occupied homes in the business sector of the economy.

An imputation for government-owned property is not made in the national income accounts for the United States because the conceptual and statistical bases for making a realistic and useful imputation are absent. The analogy to the housing imputation does not hold. The bulk of this imputation is anchored to realistic estimates of the gross rental value of owner-occupied houses available from Census reports, based on comparisons of owneroccupied property with rental property of similar type. In the case of the government no similar, market-based information to establish the rental value of the vast bulk of government structures and equipment is, or can be, available. The rental value of the highway system or of the Tennessee Valley Authority cannot be estimated by reference to the rental value of property of similar type.

In the absence of a realistic market evaluation of the rental value of government property, its net return would have to be derived by estimating the total value of government real capital assets, segregating the part which is deemed to be in productive use, and then applying to the latter a rate of return to reflect the value added by the property. Clearly, each of these steps would be highly speculative, and a measure of imputed return useful in realistic analysis would not be likely to result.

## Decisions affecting valuation of business output

In the national product, output is valued at market prices-inclusive of indirect business taxes and exclusive of subsidies. The manner in which these two items are defined therefore affects the total value of national product.

## Indirect business taxes versus personal taxes

Indirect business taxes are taxes (other than social insurance contributions) that are chargeable to current cost by business enterprises; and personal taxes are taxes paid by persons that are not so chargeable.

This distinction leaves the treatment of retail sales and related taxes somewhat ambiguous, since in some instances these taxes are included in the sales price and charged to current expense, and in others excluded and paid separately by the consumer. In the latter case it would be possible to regard these taxes as personal taxes and to list the corresponding purchases at values excluding them. In this report the procedure of treating all these taxes as indirect business taxes forming a part of market price has been adopted, because it is thought to be the more meaningful from the standpoint of studying market behavior.

Further emphasis on this type of study underlies a proposal to depart from the accounting distinction between personal and indirect business taxes used in this report. It has been suggested that for analysis of consumer behavior all taxes that are closely tied to consumer purchases should be treated as indirect business taxes and included in personal consumption expenditures, regardless of whether they are chargeable to current cost by business. For instance, automobile license and registration fees paid by personal consumers would, according to this plan, be classified in personal consumption expenditures and indirect business taxes, rather than in personal taxes as at present. The logic would be that payment of these taxes is a determinant in the choice of consumers as between automotive and other types of expenditures. While this suggestion has some merit, it would raise difficult problems of classification. The influence of various types of taxes on personal consumption is a matter of degree and does not provide a clear-cut criterion of classification.

## Subsidies versus purchases

Subsidies are monetary grants to business, and it is usually easy to distinguish them from government purchases of goods and services. However, in certain instances a subsidy element may be included in the purchase price of an item in lieu of an explicit subsidy. A clear-cut instance in which the subsidy element is recognized but not stated separately is Federal Government payments for mail contracts. Payments of this type, which are not important in the total, are regarded as purchases, and no attempt is made to segregate the subsidy element.

## Imputations

Imputations are made for wages and salaries paid in kind to government employees. The most important of these imputations is for food and standard clothing issued to members of the armed forces. It may be noted that only standard, or personal, clothing is included, not special clothing and equipment: Also, the rental value of shelter provided is not allowed for. The principal line of reasoning is that in many instances the provision of lodging to servicemen does not reduce their cash housing expenditures and hence is not a clear addition to their income.

In the recording of the imputations, the accounts are reconstructed to correspond to a situation in which the government paid out to its employees additional wages equal to the cost (to the government) of the food and clothing provided and the employees themselves purchased these items from the business system. In the government account (table IV), compensation of employees (and income and net and gross product originat-
ing in government) is raised by the value of the imputation. But total government purchases of goods and services are not changed because government purchases from business are reduced by a corresponding amount. In the business account (table II), there is a corresponding shift from sales to government to sales to persons. Finally, in the National Income and Product Account (table I), the imputation raises personal consumption expenditures and gross national product, on the one hand, and the compensation of employees, national income and the sum of charges against the value of national product, on the other.
In view of the fact that an imputation is made for wages and salaries received in kind, it may be wondered why transfer payments, and also subsidies, are confined to monetary transactions-why specific goods and services given to individuals are not included in transfer payments, and why those given to business are not counted in subsidies. The basic reason for this apparent inconsistency is that, whereas in the case of wages and salaries a generally accepted procedure for imputation, partly pragmatic and partly tradition-based, is available, this is not so with respect to transfer payments and subsidies. The principal difficulties in the way of establishing such a procedure have been set forth in the discussion of the basic notions underlying national output measurement.
By way of supplementary argument, it may be noted that the introduction of transfer payments and subsidies in kind would interfere with the function of the accounts as a record of actual transactions. Of course, wage and salary and other imputations that are made in the national accounts have a similar effect. In these instances, however, it is felt that the resulting improvement in the income and product components and totals outweighs the disadvantages involved.
Two examples of the rather extreme complications of the accounts that can arise from the introduction of imputations of transfer payments and subsidies may be given.
Suppose, for instance, that services rendered by government employees in the administration of relief programs were to be regarded as transfer payments in kind. In the government account (table IV), transfer payments would be increased and compensation of government employees correspondingly reduced. In the personal account (table III), transfer payments would be increased on the credit side and employee compensation (and hence purchases of goods and services and income and net and gross product originating) on the debit side. In effect, the government employees rendering the services classified as transfer payments in kind would now be classified in the personal sector, as household employees. Finally, in the National Income and Product Account (table I), personal consumption expenditures would be raised, and government purchases lowered, by the amount of the imputed transfer payments. It is apparent that these reclassifications would greatly reduce the value of the accounts as records of the income and product flows that actually occur among the major sectors of the economy.
Or , assume that a subsidy in kind consisted of services rendered by government employees. In this instance the reclassification would involve labelling as subsidies in the government account payments actually made for wages. In the business account wages would have to be increased, to include wage payments actually made by the government, and offset by a corresponding increase in the deduction made for subsidies.

## Social insurance funds

The consolidation of social insurance funds with the accounts of general government is a straightforward procedure which need not be detailed. However, certain differences between the treatment of social insurance funds and of privately-administered pension funds may be pointed out. These stem from the fact that the social insurance funds are consolidated with government while private pension funds are consolidated with individuals in the personal sector.

With respect to the measurement of employee compensation (and national income), the difference is merely one of classification between shares-employer contributions to government-administered funds are listed under "employer contributions for social insurance," whereas employer contributions to private pension funds are included in "other labor income." However, the effect of the difference in treatment on personal income and saving is more substantive. Employer contributions and property income received by privately-administered funds become elements of personal income, and the saving of these funds part of personal saving. Employee contributions into these funds, as well as benefit payments made by them, are canceled as constituting transfers within the personal sector. Employer and employee contributions and property income received by social insurance funds, on the other hand, enter government receipts; benefit payments made by them are explicitly recognized (as transfer payments by the government) as a component of personal income; and the saving of social insurance funds is a component of the government surplus rather than of personal saving.

## Rest of the World Sector

The transactions of the rest of the world with the United States are summarized in the rest-of-the-world account presented in table V. The rest of the world covers foreign countries, territories and possessions of the United States, international organizations, and the United States monetary gold stock: The gold stock is included in this sector because net acquisitions of gold by the monetary authorities from domestic sources are considered foreign investment.

It may seem strange at first that the "rest of the world" is a sector of the national economy, and, indeed, there would be no need to consider it in the case of a closed economy which had no dealings with foreign countries. In the real world, however, trade and investment do cross international boundaries. Consequently, to complete the set of accounts it is necessary to include one which summarizes the transactions of foreigners with the three domestic sectors of the economy.

The rest-of-the-world account is a receipt and expenditure account and, like the other accounts, consolidated. It bears a close affinity to the balance-of-payment statement. It differs from this statement mainly in arrangement, with respect to netting and the classification scheme applied to the transactions involved.
The debit side of this account shows the net purchases of United States goods and services by the rest of the world. It is divided among net purchases of direct factor services and other purchases (net) from business, government, and persons. Net purchases of direct factor services from the United States by the rest of the world, as shown by the net inflow of factor incomes to the United States,

measure United States national income and product originating in the rest of the world. ${ }^{5}$

Because of the inclusion of gifts in net purchases from United States persons and government, net purchases of goods and services by the rest of the world cover all its current transactions with the United States. The excess of purchases over sales must be financed by a change in the net international asset position (an increase of United States claims on abroad or a decrease of foreign claims on the United States). From the standpoint of the rest of the world, this excess constitutes net foreign disinvestment in the United States, as shown on the credit side of the account.

## International gifts

Inclusion of cash gifts received by foreigners from the United States in sales to United States persons and to the United States Government, together with the corresponding inclusion of gifts made by foreigners in purchases from the United States, secures a treatment of these transactions which is appropriate for the measurement of national product. Net gifts made by United States persons and Government appear in personal consumption expenditures and government purchases but are offset in the net foreign investment component of national product.

Needless to say the treatment of gifts as purchases is a somewhat unsatisfactory short-cut. It was adopted in order to simplify the structure of the accounts at a time when the important role of gifts in international transactions was not yet apparent. It has not been discarded because the alternative, more elaborate treatment also has serious shortcomings.

This alternative treatment consists of the establishment of a separate category of international transfers in the income and product accounts to cover the gifts now included in the purchases and sales of goods and services. These international transfers would affect, in addition to the rest-of-the-world account, the personal and government accounts (tables III and IV). The national income and product account (table I) also would be affected. Per-

[^5]sonal consumption expenditures and government purchases of goods and services would be reduced by the amount of net gifts made, and the entry under net foreign investment would be increased by a corresponding amount (with an appropriate change in the designation of the term to indicate that it would no longer reflect net foreign investment, but the balance of transactions in actual goods and services).

The complication of the accounts which would be involved in the establishment of a separate category of international transfer payments, while considerable, would be warranted if it would throw into clear relief the large international aid transactions involving the United States Government. However, this would not be accomplished for the reason that international aid, in addition to cash grants, involves also loans and aid in kind. The three forms of aid often are almost indistinguishable from one another in their economic aspects.

There is no clear-cut procedure available for distinguishing between international aid rendered in kind and government purchases for domestic purposes. For instance, in World War II it would have been rather unrealistic to distinguish between lend-lease, which presumably would have been classified as international aid in kind, and other government purchases for war purposes. Nor is there available an uncontroversial yardstick for classifying loans into loans proper and those that in effect represent international transfers. Since the relative magnitudes of the three media for extending international aid of essentially similar nature have been subject to considerable shifts, it would not have been instructive to establish a separate category for cash gifts alone, the only type of aid that could have been distinguished objectively.

It may be noted that conceptually similar problems arise with respect to the domestic operations of government. Aid to individuals and business also involves monetary grants, goods and services rendered in kind, and loans. In the case of these domestic transactions, monetary aids (in the form of transfer payments and subsidies) are recorded, but the two other types of aid are not recognized as such. While from some standpoints this dividing line is somewhat arbitrary, it is much more meaningful than a corresponding line would be for international aid. In the domestic sphere, shifts in the relative importance of the three media in extending aid of essentially similar nature have not been present in a comparable degree.

## Treatment of gold

In essence, the treatment of gold production in national income and national product is the same as that of any other commodity. The classification of gold transactions, however, is somewhat different and complicates the picture. As with any other commodity, the distributive shares arising directly or indirectly in its production (together with nonfactor charges, such as indirect business taxes and depreciation) are reflected on the debit side of the national income and product account, and the value of gold produced enters the credit side either as such or as an ingredient of the value of some other final product.

It is the classification in the product flow that is less transparent in the case of gold than of other commodities. Domestic nonmonetary use of gold may be reflected in any of the domestic components of national product-personal consumption, domestic investment including inventory change, and government purchases. To convert domestic nonmonetary use into a measure of total domestic production, monetary use and exports must be added and imports must be deducted.
These items--the change in the monetary gold stock and net gold exports-which in combination measure net domestic business sales of gold for export and monetary purposes, are included in net purchases by the rest of the world from United States business. In other words, the monetary gold stock is set up as part of the rest of the world and its transactions with United States business are treated as foreign transactions. Thus, changes in the monetary gold stock not offset by gold exports and imports come to be reflected in net foreign investment.
Silver is not regarded as an international monetary asset. It is classified in the product flow exactly like any other commodity.

## Gross Saving and Investment Account

The entries in the sector current accounts presented so far show the current transactions of each of the four major economic groups, yielding in each case a residual which represents a form of saving. A logical extension of
this system of sector current accounts would be the establishment of corresponding sector saving and investment accounts showing the disposition of these savings in the form of net financial and real investment.

Sector saving and investment accounts of this type have not been constructed on a comprehensive scale (a statement of this type for persons is presented in table 6, Part V) and cannot yet be made an integral part of the national economic accounting system. A consolidated saving and investment account for the Nation as a whole is presented instead, in table VI.

In the process of consolidation the financial investments involving transactions among the domestic segments of the economy are cancelled, and all that remains are matching flows of saving and of domestic investment (fixed capital formation and inventory change) and foreign investment. The consolidated capital account is obtained from the four sector current accounts by assembling all items in these accounts that so far have been entered only once because they constitute transactions not with other current accounts but with the capital accounts of the same or other sectors.

The placing of the government deficit (or surplus) on the left side of the account is arbitrary. It was dictated by the consideration that in many types of economic analyses the government deficit is treated as an "offset" to saving. Needless to say, no basic issues are involved; the government deficit (or surplus) could be entered, with changed sign, on the right side of the saving and investment account (and correspondingly on the left side of the government current account). This would accord better with the affinity between government surplus and deficit and other forms of domestic saving and dissaving.

The content of the gross saving and investment account is determined by the basic concepts and classifications underlying national income accounting. Only business assets are included in fixed capital formation and inventory change. Consumer- and government-held tangible assets are not included in capital formation. It should also be recalled that fixed capital formation is presented gross and that, therefore, capital consumption allowances appear as a component of (gross) saving.

Table VI.-Gross Saving and Investment Account, 1939
[Millions of dollars]

| 1 | Business purchases on capital account._._-............. 9, 476 | 6 | Excess of wage accruals over disbursements . . . . . . . . - . . . 10 |
| :---: | :---: | :---: | :---: |
| 2 | Change in business inventories. | 7 | Undistributed corporate profits (domestic) .-. .-. .-. . . - - 1,162 |
| 3 | Net disinvestment in the United States by rest of world | 8 | Corporate inventory valuation adjustment. . . . . . . . . . . . . -714 |
| 4 | Government deficit $(+$ ) or surplus ( - ) on income and product transactions. | 9 10 11 12 |  |
| 5 | GROSS INVESTMENT AND GOVERNMENT DEFICIT. 12,672 | 13 | GROSS PRIVATE SAVING................... . . . . . . . . . . 12,672 |

## DEFINITIONS OF CONCEPTS AND TERMS

The following definitions of the national income and product aggregates and their components are intended to give concise, accurate descriptions of the coverage of the various series and, at the same time, to call attention to the principal aspects of the series which are not readily apparent from their titles. The definitions of the national aggregates should be considered in conjunction with the definitions of their components as the details of the latter are not repeated in the former.

## I. National Income and Product Aggregates

National Income is the aggregate earnings of labor and property which arise from the current production of goods and services by the Nation's economy. Thus, it measures the total factor costs of the goods and services produced by the economy. The Nation's economy in this context refers to the labor and property supplied by residents of the Nation. Earnings are recorded in the forms in which they accrue to residents of the Nation, inclusive of taxes on those earnings. As such, they consist of the compensation of employees, the profits of corporate and unincorporated enterprises, net interest, and the rental income flowing to persons.

Gross National Product or Expenditure is the market value of the output of goods and services produced by the Nation's economy, before deduction of depreciation charges and other allowances for business and institutional consumption of durable capital goods. Other business products used up by business in the accounting period are excluded. The Nation's economy in this context refers to the labor and property supplied by residents of the Nation. Gross national product comprises the purchases of goods and services by consumers and government, gross private domestic investment, and net foreign investment.

Net National Product or Expenditure is the market value of the net output of goods and services produced by the Nation's economy. All business products used up by business in the accounting period are excluded. The Nation's economy in this context refers to the labor and property supplied by residents of the Nation. Net national product comprises the purchases of goods and services by consumers and government, net private domestic investment, and net foreign investment.

Personal Income is the current income received by persons from all sources, inclusive of transfers from government and business but exclusive of transfers among persons. Not only individuals (including owners of unincorporated enterprises), but nonprofit institutions, private trust funds, and private pension and welfare funds are classified as "persons." Personal income is measured as the sum of wage and salary receipts, other labor income, proprietors' and rental income, interest and dividends, and transfer payments.

Disposable Income is the income remaining to persons after deduction of personal tax and nontax payments to general government.

## II. Components of National Income and Product Aggregates

A. National Income (as in table 1, Part V).

Compensation of Employees is the income accruing to persons in an employee status as remuneration for their work. From the employer's standpoint, it is the direct cost of employing labor. It is the sum of wages and salaries and supplements to wages and salaries.

Wages and Salaries consists of the monetary remuneration of employees commonly regarded as wages and salaries, inclusive of executives' compensation, commissions, tips, and bonuses, and of payments in kind which represent income to the recipients.

Supplements to Wages and Salaries is the monetary compensation of employees not commonly regarded as wages and salaries. It consists of employer contributions for social insurance, employer contributions to private pension and welfare funds, compensation for injuries, directors' fees, pay of the military reserve, and a few other minor items of labor income.

Income of Unincorporated Enterprises measures the monetary earnings and income in kind of sole proprietorships, partnerships, and producers' cooperatives from their current business operations-other than the supplementary income of individuals derived from renting property. As with corporate profits, capital gains and losses are excluded and no deduction is made for depletion.

Inventory Valuation Adjustment measures the excess of the value of the change in the volume of nonfarm business inventories, valued at average prices during the period, over the change in the book value of nonfarm inventories. This adjustment is required because corporate profits and income of unincorporated enterprises are taken inclusive of inventory profit or loss, as is customary in business accounting, whereas only the value of the real change in inventories is counted as current output in the national product. No valuation adjustment is required for farm inventories because farm income is measured exclusive of inventory profits.

Rental Income of Persons consists of the monetary earnings of persons from the rental of real property, except those of persons primarily engaged in the real estate business; the imputed net rental returns to owner-occupants of nonfarm dwellings; and the royalties received by persons from patents, copyrights, and rights to natural resources.

Corporate Profits before Tax is the earnings of corporations organized for profit which accrue to residents of the Nation, measured before Federal and State profit taxes,
without deduction of depletion charges and exclusive of capital gains and losses. Profits accruing to residents are measured by eliminating intercorporate dividends from profits of domestic corporations and by adding the net receipts of dividends and branch profits from abroad. In other major respects, the definition of profits is in accordance with Federal income tax regulations.

Corporate Profits Tax Liability comprises Federal and State taxes levied on corporate earnings. Disbursements of tax refunds are deducted from tax liability in the year in which the tax liability was incurred.

Net Interest measures total interest (monetary and imputed, private and government) accruing to United States persons and governments minus total interest paid by United States governments. Government interest (Federal and State and local) is deducted because it is not considered income arising in current production. It is necessary not only to exclude the portion of it paid directly to persons and governments, but also to deduct the portion of it paid to business, because the latter is reflected in the incomes paid out or retained by the business system. The imputed interest component of net interest is measured in general as the excess of property income received by financial intermediaries from funds entrusted to them by persons over property income actually returned in monetary form by these intermediaries to persons. A portion of imputed interest is numerically equal to the value of financial services received by persons without explicit payment; the remainder represents property income withheld by life insurance companies and mutual financial intermediaries on the account of persons.

## B. Gross National Product (as in table 2, Part V).

Personal Consumption Expenditures consists of the market value of purchases of goods and services by individuals and nonprofit institutions and the value of food, clothing, housing, and financial services received by them as income in kind. It includes the rental value of owneroccupied houses but does not include purchases of dwellings, which are classified as capital goods.

Gross Private Domestic Investment consists of acquisitions of newly produced capital goods by private business and nonprofit institutions and of the value of the change in the volume of inventories held by them. It covers all private new dwellings, including those acquired by owneroccupants.

Net Foreign Investment is the net change in international assets and liabilities, including the monetary gold stock, arising out of the current international flows of goods and services, factor incomes, and cash gifts and contributions. Thus it measures the excess of (1) domestic output sold abroad over purchases of foreign output, (2) production abroad credited to United States-owned resources over production at home credited to foreign-owned resources, and (3) cash gifts and contributions received from abroad over cash gifts and contributions to foreigners. The net transfer of cash gifts and contributions offsets corresponding entries in personal consumption expenditures and government purchases of goods and services.

Government Purchases of Goods and Services measures purchases of goods and services by government bodies, exclusive of acquisitions of land and used depreciable assets and of current outlays of government enterprises. It consists of general government expenditures for compensation of employees, purchases from business (net of sales by government of consumption goods and materials), net government purchases from abroad and international contributions, and the gross investment of government enterprises. Therefore, government purchases of goods and services excludes transfer payments, government interest, and subsidies, as well as loans and other financial transfers outside the scope of income and product transactions.

## C. Personal Income and Disposition of Income (as in

 table 3, Part V).Wage and Salary Receipts is equal to wages and salaries less employee contributions for social insurance, except that retroactive wages are counted when paid rather than when earned.

Proprietors' and Rental Income is the sum of income of unincorporated enterprises and inventory valuation adjustment and rental income of persons as given in the components of national income.

Personal Interest Income measures total interest (monetary and imputed, private and government) accruing to United States persons. The imputed interest component of personal interest income is the same as in national income.

Transfer Payments consists of monetary income receipts of individuals from government and business (other than government interest) for which no services are rendered currently, of government payments and corporate gifts to nonprofit institutions, and of individuals' bad debts to business.

Personal Tax and Nontax Payments consists of the taxes levied against individuals, their income, and their property that are not deductible as expenses of business operations, and of other general government revenues from individuals in their personal capacity. It includes payments for such specific services as are provided within the framework of general government activity. It excludes, however, purchases from government enterprises. Tax refunds are deducted from payments as of the time of refund.

Personal Consumption Expenditures is the same as in gross national product.

Personal Saving is the excess of personal income over personal consumption expenditures and personal tax and nontax payments. It consists of the current saving of individuals (including owners of unincorporated businesses), nonprofit institutions, and private pension, welfare, and trust funds. Personal saving may be in such forms as changes in cash and deposits, security holdings, indebtedness, and reserves of life insurance companies
and mutual savings institutions, the net investment of unincorporated enterprises, and the acquisition of real property net of depreciation.

## D. Reconciliation Items Between National Income and Gross National Product (as in table 4, Part V).

Depreciation Charges represents the charges made by private business against receipts for the current consumption of durable capital goods and comparable allowances for nonprofit institutions. It includes depreciation charges against owner-occupied houses. Depreciation reported by business is not adjusted for changes in the replacement value of capital goods, except for farm enterprises.

Accidental Damage to Fixed Capital measures the value of the physical losses by fire, natural events, and other accidents to fixed capital of private business, not covered by depreciation charges.

Capital Outlays Charged to Current Expense represents new construction and purchases of new durable capital goods included in gross private domestic investment that are charged as current expense by business rather than entered on capital account.

Indirect Business Tax and Nontax Liability consists of tax liabilities incurred by businesses, except corporate income taxes, and other general government revenues from business. It includes all sales taxes. It includes pay-
ments for such specific services as are provided within the framework of general government activity. It excludes, however, purchases from government enterprises. Government receipts from the sale of surplus property are not included in this item. Tax liabilities are net of refunds.

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    Subsidies Minus Current Surplus of Government
Enterprises:
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Subsidies are the monetary grants provided by government to private business.

Current surplus of government enterprises represents the excess of sales receipts over current operating costs of government enterprises. In the calculation of the current surplus, no deduction is made for charges to depreciation or other reserves and interest is not counted in either receipts or costs.

Subsidies and current surplus are shown as a single item because of the difficulties involved in segregating subsidies paid through Federal Government enterprises from other expenditures of these enterprises.

Statistical Discrepancy is the excess of the value of the estimated gross national product computed by the final products method over its independently estimated value computed by adding necessary conceptual adjustments to the national income.

# Sources and Methods of National Income Estimation 

## INTRODUCTION

The statistical methodology underlying United States national income estimates is of interest to two broad groups-to users of the data and to producers of similar and related estimates. The importance of the former group is obvious. The importance of serving the latter group is easily appreciated if it is realized that it includes workers in the entire field of economic statistics, not only in this country but all over the world.
Users of national income statistics are concerned with sources and methods mainly from the standpoint of their bearing on the accuracy of the statistics. The interest of this group in methodological detail is limited because much of it is not germane to the question of the reliability of the estimates. Producers of statistical data, on the other hand, want to learn about sources and methods in order to derive assistance in their related tasks. They are likely to require knowledge in greater detail.

In practice, however this conflict of interests is not too serious. For, as will become apparent; the user of the data cannot form a judgment of their reliability without a considerable acquaintance with statistical methodology. In turn, the interest of the professional statistician in specific detail tends to be limited, because much of it is not applicable to his situation. Hence, in writing the statistical descriptions which follow, it seemed appropriate to plan a compromise that would be helpful to general users of the data as well as to technicians.

## Salient Features of the Statistical Methodology Stages of statistical measurement

Since national income and product are measures of total national output, it might appear that the most direct way to obtain these measures would be to sum the values added to total output by each of the industrial sectors of the economy. In terms of product flows, these values would, in general, be measured as the total product of the industry minus its purchases of intermediate products from other industries. This difference equals the sum of wages, interest, profits and other distributive shares accruing in the industry plus certain additional charges against the value of its production. Seen from this aspect, the summation of industrial values added would yield a measure of output in terms of income flows. If national output were calculated according to this plan, its breakdowns by industry of origin would be the basic statistical building blocks. In fact, however, the data on value added by each industry are not available directly, and total output must be estimated by other procedures.
National income, which is a measure of total output in terms of factor income flows, is estimated by summing estimates of the various distributive shares. Data to estimate these shares are not always available on an industrial basis, and only as the result of often complex supplementary calculations is an estimate of national income by industrial origin obtained.
National product, which is a measure of total output in terms of product flows, is obtained generally by adding component estimates of the purchases of final products by major purchaser groups. Since measurement is restricted to final product flows, the mutually cancelling purchases and sales of intermediate products, which would be necessary to determine the industrial distribution of output, cannot be taken into account
This lack is not felt to be a significant gap in the statistics, since the corresponding breakdown of national income serves most
needs for an industrial distribution of total output. (It may be noted that an indirect measure of gross national product by industrial origin could be obtained by adding to the national income originating in each industry other charges against gross national product and deducting subsidies. However, most of these elements of reconciliation have not been distributed on an industrial basis.)
Moreover, this lack of an industrial distribution of national product is more than counterbalanced by the economic significance of the breakdowns of the product flow by type of purchase: (and also by type of product) which are yielded by the final product approach. In fact, these breakdowns provide essential elements for extending the scope of national income and product statistics beyond the mere measurement of output totals into a comprehensive national economic accounting system providing a statistical picture of the economy.

The components of national income and national product are the core of this picture. The remaining statistical task consists of deriving supplementary breakdowns and series necessary for a fully articulated picture of the economy, mainly in terms of the interrelated transactions of its major constituent groups-businesses, households and institutions, government, and foreign nations.

## The reporting units

Only on a limited scale is reliable statistical information available from individual consumers, because of the general inferiority of consumers' records and other difficulties involved in the collection of data from them. Hence, even over the broad areas in which national income and product flows reflect transactions in which individual consumers are involved, the statistical information for making the estimates is usually derived from the other parties to the transactions-chiefly businesses and government. These sources, in general, are decidedly preferable. The character of the underlying records is superior; the number of reporting units is smaller; and the reporting systems necessary for the procurement of reliable information can be developed more readily.

## Major reporting systems

The entries into the national income and product tables are derived from a multiplicity of statistical sources ranging over most of the essential phases of the Nation's economic life.

A large body of statistical data is collected by the Government, mainly with the intent of providing information which is of general interest to broad user groups. The various censuses-such as the Census of Manufactures, the Census of Business, and the Census of Agriculture-are prime examples in this category. Of equal importance is the statistical information which becomes available as the byproduct of the administrative functions of the Government. The wage and salary data provided in connection with the old-age and survivors and unemployment insurance programs by the Social Security Administration are an outstanding example. Another is the information on the incomes of corporations and of proprietorships and partnerships furnished as a byproduct of Federal income tax administration by the Bureau of Internal Revenue.

Government-produced statistics are the mainstay of national income and product estimates, but they are supplemented by a wide variety of information obtained from private sources, such as trade associations, labor organizations, research organizations,
private educational groups, and religious and welfare organizations.

By any comparative standard the available information for estimating national income in the United States must be judged abundant. Also, long experience in the reporting and collection of economic data, the stringent requirements of Governmental administrative agencies, and emphasis on sound statistical techniques make for a generally high degree of reliability.

The adequacy of the data is steadily improving. Outstanding in this connection is the signal increase in the current reporting of economic information which has occurred in recent years. This development is closely connected with advances in the theory and practice of sampling techniques. This flow of current information has put the preliminary estimates of national income and product, which are made pending the availability of final benchmark data, on a much firmer basis. And, indeed, it has made it possible for these estimates to be made with little time lag and in considerable detail.

## Estimating procedures

In spite of the abundance and general reliability of statistical information, the task of the national income estimator is complicated because the basic data are not collected in the framework of a coordinated statistical program designed to fill the needs of national income measurement. Without significant exception, the reported information is not in a form in which it can be entered directly into the national income and product accounts. It must be processed further to fill gaps in coverage and to adjust for differences in definition. This processing of the data involves procedures that are often quite complex. Although the mathematical operations used are usually simple, involved estimation may be necessary to combine and adjust a multiplicity of diverse sources to produce series that have the coverage and definition required by the national income estimates.

## Reliability of the Estimates

It is clear from this summary discussion of the derivation of national income estimates that they are subject to error. Hence it is important to evaluate the degree of their reliability.

A comprehensive statement of the degree of accuracy of a given estimate is usually thought to involve the specification of a frequency distribution of similar estimates around the universe value. In the field of national income this ideal cannot be approximated. The many source materials and procedures utilized are not of such a nature as to permit calculations of the probable errors in the various income and product series.

The replacement of present estimating methods by the sampling approach would not be a solution. Serious difficulties in applying sampling techniques would be encountered with income and product components for which knowledge about the size and characteristics of the universe was lacking, or whose composition was heterogeneous or subject to rapid change.

Moreover, the sampling errors that could be calculated would provide only partial approximations to the errors in the final estimates. Faulty reporting, willful misstatement, and negligent enumeration are all sources of error in reported data (and hence in the estimates) which are outside the scope of sampling-error measurement. Such sources of error might be checked upon and allowed for; but in the sampling process, as well as in the varied other methods now used in national income estimation, they generally are unknown and hardly ever can be quantified. In practice, they are likely to be much more important factors in the reliability of the national income estimates than are sampling errors.

Thus, the reliability of the national income and product estimates cannot be assessed with mathematical precision. Rather, the main approach must be to make a detailed analysis of the statistical sources and methods underlying them and to use this as the basis for qualitative judgment. The general aim must be
to decide whether the reliability of the estimates is sufficiently high to warrant the specific use intended, and, if this does not appear to be the case, whether the plan of investigation can be simplified to take account of the limitations of the estimates.
This task is admittedly difficult. It is complicated by the fact that throughount the period since 1929 relatively few series of estimates are derived from the same sources and methods, and hence have the same range of error in all parts of the period. Many series are a time-period admixture of sources and methods of widely varying type and quality.

Given this situation, it often will not be fruitful or possible to judge the reliability of the estimates in an over-all sense. The investigator not only will have to take account of general features of the series involved, but often will have to distinguish between benchmark and other-period estimates and make such determinations as whether annual levels or year-to-year changes are principally relevant and whether components are being used in isolation or in relation to other components. Having determined what aspects of reliability are relevant in a particular instance, he can proceed to a study of the national income data with these aspects in mind and obtain optimum results.

## Factors affecting reliability

Consideration of four major factors should prove helpful in forming a judgment about the reliability of estimates of the various components of the income and product flow.
In the first place, one must consider whether the economic units (such as businesses, governmental agencies, or individuals) are reporting on an item which is represented by straightforward transactions of simple definition, or on an item which requires complex calculations on their part or is somewhat vague in definition. In practice, the former case is likely to be associated with the occurrence of monetary transactions.
The second factor to be considered is the quality of the records kept by the economic units whose transactions are being measured. Lack of adequate records leads to less reliable reporting or to an absence of reported data. In either case, the reliability of the resulting estimates is impaired.
The third factor which should be given weight is the reporting system-its character and the quantity of data it produces. The obvious distinction here, as to the former, is between complete census-type coverage and sampling. However, this distinction in itself does not throw much light on the problem of reliability. While, other things being equal, complete enumerations are more reliable than samples-and, for that matter, large samples are more reliable than small ones-the ceteris paribus qualification in this instance deprives the statement of much of its practical significance.

So much depends on the quality of the censuses and of the samples-including the skill and training of enumerators-that only a detailed investigation of all the relevant characteristics can yield well-founded conclusions regarding reliability. Needless to say, such investigations are difficult undertakings and often may not prove conclusive. In particular, recent advances in sam+ pling techniques have considerably narrowed the area over which a flat claim of superiority for the results of census-type reporting can be made.

With respect to the quantity of information yielded by a reporting system, it is first to be observed that large and frequent quantity does not necessarily, of course, make for reliable estimates. But smallness of quantity, even of high quality, results in data gaps impairing the adequacy of an income or product series.
The final point to be considered is to what extent the items that enter the income and product accounts differ from those that are actually reported. Such differences almost always imply that estimating procedures have been introduced. This means an impairment of reliability of the final figures which can be evaluated only by an examination of the procedures. In general, a long and involved estimating chain can be taken as a sign of statistical
weakness, although this rule must be qualified in the light of the adequacy of the supplementary data introduced and of the cogency of the procedures adopted. Simplicity of procedure, however, cannot be taken as an evidence of absence of statistical weakness. It may only mean that reliable data for making necessary adjustments are not available, and that summary, arbitrary assumptions have been used instead.

## Application of factors to broad income and product components

It may prove of interest and value to test some of the major components of national income and product against these four criteria of reliability. For brevity this is done in a very general way, and with frequent resort to personal judgments of the type which have sometimes proved erroneous in the past.

Considering first the components of national income, there can be no doubt that wages and salaries rank highest in reliability. This conclusion is based on the relative simplicity of the concept, the comprehensiveness and high quality of the record-keeping and of the reporting system (both to a large extent byproducts of the Social Security system), and the fact that the adjustments to the reported totals that are necessary to bring them into conformance with the requirements of the income and product accounts are small and well-founded statistically. In this instance the statement seems warranted that the departure of the annual estimates for the past decade from their true value is probably very small. Any marked lowering in the quality of the 1929-39 estimates is precluded by the fact that periodic industrial-census results and the sample wage indexes compiled by the Bureau of Labor Statistics are available to extrapolate the Social Security based series.
The estimates of rental income of persons are on the other end of the reliability scale. In this instance, a profit-type income is involved, the definition of which to the reporting unit must always be complex and somewhat vague. Both record-keeping and reporting systems are fragmentary and poor, and the estimating procedures which are necessary to convert reported data into national income entries are unusually complex and tenuous.

Estimates of the other income shares range between these two extremes on the scale of reliability. Supplements to wages and salaries follow wages and salaries closely. Large parts of them are as well-founded as the wage and salary data, for reasons that are essentially similar. Supplements rank somewhat lower because their "other labor income" component includes certain items which are statistically less well-founded, especially for recent years.

On the lower end of the scale the "income of unincorporated enterprises and inventory valuation adjustment" may be considered as superior to rental income. The problems of calculating entrepreneurial income confronting the reporting units are similar to those involved in the calculation of rents-both constitute a type of profit income. Records and reporting systems are, however, somewhat more satisfactory than in the case of rental income; and the estimating procedures that are applied to the reported data are somewhat more direct and incorporate better information. It should be noted, however, that the entrepreneurial income estimates are subject to very significant shortcomings when compared with the other income shares.
Broad generalizations of this type, it is recognized, are not apt to be of much concrete help for any particular use of the entrepreneurial income data. For one thing, the estimations of farm and nonfarm incomes, although handicapped by certain common limitations, are fundamentally dissimilar. There is no parallel in the nonfarm segment to the Department of Agriculture's systematic long-period study of farm income and development of reporting sources. And the estimation of farm income has no counterpart to the necessary heavy reliance that is placed upon income-tax return information in deriving the net income of nonfarm unincorporated enterprises. Moreover, the data and procedures used to estimate farm income since 1929 are characterized
by substantial uniformity over the period, whereas those underlying the nonfarm total vary widely in different subperiods.

Corporate profits before tax are a series whose probable deviation from true universe values must be adjudged smaller than that of any of the other distributive shares except employee compensation. The definition of profits is not simple, and measurement at the level of the individual business firm involves complicated computations that can be performed with varying accounting criteria. Yet the quality of corporate records is surely good, and the reporting system developed over a period of many years by the Bureau of Internal Revenue doubtless has gone far towards standardization of reporting. This system has produced comprehensive annual data not requiring unduly large estimating adjustments before inclusion in the national income tables.

In judging the corporate profit series, two limiting aspects should not be overlooked. First, the estimates for recent years are not based on Bureau of Internal Revenue tabulations, in which there is a 2 -year lag, and are less firmly grounded. Secondly, the addition of the "inventory valuation adjustment" to corporate profits before tax appreciably reduces the statistical reliability of the profit series. This adjustment-designed to put inventories charged to cost of sales on a uniform and current pricing basis, differing from the pricing practices followed in business account-ing-is introduced because it is thought to constitute a significant improvement in the economic meaningfulness of the statistics. But the adjustment is based on information that is slender and procedures that are complex and subject to error.
The remaining income share, net interest, is based in part on corporate sources of data (obtained mainly from the Bureau of Internal Revenue), but its reliability is weakened by the inadequacy of information on interest flows originating in certain major noncorporate areas, and by the general lack of reliable data for the latest years.

Govemment purchases of goods and services are highest on the scale of reliability among the components of gross national product. Were it not for certain problems involving the timing of purchases which are important when the level of Government expenditures is changing sharply, the data for the Federal Government would parallel the quality of the wage and salary estimates, using the criteria of definitional clarity, quality of recordkeeping and reporting, quantity of available information, and the statistical foundation of the estimating adjustments. However, the problem of timing, together with the fact that the series on State and local government purchases is less well-founded than the Federal series, reduces the reliability of the combined government purchases series below that of wages and salaries.

The estimates of change in business inventories probably rank lowest on the product scale. The measurement of inventories presents substantial problems of cost allocation and pricing to reporting units, and for important segments of the noncorporate economy records are not adequate and reporting is unsatisfactory, especially for recent years. More important, however, is the fact that the change in business inventories represents the difference between large and volatile annual totals, and hence is subject to significant percentage errors. Also the reported inventory data require substantial estimating adjustment. Involved in the measurement of nonfarm inventory change is the inventory valuation adjustment, the inadequacy of which was noted above in the comments on corporate profits.

Estimates of producers' purchases of durable equipment and of personal consumption expenditures for commodities-both based largely on producers' records-follow government purchases in reliability on the product side. The definitional problems confronting the ultimate reporting units do not loom too large; record-keeping and reporting are relatively adequate; estimating procedures applied to the reported basic data are fairly complex and reduce reliability, particularly in the case of consumer commodities, but on balance, the two series must be rated rather high. These generalizations, it is important to add, refer to the methodology adopted
for years for which benchmark data are available. For recent period estimates, the evaluation would be less favorable.

The series on personal consumption expenditures for services is based largely, but by no means exclusively, on producers' sales records. The concept of sales is simple, and comprehensive, censustype reporting systems yield generally reliable data for items comprising the bulk of the total. The estimation problem is simplified by the absence of intermediary enterprises between the producer and consumer and by the comparatively small extent to which reported sales must be adjusted for the elimination of sales to nonconsumers. But reliability is significantly lowered by the fact that many of the comprehensive sources on which heavy reliance is placed become available only rather infrequently. Of lesser effect is the inadequacy of materials for many of the 125 items comprising the services total.

The field of private construction is an extremely difficult one for statistical estimation. The concept of "value of work performed" used in the new private construction series is not a simple one on which to report, and consequently little of the reported information is obtained on this basis. Neither enumeration nor sampling is well suited for establishing universe levels, and complex statistical methods are necessary to adjust for the coverage gaps and timing deficiencies of data secured through varied reporting systems.

The estimates of public construction are much more firmly based, mainly because of the comprehensiveness and superiority of Federal agency records. However, these estimates are not an independent component of gross national product, but are used only in obtaining a breakdown of total government purchases.

Estimates of individual series entering into the computation of net foreign investment are based on a great deal of solid statistical information, But this component of gross national product is derived as the difference of large minuends and subtrahends. Consequently, substantial percentage errors are likely, especially in years when the absolute magnitude of the component is small.

Personal income is more reliable than national income. The major items included in personal income but not in national income (government transfer payments and government interest) are reliable. The exclusions that are made either do not affect reliability (such as the accurate deduction of social insurance contributions from employee compensation) or else actually increase it (such as the deduction of the corporate inventory valuation adjustment and all other components of corporate profits except dividends).

With respect to the disposition of personal income, the major point relates to saving. This item is the difference between large totals, and is therefore subject to large percentage errors. Supplementary information that should be considered in interpreting the reliability of this component of the accounts is discussed in the section of the methodological descriptions dealing with personal saving.

Although a study of the methodology underlying the national income and product estimates is the main basis for an evaluation of reliability, there are two other types of evidence whose examination throws light on the subject. The first is the record of the "statistical discrepancy;" the second is the record of the revisions that are made of the estimates as originally published. These two will be discussed in turn.

## Significance of the statistical discrepancy

The "statistical discrepancy" measures the excess of the gross national product as estimated by summing its component product flows over the gross national product as estimated by summing components of the national income and all other charges against the total value of gross national product. It arises because of errors in the component estimates, and hence is relevant to the problem of reliability.

In the national income and product account the statistical discrepancy is entered on the debit side, as an item reconciling national income with charges against national product. This manner
of entering the statistical discrepancy is purely a matter of convenience. It permits the two most widely used aggregates-national income and gross national product-to be broken down into component items which do not include the "statistical discrepancy." It does not signify that the national income and the gross national product have been correctly estimated, and that the error has been made in the estimation of one or more of the items reconciling the two. Quite to the contrary, it is likely that the aggregates are affected whenever a statistical discrepancy appears.

The statistical discrepancy appears also in the business income and product account, and similar comments apply to the form in which the entry is made there. It may be noted that in the accounts as shown the item always reflects discrepancies between the estimates of business income and production. This is so because business income and production are obtained statistically by making consistent deductions for nonbusiness income and production from the two sides of the national income and product account. Hence, the results of all estimating inconsistencies, whatever their origin, are shifted into the business account.

The adjustment for statistical discrepancies appears also in the gross saving and investment account. Again the manner in which it is entered (on the credit side, as a component of saving) is arbitrary. A statistical discrepancy signifies an error either in total saving and/or total investment.

The statistical discrepancy is a measure of the difference in error between the two estimates of the total gross national product. While its presence is conclusive evidence that errors have been committed, a zero discrepancy does not constitute proof to the contrary. Strictly speaking, the discrepancy measures lack of consistency, and it does not register absolute errors which compensate in the accounts. To the extent, however, that the sources and methods of estimating the components of the credit and debit sides of the national income and product account are independent-in the sense that errors committed in estimating components on the one side do not involve corresponding errors on the other-it is reasonable to give some weight to the statistical discrepancy in evaluating the reliability of the totals. In these circumstances, greater confidence can be attached to the value of the national income and product totals if the size of the discrepancy is small than if it is large.

## Degree of independence of income and product estimates

It is important, therefore, to consider to what extent the two sides of the income and product account are in fact independent as to statistical sources and methods. Quantification is not possible, but certain relevant considerations can be presented. These are of a summary nature and should be supplemented by the detail contained in the following statistical notes.

It is not possible to classify the estimates of the various components of the income and product flow into two neat groups, consisting of those that are based on independent sources and methods, on the one hand, and of those lacking such independence, on the other. In fact, the estimates range over a wide scale.

Largely due to the utilization of social security data, the estimates of employee compensation are the outstanding example of a close approximation to statistical independence on the income side of the accounts. Even this statement has to be qualified, because certain components of these estimates are entered identically on the product side (for instance, the sizable item for domestic service).

A second example of a high degree of statistical independence is provided by the estimates of government purchases, on the product side of the accounts. The degree of independence is probably somewhat smaller in this instance, because estimates of government employee compensation, in the national income, are based upon records and reporting systems related to those upon which the estimates of government purchases are made. However, in spite of this qualification, the degree of independence is very large.

While, on the other end of the scale, there is considerable interdependence of statistical methodologies, no major component of the
income or product flow can be said to lack independence completely. However, the opportunity for consistent error is also wide. In particular, there is substantial interdependence between the business income components of the national income and the estimates of several of the components of the product flow. This is so because inventory and sales data are used in a related fashion.
The inventory valuation adjustment is perhaps the most clearcut example of such a relationship. It is made in the form of identical entries on the income and product sides, consisting of an adjustment to the income of unincorporated enterprises and corporate profits, on the one hand, and to the change in the book value of inventories, on the other, in the measurement of the change in nonfarm business inventories.
Moreover, there is close interrelation between the estimates of unincorporated enterprise income and corporate profits and the change in the book value of inventories. For benchmark-year estimates, errors in corporate inventories result in identical errors in corporate profits, since both estimates are based on balancing corporate accounts submitted to the Bureau of Internal Revenue. For noncorporate business inventories, the offset is complete in the case of farming, and it tends to hold for other unincorporated business to the increasing extent that the estimates are based upon balanced accounting data similar to those used for corporations.
Instances in which related sales or gross receipt series underlie the estimates of both business profits and product flows are analytically similar, although in statistical practice effective interdependence is usually reduced. Clear-cut examples are afforded by the rent and professional service estimates. Errors in gross dwelling rents and in the estimates of gross receipts of professional practitioners from consumers affect both personal consumption expenditures for services and the corresponding business incomes, although not necessarily to the same extent. The same type of relationship can be found in other areas of business income, unincorporated as well as corporate, although it may be attenuated by the particular statistical procedures adopted, or harder to trace because of a less explicit coordination of them.
In the examples of interdependence hitherto given, all reference has been to instances in which for accounting reasons errors in the estimates of the product components must lead to offsetting errors in the income components. It may be noted that complete interdependence is not involved. Independent errors are still possible, for instance, when in deriving business profits current expenses are wrongly reported or estimated.
So far no reference has been made to compensating errors which are a matter of statistical probability rather than accounting necessity. For instance, when wage and sales data are taken from identical sources, lack of complete coverage of the basic reports may lead to similar errors in both items. However, this need not be the case. Both in census-type reports and in sample-based estimates, the error in the one component may differ from that of the other. Prior to the introduction of the social security data, the United States estimates were susceptible to this type of common error to an important extent. Large segments of the estimates of wages and salaries and of the product flow were derived from identical, industrial census, sources. Since the utilization of social securitydata, there do not appear to be any important areas of the income and product flows in which this type of error is significant.
The statistical discrepancy measures the net residual of error which remains after the best possible estimates of the various components of the income and product flow have been made. If initial estimates of the components lead to a large statistical discrepancy or to erratic movements in it, they are reexamined and an effort is made to trace the source of the discrepancy and to eliminate it as far as possible. This reexamination of the initial estimates consists mainly of a critical comparison of the methodology of the component estimates for error and inconsistency. This is an essential step of the estimating procedure which cannot be taken by the individual estimators responsible for the preparation of the
component series, but must be reserved until initial estimates of all the components have been prepared. While significant improvements can sometimes be made in this manner, a residual discrepancy will remain.

The suggestion has been made that this residual discrepancy should be eliminated, either by the exercise of further judgmental decisions of the type used in reducing it from its initial size, or by the application of more formal mathematical procedures that tend in the direction of greater objectivity. Superficially, complete elimination of the statistical discrepancy would be desirable, from the standpoint of convenience to the users of the data. Basically, however, it would be harmful. A statistical discrepancy of substantial size or irregular movement reflects troublesome errors in the estimates. If this is the situation, the users of the data should be aware of it so that they can exercise due caution in the application of the estimates in economic analysis.

## Characteristics of the revisions

Recent-year estimates of national income and product are based on incomplete data and are revised as additional information becomes available. A few of the components do not undergo significant revisions after the publication of the initial estimates, but this is not the usual case. Fairly widespread revisions can be expected in the estimates for the two most recent years because of the lag in the availability of Bureau of Internal Revenue income tax return data, which serve as benchmarks for many of the component estimates. Revisions extending further back reflect the incorporation of census information which is obtained at intervals which can range up to 10 years. In certain, much less frequent, instances, improved sources and/or methods may become available which call for revisions over an even longer number of years.
Thus, it is important to keep in mind that recent-year estimates are less reliable than those for earlier years; that the estimates for the last 2 years are particularly subject to revision on a broad scale; and that the degree of finality of the estimates for all years should also be judged by reference to the time-table of the basic census enumerations. At the present juncture, for instance, recent census results, such as those of the Census of Manufactures for 1947, the Census of Business for 1948, and the Census of Population and Housing for 1950 have not yet been systematically incorporated into the estimates. As these censuses had not been taken since before World War II, many component estimates for the last decade represent extrapolations and may be changed by introducing new benchmarks and revised interpolations and extrapolations.

Some inferences as to reliability can be drawn from the record of the revisions which initial estimates of the income and product flows underwent in subsequent years. Frequent and large revisions in the estimates are a positive evidence of lack of reliability. However, absence of sizable statistical revisions can be taken as positive evidence of reliability only if the more recent estimates incorporate additional information which is known to be more reliable. In this case meaningful judgments as to the relative reliability of recentyear estimates as compared with later benchmark estimates can be made. But it is not possible to go further than this. Absence of revisions in estimates of several significant components of the income and product flow reflects only a lack of data accretion subsequent to the publication of the initial estimates, rather than constituting a positive sign of reliability.

With reference to the national income and product aggregates, it may be said that since their publication on a new basis in July 1947, the revisions in the initial estimates have been very moder-ate-generally less than 1 percent. The national product estimates for the year 1946 and the national income estimates for the year 1947 provide exceptions to this statement. In the former case, the initial estimate was $31 / 2$ percent below the one now used; in the latter case, the initial estimate was 2 percent higher.

Revisions of the annual changes initially shown by the totals were much larger, of course, in these years. The worst record was
with respect to the decrease from 1945 to 1946. In this instance, the initial estimate was cut by more than one-half, from $\$ 9.4$ billion to $\$ 4.1$ billion for the gross national product and from $\$ 4.6$ billion to $\$ 2.4$ billion for the national income.

In further qualification of these comparisons, it should be recalled that the estimates do not yet incorporate the results of the basic censuses taken in recent years. Hence they show the reliability of initial estimates as compared with interim revisions which differ from them mainly because of the incorporation of Bureau of Internal Revenue data. A comparison of the initial as well as interim revisions with estimates incorporating the census results (and hence not likely to be subject to further significant changes) is not yet possible.

The percentage revisions in the national income and product totals are much smaller than those in some of their components, as will be noted specifically in the notes on methodology. To a substantial extent, this is due to the effect of offsetting errors. According to past experience, such errors may be counted upon to increase the reliability of the estimates as their finest components are added to obtain broader subtotals.

The national income and product series are published in considerably greater detail than is warranted by the statistical reliability of some of the ultimate components. While it would be hazardous to attach precise significance to the level and movement of these components, offsetting errors make it feasible to recombine them into reliable subtotals differing from the published ones and better adapted to specific types of economic analysis. It is in order to facilitate judicious recombinations of this type that some of the detail (in particular recent-year detail on the industrial origin of some of the income shares and on the product breakdown of some of the consumer commodity and service flows) is published, and one should be aware that the use that can be made of these series in isolation is very limited.

## Allowing for statistical error

The foregoing survey suggests no easy way of providing the users of national income data with measures of statistical reliability. Relevant quantitative measures are not available; and, owing to the basic nature of the data, the prospect of their ever being constructed on a comprehensive scale appears quite limited. A study of the statistical methodology underlying the national income estimates, supplemented by analysis of the statistical discrepancy and of the revisions, will remain the major avenue for obtaining an evaluation of their reliability. If best use is to be made of national income statistics, their reliability will have to be evaluated concretely on the basis of this evidence, from the standpoint of the specific economic problem at hand.

While the task of evaluating statistical reliability confronting the user of national income data is difficult, it should also prove rewarding. Analysis of methodology and of relevant supplementary evidence will forestall many misuses of the data. It will lead to more effective utilization of the data by channelling them into uses warranted by their nature and degree of accuracy. It will serve to make the informed user wary of many seemingly significant conclusions that are drawn from small changes in the data which are obviously well within their margin of error. Also, for any analysis an awareness of hitherto unknown limitations of particular national income series may demonstrate the advisability of marshalling all other relevant information, within and outside the scope of national income. Clearly, if the evidence is supportive and consistent, greater confidence can be attached to the indicated conclusions than if the evidence is contradictory.

Finally to be noted is that the suggested approach to evaluation of reliability is methodic, even though presently permitting quantitative definiteness in only few instances. Large strides may be anticipated from the integration into it of the results of further work and experience. For it must be recalled that official national income work in the United States spans less than two decades,
and that the new and expanded series were established only in 1947. The scope for analysis of methodology will be substantially expanded over time with the continued improvement of source materials, the opportunity for testing past sources and the procedures applied to them, and a broadened basis for analyzing the record of revisions. The statistical notes and related material presented in this report represent only a start in the indicated direction.

## Aim and Plan of Statistical Descriptions

The following sections in this Part deal with the sources and methods used in estimating the income and product flows. Insofar as feasible, the sections are written according to a uniform plan.

An introductory part first discusses the general nature and reliability of the series. Next follows a discussion of methodology, covering both base-year, or "benchmark" year, estimates and their extrapolations, whenever such a distinction is relevant. This discussion is intended largely as an evaluative review but also contains considerable descriptive material, with the dual objective of giving information about the principal methods used and affording an independent basis for judgment about reliability. Concluding remarks are made on the characteristics of revisions in instances in which a separate discussion of this subject appeared pertinent.

Only the annual estimates are covered by the sections on sources and methods. No reference is made to the monthly or quarterly series, or to the summary annual data derived from them which are published each February in the Annual Review Number of the Survey of Current Business.

In general, more emphasis is placed on recent-period estimates than on those for the period, say, 1929-39; and the discussion is aimed principally at covering the totals of the various components, rather than their industry or commodity breakdowns per se. Nevertheless, a considerable amount of information on these breakdowns is introduced, as it often is relevant to an evaluation of the broader categories and also is of substantial interest to users of the estimates.

The various income and product components selected for discussion cover all of those listed in the first four tables in the statistical section (Part V) of this report. These are the summary tables on national income by distributive shares, gross national product or expenditure, personal income and its disposition, and the relation of gross national product, national income, and personal income. At the end of this introduction is provided a summary of the stubs of these four tables, cross-referenced against the numbers of the various sections on sources and methods.

In the following descriptions of sources and methods numerous "exhibits", or supporting tables of data, are presented. Most of these exhibits refer to 1947. This year was chosen because the 1950 estimates (and the revised figures for 1948 and 1949) were not completed until after the text had been written and sent to press.

Although geared directly to the first four tables, the following sections on methodology furnish partial or complete coverage of nearly all of the other 35 tables of annual estimates. Many of these tables relate to income flows by industry. As already indicated, the discussions of the various distributive shares give considerable attention to their industry breakdowns; but national income by industrial origin, which is obtained statistically by aggregating these individual-share breakdowns, is not separately discussed. It is convenient at this point, therefore, to give consideration to an important summary aspect of the industry data-the basis of industrial classification underlying them.

## Industrial classification of national income

The industrial distribution of national income is based primarily upon a classification of establishments rather than of companies, or firms. Use of the word "primarily" connotes a statistical exception (noted below), not one of definition.
The establishment is the preferred unit since it yields an indus* trial classification much closer to an activity basis than does the

Industrial Classification for the National Income ${ }^{1}$

${ }^{1}$ Numbers refer to the code numbers in the Standard Industrial Classification Manual (Government Printing Office, 1942), the Social Security Administration Industrial Classification Code (Social Security Board, 1942 , mimeographed) and the Bureau of Internal Revenue Instructions for Coding Industrial Activity with respect to corporation income and excess profits tax returns (Income Tax Unit, 1942 edition, mimeographed). I.ater editions of these codes have been issued, but the differences between these classifications and that of the National Income Division are so pervasive that it is not feasible to present a comparison here. General adoption of these codes by data-gathering agencies will prevent continuation of the industrial classification scheme used in this report.
the $^{2}$ All eatablishments operated by government agencies or corporations are classified in the Government and government enterprises industrial division, regardless of their classification in the three codes with which comparison is made.
87,99 and ${ }^{3}$ Theau of Internal Revenue "not allocable" groups (BIR 16, 43, 450, 470, 68, 78, 1,9 and 00 ) are not indicated in the table.
${ }^{\text {- LLecal National Income Division classification includes irrigation system operation in }}$ 'Local utilities and public services, n. e. c."
${ }^{5}$ Industry 52 is divided between wholesale trade and retail trade.
${ }^{6}$ In National Income Division classification, includes insurance agents, brokers and services, and establishments regularly engaged in any combination of real estate, insurance, oans, or legal activities when none of these activities alone constitutes the principal busiaess of the establishment.
${ }^{1}$ In National Income Division classification, includes also local bus lines.
${ }^{8}$ In National Income Division classification, excludes local bus lines and toll roads, highway bridges, terminals, etc.
${ }^{2}$ In National Income Division classification, excludes services incidental to water transportation.
${ }^{10}$ In National Income Division classification, excludes sight-seeing and "taxi", airplane service, and airports and flying fields.
${ }^{11}$ In National Income Division classification, includes also toll roads, highway bridges, terminals, etc.; services incidental to water transportation; sight-seeing and 'taxi" airplane service; and airports and flying fields.
${ }^{12}$ In National Income Division classification, excludes organization hotels and lodging ${ }^{12}$ In National Income Division
houses (on membership basis).
${ }^{13}$ Not in Bureau of Internal Revenue Instructions for Coding (Corporate) Industrial Activity.
${ }^{14}$ In National Income Division classification, includes private cmployment agencies.
${ }^{3}$ In National Income Division classifeation, excludes private employment agencies and includes accounting, auditing and bookkeeping services.
${ }^{16}$ Includes all Federal Government agencies and operations, except those included in the industry, "Federal-govermuent enterprises".
${ }^{17}$ The following list enumerates all Federal enteprises: Agricultural Marketing Act Revolving Fund, Alaka Railroad, Army Post Exchanges, Banks for Cooperatives, Bonneville Power Administration, Boulder Canyon Project, Conmodity Credit Corporation, Defense Homes Corporation, Defense Plants Corporation, Defense Suppits Corporation, Disaster Loan Corporation, Electric Home and Farm Authority, Emergency Crop and Fced Loan Program, Export-Import Bank, Federal Crop Insurance Corporation, Federal Deposit Insurance Corporation, Federal Farm Mortgage Corporation, Federai Lome foan Banks, Federal Housing Administration, Federal Intermediate Credit Banks, Federal Fand Banks, Federal National Mortgage Association, Federal Prison Industries, Inc., Federal savings and ioan nsurance Corporation, iome Owners ioan Corporation, Resand Company, Navy Ship Stores and Ship's Service Stores, Panama Canal Zone, Panama Railroad Company, Petroleum Jeserves Corporation, Post Office, Production Credit Corporations, Public IIousing Administration, Reconstruction Finance Corporation, Regional Agricultural Credit Corporations, RFC Mortgage Company, Rubber Development Corporation, Rubber Reserve Company, Rural Electrification Administration, Snaller War llants Corporation, Tennessee Valley Authority, U.S. Commercial Company, War Damage Corporation, War Shipping Administration (commercial operating and war risk insurance activities).
:s Includes all State and local government agencies and operations except those included in the industry, "State and local-government enterprises".
${ }^{19}$ Includes State workmen's compensation funds and undertakings classified as enterprises by the Bureau of the Census, such as alcoholic beverage monopolies; water, electric, gas, and transit systems: housing authorities; and other large commercial activities involving significant amounts and operated and accounted for as enterprises.
${ }^{20}$ Includes foreign countrics, United States territories and possessions and international organizations.
use of the company. It also largely prevents discontinuities due to mergers or other changes in the structure of ownership.

Industrial classification by establishments, for example, places in bituminous coal mining a soft coal mine owned by a corporation engaged primarily in the production of iron and steel products, whereas classification by companies places it in the iron and steel industry. The establishment classification, nevertheless, is quite different from an activity or product classification since many establishments produce secondary products which fall within industries other than those in which their major products are classified. Force-account construction is an important special type of secondary product.

The establishment basis is used for the industrial classification of wages and salaries, supplements to wages and salaries, income of unincorporated enterprises and inventory valuation adjustment, and interest paid by noncorporate enterprises. But, because of statistical necessity, the company basis of industrial classification is used for corporate profits, the corporate inventory valuation adjustment, and interest paid and received by corporations.

The data for these items are all calculated from tabulations of corporation income tax returns filed with the Bureau of Internal Revenue. During the years from 1934 to 1941 such returns were filed by every corporation, with certain exceptions, and separately classified by industry. From 1929 through 1933, and again in 1942 and subsequent years, affiliated corporations were permitted to file consolidated returns. More precisely, then, from 1934 to 1941 the unit of classification for corporate profits and corporate interest is the individual corporation; from 1929 to 1933 and from 1942 on it is a corporate unit consisting of either a single corporation or of affiliated corporations.

Because the bulk of total income originating is comprised of distributive shares which are classified by establishments, and because of the probable tendency for subsidiary activities of corporations operating in more than one industry to be offsetting, it is unlikely that the industrial distribution of the total national income is seriously distorted by the use of a company, rather than an establishment, classification for corporate profits and corporate interest. This is a serious limitation, however, on the comparability of the distributive share estimates for some industrial groups, and one which should be considered carefully by those who use the data for particular industries.

For the technical users of the estimates of national income and the various distributive shares by industry, the accompanying table provides a comparison of the industrial classification underlying these estimates with the classifications presented in the 1942 edition of the Standard Industrial Classification Code, the 1942 edition of the Social Security Administration classification, and the 1942 edition of the Bureau of Internal Revenue Classification Code. Differences between the National Income Division code and the 1942 Standard Industrial Classification Code (published by the Division of Statistical Standards of the Bureau of the Budget and recommended for use by all agencies classifying data industrially) were dictated, for the most part, by statistical necessity.

In 1945, a revised edition of the Standard Industrial Classification Code for manufacturing industries was released by the Division of Statistical Standards, and in 1949 a revision of the same code for nonmanufacturing industries was issued. The changes in the manufacturing code were extensive, so that the new code differs markedly from that followed by the National Income Division.

The new codes have not been adopted by the National Income Division because not until very recently have statistical data classified on the new basis become generally available. The wage and employment data for manufacturing collected under the operations of the State unemployment insurance programs were classified according to the new code beginning with 1947. This has necessitated a difficult conversion to the old code basis. A similar problem arose this spring (1951) with the 1948 corporate tabulations for manufacturing provided by the Bureau of Internal Revenue.

## GUIDE TO SECTIONS ON METHODOLOGY

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| Plus: |  |
| Net interest paid by government Transfer payments | 14 |
| Equals: Personal income_ |  |

## 1.-WAGES AND SALARIES ${ }^{1}$

The annual estimates of total wages and salaries for the last decade are extremely reliable. Over 90 percent of the total consists of reported payroll information taken from accounting records of business and government. The lag between preliminary and final estimates is short, and the largest revision that has been required in recent years by the accession of later data has been 1 percent of the total.
From the standpoint of sources and methods, the estimates may be divided into those covered by the social security systems and those not covered. The former include virtually the whole of industrial and commercial employment. They account for almost 80 percent of total wages and salaries and almost 95 percent of privateindustry wages and salaries.
The area of the economy not completely covered by social security, and therefore estimated independently, consists of government, agriculture, private households, and a few quantitatively minor industries. The following tabulation shows a breakdown of wages and salaries into the segments estimated from different sources.

Exhibit 1:-Wages and Salaries, 1947

| Item | Millions of dollars | Percent |
| :---: | :---: | :---: |
| Industries covered by social security programs. | 97,199 | 79.6 |
| Industries not covered: |  |  |
| Federal Government. | 9,803 | 8.0 |
| Farms and local governments | 7.436 | 6.1 |
| Private households | 2,837 2,210 | 2.3 |
| Nonprofit hospitals. | 783 |  |
| Religious organizations, | 359 | . 3 |
| Edueational services (part) | 595 | . 5 |
| Nonprofit organizations, n. | $\begin{array}{r}135 \\ 52 \\ \hline\end{array}$ | . 1 |
| Forestry (part) | 36 | . 03 |
| Rest of the world.- | 17 | . 01 |
| Tips (in all industries) | 597 | . 5 |
| Total wages and salaries | 122,059 | 100.0 |

## Industries Covered by Social Security Programs

## Total payrolls

The reporting system that has been developed under the Social Security and Railroad Retirement Acts approaches the ideal as a source for income estimates. It has the advantages of comprehensive coverage, regularity of reporting, and of being largely "selfpolicing", in that the wages reported by employers-upon which the size of benefits partly depends-can be verified by the employee. Because the reports from every firm list the employees and their wages individually, unlike other enumerative surveys, the possibility of omissions and accounting errors is minimal. Reported figures account for practically the entire total of wages and salaries in covered industries; only about 1 percent of the total must be filled in by estimation.
In industries covered by the Old-Age and Survivors' Insurance program (OASI), each employer with one or more employees files a quarterly list of his employees and the taxable earnings paid to each employee-through 1950, the first $\$ 3,000$ earned during the calendar year (thereafter, the first $\$ 3,600$ ). Taxable payrolls are compiled from these lists for each calendar quarter and an estimate added for delinquent employers. The four-quarter sum of these totals represents about four-fifths of the total wages of these firms.
Nearly all of nontaxable earnings in employment covered by the OASI program is reported under the State unemployment insurance (UI) programs. The State agencies obtain from employers covered by their programs regular quarterly reports on both total and

[^6]taxable payrolls and summarize these reports for the Burcau of Employment Security of the Department of Labor. Taxable carnings under the OASI program and nontaxable earnings reported to the State unemployment insurance agencies together represent in most years more than 90 percent of total wages and salaries in industries covered by the Social Security Act.
The two sources are not quite complete because some of the UI programs exempt firms with few employees (ranging at present from 1 to 7, according to the individual State laws) and firms in business intermittently or for short periods. As such firms are covered by the OASI program, only their nontaxable wages must be estimated. This is done by a method developed in the Social Security Administration. The taxable payroll of firms not covered by the State laws is multiplied by a ratio of nontaxable to taxable earnings. The first of these factors, the taxable payroll, is obtained by subtracting taxable wages paid under the UI programs from taxable wages under the OASI program. The second factor, the ratio, is approximated from UI data and then adjusted, by use of a 1943 OASI study, to apply to firms not under the UI program.

The over-all wage and salary estimates for industries covered by the Social Security Act are thus built up as the sum of (1) taxable earnings reported under OASI, (2) nontaxable earnings reported under UI, and (3) estimates, based on social security data, of nontaxable earnings in these industries not reported under UI.

Total wages paid under the Railroad Retirement Act are ascertained in much the same way. Wages taxable under this program -the first $\$ 3,600$ for each employee-are reported quarterly to the Railroad Retirement Board, which processes and tabulates these data. The Board has an accurate basis for raising taxable wages to the total, by multiplying them by the ratio of total wages reported by employers to the Interstate Commerce Commission to the taxable wages of the same employers, which account for about 95 percent of taxable compensation.

All of the figures necessary for computation of the "covered" wage and salary total are available 6 months after the period in which the wages were earned. Thus in Junc of each year data are available for the previous year. The figures are subject to revisions of two types: (1) Correction of errors in reported data and (2) substitution of actual data from delinquent reports for the earlier estimates of delinquent wages. In the past, revisions of either type have been negligible.

The relation of the reported to the estimated elements of wages and salaries for covered industries is shown in Exhibit 2. This covers the 1947 estimates prepared for publication in July 1950. The estimated portion was less than 1 percent of the total. In the first estimates for 1947, published in July 1948, the estimated portion was higher- 4.7 percent-because of the necessary higher allowance for delinquent wages.

| Industries, 1947 <br> [Millions of dollars] |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | Total | Reported ing employers | Estimated |
| ndustries under Social Security Act: | 78,011 |  | 74 |
| Taxable wages-..- | 14,077 | 13,614 (UI) | 63 |
| Minor adjustments. | + |  |  |
| Industries under Railroad Retirement Act: <br> Taxable wages. | 4,744 | 4, 74 |  |
| Nontaxable wages.- |  |  | 3 |
| Total wares and salaries, covered industries | 97,199 | 96,295 | 904 |

I Estimated delinquency as of May 1950.
Nontaxable wages paid by employers not covered under $S_{\text {tate }}$ laws.
Net adjustment to climinate covered portion of farming, which is treated separately by the National Income Division, and to complete the coverage of agricultural services.

## Industrial distribution of payrolls

The method used to derive an all-industry total of wages and salaries cannot be followed satisfactorily for the separate indus-
tries, chiefly because old-age and survivors insurance data have not until recently been collected or tabulated on an establishment basis. As noted in the Introduction to this Part, this is preferred to the company basis of classification.

The preparation of an industry breakdown of the covered payroll total relies heavily on the Bureau of Employment Security's reports summarizing wages and salaries under the UI programs, in which the establishment basis of classification is used. This source and the Interstate Commerce Commission's Statistics of Railways reports together provide accurate, employer-reported data by industries for about 95 percent of total covered payrolls.

The missing part consists of the payroll of firms (1) covered by the OASI program but not by the State laws and (2) covered by the Railroad Retirement Act but not reporting to the Interstate Commerce Commission. The latter element, quantitatively very small and affecting only a few industries, is estimated from data furnished by the Railroad Retirement Board. A satisfactory basis for estimating the former is furnished by special tabulations of oldage and survivors' insurance data showing by industries the taxable payroll of the small firms not covered by the State laws. These are available for the third quarter of 1940 and 1943 and the first quarter of each year beginning with 1945.

For nearly all covered industries, the process of obtaining provisional estimates (before adjustment to the controlling total) involves simply the addition of these OASI and Railroad Retirement Board data to the comprehensive data reported under the UI programs and by the Interstate Commerce Commission. This general method was departed from only in those few instances where more reliable data were available from other sources or where the portion of employment in firms not covered by the unemployment insurance data was so large as to suggest use of another procedure. The industries thus receiving special treatment include "agricultural services," "forestry," "fisheries," "banking" (prior to 1943), "water transportation" (prior to 1947), "personal services" (prior to 1947), "medical and other health services," and "legal services." The data utilized in making estimates for these industries were obtained from the population and industry censuses, the Maritime Commission, Govermmental banking regulatory bodies, and special surveys of the professions (described in the section on Income of unincorporated enterprises) conducted by the National Income Division.

The summation of direct industry estimates from these general and special sources yields a payroll aggregate falling short of the independent controlling total in most years by only a fraction of 1 percent. A large part of this discrepancy can be traced to exclusions from the industry estimates of data unclassified by industry in both the unemployment insurance and special tabulations of OASI small-firm data, as well as to the omission of nontaxable wages from the latter. In 1947, when the summation of direct industry estimates fell short of the $\$ 97.2$ billion aggregate by $\$ 1$ billion, $\$ 0.6$ billion was due to the factors listed above. Adjustment to the controlling total is accomplished by allocating the amount of the discrepancy among the industries in proportion to the estimates of wages not covered by the State unemployment insurance programs.

For the years 1929-38, before social security data were available, wages and salaries for the "covered" segment of the economy were derived from diverse sources, the most important being the periodic censuses of industry and business. These provided coverage of manufacturing, retail trade, wholesale trade, most of the "covered" services, mining, construction, insurance, communications and public utilities, and parts of banking, highway transportation, and services allied to transportation. Reliable, comprehensive data were available from Federal reports also for banking, railroads, pipeline transportation, and air transportation. For the industry groups for which censuses furnished one or more benchmarks, the general procedure for estimating the intercensal years was through interpolation or extrapolation by sample data on payrolls and employ-
ment collected by the Bureau of Labor Statistics. The series prepared for individual industries for the years 1929-39 were used to extrapolate the 1939 estimates derived from social security data.

## Industries Not Covered by the Social Security Programs

## Federal Government

Civilian payrolls of the Federal Government-executive, legislative, and judicial-are reported monthly to the Civil Service Commission and the Department of Labor from records of the individual agencies. The data become available with about a 2 -month lag; subsequent revisions due to late reporting are negligible. Payrolls of employees stationed abroad who are citizens of the continental United States-a small item-are estimated by the National Income Division and added to the reported payroll for the continental United States.

Prior to September 1933, monthly payroll data for the civil executive service were not available. The Bureau of Labor Statistics derived the 1929-33 annual estimates largely on the basis of Budget of the United States Government figures and detailed employment data collected by the Civil Service Commission.

Federal Government civilian payrolls have been divided between general government and government enterprises on the basis of these sources, supplemented on occasion by direct reports from certain of the individual agencies such as the Post Office Department, the largest of the enterprises. Little estimation has been necessary.
Military wages are estimated as the sum of cash pay and allowances and of pay in kind. Information on cash wages is secured separately on a fiscal-year basis from the five armed services. These accounting (budgetary) records must be adjusted in some instances to eliminate nonwage items. The adjustments likewise are based on detailed data furnished by the services. The data are generally adequate for the purpose, even though not developed for it. The fiscal-year figures are then converted to a calendar-year basis by means of monthly estimates supplied by the armed services to the Bureau of Labor Statistics. Prior to 1934, when monthly payroll estimates were not available, this conversion was made by monthly distributions of personnel.

Pay in kind includes the cost value of food consumed by the armed forces and standard issues of personal clothing. This is estimated by the various services from their cost records, since no suitable accounting data for the two items are available. The procedure involves multiplication of the number of personnel receiving the food or clothing by the estimated cost per person.

Necessary revisions of the calendar-year estimates of military wages are usually small but on occasion have been as large as 5 percent.

Wages and salaries in Federal work relief projects, covering the period 1933-43, are compilations of the Social Security Administration from records of the various agencies which administered the projects.

## State and local government

Estimates of public education payrolls-classified in general gov-ernment-have been based since 1946 on data from the Office of Education and the Bureau of the Census. The Biennial Surveys of Education of the Office of Education provide detailed data on payrolls, and estimates derived from the Census data are used for interpolation and extrapolation. The Census Bureau collected data for the school years 1945-46 and 1948-49 from samples representing about 80 percent of total estimated payroll. They were raised to the total on the basis of 1940 population, on the assumption that payroll per capita was the same in unsampled as in sampled units of similar size.

The school-year data were converted to calendar years by use of studies of the National Education Association on the period and frequency of teachers' salary payments. The 1946 and 1949 calendaryear totals were interpolated by sample data (covering about 85
percent of the total) collected by the Census Bureau for one month of each quarter year to yield estimates for 1947 and 1948. These regularly available monthly data also furnish the basis for extrapolation into the current period. For the years 1940-45, public education payrolls were estimated largely from detailed data of the Office of Education.
Total nonschool payrolls (except work relief)—general government and government enterprises combined-have been estimated for 1 month in each quarter from a mail sample of governmental units. The sample data, covering about 85 percent of the estimated total, are expanded to the total in the same way the 1946 and 1949 public education samples were. The months not sampled are obtained by the National Income Division by straight-line interpolation.
The Census Bureau generally has provided separate data for one month in the year on government enterprise payrolls. These are interpolated for intervening months by total nonschool payrolls. Subtracting enterprise payroll from total nonschool payroll yields the general government portion of the latter.
The annual estimates of public education and of nonschool (except work relief) payrolls for the period 1929-39 are those prepared by the State, County, and Municipal Survey, conducted by the Department of Labor with Work Projects Administration funds and published by the Department in Employment and Pay Rolls in State and Local Governments, 1929-39. This survey collected data from all States and a comprehensive sample of local governmental units. Separate data were provided for general government and government enterprises.
State and local government payrolls include also a small amount of income in kind, representing the value of food and lodging received by government hospital employees and of food received by State prison employees. This has been estimated from data contained in two Census Bureau publications: Patients in Mental Institutions and Prisoners in State and Federal Prisons and Reformatories.

State and local work relief wages, covering the period 1929-42, were derived largely from reports of the Federal Emergency Relief Administration, supplemented by compilations of the Bureau of Labor Statistics and Social Security Administration. For lack of complete data, the estimates for 1929-32 (totaling only $\$ 50$ million for the period) are subject to sizable error.

## Farms

Farm wages, including both cash payments and the cost of board, lodging, and other perquisites furnished to hired workers, are estimated by the Bureau of Agricultural Economics. The cash part, comprising more than four-fifths of the total, is taken as reported in the Census of Agriculture. The Census figures are extended to other years by sample data on employment obtained monthly and wage rates quarterly from a mail questionnaire of between 15,000 and 20,000 farmers.

When the results of the 1945 Census of Agriculture became available, it was necessary to correct the 1944 estimates of cash wages derived from the sample by only 5 percent. Much larger corrections had been required to adjust to the censuses covering 1929 and 1939.
The basic data for estimating wages in kind were obtained from two early census enumerations and several sample surveys. Sample data on employment, wage rates, and the prices of perquisite items are used for extrapolation.

## Private households

Data on employment and average earnings collected from individual employees in the labor force enumerations of the 1940 Census of Population and Housing furnished the basis for estimating the cash pay of domestic servants in 1939. This base-year estimate has been projected to later years by an index of wage rates multiplied by employment. The wage rates are taken from
the domestic service component of the Consumers' Price Index of the Bureau of Labor Statistics, while employment data are obtained from the Monthly Report on the Labor Force, Bureau of the Census. The first comprehensive check on the estimates thus derived will be provided by tabulations from the 1950 Population Census.
The estimates prior to 1939 also were obtained as the product of employment and wage rates. It was necessary to base the movement of employment on indirect data (employment in industrial and commercial pursuits), and the resulting series was adjusted to an estimate of the number of domestic servants derived from 1930 Census of Population data. The 1939 estimate of average cash pay was extrapolated to 1929 by an index of average earnings of domestics prepared by the National Bureau of Economic Rescarch from data collected from employment agencies by the National Income Division and the National Bureau.

The value of board furnished domestic service employees is based on a standard budget for 1935-36 derived from the National Resources Planning Board study on Family Expenditures in the United States, 1935-96, moved by changes in food prices, and multiplied by the proportion of employees receiving board, as estimated from a survey of employment agencies made by the National Income Division in 1936.

## Nonprofit hospitals

It has not been possible to prepare direct estimates of nonprofit hospital payrolls. Instead, these are derived by subtracting the payroll of proprietary hospitals, as obtained from social security records, from independent estimates for all privately controlled hospitals. The following description relates to the latter.
Virtually complete data on the cash payroll of privately controlled hospitals have been collected annually by the American Hospital Association since 1944. Only slight estimation is required to secure the aggregate, of which nonprofit hospitals account for about four-fifths. The value of maintenance furnished employees is added by the National Income Division. The value of maintenance per employee receiving maintenance was derived from the 1935 Census of Hospitals and has been extrapolated to 1944 and later years by an index constructed by weighting the Consumers' Price Index by one and the food component of this index by four. The proportion of employees receiving maintenance was estimated from the 1935 Census, and, in the absence of later information, this proportion has been held constant. Maintenance accounts for about one-fifth of total wages and salaries.

Prior to 1944 the only comprehensive payroll data were those provided by the 1935 Census of Hospitals. The 1935 Census total (cash and maintenance) was extended back to 1929 mainly by data collected in a special survey of hospitals made by the National Income Division in 1935.

Estimates through 1941 were prepared by extrapolating the 1935 payroll by estimates constructed from such information as the number of hospital beds and the average salary per bed, per capita expenditures for hospital in-patient service, and the average daily census of patients. Unemployment insurance data (covering largely proprietary hospitals) were used to interpolate between the 1941 and the 1944 payroll estimates.
Since the hospital estimates for the period 1936-43 are based on diverse and partial sources, it may be noted that the original estimate for 1944 differed by only 2 percent from the final estimate subsequently derived from the basic data provided by the American Hospital Association, adjusted to include maintenance.

## Religious organizations

The basic estimate of cash payrolls was derived from the 1936 Census of Religious Bodies, the reported totals being raised to allow for churches not reporting. This figure has been extrapolated by multiplying estimated annual employment by an index of average salaries calculated from data supplied the National Income Division by various denominations. The employment estimates
have been derived from data obtained from the following sources: the 1930 and 1940 Censuses of Population; the Official Catholic Dircctory; a special survey of Catholic dioceses made by the National Income Division, covering 1929-35; and correspondence with other denominations.

The rental value of parsonages was assumed to be 10 percent of their value, as reported in the 1926 and 1936 Censuses of Religious Bodies. The rent component of the Bureau of Labor Statisties' Consumers' Price Index has been used for interpolation and extrapolation. The value of board received by Catholic clergy-men-the other item of pay in kind-was estimated for 1034 from data collected in the special survey by the National Income Division. The extrapolation to other years has been made by the product of number of clergymen and the food component of the Consumers' Price Index.

## Educational services (part)

Estimates of wages and salaries for private educational services not covered by the social security laws are prepared separately for parochial schools, other elementary and secondary schools, higher education, and a miscellaneous category of institutions and agencies. The general procedure is one of piecing together information on employment and average carnings. The Office of Education has been the principal source of data, including not only the Bicnnial Survey of Ellucation and other published reports, but also numerous special tabulations. Other sources include the National Catholic Welfare Conference, the National Education Association, State unemployment insurance tabulations, and a special survey of Catholic dioceses made by the National Income Division covering. the period 1920-35.
Nonprofit organizations, n. e. c. (part)
Estimates of payrolls for other nonprofit organizations not covered by social security are based on the 1935 Census of Nonprofit Organizations, Office Buildings, and Miscellaneous. Payrolls in welfare and relief organizations have been extrapolated by domestic consumption expenditures of private social welfare and relief agencies, except that the National Red Cross payroll has been obtained directly since 1940. The very small amount of payroll for other nonprofit organizations exempt from social security is extrapolated separately by payrolls in "covered" organizations.

## Federal Reserve Banks

Wages and salaries are obtained from the annual reports of the Board of Governors of the Federal Reserve System.

## Forestry (part)

Only a small part of forestry is covered by social security laws. This is deducted from estimates of total forestry payrolls to obtain the noncovered portion.

Base-period estimates of forestry payrolls are derived from Census of Manufactures data for gum turpentine and gum rosin producers. These account for nearly all of the industry. Logging, it may be noted, is classified in manufacturing, rather than forestry.

Extrapolation to other years has been based mainly on a total labor cost series, computed from Department of Agriculture data. This is derived by multiplying the physical volume of production of turpentine and rosin from gum by estimates of labor cost.per unit of naval stores.

Employment in other forestry-only about 10,000 -is estimated from Census of Population data and multiplied by the average wages of turpentine and rosin workers.

## Rest of the world

This series is described in the section on Net foreign investment.

## Tips

Tips are treated in the category "not covered" since it is believed that the extent of actual coverage under the social security
laws is small. The social security regulations state that tips are considered wages only if the employee renders to the employer an accounting of the tips. To the extent that tips are covered, however, they offset any exclusions of income in kind, which is treated as being completely reported in the social security payroll data.
Tips were estimated at $\$ 0.6$ billion in 1947, and are included in the payroll estimates for retail eating and drinking places, railroads, taxicabs, hotels, and personal services.
Tips in eating and drinking places were estimated for 1939 from wage studies in restaurant occupations made by State labor departments of Illinois, New York, Ohio, and Rhode Island. The 1939 estimate has been extrapolated to other years by the Office of Business Economics series on sales of eating and drinking places.
The estimates for the railroads (except dining and buffet cars) were prepared on the basis of a survey for 1929 and 1933 conducted by the Brotherhood of Sleeping Car Porters for the National Income Division, and extrapolated to other years by the number of berth and seat passengers in sleeping and parlor cars (reported annually in Statistics of Railways) and estimated changes in the percent of passengers tipping and the average tip. Tips in dining and buffet cars are estimated at 12 percent of dining and buffet car sales (reported annually in Statistics of Railways).

Tips in the taxicab industry are calculated at 15 percent of operating revenues, on the basis of several studies of the industry in the mid-thirties.
The studies for New York and Illinois used in estimating tips in eating and drinking places also provided the basis of the estimates of tips to hotel food service employees in 1939. The 1939 estimate has been extrapolated to other years by the index of hotel receipts from meals and beverages compiled by Horwath and Horwath, specialists in hotel accounting.
Tips in personal services are estimated at 5 percent of the receipts of barber shops, beauty parlors, and baths and masseurs.

## Wage and Salary Receipts

"Wage and salary receipts," a component of personal income, is equal to wages and salaries plus the excess of wage disbursements over wage accruals less employee contributions for social insurance.

Because of retroactive wage and salary payments, it is necessary to adjust wages and salaries from an accrual basis to a payment basis for inclusion in the personal income estimates. The adjusted series is termed "wage and salary disbursements". The adjustment item, the excess of wage disbursements over wage accruals, reflects the difference in timing, as between receipt and earning, of retroactive wages.

The following example indicates the procedure of moving from wages and salaries to wage and salary disbursements. In 1946 a retroactive wage payment of $\$ 30$ million was made by the Western Union Telegraph Co., under order of the National War Labor Board. The award applied to work performed in the years 1943, 1944 , and 1945 , in the amounts of $\$ 2, \$ 14, \$ 14$ million, respectively. Wages and salaries, which reflect earnings on an accrual basis, in this specific case are $\$ 2$ million in 1943, $\$ 14$ million in both 1944 and 1945, and 0 in 1946. The adjustment item, the excess of wage disbursements over accruals is $\$-2$ million in 1943, \$-14 million in 1944 and 1945, and $\$ 30$ million in 1946. Consequently wage and salary disbursements are 0 in each year 1943-45, and $\$ 30$ million in 1946.

The adjustment of wages and salaries to wage and salary disbursements is not intended to correct discrepancies between the two arising from all retroactive wage payments, but only for the more significant of these actions. While in the case of the Western Union award noted above, it was possible to secure direct information on these payments, more often such information has to be approximated from news accounts or other less formal sources.

## Employee contributions for social insurance

Employee contributions are obtained from the same sources described in the notes to employer contributions for social insurance in the section on Supplements to wages and salaries. Employees contribute to all the programs described in that section except railroad unemployment insurance and several of the smaller Federal Government retirement programs.

## 2.-SUPPLEMENTS TO WAGES AND SALARIES

In terms of the character of basic data, supplements to wages and salaries can be discussed most conveniently under two subheadings. Employer contributions for social insurance comprises items for which highly reliable data are obtained, with virtually no time lag, almost exclusively from the accounting records of the agencies administering the programs. This major component accounted for three-fifths of total supplements in 1947. Estimates of Other labor income are less reliable. They are based to a lesser extent on comprehensive accounting data, and these become available with a lag of two to three years. Considerable estimation is involved for the most recent years,

The substantially final estimate of employer contributions for social insurance for 1947 made in July 1950 differed by only one percent from the original estimate for that year made in 1948. The comparable adjustment for other labor income amounted to 8 percent. Also to be noted is that in July 1950 a rough estimate was added to other labor income for employer contributions for group insurance. This item previously had been neglected for lack of data.

## Employer Contributions for Social Insurance

## Private industries

Regular contribution reports filed by employers with the administering agencies or with the United States Treasury are the source of data on contributions made by employers under the old-age and survivors insurance program, the State unemployment insurance and cash sickness compensation programs, the railroad retirement and unemployment insurance programs, and the Federal unemployment tax. The reported contributions data are lagged (usually one-quarter year) to time them with the accrual of the wages and salaries on which they were levied, rather than with the receipts of the Government funds.
Like covered payrolls, discussed in the notes on Wages and salaries, these contributions data are a byproduct of operations under the social security laws. They are subject to revision only to the extent that wage reports are in error and that estimates made for delinquent reports are corrected on the basis of actual data. Revisions from these causes have been negligible.
The industry distributions of employer contributions under these several programs either are available from tabulations of employer reports or can be estimated from taxable wage data, since taxes are levied at a uniform percentage rate.
Data by industry on employer contributions under the State unemployment insurance programs have been obtained for years since 1940 from the Bureau of Employment Security of the Department of Labor. They are summations of employer reports. For the years 1936-39, when reported data were not available on an industry basis, estimates were prepared by extrapolating the 1940 industry figures back to 1936 on the basis of the National Income Division's estimates of wages and salaries, and then adjusting the results proportionately to the all-industry total for each year.

The industrial breakdown of employer contributions for old-age and survivors insurance for years since 1941 has been obtained by multiplying the contribution rate by reported taxable wages under the State unemployment insurance programs plus estimated taxable wages of firms covered by old-age and survivors insurance but not covered by the State programs chiclly because of the varying size-of-firm exclusion provisions of the latter.: The oldage and survivors insurance data for small firms have been estimated from periodic special tabulations by the Bureau of Employment Security of the Department of Labor. In the absence of taxable payroll data by industry prior to 1941 , the estimates in each industry for that year were extrapolated to the 1937-40 period by total wages and salaries in the industry, with appropriate adjustment to the annual all-industry aggregate.

The industry distribution of employer contributions for oldage and survivors insurance has been used to allocate the Federal unemployment tax.

The all-industry totals for employer contributions under the railroad retirement and unemployment insurance programs have been allocated among the few industries in which there is coverage on the basis of total payrolls, as derived in preparing the estimates of wages and salaries.

Cash sickness contributions, confined to a few States, have been distributed by industry in the same proportion as unemployment insurance contributions in those particular States.

## Government

Payments made by the Federal Government to its civilian employee retirement systems are obtained on a fiscal year basis from records of the Treasury Department or of the agencies responsible for the administration of the systems. Calendar year estimates are prepared by averaging the data for adjoining fiscal years. The data on contributions to the Government and National Service Life Insurance Funds are compiled monthly from reports of the Veterans' Administration.
The separation of contributions to the numerous (and quantitatively minor) funds other than the civil service fund as between general government and government enterprises poses no problem, since the functions of agencies with separate funds are clearly defined. But since the Federal Government makes one lump-sum payment each year to the civil service retirement fund, it is necessary to make a statistical allocation of the data for this fund between general government and government enterprises.
For years other than 1941-45, this allocation has been accomplished on the basis of Treasury data on employee contributions to the retirement fund classified by individual Federal agencies. To obtain estimates for the 1941-45 period, the 1940 estimate of the Government's contribution for enterprise employees was extrapolated by the relative change in government-enterprise employee contributions (adjusted for the July 1, 1942, rate change), and the Government's contribution for general government employees was obtained as a residual.
This procedure was adopted because, while employee contributions were swelled by the expansion of payrolls, the Government's contribution was not increased proportionately. Most of the war service employees, concentrated in general governmental agencies, were expected to withdraw from the Federal service before attaining eligibility for retirement benefits, taking refunds of their contributions instead of adding to the long-run liabilities of the fund for benefit payments.

Estimates of contributions by State and local governments to retirement systems for their employees have been furnished by the Social Security Administration for years since 1936. Base

[^7]year data for these estimates were developed through a joint study by the Social Security Administration and the Bureau of the Census. Employer contributions for the fiscal year 1940-41 were estimated on the basis of questionnaires on the operations of retirement systems sent to all large State and local governmental units and to a sample of the smaller units. This base year estimate has been extended to other years by the Social Security Administration from data compiled by the Census Bureau in its annual financial statistics series and in special reports, and from published annual reports for some of the larger retirement systems. The fiscal year data have been adjusted to a calendar year basis by averaging successive fiscal years. The estimates for 1929-35-definitely of lesser reliability-were prepared by extrapolating the 1936 figure provided by the Social Security Administration by contributions data obtained from a sample questionnaire survey of State and local government units conducted by the National Income Division.

State and local government employer contributions have been allocated between general government and government enterprises in proportion to the breakdown of employee contributions for 1939 estimated from data furnished by the Census Bureau. The enterprise portion is small, the 1939 estimate amounting to only $\$ 3$ million.

## Other Labor Income

## Compensation for injuries

Estimates of benefits paid to workers (and their dependents or survivors) insured under State and Federal accident compensation laws, either on a compulsory or voluntary basis, have been prepared annually since 1039 by the Social Security Administration. These estimates are based on data for private insurance companies from the Spectator Company's annual Insurance Yearbook, for State insurance funds from reports of the funds, and for selfinsurers from information furnished by the State accident compensation commissions. Reports of the United States Employees' Compensation Commission also are utilized. Data from these sources become available with about a year's lag, and a preliminary estimate is made by the Social Security Administration from direct information for a few States and industrial injury data compiled by the Department of Labor. The estimates for years prior to 1939 were prepared by the National Income Division by methods paralleling those followed by the Social Security Administration in later years, but greater use was made of data from the State commissions.

The Division also estimates the relatively small amounts of court-awarded benefits received by injured railroad and maritime workers, since these are not covered by the compilations of the Social Security Administration. The estimates for railroad workers are based on Interstate Commerce Commission data on payments by railroads for injuries to persons (employees and passengers) and on the numbers of employees and passengers killed or injured, as published annually in Statistics of Railways. The estimates for maritime workers were derived for 1038 from data contained in the Labor Department Bulletin (No. 869) on Workmen's Compensation and the Protection of Scamen, and extrapolated to other years by maritime employment.

The industrial breakdown of the 1929-38 totals of workmen's compensation for injuries was prepared in several parts. Estimates were first made separately for the following industries: Federal Government; railroads; maritime employment in water transportation; telephone, telegraph, and related services; all of the mining industries except crude petroleum and natural gas; and stevedoring, a component of services allied to transportation.

The sources of the data for railroads and maritime employment have been noted above. Data for the Federal Government and for stevedoring were obtained from the United States Employees'

Compensation Commission. Payments in telephone, telegraph, and related services were estimated by raising the amounts of accident disability benefits and death benefits reported annually by the American Telephone \& Telegraph Co. by the ratio of total payroll in the entire industry to the payroll of that company. The industry components of mining were estimated from tabulations of data reported by the accident compensation commissions in the principal mining States.

For all other industries, total payments in 37 States for the period 1929-38 as a whole were tabulated from the report on Workmen's Compensation Experience Compiled in 1941 of the National Council on Compensation Insurance. ${ }^{3}$ To these figures were added data for three additional States compiled from State reports. The 10 -year aggregates for each industry were then distributed by years in proportion to employment, and the resulting estimates for each year were adjusted proportionately to the totals for all industries not independently estimated.

In the preparation of estimates by industry for years since 1939, the Division's employment series has been used to extrapolate estimated 1938 payments in each industry except railroads, Federal Government, and maritime employment (which have continued to be estimated separately by the procedures indicated above). The results have then been adjusted to the all-industry aggregate less data for the separately estimated industries.

## Employer contributions to private pension and welfare funds

Contributions in this category relate to the following types of private programs: (1) Pensions, (2) health and welfare programs, and (3) group insurance protection.
(1) The series on employer contributions to private pension plans covers transactions under several different financial arrangements, including contributions to self-administered plans (involving separate funds administered by employers either directly or through a bank or other agent), the purchase of group annuities under plans administered by life insurance companies (where usually there is no separate pension fund with segregated assets), direct payments by employers without the establishment of a fund (of minor magnitude), and contributions to employees' profit-sharing trusts.
The totals for the pericd 1929-38 were built up as the sum of several estimated parts. ${ }^{4}$ Data for railroads were obtained annually from Statistics of Railways. Estimates for higher education were derived from contributions data furnished by the Teachers' Insurance and Annuity Association. Data on employer contributions by churches, the Young Men's Christian Association, and the Young Women's Christian Association were obtained annually for the period 1933-38 from the Church Pension Conference Report and extrapolated back to 1929 by church pension payments. The estimates for all other industries (in the aggregate) were derived for the years 1932-38 from direct and collateral information contained in the study by Murray Latimer on Trends in Industrial Pensions. For the period 1929-31, with data lacking, they were made on the assumption that contributions dropped annually from 1929 to 1932 by one-half of the average annual drop from 1932 to 1934.

Totals for the period 1939-47 were derived as the sum of estimates for employer contributions for pensions by religious organizations and institutions of higher education (both obtained by payroll extrapolations of the 1938 estimates), Federal Reserve banks, and employer contributions in all other industries combined. The latter category was available for 1945-47 (as of July 1950) in

[^8]the Bureau of Internal Revenue Statistics of Income publications, the reported data on corporate contributions requiring only minor adjustments for inclusion in the series. It was estimated for the years 1943 and 1944 from special tabulations of pension plans submitted to the Bureau of Internal Revenue for approval for incometax deduction purposes under the Revenue Act of 1942. The tabulations were not designed primarily for statistical purposes, and the data on number of plans in operation and average annual contribution per plan derived from them were not sufficiently accurate in time-period reference to yield more than rough orders of magnitude for these 2 years.
Estimates for 1941 and 1942 were obtained by proportional interpolation between the 1937 and 1943 values, using the number of plans in operation as an interpolating index. Information on the number of plans in operation was obtained from the Latimer study for 1937 and from the Bureau of Internal Revenue for 1941, 1942, and 1943. Employer contributions in 1939 and 1940 represent straight-line interpolation between the 1938 and 1941 estimates.
The Bureau of Internal Revenue corporate data reported in Statistics of Income-accounting for nearly all of the employer contributions total-do not become available until the third year after the period to which they refer. In the interim, the current estimates are prepared very largely by extrapolation on the basis of payrolls and of pension plan information in the Bureau of Labor Statistics' monthly Current Wage Developments, which reports coverage and contributions data relating to the more important new plans and revisions of plans already in effect. These extrapolations are limited in scope-they cannot, for example, take account of changes in contributions relating to the funding of past service liability and other actuarial requirements-and the current estimates are subject to sizable revision.
Direct information on the industry distribution of employer contributions to private pension funds is confined mainly to the comprehensive Bureau of Internal Revenue corporate tabulations for 1945-47 and to available data permitting the preparation of separate estimates for several industries. These include religious organizations; educational services, n. e. c. (taken as equal to higher education); Federal Reserve banks; railroads; telephone, telegraph, and related services (compiled from annual reports of the major companies); and iron and steel and their products (based mainly on data tabulated from annual reports of four principal companies).
In addition, a Bureau of Internal Revenue tabulation of employer contributions by industry covering the 5,116 plans approved through December 31, 1944 was used as the basis of a distribution (apart from the separately estimated industries) for 1944. For all other years of the period since 1929, the 1944 and 1947 estimates have been extrapolated, industry by industry, by wages and salaries, with the resulting distribution adjusted proportionately to the allindustry aggregate exclusive of the separately estimated group of industries.
(2) Contributions by employers under health and welfare programs have been derived by assembling data for the larger plans known to be in existence and preparing estimates for the remaining smaller plans.
Listings of existing plans, together with statements of their coverage and provisions, have been obtained mainly from publications of the Bureau of Labor Statistics, especially B. L. S. Bulletin 841 and the September 1946 Supplement to this Bulletin, Bulletin 900 , and the monthly reports on Current Wage Developments. Studies by the Social Security Administration and the August 1946 Supplement to the periodical Labor and Nation also have been utilized.
Data on employer contributions to the principal plans have been obtained for the most part directly from the administering organization. Thus, data have been secured from the Amalgamated Clothing Workers of America, the International Ladies Garment Workers Union, the Solid Fuels Administration of the Department
of the Interior (covering the United Mine Workers fund), and the American Telephone \& Telegraph Co.

For the smaller plans, estimates have been prepared by multiplying the number of employees covered by a plan (usually as reported in the general sources cited above, or obtained directly from the union involved) by average earnings of employees in the industry to obtain estimated wages of covered workers. These have been multiplied by estimated contribution rates (the modal rate given in the above sources) to obtain the estimated amount of employer contributions.

The method cf estimation, it will be noted, furnished the industrial distribution of employer contributions to health and welfare plans.
(3) Employer contributions for group insurance are rough, interim estimates prepared as yet only for the years since 1946. Their basis is a study for the year 1948 made by the Social Security Administration, which utilized reports by life insurance associations, the United States Chamber of Commerce surveys of accident and health insurance, Blue Cross and Blue Shield reports, and other sources. The 1948 estimates were prepared for five categories of group insurance, and each has been extrapolated by the National Income Division by data on total premium receipts of the organizations furnishing the particular type of insurance coverage. The sum of these estimates has then been rounded to the nearest $\$ 100$ million for incorporation into the published estimates. The totals have been distributed by industry according to the relative distribution of employer contributions to private pension funds, after eliminating from the pension distribution the data for industries, such as coal mining and telephone and telegraph, which are known to have well established welfare funds (included in (2) above) providing group insurance benefits.

## Other components

The remaining components of other labor income include pay of military reservists, Government payments to enemy prisoners of war, merchant marine war-risk life and injury claims, directors' fees, jury and witness fees, compensation of prison inmates, and marriage fees to justices of the peace. These items in 1947 amounted to only 9 percent of other labor income. Over the entire period of the estimates only three-military reserve pay, payments to enemy prisoners of war (covering the period 1943-46), and directors' fees-have attained any appreciable magnitude. The other items have always been negligible in amount.

Data on the pay of military reservists have been obtained from the armed services or from the annual Budget of the United States Government on a fiscal year basis, and averaged to obtain calendar year estimates. This type of supplement has increased sharply in the postwar period.
Fiscal-year data on total Federal payments to enemy prisoners of war were obtained from the Department of Defense. These were converted to a calendar year basis by use of data from that Department on the number of prisoners of war in the United States as an interpolating index. The estimated amounts paid to prisoners of war working for civilian contractors were deducted from the total, since such payments are included under wages and salaries, chiefly in farming.

The estimates of directors' fees are crude. They are prepared in two parts. For the finance, insurance, and real estate industry, which accounts for about half of the total, the estimates are made by multiplying the ratio of directors' fees to compensation of officers in Federal Reserve member banks by the total compensation of corporate officers reported by the Bureau of Internal Revenue in Statistics of Income. For other industries, a similar procedure is followed, but direct information on the ratio of directors' fees to compensation of officers was limited to the years 1929 and 1932.
Within each of these two broad groups-finance, insurance, and real estate and all other industries-directors' fees are distributed by industry in proportion to compensation of corporate officers as reported by the Bureau of Internal Revenue.

## 3.-INCOME OF UNINCORPORATED ENTERPRISES

Apart from farm income, which has been studied systematically by the Department of Agriculture for many years, no comprehensive body of data covering any appreciable time interval exists for the income of unincorporated enterprises. Estimation in this field has generally required the laborious piecing together and adjustment of various types of data from numerous sources, some only inferentially connected with noncorporate business income. In the light of the experience gained in estimation and the changing nature of source materials, the National Income Division has periodically reviewed, and materially revised, its estimating procedures in an effort to develop more refined estimates. No such review, however, has as yet produced really satisfactory results, for refinement of estimating techniques, unfortunately, is not an adequate substitute for reliable source materials.

The statistical approach and methods adopted in national income and product estimation are primarily a function of the character of available data. The force of this general proposition is clearly illustrated by the estimates of the income of unincorporated enterprises. Three broad segments of the estimates may be differentiated with respect to source materials and methods used: Income of professional practitioners, business income (the nonfarm total except for professional service income), and farm income. (See Exhibit 3.)

Exhibit 3.-Income of Unincorporated Enterprises, 1947

| Induatry | Millions of dollars | Yercent |
| :---: | :---: | :---: |
| Farms | 15,589 | 42.2 |
| Professional services. | 3,615 | 9.8 |
| Medical and other bealth serrices. | 2.101 | 5.7 |
|  |  | $\stackrel{2.8}{8}$ |
| Accountants .............. | 101 | 5 |
| Basiness.- | 17,708 | 48.0 |
| Retail trade and automotile service |  | 3.6 |
| Contruct construction--.......- | ${ }_{2}^{2,265}$ | ${ }^{6} .1$ |
| Wholesale trade_-3.-- | 1,605 | 4.4 |
| Manufacturing. | 1,400 | 3.8 |
| Financo, insurance, and real estat | 949 | 2.6 |
| Transportation. | 471 | 1.3 |
| Agricultural and similar service establishuents, Forestry, and | , |  |
| Communications and public nitilities.......................... | 199 18 | .5 |
| Total | 36,912 | 100.0 |

(1) Estimates of the net income of professional practitionersamounting to 10 percent of the noncorporate total in 1947-are prepared very largely by multiplying the number of persons engaged in independent practice in each profession by their average net income. This method, adopted at an early stage of the official national income work, takes advantage of the basic data on the number of practitioners from enumerations by the decennial Censuses of Population (and of the records of professional associations and other sources permitting a satisfactory extension of the census data to other years). The dearth of requisite information on income, however, led the National Income Division to undertake the collection of data on the average net income of independent practitioners in the various professions. Questionnaire surveys, first made in 1933 to cover the years 1929-32, have been conducted at periodic intervals. The results of the three postwar surveys were published in the August 1949 Survey of Current Business for lawyers, the January 1950 Survey for dentists, and the July 1951 Survey for physicians.
(2) Information for estimating the "business" segment of the
income of unincorporated enterprises-nearly one-half of the total in 1947-has been generally fragmentary. Comprehensive data are lacking except for 1945 and 1947, for which years the Bureau of Internal Revenue provided tabulations of the incomes of sole proprietorships and partnerships filing income tax returns. The proportion of the total number of firms filing was very large because of comparatively low income exemptions and the high levels of business activity.

For industries comprising this segment, the net income of unincorporated enterprises has been estimated either by multiplying gross receipts by a profit ratio or by multiplying the number of proprietors by an estimate of their average net income. The first method has been employed in nearly all the larger industries, the second generally for industries in which satisfactory noncorporate receipts data were lacking. For both methods the years 1939, 1945, and 1947 represent benchmarks, developed almost entirely from Bureau of Internal Revenue and, for 1939, Census materials.

Comprehensive data on receipts of sole proprietorships and partnerships were reported for 1939 in most of the industrial censuses and for 1945 and 1947 in the tabulations of income tax returns. Some of the censuses required some allowance for undercoverage, and the Bureau of Internal Revenue data had to be adjusted for enterprises not filing returns and for differences in industrial classification from that used by the National Income Division. For all 3 years, Bureau of Internal Revenue tabulations for sole proprietorships and partnerships filing returns were utilized in the estimation of profit ratios. It was necessary to adjust the data to represent the universe through estimation of the profit ratios of firms not included in the tabulations. Because of the difference in tax return coverage, this adjustment was quite important for the 1939 estimates but comparatively minor for the 1945 and 1947 estimates.
Receipts of proprietorships and partnerships were also reported in a few of the 1929 censuses, but for all years other than 1929, 1939, 1945, and 1947 receipts almost always have had to be estimated indirectly, generally by interpolation and extrapolation by available data on total receipts (corporate and noncorporate combined) or corporate receipts. The accuracy with which this could be done has varied widely among industries.

Similarly, the base-year profit ratios for 1939, 1945, and 1947 have had to be extended to other years largely on the basis of indirect methods. Bureau of Internal Revenue tabulations for sole proprietorships and partnerships for 1936 and for sole proprietorships for 1941 and 1943 were helpful in this connection, but the reported data required difficult adjustment for differences in scope and other aspects of incomparability. For interpolation and extrapolation, extensive use has been made of ratios of corporate profits before tax to sales. ${ }^{5}$ These can be computed annually from Bureau of Internal Revenue tabulations except for the two most recent years, when sample data must be utilized.
While the source materials for estimating the income of unincorporated nonfarm businesses have been generally unsatisfactory, a material change in this situation is in process. This stems mainly from the broadened coverage of the Federal income tax and the plan of the Bureau of Internal Revenue to mine the comprehensive source of statistical data afforded by the returns. As noted, the Bureau already has provided detailed industry tabulations for 1945 and 1947, and it will follow through with similar tabulations for later years as frequently as possible.
The reliability of any income estimates for noncorporate business is conditioned by the fact that this group characteristically includes a large number of relatively small enterprises, which follow a diversity of accounting practices and frequently maintain only rudimentary records. But now that the income tax and the ex-

[^9]panded social security system are covering a very high percentage of business proprietors, it can be anticipated that record-keeping and accuracy of reporting will improve with the passage of time. Not only will the individual firm require systematic records for these purposes, but the growing audit program of the Bureau of Internal Revenue will tend both directly and indirectly to promote standardization and accuracy of reporting.
The reference to this audit program points up a deficiency of the Bureau of Internal Revenue noncorporate data for use in preparing aggregate income measures. The data used represent compilations from unaudited tax returns. The Bureau has not yet provided systematic audit studies, as it has in the case of corporations, from which it would be possible to adjust statistically for understatement of income with some assurance of reliability. No formal adjustment of the data, therefore, has been made. Consideration of the unaudited nature of the returns has influenced the estimating procedure, however, in certain instances, as brought out in the description below.
(3) The Department of Agriculture furnishes the estimates of farm proprietors' income included in the national income. The estimation of farm income is a principal part of the over-all statistical services rendered by the Bureau of Agricultural Economics. From the quinquennial Census of Agriculture, the Department's Crop and Livestock Reporting services, field surveys, and many other sources, the Bureau has developed both income and balance sheet statistics for the agricultural industry.
The aggregate net income of farmers is derived as the difference between gross income (calculated in detail by type of product) and production expenditures (estimated separately for about 40 different types of expense). Such a complete development of income data by means of a synthetic income and expense statement is unique with agriculture.
The following description of methodology is divided into the three areas noted in the foregoing introductory remarks: Professional services, business, and farm.

## Income of Independent Professional Practitioners

The professional services cover the following industry groups for which estimates are published in table 16 of Part $V$ of this report: Medical and other health services, legal services, accountants (included in business services, n. e. c.), and engineering and other professional services, n. e. c. For the medical group, aggregate net income is the sum of series for physicians and surgeons, dentists, osteopathic physicians, chiropractors, chiropodists, privateduty trained nurses, veterinarians, and miscellaneous curative and healing professions. For the engineering and "other" group, income is estimated separately for engineering and architectural service and for other professional services, n. e. c.

Of these various professions, by far the largest are physicians and surgeons, lawyers, and dentists. These three groups accounted for four-fifths of professional service income in 1947.

## Medical and legal services

For the medical and legal service industries the income of proprietors measures the earnings of all professional practitioners from independent practice. It is derived by multiplying (1) the number of professional persons in independent practice (full or part time) by (2) average net income figures determined from questionnaire surveys of the professions.
(1) For either or both of the years 1930 and 1940, data from the decennial Census of Population permitted the derivation of the total number of self-employed persons for the three major groups -physicians, dentists, and lawyers-and also for veterinarians and miscellaneous curative and healing professions. For the other medical and health service groups, the universe numbers of persons engaged in independent practice have been estimated in a generally satisfactory manner from such sources as reports of the pro-
fessional associations, mailing lists of the Fisher-Stevens Service, Inc. (a mail-service company), and, for 1929 , the report of the Committee on the Costs of Medical Care. This Committee's report also furnished an estimate of the total number of physicians in independent practice in 1929.
For interpolation and extrapolation, the American Medical Directory of the American Medical Association has provided data for most years since 1929 on the total number of physicians (including those not in practice), and for some years on the number engaged in private practice. The American Dental Association has furnished information on the number of dentists for years since 1941, with estimates for 1929 and 1931-39 being obtained by straight-line interpolation and extrapolation of the 1930 and 1940 census-based figures. Straight-line interpolation and extrapolation has also been necessary to fill gaps in the data for the other medical professions. This is not, however, a source of any appreciable error in the medical services total, as these professions form only a small part of it.

For the number of lawyers, interpolations have been based mainly on data obtained from the Martindale-Hubbell Law directory and from compilations of the number of attorneys listed in a selected group of city directories.

In the estimates for physicians, dentists, lawyers, and veterinarians, adjustments have been made for the changing number of professional practitioners in the armed forces after 1940, on the basis of data obtained from the Procurement and Assignment Service of the National Roster of Scientific and Specialized Personnel and from the Department of Defense.
(2) Most of the income surveys yielding the data on average net income used in the estimates for the medical and legal services industries have been conducted by the National Income Division, usually in cooperation with the professional association in the field. In most cases, separate computations of average entrepreneurial income were made for nonsalaried practitioners (those deriving all their net income from independent practice) and for part-salaried practitioners (those deriving income both from independent practice and from salaried work).

All of the periodic questionnaire surveys have relied upon a voluntary response to mailed questionnaires. The respondents were not identified. Questionnaires were mailed either to all persons in the profession or to a representative sample of the profession. Information was requested in each case for a series of years. Usable replies have been received, on the average, from about 15 percent of the mailing, apart from the 1950 survey of physicians, for which the percentage was as high as 45 . Because of larger-sized samples, the sampling error in the later surveys (covering the period since 1937)-aside from the question of possible bias in the response-is probably smaller than in the earlier surveys. This consideration is especially important with respect to the legal profession, in which the dispersion of income, and consequently the sampling error, is larger than in the curative professions.
The generally low rate of response to most of the questionnaire surveys raises doubt concerning the representativeness of the sample data on average income. Various tests, however, point to the probability of no marked bias on this score. It has been possible in many cases to check the representativeness of the sample with respect to known characteristics of the profession sampled, such as State of practice, size of city, and age of practitioner. In addition, study of average incomes in the various professions by age classes, years-in-practice classes, city-size classes, and regions-and, in cases where the sample was large enough, by cross-classifications of these characteristics-has been reassuring. The income patterns revealed were both uniform and plausible.

Further substantiating evidence is afforded by the result of the specific check on response bias made in the 1950 physicians' income survey. As explained in the report in the July 1951 Survey of Current Business, the first and second follow-ups of the first response modified its findings only slightly and indicated the absence of appreciable bias. Mainly because the initial response rate was so
high, however, this result is not conclusively applicable to the earlier surveys.

The only other source with which average incomes derived from the questionnaire surveys can be checked-aside from questionnaires by private agencies-is the tabulations of income tax returns. Comparisons for the three major independent professions show the questionnaire averages to be appreciably higher. This has been viewed as a favorable indication of their validity. The tax data may be assumed to be too low because of the incentive to understate income for tax purposes, and the magnitude of the difference between the two sets of data did not appear unreasonable..
The questionnaire surveys for physicians, dentists, and lawyers have provided average income data for almost all years of the period since 1929. However, the results of the physicians' income survey made in 1950, covering the years 1945-49, have not yet been incorporated fully into the estimates published in this report.

For these three professions, average income estimates for years not covered by National Income Division surveys have been made in various ways. These include interpolations by the results of questionnaire surveys by other agencies (for physicians, by Medical Economics magazine; and for dentists, by the American Dental Association), by reference to the movement of income in one of the other two professions, or by using disposable personal income to interpolate gross receipts and industry (professional) payroll data to interpolate expenses. A recent-period procedure by the Division has been to make short surveys (based on a mailing of only $3,000-5,000$ questionnaires) in order to obtain interim information for extrapolation purposes. A report on two such surveys, for lawyers and dentists, was given in the July 1950 Survey of Current Busincss.

For the remaining group of smaller medical professions, surveys by the National Income Division provided average income data for most years of the earlier period. Later estimates represent extrapolations from survey benchmarks for the year 1941 in the case of private-duty nurses and veterinarians, and for 1937 for osteopaths, chiropractors, and chiropodists. Because of evidence of some past period correspondence, the average net income of physicians has been generally used as an extrapolating series for these groups. Little direct information has been available on average incomes in the miscellaneous curative and healing professions.

## Other professional services

Estimates of the two remaining professional groups-engineering and other professional services, n. e.c. and accountants-are of dubious validity because of the lack of directly relevant information for most years.

With respect to the former, the component series on engineering and architectural service has been derived from combinations of numerous sources, including income-tax return data, a survey of consulting engineers by the National Income Division covering the 1929-32 period, and an index of the value of all engineering construction contracts awarded as reported by Engineering News Record. The other component, other professional services, n.e.c., has been estimated from tax return data and use of the total net income in medical and legal services as an interpolating and extrapolating series.

The net income of independently employed accountants was obtained for 1929-36 by multiplying their estimated number by average income data collected in National Income Division surveys. The total net income of accountants after 1936 was estimated from the linear regression, based on 1920-36 data, between the net income of accountants and that of lawyers in independent practice.

## Income of Business Enterprises

The aggregate net income of noncorporate "business" enter-prises-the nonfarm total other than professional service practi-
tioners-represents the summation of separate estimates for about 65 industry subgroups. Many of these, however, are quite small. Three important industries-retail trade, wholesale trade, and con-struction-largely determine the accuracy of the business total. They accounted for 70 percent of it in 1947.

The following discussion of this segment is divided into the several time-periods characterized by general similarity of source materials and procedural problems.

## Benchmark estimates, 1939

The principal method of preparing the base-year estimates for 1939 consisted of multiplying, separately for sole proprietorships and partnerships, total receipts reported in the various industrial censuses by profit ratios derived from Bureau of Internal Revenue tabulations of data from the business schedule of individual income tax returns and the mandatory informational returns filed by partnerships. The tabulations, published in Statistics of In-come-Part 1 and Supplement were based on a complete count for partnerships and for sole proprietorships (in general) with income of $\$ 5,000$ or more, and on sampling for smaller proprietorships. The sole proprietorship tabulations gave for each industry the receipts and net income of firms classified by gross receipts classes. The definition of net income in the Bureau of Internal Revenue tabulations was very similar to that used in national income measurement. Only a few adjustments had to be made, on the basis of reported data, to secure uniformity. These included the addition of depletion charges for proprietorships and partnerships and the elimination of capital gains and losses and property income received from partnership receipts, which were reported inclusive of these items.

Noncorporate receipts totals were available from the 1939 Censuses of Retail Trade, Contract Construction, Service Establishments, Manufactures, and Mineral Industries. The data reported for retail trade, construction, and mining were adjusted upward to allow for exclusion of concerns which, although in operation during 1939, had gone out of business before enumerators' visits in early 1940, or for some other reason were not enumerated. These adjustments, which allowed also for any differences in industrial classification, were made by comparing the industrial census data on the number of employees or proprietors with similar data from the social security records or the decennial Census of Population and Housing. ${ }^{6}$

Adjustment of the Bureau of Internal Revenue data to take account of the many small firms not filing tax returns in 1939 was necessary before they could be used to derive profit ratios to apply against the industrial census receipts figures. The principal complication in deriving aggregate profit ratios by industry stemmed from the strong negative correlation between the profit ratio and the size of firm as measured by receipts. Because of this correlation, profit ratios computed from data for firms filing returns were almost.always too low to be applicable to the entire noncorporate sector of an industry. The general procedure, therefore, was (1) to deduct receipts reported to the Bureau of Internal Revenue from the census-based receipts figures, and then (2) to multiply the resulting estimate of receipts of firms not filing tax returns by the profit ratio calculated for one of the smallest Bureau of Internal Revenue receipts-size classes. The sum of estimated net income for the firms not filing income tax returns and the net income actually reported on the returns constituted the aggregate net income estimate.

[^10]One important variant of this procedure was developed. It was found that for sole proprietorships in the nonprofessional components of the service industry the ratio of payroll plus net income to receipts tended to be constant throughout the reported receiptssize distribution. Thus, the tendency of the profit ratio to decline as the size of firm increased was just offset by the tendency for the ratio of payroll to receipts to rise. Where payroll data by size of firm could be obtained from the industrial censuses, as in services and contract construction, the use of this relationship permitted the estimation of small-firm profit ratios from data for larger firms. This was helpful, since the data for proprietorships with receipts under $\$ 5,000$ reported in Statistics of Income for 1939 often were fragmentary or appeared to be biased.
In the case of the large retail trade industry, the income estimates were derived separately for 19 types of stores through the combined use of Census Bureau and Bureau of Internal Revenue data. The estimated value at wholesale prices of withdrawals in kind from stock by proprietors was added. Although required by law to do so, it was assumed that proprietors do not include in net income reported on their income tax returns the value of stock withdrawn for their own use.
For a few industries in which adequate data on gross receipts or profit ratios could not be obtained, the net income estimates were prepared as the product of the number of proprietors, taken from the population or industrial censuses, and average income per proprietor, derived by adjusting tax return data for incomplete coverage or from industrial census data on the reported withdrawals of proprietors. Wholesale trade was the most important industry in which this method was applied. Agricultural services, forestry, fisheries, and some of the transportation and nonprofessional service industries were estimated according to the same formula.
The foregoing brief account of the two principal methods used to derive 1939 net income estimates in the "business" area is an oversimplification. The matching of Census and Bureau of Internal Revenue receipts tabulations by size classes and the preparation of adjusted profit ratios and of average income per proprietor were generally difficult processes subject to appreciable epror. Emphasis on the judgmental factor was necessarily considerable. Moreover, variations of, or departures from, the two general methods frequently were necessary in particular industries.
The nature of the bias which may be introduced into the 1939 estimates by failure to file mandatory tax returns or by falsification of income tax returns may be briefly explored.
In the most important cases, in which an independently derived estimate of noncorporate receipts was used as a control in estimating net income, the effect of tax evasion upon the estimates depends upon the nature of the evasion. Nonreporting of receipts on income tax returns, or understating them without understating the profit ratio, would tend to cause the estimates to be too high, because the unreported receipts would tend to be assigned to a lowersized receipts class with a higher profit ratio. Evasion by overstatement of expenses would lead to an understatement of the income estimates by understating the profit ratios used or implied in them.
In instances in which average income per proprietor was derived directly from the tax data, any type of evasion would tend to make the estimates too low. To offset this, the average income of proprietors not filing tax returns was estimated rather liberally.
Taking into account these considerations and the specific correction in retail trade for withdrawals from stock, it seems highly probable, on balance, that the 1939 estimates in the business area are conservative.

## Benchmark estimates, 1945 and 1947

The tabulations from tax returns provided by the Bureau of Internal Revenue for 1945 and 1947 represented such high coverage of all proprietors in the business segment as to constitute, after certain necessary adjustments, benchmark materials. The final estimate of aggregate net income in this segment for 1947 exceeded
by one-fourth the amount reported by the Bureau of Internal Revenue in its industry tabulations. For 1939, the final estimate was twice as high as the amount reported on tax returns.

For both 1945 and 1947, the Bureau tabulations showed receipts, expense, and net income information by industry and separately for sole proprietorships (from the business schedule of the individual income tax returns) and for partnerships (from the mandatory informational returns). The information for sole proprictors in 1945 and partnerships in 1945 and 1947 was classified by receipts size-class of firm. The tabulations were based on complete coverage of the larger sized enterprises and on estimates developed through scientific sampling for the smaller enterprises.

The Internal Revenue tabulations, it was evident, differed in some respects as to industrial classification from that used in the national income estimates. Also, the tabulations were incomplete to the extent of not covering firms which did not file tax returns. Adjustments for both of these deficiencies were accomplished through comparison of the universe number of proprietors in each industry, as estimated by the National Income Division, with that reported by the Bureau of Internal Revenue.

The estimates of number of proprietors in 1945 and 1947-part of the Division's annual series, published in table 27 of Part $V$ of this report-were prepared by extrapolating base-year estimates for 1939 (derived from the industrial and population censuses) by an index of the number of noncorporate firms, adjusted for differences in the estimated number of active partners per partnership on the basis of Bureau of Internal Revenue compilations for the three years. The index of noncorporate firms was constructed, industry by industry, by subtracting the number of active corporations in each year from the quarterly average number of operating firms estimated by the Office of Business Economics as part of its business population series. The sources and methods underlying this series were described in an article in the June 1049 Survey of Current Business.

In most industries, the National Income Division estimate of number of proprietors in 1945 and 1947 somewhat exceeded the number reporting to the Bureau of Internal Revenue for income tax purposes, and average receipts and profit ratios for one of the smallest receipts classes were assigned the nonreporting proprietors to derive their net income. This was added to the amount reported in the tax returns data to secure the estimate of total net income.

In some industries, however, the Division's estimate of number of proprietors was less than that compiled from income tax returns. The differences were regarded as a matter of industrial classification. ${ }^{7}$ In wholesale trade, for example, the excess of proprietors filing income tax returns was adjudged to belong in the Division's retail trade classification. The average income per proprietor in retail trade was assigned to this group of proprietors, and their total income was added to the amount reported on income tax returns to account for part of the income in retail trade not reported to the Bureau of Internal Revenue. In manufacturing, where the Bureau of Internal Revenue total number of proprietors greatly exceeded the National Income Division estimate, the receipts and net income of proprietors in the under $\$ 10,000$ or under $\$ 15,000$ receipts classes (varying among the 20 industries) were shifted from manufacturing to miscellaneous repair services and hand trades.

In general, then, noncorporate net income (and receipts) in the business industries in 1945 and 1947 was derived through adjustment of the tax return data by using number of proprietors as a measuring rod. This involved substantial acceptance of the reported tax data.
'Statistical differences were present here too, as well as in cases where the National Income Division estimate exceeded the number reported by the Bureau of Internal Revenue. The Division estimates were subject to estimating errors, and the Bureau data to sampling errors. In most industries, a high proportion of proprietors was in the receipts classes sampled. (For net income, however, the proportion of the total sampled was much smaller.)

## Retail trade

In the important retail trade sector, however, this general procedure was not followed. Receipts were estimated in the usual manner for 1945, by adjusting Burcau of Internal Revenue data for undercoverage, but the ratio of net income to receipts was estimated independently, and not based on the tax data. This estimate was made by extrapolating to 19.45 the 1939 ratio of payroll plus profits (inclusive of stocks withdrawn for own use) to receipts by similar data for retail corporations. Application of the resulting 1945 ratio to noncorporate retail sales and the deduction of estimated noncorporate retail payroll yielded the figure on total net income used for 1945 . This was appreciably higher than the one which would have resulted from the usual procedure of adjusting the tax return data. To derive the 1047 estimate of net income in retail trade, the 1945 profit ratio was extended to 1947 by the relative movement of the tax return data and multiplied by receipts obtained through the usual adjustment of the tax data.

The above method of estimating the ratio of net income to receipts for 1945 was an application of the relationship, noted above, developed from 1939 Census Bureau and Bureau of Internal Revenue materiais for sole proprietorships in the nonprofessional service industries-that throughout the receipts-size distribution the ratio of payroll plus profits to receipts tended to be constant. This relationship, reflecting the varying proportion of labor performed by paid employees as against proprictors and their families, was assumed to be valid with respect to corporate and noncorporate retail trade in a temporal application. In retail proprietors' income there is a large and comparatively stable element of labor return corresponding to retail corporations' payroll. Analysis for 1939, it may be noted, indicated that the difference in profit ratios between incorporated and unincorporated enterprises in retail trade was accounted for very largely by differences in the relative importance of payroll expense.

When this presumedly valid, alternative method yielded a somewhat higher profit ratio for 1945 than that indicated by the tax returns data, the ratio was accepted as reasonable. Its actual use in this large industry was influenced by the consideration that the Bureau of Internal Revenue compilations were unaudited and doubtless biased in the direction of understatement.

The 1947 profit ratio was obtained by extrapolation of the 1945 estimated ratio by the tax return data (adjusted as described above) because this afforded a seemingly valid use of these comprehensive noncorporate data. The data indicated a marked decline in the profit ratio from 1945 to 1947 . Any rejection of this evidence would have involved the rather sweeping assumption that the degree of tax evasion in noncorporate retail trade in 1947 was much greater than in 1945. The authenticity of the decline in the retail trade profit ratio was corroborated by the fact that similar declines characterized unincorporated enterprises in most industries, as well as the smaller-sized group of corporations in these industries.

## Interpolations, 1940-44 and 1946

For other years of the period 1939-47, estimates of net income of unincorporated enterprises in the business segment were prepared by interpolation of the 1939, 1945, and 1947 benchmark estimates. Two factors made the process difficult and impaired the accuracy of the estimates.

First was the necessity of making sizable adjustments for noncomparability of coverage of the data on sole proprietorships reported for several years of the period by the Bureau of Internal Revenue. Secondly, the heary reliance upon corporate data to estimate the movement of noncorporate sales and profit ratios-unfortunate in itself-was complicated by a shift of some firms, because of the tax advantages to be gained, from the corporate to noncorporate form of organization in the war period, and by an opposite shift in the early postwar years after the removal of the corporate excess profits tax.
(1) To adjust the reported sole proprietorship data for 1939, 1941, 1943, and 1945 so as to obtain comparable receipts and profit ratios, the usual procedure was to ( $a$ ) extrapolate receipts reported in the year of greatest coverage to other years by an index intended to measure the movement of receipts of all sole proprietorships, to obtain (by subtraction) estimates of the receipts not reported in the years of lesser coverage; (b) multiply the nonreported receipts by a small-firm profit ratio and add the result to reported profits; and (c) compute the ratio of adjusted profits in (b) to receipts in (a). Use of the reported data directly, without this type of adjustment, would have imparted a strong upward bias to the profit ratios (particularly for 1941 and 1943). The expansion of Bureau of Internal Revenue coverage was such as to bring in a rising proportion of small proprietorships, which, as has been indicated, have very high profit ratios relative to the large proprietorships.
(2) Most of our limited knowledge about the magnitude and nature of the shift in legal form of organization is confined to its postwar phase. ${ }^{8}$ It is evident that it was minor as to number of firms involved, but appreciable as to its effects on total sales and net income. The shift was largely between the corporate and partnership forms, and it was concentrated mainly in manufacturing, retail trade, wholesale trade, and contract construction. For these industries-in which the relative movements of corporate sales from 1939 to 1945 and from 1945 to 1947 differed markedly from those of noncorporate sales-several special procedures, as described below, were followed to improve the use of the corporate data for interpolation.

## Receipts times profit-ratio method

The series used to interpolate net income of unincorporated enterprises in "business" industries between 1939 and 1945 generally were prepared as the product of receipts and profit ratios, with separate interpolations for sole proprietorships and partnerships. Receipts and profit ratios of sole proprietorships were usually obtained for 1941 and 1943 by adjusting to full coverage (as explained above) the data reported on unpublished tax-return tabulations. Mainly corporate data were then used for making the interpolations for 1940,1942 , and 1944. Partnership receipts and profit ratios were interpolated between 1939 and 1945 either by data for corporations or by the sole proprietorship series.

The 1940-44 retail trade estimates represented a special application of the sales times profit ratio method. Sales were derived by interpolating the 1939 and 1945 benchmarks by a series obtained by deducting corporate sales (as reported annually in the Bureau of Internal Revenue's Statistics of Income) from total retail sales as estimated by the Office of Business Economics (described briefly in the section on Personal consumption expenditures for commodities). Total net income was then computed by (1) extrapolating to 1945 the 1939 ratio of noncorporate payroll plus net income to sales by a similar ratio compiled annually from corporate data, (2) multiplying the resulting ratios by the estimates of noncorporate sales, and (3) deducting noncorporate payroll. The required estimates of corporate and noncorporate payrolls were made in the following manner: (1) Payroll figures for 1939 were derived from the legal-form tabulations of the Census of Business and extrapolated by the corporate and noncorporate sales series, and (2) the resulting provisional payroll estimates were adjusted proportionately to the National Income Division's series on wages and salaries in retail trade.

[^11]In principle, this procedure of estimating noncorporate retail sales accounted for sales shifts due to corporations' changing their legal form of organization. The measure, however, doubtless was somewhat blurred by errors of estimation in the residual sales figures. In this connection, it may be noted that little could be done to correct for whatever inconsistency was introduced into the corporate sales data by the change from the unconsolidated basis of filing through 1941 to permissive consolidated reporting beginning with 1942.

In most of the 20 major types of manufacturing and in contract construction, where the legal-form shift caused the relative movements of partnership and corporate receipts to diverge from 1939 to 1945, figures derived by multiplying the estimated number of partnerships by average receipts per corporation were used to interpolate the receipts of partnerships. The number of partnerships was estimated by (1) extrapolating census-based figures on the number of noncorporate enterprises for 1939 by the total number of operating firms (Office of Business Economics series) less the number of active corporations, and (2) subtracting from this noncorporate series the estimated number of sole proprietorships, obtained by extrapolation from 1939 by the total number of operating firms. For industries not believed to be affected materially by industrial classification differences, the estimates were sometimes modified on the basis of comparison with the number of partnership enterprises reported for 1945 by the Bureau of Internal Revenue.
This procedure was based on the consideration that most of the corporations that changed their legal form of organization became partnerships. It greatly improved the "closeness of fit" of the interpolating series for partnership receipts and provided an indirect and partially satisfactory measure of the timing of the shift.

## Proprietors times average-income method

The number of proprietors times average-income method also was used in preparing estimates for the years 1940-44. The number of proprietors was estimated by extrapolating the 1939 totals by a series on total operating firms minus the number of active corporations, with a straight-line adjustment for the difference in active partners per partnership in 1939 and 1945. Average net income per proprietor generally was derived for 1941 and 1943 through interpolation by estimates for sole proprietorships obtained by adjusting Bureau of Internal Revenue data to a com-parable-coverage basis for the years 1939, 1941, 1943, and 1945, in the manner outlined above. The interpolation of average income per proprietor for 1940,1942 , and 1944 usually utilized data for related industries-retail trade in the case of the large wholesale trade group.

## Special features of 1946 interpolation

In general, the same sources and methods used in making the 1940-44 interpolations of net income in the business area were employed for interpolation between the 1945 and 1947 benchmark estimates.
One special problem, however, was encountered. In nearly all industries, ratios of profits to sales derived from data for corporations in the aggregate were found to be wholly unsuitable for interpolation of the noncorporate ratios. Noncorporate profit ratios declined markedly in most industries from 1945 to 1947, whereas the corporate ratios tended to be stable. Upon analysis, however, it was found that this divergence reflected size-of-firm, not legal-form, differences. Industry-by-industry compilations of ratios of profits plus compensation of officers to sales for corporations in the two or three smallest asset-size classes showed the same pattern of decline as exhibited by the noncorporate ratios, and were used for interpolation in most industries, including retail trade (by individual lines of trade). The small-firm corporate data, it may be of interest to note, generally showed stability from 1945 to 1946, with all of the 1945-47 decline occurring in 1947 .
The failure of profit ratios based on aggregate corporate data
to reflect at all adequately the movement of noncorporate ratios in the early postwar period is disconcerting. Even if this period is regarded as atypical, fresh doubt is cast on the validity of the extensive use made of aggregate corporate data to extend baseyear noncorporate profit ratios. As tabulations from tax returns for sole proprietorships and partnerships become available for years beyond 1947, this will become a subject of further analysis. The basis for comparing the movements of corporate and noncorporate profit ratios, industry by industry, will be broadened, and some generalization may be possible.

With use being made of profit ratios for the small-sized corporations to interpolate between 1945 and 1947 in most industries, the receipts interpolations also were generally based on tabulations of the two or three smallest asset-size classes of corporations. To take account of the effects of the legal-form shift, the interpolating receipts series for partnerships in manufacturing (each of 20 industries) and in contract construction were derived by multiplying average receipts per corporation in these smallest asset classes by the number of partnerships. This latter was estimated in the same fashion as in the prior period, with an additional check and basis for correction afforded by the special Bureau of Internal Revenue tabulations of corporations changing their legal form of ownership in 1946.

The receipts data used for interpolation in retail trade were derived by individual lines of trade by deducting corporate receipts (Bureau of Internal Revenue compilations) from aggregate receipts (estimated by the Office of Business Economics).

## Extrapolations, 1929-38

There is comparatively little information for the 1929-38 period relating directly to the net income of unincorporated enterprises in the business area. Noncorporate receipts data were compiled for 1929 in the Censuses of Retail Trade and Manufactures. Useful data on number of proprietors were provided by the Census of Wholesale Trade in 1929, 1933, 1935, and 1939. A compilation of 1936 income tax returns for sole proprietorships and partnerships was made available by the Bureau of Internal Revenue, but this could not be used in many industries either because of large sampling errors in the tabulations or because they could not be satisfactorily adjusted to obtain comparability with 1939.9

With such paucity of direct data, the estimating methods for the period 1020-38 necessarily relied to a very large extent on indirect measures. The preparation of estimates for a substantial number of individual industries provided a basis for utilizing available detailed information and for taking account of shifts in the importance of industrial components within the business total. The methods used in a few of the larger industries may be summarized briefly.

Net income of unincorporated enterprises in retail trade was extrapolated from 1929 to 1939 by the same method utilized for the 1940-45 period (sales times the ratio of payroll plus profit to sales). Sales were extended by a series representing (1) Census values for 1929 and 1939; (2) estimates derived for 1933 and 1935 by preparing legal-form breakdowns of Census aggregates for those years by interpolating between such reported breakdowns for 1929 and 1939 by weighted indexes of chain store sales and independent store sales; and (3) interpolations for all other years on the basis of the Office of Business Economics estimates of total retail sales. For extrapolation of the 1939 noncorporate ratio of profits plus payroll to sales by corresponding data for corporations, the payrolls of corporations and of unincorporated enterprises were estimated by methods analogous to those followed in obtaining sales. The profits data for corporations were available annually from the Statistics of Income reports of the Bureau of Internal Revenue.

[^12]The income of proprictors in wholesale trade for the years 1929-38 was estimated as the product of number of proprietors and average net income per proprictor. The 1939 estimate of number of proprictors was extrapolated to 1929 by a series comprising Census of Wholesale Trade data for 1029, 1933, 1935, and 1939 and straight-line interpolations for the other years. Average net income per proprictor was derived for 1936 by adjusting the Bu reau of Internal Revenue tabulations for incomplete coverage, and for all other years of the period through interpolation and extrapolation by the average net income estimates for retail trade.

The income of noncorporate enterprises in contract construction was derived for the 1920-38 period by multiplying estimates of receipts by the ratio of net income to receipts. Receipts of corporations, obtained from Statistics of Income, were deducted from the estimated total value of contract work to obtain a series on noncorporate reccipts that was used to extrapolate the 1939 estimate. Value of work performed wás estimated for 1939, by four major types of construction, from the Census of Construction. The 1939 values for these four types were extrapolated to earlier years by components of the construction activity series (see notes on New construction), which covers force-account as well as contract construction, and summated to obtain total value of work performed. The 1939 noncorporate profit ratio in contract construction was extrapolated to 1929 by the absolute changes from year to year in the ratio of profits plus compensation of officers to receipts for corporations in the industry.

The value of product of noncorporate enterprises in manufacturing was taken for 1929 and 1939 from the Census of Manufactures. Separately for the 20 major types of industries, estimates for the intervening odd-numbered years were obtained by interpolation on the basis of the total value of product of all enterprises reported in the biennial manufacturing censuses. The even years were then interpolated by gross sales plus gross receipts from operations of corporations in manufacturing, as published in Statistics of Income. The resulting series was then multiplied by estimated profit ratios. These were derived for each industry for 1936 from the special tax return tabulations and extended to other years of the 1929-38 period chiefly through use of a linear regression between noncorporate profit ratios for 1936, 1939, and 1941 and annual (adjusted) corporate profit ratios from 1929 to 1941.

## Current estimates

Pending the availability of the tax return tabulations and other comprehensive information, estimates of the net income of unincorporated enterprises in the business segment for current years (since 1948 at present) must be prepared from fragmentary and indirectly relevant data.
The main general procedure, again, is to derive net income as the product of separate extrapolations of sales and profit ratios. The principal source materials for this purpose are corporate data from sample compilations of Government agencies, of private organizations in some cases, and of the National Income Division from published income statements of individual firms. These sample data are described in the section on Corporate profits. To obtain the benefit of appropriate weighting, the extrapolations are carried out in as much industry detail as feasible, such as by lines of business in retail trade.
For the 20 industries of manufacturing, some improvement, in principle, over the use of aggregate corporate data as extrapolators is possible, since unpublished data of the joint quarterly survey of the Federal Trade Commission and Securities and Exchange Commission permit the use of sales and profit ratios of the smallest-sized corporations. These detailed cell data, however, are subject to sizable sampling errors and must be used cautiously. The large expansion of the manufacturing sample initiated in the first quarter of 1951 should greatly improve the data for this type of use. More importantly, the extension of the sample work of these agencies to corporate trade will strengthen the sources for estimating business incomes in this large segment.

For many industries-most of them relatively small-even reasonably satisfactory corporate information is lacking (or entirely inappropriate) for current extrapolations of the proprietors' income estimates. This generalization applies to wholesale trade, agricultural services, forestry and fisheries, and most of the finance, nonprofessional service, and transportation and public utility industries. For these groups, the movement of net income is based on one or a combination of such series as number of proprietors (extrapolated by the Office of Business Economics data on number of operating firms), average earnings of employees, wages and salaries, consumer expenditures, and estimates of net income in related industries. For contract construction, principal reference for this purpose is had to estimates of wages and salaries in the industry and construction activity. For wholesale trade, net income in current years is derived by the usual procedure of multiplying number of proprietors by average net income per proprietor based on the movement of the average in retail trade.
A procedure adopted in recent years is to check the currentperiod movement of the estimated total of net income in the business and professional industries against the movement of a series derived from Federal individual nonwithholding tax collections, appropriately lagged and adjusted for tax-rate changes. This series, available in the aggregate only, consists largely of taxes against the net income of nonfarm unincorporated enterprises, but covers also personal income from higher-bracket salaries, farming, rents, interest, and dividends, as well as capital gains and losses. Allowance for these other sources of personal income is made in the comparison with the tax series; but because of its broader coverage and the difficulty of adjusting for changes in tax rates, the measure of the relative movement in total nonfarm entrepreneurial income which it affords is far from precise. It nevertheless serves as a useful check, particularly in view of the weakness of source materials underlying the individual-industry estimates for very recent years. These estimates are subject to a possible upward or downward adjustment from the analysis of the tax data.

## Revisions of business and professional income estimates

Recent-year estimates of noncorporate net income in the business and professional service industries are revised when more reliable data become available-such as Bureau of Internal Revenue tabulations of receipts and net income of sole proprietorships and partnerships; Census of Business data on number of proprietors and legal-form tabulations of receipts and other relevant materials; and the labor-force enumerations of the Census of Population and Housing. ${ }^{10}$ For the war and postwar period, the revisions of preliminary estimates of the totals have been sizable in some instances, as shown in Exhibit 4. Revisions of the estimates for individual industries have varied widely in relative terms.

[^13]Exhibit 4.- Successive Estimates of the Income of Unincorporated Nonfarm Business and Professional Enterprises
[Millions of dollars]

|  | Date of publication |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | July 1947 | July 1948 | July 1949 | July 1950 |
| 1942 | 12,464 | 12,464 | 12,945 | 12,945 |
| 1943 | 14, 266 | 14,266 | 15,117 | 17,226 |
| 1945 | 16,754 | 16,853 | 18, 832 | 18, 832 |
| 1946 | 21,046 | 21,815 | 22,676 | 22,404 |
| 1947 |  | 24,384 | 24,727 | 21.35 |
| 1948 |  |  | 24,874 | 22,301 |

The revisions for 1942-47 published in the July 1949 Survey of Current Business were based mainly on the 1945 Bureau of Internal Revenue tabulations of sole proprietorships and partnerships made available in that year. The subsequent revisions for 1946 and 1947 published in the July 1950 Survey reflected chiefly the incorporation of the similar Bureau of Internal Revenue tabulations covering 1947.
The revisions in the July 1949 report stemmed mainly from failure to take account of the war and postwar legal-form shifts. Those in the July 1950 report reflected a previous missing of the sharp decline in noncorporate profit ratios in 1947. These two phenomena could not be discerned or measured from the statistical materials available when the preliminary estimates were made, and were not anticipated on the basis of judgment.

## Net Income of Farm Proprietors

The estimates of total net income of farm proprietors are prepared by the Bureau of Agricultural Economics. They are described in chapter 20 of The Agricultural Estimating and Reporting Services of the United States Department of Agricalture (Miscellaneous Publication No. 703), Washington, 1949. The description here is limited to very brief compass.
Farming as an industry comprises about $51 / 2$ million independent enterprises, most of which do not keep accounts permitting them to calculate net income on any uniform basis. However, an extensive body of both benchmark and current statistics on farming operations in the aggregate has been developed over a long period of time.
The general procedure used by the Bureau of Agricultural Economics in deriving the net income of farm operators is to make an independent estimate for each item required for an income-and-expense statement covering all farms, based on whatever combination of available data best represents that item. Net income of farm proprietors is then calculated by summing the estimates for components of gross farm income and deducting the sum of the production expense estimates, as illustrated in Exhibit 5 for the year 1947.
"Net income of farm proprietors" differs from the Bureau of Agricultural Economics" "realized net income of farm operators" by the inclusion of the value of net change in farm inventories in the National Income Division series. Apart from this difference in definition, the net farm income figures included in the national income accounts differ slightly in most years from those of the Bureau of Agricultural Economics. For the most recent year the Bureau furnishes special preliminary figures, since it usually does not prepare and publish detailed estimates until a few months later. In addition, it has not been feasible to incorporate into the proprietors' income series some back-year revisions made by the Bureau of Agricultural Economics.
Basic data for preparing the farm income estimates are obtained partly from the freparing the farm income estimates are obtained Census of Agriculture and a current Crop and Livestock Reporting system designed to include at least one reporter in every farming township in the country. An important part of the basic data, however, is derived from the auxiliary industries and agencies which market, transport, store, process, or otherwise aid or regulate the production or distribution of farm products. As the assembling and processing of many of these products are either dominated by large firms or are subject to sanitary inspection, and the individual products are fairly homogenous in nature, it is feasible to obtain from auxiliary industries very reliable data (with little time lag) on the marketings and market prices of such important products as meat animals, most dairy products, cotton, tobaceo, and sugar beets.
Exhibit 5.-Derivation of Net Income of Furm Proprictors, 1947
[billions of dotharm


## Gross farm income

The major components of gross farm income are cash receipts from the marketing of crops and of livestock and livestock products and the value of food and fuel produced and consumed on farms. Cash receipts and home consumption are calculated for each commodity by States from estimates of the quantities involved and the average prices paid to farmers. The price estimates are based on monthly mail questionnaire returns from about 30 percent of the 35,000 dealers and farmers to whom such questionnaires are sent; the same price series are used in deriving cash receipts from marketings and value of home consumption. The estimates of quantities marketed and consumed on the farm are made in a framework in which production data are reconciled with disposition data.

Crop production is estimated as acreage harvested times average yield per acre. To obtain acreage and yield figures, benchmarks derived from the Census of Agriculture and several annual State assessors' censuses are extended by sample data on acreage and yield changes indicated by a sample of close to 100,000 reporting farmers. The changes reported currently are adjusted on the basis of past relationships between the sample data and the benchmarks.

Disposition of each farm product covers the respective quantities sold, consumed by the farm family, used for feed and seed, and added to inventory. It is generally estimated in percentage terms from annual mail reports filed by a selected sample of pro-ducers-by 15,000 wheat growers, for example. For most field and vegetable crops, these percentages are applied to production estimates, and the results for quantity sold are generally reconciled with totals based on annual reports by producers accounting in many cases for the bulk of the commercial movement. Reports from processors, handlers, or sanitary inspectors provide such good coverage of certain other major crops and livestock products that firm estimates of marketings can be based directly on these. Cotton belongs to this class because of reports made by substantially all ginners. Meat animals are another example, for which there are Federal meat inspection reports, returns from a very large stratified sample of butchering firms, and data from common carriers.

Nonrecourse loans to farmers made or guaranteed by the Commodity Credit Corporation, net of current redemptions, are considered cash receipts from farm marketings. Such loans and redemptions are reported currently by the Corporation, and net loans are added to the value of farm marketings discussed above.

Gross rental value of farm dwellings covers housing on owneroccupied as well as rented farms. It is derived by (1) calculating a return on dwelling investment from the estimated value of farm dwellings and the average rate of interest on farm mortgage loans, and (2) adding to this computed net value the portion of total farm expenses estimated to be allocable to the upkeep of dwellings. The basic estimates of the total value of dwellings are prepared from Census of Agriculture data, with only the 1930 Census reporting separate data on dwellings as distinguished from other structures. Value relationships are used to derive the proportions of the various expense items allocated to dwellings.

Government payments in connection with the various farm programs are reported from the fiscal records of the responsible agency, the Production and Marketing Administration.

## Change in farm inventories

The value of the change in farm inventories is measured as the difference between physical quantities of crops and livestock on farms at the beginning and end of the year, multiplied by year-end prices. It is derived as the sum of separate State estimates for each crop and livestock item.

This component of gross farm income is entered directly in the gross national product as a component of "Change in business inventories". No inventory valuation adjustment is required, as in the case of estimating the change in nonfarm business inventories, since the farm inventory changes are computed directly from data on physical stocks and current prices.

Benchmark data on the number of each class of livestock on farms are obtained every five years from the Census of Agriculture. These census enumerations are adjusted, where necessary, to obtain complete coverage.

Current estimates of year-to-year changes in the number of livestock on farms are prepared from surveys made each December. The rate of sampling varies among States, depending largely on the needs of the individual States for livestock data. In general, a sample of 3,000 to 6,000 farms is considered satisfactory for a principal livestock-producing State. Special surveys (especially in States where the size of farm varies greatly); records of marketings, slaughterings, and rail shipments; livestock tax assessment data; and State farm censuses are used for checking the inventory estimates derived from the basic survey data.

Estimates of year-end farm inventories of crops are prepared by one of two methods. For all major crops except cotton and tobacco, farm stocks are estimated quarterly. These estimates are based upon the results of mail surveys covering about 80,000 farmers, from which the usable response is approximately 30 percent. Each respondent reports the production of each crop grown on his farm and the quantity on hand at the survey date. For each crop the reported stocks on farms are expressed as a percentage of total production for these farms, separately for each State. These percentages are applied to the estimated total State production of each crop to yield total stocks on farms at the end of each quarter. Studies made in 1948 substantiated the validity of this method.
The estimates of year-end inventories of crops derived in this manner do not include crops which farmers own but may have placed in commercial storage located off their farms. The magnitudes involved are not known, but believed not to be large. Also, for certain crops a part of the estimated stocks on farms may have been used to secure a Commodity Credit Corporation loan. As the proceeds of such loans are included in gross farm income, it is necessary to deduct the quantity of these crops under loan from farm inventories in order to avoid double-counting. The adjustment is made on the basis of reported data on Commodity Credit Corporation loans and redemptions.

For cotton and tobacco and a few relatively minor crops, inventory changes are calculated in terms of inventories "held for ultimate sale." Crops held for use as feed or seed on farms where grown are excluded. To estimate the quantity of each crop still
remaining to be sold on January 1 of each year, the amount of the previous year's production of the crop actually sold through December is subtracted from the total amount to be sold.

The prices used to value the change in physical quantities of crops are the December 15 average prices received by farmers for their products as sold at local markets or at points to which the farmers deliver them. For livestock, inventory values per head as of January 1 are used, based on farmers' estimates of replacement costs.

## Production expenses

Estimates are made for each of some 40 categories of production expense. The largest include purchased feed, hired labor, depreciation, net rents to nonfarm landlords, costs of operating motor vehicles, purchases of livestock, and taxes. These accounted for more than four-fifths of the 1947 total.

Purchases of feed are reported at 5 -year intervals in the Census of Agriculture. For interpolation and extrapolation, an index calculated from price and quantity data for 18 important feeds is used. Average price data are based on monthly mail returns from 4,000 reporting merchants. Quantities are estimated as production, indicated by reports from farm or factory producers, plus imports, with the total adjusted for inventory change and exports and other nonfarm uses.

The estimates of wages paid to hired farm laborers are described in the section on Wages and salaries.

Depreciation estimates are made separately for seven categories of farm property, on the basis of replacement cost, rather than original cost. Percentage rates of depreciation have been derived for dwellings from a 1934 survey covering 600,000 farms and for most other items from scattered sample data on length of useful life. These are applied to estimates of current value based on the Census of Agriculture and/or on cumulation of purchases (as a measure of current gross increment), estimated for tractors and other types of machinery and equipment from the annual Census of Manufacture and Sale of Farm Machinery and Equipment, adjusted to reflect current values on the basis of Bureau of Agricultural Economics price index series.

Motor vehicle operating costs are estimated separately for automobiles, trucks, and tractors, and only 40 percent of the total cost for automobiles is charged to farm production. The basic data on number of vehicles are obtained from the Census of Agriculture and extended on the basis of sales data on new tractors, less estimated scrappage, and truck and automobile registrations in predominantly agricultural states. Costs per vehicle for some items were obtained from a survey in 1936, and have been extended on the basis of changes in prices. Consumption of gasoline and oil per vehicle have also been obtained from surveys, supplemented by occasional spot checks of mileage and average mileage per gallon in the case of automobiles and trucks, and the number of days used and fuel consumption per day in the case of tractors.
The series on net rents to nonfarm landlords is discussed in the section dealing with Rental income of persons. This series comprises the only rental figures explicitly included in the farm income statement. The explanation is as follows.

Rental flows within the farm sector do not appear in the statement shown in Exhibit 5 because it is a consolidated statement in which intra-business flows cancel out. Net rents earned by farmer landlords become merged with the net income of farm operators and are not isolated statistically. However, rents paid to landlords not living on farms must be recorded as flowing out of the farm sector. Only net rents are shown explicitly. The difference between them and the gross rents actually paid consists of expenses that are included among the various expense items of the statement.

Farmers' expenditures for livestock, which are prepared by States, cover purchases from all sources outside the State and from public stockyards within the State. The estimates of cash receipts from livestock are defined in a manner consistent with this treatment.

Estimates of livestock numbers shipped across State lines for stocker and feeder purchases are made from inspection records of State veterinarians, inspections by the Department of Agriculture at 66 public stockyards, and data derived from truck and railway movements of livestock. Estimates of the weight and price of the livestock purchased are obtained from records of transactions at five important stocker and feeder markets, which handle more than one-half of the transactions.
Taxes on farm property cover all ad valorem taxes levied on farm property by State and local governments. Real estate tax rates are developed from sample data from local tax officials or from farmers, and from real estate tax data reported in the Census of Agriculture. The tax rate estimates are applied to value of agricultural land calculated from the censuses and interpolated by an index of farm land values constructed by, the Bureau of Agricultural Economics. Personal property taxes are estimated from the real estate taxes in conjunction with ratios of the amounts of farm real and personal property on tax rolls as shown in published reports of State tax commissions, boards of equalization, or similar bodies.

## Revisions

Revisions of the farm income estimates occur periodically to incorporate the results of the Census of Agriculture or of special surveys made by the Department of Agriculture in order to improve certain areas of the estimates. In 1948 the estimates were adjusted to take account of new data from the 1945 Census of Agriculture, chiefly affecting the 1944-46 production expense estimates. The resulting downward revision of about 7 percent in the farm proprietors' income estimates for the 3 -year period largely reflected, on balance, a previous understatement of farmers' expenditures for feed. This is one of the largest single farm expense items, and for intercensal periods the available direct information relating to it is incomplete.

## 4.-RENTAL INCOME OF PERSONS

Rent items appear on both sides of the national income and product accounts. Net rental income of persons is a distributive share of national income, and space rental value of housing is a component of personal consumption expenditures for services. Space rental value of nonfarm housing is estimated at an intermediate stage in the derivation of persons' net rental income arising from nonfarm rental housing or imputed to owner-oceupancy of nonfarm dwellings, and is discussed below in connection with these net dreeling rents. Rental value of farm housing is estimated by the Bureau of Agricultural Economics and is described in the section on Income of unincorporated enterprises.
Primary data on rent income are notably inadequate. Rents are received by a large number of individual landlords who maintain only fragmentary accounts. The only major attempt to obtain income statements from these landlords is in connection with the Federal individual income tax. The rent data tabulated by the Bureau of Internal Revenue are derived from a sample of the tax returns and are restricted to the net rent item. Lack of gross rent and expense tabulations precludes systematic use of collateral source materials to adjust the Bureau of Internal Revenue data for inconsistencies due to inadequate bookkeeping and incomplete reporting.
The tax return tabulations were used to derive a 1941 benchmark which covers net rent from property types accounting for about one-third of persons' net rents in that year. The remainder of the 1941 estimate and the totals for other years have been derived by subtracting sample-based estimates of expenses from gross rent receipts computed largely from data on rent paid as
reported by tenants. Tax returns, census enumerations, and sample surveys-the main sources of rental information-provide much better coverage of rents paid than of rents received.

The resulting estimates of net rent are considerably less reliable than the farm income series, which is derived by a somewhat similar formula. Although the rent estimates pertain to an "industry" almost half as large as farming, public interest in real estate renting as an industry has been insufficient to justify any broad special program of data collection such as underlies the farm income estimates. Moreover, the use of data from tenants in estimating persons' net rental income is complicated by the necessity of excluding rent paid to landlords other than persons.

Derivation of the net rent estimates via a detailed structural analysis of gross rent flows and expenses has the virtue of providing a framework which facilitates the consistent use of all available data on rents. While on balance this is a distinct advantage, the necessity of deriving the final figures in this way has made for complexity in the statistical methodology, with consequent danger of errors. In particular, it will be noted, the final estimates are often calculated as the difference between much larger items which, in turn, are also obtained as residuals. Even small errors made at the various stages of the estimating procedure may significantly affect the final results. Both as to general level and relative movement the rental estimates must be regarded as among the least satisfactory of national income statistics.

The property-type components of the net rent estimates may be grouped as follows, to show their relative magnitude and the order in which they are discussed in the following pages.

Exhibit 6.-Components of Net Rental Income of Persons, 1947

| Types of property | Millions of dollars |  |
| :---: | :---: | :---: |
| 1. Rented nonfarm property.- |  | 2,992 |
| a. Rented dwellings.. | 1,071 |  |
| b. Royalty-earning | 1, 320 |  |
| c. Business and industrial. | 1,601 |  |
| 2. Owner-occupied nonfarm dwellings_ |  | 2,580 |
| 3. Farm realty |  | 1,403 |
| Total |  | 16,975 |

${ }^{1}$ This figure is $\$ 84$ million less than that published. The difference consists of revisions which have been effected bere but not yet incorporated in the national incone and product tables.

## 1. Rented Nonfarm Property

Persons' net rental income from rented nonfarm property is derived in the course of a rather intricate estimating procedure. The following synopsis will facilitate understanding of the estimating sequence, details of which are described later.

An estimate of persons' net rental income from rented nonfarm property for 1941 was derived from net rents reported on individual Federal income tax returns. For purposes of extrapolation, the 1941 total was broken down into three groups: (a) Net rents from rented dwellings, (b) royalties, and (c) net rents from business and industrial property.
(a) Personal net rents from rented dwellings are calculated annually as the difference between gross rental receipts and landlords' expenses on all such dwellings, after nonpersonal landlords' receipts and expenses have been eliminated from these gross totals.
(b) Personal net royalties are estimated annually by applying suitable corporate ratios to the series described below on gross rental receipts of persons from business and industrial property.
(c) Personal net rents from business and industrial property were obtained as a residual for 1941. Their extrapolation involves estimating persons' gross rents from business and industrial property for 1941 and other years as gross rents paid by business and government less gross rents received by business and govern-
ment from business and industrial property; deducting the 1941 benchmark figure for persons' net rent from such property from the 1041 estimate of persons' gross rent to obtain persons' expenses as a residual; breaking down this residual into component parts and extrapolating them by use of corresponding expense items of the series on nonfarm rental dwelling expenses; and subtracting expenses from gross rents to obtain personal net rents.

Details of these procedures are discussed below.

## Benchmark estimates

Total net rents and royalties of individuals and fiduciaries reported on the rent schedules on Forms 1040-41, as tabulated by the Bureau of Internal Revenue for 1941, were adjusted to cover nontaxable fiduciaries, individuals reporting on the short Form 1040A, and persons and nonprofit organizations not reporting. They were further adjusted to deduct losses on property rentals reported by some filers, an estimate of net room rents reported, an allowance for neglected or misplaced expense entries, and an estimate of net rents reported by farmers. The original total of $\$ 1.8$ billion was reduced to a figure of $\$ 1.4$ billion, representing net rent from nonfarm property and net royalties.

The taxpayer filing Form 1040 may report his net rents either on the business schedule or on the rent schedule. These two schedules are adapted, respectively, to large and complex rental activities and to small or simple transactions. It is reasonable to suppose, therefore, that most taxpayers who receive rent as an occupational income fill in the business schedule, and that rents which are merely a supplemental source of income or accrue to persons without occupation are generally reported on the rent schedule. This distinction between occupational and non-occupational income underlies the distinction in national income measurement between the distributive shares of income of unincorporated enterprises and rental income of persons.

Statistically, the use of the income tax data has serious drawbacks. Of the total of $\$ 1.8$ billion reported by the Bureau of Internal Revenue for 1941, nearly three-fourths is an estimate (for income classes under $\$ 5,000$ ) based on samples comprising less than 6 percent of the returns. Moreover, reporting requirements are peculiarly difficult to enforce in the case of rental income, because such income is received in small amounts by large numbers of landlords and because difficult accounting problems are involved in calculating net rent. Finally, the various adjustments of the tax data made by the National Income Division had in most cases to be based on fragmentary or otherwise unsatisfactory data.

It would be possible to estimate net rents directly from income tax returns for most other years as well as for 1941. However, the relatively high tax exemption limits in effect in the earlier years meant that a very substantial part of persons' rental income was not reported for tax purposes. After 1941, the movement of net rents indicated by individual income tax return data diverged increasingly, not only from the prewar trend, but also from the movement indicated by a rather substantial body of other data. These include sample series on net dwelling rents and synthetic income statements for all rental housing, as well as corporation income tax tabulations showing the net flow of rent out of the corporate sector of business. As individual income tax data do not increased with the requirement since 1941 that landlords file the long Form 1040 instead of the much simpler alternative forms available to most non-landlords.

The estimating procedure actually adopted for years other than 1941 assumes that corporate tax returns provide a firmer statistical base than tax returns of individuals. It may be noted that incentives to nonreporting of rents received by individuals have increased with the requirement since 1941 that landlords file the long Form 1040 instead of the much simpler alternative forms available to most non-landlords.
The derivation of persons' net rents from rented nonfarm property, and of persons' royalties, in 1941 is summarized in lines 1 , 2, and 3 of Exhibit 7. For extrapolation the total is broken down
as shown in lines 4,5 , and 6 , corresponding to items $\mathrm{a}, \mathrm{b}$, and c in the synopsis given above for line 1 of Exhibit 6. This breakdown and its extrapolation will next be considered.
Exlibit 7.-Derivation and Breakdown of Persons' Net Rents from Rented Nonfarm Property and of Royalties, 1941

| Item | Millions of dollars |
| :---: | :---: |
| 1. Net rents tabulated from tax returns. | 1,770 |
|  | 388 |
| 3. Lquals: Persons' net rents from rented nonfarin property, and royalties..- | 1,382 |
| 4. I.ess: P'ersons' net rents from rented nonfarm dwellings | 549 |
|  | 193 |
| G. Equals: Persons' net rents from rented nonfarm business and industrial property. | 640 |

## Persons' net rents from rented nonfarm dwellings

The first step in preparing annual estimates of personal net rents from rented nonfarm dwellings is to derive, separately for urban and rural nonfarm dwellings, midyear annual numbers of rented dwellings and of mean annual contract rent per dwelling. Annual contract rent for each of the two cells is then obtained by multiplication. For the period from 1929 through 1940, dwelling unit numbers and mean and total rentals were estimated separately for each of four cells, cross-classified between one- and multi-family structures as well as by urbanization. After 1940, however, neither mean rent indexes nor numbers of rented units were available with a structure-type breakdown.
Next, cell estimates of landlords' total expenses for facility and utility services included in rent are obtained by an analogous formula. Deduction of these from the contract rent aggregates yields Space rent of tenant-occupied nonfarm dwellings, a component of personal consumption expenditure and of gross national product.
Landlords' other expenses are then estimated and deducted from space rent to determine landlords' net rental income.
Finally, net rents of nonpersonal landlords are estimated and deducted to obtain the nonfarm rented dwelling component of the rental income of persons.
The magnitudes involved in these calculations are illustrated by the 1947 values shown below.

Exhibit 8.-Calculation of Space Rent and Net Rent for Nonfarm Rented Dwellings, 1947

| Item | Urban | $\begin{gathered} \text { Rural } \\ \text { nonfarm } \end{gathered}$ | Total |
| :---: | :---: | :---: | :---: |
| 1. Rented nonfarm dwellings (number in millions) -- | $\begin{array}{r} 12.441 \\ 5.007 \\ 5.068 \end{array}$ | $\begin{array}{r} 3.339 \\ 269 \\ 896 \end{array}$ | 5,964 |
| 2. Times: Average annual rent (rounded to dollars).-- |  |  |  |
| Lquals: Total contract rent (millions of dollars).-. |  |  |  |
| 3. Less: Landlords' expenses for facility and utility services included in rent |  |  | 1,560 |
| 4. Use of cookstoves, refrigerators, furnishings.-- | $48 \overline{1}$ | 0 |  |
| 5. Electricity, fuel, water, gas, and miscellaneous Equals: Personal consumption expenditure for space rent | 980 3,607 | 797 | 14,404 |
|  | 3,607 |  | 3,249 |
|  | 743 |  |  |
|  | 910 |  |  |
|  |  |  |  |
|  |  |  | 1,153 |
| 11. Less: Nonpersonal landlord net income $\qquad$ <br> Equals: Net rental income of personal landlords from nonfarm rented dwellings. $\qquad$ |  |  | 1,071 |
|  |  |  |  |  |

${ }^{1}$ The published series for consumption expenditure for space rent also includes sillowi ances, totalling $\$ 214$ million in 1947 , for certain liture for space rent also includg house rents and lodging receired
gratis as a perquisite of employment. These allowances are rough approximations based on a variety of census, income tax, social security and other data.

The derivation of the values in Exhibit 8 is of special importance for two reasons. In the first place, substantially the same procedures and data sources used here are used also in deriving estimates for owner-occupied dwellings. Secondly, the estimated
expense series for rented dwellings are used in extrapolating the expenses incurred by persons as lessors of business and industrial property. For these reasons the exhibit will be discussed line by line.

1. The total number of nonfarm rental dwelling units has been benchmarked on the decennial Censuses of Population and Housing for 1930, 1940, and 1950. Census Bureau data, based on interviews with scientifically constructed samples of $20,000-30,000$ families surveyed in connection with the Bureau's "Monthly Report on the Labor Force", were used for the years 1944, 1945, and 1947-49. The 1948 and 1949 sample surveys yielded only the total numbers of occupied dwellings, which were distributed by tenure and raised to cover vacancies with the aid of ratios interpolated between the survey-based figures for 1947 and those indicated for 1950 by preliminary sample tabulations from the decennial census of that year. Data for 66 cities included in the Commerce Department's Real Property Inventory of 1934 were used in much the same way in making the 1934 estimates as were the Census Bureau surveys for 1944, 1945, and 1947, except that data for the 66 cities were used for extrapolation instead of being treated as a stratified sample and expanded.
Estimates for years not covered by decennial census or sample data have been derived by adding to the base-year totals the cumulative net number of new multi-family units provided in each subsequent year by construction or conversion, and deducting an allowance for the number of units demolished. The construction series rest on Bureau of Labor Statistics estimates of housing starts, which are based chiefly on reports of building permits issued. (See section on New construction.) The conversion and demolition series have been derived, partly by graphic interpolation, in the process of reconciling the decennial census totals and the Census Bureau's sample-based data with the estimates for the same dates made by adding new construction cumulatively to the base stock. For the war and early postwar years, such reconciliations also required allowance for the shift of many dwellings out of the rental market to owner occupancy.
The annual midyear number of rented nonfarm dwellings occupied is estimated from the total number of rental units by use of occupancy ratios based on the Census sample surveys and decennial enumerations.
2. Average annual rent for rented units likewise has been derived from the decennial censuses of 1930, 1940, and 1950 and the sample surveys made by the Census Bureau for 1944, 1945, and 1947. Minor adjustments have been made in the decennial census data for nonreporting of rent and to convert the final means for April to an annual-average basis. Values for other years represent interpolations and extrapolations by reference mainly to the Rent Index component of the Bureau of Labor Statistics Consumers' Price Index. Also used for this purpose were the mean rent data provided by the Financial Survey of Urban Housing for a $12-15$ percent sample of all families in 52 cities, covering the years 1929, 1932, and 1933.
The Rent Index is based on returns filed by about 100,000 families in 34 cities. The National Income Division has modified the recent-year values in the Index to allow for the comparatively high rent of newly constructed dwellings (as indicated by properties mortgaged under Federal Housing Administration guaran-
${ }^{\text {tee) }}$ and for changes in the common practice of landlords with
regard to the inclusion of facilities and utilities in rent. Data for the latter adjustment are obtained through periodic Dwelling Unit Surveys by the Bureau of Labor Statistics.
3. Facility expenses and utility bills, although sometimes paid by the resident family directly to the producer, are often in-
cluded in cluded in contract rent and paid by the landlord. As outlays for these items are classified in gross national product under personal to umption expenditures for household operation, it is necessary lords exclude from the housing component the allowance which land-
lords make for them in fixing rents. The total amount to be
excluded for each item is estimated by multiplying together two factors: the average cost of providing the item for one dwelling; and the number of dwellings for which the item is provided at the landlords' expense. The derivation of each of these factors is outlined below under (4) for facilitics and under (5) for utilities.
4. The average cost of providing each type of facility (cookstove, refrigerator, or furnishings) for one dwelling is calculated for the present purpose as the sum of amual depreciation plus maintenance cost, since this sum is the extra amount which the rent must cover to make the inclusion of the facilities in it worth while from the landlords' standpoint.

The estimates of average maintenance cost (except for furnishings) are flat rates based on trade opinion. Depreciation averages are calculated from the estimated original average price of the equipment in use, by straight-line amortization over the estimated useful life of the equipment. The length of useful life is determined for most items from studies made for the Bureau of Internal Revenue. The original average price which is amortized is generally calculated as a weighted moving average of annual prices covering a back period equal to the length of useful life.

For stoves and refrigerators, it is derived by dividing the total value of sales during the back period by the total number sold during that period. Annual value of sales and number sold have been estimated basically from Census of Manufactures data, which have been interpolated, extrapolated, and raised to cover distribution cost by use of information from trade sources.

For furniture, a sample-based average expense benchmark was derived for 1933 in the Financial Survey of Urban Housing. This is extrapolated by Bureau of Labor Statistics price indexes, and the annual results are averaged over the back period without weighting the years.

The numbers of dwellings for which facilities are provided at the landlords' expense are estimated by applying percentage ratios to the series on total number of rented units described under (1) above. Base-year percentages of dwellings let furnished were determined from the 1940 Census of Population and Housing and from the 1934 Financial Survey of Urban Housing, and interpolated and extrapolated by use of data gathered periodically by the Bureau of Labor Statistics from families in the sample underlying its Rent Index. Percentages of dwellings let with refrigerator were estimated from the 1934 Financial Survey of Urban Housing and the 1935-36 and 1941 studies of consumer purchases, and their trend was established from data analogous to those used in extrapolating the percentages of dwellings let furnished. For cookstoves, an arbitrary percentage has been selected on the basis of general impressions.
5. The average costs of utilities per dwelling are generally derived from fairly complete annual data supplied by agencies such as the Edison Electric Institute and the American Gas Association. Average fuel bills, however, were based on the Financial Survey of Urban Housing of 1934. They are extrapolated by an indicator representing the product of the Consumers' Price Index fuel component times an index of heating season degree days as reported by the Weather Bureau.

The aggregates in line 5 of Exhibit 8 are products of average cost, total number of units, and percentages of units including the respective utilities in rent. The latter percentages are based on the Financial Survey of Urban Housing and on recent studies by the Bureau of Labor Statistics using the sample which underlies the Rent Index.
6. The other expenses deductible from contract rent in calculating rental income are estimated largely from value ratios applying to all dwellings, and may therefore conveniently be described here for owner-occupied as well as for rental units.
7. Depreciation is derived by applying a flat rate of 2 percent to the estimated original cost value of all nonfarm dwellings. The result is allocated by tenure groups, in the absence of original cost breakdowns, in proportion to aggregate fair market value in each category.

The depreciation rate is based on several surveys of average length of useful life of dwellings, including in particular that made by the National Association of Real Estate Boards for the Bureau of Internal levenue.

Original cost value of all nonfarm dwellings is estimated by cumulating annual estimates of original and subsequent construction outlays on units still existing. The 1940 Census of Population and Housing reported a distribution of the current stock of housing by year of construction. Unit mean original cost of dwellings in each age group was estimated chiefly from the building permit data described in the section on New construction, and was multiplied by the number of units found by the Census in that age group to obtain a census-year aggregate. The corresponding aggregates for noncensal years are derived by adding subsequent-year construction outlays to (or subtracting previous-year outlays from) the benchmark.

The tenure-class distribution of fair market value used for the allocation of the depreciation total is based chiefly on the tenureclass series for number of units and mean rent (or rental value, for owner-occupied units). The rent and rental value means are converted to fair market value equivalents by use of a regression derived from the 1940 Census of Population and Housing, and multiplied by the respective numbers of units to secure value aggregates.
8. Taxes are estimated as a variable fraction of the property tax series described in the section on Government receipts and expenditures. This tax series is allocated among nonresidential property, rental housing, and owner-occupied dwellings.

For the period from 1929 through 1941, the allocation was derived from a detailed study of State and local government fiscal reports. For subsequent years, it has been made in two partsthe tax series is allocated between nonfarm residential and all other realty; and the nonfarm residential portion is then allocated by tenure groups. The primary allocation of the tax series between nonfarm residential and other realty has been carried forward in terms of taxable value, allowing for new construction, depreciation, and trends in assessment practice. The tenure-class allocation has been extrapolated from 1941 by the tenure-class distribution of fair market value described above in connection with the estimates of depreciation.
9. Mortgage interest is calculated as the product of mortgage debt in each tenure class times a general mean rate of interest. Debt on owner-occupied units is estimated from the benchmark averages found by the 1940 Census of Population and Housing and from the Federal Home Loan Bank Administration's series on oneto four-family units, which is based on reports from a large sample of lending agencies. The latter series provides the chief component for an annual estimate of total nonfarm residential debt, which takes into account the value of multi-unit building construction and trends in apartment-house debt retirement. Owner-occupants' debt is subtracted from this total estimate to derive debt on rented and vacant units. The general interest rate series used is based on the 1940 Census of Population and Housing, with adjustments to make it a weighted average and applicable to the calendar year as a whole. Interpolations and extrapolations of the rate series utilize such sample materials as the Federal Home Loan Bank Administration's series on mortgage loans and interest income of substantially all building and loan associations.
10. Other property expense consists of estimates for repair and maintenance, insurance, and miscellaneous costs. Repair and maintenance cost accounts currently for two-thirds of the sum of these three components. Benchmark averages derived from the $1935 \mathbf{3 6}$ Study of Consumer Purchases and from a similar but much smaller survey made in 1941 were multiplied by 1930 and 1940 Population and Housing Census data on number of dwellings to obtain subtotals for each of a large number of regional, rent-level, and structure-type cells. The sum of the subtotals for owner units is extrapolated with the aid of State sales tax data on sales of building material retailers. The average per rental unit is extrapo-
lated by an indicator series pieced together from sample data reported in rent control agency surveys and from collateral information such as average repair and maintenance for owneroccupied dwellings and average space rent for rented units. Extrapolation to 1929 and interpolation between 1930 and 1940 were accomplished in terms of averages per unit by use of series on income per nonfarm family.

The foregoing estimates of facility, utility, and other expenses incurred on rented nonfarm dwellings are deducted from the estimated rentals of such dwellings to obtain the figure for net dwelling rents of all landlords.
11. Rental housing, however, is owned by business enterprises and government agencies as well as by persons. In the absence of any direct information, contract rentals and expenses on holdings of persons are derived by eliminating the business- and gov-ernment-owned portions from the totals. In line 11 of Exhibit 8 only the net adjustment is shown.

For government, the estimates of rental receipts are derived chiefly from reports and records of the Public Housing Administration. Business dwelling-rent receipts are calculated as the sum of (a) real estate corporation apartment building rentals; (b) other dwelling rentals received by real estate corporations, and dwelling rentals of insurance companies; (c) dwelling-rent receipts of corporations in banking, brokerage, and finance, n.e.c.; (d) for all other corporations, an arbitrary five percent of their total rent receipts as reported for income tax purposes; and (e) for each of these groups of industries, the same percentage of noncorporate as of corporate total rent receipts.
(a) For corporation-owned apartments, the base-year estimate was obtained by a reconciliation of total rent receipts shown on real estate corporation income tax returns for 1937, which excluded apartment buildings, with those shown on returns for 1938 , which included them. This estimate was extrapolated over the 1929-40 period by total rent on multi-family dwellings. It has been carried forward from 1940 by an index of mean rent on all rented urban dwellings. The use of the latter index in this connection is a makeshift, adopted for lack of a more appropriate extrapolator series for this period.
(b) The estimates of insurance company dwelling rentals and nonapartment dwelling rentals of real estate corporations utilize tax return data to determine total rent receipts, which are distributed between residential and nonresidential by use of reported figures on value of life insurance companies' investment holdings of dwelling and nondwelling real estate.
(c) An analogous method is applied for banking, brokerage, and finance, $n$. e. c., using reported data on types of bank-owned realty. Part (d) requires no comment, and the noncorporate totals required for (e) are benchmarked on Federal tax return data for sole proprietorships and partnerships and extrapolated by the corporate series for the respective industries.
The resulting series for dwelling rental receipts of business is used in two connections-as a deduction from total nonfarm dwelling rents in arriving at dwelling rental receipts of persons, and as the basis for the estimates of business firms' expense on rental housing, which are deducted from total nonfarm dwelling landlords' expenses in arriving at dwelling rental expenses of persons. For the latter purpose, the business receipts series is multiplied by expense ratios based on income statements appearing in Moody's Manuals of Finance, Insurance and Real Estate corporations for a sample of about 150 concerns. Expenses on public housing, like rental receipts, are estimated from fiscal reports and accounting records.

## Net royalty receipts

These are estimated annually by use of Federal income tax return data, on the assumptions that (1) the ratio of royalty ret ceipts to nonfarm nonresidential rental receipts is the same for persons as for corporations, and (2) the ratio of net to gross royalty income is the same for persons as for corporations specializing
in royalty-yielding investments. Preliminary estimates for the two most recent years, pending the availability of the tax return tabulations, are made by extrapolation using a suitably weighted index of mineral production and an index of the net/gross rent ratio for nonfarm business and industrial property.
Since the basic use made of these estimates of net royalties is in the allocation and extrapolation of the net rents and royalties total derived from the individual income tax returns, any error in the 1941 level is balanced by an opposite error in the benchmark level of persons' net rent from business and industrial property. The net effect of any such error is therefore to mis-weight the extrapolator series.

## Rent on business and industrial property.

In estimating net rental income of persons from nonfarm business and industrial property, individual income tax return data for 1941 were adjusted for coverage and concept and to eliminate net rent from nonfarm dwellings and net royalties, as shown in Exhibit 7 above. The resulting benchmark has been extrapolated as the difference between annual estimates of gross rental receipts and of expenses. The calculations involved are illustrated in Exhibit 9.
Exhibit 9.-Persons' Net Rents from Business and Industrial Property, 1941 and 1947
[Millions of dollars]

| Item | 1941 | 1947 |
| :---: | :---: | :---: |
| Rent on nonfarm business and industrial property: |  |  |
| 1. Paid by business and government. | 3.685 | 5,988 |
| 3. Equals: GROSS RENTAL RECEIPTS OF PERSONS from nonfarm business and industrial property | 1,947 | 2,952 3,036 |
| 4. Less: PERSONS' EXPENSES as landlords of nonfarm business and industrial property | 11,298 | 1,435 |
| 5. Equals: PERSONS' NET RENTS from such property | 2640 | 1,601 |

1 Derived as line 3 less line 5 , in 1941 only.
Benchmark estimate based on data from Federal individual income tax returns. See
Exhibri 7 .
Gross rental receipts of persons from nonfarm business and industrial property (line 3) are estimated by a residual method: business enterprise and government rent receipts other than from dwellings and farm property (line 2) are subtracted from business enterprise and government rent payments (line 1). Of the series used in this calculation, total business enterprise rent receipts and payments are estimated primarily from Federal income tax return data for corporations, partnerships, and sole proprietorships. Total government rent receipts and payments are estimated from the Federal Budget and fiscal reports of sample States and municipalities. Dwelling rent receipts by government and business are derived as indicated above (in the discussion of line 11 of Exhibit 8) and netted out of their total receipts. Rents on farm property, likewise netted out, are estimated partly from government fiscal records and partly by use of percentages from a 1945 study of a sample of 150,000 farm owners.
Persons' expenses (line 4) were estimated for 1941 as persons' gross receipts (line 3 obtained as described above) less their net rents (line 5 derived from tax data as shown in Exhibit 7). For extrapolation, ( $a$ ) the resulting estimate of total 1941 expense Was itemized, and (b) the value for each expense item is moved by reference to the corresponding expense series for nonfarm rental housing. The sum of the expenses is then deducted from persons' gross rental receipts to yield annual net rental income of persons from nonfarm rusiness and industrial property.
(a) The percentage distribution of expenses used in itemizing the 1941 total was based on tax return data for real estate corporations. The total for each expense item reported by such corpora-
tions tions was first adjusted to eximinate the portion of it chargeable to rental housing, calculated as corporations' dwelling rent receipts
(from 11 above) times the expense ratio shown by the sample of about 150 rental housing corporations from Moody's Manuals.
(b) In extrapolating the resulting nondwelling expense benchmarks by the dwelling expense series, it is necessary to allow for the fact that expenses rise and fall with changes in the number of rental units. To correct generally for any divergence of this sort between dwelling and nondwelling expense series, the sum of persons' expenses so extrapolated is multiplied by an index of the ratio of persons' gross rental receipts from nonfarm nonresidential property to landlords' gross rental receipts from dwellings.

Tax return data become available at intervals of varying length for the various items used in estimating net rent on business and industrial property. Annual tabulations from corporate income tax returns are completed only after a lag of three years; and periodic tabulations from individual and partnership tax returns must be extrapolated over periods ranging up to four or five years. The extrapolations necessitated by these lags are based for corporations upon indexes of employment, payrolls, or industrial production and upon samples of published corporate financial statements; and, for noncorporate business, upon the rent series for corporations in the same industries.

## 2. Owner-occupied Nonfarm Dwellings

Imputed income derived from owner-occupancy of nonfarm dwellings made up over one-third of total net rental income of persons in 1947, and a somewhat smaller fraction in most of the earlier years. This imputed income item is defined as the gross return which the owner-occupants of nonfarm dwellings could theoretically have realized had they offered their houses for rent, less their expenses. The implied option is considered from the standpoint of the individual owner-occupant, but without regard to any special treatment accorded under the rent control legislation to dwellings previously owner-occupied.
In general, the methods used to estimate the imputed item of rental income as well as the corresponding consumer expenditure component, Space rental value of owner-occupicd nonfarm dwellings, parallel those discussed above for rental housing in the use of population census benchmarks, periodic sample surveys, and the Rent Index. Even the statistical problem of facilities included in rental value occurs with owner-occupied as well as with rented dwellings, since the 1940 Population and Housing Census, which provides the sole benchmark for rental value of owner units, reported such value inclusive of cookstove, refrigerator, and (for multi-family structures) any utilities included in the rent of other dwellings in the same structure.

Accordingly a separate description of the methodology underlying the imputed rent estimates is not given. Only two points of difference between imputed and contractual rent estimation need be noted. First, in the case of owner-occupied dwellings it is unnecessary to allow for ownership by landlords other than persons. Secondly, the estimation of mean contract rental value per unit is complicated for owner-occupied dwellings both by a relative paucity of data and by the more subjective character of such data as exist.
The benchmark data for mean rental value of owner-occupied units are estimates for the individual dwellings reported in the 1940 Census of Population and Housing. Enumerators were instructed to base the estimates on rents actually being charged for similar dwellings in the neighborhood. In deriving the benchmark means from these data, a systematic downward adjustment, amounting to about two percent, was made to eliminate the apparent effect of enumerators' having occasionally used a rule-ofthumb ratio to market value in estimating rental value.
A direct estimate was also developed for 1930, based on Population Census value data for that year used in conjunction with value-rent relationships indicated by the 1940 Census. Estimates for 1932 and 1933 are extrapolations from 1930 by data for 22 cities from the Financial Survey of Urban Housing. They recon-
cile very closely with the results of extrapolation back from 1940 by series underlying the Rent Index compiled in the Bureau of Labor Statistics.

The estimates of rental value for 1944, 1945, 1947 and 1950 were obtained by extrapolation from 1940, as follows: (a) The mean rental value of all occupied units combined (rented as well as owned) was extrapolated by mean rent for rented units, which in turn had been estimated from Census Bureau sample data; (b) the means for all occupied units and for rented units were multiplied respectively by the corresponding numbers of units, and (c) the products were differenced to secure aggregate rental value of owner-occupied units. This procedure was adopted primarily to take account of the effect of the shifting of units from rental to owner-occupancy.
For other years, compilations made by the Bureau of Labor Statistics for its Consumers' Price Index have scrved as the chief basis for interpolating and extrapolating mean rental value. The compilations used for 1935-39 were indexes of rent by rent ranges. Other interpolation estimates were based in most cases directly on the published Rent Index.

## 3. Farm Realty

The basic series used in estimating net rent from farm property are prepared by the Bureau of Agricultural Economics, using the data-collecting system and some of the specific estimates described in the section on Income of unincorporated enterprises. In conformity with the Department of Agriculture treatment, all farm net rents received by or imputed to landlords living on farms are regarded as incident to the business of farming, and hence are included in national income under the heading of net income of unincorporated (farm) business rather than under the heading of rental income of persons. The magnitudes involved in the 1947 estimates are as follows:

Exhilit 10.-Persons' Rentals from Farm Property, 1947

| Item | Millions of dollars |
| :---: | :---: |
| 1. Grosy farm rent and Government payments to landlords. .-............... | 3,207 |
| 2. Less: licnt payable to farmer landlords, nonfarm business, and government | 1,127 |
| Equals: Gross rental income of persons from farm property | 2,080 |
| 3. Less: Expenses of personal landlords. | 677 |
| 4. Equals: Net rental income of persons from farm prope | 1,403 |

1. Gross rent payable to landlords includes crop share, livestock share, and cash rents. It is estimated by the Bureau of Agricultural Economics from acreage and production statistics, using relationships from Agriculture Census reports, Crop Reporter data, and a special survey for 1936 of a sample group of 15,000 reporting landlords. As used by the National Income Division, the series also includes income from Government payments made to landlords qua landlords (as distinguished from such payments made to farm operators as such).
2. The distribution of the total by landlord groups is based on data from the 1936 survey mentioned above and from over 150,000 returns to a 1945 survey. A primary distribution between landlords living on farms and other landlords is calculated by the Department of Agriculture from these surveys, and ratios from the 1945 survey are used by the National Income Division to break out for that year nonfarm business and government rent receipts from the total going to landlords not living on farms. For other years, the business and government receipts are extrapolated by government fiscal and corporate tax return data.
3. Landlords' expenses represent those shares of farm production expense items such as taxes, depreciation, repairs, insurance, and seed (see discussion of farm proprietors in the section on Income of unincorporated enterprises) which are borne by per-
sonal landlords. The total paid for each item is allocated first between rented and owner-occupied farms, generally by use of acreage or property value ratios derived from the quinquennial Census of Agriculture. The major expense items involved for rented farms can be assumed to be paid by the landlord rather than by the tenant. Seed, fertilizer, and binder twine, however, illustrate a different treatment, lessors being estimated to pay a fraction of these determined by the ratio of share-cropped acreage to total crop acreage. The amounts of expenses ascribed to landlords are prorated between landlords living on and off farms in proportion to the land owned by each, as indicated by the 1936 and 1945 surveys. Finally, expenses of landlords living off farms are prorated between persons and nonpersonal landlords by use of the corresponding distribution of rental receipts described above.

## Characteristics of the Revisions

As has been indicated above, the rent estimates are based upon a wide variety of sources, many of which are nonrecurrent, or become available infrequently and irregularly or with substantial delay.

To the extent that the estimates of rents rely on corporate income tax data, the figures for the two most recent years published each July are subject to revision. However, revisions may extend further, for instance when new benchmark data lead to the substitution of interpolations for previous extrapolation procedures over a number of years. The forthcoming results of the 1950 decennial Census of Population and Housing will lead to changes of this type.

A particular aspect of the net rent estimates should be noted. The published totals for the years 1929 through 1941 are based upon a more summary methodology than has been described in this section. The present methodology and estimates corresponding to it were developed after the publication of the comprehensive changes made in the national income estimates in 1947. Because of subsequent decisions to limit revisions in these estimates, the new rent series have not yet been incorporated for years prior to 1942.

## 5.-CORPORATE PROFITS

The basic estimates of corporate profits are derived from annual tabulations of corporate income tax returns compiled by the Bureau of Internal Revenue. The tabulations are available, for the most part, from the Bureau's annual Statistics of IncomePart 2, or are taken from the "Source Book", unpublished volumes supplementing Statistics of Income with more detailed information.

These data are sufficiently complete and reliable to overcome many of the difficulties which are inherent in the estimation of profits. Filing of detailed returns is mandatory, and the returns are prepared in the knowledge that they are likely to be audited. Although the measurement of profits involves many conceptually difficult problems, the imposition of administrative rules and regrlations during the long time period over which the Bureau of Internal Revenue reporting system has been in operation has gone far toward standardizing accounting practice for corporate income tax reporting.
On the other hand, certain important problems still arise in the translation of the tax return data into estimates of corporate profits for national income purposes. The data must be adjusted in various ways to secure comparability with other entries in the national income and product tables. One of these adjustments, in particular, involves a considerable amount of estimation-allowance for the additional profits disclosed by auditing. The auditing process to which returns accounting for the bulk of profits in any year are subjected requires about fifteen years to complete, and
its ultimate, full effect in revising the profits figures originally tabulated must be estimated from reports of its progressive effect on tax liability as the auditing proceeds.
There is a time lag before the tax return data become available. This necessitates reliance on extrapolation procedures to obtain estimates for the two most recent years. As is indicated at the end of this section, such extrapolations have at times led to errors of significant size, particularly on an industry basis. The situation in this respect is improving, however, due to progress in the current reporting of corporate profits through the joint surveys of the Securities and Exchange Commission and the Federal Trade Commission. These surveys have provided improved data on manufacturing since 1947. They are being further strengthened and extended to other industries.
The corporate profits estimates are classified industrially on the basis of companies, or firms, rather than establishments. As discussed briefly in the Introduction to this Part, this results in incomparability with the income shares that are classified on an establishment basis. The most serious practical limitations in this connection arise in the comparison of payrolls and profits in certain industries.
Use of the company, as against the establishment, as the unit of classification leads to an industrial distribution further removed from a product, or activity, basis. This is so because the operations of companies are generally more heterogeneous than those of establishments. Consequently, with companies assigned to specific industry groups on the basis of their major activity as measured by receipts, there is more likelihood that movements in the industry series will reflect changes in classification of firms due to marginal changes in the composition of their activity, rather than substantive changes in the type of industrial activity indicated by the industry designation. Special cases of shifts of this type resulted from Federal tax legislation affecting the filing of consolidated and unconsolidated returns. In this respect, the industry breakdown of corporate profits in the periods 1929-33 and 1942 to date is not strictly comparable to that for the years 1934 41, when, with certain exceptions, filing on an unconsolidated basis was required.
In the following pages the base year estimates and their current extrapolations will be discussed in turn.

## Base Year Estimates

All of the adjustments made in the tax return data are indicated in table 38, Part V of this report. Exhibit 11 below lists for the year 1947 those which involve no estimation, the required values being shown separately in the tax return data or reported elsewhere on a complete basis. Further adjustments which must be made using estimated values are shown in Exhibit 12.
The "Totals as reported" from tax returns are tabulated by Exhibit 11.—Adjustments Not Requiring Estimation in the Derivation of Corporate Profits Before Taxes, Profits Taxes, and Net Dividend Payments, 1947 [Millions of dolars]

| Item | Profits before taxes | Profits taxcs | Dividend payments |
| :---: | :---: | :---: | :---: |
| Amounts derived from tax returns: Totals as reported | 31,615 | 11,011 | 8,365 |
| Adjastments: <br> Domestic dividends received. Foreign dividends received | $-1,882$ -341 |  | $-1,882$ -341 |
| Depletion. | +1,210 |  |  |
| Net capital gain. <br> Net gain, sales other than capital assets <br> Net loss, sales other than capital assets | -925 -323 +325 |  |  |
| Mutual nonlife insurance companies. | -21 | -10 | +5 |
| Foreign income ta |  | -230 |  |
| Amounts reported by Federal Reserve System | +93 | +75 | +3 |
| Totals from tax returns, as adjusted | 29,751 | 10,846 | 6,150 |

the Bureau of Internal Revenue as Compiled net profit, Total tax (consisting of Federal income and excess profits taxes), and Dividends paid in cash and assets other than own stock, respectively. These totals provide the starting points for the estimates described in the present section.

Dividends received are deducted from profits and dividends to obtain unduplicated totals reflecting income originating in United States corporate production; depletion is added to profits since it is not regarded as an element of capital consumption in the national income and product accounts; and capital gains and losses are eliminated from profits as not measuring incomes arising in current production.

The adjustment for mutual nonlife insurance companies will be commented upon in connection with a similar adjustment in Exhibit 12 for mutual life insurance companies. The adjustments for foreign dividends received and foreign income taxes paid also will be discussed under Exhibit 12, in connection with related international adjustments.

Finally, reported data for the Federal Reserve System are added, since they are not included in the basic Bureau of Internal Revenue tabulations.

In addition to these adjustments, there are others which are made by use of estimated rather than reported values. These are itemized in Exhilit 12.

Exhibit 12,-Adjustments Requiring Estimution in the Derivation of Corporate Profits Before Taxes, Profits Taxes, and Net Dividend Payments, 19.47
[Millions of dollarsi]

| Itern | Profits hefore taxes | $\begin{aligned} & \text { Profits } \\ & \text { t:uxcs } \end{aligned}$ | $\begin{aligned} & \text { Set } \\ & \text { dividend } \\ & \text { myments } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| Totals from tax returns, as adjusted per Exhitit $11 . .$. | 29,751 | 10,816 | 6,350 |
| Adjustments: <br> Profits disclosed by audit_ | --1,350 | $+490$ |  |
| "Rest of the world" industry- | +213 |  | $+2.51$ |
| Foreign income tax on branch profit Foreign incone tax on dividends... | -120 |  | +110 |
| Mutual life insurance companies. | $-1.30 \%$ |  | + 50 |
| State income taxes. | - 400 | +604 |  |
| Final estimates. | 30.489 | 11,940 | 6,561 |

## Audit adjustment

The tax return data shown in Ewhibit 11 are compiled from the returns before audit. The first adjustment indicated in Exhibit 12 is the addition of the estimated profits and tax liability disclosed through subsequent audits by the Bureau of Internal Revenue. It should be noted that not all returns are audited, and that even in the audited returns there may remain some understatement of profits.

Furthermore, the national income estimates of the actual results of audit are subject to a significant margin of error, because they must be based on data rather unsatisfactory for the purpose. In the first place, the auditing process is far from complete for many of the years for which estimates must be made. Secondly, the results of audit are reported in terms of net additional tax liability only. The additional profits disclosed are not tabulated, and neither are the effects of audit in reducing the size of deficits originally reported.

The estimating procedure is carried out in three steps. The first is to determine the results to date of the auditing process for the given tax year. This is done by cumulating the net additional corporate tax assessments made for that tax year to the end of the following June, to the end of the second following June, and so on up to the latest reported. Such additional assessments are calculated in practice as "gross additional assessments" less the sum of "refunds," "credits," and "duplicate abatentents," all as tabulated by the Bureau of Internal Revenue.

The second step is to add the expected results of further auditing of returns for the given tax year. These are estimated by applying experience-based ratios to the total obtained in the first step. The case of the tax year 1946 will illustrate the method. At present (July 1951), the first step yields a measure of the net additional taxes assessed against 1946 income as a result of about four years of work by the auditors. Study of the auditors' rate of progress in auditing returns for earlier tax years indicates that the fifth year of the process is likely to add about 20 percent to the results obtained in the first four years, the sixth year is likely to add about 15 percent to the initial four-year total, and so on. Cumulating these percentages forward suggests that future auditing of 1946 tax returns may add about 75 percent to the net assessments already reported due to audit. The estimate obtained in step 1 is accordingly raised 75 percent to obtain the estimated nudit adjustment applicable to the tax liability originally tabulated from the 1946 returns. (The 1946 adjustment implied in table 38 was actually made in 1950, when fewer data were available, and will be revised from time to time to take account of the audit results obtained in 1950 and subsequent years.)

The third step is to calculate the additional profits implied by the estimated additional tax assessments. Income tax liability is divided by net income subject to tax, both magnitudes being calculated from tabulations based on the original tax returns. The quotient, representing an effective tax rate, is divided into the estimated additional tax assessments to derive the corresponding additional profits.

Special complications have occasionally been introduced into the first and third steps described above, mainly as a result of tax legislation in connection with World War II. For the first step, adjustments were made in the basic tabulations of audit results to eliminate the effects of recomputing emergency amortization charges, and the effects of the carry-backs of net operating loss and of the unused excess profits tax credit. The adjustments applied to profits and/or taxes for these items are derived independently of the audit adjustment, as indicated later in this section. Similarly, the effects of the credits for debt, retirement and postwar refund (under the World War II excess profits tax) were eliminated, since tax liability is measured net of these credits in the national income accounts.

For the third step, it was generally necessary to utilize separate estimates of income tax assessments and excess profits tax assessments, and separate estimates of effective tax rates.

The results obtained by the auditors during the first three or four years after the returns are filed are believed to provide a fairly adequate basis for applying the method that has been outlined. For the most recent years, the audit adjustment is obtained as a constant proportion of the total compiled deductions of all corporations as tabulated from the tax returns. The constant proportion chosen represents an average based on past experience.

## Adjustments for international flows

The international adjustments listed in Exhibits 11 and 12 are designed collectively to yield: for profits, an aggregate which includes profits and dividends received from abroad but excludes profits and dividends paid to abroad; for dividends, an aggregate which includes dividends received from abroad but excludes dividends paid to abroad; and for taxes, a measure of liability to the United States Government.

For profits, the tax return data as adjusted in Exhibit 11 exclude (1) the dividends received by United States stockholders of foreign corporations. On the other hand, these data include (2) dividends accruing to foreign stockholders of United States corporations and (3) profits to foreign corporations from their branches in the United States. The "Rest of the world" adjustment added to profits in Exhibit 12 is a correction for all three of these characteristics of the data.

It is calculated as the total inflow of dividends (item 1 above) less the sum of dividends paid to foreigners (item 2 above) and profits of foreign corporations' United States branches (item 3 above). All of the items in the adjustment are measured net of income taxes levied by the payer country, in accordance with the definitions used in calculating net foreign investment. The same definitional principle requires that foreign taxes be netted out of the income earned by United States corporations from their branches abroad; this is not done in the tax return data and is accomplished by the second international adjustment to profits shown in Exhibit 12.
For profits taxes, foreign taxes on both branch profits and dividends are deducted (in Exhibit-11) from reported Federal tax liability, against which they constitute a credit.

For dividends, the tax return data as adjusted in Exhibit 11 have three inappropriate characteristics. They exclude dividends received by United States stockholders from foreign corporations; they include dividends accruing to foreign stockholders of United States corporations; and foreign taxes on United States corporations' dividend receipts have been netted out along with the dividend receipts themselves, since the latter are reported (and deducted as in Exhibit 11) gross of such taxes. In Exhibit 12, the "Rest of the world" adjustment (calculated as the total inflow of dividends less dividends paid to foreigners) and the adding back of foreign income taxes paid by United States corporations on dividend receipts from abroad together correct for these characteristics.

Of the series entering into these international adjustments, foreign income taxes are taken from the corporate income tax returns. The series composing the Rest-of-the-world adjustment are prepared in connection with the balance-of-payments estimates of the Office of Business Economics. (See section on Net foreign investment.) The distribution of foreign income taxes between taxes on branch profits and taxes on dividends is based on the relative proportions of branch profits and dividends earned from abroad.

## Exclusion of mutual insurance companies

Mutual companies are not considered part of the corporate universe for national income purposes, and it is therefore necessary to remove from the tax return data the values included for mutual insurance companies. For mutual nonlife companies, the amounts to be removed are reported separately by the Bureau of Internal Revenue and are used as shown in Exhibit 11. Tax return data for mutual life insurance companies are tabulated in combination with the data for stock life insurance companies, and must be isolated statistically to permit the adjustments for them shown in Exhibit 12.

The amount of the adjustment to corporate profits before tax is calculated by subtracting an estimate of stock life company profits from the total of life insurance company profits given in the tax return data. The required series for stock life company profits is estimated as the sum of cash dividends paid and Federal income tax liability (these items as reported to the Bureau of Internal Revenue are applicable only to stock companies) less sfock life company receipts of dividends. These dividend receipts are computed as 20 percent of the total dividend receipts reported on life insurance company tax returns, the ratio being based on a special tabulation from reports compiled by the Spectator Company for its Insurance Yearbook.
The adjustment shown in the final column of Exhibit 12 for insurance companies represents the remaining 80 percent of the reported dividend receipts of life insurance companies. These are ascribed to mutual life carriers, and added back to net dividends to cancel the effect of their inclusion in the corporate dividend receipts previously deducted. The original over-all deduction and the corresponding adding back of dividend receipts of mutual nonlife insurance companies are shown in Exhibit 11.

## State income taxes

State income taxes are among the deductions made by the taxpayers in arriving at the profits figures shown in the Bureau of Internal Revenue tabulations, but are not shown separately from other taxes in these tabulations and must therefore be ascertained from other source materials. For 1937 and subsequent years, the Governments Division of the Census Bureau has compiled statistics on collections under State corporation income tax laws, from reports filed by the various State governments. The total so reported for each year has been taken as a measure of the tax liability incurred in the preceding year, to obtain the amount of the adjustment illustrated in Exhibit 12. For the years prior to 1936, the adjustment was estimated from a sample including. States which in 1939-42 assessed about half of the national total of such taxes. The raising ratio applied to the sample data was varied annually to allow for the adoption of corporation income taxes by additional States.

## Adjustments not applicable to 1947

A number of adjustments not applied for 1947 had to be made in the Bureau of Internal Revenue data to derive profit estimates for other years. (See table 38.) These included corrections for gross renegotiation refunds, emergency amortization acceleration, war losses, the unjust enrichment and Vinson Act excess profits taxes, and the carry-back tax refund.
Renegotiation of war contracts led to refunds by the contracting corporations which reduced their profits and their tax liability from the amounts originally reported, mainly for the war years. The totals tabulated from the tax returns originally filed were adjusted accordingly, by use of special tabulations published in Statistics of Inccme for the years in which the item was quantitatively important.
The adjustment applied to the profits series for the emergency amortization acceleration is discussed in the section on Capital consumption allowances. The corresponding adjustment applied to the tax series was calculated by multiplying the adjustment applied to the profits series by estimates of effective tax rates.
The tax return data on profits, for 1942 particularly, were net of deductions claimed by some corporations for losses due to enemy capture of properties they owned abroad. A minimum allowance for such losses was estimated from the published income statements of United States corporations believed to have such foreign holdings. This allowance was added back to profits as reported in the tax return data, to bring the treatment of the losses involved into conformity with the treatment of capital losses generally.
The unjust enrichment and Vinson Act excess profits tax collections reported by the Treasury Department were allocated to the years in which the liabilities were estimated to have accrued, and were added to the profits tax series for those years.
The carry-back tax refunds reduced tax liability for the years after 1940 below the amounts originally reported. They were occasioned by statutory provisions allowing unused excess profits tax credits and net operating losses for a current year to be carried back and net operating losses for a current year to be previous years.
Estimation was required because of two circumstances. First, the downward revision in the excess profits tax liability for past years resulting from the carry-back of later-year tax credits had the effect of increasing income subject to the net income tax and therefore the net income tax liability. The amounts of the increases in past net income tax liability were allocated back to the tax years affected by the revision approximately in proportion to to gross refunds reported as due to carry-back of tax credits to those years. Secondly, the adjustment had originally to be made while some claims for refunds were still outstanding and
some othe the adjustment had originally to be some others had been settled but not tabulated. Allowance for
these was these was made by a pettled but not tabulated. Allowance for
scribed above in connection with the audit adjustment. Only small amounts were involved.

Additional tax refunds, not allowed for in the adjustments described above, have been claimed (1) under Section 722 of the Internal Revenue Code, which provides for cases in which the base-period experience used in calculating excess profits tax credit allowances was abnormal, (2) as a result of the reopening of contract renegotiation on account of the reduction in wartime profits caused by the recomputation of emergency amortization charges; and (3) as a result of recent-year operating loss carrybacks to 1946-49. When the estimates were last revised, available data were insufficient to provide a basis for allowances for these.

## Industry breakdown of estimates

In the derivation of corporate profits, taxes, and dividends by industry, such of the adjustments in Exhibits 11 and 12 as are applicable to more than one industry are made separately to the respective Statistics of Income industry benchmarks. The corrections illustrated in Exhibit 11 are generally available in the required industry detail, with the exception of the item for foreign income taxes which appears also in Exhibit 12. For those in Exhibit 12 , the relevant all-industry totals are distributed as follows: the audit adjustment, proportionately to income and excess profits taxes as originally reported; foreign income taxes, proportionately to foreign dividends received; and State income taxes, proportionately to Federal corporate income taxes.
Further adjustments are made in the industry estimates so derived to improve their industrial comparability. They deal with changes made by the Bureau of Internal Revenue in its classification system from time to time (mainly in 1938), and, less important, with categories of firms whose precise industrial attachment is not determined by the Bureau of Internal Revenue.
Changes in the system cause minor industries previously tabulated under a major industry heading to be transferred to another heading. Generally the resulting discontinuity is eliminated by transferring the prior-year values for the minor industry to the new heading. If the minor industry values to be transferred are not reported separately for all years, those for the missing years are estimated by extrapolation using the broader industry series which contain them.
To eliminate the "not allocable" categories in the industrial breakdown of the tax return data, the values in these categories are generally prorated by the corresponding values in the industries among which the "not allocable" totals are to be distributed.
Formal comparability over time in the individual industry estimates is thus secured by methods that are reasonably satisfactory. The more fundamental difficulties affecting comparisons, for which no adjustment can be made, have been noted earlier.

## Recent Year Estimates

As indicated above, the tax return tabulations do not become available until more than two years after the year to which they refer. It is accordingly necessary to use extrapolation procedures to obtain the estimates of profits, taxes, and dividends for the two most recent years. Extrapolators are applied to industrial benchmark estimates uncorrected for audit results, and an adjustment for audit results is then intrcduced into the resulting estimates. This specific adjustment is extrapolated from the base year on an all-industry basis by the difference between corporate sales and profits before tax, which in turn are obtained by extrapolation using the data sources described below.
The source materials available for the construction of extrapolator series may be classified into four categories. These are listed in Exhibit 13 together with the industries for which they are used. The results of the individual industry extrapolations are checked by, and occasionally modified in the light of, independent estimates of total corporate profits derived from tax collection data. The estimates obtained by extrapolation and those based on the tax data will be discussed in turn.

Estimates for the Rest-of-the-world industry, which is not included in Exhibit 13, are discussed in the section on Net foreign investment.

Exhibit 13.-Components of Current Corporate Profits Estimates, ly Basis for Extrapolation, 1947

| Industry | Ditan used in "xtrapolation | Profits before taxes |  |
| :---: | :---: | :---: | :---: |
|  |  | Millions of dollars | Percent of total |
| All induatries, total, excluding inset-of-the-worth. |  | 30,276 | 100 |
| 1. Matafacturing, exrept newspaper pathithing. | Pederal Trade Commission and Securities and Exchanen Commission, Quarlerty Industrial Financia! ReportSeries For 1 Il U.S. Manufacluring Corporations. | 17,076 | 56 |
| 2. Banking: railtoads, highway pasnenger transportation, highway freight transportation and warthoowinge, air tratupportation (collithon (arrimes), piplite transportation; telephome, telegraph and related servicen radiobrematcasting and telerivion: utilities: eleetris and sias. | Dita reported to Foderal regulatory agencies. | 3.393 | 11 |
| 3. Mining; newopaper publiatiot; retail tradle: real ratiate: lomal raitways and bus limes; hotely amd other locking places, motion pictures. | Tabulations of sample data from nongovernment sourcer. | 5,697 | 10 |
| 4. Agriculture, forestry: and tivherim: contract construction: wholsale trade; timance, exeluding bankbut and real extate: water transportation. survices allied to transportation:localutilities and phbie servites, in.e. e.; servires ather than motion pietures and hotels. | Miscellaneous inadequate data. | 4,110 | 14 |

## Industry extrapolations of corporate profits

1. The Quarterly Industrial Finencial Report Scries is by far the most important source noted in Ewhibit 13, being used for manufacturing industries which accounted for more than one-half the all-industry total of corporate profits in 1947. It is based on regular reports from atout $\overline{5}, 500$ corporations in a sample drawn primarily from among conpanios which filed 1943 Federal income tax returns. The sampling and estimating procedures were designed to obtain current statistical aggregates for all manufacturing corporations. The sample is stratificd, and the sample data are expanded, in terms of asset-size classes.

Estimates for all manufacturing corporations with securities registered on a national stock exchonge are prepared in the Securities and Exchange Commission. These companies are crossclassified by industry and asset size. The reported figures for each cell are multiplied by the ratio of the preceding-year assets of all registered corporations in the cell to the assets of reporting corporations in that cell. Estimates for unregistered manufacturing corporations are prepared in the Federal Trade Commission, by multiplying the data for each reporting corporation in the sample by the ratio of the total number of unregistered corporations in that asset class to the total number reporting.
The measures of profits ("net income before Federal income taxes'), Federal tax liability, and dividends in this survey are based on definitions similar to those used by the Bureau of Internal Revenue, except for the effects of (1) consolidated reporting and (2) more liberal rules in the survey for the expensing of current additions to reserves. The chief variations between the national income definitions and those used for the survey are therefore due to the items listed in table 38. The impossibility of adjusting for any of the latter (apart from the expected results of audit) inevitably introduces some error into the estimates.

All reporting corporations are classified by industry (as of 1046), and industry aggregates are derived by summing the
reported amounts expanded as described above. These industry aggregates are not in all respects satisfactory for use in extrapolation. The industry breakdown has shortcomings because of the general use of consolidated returns for affiliated corporations, and because the basic design of the sample and the expansion factors used by the Federal Trade Commission are not primarily intended to yield reliable individual-industry details.
In spite of these limitations, the Financial Report Series provides extrapolators for these manufacturing industries substantially more reliable than those (compiled from privately published financial statements as described under 3 kelow) used prior to the initiation of the Financial Report Series in 1947.
2. Banking, transportation, and communications and public utility corporations accounting for the bulk of the profits in their industries are subject to Federal regulation, and submit regular financial statements to the respective regulatory agencies-the Federal Deposit Insurance Corporation, the Interstate Commerce Commission and the Civil Aeronautics Administration, the Federal Communications Commission, and the Federal Power Commission. The coverage of the data used in extrapolation for most of these industries is consequently very good. On the other hand, neither the industry classification scheme nor the report forms can be made to match exactly the definitions used in national income estimates; in some cases, there are important differences in concept or coverage. These discrepancies affect the level and movement of the extrapolator series, and result in errors in the estimates based on them.
3. For a number of industries covered neither by the Financial Report Series nor by reports to regulatory agencies, the estimates are extrapolated with the aid of sample data compiled from published financial reports of individual companies. These samples include substantially every domestic nonmanufacturing corporation for which the requisite data are published in Moody's Manual of Industrial Securities. Nevertheless, their coverage is much less adequate in general than that of the data obtained from regulatory agencies, and they fall short in coverage also of the manufacturing sample. Moreover, they are less well designed than the latter, since in general only large corporations can be included. Their definitional comparability with the benchmark estimates is subject to the same general limitations as the extrapolators described under (1) and (2) above. Capital gains and losses, as well as charges to special reserves not allowable for tax return purposes, are eliminated to the extent permitted by the published details, in accordance with national income definitions. The results are tabulated and weighted in as fine an industrial breakdown as the sample reports and the basic tax return tabulations allow.

Retail trade is by far the most important industry in this group, accounting for about 60 percent of the profits listed in line 3 of Exhibit 13. The sample includes about 150 corporations which earned approximately 25 percent of total retail profits in 1947. Sample data on profits, dividends, and taxes are compiled for eight lines of trade (general merchandise, food stores, apparel, furniture, auto accessories, filling stations, drug stores, and restaurants) which together account for about 60 percent of total retail profits. For four other groups (automobile and truck dealers; auto repair shops; hardware, building materials, fuel and ice dealers; and a miscellaneous category), the estimates are extra* polated by reference to sales series and rough allowances for changes in profit-sales ratios.

The coverage of the sample data varies widely among the eight lines of trade listed, depending to a large extent on the prevalence of large corporations in each line. In general, benchmark profits for each line are extrapolated by the movement of the corresponding sample profits. However, sample sales are compared with estimated total retail sales in each line of trade (see section on Personal consumption expenditures for commodities), and the profit estimates are modified if the movement of the sample sales appears to be unrepresentative.

Adequate sample data on profits are not available for the other four groups. The profit estimates for these are derived by multiplying estimated sales by profit-sales ratios. The sales estimates are obtained, separately for each of the four lines included, by extrapolating benchmark sales, as tabulated in the corporation income tax returns, by the corresponding components of total retail sales. Profit-sales ratios are obtained by moving the benchmark ratios by reference to the movement of sample-based ratios in other lines of retail trade, and on the basis of available limited information from trade sources.
It may be noted that the inclusion of these residual parts of retail trade in line 3 of Exhibit 13 is somewhat arbitrary and dictated largely by expositional convenience. The methodology is very similar to that applied to wholesale trade, which is listed in line 4 and discussed below.
Other major components of the total in line 3 of Exhibit 18 are mining and real estate, which account respectively for about 20 percent and 8 percent of this total. The sample used in extrapolating each includes more than 100 companies. In the case of mining, it should be noted that the ratio of sample profits to universe profits is quite high-around 70 percent-but that many of the sample reports are consolidated statements reflecting operations of affiliates in other industries. The sample ratio for real estate is relatively small, and the sample itself is unavoidably biased toward corporations whose stock is not closely held.
Similar comments apply to the sample for newspaper publishing and in lesser degree to that for motion pictures. Tabulations by the accounting firm of Horwath and Horwath, based on reports from about 100 hotels in more than 50 cities, provide the indicators used for the hotel industry. For local railways and bus lines, the American Transit Association compiles the extrapolator series on the basis of returns from corporations representing about 90 percent of the industry; conceptual differences impair the usefulness of these data in extrapolating profits, however.
4. The final category of industries distinguished in Exhibit 13 consists of those for which little or no current data on profits are available. For these industries, base year profits estimates are extrapolated by tenuous procedures involving, in general, indicators of total sales adjusted to allow for probable changes in profit ratios.
Wholesale trade is by far the most important of these industries, accounting for about two-thirds of the total in 1947. The basic estimate of corporate sales is extrapolated by the sales of service and limited-function wholesalers. The sources and methods for estimating this sales series are the same as those for wholesale inventories, summarized in the section dealing with the change in business inventories. A basic ratio of profits to sales for corporate wholesalers is derived from the income tax return data and extrapolated by reference to the corresponding sample-based ratio series for retail trade. The resulting ratio series is applied to estimated corporate wholesalers' sales to derive corporate profits.
For other industries in this group sales data are in general less adequate than for wholesale trade and use is sometimes made of other indicators of gross business volume such as payrolls. Applicable profit ratios are estimated in principle by means of regressions of profits against these indicators based on past experience. Industry extrapolations of profits taxes and net dividends
For the industries listed in lines 1, 2, and 3 of Exhibit 1 s , the latest base-year data on corporate profits tax liabilities are extrapolated in general by the movement of series on "provision for Federal income taxes" taken from the same sources. In instances in Which such data are not available, or in which they yield erratic results, effective tax rates are estimated by reference to base year data with allowance for changes in tax rates. These estimated rates are then applied to the estimates of profits before tax described above. This latter procedure is used also for the industries listed in line 4.
Net dividends (dividends paid minus dividends received) are
estimated for each industry by extrapolating base year figures by total dividends paid. Dividends paid by the industries listed in line 1 of Exhibit 13 are shown in the same source used for the extrapolation of profits before tax and taxes. Dividends paid by industries listed in lines 2, 3, and 4 are extrapolated by the corresponding industry components of the National Income Division's series on publicly reported dividend payments, compiled monthly from data in Moody's Dividend Record and published regularly in the Survey of Current Business. For these industries, the coverage of this dividend series is broader than that of the corresponding profits series, because many corporations report their dividends but not their profits.

## All-industry estimate based on tax collections

The profits estimates obtained for the latest years through in-dustry-by-industry extrapolation as described above are summed to obtain a tentative aggregate for all industries combined. This aggregate is checked, and in some cases modified, by reference to an independent estimate of total corporate profits based on collections of current Federal corporation income taxes. These data are available with little time lag. The procedure followed in deriving this estimate may be summarized in terms of five steps.

The first step is to multiply total collections by the estimated ratio of liabilities to collections, to obtain a figure for total tax liability. The collections data are lagged one year in deriving the ratio, which is projected from past experience. Liability for the most recent past year must be estimated from tax collections made in the current year, which are still incomplete. Collections reported to date in the current year are raised to a full-year basis by use of past patterns.

The second step is to divide the estimated tax liability by an effective tax rate, to obtain a figure for taxable net income of all corporations having net income. The effective tax rate is determined from tax return data for the recent years for which such data are available, and is projected forward with adjustments to take account of changes in statutory tax rates.
The third step is to estimate and to deduct the total net deficit of corporations having no net income, since for national income purposes corporate profits are calculated net of corresponding losses. The net deficit is estimated by projection from recent years for which tax return data are available, its movement being determined in the light of the total obtained in step (2) and the relationships between the two series shown in the tax return data for earlier years.
Taxable income of all corporations, as derived in step (3), is next increased by estimates of tax-exempt interest income, the amount of prior-year operating loss carried forward, and the credit for dividend receipts. These three items together represent the difference between taxable income and the Bureau of Internal Revenue's current definition of "compiled net profit".
The interest item is estimated by projecting the trend shown in the tax return data for recent years. The allowance for loss carried forward is likewise projected from tax return data, its year-toyear movement being based on that of estimated (or reported) prior-year losses appropriately lagged. The dividend receipts credit is extrapolated from the latest tax-return-based estimate by the net dividend component of national income.
The final step is to proceed from the estimate of compiled net profit, obtained in step (4), to an estimate of corporate profits as defined for national income purposes. The adjustments required are those indicated in Exhibits 11 and 12 (and in Part V, table 38). Some of them must be made on a more or less arbitrary basis, in the absence of current data.

The procedure outlined is subject to significant error at several stages: the estimation of the ratio of part-year to full-year tax collections; of the ratio of tax liabilities to collections; of the ratio of taxable profits to tax liabilities; of the magnitude of corporate deficits; and of the adjustment items (notably for capital gains and losses) between taxable profits net of deficits and profits as defined
for national income purposes, Consequently, a rough range of overall error is calculated. If the sum of the industry estimates falls outside this range, their detail is reexamined and adjustments are made in the direction indicated by the tax data.

## Characteristics of the Revisions

Comparisons of the revised estimates of profits based on tax return data with the interim estimates based on less reliable sources and methods are shown in Exhibit 14.

It can be seen from the exhibit that revisions, usually of minor amounts, continue to be made in the estimates after incorporation of the tax return data. These occur primarily as a result of changes, based on progressively accumulating data for the given year, in the estimate of the effects of audit.

| Published in the Surrey of Curren Business | Lstimates for year- |  |  |
| :---: | :---: | :---: | :---: |
|  | 1945 | 1946 | 1947 |
| July 10.17. | 120,222 | : 21, 140 |  |
| July 19.18. | 20,389 | 121,840 | 29,784 |
| July 19.19. | 19,717 | 23,560 23,464 | 1 31,002 30,489 |
| Juy 1 wo. | 15.117 | 23,464 | 30,489 |

1 Extrapolated forward 1 year from tax return data base.
2 Extapolated forward 2 yeurs from tax return data base.
Since the estimates published in the Survey of Current Business three years after the event are based upon much more nearly complete information than are the initial preliminary estimates published with a lag of less than a year, comparisons between the two cast some light on the reliability of the latter.

In general, compensating errors in the industry series make the detailed extrapolations less accurate than the sums of these. Thus the initial estimate of the all-industry total for 1947 differed only 2.3 percent from that which replaced it when the tax return data became available, while the corresponding differences for the industry groups distinguished in Exhibit 18 were 9 percent for those extrapolated by regulatory agency data; 10 percent for those (other than manufacturing) extrapolated by use of published company reports; and 31 percent for those extrapolated by miscellaneous inadequate data. The initial estimates for 1946 were relatively better in detail, but not so good in total, since the sample-based extrapolators rather uniformly failed to reflect the 1946 shift of numerous enterprises from the noncorporate to the corporate form of organization.

The sample-based series prepared for manufacturing by the Federal Trade Commission and the Securities and Exchange Commission began in 1947. The preliminary estimates shown in Exhibit 14 had therefore to be made without use of these series, and for manufacturing were based instead on sample data compiled by the National Income Division from the published reports of individual corporations.

Certain significant variations exist within the groups in Eahibit 13. Among the industries for which extrapolation is based on data from regulatory agencies, differences of coverage and concept between the national income estimates of railroad profits and the Interstate Commerce Commission series used as extrapolators have necessitated revisions of significant size. Among the nonmanufacturing industry estimates for 1946 and 1947 based on published company reports, those for retail trade have been subjected to percentage revisions somewhat larger than those for the group as a whole. The extrapolations for wholesale trade, the most important based on materials considered definitely inadequate, have likewise been revised by comparatively large percentages when the tax return data became available.

Revisions in the preliminary estimates of taxes have been similar to those in the profits estimates, since both are based largely on a common set of source materials. Sample data for dividend payments are more adequate than for profits or taxes. Revisions in the preliminary estimates of net dividends have in general been smaller percentage-wise than the revisions in the profits series.

## 6.-INTEREST

This section contains a discussion of the interest components of national income and personal income, as well as of the three components of personal consumption expenditures for services which are estimated in an interrelated statistical procedure. These are Interest on personal debt, the interest element of Brokerage charges and interest and investment counselling, and Services furnished without payment by financial intermediaries except life insurance.
The basic accounting data underiying the interest estimates and the reporting systems by means of which they are summarized are quite satisfactory for large areas of the economy. Corporate interest transactions are covered in income tax return tabulations published by the Bureau of Internal Revenue in its Statistics of Income-Part 2, and those of mutual financial institutions in reports of regulatory agencies or in other comprehensive summaries of basic data. Information on government interest transactions is also, in large part, comprehensive.
Personal landlords, unincorporated enterprises (farm and nonfarm), households and institutions, and the rest-of-the-world sector are the major remaining groups whose interest transactions must be taken into account in calculating interest flows for national income purposes. The quality of the information with respect to them varies widely. In general, the estimates must rely on distinctly less adequate and regular sources. The largest single item in this group is mortgage interest paid by personal landlords.

Although the interest flows in national income measure amounts accruing to United States persons and government, these accruals cannot be estimated directly, because of lack of information from individual recipients. Instead they are measured as the payments less the receipts of relevant payer groups. This residual method of estimating has some advantages, mainly because it leads to entries consistent with the measurement of corporate profits in the income and product accounts. But it is subject to the shortcomings of all residual estimating procedures, in which small errors in the minuend and subtrahend may lead to significant ones in the remainder. The fact that the recording of interest by creditors and corresponding debtors may differ both as to coverage and timing introduces special hazards into the procedure.

The above evaluation refers to years for which Bureau of internal Revenue corporate tax return tabulations are available. For the two most recent years, for which information is much less adequate, the reliability of the estimates is reduced, particularly on an industry basis.

As will become apparent, the definition of interest flows in the national income is a complex matter, mainly with respect to the imputed interest flows arising in connection with financial institutions. In this section, the operational procedures used in the determination of these flows are set down precisely, with but little attempt to explain their basic rationale, which is discussed in Part II.

The actual measurement of imputed interest flows is based, in general, upon data of a high order of reliability, but accuracy is somewhat impaired by the necessity (as explained later) of substituting in some instances statistical assumptions for lack of the precise data called for by the definitions.

## Relation of Major Interest Flows

The interest component of the national income, "net interest", measures total interest (monetary and imputed, private and govermment) accruing to United States persons and governments minus total interest paid by United States governments. Government interest (Federal and State and local) is deducted because it is not considered income arising in current production. It is necessary not only to exclude the portion of it paid directly to persons and governments, but also to deduct the portion of it paid to business, because the latter is reflected in the incomes paid out or retained by the business system.
Since accruals to persons cannot be ascertained directly, net interest is obtained by estimating its algebraic equivalent-the difference between (1) total interest paid by United States business and persons plus total interest paid to the United States by foreigners, and (2) total interest received by United States business plus total interest received by foreigners from the United States.
The interest component of personal income, "personal interest income," measures total monetary and imputed interest paid to United States persons. It is obtained algebraically by adding to the interest component of national income the excess of interest payments by United States governments over their interest receipts.
The nature of these algebraic relationships can be understood from the following schematic presentation. Since for the economy as a whole total payments must equal total receipts, then:
(1) Total interest paid by U. S. business + (2) total interest paid by U. S. persons + (3) total interest paid by foreigners to the U. S. + (4) total interest paid by U. S. governments $=$ (5) total interest received by U. S. business + (6) total interest received by U. S. persons $+(7)$ total interest received by foreigners from the U. S. $+(8)$ total interest received by U. S. governments.
From this it follows, first, that the interest component of national income, as initially defined above $[(6)+(8)-(4)]$ is algebraically equivalent to the formula by which it is statistically measured, $[(1)+(2)+(3)-(5)-(7)]$. It also follows that the interest component of personal income (6) can be obtained from the interest component of national income by adding to it the excess of total interest paid by U. S. governments over total interest received by U. S. governments [(4) - (8)].
The derivation of the two interest series is shown in summary form in Exhibit 15, and will be discussed in the same order in the text. The derivation of the related components of personal consumption expenditures will be explained at appropriate stages of the discussion.
While the concept of national income calls for measurement of interest flows on an accrual rather than cash basis, this distinction cannot be maintained in statistical practice. In Exhibit 15 the major components of the interest flows are labelled uniformly on a cash basis-as "paid" or "received." In the subsequent detailed "riscussion the terms "paid" and "payable" and "received" and "receivable" are used to indicate the exact nature of the flows whenever possible.
Exhibit 15.-Derivation of the Interest Components of National Income and Personal Income, 1947

| Item | Millions of dollars |
| :---: | :---: |
| Monetary interest paid | 6,435 |
| Lesputed Monterest paid | 4,502 |
| Indonetary interest received | 1 <br> 1.283 <br> 1.184 |
| Equals: Net intereat |  |
|  | 3,489 |
| United interest paid by government (excess of interest payments by mived States goveraments over interest received by United States covernments) | 4,378 |
| Eruals: Personal interest income (component of personal income) | 17,867 |

## Monetary Interest Paid

The composition of total monetary interest paid in 1947 is shown in Exhibit 16.

Exhibit 16.-Components of Monetary Interest Paid, 1947

| Item | Millions of dollars | Percent |
| :---: | :---: | :---: |
| Corporations. | 2,501 | 38.9 |
| Corporations reporting to Bureau of Internal Revenue-Less: Mutual insurance carriers (life and nonlife) | 2,501 |  |
| Plus: Federal Reserve Banks-.-----------.......----- | 0 |  |
| Sole proprietorships and partnerships. | 815 | 12.7 |
| Farm- | 431 384 | 0.7 0.0 |
| Other private businesses. | 1,965 | 30.5 |
| Mutual financial institutions. | 509 | 7.0 |
| Mutual savings banks.- | 264 | 4.1 |
| Mutual nonlife insurance carriers | 235 | 3.7 |
| Savings and loan association Credit unions.------- | 10 | . 2 |
| Nonprofit organizations servicing busi | 19 | . 8 |
| Personal landlords (nonfarm) ----.-. | 1,437 | 22.3 |
| Households and institutions. | 932 | 14.5 |
| Consumers | 858 | 13.3 |
| Nonprofit organizations servicing individuals----.------ | 74 | 1.2 |
| Rest of the world | 222 | 3.4 |
| Total monetary interest paid. | 6,435 | 100.0 |

## Corporations

Monetary interest paid by corporations accounted for almost 40 percent of total monetary interest paid in 1947. With the single exception of Federal Reserve Banks, this item is based on Federal corporation income tax returns, tabulated by the Bureau of Internal Revenue in Statistics of Income-Part 2. Where greater industrial detail is needed, it is obtained from the supplementary, unpublished "Source Book".

Adjustment of the tax return aggregate to the corporate universe as defined for national income purposes involves for all years the deduction of estimates for mutual insurance carriers and the addition of data for Federal Reserve Banks. In both cases, adjustments have been negligible for the entire period.

In order to obtain formal comparability in the industrial classification over the period, numerous adjustments and estimates have been required to correct for changes in the Bureau of Internal Revenue classification. These related chiefly to years prior to 1938. Apart from this factor, however, the industrial classification of monetary interest paid (and received) by corporations is affected by classification on a company basis and by changes in revenue laws regarding the filing of consolidated and unconsolidated returns. (See comments regarding this in the Introduction to this Part and in the section on Corporate profits.)

For the latest two years, for which Statistics of Income data are not yet available, total corporate monetary interest paid is obtained by adding separate estimates for banking and for the total of all industries except banking.

Banking interest is obtained by extrapolating the last base year estimate by interest paid by insured commercial banks on time and savings deposits, raised to the all-commercial bank level on the basis of yearly asset ratios (Federal Deposit Insurance Corporation data.)

Estimates for all corporations except those classified in banking are obtained on the basis of a regression derived from plotting interest paid during a year against National Income Division estimates of corporate gross long-term debt plus notes and accounts payable as of the beginning of the year. The debt figures are based on Statistics of Income balance sheet data, and estimated for current years by adding increments derived from Securities and Exchange Commission, Federal Deposit Insurance Corporatior, and Interstate Commerce Commission reports.

To obtain a breakdown of the nonbank total, direct estimates are made for several industries. For farms, the last Statistics of Income figure is extrapolated on the basis of interest paid by unincorporated enterprises in that industry (described below). For contract construction, extrapolation is by the value of new private construction activity (described in the section on New construction). For railroads, telephone and telegraph, and electric and gas utilities, interest paid data (reported, respectively, to the Interstate Commerce, Federal Power, and Federal Communications Commissions) are used as extrapolators.

For each individual industry not listed above, the latest base year figure is extrapolated by the estimated total for all industries less the industries for which specific estimates are made.

## Sole proprietorships and partnerships

In 1947, monetary interest paid by sole proprietorships and partnerships amounted to about 13 percent of total monetary payments. The 13 percent was about evenly divided as between farm and nonfarm proprietors.

Farm.-The series for long- and short-term interest payable by farmers (exclusive of that payable by nonfarm landlords) is obtained from the Bureau of Agricultural Economics of the Department of Agriculture. In general, the computation of these interest charges is based upon multiplication of the amounts of different types of debt outstanding by relevant interest rates. The long-term debt and interest rates are estimates by the Bureau of Agricultural Economics on the basis of Census of Agriculture benchmarks and sample reports from lending agencies. The short-term debt to institutional lenders and interest rates are based on reported information from Federal farm lending agencies and from commercial banks. The short-term interest payable to non-institutional lenders (amounting to $\$ 122$ millions in 1947) has been described by the Bureau of Agricultural Economics as "merely a rough approximation".

Nonfarm.-Total monetary interest paid in this sector is obtained as the sum of industry estimates. For the years 1929 through 1941, 1039 is the general benchmark. For many industries this benchmark was obtained by multiplying estimated total receipts of all proprietorships and partnerships in the industry (see the section on the Income of unincorporated enterprises) by the ratio of interest paid to total receipts, taken from 1939 informational partnership tax returns published by the Bureau of Internal Revenue in the Supplement to Statistics of Income-Part 1. In other areas, where total receipts are not available, a frequently used method was to multiply interest paid per partner (as calculated from the partnership returns) by the total number of active proprietors (see Part V, table 27).

Bureau of Internal Revenue tabulations itemizing interest paid by industry for both partnerships and sole proprietorships in 1945 were used directly to establish nonfarm benchmarks for that year. The coverage of these tabulations was much higher in 1945 than in 1939. Also, partnership tabulations for 1947 permitted benchmarks for that sector and fairly reliable estimates for sole proprietors.

The general method of extrapolation and interpolation used to obtain industry estimates is to employ the corporate interest paid series, adjusting to the three benchmark years. In the mining and manufacturing sub-groups, Census of Mineral Industries and Census of Manufactures value of product data for 1929 and 1939 permitted a further adjustment for the changing relative importance of the corporate and noncorporate segments.

## Other private businesses

Mutual financial institutions.-Mutual financial intermediaries in 1947 accounted for about 8 percent of total monetary interest paid. For each of the components the estimated series is based on reported information from a substantial portion of the industry and is reliable both as to level and to movement.

Interest payments by mutual savings banks from 1943 forward are based on data compiled by the Federal Deposit Insurance Corporation for insured banks, raised to the universe level by asset ratios for all banks to insured banks in each year. Prior to 1943, the series was estimated on the basis of Federal Deposit Insurance Corporation and Comptroller of Currency tabulations, reports on savings banks by the Commissioner of Banks in New York State, reports by the Commissioner of Banks in Massachusetts, and reports by the American Bankers Association.
For savings and loan associations, interest paid and dividends paid to shareholders are together considered interest. The estimates are based on Federal Home Loan Bank Board reports from member associations raised to cover nonmembers. Dividends paid by credit unions (assumed to measure the whole of interest payments on deposit and share accounts) are also estimated on the basis of reports to official agencies.

Nonproft organizations servicing business.-These organizations (mutual utility companies, farmers' cooperatives, etc.) have been required to report their operations to the Bureau of Internal Revenue. Their combined statements were published in Supplement to Statistics of Income for 1943-Part 2. Reporting was incowplete by an indeterminate amount, but the total involved was undoubtedly small. In general, the method used is to extrapolate the 1943 reported figure over the entire period by other relevant interest series.

Personal landlords (nonfarm).-Monetary interest payable by nonfarm individual property owners (other than professional real estate operators) represented 22 percent of total monetary interest paid in 1947. This component includes interest payable on mortgages against farm property owned by nonfarm landlords, owneroccupied nonfarm dwellings, and other nonfarm residential and nonresidential property owned by individuals. The farm mortgage interest series is prepared by the Bureau of Agricultural Economics, using sources and methods outlined above. The two series on nonfarm mortgages are derived in connection with the estimates of the rental income of persons.

## Households and institutions

Monetary interest paid entered under the heading "Households and institutions" amounted to about 14 percent of the total in 1947. The major share of this represents nonmortgage interest paid by individual consumers.

Consumers.-Nonmortgage interest payable by individual consumers is of several types. The first embraces interest payable on ordinary consumer debt and is obtained by applying estimated average monthly interest rates against Federal Reserve Board estimates of consumer debt (for installment credit extended on automobile sales; for installment loans by commercial banks, small loan companies, industrial banks and industrial loan companies, credit unions, and miscellaneous lenders; and for single-payment loan credit). The Federal Reserve Board consumer credit estimates are based on monthly samples of lending agencies, adjusted periodically to more comprehensive benchmarks. The estimates for average monthly effective interest rates are prepared in the Na tional Income Division and are based on fragmentary sample dats from lending agencies.

Automobile sales credit is consumer-allocated in line with the consumer allocation of automobile purchases. (See the section on Personal consumption expenditures for commodities.) No interest on charge account debt, service debt or installment sale debt other than on automobiles is included, for reasons of consistency. It is believed that, in general, business creditors do not enter in their books an explicit interest item as received from such loans, but rather include the amount in the sales price or in "other income."

The second type of consumer interest payments arises in cor nection with borrowings against life insurance policies. The interest
payable to life insurance carriers is estimated by applying an interest rate series against average policy loans outstanding, both obtained on the basis of Institute of Life Insurance data. The third class of consumer payment is that made to U. S. Government life insurance and adjusted service certificate funds.
The total of these three categories is entered in personal consumption expenditures as Interest on personal debt.
A fourth type of interest payments by individuals arises in connection with brokers' loans. This segment was large in 1929, but in recent years has been of minor importance. The method of estimation here is to apply averages of quoted short-term money rates (New York Federal Reserve Bank) against average brokers' loans to customers (members only, New York Stock Exchange). This item is also entered directly in personal consumption expenditures, as part of Brokerage charges and interest.
Nonprofit organizations servicing individucls.--Informational returns by labor unions, social groups, etc., to the Bureau of Internal Revenue were tabulated for 1943, thus establishing a benchmark, undoubtedly to be interpreted as a minimum estimate. However, the amounts involved are negligible. Larger in amount, but still relatively minor in comparison with the monetary interest paid total, are the payments made by other types of organizations such as churches, hospitals, and private schools. Here only fragmentary data have been available and the estimates take the form of average interest rates applied against estimated mortgage indebtedness, or interest-to-receipts ratios applied against estimated total receipts.

## Rest of the world

Interest paid to United States residents by foreigners is estimated in connection with the United States balance of payments estimates of the Office of Business Economics. The series is described in the section on Net foreign investment.

## Imputed Interest Paid

In addition to monetary interest, national income and personal income include imputed interest flows. These arise in connection with the transactions of financial intermediaries. In national income accounting commercial banks are conceived of as paying out to their depositors the entire amount of property income received, so that imputed interest paid by commercial banks equals their property income received less interest actually paid on deposits. Correspondingly, they are conceived of as making a charge for the services rendered to their depositors in excess of the monetary service charges actually made. These imputed service charges are numerically equal to imputed interest paid.
To the extent that these imputed flows represent intra-business transactions, they cancel out in the aggregate and have no effect on the size of national income and product, although they do affect its industrial distribution. To the extent that they reflect transactions between commercial banks and persons, they result in matching entries in the interest components of national and personal income and in personal consumption expenditures for services.12 A similar procedure is applied to corporate financial institutions of the investment trust type.
$A_{n}$ interest imputation is made also in connection with life insurance. Imputed interest is measured in this instance by property income received, which in national income accounting is treated as though paid out to policyholders. In turn, policyholders are assumed to make payments to life insurance companies to cover their operating expenses. Mutual financial institutions other than life insurance are given a similar treatment.
Imputed interest paid is described immediately below, and imputed interest received is described following the discussion of

[^14]monetary interest received. Imputed charges made by financial institutions (analytically distinct from the imputed interest flows) are also discussed, to the extent that they are derived in a statistically interrelated procedure. The charges for life insurance, for which the methodology is different, are covered in the section on Personal consumption expenditures for services.

In general, imputed interest paid by financial intermediaries is measured as the excess of property income received over property income actually returned in monetary form to owners of the funds entrusted to the intermediary. As will be noted in the following discussion, the precise content of this formula varies among the several types of financial institutions involved. The composition of imputed interest paid in 1947 is shown in Exhibit 17.

Exhibit 17.-Components of Imputed Interest Paid, 1947

| Item | Millions of dollars | Percent |
| :---: | :---: | :---: |
| Corporations. | 2,789 | 61.9 |
| Commercial banks | 2,274 | 50.5 |
| Federal Reserve Banks | 53 | 1.2 |
| Finance, n.e.c.-.........-- | 143 319 | 3.2 7.1 |
| Other private businesses_ | 1.713 | 38.0 |
| Mutual savings banks_- | 265 | 5.9 |
| Mutual life insurance carriers | 1.200 | 6.8 |
| Savings and loan associations | - 225 | 5.0 .4 |
| Total imputed interest paid. | 4,502 | 100.0 |

## Corporations

Most of the imputed interest paid by corporations originates in commercial banking.

Commercial banks.-In estimating imputed interest paid by commercial banks, basic data are drawn from annual reports of the Federal Deposit Insurance Corporation for the period beginning in 1935 and from the Board of Governors of the Federal Reserve System for the 1929-34 period. This departure from the general use of the Bureau of Internal Revenue data in the corporate area was occasioned by shortcomings in the industrial classification of the Statistics of Income banking industry. ${ }^{12}$
Imputed interest paid by commercial banks is measured as the excess of interest and dividends received over interest paid on demand and time deposits. Reported data for member banks (Federal Reserve System) in the 1929-34 period and for member banks (Federal Deposit Insurance System) in the 1935 forward years were raised to all-commercial bank levels on the basis of asset ratios derived from the above sources and from Comptroller of the Currency data.

Federal Reserve Banks.-Imputed interest paid by Federal Reserve Banks (measured as interest received less interest paid and profits) is calculated from aggregate financial statements published by the Federal Reserve Board.

Finance, not elsewhere classified.-Imputed interest paid by corporations classified in the "Finance, n. e. c." group, mainly investment trusts, holding companies, and long-term and short-term credit agencies, is measured as property income in the form of interest and dividends received less the sum of interest paid and profits (before income and excess profits taxes and without deduction for dividends received).

When income accounts are not in such a form as to permit an isolation of loan and investment activities from other operations, profits as reported reflect both elements, and a statistical isolation of profits earned in loan and investment activities is needed, in order that the imputation procedure be confined to these activities. In view of the fact that operations other than loan and investment

[^15]activities play a significant role in the finance, n. e. c. industry, this refinement seems desirable.

To effect the separation, investment trust companies of the management type are assumed to be institutions in which operations are substantially limited to loan or investment activities. Yearly relationships between imputed interest paid and property income received for investment trust companies are computed and applied to the total property income in "finance, n. e. c." to estimate total imputed interest paid by this group.

These ratios were based for years prior to 1938 upon a report of the Securities and Exchange Commission, Investment. Trusts and Investment Companics, Part Two (March 1939), and for 1938 and subsequent years on Statistics of Income-Part 2, including unpublished detail from the "Source Book". For the two most recent years, the ratio is held at the level given by the latest Statistics of Income data.

Series for interest and dividends received by the "finance, n. e. c." group generally are based upon Statistics of Income-Part 2 data and unpublished detail from the "Source Book". Only data for the 1920-33 period and after 1941 have been used directly, because of the break in the series introduced by corporate reporting for tax purposes on an unconsolidated basis from 1934 through 1941. For these years, estimates were interpolated by total monetary interest and net dividends paid by all corporations. For the two most recent years, the Statistics of Income series is extrapolated by the sum of (1) monetary interest payments by all corporations except those in the finance industries, and (2) publicly reported cash dividend payments by all United States corporations except those in finance. (The series on publicly reported dividend payments is compiled by the National Income Division from data in Moody's Dividend Record and published regularly in the Survey of Current Business.)

Stock life insurance carriers.-The property income (monetary and imputed interest, dividends, and net rents) received by life insurance carriers is regarded as being withheld to the, account of policyholders and is treated as though it were actually disbursed. Accordingly, a payment is imputed for life insurance in Exhibit 17.

Basic data for the measurement of dividend and monetary interest receipts of both stock and mutual life insurance carriers combined are taken from Statistics of Income-Part 2, supplemented by unpublished detail from the "Source Book". Reported dividend figures from 1929 through 1939 were adjusted to include dividends received from foreign corporations. Receipts of imputed interest are derived by procedures described below under imputed interest received. Series for gross rents received, also taken from Bureau of Internal Revenue sources, are converted to net rents realized by means of net-gross rent ratios. The break between stock and mutual life insurance carriers is estimated on the basis of data published in The Spectator Company's Insurance Year. Book.
Extrapolation of the Statistics of Income based series to current years is accomplished by means of Institute of Life Insurance data. An extrapolating series is constructed by multiplying security and mortgage asset holdings (averages of year-end figures) by net carning rates.

## Other private businesses

Mutual savings banks.-Imputed interest paid by mutual savings banks is measured as (a) property income received (interest and dividends) less ( $b$ ) interest and dividends paid depositors and interest paid on capital notes and debentures. The nature of the series for ( $a$ ) and ( $b$ ) is described under "Monetary interest received" and "Monetary interest paid", respectively.

Mutual life insurance carriers.-The procedure for estimating imputed interest paid by mutual life insurance carriers has been described above under "stock life insurance carriers".

Savings and loan associations.-Imputed interest paid by sav-
ings and loan associations is measured as total interest income less the sum of interest and dividends paid. The two flows are identical to those entered under "Monetary interest received" and "Monetary interest paid", except for the addition to the former of imputed interest received from commercial banks, estimated by procedures described below.
Credit unions.-Imputed interest paid by credit unions is measured as interest received less dividends paid (the latter taken as interest payments on both shares and deposits). Interest received by credit unions is assumed to equal interest paid to them by individuals (see above "Monetary interest paid, Households and institutions"). Dividends paid are obtained from compilations of annual reports to the Bureau of Labor Statistics.

## Monetary Interest Received

In the calculation of monetary interest received by business and foreigners, business recipients are defined to include all corporations ( 63 percent of the total in 1947), unincorporated security and commodity brokerage firms and miscellaneous proprietors in the finance, n. e. c. category (together less than 1 percent of the total), mutual financial intermediaries ( 35 percent), and nonprofit organizations (negligible). Interest received by the rest of the world from the United States accounts for about 1 percent of the total. Further details are shown in Exhibit 18.

Exhibit 18.-Components of Monetary Interest Received, 1947

| Item | Millions of dollars | Percent |
| :---: | :---: | :---: |
| Corporations. | 3.983 | 63.4 |
| Corporations reporting to the Bureau of Internal Revenue. | 4,958 |  |
| Less: Mutual insurance carriers (life and nonlife) Plus: Federal Reserve Banks | 1,133 |  |
| Sole proprietorships and partnerships. | 43 | . 9 |
| Security and commodity brokers. <br> Finadee, n.e.c | 22 21 | . 3 |
| Other private businesses_ | 2,207 | 35.1 |
| Mutual financial institutions. | 2,193 | 34.9 |
| Mutual savings banks. | 529 | 8.4 |
| Mutual insurance carriers (life and nonlife) | 1.187 | 18.9 7.2 |
| Savings and loan associations. | 450 | 7.2 |
| Nonprofit organizations servicing business. | 27 14 | 2 |
| Rest of the world. | 49 | . 8 |
| Total monetary interest received. | 16,283 | 100.0 |

[^16]
## Corporations

The general nature of the basic data covering interest received by corporations has already been discussed under "Monetary interest paid". Interest received by mutual insurance carriers (measured in conformance with the Bureau of Internal Revenue definition of interest received) is removed by use of the data described above, under "Imputed interest paid, stock life insurance carriers". Interest received by Federal Reserve Banks is tabulated by the Board of Governors of the Federal Reserve System.

For the two most recent years, for which Statistics of Income data are not available, total monetary interest received by corporations is obtained by adding separate estimates for the banking and insurance industries and for all industries except banking and insurance.
The estimates for banking (excluding Federal Reserve Banks) are obtained by extrapolating the last base year estimate by income from loans and investments reported by insured commercial banks to the Federal Deposit Insurance Corporation (raised to the all-commercial bank level). Interest received by Federal Reserve Banks is available from the Board of Governors of the Federal Reserve System. Current estimates for monetary interest received by stock insurance carriers are prepared jointly for life and nonlife
carriers. Interest receipts of all stock companies (life and nonlife) are assumed to vary with the corresponding series obtained for total life insurance. (See "Imputed interest paid, stock life insurance carriers.")
The recent-year estimates for all corporations except banking and insurance are prepared separately for interest received on holdings of taxable United States Government securities and all other investments. This break is available in the Statistics of Income data. Interest received on taxable United States Government securities is extrapolated by a series calculated as United States securities held by corporations and associations (excluding banks and insurance companies) times the computed mid-year average interest rate on the Federal debt, both available in the Treasury Bulletin. All other interest received is extrapolated by the series for monetary interest paid by all corporations except banks and insurance companies.
To obtain further industrial breakdowns, direct estimates are made for railroads, pipeline transportation, telephone and telegraph, and electric and gas utilities, in general by extravolating the base year estimates by interest received as reported to the respective regulatory commissions.
For each individual industry not listed above, the latest base year figures are extrapolated by the estimated total for all industries less the estimates for all industries for which specific estimates are made.

## Sole proprietorships and partnerships

Monetary interest received by unincorporated security and commodity brokers and certain loan companies classified under "finance, n. e. c." is assumed to be received as an integral part of business operations. It is deducted in arriving at the interest share and correspondingly included in the receipts of these enterprises in calculating their net income. ${ }^{13}$ Source materials are similar to those noted under monetary interest paid. Except for security and commodity brokers in 1929, amounts involved are small.

## Other private businesses

Mutual financial institutions.-In general, the source materials used for estimating monetary interest receipts of mutual financial institutions are identical to those employed in the "Monetary interest paid" estimates.
Monetary interest received by mutual savings banks is measured as interest and dividends on securities plus interest and discount on loans. The method of estimation is similar to that used for monetary interest paid.
Monetary interest receipts of mutual insurance carriers are measured as the sum of interest and dividends for national income purposes. (This accounts for the difference between the two entries for these institutions in Exhibit 18.) The method of estimate for life insurance carriers has been described above, under "Imputed interest paid, stock life insurance carriers". Receipts of mutual nonlife carriers are obtained from Statistics of Income tabulations, extrapolated by the method described under "Imputed interest paid, stock life insurance carriers."
Monetary interest received by savings and loan associations is measured on the basis of reports by member associations to the Federal Home Loan Bank Board. Receipts by credit unions are assumed equal to payments by individual borrowers, and are estimated by methods described above under "Monetary interest paid, Households and institutions".
Nonprofit organizations servicing business.-The basis for estimation has been described above, under "Monetary interest paid."

[^17]
## Rest of the world

Interest received by foreigners from United States residents is described in the section on Net foreign investment.

## Imputed Interest Received

The outflows from financial intermediaries of imputed interest paid become imputed interest received when viewed from the standpoint of recipients to whom such imputed interest accrues. It is necessary, consequently, to determine what groups receive the imputed interest that arises in each of the financial intermediaries. The underlying procedure in making this determination is based upon the ownership of the funds by use of which financial intermediaries obtained property income.

Data on ownership are not generally available except for commercial banks, for which there is indication of ownership by broad categories. It is necessary, therefore, to solve the problem of ownership in most cases by use of assumptions.

A review of the several financial intermediary groups indicates the substantial validity of assuming that persons own all the funds entrusted to mutual savings banks, life insurance carriers, savings and loan associations, and credit unions. The corporate component of the finance, n.e.c. group, comprising investment trusts, holding companies, and both long-term and short-term credit agencies, is less clear-cut. It is quite possible for business as well as persons to own securities of these companies. Lacking ownership data, it is nevertheless assumed that for this intermediary group also ownership is vested in persons. However, the consequent error of assuming that all imputed transactions in this area are with persons should be appraised in the light of the fact that imputations, at least among affiliated companies, are eliminated by the statistical estimating methods employed. (See the reference to the use of consolidated returns under "Imputed interest paid, finance, n.e.c.")

In summary, for all financial intermediaries except commercial banks the flows of imputed interest paid by intermediaries are treated as going entirely to persons. For commercial banks (including Federal Reserve Banks), imputed interest is allocated among recipients by use of estimates of the ownership of deposits. The main sources of data for the allocation to principal classes of recipients are the published banking statistics of the Board of Governors of the Federal Reserve System and the Federal Deposit Insurance Corporation, together with the Federal Reserve liquid asset surveys. The distribution of imputed interest paid by commercial and Federal Reserve Banks is shown in Exhibit 19.

This distribution is accomplished in three major steps:

1. Imputed interest received is estimated for three broad groups: (a) Federal Government, (b) State and local governments, and (c) persons and businesses. The procedure consists of allocating the elements of imputed interest paid by commercial banks (total property income, interest paid on demand deposits, and interest paid on time deposits) on the basis of percentage distributions showing the ownership of demand deposits and of time deposits by the three groups, and then deducting the sum of the two interest paid estimates from total property income.

These distributions are computed from Federal Deposit Insurance Corporation deposit data from 1934 forward, and from Federal Reserve Board deposit data from 1929 to 1933. The sources are the Annual Reports of the Federal Deposit Insurance Corporation and Banking and Monetary Statistics.
2. The further distribution of the total received by persons and businesses is based primarily on Derivation of Liquid Asset Distribution Estimates (mimeograph), Board of Governors of the Federal Reserve System. This publication gives the distribution of demand and time deposits by selected groups of holders, as of the end of December, from 1939 forward. For the most part, estimates presented in Solomon Shapiro's article on "Distribution
of Deposits and Currency in the United States, 1929-1939", in the Journal of the American Statistical Association, December 1943, were used to extrapolate the Federal Reserve figures back to 1929, using a December 1939 link.
Exhibit 19.-Imputed Intercst Paid by Commercial and Federal Reserve Banks, by Major liecipients, 1947

| Item | Millions of dollars | Percent |
| :---: | :---: | :---: |
| Imputed interest paid by commereinl and Federal Iteserve banks (see Vixhibit $t 7$ ); to be distributed umong major reciplentes. | 2,327 | 100.0 |
| Stop 1: |  |  |
| United States Govermment. Statenad lomal governments. | 40 146 | 1.7 6.3 |
| l'ersons and businesses...... | 2,141 | 02.0 |
| Step 2. | 2,141 | 100.0 |
| Peteons. | 977 | 45.6 |
| Trust funds for individunds---.....-. | ${ }^{27}$ | 1.3 |
| Nonprofit organizations servicing individual Individuals.............................. | 34 916 | 1.6 42.8 |
| Husinesses (see Eshibit 10). | 1, 164 | 54.4 |
| Corporations. | 699 | 32.6 |
| Finapre, insurance and real estate. | 84 | 3.9 |
| Stock lite itsurahce carriers--............. | ${ }_{21}^{6}$ | 1.3 |
|  | 57 | 1.0 2.7 |
| Other industrius............... | 615 | 28.7 |
| Proprietorships and partnerships. | 427 | 19.9 |
| Finance, insurance and real cstate. | 30 | 1.4 |
| Security and commodity brokers........ | 11 | . 5 |
| Other finame, insuranee and real estate | 397 | 18.5 |
| Fartn-..... | 115 | 5.4 |
| Nonfarm. | 282 | 13.2 |
| Other privato businesses. | 38 | 1.8 |
| Mutual life insurance carriers |  | 1.0 |
| Mutual nonlife insurance carriers Savings and loan associations.. | ${ }_{10}^{6}$ | . 3 |
| Step 31 |  |  |

3. This step consists of a further industrial breakdown, within the industry groups specified under step (2), thus completing the allocation by major and minor industries under the National Income Division industrial classification. In general, the method is to distribute imputed interest to industries on the basis of relative holdings of cash and deposits, as there is no further information on deposit ownership by industry.

Cash and deposits held by corporations reporting balance sheets are tabulated by industry in Statistics of Income-Part 2. The reported data are raised (by industry) on the basis of ratios of total compiled receipts of all corporations to total compiled receipts of those submitting balance sheets, and are adjusted to the National Income Division industrial classification.

For sole proprietorships and partnerships, only indirect methods of estimating cash and deposit holdings are available. In general, ratios of cash and deposits to total receipts for proprietorships and partnerships are assumed to equal similar ratios for corporations with assets under $\$ 50,000$ in the respective industries. These corporate ratios were obtained from Statistics of Income-Part 2, for 1941, and extrapolated to all others years by similar ratios for all corporations.

For both corporations and unincorporated firms, the relative distributions of cash and deposit holdings are assumed to remain constant in the two years prior to availability of the Statistics of Income data.

## Services furnished without payment by financial intermediaries, except life insurance

It is convenient to describe at this stage the derivation of the "Services furnished without payment by financial intermediaries, except life insurance" component of personal consumption expenditures. This component includes entries for commercial banks,
corporate finance, n. e. c., mutual savings banks, savings and loan associations, and credit unions.

Services furnished without payment by commercial banks to persons are numerically equal to imputed interest received by persons from commercial banks. For corporate finance, n. e. c. the entry equals the imputed interest paid item whose derivation has been explained above, under "imputed interest paid". For mutual savings banks, savings and loan associations, and credit unions the entry equals imputed interest paid, calculated as explained above, less income taxes and retained profits (before deduction of dividends). In general, the series on retained profits and taxes are developed from the same sources as the series on interest and dividend flows.

## Net Interest Paid by Government

A breakdown of the government interest calculation is shown in Exhibit 20. It should be noted that the transactions covered comprise not only those of general governments (including trust funds) but also those of government enterprises.

Exhibit 20.-Net Interest Payments by United States Governments, 1947

| Item | Millions of dollars | Percent |
| :---: | :---: | :---: |
| Excess of interest payments by United States governments over interest received by United States governments. | 4,378 |  |
| Monetary interest paid by governments. | 5,763 | 100.0 |
| Federal Government <br> State and local governments. | 5,230 533 | 90.8 9.2 |
| Monetary interest received by governments........-....- | 1,385 | 100.0 |
| Federal Government. <br> State and local governments | $\begin{array}{r} 1,113 \\ 272 \end{array}$ | 80.4 19.6 |

## Monetary interest paid

Federal Government.-The largest component of interest paid by the Federal Government is that paid or payable on the public debt. Data for all years are available in the records kept by the United States Treasury Department. The published source is the Daily Treasury Statement. Small amounts of interest are also paid on several types of government-administered trust funds. Calendar year estimates of the latter are obtained by averaging fiscal year data from the Budget of the United States Government. Estimates of interest paid by Federal Government enterprises are prepared in connection with the derivation of the enterprise surplus or deficit (see section on Government receipts and expenditures).
State and local governments.-Estimates of interest paid by State and local governments, prepared separately for several types of government units, are based upon data drawn from the Government Finances publications of the Census Bureau, particularly the releases on Governmental Debt in the United States.
Interest payments by State governments are available for fiscal years 1929-32 and 1937 forward, and for intervening years are interpolated on the basis of the reported gross debt of State governments. The latest fiscal year estimate is obtained by extrapolation on the same basis. Adjacent fiscal years are averaged to obtain calendar year estimates.
Comprehensive coverage of local government interest payments can be obtained from the Census reports for the years 1931, 1936, and 1940 forward. Since the reported data represent diverse fiscal periods, minor adjustments of timing are required to place them on a calendar year basis.
In the years of incomplete coverage, total municipal interest payments are assumed to move proportionately to those reported for the larger cities only, while interest payments by other types of local government units are interpolated or extrapolated on the basis of reported gross debt statistics.

## Monetary interest received

Federal Government.-Interest received by the Federal Government comprises interest income of the social insurance funds, interest income covered into miscellaneous receipts of the Treasury, and interest received by government enterprises, as well as trivial amounts received by several other funds. It may be noted that the bulk of these receipts is intra-governmental, and offsets identical amounts under interest paid.
Interest received by the social insurance funds is reported in the Daily Treasury Statement. Other miscellaneous interest receipts of the Federal Government are derived from annual analyses of miscellaneous receipts of the Treasury as detailed in the Budget document, fiscal year totals being averaged to obtain calendar year estimates. Interest received by Federal Government enterprises is, in general, obtained on the same basis as the corresponding interest paid component.
State and local governments.-Estimates of interest received by these governments, like those of their interest payments, are drawn from the various Census releases on Government Finances.
Fiscal year data for State governments are available for the years 1929-32 and 1937-40. Estimates for the 1933-36 period are obtained by straight-line interpolation, while those for years after 1940 are based primarily on reported investment earnings (not entirely confined to interest) of State pension, sinking, and trust funds. The fiscal year totals are averaged to obtain calendar year estimates throughout the period.
The Census reports of interest received by local governments are fragmentary. A comprehensive benchmark for 1931 can be established from the 1932 Census of Governments, however, on the assumption that the interest component of reported revenue from "highway privileges, rents, and interest" for local units other than cities of more than 30,000 is proportionately the same as for cities of 30,000 to 100,000 (for which, along with the larger cities, a more detailed breakdown is available). Extrapolations from this benchmark are governed primarily, through 1942, by reported data on investment earnings of public trust, pension, and sinking funds of cities with populations over 100,000 . Beginning with 1943, the basic extrapolating series cover only cities of 250,000 or more.
Because of the time elapsed in compilation of the basic Census reports, interest receipt estimates for the most recent year, both for States and for local governments, have to be extrapolated in more or less arbitrary fashion, with due regard for the trend of the series and for miscellaneous collateral information.

## 7.-PERSONAL CONSUMPTION EXPENDITURES FOR COMMODITIES

Personal consumption expenditures for commodities-like wages and salaries-represent transactions that can best be estimated from business, rather than individual, records. Unlike wages and salaries, however, consumer commodity purchases involve indirect estimation. The business sales data underlying the latter series neither generally nor uniformly distinguish sales to consumers or to the other broad purchaser groups (such as business and government) relevant to national income measurement.
The general problem, then, is to derive consumer sales, valued at prices paid by consumers, from total sales. This qualification regarding prices is important. If the estimating procedure starts with sales (or output) at the producer level and then adjusts them to cover sales of finished consumption commodities only, there still remains the substantial task of raising their valuation to a consumer-price basis.

## Nature of commodity flow method

This approach of starting with producers' output is, in fact, the basic one employed in this report. Termed the "commodity flow" method, it was used to derive estimates for the 1929-39 period for consumer commodities making up 84 percent of the $\$ 42.0$ billion total in 1939, the last year for which benchmark estimates are presently available. (See Exhibit 21.)

Exdibit 21.-Personal Consumpion Expenditures for Commoditics, 1939


1 Comprising the following items, listed in order of their importance in 1939: painting and art objects; products of custom establishments, n.e.c.; expenditures by United States Government personnel abroad; and minera' expenditures for explosives, lamps, and smithing.

First developed by Simon Kuznets of the National Bureau of Economic Research and detailed in his National Bureau volume on Commodity Flow and Capital Formation (1938), the procedure involves numerous estimating steps. In broad outline, these entail securing commodity data at producers' prices on the output of factories, farms, and fisheries; segregating for each commodity the portion of total output not requiring further processing, and destined for personal consumption; and then passing from finished output at producers' prices to final costs to consumers by tracing the commodities through the various stages of the distributive system. ${ }^{14}$
The Census of Manufactures, with its vast commodity detail, is the basic statistical source for the commodity flow method. This census was available biennially for odd-numbered years of the 1929-39 period. The most important supplementary sources utilized by the method are the Censuses of Retail Trade and Wholesale Trade, which during that period were taken for the years 1929, 1933, 1935, and 1939. These censuses-together with the Censuses of Distribution of Manufacturers' Sales (taken for 1929, 1935, and 1939 in conjunction with the manufacturing censuses)-provide most of the basic information for segregating consumer commodities from total output, tracing their flow, and measuring their costs of distribution.

Taken at such frequent intervals, the manufacturing and trade censuses furnished a comprehensive basis for estimating consumer commodity purchases during the 1929-39 period. The gaps during this period left by the absence of one or more of these censuses were filled, in generally satisfactory manner, by an interpolation process carried out within the commodity flow framework. For this purpose, a wide variety of statistical series was assembled from government and trade associations and other private sources, and some reliance was placed on relationships developed from the census materials.

[^18]The commodity flow method is admittedly "roundabout" and complex. It was adopted mainly because of the very detailed commodity classification and the comprehensive coverage of output afforded by the Census of Manufactures. For both of these reasons, the method was distinctly to be preferred to the principal alternative method employing the Census of Retail Trade as the basic source. This method, the retail sales approach, involves adjusting retail sales to eliminate all sales by retail establishments not made to consumers and then estimating independently, and adding in, that part of consumer expenditures on commodities not made in retail establishments.

## Use of retail sales for extrapolation

While it has not been feasible to employ the simpler, more direct retail sales approach in preparing benchmark estimates of consumption expenditures on commodities, retail sales data have furnished the principal basis of an extrapolation procedure used in deriving estimates for the post-1939 period. For those commodity groups estimated by the commodity flow procedure in the 1929-39 period, estimates for years since 1940 have been obtained very largely by extending the 1939 estimates forward by the relative changes in retail sales data.

This method, adopted in the absence of manufacturing and trade censuses during World War II, has important shortcomings. It cannot take account of the changing importance of business purchases at retail and consumer purchases outside retail trade. Moreover, with the exception of department store sales figures, the retail sales data are not available by commodities, but according to a not very detailed classification by type of store. Thus, in the extrapolation the general assumption is made for the various commodity groups that 1939 relationships of consumer purchases to the sales of selected types of retail stores remain valid.

Now in preparation are new benchmark estimates for the commodity flow segment of consumer commodity purchases for 1947, based very largely on the Census of Manufactures for that year and the Censuses of Retail Trade and Wholesale Trade for 1948. These postwar census materials, however, are somewhat deficient for this purpose, notably in the lack of the information provided in earlier censuses on the distribution of manufacturers' sales and on retailers' operating expenses. Also in process, therefore, is an estimate of consumers' total commodity purchases based on the retail sales approach. This will be checked against the total obtained by summing the individual commodity groups as derived by the commodity flow procedure. Extensive study will be given to the reconciliation of the two totals and to the possible use of variant procedures to arrive at the most reliable figure.

In short, then, the bulk of all consumer commodity expenditures -84 percent of the total in 1939-was estimated by the commodity flow method for the years 1929-39 and by an extrapolation on the basis of retail sales for subsequent years. For certain commodity groups, different methods were considered preferable. For others, such as food and fuel produced and consumed on farms, the commodity flow method was not appropriate.

## Other estimating methods

The main alternative to the commodity flow and retail-sales extrapolation methods was the direct approach of multiplying estimated quantities purchased by consumers by appropriate average retail prices. This procedure, which may be termed the "retail valuation" method, was used in estimating consumer expenditures for passenger cars and for gasoline and oil for all years and for household fuels for the years 1929-39, with a retail sales extrapolation being employed for subsequent years. These three groups accounted for 12 percent of the $\$ 42.0$-billion total in 1939.

The remaining estimates are of minor importance except for an imputed item covering food produced and consumed on farms. This accounted for about 3 percent of the 1939 total.

## General considerations of reliability

The subsequent description of methodology will afford, at various places, judgments about particular aspects of the estimates of consumption expenditures on commodities. Several propositions regarding their general character may be worth noting at this point, with, however, the realization that any appraisal of over-all reliability is necessarily indirect and cannot be definitive.

Concerning the estimates for 1929-39 derived by the commodity flow method, there is the primary fact that they entailed lengthy procedures processing large masses of data and resting at times to an uncomfortable degree on judgment. Counterbalancing this are several considerations pointing toward the general appraisal that the final estimates of the totals are not markedly in error.

The first is the wealth of census information on which the estimates for this period were founded-information which, if not ideal, was adequate for the requirements of most phases of the estimating process. Secondly, certain evident sources of error in the individual commodity estimates-such as the necessity of using type-of-store data in computing retail markups-may be assumed to have a tendency to compensate, or offset, in the total. Thirdly, substantial temporal comparability in the estimates-that is, reliability of movement over time-seems indicated from the use of census data having a high degree of comparability and the application of uniform procedures and assumptions.

Pending the availability of the new 1947 benchmarks, there is little basis for a definitive opinion about the accuracy of the post-1939 estimates derived by the retail sales extrapolation. A considerable disadvantage, as noted, is the lack of commodity data and of information on the changing relative importance of consumer purchases to retail sales. Also, the retail sales data themselves are estimates based on sample information. Relevant in this connection, however, is the fact that the Office of Business Economics estimates of retail sales-the principal extrapolating series used-checked very closely with the 1948 Census results in total, and quite well for many of the type-of-store classifications.

Of the commodity groups derived by other methods, it may be noted that the estimates for passenger cars, gasoline and oil, and purchased household fuels are subject to a significant qualification. The allocation of these commodities to consumers is based on limited information and may be considerably in error.
Though indirect and inconclusive, some evidence bearing on the general reliability of the consumer commodity totals is afforded by the size of the statistical discrepancy between the income and expenditure sides of the national income and product account. For a component series as large as consumer commodities-comprising in most years nearly half of the gross national productthe small size of the discrepancy throughout the period of the estimates may be taken as some external indication that the general level of the series is not markedly in error. This is particularly the case since considerable reliability can be attached to certain other large income and product components, such as wages and salaries, corporate profits, and government purchases of goods and services.
The following, main section of the notes gives a description of methodology in terms of the principal types of methods, as summarized in Exhibit 21. The description is particularly limited for the large commodity flow segment, since notes of this scope cannot deal with the numerous departures from general procedure or with the individual commodity groups, for which the relative importance of the various steps in the estimating procedure (and hence reliability) often varies significantly.

## Commodity Flow Method, 1929-39

The individual steps in deriving total personal consumption expenditures estimated by the commodity flow method are summarized for 1939 in Exhibit 22. Each of these steps will be described briefly.

1. Distribution of finished and mixed manufactured commodities. The basic source of manufactured commodities is the Census of Manufactures. Detailed output data-for about 4,000 commodities in 1939-were reported there for odd years of the 1929-39 period.
For the most part, the census data were comparable from year to year. There were, however, several minor deficiencies. One was that census coverage was slightly less complete in 1933 than in other years. The 1933 census data were raised whenever some indication was given of the degree of incompleteness in an individual industryusually less than 2 percent. Another minor deficiency stemmed from the fact that the reported commodity information was somewhat less detailed for some years, notably 1933, than others. It was often necessary to break down combinations of commodities on the basis of the details reported for proximate years.

Still other limitations lay in the difficulty of establishing strictly comparable series over the 1929-39 decade for many commodities made in the textile and apparel industries, and in the differing degrees of coverage of some of these industries in particular census years. Aside from careful attempts to achieve proper classi-

## Exhibit 22.-Derivation of Total Personal Consumption Expenditures Estimated by the Commodity Flow Method, 1939

[Millions of dollars]

fication, little could be done to overcome these limitations. It is possible that, especially for 1935 and 1937, the figures for some of the component commodities of the clothing and semidurable house furnishings groups are slightly too jow.

Following these and other minor adjustments of the reported census commodity values, the first major task was to classify the full array of commodities into the categories of finished, unfinished, and mixed.

Finished commodities were defined to include (a) commodities that had reached the stage at which they would be taken over by individual consumers without further processing, and (b) durable equipment intended for multiple use in production and with an average life of three or more years. ${ }^{15}$ Classification under (a) did not depend solely on the degree of processing; it was based also on the use to which a commodity is put. Flour, for example, was classified as finished if consumed in households but as unfinished if consumed by a factory making bread or other products for which flour is a raw material.

Unfinished commodities were defined to include (a) all commodities entering further into the productive process other than those lasting on an average of 3 years or more; and (b) in the context of this statistical study, finished commodities purchased by government and by nonprofit institutions serving persons, as well as construction materials-all of which are accounted for in other segments of the gross national product and estimated by methods other than the commodity flow. ${ }^{16}$ Exports, counted under net foreign investment, also are unfinished in this context. They were not classified as such initially, but were eliminated at a subsequent step in the estimating process.

The mixed category is a tentative grouping for commodities having appreciable diversity in use, and which therefore could not be classified wholly as finished or unfinished. The mixed commodities belonged in part to the unfinished grouping and in part to the producer durable and/or consumer commodity groupings, and required allocation among them. In the strictest sense, it is realized, most commodities are mixed, but it would not have been feasible to allow for very small fractions of finished or unfinished use. Therefore, only when there was reason to believe that the secondary use of a commodity was appreciable was it assigned to the mixed category for allocation.

The classification of commodities as finished, unfinished, or mixed was greatly facilitated by the extent of commodity detail in the Census of Manufactures. This detail made it possible to classify as finished or unfinished many product categories which, if combined, would have required allocation. For example, soap chips, flakes, washing powder, cleansers, and similar products were reported in 1939 broken down between packaged and bulk. While consumers buy some of the latter and businesses and other "nonconsumers" some of the former, the reported breakdown undoubtedly furnished a satisfactory basis for distinguishing between consumer and nonconsumer uses. On the other hand, the equally important granulated, powdered, and sprayed soaps were reported without a breakdown between packaged and bulk and therefore had to be allocated.

[^19]The greater number of the commodities reported could be classified directly as either finished or unfinished. An overwhelming proportion of commodities in this initial finished classification could be assigned immediately to either the producers' durable or the consumer commodity category. However, some finished com-modities-household furniture and tools are examples-fell into both of these categories, and so required allocation. This combined group of finished commodities was not relatively large-as shown for 1939 by the data in Exhibit 22 -and its allocation was not a likely source of appreciable error, particularly with respect to the gross national product total. Misallocation between consumer commodities and producers' durables would not lead to error in that total except for the addition of an inappropriate distributive cost element in passing from the producer value to the final value.

Commodities which could not be classified directly as wholly finished or unfinished-the "mixed" commodities-required special study to allocate them among the categories of producers' durables, consumer commodities, and unfinished. Fortunately, census reports provided two types of commodity information that were very useful for this purpose: (1) Data in the biennial Census of Manufactures on the quantity and cost of principal materials consumed in certain industries; and (2) data on the distribution of sales by class of purchaser in the Distribution of Manufacturers' Sales for 1929, 1035, and 1930 and in the Census of Wholesale Trade for 1929, 1933, 1935, and 1939. These census data were checked and supplemented by use of numerous special commodity studies from both government and trade sources, and by correspondence with business firms and commodity experts.

The materials consumed data were used to estimate the unfinished part of a number of mixed commodity items in the large food group. Special commodity data were used in the allocation of durable equipment items. In some cases, with adequate data lacking, the allocations had to be based on judgment, including outside expert opinion. But the method most generally followed in estimating the nonconsumer portion of mixed commodities inrolved application of the sales distribution data.

In the manufacturers' and wholesalers' sales distributions provided by the censuses, sales to "industrial, commercial, professional, and institutional users"-the 1939 designation, termed "sales to industrial users" for brevity-were taken to indicate nonconsumer use. Included in the coverage of this designation were private institutions and governmental bodies. In addition to sales to industrial users by manufacturers and wholesalers, interplant transfers by manufacturers were included in the measurement of nonconsumer use.

Nonconsumer use of mixed commodities was estimated in two parts. First, the percentages that manufacturers' interplant transfers and sales to industrial users constituted of manufacturers' total transfers and sales were calculated for industries representing the individual commodities most closely. In some instances the industry sales and transfer data were adjusted by commodity data to make their coverage more representative, and thus to prevent bias.

Secondly, the percentages of manufacturers' total interplant transfers and sales formed by their sales to wholesalers were multiplied by the percentages of wholesalers' sales (adjusted for duplication) made to industrial users, with the lines of trade given in the wholesale census having to be matched with the commodities involved. ${ }^{17}$

[^20]The two percentages were then added and applied to the detailed commodity totals. For mixed commodities allocated by sales distribution data, the unfinished portion thus represented sales by manufacturers to "industrial users" either directly or through the channels of wholesale trade. The allowance for nonconsumer use represented by wholesalers' sales to industrial users could have been estimated and deducted later, but was handled at the manufacturers' level to simplify the estimating procedure.

By using the sales distribution data, materials consumed data, and special commodity information, it was possible to achieve fairly reliable breakdowns for most of the mixed commodities. Nevertheless, by their very nature these breakdowns were approximations, and undoubtedly were subject to errors. As computed from the data shown in Exhibit 22, allocations from mixed commodities formed 44 percent of the estimated value of manufacturers' production of finished consumer commodities in 1939.

The area over which estimation and judgment were used in unusual degree in the classification of manufactured commodities was thus sizable for consumer commodities. It was much larger than in the case of producer durables, for which commodities that were allocated from the mixed commodity total constituted only 9 percent of the manufacturers' 1939 value of finished equipment, before deduction of government purchases. Even when government purchases of durable equipment-handled separately from the classification process in estimating producers' durables-are taken into account as being closely akin to the problem of mixed commodity allocation, the conclusion remains that the 1929-39 consumer commodity series was subject to larger error than the producer durable series with respect to the very important aspect of commodity classification. A rough quantification of this appraisal might be gained from the following fact: net errors of 20 percent -an unlikely extreme-in the mixed commodity allocation and in the estimate of government purchases of durable equipment would have affected the 1939 value of manufactured finished output by 9 percent for consumer commodities and by 4 percent for producers' durables.

At this point the procedure of estimating consumer commodities had arrived at the manufacturers' value of finished production for odd years of the 1929-39 period. This was computed, with reference to Exhibit 22, by summing the values of consumer commodities (1) assigned directly as finished, (2) allocated from the combined total of finished output of consumer commodities and producer durables, and (3) allocated from the mixed commodity total.

The detailed commodity figures were next combined into the groupings shown in table 30, Part V of this report. Further steps in the commodity flow procedure related to commodity group totals, rather than to individual products within the groups. In these steps, the various sales, output, inventory, foreign trade, and mark-up data-whether for commodities, industries, lines of wholesale business, or types of retail store-were always first combined so as to correspond best with the commodity groups.
For the even years of the period, the estimates of manufacturers' output of finished consumer commodities were of necessity based on partial information, which was utilized for interpolation between the census-based estimates. Nevertheless, the intercensal figures are believed to be of a fairly high order of reliability.

With respect to the actual procedure, either manufacturers' production or manufacturers' sales were interpolated, depending on whether the best available interpolating data related to production or sales. In instances of the latter, the interpolation was carried out, of course, at the stage of the estimating procedure indicated by line 4 of Exhibit 22-where manufacturers' sales had been derived by subtracting changes in inventories from manufacturers' production.
From a wide variety of sources were assembled as many different interpolating series for each commodity group as were available. These series, representing various product and industry data, were tested against one another by examination of coverage and of relative
movement from one census year to the next. Reasonably good intercensal interpolations were obtained for every commodity group.
2. Manufacturers' production of finished consumer commodities. Following the lengthy process of classifying the biennial census data and then making interpolations for other years, estimates of manufacturers' production of finished consumer commodities were available for all years of the period 1929-39. (The procedural exception noted above regarding interpolations of sales may be mentioned again.) The estimates represented manufacturers' output for export and consumer use.
3. and 4. Subtraction of change in manufacturers' inventories to derive manufacturers' sales.-Annual changes in the inventories of finished consumer commodities held by manufacturers were estimated and subtracted (algebraically) from the production figures to obtain manufacturers' sales of finished commodities. Much of the 1929 census data, however, already represented manufacturers' sales, and no adjustment was necessary.
Changes in manufacturers' inventories of consumer products for the years 1937, 1938, and 1939 were estimated from values of finished product inventories reported in the manufacturing censuses for 1937 and 1939. These censuses obtained beginning and ending inventories broken down into finished product inventories and all other inventories-materials, work in process, merchandise, etc. The ratios of finished product inventories to total products of establishments in each appropriate industry were applied to the individual commodity values to obtain beginning and year-end inventories of finished consumer commodities for 1937 and 1939. These were summed by commodity groups, and the resulting inventory totals were differenced to obtain the annual changes for 1937, 1938, and 1939.
For the years 1929-36 the inventory adjustments were based on inventory and sales data compiled by the Bureau of Internal Revenue from corporate income tax returns, as given in Statistics of Income--Part 2 and the underlying "Source Book", containing further industrial detail. Inventory changes were not actually calculated for this period. Rather, the procedure for translating the commodity output data to sales was to (1) compute sales-production ratios for the commodity groups for the year 1937; (2) extend them to earlier years by similar ratios computed from the corporate industry data; and (3) multiply the commodity group production values by the resulting ratios.
A limitation of the 1937-39 inventory-change estimates stems from the fact that the census finished-product data on inventories were too broad in scope for the purpose at hand, covering finished nonconsumer, as well as consumer, goods. The corporate data used for the 1929-36 period were much less satisfactory. They represented total corporate inventories (the unfinished part generally being large and relatively volatile), and were available in an industrial detail too limited to provide appropriate representation of many of the individual commodity groups. ${ }^{18}$ Little confidence can be placed in the inventory adjustments for the earlier period. Fortunately, however, they do not, for the most part, form an appreciable element of the final consumer commodity values.
5. Producers' sales of finished nonmanufactured commodities.Producers' sales of foods reaching consumers without undergoing manufacture were added at this stage. Since the initial basic data used represented sales, rather than production, no inventory adjustment was required.

Statistics on agricultural products, available annually, were secured from the Department of Agriculture. Because substantial amounts of fruits, vegetables and other farm products are used in the manufacturing process, the estimates of farmers' cash receipts from marketings had to be allocated between finished and unfinished. The allocations for the many individual products-believed, in general, to be fairly reliable-were derived largely from data of the Department of Agriculture.

[^21]Nonmanufactured foods also included the products of commercial fisheries. Estimates of the value of edible fish other than that canned, dried, or otherwise preserved (already covered under manufactured foods) were derived chiefly from compilations of the Bureau of Fisheries.
6. Producers' sales of finished commodities.-With the addition of producers' sales of nonmanufactured foods to manufacturers' sales, there was obtained a complete measure of finished commodity sales (f.o.b. at producers' prices) for export and consumer use. In 1939, this measure accounted for 61 percent of the final market value of consumer commodity purchases estimated by the commodity flow method. Manufactured commodities represented 63 percent of that value, and nonmanufactured foods 8 percent.
7. Addition of transportation charges to producers' sales.-The transportation allowances added to producers' sales covered transportation from producer to the first buyer, whether retailer, wholesaler, or consumer, and to port of export. Costs of transporting consumer commodities beyond the first buyer were assumed to be included in wholesalers' and retailers' markups. While this treatment was substantially correct, it very probably resulted in some incompleteness of coverage of the transportation cost element.

The estimates of transportation charges were based almost wholly on data from the Interstate Commerce Commission. The procedure followed was to multiply producers' commodity sales by annual ratios of freight revenue per ton to value per ton at point of production for most nearly appropriate Interstate Commerce Commission commodity classifications. Ratios were calculated for 89 of the Interstate Commerce Commission's 157 commodity classifications found to be related to one or more of the consumer commodity classifications.

Freight revenue per ton of freight carried was computed for each year of the 1929-39 period from freight revenue and tonnage data published annually by the Interstate Commerce Commission. Values per ton at point of production were obtained from Interstate Commerce Commission publications for the years 1928, 1930, 1933, 1936, and 1939. Data on value per ton for other years were derived for the relevant Interstate Commerce Commission commodity classifications by interpolation on the basis of 1928-39 price indexes constructed principally from wholesale price series of the Bureau of Labor Statistics.

For lack of data on other forms of transportation, rail freight charges formed the sole basis of the specific transportation allowances in the commodity flow estimates except for a rough supplementation to cover trucking in the case of nonmanufactured foods. Truck transportation is important for many consumer commodities, and to the extent that truck rates differed from rail rates the procedure would lead to error in the estimated cost of moving the commodities from the producer to first buyer.
8. Distribution of producers' sales, inclusive of transportation charges.-The distribution of manufacturers' and other producers' sales among exports, wholesalers, retailers, and consumers is a vital step in the commodity flow method. Producers' exports are eliminated at this point since they are accounted for, by a different methodology, in the net foreign investment component of the gross national product. The three remaining channels are differentiated because varied markup treatments must be applied to the finished consumer commodities flowing through them.

No markups are applied to producers' sales direct to consumers, which become immediately a part of the consumption expenditure estimates. Wholesalers' markups are applied to commodities sold by producers to wholesalers and then either exported or sold directly to consumers. Cumulative wholesalers' and retailers' markups are required for consumer commodities sold by producers to wholesalers and then sold by them to retailers. Lastly, only retailers' markups must be added to sales made by producers directly to retailers.

The distribution of manufacturers' sales, inclusive of transportation charges, was estimated for 1929, 1935, and 1939 very largely from data provided in the census reports on Distribution of Mar-
ufactarers' Sales. With two qualifications noted below, appropriate percentage distributions were derived directly from the reported data for detailed industry groups and applied to the consumer commodity groups. For intercensal years, the derived census-year percentages, which did not change appreciably, were interpolated along a straight line. The distributions of other producers' salesnonmanufactured foods-were based chiefly on estimates of farmers' sales distributions made by commodity specialists in the Bureau of Agricultural Economics.

In two particular aspects, sales distributions as reported by the censuses required modification. First, since wholesalers' sales to industrial users had been eliminated in arriving at manufacturers' sales of finished consumer products, census data on manufacturers' sales to wholesalers were reduced by the proportions of wholesalers' sales to industrial users which had been employed in estimating the nonconsumer-use portion of mixed commodities.

Secondly, exports required special estimation since the census sales distributions showed manufacturers' exports separately only in 1939. The export estimates derived for 1939 by applying the industry sales distribution data to the commodity values were extrapolated to the years $1929-38$ by selected commodity data on exports obtained from Foreign Commerce and Navigation of the United States, published by the Bureau of Foreign and Domestic Commerce. ${ }^{10}$ The 1929 , and 1935 sales distributions and the annual estimates of producers' commodity sales were then adjusted to eliminate exports, and the distribution estimates were made in terms of domestic sales to wholesalers, retailers, and consumers.

It would appear that the most significant limitations of the estimated distributions of producers' sales stemmed from the necessary application of industry and line of trade data to product data. Although every effort was made to achieve appropriate matchings of these data, the distributions for some commodities could have been appreciably in error.

9 and 10. Addition of imports to producers' sales distributed to wholesalers to arrive at total purchases by wholesalers.-Imports are a source of commodities sold to consumers and must be added to producers' domestic sales. In the commodity flow process imports are handled entirely as purchases by wholesalers. In the main, this accords with fact, as only a minor portion of consumer product imports is made by manufacturers, by retailers, or by consumers directly.

Imports were estimated for the various consumer commodity groups for the years 1929-39 from annual commodity data on "imports of merchandise for consumption" (with "calculated duty" added) published in Foreign Commerce and Navigation of the United States by the Bureau of Foreign and Domestic Commerce. Nonconsumer use was not allowed for explicitly-that is, by carrying out the sort of allocation process employed in classifying the domestic output of manufactured products. Instead, commodities shown in the import statistics were selected by inspection to correspond with the various consumer commodity groups, and reliance was placed on compensating errors of inclusion and omission.

The estimated value of consumer imports, amounting to less than 2 percent of the final value of consumption commodities in 1939, was somewhat understated. Because of the nature of the basic data, the estimates omitted ocean transportation charges from country of export to the United States. Also, they did not cover handling, transportation, and related charges between port of import and purchaser, although this factor is minimized by the fact that to a considerable extent importers are located in ports of import.

11 and 12. Subtraction of change in wholesalers' inventories to obtain cost of goods sold by wholesalers.-The next stage in the commodity flow procedure calls for estimation of changes in wholesalers' inventories of finished consumption commodities. They are

[^22]subtracted from wholesalers' purchases in order to derive the costs of commodities sold. To these costs can then be added wholesalers' markups to arrive at their sales of consumer commodities.

The general procedure for estimating changes in wholesalers' inventories of finished consumer commodities was to prepare in-ventory-cost of goods sold ratios and to apply those ratios to the annual estimates of wholesalers' purchases. ${ }^{20}$ The procedure may be outlined as follows.
(1) Ratios of wholesalers' year-end inventories at cost to annual sales (adjusted for duplication) were computed for the years 1929, 1933, 1935, and 1939 from data contained in the Census of Wholesale Trade.

As the first element of these computations, total inventories reported by type of operation-service and limited function wholesalers, manufacturers' sales branches and offices, and, in 1929 and 1933, chain store warehouses-in each relevant line of trade were prorated among sales to other wholesalers, sales to industrial users, and other sales (exports and sales to retailers and consumers). The data did not permit of any ${ }^{3}$ other apportionment of reported inventories, but it is believed that the assumption of a uniform rate of inventories to sales within a single trade and type of operation was substantially correct.

Inventories held against sales to other wholesalers were next prorated between sales to industrial users and other sales. This was done by commodity groups, combining all trades and types of operation assigned to each group.
In combining trades and types of operation to obtain rates of inventories to sales for the consumer commodity groups, the weights used were the appropriate census sales totals-exports and sales to retailers and consumers, plus the prorated portion of sales to other wholesalers covering these categories.
(2) The ratios of inventories to sales for the census years 1929 , 1933, 1935, and 1939 were converted to ratios of inventories to cost of goods sold by use of wholesalers' markup ratios (described below). With $\mathrm{S}=$ sales, $\mathrm{M}=$ markups, $\mathrm{C}=$ cost of goods sold, and $\mathrm{I}=$ inventories, then $\mathrm{C}+\mathrm{M}=\mathrm{S}$ and $\frac{\mathrm{I}}{\mathrm{C}}$ was computed as $\frac{I}{S}\left(1+\frac{M}{C}\right)$.
(3) The ratios of inventories to cost of goods sold so derived were multiplied by wholesalers' purchases to obtain year-end inventories of consumer commodities for census years.
(4) In the estimation of year-end inventories for intercensal years, one of two procedures was followed. For some commodity groups, the census-based inventory-cost of goods ratios were interpolated and multiplied by purchases. But the more general procedure followed, because of the nature of available data, was to interpolate the census-year inventory figures directly.
The information on wholesalers' inventories by line of trade available for interpolations was quite limited. The wholesale data used were sometimes not directly representative of the individual commodity groups, and in many instances it was necessary to resort to use of retail inventory data.
For the years 1929-34, department-store inventory data from the Controllers' Congress of the National Retail Dry Goods Association were most generally used for interpolation. For the 1935-39 period, the principal interpolating data were sample series on wholesalers' closing inventories compiled by Dun and Bradstreet and by the Bureau of the Census from its monthly Wholesale Survey. For commodity groups for which other information was lacking, use was made for all or part of the $1929-39$ period of corporate wholesale trade data from Statistics of Income. These related, for all wholesale corporations combined, to the ratio of total inventories to cost of goods sold.

[^23]13 and 14. Addition of wholesalers' markups to obtain wholesalers' sales of finished commodities.-Wholesalers' markups form an appreciable element of the final market value of consumer commodity purchases, amounting to 8 percent in 1939.
In the estimation of wholesalers' markups, ratios of operating expenses to sales (adjusted for duplication) in 1929, 1933, 1935, and 1939 were derived for each commodity group from wholesale census data for appropriate lines of trade. Because of the lack of a relevant breakdown of the reported operating expense figures, the same sort of procedure was required as that applied to census inventory data in estimating changes in wholesalers' inventories of consumer commodities. In brief, total operating expenses for each relevant type of operation in each trade were first prorated among sales to other wholesalers, sales to industrial users, and other sales (exports and sales to retailers and consumers), after which the operating expenses prorated to sales to other wholesalers were divided by commodity groups between sales to industrial users and other sales. The weights used in combining selected lines of trade and types of operation into a single operating expense-sales ratio for each commodity group were the relevant sales totals, covering exports and sales to retailers and consumers and a prorated portion of sales to other wholesalers attributed to these categories as against industrial users.
No allowance was made for the services of proprietors of unincorporated establishments, but this omission results in an understatement of the ratio of total operating expenses to sales of only a fraction of one percent.
Principal sources used to interpolate census-year expense ratios for intercensal years were the series of wholesale surveys made by Dun and Bradstreet and the 1941 report on Distribution Costs, An International Digest of the Graduate School of Business Administration, Harvard University. When appropriate wholesale data were lacking, the movement of the comparable group expense ratio for retail trade was used.
It was necessary to add profit ratios (ratios of profits to sales) to the operating expense ratios to obtain gross margin ratios. The available information on wholesale profits by line of trade was scanty. Some of the special wholesale surveys were helpful, but frequent use was made of gross margin-operating expense ratios developed for comparable retail trade groups. And for some commodities the selection of the profit ratios had to be largely arbitrary. Still, it should be noted, even large errors in the profit element of wholesalers' gross margins would have little effect on the consumer expenditure estimates.
The annual wholesale gross margin ratios were converted to markups by use of the equation $M=\frac{100 \mathrm{G}}{100-\mathrm{G}}$, where M is the markup percentage of cost, and $G$ is the gross margin percentage
of sales.
15. Subtraction of wholesalers' exports.-The basic commodity data, representing production or sales for both exports and consumer use, were adjusted at the producer level for domestic nonconsumer use but not for exports. Exports were deducted in part from manufacturers' sales of finished commodities. Remaining at this stage of tracing the commodity flow was the elimination of Wholesalers' exports from their sales.
Wholesalers' exports were derived by deducting previously estimated manufacturers' exports from an independent estimate of total exports. The totals were obtained by a process of commodity selection. The selection was made from the detailed commodity classification of exports (valued at port of exportation) given annually in Foreign Commerce and Navigation of the United States. Where the export classification combined products included in the commodity groups with other products not included, the omission or inclusion of the classification was based on rough appraisal or inclusion of the classification
The procedures for deriving wholesalers' and manufacturers' exports may lead to error on several scores. The error involved,
however, is less than would obtain from treating total exports as either manufacturers' or wholesalers' exports. This is because of the difference in markup treatment accorded commodities eliminated from producers' sales and wholesalers' sales.
16. Distribution of wholesalers' domestic sales.--Wholesalers' domestic sales of finished consumption commodities are broken down into sales to retailers and sales to consumers. The latter, as final sales, are segregated, whereas sales to retailers are still subject to inventory and markup adjustments.

The Census of Wholesale Trade provided the basis for the sales breakdowns for 1933, 1935, and 1939. These censuses collected data on sales to retailers for resale and on sales to consumers. Only limited use could be made of the 1929 wholesale census, which obtained information on sales to consumers, but not to retailers, and in certain other respects was deficient for this purpose.

The sales distributions as reported in the 1933, 1935, and 1939 censuses generally were somewhat incomplete. They were raised to reported total sales by line of trade and type of operation (service and limited function wholesalers, manufacturers' sales branches and offices, and, in 1933, chain store warehouses). The resulting figures were summed for retailers and consumers, and the relationship of the two employed to break down the commodity estimates of wholesalers' domestic sales. The trades selected for application to each commodity group were, to the extent possible, the same as those utilized in deriving wholesale inventory and operating expense ratios. Changes in classification of lines of trade were ratio-adjusted so far as possible, but' in some cases it was necessary to use 1935 retailer and consumer proportions for 1933.

For some commodity groups, analysis indicated the appropriateness of utilizing for 1929 the proportion of consumer sales to total sales less sales to "industrial consumers" computed from census data. But for most groups it was necessary to carry the 1933 or 1935 proportions back to 1929. In a few instances, where fluctuations in the consumer and retailer proportions appeared to be cyclical, 1939 proportions were used for 1929.

For intercensal years, percentage breakdowns of wholesale sales to retailers and consumers were obtained (except where 1933 or 1935 percentages were held constant back to 1929) by interpolating the census-based percentages along a straight line. The smallness of the changes between census years suggested that this procedure was not markedly in error.
17. Total purchases by retailers.-After the distribution of wholesalers' domestic sales is accomplished, total purchases by retailers are secured by summing wholesalers' sales to retailers and (from 8c) producers' sales to retailers.

18 and 19. Subtraction of change in retailers' inventories to obtain cost of goods sold by retailers.-Estimates of changes in retailers' inventories of finished consumer commodities were computed from inventory totals derived from a combination of two distinct procedures. (1) Tentative estimates were first prepared, for individual commodity groups, by a procedure paralleling that used in making the wholesale inventory adjustment. (2) Modifications of these estimates for certain years were made after comparing the relative movement of the commodity inventory totals with that of the series on year-end book values of inventories in retail trade derived in the process of calculating the inventory component of the gross national product. (See section on Change in business inventories.)
(1) Year-end inventories of consumer commodities for census years were derived by (a) computing ratios of retailers' yearend inventories at cost to annual sales for the appropriate type-of-store classifications, (b) converting these ratios to ratios of inventories to cost of goods sold by applying retailers' markup ratios (described below), and (c) multiplying the inventory-cost of goods ratios by the estimated retailers' purchases of the various commodities.

Inventory change estimates by commodity groups for other than census years were arrived at by differencing totals computed either by interpolating the census year inventory-cost of goods
ratios and multiplying them by purchases, or by interpolating the census year inventory figures directly. In the former procedure, the most important source used was the Bureau of Internal Revenue tabulations of inventories and cost of goods sold from retail corporations' income tax returns. The latter procedure of direct inventory interpolation utilized mainly the department store data published by the Controllers' Congress of the National Retail Dry Goods Association in Departmental Merchandising and Operating Results of Department Stores and Specialty Stores. The departmental breakdown of inventories given was detailed and adaptable to the commodity groups. This source could be used only for the 1929-34 period, as the inventory figures after 1934 were presented as stock turns, unsuited to estimation of year-end inventories. For the later years of the period, inventory series from a variety of sources, chiefly Dun and Bradstreet, were utilized.
(2) The relative movement of the total of commodity group inventories derived by the foregoing procedure was similar to that of the retail trade industry data in the 1920-33 period but diverged in the subsequent period. The industry data were used to interpolate between the census-based commodity totals for 1933, 1935, and 1939. The differences between the revised totals and those obtained in step (1) as the summation of commodity groups were prorated among the latter.

This over-all check and modification on the basis of the retail industry estimates was indicated by the weakness of the available data for interpolating census-based estimates for many of the commodity groups. This type of check had not been feasible in the case of the wholesale inventory adjustment because of the large role of unfinished commodities in the operations of the wholesale trade industry.

20 and 21. Addition of retailers' markaps to arrive at retailers' sales of finished commoditics.-Retailers' markups are a very sizable element of consumer commodity purchases estimated by the commodity flow method. In 1939 retail markups formed 28 percent of the final consumer value.

The estimates of retailers' markups in the consumer commodity series, like those of retailers' inventories, represented an integration of the results of two methods. (1) Estimates were first prepared for individual commodity groups, and (2) these were modified for the years $1930-38$ on the basis of relevant retail trade industry data.
(1) The first step involved the estimation of retailers' markups in a manner similar to that employed for wholesalers' markups. Census-based ratios of operating expenses to sales were interpolated by noncensus source materials, raised on the basis of these materials to gross margin ratios by the addition of profit and loss allowances, and then converted to markup ratios.

Operating expenses as a percentage of sales for comparable types of stores most closely related to the various commodity groups were derived for 1920, 1933, 1935, and 1939 from the retail censuses. For 1939, the census reported only payrolls; allowances for other operating expenses were based on the 1935 relationship of total operating expenses to payrolls. Since only the 1933 census included a satisfactory allowance for the services of proprietors and firm members of unincorporated establishments, a similar adjustment to the expense data had to be made for the other census years. This was done on a basis comparable with that for 1933.

Data from numerous sources were used to obtain, by interpolation, operating expense-sales ratios for intercensal years. An important source providing commodity data was the annual reports on Departmental Merchandising and Operating Results of Department Stores and Speciality Stores published by the Controllers' Congress of the National Retail Dry Goods Association. Studies made by Dun and Bradstreet, the Federal Trade Commission, the Harvard University Graduate School of Business Administration, and various trade groups provided additional ratios for many types of stores. These various sources also provided the basic information on profit-sales relationships necessary to translate the operating expense ratios into gross margin ratios.

Several factors bearing on the validity of these estimates may be noted. First, it is likely that errors stemming from the use of type of store data to estimate retailers' markups for commodities have a tendency to be offsetting, or compensating, in the totala type of assumption which is much less valid when data on manufacturing industry or wholesale line of trade are applied to commodity data. This is because the preponderant part of retail sales is made to consumers; that is, the nonconsumer element of sales is less in retail trade than in wholesale trade or manufacturing.
Running counter to this consideration, however, is the fact that for all years of the 1929-39 period the data for estimating the volatile profit-and-loss component of retailers' markups for individual commodity groups were partial and generally inadequate. Moreover, the available information for making the interpolations of operating expense-sales ratios between census years was far from comprehensive.
These several considerations were taken to indicate that the commodity totals of retailers' markups were probably not satisfactory in cyclical movement over the period.
(2) This movement was checked against, and modified by, a series which may be termed "adjusted income originating in retail trade." It was derived by two types of adjustment of the National Income Division's 1929-39 estimates of income originating in retail trade and automobile services. The first consisted of subtracting the inventory valuation adjustment and adding depreciation, gross rental payments, and indirect business taxes.
The resulting series, while more nearly representing retail gross margins, was too broad in scope for the purpose at hand. It included certain lines of trade not covered by the commodity flow estimates (such as motor vehicle dealers, service garages, and filling stations) and certain others in which the nonconsumer element was large (such as lumber dealers). Separate income data for these various lines of trade were not available. Accordingly a correction to reduce the scope of the adjusted income total was made by use of operating expense data in the following manner.
For the census years 1929, 1933, 1935, and 1939 total operating expenses for retail trade and automobile services were divided into operating expenses exclusive of the various lines of trade noted above. These ratios, with straight-line interpolations for intercensal years, were then multiplied by the adjusted income originating totals for retail trade and automobile services.
The income series obtained by this second adjustment was used to interpolate between the 1929 and 1939 estimates of retailers' markups obtained by summing the individual commodity groups. The relationship of 1939 to 1929 was similar in the two series, but the movement within the period differed appreciably, the income series showing a wider amplitude. The absolute differences between the revised estimates of total retailers' markups for the years 193038 and the original estimates obtained as the summation of individual commodity groups were prorated among them.
This adjustment, though rough, probably improved both the estimates of retailers' markups in the consumer commodity series and the statistical consistency between national income and gross national product. A similar adjustment was not made for wholesalers' markups because of the greater importance of unfinished products in the wholesale trade industry.
22. Consumer commodity purchases exclusive of general retail sales taxes.-The final market value of consumer commodity expenditures, except for the addition of general retail sales taxes, is arrived at by summing sales of finished commodities to consumers by producers (8d), wholesalers (16b), and retailers (21).
23 and 24. Addition of general retail sales taxes to obtain personal consumption expenditures estimated by the commodity flow method.-General retail sales taxes and part of the alcoholic bererage taxes levied by State and local governments were the main taxes not covered by the trade markups in the 1933-39 period. Fiscal year data for that period were obtained from the surveys of State and local government finances by the Bureau of the Census
and shifted to a calendar year basis. Adjustments of the tax totals to make them conform in scope to the consumption expenditure estimates were made by using tax collection data, by type of store, reported for a small number of sample States. The adjusted tax totals then were prorated by the expenditure estimates among applicable commodity groups, with allowance for the exemption of food in certain jurisdictions.
After arrival at the final figures, inclusive of taxes, the individual commodity groups were classified as durable or nondurable, as shown in table 30 in Part V. Durable commodities were generally defined as those having an average life of three years or longer.

## Extrapolation of Commodity Flow 1939 Benchnarks

As indicated in the introductory remarks to this section of the notes, the consumer commodity groups established for 1939 by the commodity flow method have been projected to later years primarily on the basis of relative movements in retail sales. Retailers' excise taxes and applicable general retail sales taxes have been estimated separately and added, except in cases where the retail pricing basis covered such taxes.
The principal retail sales series which have been used in the consumer commodity extrapolations are (1) retail sales, by type of store, prepared by the Office of Business Economics, and (2) department store sales, by type of department, compiled by the Board of Governors of the Federal Reserve System. In addition, some specific use has been made of unpublished compilations of State sales tax data, sales data from trade associations and other private organizations, quantity and price data, and Federal retailers' excise tax collections.
(1) The Office of Business Economics retail sales estimates represent extrapolations from sales totals by type-of-store groupings given in the 1939 Census of Retail Trade. The annual extrapolations are based primarily on sales tax reports from a group of 10-12 States accounting for about one-third of the Nation's retail sales. Other data used include the Federal Reserve Board department store sales estimates; data from samples of independent retailers and chain stores reporting to the Bureau of the Census; estimates of changes in the retail store population prepared in the Office of Business Economics; sales tabulations for retail businesses by the Bureau of Internal kevenue from income tax returns of corporations, sole proprietorships, and partnerships; and, of course, the Census of Business benchmark sales totals. The Office of Business Economics retail sales estimates have not yet been formally adjusted to the 1948 Census data, but, as mentioned earlier, check closely with them in total and compare favorably for many of the type-of-store groupings used for extrapolating consumer expenditures.
(2) The department store sales data, by major departments, of the Federal Reserve Board are based on departmental data reported by about 350 independent department stores located in various cities throughout the country and accounting for about 50 percent of the estimated total department store sales. Not all stores report data for all of the departments asked; consequently, the sample for individual departments is not so comprehensive as that for department groups.
Under the method of extrapolating 1939 consumer expenditures, estimates for a particular commodity group often have been extended by sales of one or more relevant types of stores (on the assumption that sales of store groups tend to reflect the movement of sales of commodities). However, when a commodity group is not handled almost exclusively by specialized stores, or data for these stores were not available separately, the movement of total sales of the commodity has been estimated from the experience of departments handling that line in department stores or by use of combined relevant data for specialized stores and department stores. Weights for combining these series were usually derived from the commodity distributions of sales by kinds of business in the 1939 Census of Retail Trade. Since departmental sales by type of department more nearly represent commodity sales, they appear to be
more appropriate extrapolators than those specialized stores whose sales cover more than one commodity group. Consequently, the department store data have been given more than proportionate weight in certain instances.

An important shortcoming of retail trade data in these applications is that, with the exception of department store sales, they cannot be broken down by commodity groups. The type-of-store classification found in the basic data assigns a store to a single classification on the basis of the commodity accounting for the principal part of its business. But food stores, for instance, sell goods other than food, and food is sold also in other kinds of stores, including drug and department stores. With diverse movements in the sales of various commodities, use of sales data classified by type of store to extrapolate commodity groups may give rise to errors. There is a fair presumption, however, that these errors tend to offset in the total.

Another limitation of retail sales data for the extrapolation of consumer commodities arises from the fact that consumers buy from producers and wholesalers as well as from retailers. In 1939 these direct purchases were 6 percent of all consumer commodity purchases. In the general absence of data for estimating purchases from producers and wholesalers separately, they have been assumed to vary with retail sales. Except for a few items of which the large food group is a primary example, errors stemming from this assumption would necessarily be minor because of the relatively small volume of the non-retail purchases involved.

In the extrapolation of the commodity flow benchmarks by retail sales, it was necessary, but difficult, to make allowance for the changing proportion of business purchases at retail. Downward adjustments were made in the war period for some commodities, such as purchased meals and beverages of the food and tobacco group, to allow for the apparent increase in the relative magnitude of business purchases. There was very little quantitative information on which to base the adjustments.
The revisions in the commodity expenditure estimates for the years since 1942 published in the July 1948-50 issues of the Survey of Current Business and in this report represent largely the result of refinements in methods used and of revisions in the underlying estimates of retail store sales. The new benchmark figures which will be derived from the 1947 and 1948 Censuses will provide the first real indication of necessary revisions in the post-1939 estimates.

## Retail Valuation Method

The main alternative to the commodity flow procedure and the retail sales extrapolation was to multiply by an appropriate average retail price the estimated quantities of consumer commodities purchased. This approach-the retail valuation method-was used for three major groups, comprising 12 percent of the remaining 16 percent of 1939 expenditures. These groups are passenger cars, gasoline and oil, and household fuels.

## Passenger cars

Preparation of the consumer expenditure series on "new cars and net purchases of used cars" was carried out in three steps: (1) multiplication of data on number of new cars by an average retail price; (2) addition of gross margins on used car sales ("net purchases of used cars") ; and (3) allocation of the totals of new passenger cars (after a deduction for government purchases) and of gross margins between personal consumption expenditures and producers' purchases of durable equipment.
(1) The Automobile Manufacturers Association reported for the years 1929-41 the number of passenger cars sold at retail and an average retail price at the factory. The latter was raised to cover estimated transportation costs and also incidental charges by retail dealers. State and local retail sales taxes were not included in the price, but were added separately.

With the discontinuance by the Automobile Manufacturers Association of this retail sales series, the number of new passenger
automobiles was estimated for the years 1942-45 from Office of Price Administration rationing statistics. Average prices for this period were obtained by extrapolation of the 1941 price by use of data based on O. P. A. price regulations.
For 1946 and subsequent years, the number series was new passenger car registrations compiled by the R. L. Polk Co. The average price was based on the Bureau of Labor Statistics composite price for Ford, Chevrolet, and Plymouth, adjusted upward to cover other makes of cars and factory installed extras.
(2) In the 1929-39 period the estimates of gross margins on used car sales covered only used car dealers. Used car margins of new car dealers were assumed to be covered by the average price series used in estimating purchases of new cars. The price series, being an average of list prices, was believed to have exceeded actual prices largely because it did not reflect excessive allowances for trade-ins. Used car margins of new car dealers were introduced in successively larger proportions in 1940 and 1941, and have been included entirely, along with the margins of used car dealers, since 1942, when the full retail list price for new cars was assumed to have been realized.

Data for estimating gross margins on used car sales were, for the most part, inadequate. For the 1920-39 period, gross margins of used car dealers were estimated from retail census data on operating expenses and proprietors' compensation. For the period since 1946, total sales of used cars (estimated largely from surveys of sales finance companies and of consumer finances made by the Federal Reserve Board) have been multiplied by gross margin ratios that are largely arbitrary, the only statistical reference point being the gross margins of used car dealers as indicated for 1948 by sample data from tax returns to the Bureau of Internal Revenue for that year. The estimates for 1940-42 were obtained by extrapolating used car sales from the 1939 census on the basis of sales finance company data for those years and multiplying sales by the 1939 gross margin ratio stepped up on the basis of judgment. The estimates for 1943-45 were obtained by using as an interpolating series passenger car registrations excluding new car registrations.
(3) The totals of new passenger cars (after a small deduction for Federal, State, and local government purchases) and gross margins on used cars were allocated 70 percent to personal consumption expenditures and 30 percent to producers' durable equipment except during the war period from January 1942 through May 1945. These proportions were derived mainly from surveys made by the Bureau of Public Roads in 1934-37 to determine road use in terms of mileage. The 70-30 allocation was also applied during the war period to gross margins on used cars, since the distribution of used cars was not controlled by rationing. For the new passenger car series, however, after consultation with specialists in the Office of Price Administration, the consumer allocation was reduced to 50 percent during the January 1942-May 1945 period, except that for April and May of 1945 all new cars were counted as producers' durables.

The allocation of the passenger car estimates must be regarded as an uncertain element. Errors in the allocation would affect both consumption expenditures and producers' durables, but not the gross national product total.

## Gasoline and oil

For the period 1929-39, estimates of purchases of gasoline and oil-prior to consumer allocation-represent the sum of separate series for gasoline and oil, each obtained by multiplying quantities by an average price.
The quantities of gasoline and lubricating oil used in passenger cars were estimates published by the Bureau of Mines in its Minerals Yearbook. The gasoline price was the 50 -city service station average compiled by the American Petroleum Institute and published in American Petroleum News. The 50 -city price excluding taxes was used, and these were estimated separately and added. Lubricating oil was valued at the Bureau of Agricultural

Economics average of prices paid by farmers for medium grade motor oil.

With the discontinuance of the Bureau of Mines quantity series, the estimates of gasoline and oil purchases since 1940 represent extrapolations from 1939. The extrapolating index has been obtained by multiplying data from the Bureau of Public Roads on the quantity of passenger car motor fuel used by the average price of gasoline (inclusive of taxes) in 50 cities compiled by the American Petroleum Institute.
The figures so derived for expenditures on gasoline and oil were allocated 70 percent to personal consumption expenditures in the periods from 1929 through 1941 and beginning with 1946. During the war period, the following percentages were used: 65 for 1942, 55 for 1943 and 1944, and 60 for 1945.
Errors stemming from this thinly based allocation, which was generally the same as that used in the passenger car series, would lead to error in the gross national product through their effect on consumer expenditures. The business-use portion of gasoline and oil expenditures, unlike that of passenger car purchases, is an intermediate product not included in the gross national product, and therefore cannot counterbalance any error in the consumeruse portion.

## Household fuels

Expenditures for purchased fuels (except gas) and ice were estimated for the period 1929-39 chiefly by multiplying quantity data provided by the Bureau of Mines by retail prices selected from series maintained by the Bureau of Labor Statistics. Post-1939 figures represent extrapolations from that year on the basis of the Office of Business Economics estimates of retail sales of fuel and ice dealers-in turn developed from reported sales tax collections in 11 States.

The quantity data underlying the 1929-39 estimates covered light fuel oil, range oil, kerosene, coke for domestic use, fuel briquets, packaged fuel, and anthracite and bituminous coal. The necessary allocations to consumer use were made upon advice of specialists in the Bureau of Mines. The retail prices used to value the estimated quantities consumed by persons were obtained from the Bureau of Labor Statistics except for kerosene (valued at the average of prices paid by farmers, from the Bureau of Agricultural Economics) and local sales of anthracite (valued at average mine realization, as published in Minerals Yearbook). To these component series derived as the product of quantity and price were added estimates for ice and purchased firewood. These were made by marking up by 50 percent (a rather arbitrary figure) manufacturers' production of ice, after allowing 40 percent for nonconsumer use at the suggestion of the industry association, and producers' sales of firewood.

## Other Methods

## Imputations

Three imputed items, comprising 3 percent of consumption expenditures for commodities in 1939, are listed in Exhibit 21. Food produced and consumed on farms and fuel produced and consumed on farms are discussed in the section on Income of unincorporated enterprises. The third item, standard clothing issued to military personnel, is covered in the section on Wages and salaries.

The consumer commodity estimates include one other imputa. tion-"food furnished government (including military) and commercial employees, and withdrawn by nonfarm proprietors"which is not shown in the breakdown of the estimates for 1939 in Exhibit 21. An explanation of this omission may conveniently be used also as a means of discussing an aspect of the commodity estimates not covered in the notes to this point. That concerns the nature of the breakdown of the large food and tobacco group provided in table 30 in Part $V$.

Food furnished government (including military) and commercial employees, and withdrawn by nonfarm proprietors ("food furnished") is not shown as a separate item in Exhibit 21 because
it was not an explicit component of the 1939 estimates. It was included in the commodity flow measure covering the aggregate of food expenditures except food produced and consumed on farms, which was an independent imputation, and tips, which were added separately.
In the 1929-39 period, total food except the imputed farm item and tips was estimated by the commodity flow method. Purchased meals and beverages (and the supporting detail) and "food furnished" were component elements estimated separately for purposes of the breakdown in table 30. Food purchased for off-premise consumption was derived as a residual by subtracting those two items from the food aggregate exclusive of tips and the imputation for farm food. The estimates of expenditures on tobacco and smoking supplies were prepared by the commodity flow procedure.
For the period since 1940, total food and tobacco purchases have been built up as the sum of separate estimates for the five subgroups. With "food furnished" and food produced and consumed on farms constituting imputations, food purchased for offpremise consumption and purchased meals and beverages have been estimated very largely by extrapolations from 1939 on the basis of retail sales. Expenditures for tobacco and smoking supplies have been extrapolated by means of the retail valuation (quantity times price) method.

## Miscellaneous

The remaining, "miscellaneous" category, accounting for one percent of consumer commodity expenditures in 1939, warrants only brief comment.
Expenditures for flowers, seeds, and potted plants and for lighting supplies have been estimated primarily from retail censuses and other sources of retail sales data, such as State tax collections. The tips series is described in the notes on Wages and salaries.
None of the other miscellaneous items has been of sizable magnitude in the period since 1929 except for expenditures by U. S. Government personnel abroad, which rose sharply during the war and reached a peak of $\$ 1.4$ billion in 1945 . This component is described in the section on Net foreign investment.

## 8.-PERSONAL CONSUMPTION EXPENDITURES FOR SERVICES

In descriptions of national income methodology, resort is sometimes had to the phrase, "constructed from a great variety of source materials." This easy generalization is probably nowhere so apt as in the case of personal consumption expenditures for services. Expenditures for some 125 different service items are shown in table 30 of Part V of this report; and these represent the incorporation of numerous types of data from many different government and private sources, processed by procedures virtually running the gamut of those used in national income estimation. A primary factor in the extent of detail, which is even greater in terms of worksheet computations, has been the desire to take advantage of available sources of information, however piecemeal, and to minimize errors stemming from the estimation of broad components on the basis of data differing in scope or internal composition.
Perhaps a meaningful way of classifying the service estimates to facilitate a general explanation of methodology is according to the broad types of underlying statistical sources listed in Exhibit 23. This shows that for 1947 items comprising 25 percent of the $\$ 49.1$ billion total were founded on comprehensive annual reports by government agencies and private sources; that components forming 54 percent of the total were benchmarked on periodic comprehensive sources, mainly the Censuses of Business
and Population; that another 12 percent stemmed from sample information; and that items accounting for 9 percent of all consumer service expenditures fell into a "Miscellaneous" category.
Exhibit 23.—Personal Consumption Expenditures for Services, 1947

| Type of source | Total | No subNiantial allowation problem | $\begin{gathered} \text { subt } \\ \text { sitantial } \\ \text { alluchtion } \\ \text { problcom } \end{gathered}$ | Tonal | Nosul) stantial allocation problem | Sul) ktantial alloration problem |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Bithiour of dellare |  |  | Precerat |  |  |
| Comprehensive annual reports. | 12.1 | 10.6 | 1.5 | 24.6 | 21.5 | 3.1 |
| Government agencies.... | 4.7 7.4 | 3.2 | 1.5 | 15.6 | 9.: | 3.1 |
| Periodic comprehensive sources | 26.2 | 24.9 | 1.3 | 53.5 | 50.8 | 2.7 |
| Census of Population...- | 15.2 | 15.2 |  | 30.9 | 30.9 |  |
| Census of Business. | 8.4 | 7.1 | 1.3 | 17.1 | 14.4 | 2.7 |
| Census of Agriculture.-- | 1.2 | 1.2 |  | 2.5 | 2.5 |  |
| Census of Religious Bodies_................ | . 9 | . 3 |  | 1.8 | 1.8 |  |
| Biennial Survey of Education. | . 6 | . 6 |  | 1.2 | 1.2 |  |
| Sample information | 6.1 | 5.1 | 1.0 | 12,5 | 10.5 | 2.0 |
| Miscellanebus. | 4.6 | 3.3 | 1.3 | 9.4 | G.8 | 2.6 |
| Total | 49.1 | 44.0 | 5.1 | 100.0: | 89.6 | 10.4 |

The exhibit affords some insight into aspects of both strength and weakness of the estimates of consumer service expenditures. Thus, it is evident that-contrary to an apparent general belief that statistical source materials on consumer services are sparse and inadequate-a substantial body of data exists for estimating this segment of the gross national product. Even so, the reliability of the series is impaired by the necessary heavy reliance on periodic (and sometimes rather infrequent) source materials. This consideration has particular relevance to the published estimates, since the latest Censuses of Population and Business incorporated into them are those taken in 1940 and the available materials for extrapolation from that point are by no means ideal.

Another key factor bearing on the reliability of the consumer service estimates is brought out in Exhibit 23-that components adding to only 10 percent of the total in 1947 constituted a "substantial allocation problem". First to be noted in this connection is that expenditures for consumer services, like those for consumer commodities, are generally estimated from data on producers' sales. In the case of services, however, the estimating procedure is simplified (and, hence, reliability is enhanced) by two facts: (1) There are no intermediary enterprises between the producer and consumer; and (2) in very large degree, consumer-type services are by nature items normally purchased only by persons. The area of estimation centering in the allocation of producers' total sales between consumers and others is relatively small.

To quantify this latter aspect of the consumer services series, and to arrive at the information given in the exhibit, the 1947 estimates were classified according to those (1) representing items purchased wholly, or very nearly so, by persons and thus not requiring an allocation of sales between persons and business and government; (2) representing items purchased in appreciable degree by other groups as well as consumers, but for which reliable information on the nonconsumer element was available; and (3) requiring a sizable allocation for which the available data, if any, for making it were regarded as inadequate.

This classification-in some measure a matter of judgmentresulted in the finding that in 1947 components amounting to 90 percent of consumer service expenditures did not involve any substantial problem of allocating producers' sales to arrive at consumer purchases only. More specifically, components forming as
much as 70 percent of the total were classified in the first category, as being normally purchased only by persons and thus presenting no problem in this regard. Items comprising another 20 percent were assigned to the second category, for which the problem of statistical allocation was taken care of adequately (although, for the most part, only periodically) in the basic data. Individual series constituting only 10 percent of consumer services fell into the third category with the label of "substantial allocation problem", and may be viewed as subject, on this score, to sizable error.

The following description of the estimates of personal consumption expenditures for services is outlined according to the four types of statistical sources shown in the exhibit. Probably no broad statistical classification of the numerous and heterogeneous service items would be entirely appropriate, and the present one is no exception. Some items, though relatively few, did not fall readily into any one grouping. The difficulty was usually resolved by assigning them to "Miscellaneous."

## Comprehensive Annual Reports

Regular comprehensive reporting systems exist for most of the services requiring large aggregations of capital to produce. In some cases, generally where the producing industry is subject to government regulation, the basic data for estimating consumer service expenditures are furnished by Federal or State agencies. In others, the data are provided directly by private industries with excellent facilities for the collection of statistical information.

## Government agencies

The service items for which comprehensive annual data-before deduction of any allowance for nonconsumer use-are collected by Federal and State agencies are listed in Exhibit 24, together with the 1947 consumer expenditure value for each.

Exhibit 24.-Consumer Expenditures for Services Based on Comprehensive Annual Reports ly Government Agencies, 1947

| Item | Millions of dollars |
| :---: | :---: |
| Services furnished uithout payment by financial intermediaries except insurance companics. | 1.532 |
|  | 1,366 |
| Steam railway fineluding commutation ant sleeping and parlor car fares)....- | 647 |
|  | 327 |
|  | 119 |
| Pari-mutuel net receipts. | 248 |
| Bank service charges (trust and other). | 215 |
| Athletic and social clubs--dues and fees. | 149 |
| Other ${ }^{1}$. | 79 |
| Total.-. | 4,682 |

I'Includes afe-deposit box rental, tuoney-order fees, and ticket brokers' markup on admissions

The estimates of services furnished without payment by financial intermediaries are developed mainly from data furnished by the Federal Deposit Insurance Corporation, Board of Governors of the Federal Reserve System, and Bureau of Internal Revenue (from tabulations of corporations' income tax returns, as published in Statistics of Income-Part 2). This series is described in the section on Interest. As pointed out there, the necessary allocations of reported totals to derive measures covering only consumers can be made on a generally satisfactory statistical basis.

The annual reports of the Federal Communications Commission contain statistics on telephone operating revenues and excise taxes. Additional, supporting statistics in these reports are used to reduce total revenues to an estimate of consumer payments for
telephone service. This allocation, regarded as satisfactory, is accomplished by means of a formula devised with the assistance of the American Telephone and Telegraph Company.

Passenger revenues are compiled annually by the Interstate Commerce Commission for railways and intercity bus lines and by the Civil Aeronautics Administration for airlines. However, the statistical basis for adjusting these comprehensive revenue data to measures of consumer expenditures is limited.

For the railroad series, travel fares paid by the Federal Government are first excluded from passenger revenues. Little direct information on Federal outlays for rail travel has been available except for that regularly furnished the National Income Division by the Pullman Co. For years since 1942, railroad coach passenger revenues from sources other than the Federal Government have been estimated by an indirect, though fairly adequate, method utilizing data on collections by the Government from the tax levied on the various types of transportation of persons. Of total railroad revenues from sources other than the Federal Government, in all years the allocation to consumer expenditures has been placed at 65 percent for railroad coach transportation (excluding commutation) and 40 percent for Pullman service (including both seat and berth charges).
These percentages were drawn from a study made in 1942 by the Office of Defense Transportation, which furnished similar information also with respect to intercity bus transportation. Passengers arriving at major railroad and bus terminals during the survey week were interviewed to determine the purpose of travel. The tabulated results of the study required some adjustment so as to reflect the source (consumer or business) rather than the purpose of expenditure.

The Interstate Commerce Commission data on passenger revenues of intercity motor carriers have been reported since 1937. These were extended to earlier years by data on total revenue from operation of intercity motor bus companies compiled by Bus Transportation magazine. Over the period since 1929, receipts from Federal Government travel have been estimated at 2 to 5 percent of the total. Seventy percent of the remainder has been apportioned as receipts from consumers, as indicated by the 1942 survey of the Office of Defense Transportation.
The reported passenger revenue data for the airlines, covering the period since 1935, were extrapolated to 1929 by data on passenger mileage flown. For the years 1939-41, the consumer source of passenger revenues was estimated as one-third on the basis of sample data presented at hearings before the Civil Aeronautics Board and collected in questionnaire surveys conducted by several of the airlines. This proportion has been modified for other years as indicated by scattered information relating to business and government use of airlines.

In addition to these several transportation components, estimates of bank service charges and of safe-deposit box rental and money-order fees (both included in the "other" category) also lack adequate data for making the sizable nonconsumer allocations involved in their derivation.
The series on pari-mutuel net receipts includes the tracks' and States' shares of amounts wagered and of breakage. Data are obtained from the Census Bureau, as summarized in State Finances, and from reports of the individual State racing commissions. The data are entered as consumer expenditures without any nonconsumer allowance.
Estimates of dues and fees paid to athletic and social clubs are based on Federal tax collections data. Only very minor estimation, for the nontaxable portion, is required.

## Private sources

Comprehensive annual data are available from private sources for estimating the types of consumer expenditures for services shown in Exhibit 25.

Exhibit 25.-Consumer Expenditures for Services Based on Comprehensive Annual Reports by Private Sources, 1947

| Item | Millions of dollars |
| :---: | :---: |
| Expense of handling life insurance.. | 1,966 |
| Accident and health insurance-net payments. | 362 |
| Mutual accident and sick benefit associations- | 60 |
| Privately controlled hospitals and sanitariums. | 1,394 |
| Electrisity. | 1,406 |
| Gas. | 809 |
| Street and electric railways and local bus lines. | 1,313 |
| Total. | 7.370 |

Virtually complete data relating to the first three items of insurance in the above listing are collected annually by the Spectator Company and published in its Insurance Yearbook.
Data on the income and expenditures of hospitals are collected in annual censuses of these institutions by the American Hospital Association and published in the American Hospital Directory. These data, with minor adjustments, have supplied measures since 1946 of personal consumption expenditures on privately controlled hospitals and sanitariums. This component consists of payments by patients to proprietary hospitals and of current expenditures (including depreciation) of nonprofit hospitals in providing care of patients.

Prior to 1946, however, considerable estimation was required in the absence of comprehensive annual data. Benchmark figures were derived for 1930 from a study by the Committee on the Costs of Medical Care and for 1935 from the Census of Hospitals. The movement for other years was estimated, for the most part, as the product of the average daily number of patients, published by the American Medical Association, and the hospital price component of the Bureau of Labor Statistics Consumers' Price Index.

For the entire period covered by the estimates, the Edison Electric Institute and the American Gas Association have reported annual data relating, in effect, to sales to consumers separately from sales to other customers. Thus, data of the Edison Electric Institute on revenues from residential or domestic sales and from rural sales at distinct rural rates have had to be adjusted only to eliminate revenue from farm business use to furnish a measure of consumer expenditures for electricity (inclusive of landlords' expenditures). And a similar measure of expenditures for gas has been secured annually from data reported by the American Gas Association on revenues from sales to residential consumers.

The American Transit Association publishes annual data on passenger revenue receipts from operations of street and electric railways and local bus lines. To them are added estimated taxes on electric railway fares to obtain the consumer expenditures series.
The comprehensive annual data supplied by the several private sources noted above are gathered through well-established reporting systems from relatively small numbers of large and responsible business enterprises keeping adequate accounting records. The estimates of consumer expenditures derived from them, involving only minor problems of estimation, may be presumed to be subject to comparatively little margin of error.

## Periodic Comprehensive Sources

The Census of Population and Housing yields benchmark data for items aggregating 31 percent of the consumer service total in 1947; the Census of Business, for components amounting to 17 percent. Other periodic comprehensive sources furnish the underlying data for items forming 6 percent of the 1947 services total. The expenditure components based on these various sources are listed in Exhibit 26.

For most items classified in this category, periodic universe values of consumer expenditures can be estimated with considerable confidence. The accuracy of the benchmark estimates is somewhat affected, however, by the fact that many of the reporting units are individuals or small business enterprises and tend to have less adequate accounting records. Also, estimating adjustments of the reported data often are necessary.

Only to a small degree are the estimates in this grouping impaired by serious difficulties of consumer allocation. Items amounting to less than 3 percent of the 1947 services total were classified as constituting a "substantial allocation problem".

A major factor bearing on the reliability of the series in this group is that the availability of comprehensive data only periodically necessitates the development of interpolating and extrapolating indexes. In many cases, these indexes must be based on data that are partial and unrepresentative or of only indirect relevance.

It is not unlikely that most series included in this grouping are subject to appreciable error in relative movement, particularly for years estimated by the projection of benchmark estimates over a considerable span. There is no reason, however, to expect the errors to be cumulative (or to undermine many uses of the figures except in refined analysis). On the contrary, it may be presumed on the basis of experience in estimating individual components from masses of diverse data that the errors in individual series will have a tendency to offset in the total.

## Census of Population and Housing

The decennial Census of Population and Housing provides data on the number of dwelling units in each tenure class, on the average monthly rent of rented dwellings, and on the fair market value of owner-occupied units. The census taken in 1940 also included a question on the rental value of owner-occupied units. These basic data (inclusive of certain preliminary tabulations from the 1950 census) have been used to derive benchmark estimates of the space rental value of owner-occupied nonfarm dwellings and of

Exhibit 26.-Personal Consumption Expenditures for Services Based on Periodic Comprehensive Sources, 1947

| Source and item | Millions of dollare |
| :---: | :---: |
| Census of Population and Housing: |  |
| Epace rental of owner-occupied nonfarm dwellings. | 8,324 |
| Space rent of tenant-occupied nonfarm dwellings.- | 4,618 |
| Domestic service (including practical nurses and mid-wives). | 2,210 |
| Census of Business: |  |
| Automobile repair, greasing, washing, parking, storage and rental. | 1,087 |
|  | 1,407 |
| Cleaning, dycing, pressing, alteration, storage, and repair of garm n. e. c. (in shops) | 1,244 |
| Barber shop and beauty parlor services | 1.036 |
| Launderine in extablishments.-. | 850 |
| Funeral and burial sorvice.... | 571 |
| Photogrephic studios and photo developing and printing. | 306 |
| Repair of household items '- | 303 |
| Shoe cleaning and repair.- | 278 |
| Transient hotels and tourist cabins, | 230 |
| Commercial amusements, n. e.c | 196 |
| Other ${ }^{2}$-... | 891 |
| Census |  |
|  | 1,220 |
| Census of Religious Bodies: 8801 |  |
| Religious bodies........ | 891 |
| Biennial Survey of Education: |  |
| Higher education (private). | 606 |

1 Consists of care of electrical equipment except radios and of stoves, upholstery and furniture repair, and rug, drapery and mattress cleaning and repair.
furniture repair, and rug, drapery and mattress cleaning and repair.
includes the following recreation items; billiard parlors and bows; lepitimate Theaters and opera admissions; professional baseball admissions; dancing, riding, shooting, theaters and opera admissions; prosessional baseball admissions; dancing, riding, sooting, skating, and swimming plases; amusement devices and parks; boat and bicycle rentas,
atorage and repair; book rental and repair; radio repair. Also includes waich, clock, and atorage and repair, rical; miscellaneous housenold operation;
space rental payments on tenant-occupied nonfarm dwellings. Their derivation, along with the construction of estimates for intercensal years, is explained in the section on Rental income of persons.

Expenditures for domestic service (cash payments and value of meals furnished) are equal to wages paid in the Private households industry. These wage estimates, based very largely on benchmarks derived from population census data, are described in the section on Wages and salaries.

## Census of Business

Service establishments were canvassed in connection with the 1933 Census of American Business and the 1935, 1939, and 1948 Census of Business. (Results of the 1948 census, it may be noted again, have not yet been processed and incorporated into the consumer expenditure estimates.) In addition, hotels (both yearround and seasonal) of 25 rooms or more and most types of automobile servicing establishments were covered by censuses in 1929. Power laundries and cleaning and dyeing plants, first included in the Census of Business in 1939, were covered in conjunction with the Census of Manufactures in odd years from 1929 through 1935.

Census coverage of service establishments was accepted as complete throughout in making estimates for automobile repairs and for personal services (barber shops, beauty parlors, shoe repair shops, funeral and burial service, etc.). The census data on amusements for 1935 and 1939 also were taken as reported and used, with the exception of motion pictures in 1935 . The 1933 census data on amusements were used in only a few cases. Census coverage of hotels was considered complete except for seasonal hotels in 1933, and for seasonal hotels in the New England and Middle Atlantic States in 1939. (However, for 1929 it was necessary to add estimates for hotels with less than 25 rooms, not canvassed by the Census.) Data on tourist courts were used as given by the Census in all years.

For the consumer expenditure estimates relating to laundering and dry cleaning, census data were used as reported except for 1933. Upward adjustments of 8.7 percent and 17.1 percent, respectively, were applied to all data for that year utilized from the Census of Power Laundries and the Census of Cleaning and Dyeing Establishments. These adjustments were made on the basis of information as to coverage reported by the Census Bureau.

For most consumer service items based on the Census of Business, it has been necessary to make some adjustments for differences in the definition and type of data reported in the various years. These adjustments, based on census data themselves, generally have been of minor magnitude.

Where appropriate, the estimates of consumer service expenditures derived from the Census of Business generally represent the service receipts of retailers (reported in the retail censuses) as well as of service establishments. Sales data are tabulated by line of business, with a general distinction between commodity sales and service receipts in each line. In general, the classification by line of business approximates the desired classification by type of service. The instances in which the line-of-business receipts data could not be taken to indicate expenditures by type of service have been relatively few. The necessary allocations of receipts data in such instances did not affect the consumer services total.

The series derived from Census of Business information that involve substantial problems of consumer allocation are as follows: automobile repair, greasing, washing, parking, storage, and rental; transient hotels and tourist cabins; and miscellaneous household operation services.

The following summary for a number of the larger series based on the Census of Business may serve to indicate more specifically the uses and adjustments made of census data and the nature of the methods-sometimes diverse and indirect because of the inadequacy of available source materials-that are employed for interpolation and extrapolation.

## Automobile repairs

Expenditures for automobile repair, greasing, washing, parking, storage and rental were based for 1929 (partly estimated), 1933, 1935, and 1939 on Census of Business receipts data covering service, retail, and wholesale establishments. The interpolations for this period were made prior to 1935 by the Motor and Equipment Manufacturers' Association index of shipments of service parts to wholesalers and after 1935 by an index of sales of parts and accessories stores, based on sales tax receipts in Illinois, Iowa, and Indiana. The estimates for years after 1939 represent extrapolations by the product of employment in automobile repair shops and the Bureau of Labor Statistics automobile repair price index, with adjustment of the resulting series to secondary benchmarks for 1945 and 1947. These latter were derived from Bureau of Internal Revenue tabulations of the total sales of corporate and noncorporate concerns classified in the automobile repair services industry.

The estimates of total expenditures so derived have been allocated by the proportion of consumer to total highway use of gasoline. This proportion has been estimated as the product of ratios of (1) consumer to total passenger-car use of gasoline and (2) passenger car to total highway use of gasoline. The first ratio is the same as that used in the allocation of expenditures for gasoline and oil (see section on Personal consumption expenditures for commodities). The second has been derived from annual data of the Bureau of Mines and Public Roads Administration.

## Motion picture admissions

The 1939 consumer expenditure figure for admissions to motion picture theaters was taken from the Census of Places of Amusement for that year. Bureau of Internal Revenue compilations of operating receipts of corporate and noncorporate enterprises in the motion picture theater industry provided the basis for independent estimates for 1945 and 1947. Other years have been estimated chiefly by using gross receipts from operation of motion picture theater corporations for interpolation and extrapolation, with allowance for changes in the admissions tax, not reflected in the data reported to the Bureau of Internal Revenue. For the two most recent years of the series, when such data are not available, an index is obtained by dividing the Federal admissions tax rate into the total collections from this tax, adding the tax collections to the quotient, and deducting the independently estimated amount of receipts from taxable admissions to other spectator amusements.

## Cleaning and dyeing

The consumer expenditure series on cleaning, dyeing, pressing, alteration, and repair of garments is based on census values for the years 1929, 1931, 1933 (adjusted for the undercoverage noted above), 1935, and 1939. The census figures required numerous, but minor, adjustments for comparability from year to year. The problem of consumer allocation was obviated by the type of data given in the census reports. Most important in this respect was the provision of data on receipts from cleaning and dyeing at retail (separately from wholesale) of cleaning and dyeing plants, rug cleaning establishments, and power laundries. Estimates for other years prior to 1935 were obtained by interpolation by the American Institute of Laundering index of cleaning plant sales of its member power laundries. The 1936-38 estimates were made by using the Bureau of Labor Statistics index of payrolls of cleaning and dyeing plants for interpolation.

Still another procedure has been followed for estimating consumer expenditures for cleaning and dyeing services for 1940 and subsequent years. Provisional estimates were first made by summing (1) receipts from cleaning and dyeing at retail of power laundries, obtained by extrapolating the 1939 figure ( 11 percent of the total) by the American Institute of Laundering index; and (2) the remainder of the item, obtained by extrapolating the 1939 figure ( 89 percent of the total) by an indicator of sales computed
by multiplying the dry cleaning price component of the Consumers' Price Index by an output index derived as the quotient of the Bureau of Labor Statistics indexes of payrolls and average hourly earnings for cleaning and dyeing establishments. These estimates were then adjusted to independent values for 1945 and 1947 based on the Bureau of Internal Revenue sales data for corporate and noncorporate enterprises in the laundry, cleaning, and dyeing industry. Because the industry sales data covered laundries as well as cleaning and dyeing plants and included a sizable element of receipts from business for which it was difficult to allow, the recent year estimates of consumer expenditures for cleaning and dyeing services must be viewed as tenuous.

## Barber shops and beauty parlors

Census data, with 5 percent added for tips, provided the basis for estimating consumer expenditures for barber shop and beauty parlor services for 1933, 1935, and 1939. Estimates for 1930 were obtained by multiplying the number of employed persons in these industries, as derived from the 1930 population census, by average receipts per person estimated by reference to census data for later years. For other years of the 1929-35 period, estimates were prepared by using for both the barber shop and beauty parlor series consumer expenditures for laundering as an extrapolating and interpolating index. To obtain interpolations for the two series between 1935 and 1939, the barber shop and beauty parlor service components, respectively, of the Consumers' Price Index were multiplied by an output index for laundry services, computed by dividing the Bureau of Labor Statistics index of payrolls in power laundries by its index of average hourly earnings for the same industry.
Estimates for years since 1940 represent projections of the 1939 census-based figures with adjustment to 1945 and 1947 values for the two series combined based on Bureau of Internal Revenue receipts tabulations from income tax returns. For the period 194042, the index used to project the 1939 estimates was constructed by multiplying the Bureau of Labor Statistics barber shop and beauty parlor service price indexes by the quotient of estimated payrolls in the "other personal service" industry group and average hourly earnings in power laundries. For later years, the availability of detailed unemployment insurance wage data has permitted the substitution of barber shop and beauty parlor payrolls for "other personal service" payrolls in this formula.

## Laundering in establishments

As derived for the years 1929, 1931, 1933, 1935, and 1939 from the Censuses of Power Laundries, Cleaning and Dyeing Establishments, and Service Establishments, the figures on consumer expenditures for laundering in establishments include receipts from bundle work and family services of power laundries, laundry receipts of cleaning and dyeing plants, and 80 percent of the service receipts of hand laundries. (Payments from hand laundries to power laundries were taken at 20 percent of the formers' receipts.) Receipts of hand laundries for 1929, 1931, and 1933, not given in the census reports, were estimated by the movement of the other components. Estimates for 1945 and 1947 were derived from Bureau of Internal Revenue sales tabulations for laundry, cleaning, and dyeing companies. As in the case of the similar cleaning and dyeing companies. As in the case of the they are tenuous because of the absence of a breakdown between laundries and cleaning and dyeing plants in the tax return data and the presence of a large nonconsumer source element of total sales. For all other years, consumer expenditures have been estimated by interpolation and extrapolation by the American Institute of Laundering index of laundry receipts of power laundries.

[^24]estimate of the funeral receipts of combination furniture and undertaking establishments derived from the 1929 Census of Retail Distribution. Odd-year estimates prior to 1935 were obtained by extrapolating the 1935 figure by data on the value of coffins and funeral supplies produced (from the biennial Census of Manufactures). These were interpolated for 1930,1932 , and 1934 by billings of funeral directors and embalmers, as estimated by Rolf Nugent, Consumer Credit and Economic Stability (Russell Sage Foundation, New York, 1939). Estimates for other years (1936-38 and 1940 forward) are interpolations and extrapolations by data on collections of sales taxes levied on funeral directors' receipts in 6 States.

## Census of Agriculture

Estimates of the rental value of farm houses, described briefly in the section on Income of unincorporated enterprises, are based on value data reported in the quinquennial Census of Agriculture. The basis of estimation, however, is not a direct one. Census-based figures on value are multiplied by an annual interest rate, and the product is then converted to a gross measure of rental value by adding an estimate of farm expenses allocable to the upkeep of farm dwellings.

## Census of Religious Bodies

The "religious bodies" component of consumer services represents all current expenditures by churches except for local cash relief and charity, plus estimated depreciation of buildings.

Estimates of cash current expenditures were prepared for 1926 and 1936 from data reported in the Census of Religious Bodies, with a small adjustment for churches not reporting. The value of clergymen's imputed income (see section on Wages and salaries) was added. For all other years of the period since 1929, estimates of total current expenditures (cash and imputed) have been obtained by interpolation and extrapolation on the basis of the National Income Division series on total payroll of religious organizations, as described in the section on Wages and salaries. Depreciation, estimated at about 1.5 percent of the value of church edifices, was derived by a downward modification of hospital building depreciation rates (see section on Capital consumption allowances).

## Biennial Survey of Education

Office of Education data reported in the Biennial Survey' of Education, covering school years ending in even numbers, form the principal basis of the consumer service series on "higher education" and "elementary and secondary schools." The estimated depreciation of educational buildings and equipment (see section on Capital consumption allowances) is added to figures on current expenditures by these institutions for educational services, as derived from the Biennial Survey.

Estimates of current expenditures for intervening school years not covered by the Biennial Survey are obtained by straight-line interpolation. For the recent years of the series before the Biennial Survey becomes available, the latest reported data are projected on the basis of partial information furnished by the Office of Education. The resulting school-year figures are converted to calendar years by averaging. To obtain the estimate for calendar year 1946, for example, the 1945-46 school-year data were weighted by 2 and the 1946-47 school-year data by 1.

It should be noted that the series for elementary and secondary schools is less firmly based than that for higher education. The data published in the Biennial Survey of Education for private elementary and secondary schools include capital outlays, and these must be estimated and deducted. Moreover, the published data represent estimates based on reported enrollment in these private schools multiplied by average expenditure per pupil in public elementary and secondary schools. Accordingly, this series is not regarded as being based on periodic comprehensive sources, as listed in Exhibit 26, but is included in the miscellaneous category discussed below.

## Sample Information

Consumer service expenditures whose levels have been estimated from sample data comprised 12 percent of the service total in 1947. These series include expenditures for professional services ( 8.2 percent) ; interest on personal debt ( 1.7 percent); automobile insurance, net payments to labor unions, postage, and telegraph, cable, and wireless (combined, 1.8 percent); and foreign travel and remittances ( 0.8 percent).

The professional services category noted above includes separate expenditure estimates, as published in table 30 of Part $V$, for the services of physicians, dentists, lawyers, osteopathic physicians, chiropractors, chiropodists and podiatrists, private duty trained nurses, miscellaneous curative and healing professions, and veterinarians. The sample information used in making these estimates is obtained very largely from periodic questionnaire surveys by the National Income Division, generally with the cooperation of the professional associations. This information covers (1) average gross income from independent practice, (2) percentage of persons in the profession engaged in independent practice, and (3) the percentage of gross income (in the case of physicians, dentists, lawyers, and veterinarians) received from government or welfare agencies or business organizations, as contrasted with individuals.

These data are used in conjunction with available information on the total number of persons in each profession to secure the consumer expenditure estimates. The main sources of information on numbers in the various professions are the occupational data of the Census of Population, compilations of the individual professional associations (such as the American Medical Association, American Dental Association, and the American Osteopathic Association), and the Fisher-Stevens, Inc. lists.

The methods of estimating consumer expenditures for professional services are directly analogous to those used in deriving the total net income of independent practitioners in the various professions. These professional income series are described at some length in the section on Income of unincorporated enterprises.

Estimates of interest on personal debt, as noted in the section on Interest, are based very largely on consumer credit data (compiled by the Federal Reserve Board from sample reports adjusted periodically to more comprehensive sources), multiplied by fragmentary sample information on interest rates applicable to the various types of credit.

Data from the 1935-36 Consumer Purchases Study (given in reports by the National Resources Planning Board and the U. S. Departments of Labor and Agriculture) provided benchmark materials for estimating the consumer service series on automobile insurance (premiums minus claims paid), net payments to labor unions (dues and fees paid minus cash benefits received), postage, and telegraph, cable and wircless. Little confidence can be placed in these series. Apart from sampling or reporting errors in the basic data, considerable estimation was required in utilizing the data to obtain the benchmark consumer expenditure values; and the available information for extrapolation is not adequate. Except for the Jabor union item, the presence of large nonconsumer elements in the extrapolating data is an added difficulty.

The consumer service series relating to foreign travel and remittances (net) are those shown under this caption in table 30 , group XII, with the exception of the commodity item of expenditures by U. S. Government personnel abroad. The estimation of these series, which involves in substantial degree the problem of consumer allocation, is based largely on questionnaire surveys. (See section on Net foreign investment.)

## Miscellaneous

Consumer service expenditures for items classified under "Miscellaneous" sources comprised about 9 percent of the 1047 total. A less rigid basis of classification, as already indicated, might have considerably reduced the proportion of expenditures in this category.

Of the 50 items in the category, six accounted for more than one-half of the 1947 total. These six are social welfare and foreigo relief agencies (current expenditures plus depreciation), taxicab fares and tips, household expenditures for water, elementary and secondary schools, moving expenses and warehousing, and brokerage charges and interest and investment counseling.

For the most part, these six series incorporate a great deal of relevant statistical information (notably in the cases of social welfare and foreign relief agencies, elementary and secondary schools, and brokerage charges and interest and investment counseling). Difficulty of consumer allocation is present for the series on moving expenses and warehousing, brokerage charges, etc., and taxicab fares and tips, as well as for the estimates of water expenditures with respect to the data used for extrapolation of the 1940 base-year figure.

Of the remaining 44 items in the "miscellaneous" category, nearly all are relatively small, with 35 having magnitudes of less than $\$ 75$ million in 1947. Source materials vary widely in adequacy among this group of service items but are not satisfactory for many of them. It often is necessary to use indirect estimating methods, and to rely on occasional and incidental information obtained from public and private research studies, correspondence with trade associations, and informal sources such as magazine and newspaper accounts.

## 9.-NEW CONSTRUCTION

New private construction is an independent element in the statistical determination of gross private domestic investment. New public construction is a component of government purchases of goods and services, which, however, are estimated as a total independently of the construction series. (See the section on Government receipts and expenditures.)
These construction components of gross national product represent the value of progress made during the given year in the production of fixed works and structures. The value of progress made, or "work put in place," is defined as equivalent to the value of labor and materials used plus overhead costs and profits accrued on operations during the given period. It includes the installed value of equipment generally considered an integral part of a structure and commonly included in the construction contract price,
Fixed works and structures include not only dwellings and other buildings but also dams, bridges, roads, canals, and the like. Certain types of works, such as mine tunnels and farm ditches, which might be classified as construction, are not included. They are probably unimportant quantitatively, and a substantial portion of them is likely to be charged to current expense. Hence it is be lieved that their omission from gross national product does not result in any appreciable discrepancy in the national income and product accounts.

The estimates of construction activity have been prepared jointly by the Bureau of Labor Statistics and the Commerce Department Construction Division (now the Building Materials Division of the National Production Authority). These estimates differ from the totals used in the gross national product only because the latter include petroleum and gas well drilling (in private construction) and exclude work relief (from public construction), and because revisions made for some years in the Commerce-Labor estimates have not yet been incorporated. (See the concluding paragraph of this section.)

The factual content of the present notes is largely limited to ${ }^{2}$ summary of descriptions published in the Construction Division's May 1950 Statistical Supplement to Construction and Construction Materials and in the October 1949 and February 1950 issues of the Monthly Labor Review. No attempt is made to indicate dif-
ferences between the estimating methods underlying back-year values and the methods currently in use; only the latter are described below. Although the basic sources and methods have been the same throughout the period since 1929, a number of important improvements have been made. It should be noted, however, that most of them did not cast light on back-year movements in the series affected. Estimates for the more recent period, discussed in these notes, are therefore generally somewhat better founded than those for earlier years.
Modern techniques of systematic reporting and sampling are difficult to apply to the direct statistical measurement of construction activity. Many of the producers that should be covered are hard to identify. Much construction work is done by firms only intermittently attached to the industry; many construction firms have no fixed and readily recognizable place of business; and any firm in any industry may undertake force account projects. (The several past censuses of construction, it may be noted, omitted by intent the substantial volume of force account construction.) The alternative of covering the purchasers of construction work is generally subject to the same sort of difficulties.
This problem of identifying the units to be covered affects both the enumerative and the sampling approaches to data collection. In particular, it makes enumeration expensive. Sampling, the theoretical validity of which rests on the homogeneity and continuity of the universe sampled, must deal here with large, unstandardized, nonrepeating projects, many arising out of a special local need. Under these circumstances, estimation relies heavily on indirect evidence of construction activity, as is explained below, and is subject to considerable uncertainty as to coverage, valuation, and timing.
The construction estimates are developed from several different types of statistical sources and methods. These may be summarized very briefly as follows.
From certain special classes of buyers, regular current reports are received on the actual progress of, or expenditure for, their construction work. In general, Federal Government and Federallyaided projects are covered by current reports on progress, and construction done by or for public utility companies is regularly reported from accounting records.
Other nonfarm nonresidential construction is generally estimated from monthly data on value of contract awards.
Other nonfarm residential building is estimated chiefly from monthly reports of building permits issued.
For some types of construction, the foregoing kinds of information are inadequate or unavailable, and estimates must be made from a variety of data of varying appropriateness and reliability. A small part of nonfarm residential construction, all farm construction, and oil and gas well drilling are included in this miscellaneous category.
The relative importance of these various sources and methods in deriving the new construction estimates is illustrated in Exhibit 97 below. Each component of new construction (as given in tables 3, 4, 6, and 26 of the May 1950 Statistical Supplement to Contruction and Construction Materials) is here classified according so the principal type of source material used in estimating its ialue.
The four classes of source materials distinguished in Exhibit 27 nay be compared briefly with one another in terms of coverage, paality of value data, and the indication given as to timing of he construction work done.
Direct reports of work done or paid for are obtained through ormal reporting systems involving the regular and sometimes nandatory cooperation of parties to the construction contracts. loverage of work done by or for the categories of purchasers inluded in these systems is generally excellent. The value informaion reported, being taken on a fairly standardized basis from acounting records appropriate to the purpose, is also quite satsfactory. Finally, the reported timing of contract construction

Exhibit 27.-Components of New Construction Aetivity, Classified by Statistical Basis of Estimate, 1947


1 Breakdown of new dwelling between pertuit insuith amd nonjermit-iswuing arcas is rough; based on unpublished data.
work is based largely on engineering inspections made to check contractors' claims for progress payments, and therefore accords very closely with the conceptual requirements of the estimates.

Contract award reports (which take into account subsequent cancellations) provide reasonably good value information for projects covered, particularly in periods when escalator clauses or other similar arrangements are not important. As will be seen, however, the coverage of these data is far from complete, and an estimate for the noncovered areas must be made. Furthermore, there is a varying time lag between the reported date of a contract award and the start of actual construction, and there is further variation in the rate of progress after the start. The allocation of contract values to the particular time periods during which the work is presumed to have been done is based on past activity patterns and cannot be precise.

Building permit data share with the contract award reports the disadvantage of not indicating the time period during which the work is done and undergo a similar timing adjustment in the course of deriving the estimates. The valuations entered on building permit applications are generally less reliable than are values to which the parties are committed by contract. An adjustment for undervaluation, based on sample studies, is made. Also, an allowance has to be made for lapsed permits, for which no current or comprehensive information is available. However, the coverage of the permit data is very high in the areas where building permits are required.

The miscellaneous sources used in estimating the remainder of construction activity vary widely in quality. In general, they yield results less reliable than those derived by the use of the other three types of source materials.

## Estimates Based on Direct Reports of Work Done or Paid For

Direct reports are the chief basis of components accounting in 1947 for 17 percent of estimated private construction and 72 percent of estimated public construction. Exhibit 28 shows the components estimated wholly or in large part from materials of this sort. They consist primarily of projects in which the Federal Government is involved-as a contracting party, as a source of aid funds, or through agencies which regulate the purchaser's industry. However, private corporations and trade associations also perform an important service in data collection, as is indicated by the list of reporting systems included in the exhibit.

## Exhibit 28.-Components of New Construction Activity Estimated

 Chielly from Direct Reports of Work Done or Paid for, 1947| Component | Reporting agency | Millions |
| :---: | :---: | :---: |
| Private construetion |  | 2,338 |
| Public utility: |  |  |
| Electric light and power-...- | Acderal Power Commission......... | ${ }_{540}$ |
| Telephone...............-- | American Telephone and Tele- |  |
| Railroad. | Interstate Commerce Commission, Association of American Rail- |  |
| Petroleum pipe-ling | Interstate Commerce Commission.: | ${ }_{121} 18$ |
| Local transit........ <br> Telograph | American Transit Association..... <br> Western Union Telegraph Co |  |
| Public Construction |  | 2,513 |
| ghway: |  |  |
| Federal. <br> Federal-aid | Bureau of Public Roads | ${ }_{309}^{40}$ |
| State and locail.-.... | Bureau of Public Roads (Through |  |
|  | State highway departments)..... | 1,165 |
| Military and naval facilities 1- | Department of Defense-.-.-. | 204 |
| Public rasidential building .-... | Public Housing Authority; N. Y.C. |  |
| Public nonresidential building (Federal and Federal-aid) | Federal agencies responsible; |  |
| Other types of public construction (Federal and Federal-aid) | Federal agencies responsible; Bureau of the Budget | 4 |

${ }^{1}$ Public residential construction by the Department of Defense is included under "Mikitary and naval facilities." Housing at the sites of reclamation and flood control projects is included in the "conservation and development" category among "Other types of public construction.'

The estimates for privately owned public utilities generally involve only minor problems with respect to coverage, valuation, and timing. Totals from annual reports by railroads, electric utilities, oil companies, and members of the Bell Telephone System are adjusted to reflect construction by or for small concerns which do not report. The values reported for petroleum pipe lines and electric and gas utilities include some expenditures for the purchase of existing facilities or producers' durable goods; statistical adjustments are made to eliminate these. With respect to timing, the annual reports for public utilities are somewhat less appropriate for these estimates than are the progress reports upon which most of the other values shown in Exhibit 28 are based. However, there is no reason to expect any important timing discrepancy on an annual basis.
For the most recent year, financial data on construction outlays are generally not yet available for public utilities except the large railroad systems. Preliminary estimates are based mainly on the utility companies' previously announced plans for construction and checked against current sample series on plant and equipment expenditures, such as the quarterly Commerce-Securities and Exchange Commission estimates. Construction plans are ascertained from reports compiled either by trade sources or by the same agencies which later tabulate the financial data.

About three-fifths of all public construction covered by reports of work done or paid for consists of road-building. The Federalaid highway program accounts for roughly one-fifth of the total value of streets and roads built. Monthly estimates of the value of work accomplished under this program are prepared from reports of the Bureau of Public Roads showing State "earnings,"
which are based primarily on reports by engineers of the progress made on individual projects. The Bureau of Public Roads also compiles annual reports of highway construction on Federal lands. State, county, and municipal highway, road, and street construction outside the Federal-aid program is estimated mainly from special financial reports submitted annually through State highway departments to the Bureau of Public Roads.

For military and naval facilities, the expenditures reported represent the volume of all construction, regardless of type, at Federal military installations. The relatively small amounts of military construction by the States (armories, rifle ranges, and the like) are included with other public construction categories according to type of construction. The data for the two construction agencies of the Department of Defense-the Office of the Chief of Engineers and the Bureau of Yards and Docks-are based on monthly progress reports for all construction projects by service engineers.

Public housing construction progress reports are gathered for Federal and Federal-aid housing by the Public Housing Authority and are prepared for locally financed projects in New York City by the local Housing Authority. The remainder of public residential construction is estimated by more indirect methods involving the application of activity patterns to local government estimates of cost, duration, and starting date of projects reported to regional offices of the Bureau of Labor Statistics. In 1947 the preponderant share of the public residential building estimates was based upon direct reports and they are therefore classified under this heading. For some other years their classification under "other sources" (see below) would have been more appropriate.
Direct Federal construction of housing as carried on during the depression, defense, and war periods under the Lanham Act was estimated from progress reports by the Public Housing Administration on the number and cost of units built. Construction of low-rent units and slum clearance expenditures by State and local agencies with Federal loans and grants under the Housing Act of 1949 are estimated from progress reports made available by the Public Housing Administration. Estimates of the value of work accomplished on the locally financed New York City projects have been based on the progress reports used to determine payments to contractors.
Of the 1947 total value of public nonresidential building, onethird was Federal or Federally aided; all but a small part of this was covered by progress reports.

In hospital and institutional construction, a major item under this heading, two large programs are involved: that of the Veterans Administration and the National Hospital program. Estimates of the value of Veterans Hospital building are based on monthly progress reports supplied to the Office of the Chief of Engineers and to the Veterans Administration by project engineers in the field. The National Hospital program is one of Federal aid. Estimates of the value of work done under this program are prepared from progress reports on individual projects submitted to the Hospital Facilities Division of the Public Health Service by State agencies administering the program. The rest of public hospital construction, not aided by the Federal government (included in the total shown in Exhibit 28, since its value is not published separately), is evaluated by applying activity patterns to contract award values compiled from F. W. Dodge corporation reports (see below) and other sources. The value of other construction included in public nonresidential building, consisting chiefly of work done for the Public Buildings Administration, is estimated from progress reports of the supervising agency.
A minor part of the total shown under public nonresidential building in Exhibit 28 represents construction for the National Advisory Committee for Aeronautics, the Bureau of Prisons, and similar agencies which engage in construction only occasionally or on a small scale. These agencies usually do not have sufficiently large construction staffs to warrant setting up regular progress reporting systems. Estimates for them are made by applying ac-
tivity patterns to contract award data from the agencies, supplemented by annual statistics from the Budget of the United States Government.
The "Other types of public construction" distinguished in Exhibit 28 consist largely of outlays to conserve, develop, or control the Nation's water resources. The bulk of these expenditures is estimated from monthly progress reports by Government engineers on projects of the Bureau of Reclamation and the Civil Works Division of the Office of the Chief of Engineers. The Tennessee Valley Authority also provides monthly summaries of actual cost of its construction activities. The small balance of conservation and development work included in Exhibit 28 is carried on by the International Boundary and Water Commission and similar agencies, and is evaluated from annual fiscal data shown in the Budget. Civil airport construction activity is estimated primarily from monthly progress reports to the Civil Aeronautics Administration; and Federal construction of a few other nonconservation items of minor importance is approximated from Budget data.

## Estimates Based on Contract Awards

Monthly reports of the value of contracts awarded are used to evaluate construction projects which collectively account for 24 percent of the private construction and 28 percent of the public construction included in the 1947 gross national product. (See Exhibit 27.)
The chief source of data on contract awards (including information on subsequent cancellations) is the F. W. Dodge Corp., whose local correspondents keep informed of new projects through personal contacts in the construction and related industries, press reports, permit-issuing offices, and a variety of other sources. Values of projects thus offices, and a vare generally ascertained directly from the contracting parties. It is obviously difficult to avoid the omission of a considerable amount of construction activity When data are gathered in this way. The system is considerably more effective than the difficulty of the task would suggest, however. Its relatively good coverage is due to the long experience of the Dodge organization, which initiated this work in 1901, and to Inancial support from contractors and suppliers who keep in touch with their markets through such information.
To derive estimates of construction work done, the Construction Division adjusts the contract awards data for coverage and timing. The first adjustment of coverage is required because the F. W. Dodge Corp. data apply only to the 37 States east of the Rocky Mountains. Western State figures comparable to the Dodge tabulations are estimated chiefly from building permit information and reports on construction contract awards appearing in various trade
journals. A
A further coverage adjustment is applied to the national totals so obtained, because neither the Dodge materials nor those availthe for the West purport to cover all construction projects in the categories estimated from contract awards. For private construction in each of these categories, a raising ratio is computed by use of estimates based on the 1939 Census of Construction and
trade sopution trade sources. Allowances for undercoverage of public construction are based on extensive correspondence with State and local government officials.
After these adjustments, the data represent estimates of the value of construction work of each type for which contracts have been let during the month. Some projects undoubtedly are started will not be same month in which contracts are awarded; others if definite started until two or three months later. In the absence of definite information on the patterns of these delays, it is more ir less arbitrarily assumed that their average is one month; the stimated value of contracts let in the given month (excluding otal vubsequently cancelled) is accordingly taken to measure the otal value of projects which will be started in the following
nonth.

Most construction projects take several months to complete after they are started. Through surveys of thousands of actual projects, the Construction Division of the Department of Commerce has established typical activity patterns for various types and sizes of projects, showing percentages of value "put in place" in successive months. These patterns are used to translate the value of starts into construction activity.

Modifications of these patterns were made during the war years from data collected by the War Production Board, and also during the immediate postwar years, when materials shortages delayed construction, on the basis of data collected by the Commerce Department for the Civilian Production Administration. The patterns are subjected to constant revision as additional information becomes available and on the basis of judgment gained through experience over a decade of investigation.

A final adjustment in the resulting estimates of work put in place is made to eliminate offices, warehouses, and other buildings constructed by public utilities, all of which are classified as public utility construction.

## Estimates Based on Building Permits

Building permits are the most important data source for private nonfarm residential construction. This category of construction is estimated in four parts: construction of dwelling (housekeeping) units in areas in which building permits are required; construction of dwelling units in other areas; construction of nonhousekeeping units; and additions and alterations. The following tabulation illustrates the relative importance of each of these parts.

Exhibit 29.-Components of Private Nonfarm Residential Construction, 1947

| Item | Millions of dollars | Percent |
| :---: | :---: | :---: |
| Dwelling units built under permit | 4,360 | 69 |
|  | 1,090 | 17 |
| Nonhousekeeping units | 125 | 2 |
| Additions and alterstions. | 735 | 12 |
| Total. | 6,310 | 100 |

${ }^{1}$ Breakdown of the total of these items is rough; based on unpublished data.
Estimates of the third item are based upon the contract awards data which have already been discussed. Estimates of the second item are based upon procedures explained below. Those of the first and fourth items are based upon information on building permits, and will be described next.

## Nonfarm dwelling units built under permit

Most nonfarm residential construction is carried on under building permits. The permit-issuing officers of the responsible local governments compile totals for number of dwellings and estimated value from the records of permits issued, and they report these totals to the Bureau of Labor Statistics on a monthly questionnaire form.

Coverage of permit-issuing localities is not far from completeabout 90 percent of all such localities report each month. To allow for the remainder, the individual localities are first cross-classified into cells according to type of jurisdiction, location, urbanization, and population size. A raising ratio for each urban cell is then computed by dividing the number of localities reporting for the month into the total number of localities in the cell. For each rural nonfarm cell, the raising ratio is computed from 1940 population census figures, as the ratio of dwellings in all localities to dwellings in localities reporting.

Reported values raised by these ratios are next adjusted to allow for permits lapsing, and then for the understatement of ultimate construction values which is generally characteristic of estimates entered on building permits. Periodic field studies are made by the Bureau of Labor Statistics to determine the appropriate percentage allowance for each of these factors.

The timing adjustments next applied-of the same general nature as those of the contract awards data-utilize activity patterns based upon Bureau of Labor Statistics investigations. Specifically to be noted is that the estimates of the lags which occur between the issuance of permits and the start of the projects are based upon Bureau of Labor Statistics field studies instead of the summary assumption used in the case of the contract awards data.

## Additions and alterations to nonfarm dvellings

Most local jurisdictions with building-permit systems require permits not only for new structures but also for additions and alterations to existing structures. However, compliance with such regulations is much less complete in the case of additions and alterations, particularly in rural nonfarm areas. Special problems are therefore met in translating the permit data on additions and alterations into estimates of the value of work done. For the urban United States, the procedure is substantially the same as for new dwelling units except that no specific adjustment is made for lapsed permits. The resulting estimates of value of work in place are then expanded to cover rural nonfarm activity, using relationships between rural nonfarm and urban construction of new units. Studies of family expenditures-notably the Consumer Purchases Study of 1035-36-provide the basis for a final adjustment which allows both for understatement of value in permit applications and for undercoverage of projects.

## Estimates Based on Other Sources

Nonfarm dwelling units not built under permit
As is suggested by Exhibit 29, a significant fraction of residential construction occurs in rural nonfarm areas where no building permit is required. Representatives of the Bureau of Labor Statistics cover a sample (currently, nonpermit-issuing parts of 96 counties) of such areas in much the same manner as representatives of the F. W. Dodge Corp., and report numbers of units started as well as prevailing average construction costs. Reported numbers are raised to full coverage by a method similar to that applied to building permit data for rural nonfarm areas and multiplied by average construction cost. The results are then distributed forward over succeeding months by normal activity patterns.

## Farm construction

Annual estimates of construction on farms are prepared by the Bureau of Agricultural Economics, and described in Agricultural Estimating and Repurting Services (Washington, December 1949). They are based chiefly on data from sample surveys of construction expenditures of farm operators in 1934-37, 1939, and 1946. Estimates for other years are made by interpolation gnd extrapolation, based in part om inferences from data on farm electric lighting systems, windurills, silos, ete, segorted in the annual Census of Manufacture and Sale of Farm Machinery and Equipment. The bulk of the dollar amounts involved, however, for other than benchmark years represents approximations hased on changes in indices of farm construction costs and in indicators such as estimated consumption of lumber, sales of building materials in rural areas, and nonfarm residential construction. The Commerce Department's farm construction series represents the Bureau of Agricultural Economics' expenditure series adjusted to exclude estimated expenditures for building repairs.

## Oil and gas well drilling

Oil and gas well drilling is not classified as new construction in the classification system employed by the Construction Division of the Department of Commerce, which prepares the estimates, but is included as such in gross national product. All costs of drilling are covered, including the cost of casings (but not the cost of installed production equipment).

Estimates for the base year 1939 were derived for each State from data gathered in the 1939 Census of Mineral Industries and
compilations of reports to trade publications. These estimates have been projected from 1939 by using figures on the number of wells completed, as reported in trade sources, multiplied by the average cost per well. The latter is determined by adjusting the 1939 average cost in each State to take approximate account of changes in labor costs and efficiency, material costs, proportion of wildcat ventures and average depth of wells.

## Characteristics of Revisions

New data and methodological or conceptual changes have necessitated occasional major revisions in the estimates of certain components of construction. For the most part, these revisions have not been of such a nature as to cast light on the degree of reliability attained in the currently-published series.

There is one component, however, for which the preliminary results of extrapolation from benchmarks may be compared with revised estimates derived from later benchmark materials. Estimates for public utilities are generally based in the first instance largely on reported plans, and are then revised after the financial reports become available. For years when rapidly changing circumstances have made accurate forecasting difficult or impossible, the amount of construction actually done may prove to be considerably larger or smaller than had originally been expected.

As has already been noted, the estimates of new constraction included as components of the various national income and product tables differ from the most recent estimates of new construction prepared by the Departments of Labor and Commerce for two reasons. First, expenditures for oil and gas well drilling are included (in new private construction), and work relief construction is excluded (from new public construction). Scoondly, certain recent revisions in the Labor-Commerce estimates have not yet been incorporated: revisions in the totals for nonfarm residential construction to include allowances for additions and alterations, builders' profit margins, land development costs, and engineering and architectural fees, for the years 1920-38; revisions in both the residential and the nonresidential series to extend their coverage specifically to certain minor types of structures, for the same years; and routine revisions affecting various years prior to 1948. The revised Labor-Commerce estimates are reproduced in table 31 in Part V.

## 10.-PRODUCERS' DURABLE EQUIPMENT

The commorlity flow method, strmarized in the section on Persomal comsumption expenditures for commoditics, is the principal ome used in estimating protucers' purchases of durable equipment. It accounted for 69 percent of the total in 1939. (See Eraibit 30. )
For the 1929-39 period, the availability of requisite data, mainly fiom the manufactures and trade cerrsuses, made it possible to carry out the method in detail. The numerous estimating steps entailed segregating finished producers' durables from total manufacturing output and then tracing their flow and measuring their distributive costs so as to arrive at the final costs to purchasers. (See Exhibit 31.)
Lack of industrial census materials has prevented a detailed application of the commodity flow methcd for the years since $1940 .{ }^{21}$ For the war years 1942-45, the method in abridged form was used to establish "secondary" benchmarks, based mainly on information, arising out of production-control programs, on the commodity breakdown of manufacturers' sales in the metal fabricating industries. Government purchases and exports were eliminated from the sales data. It was not possible, however, to trace the flow of man-

[^25]ufacturers' domestic sales of finished equipment through the various distributive channels. Adjustment for inventory change was ignored and transportation allowances, wholesalers' markups, and retailers' markups were added to manufacturers' domestic sales by application of 1939 percentages.

Exhibit 30.-Producers' Durable Equipment, 1939

| Item | Millions of dollars | Percent |
| :---: | :---: | :---: |
| Estimated by commodity flow method. | 3,147 | 68.8 |
| Endimated by other methods: | 1,142 | 24.9 |
| Reailroad and transit equipment | 200 | 4.4 |
|  | 88 | 1.9 |
| Total producers' durable equipment | 4,577 | 100.0 |

Estimates for the commodity flow segment of producers' durables for 1940 and 1941 and for the postwar years represent interpolations and extrapolations of the 1939 and war-period benchmarks. With some variation between the two periods, the interpolating and extrapolating procedures accounted separately for manufacturers' commodity sales, government purchases, transportation allowances, exports, and wholesalers' and retailers' markups. Again, 1939 percentages formed the basis for estimating transportation charges and distributors' markups.

As described in the notes on consumer commodities, the commodity flow portion of personal consumption expenditures has been estimated for years since 1940 very largely by extrapolating the 1939 commodity group estimates by retail sales. This was feasible because a very high proportion of consumer commodities is purchased at retail (and purchases by nonconsumers do not bulk large in the retail sales totals).
For producers' durables, however, the procedure of utilizing a single extrapolating series would not be valid. These goods are purchased in large volume both from manufacturers and wholesalers. Also, substantial quantities of durable equipment are channeled through manufacturing and wholesale trade for government use and export, and these (particularly government purchases) have fluctuated widely in relative importance since 1939. Continuation of the commodity flow approach after 1939 was necessary to provide the basis for separate measurement of these major elements.
For three of the producers' durable groups, as shown in Exhibit so, it has been found preferable to prepare estimates by methods other than the commodity flow. The largest such group is business motor vehicles, which formed 25 percent of the 1939 total. For each of the components of this group-passenger cars and trucks and busses-the general method consists of multiplying the estimated number of units purchased by producers by an appropriate average price.
Expenditure data reported by the Interstate Commerce Commission are the basic source for estimating producers' outlays on railroad and transit equipment. The ships and boats series, of minor quantitative importance, was estimated by the commodity flow method in the 1929-38 period. For subsequent years, it has been derived mainly from various data provided by the Maritime Administration and the Bureau of Customs.

## Considerations regarding reliability

In the section describing the sources and methods of estimating consumption expenditures for commodities, the conclusion is reached that the totals for the large commodity flow segment of consumer commodities for the years 1929-39 are "not markedly in error". Analysis of the essential differences in the application of this method to the consumer and the producer durables series indicates that even higher reliability may be attached to the latter. Two points, amplified later, are of main relevance.
First, the problem of allocation was considerably less in the producer durable series. With relatively few exceptions, commod-
ities listed in the Census of Manufactures could be selected in their entirety for assignment to the producers' durable groups (apart from the special problem of government purchases). In the consumer commodity series, a much larger part of manufacturers' estimated sales of finished commodities was derived from allocation of "mixed" groups. In general, estimation and judgmentand hence possible error-are involved to a greater extent in allocation than in the selection of finished items.
Secondly, the successive estimating adjustments to manufacturers' sales required by the commodity flow method, as illustrated in Exhibit 31, were relatively smaller for producers' durable equipment than for consumption commodities. Such adjustments were roughly offsetting in the producer durable series in the prewar period, and were not of substantial magnitude individually. By contrast, retailers' markups alone formed 28 percent of the 1939 final value of consumer commodities estimated by the commodity flow method.

Pending the completion of the new 1947 benchmarks, any definitive appraisal of the $1940 \rightarrow 50$ estimates of producers' durable groups derived by the commodity flow approach is not possible. It is clear, however, that their reliability is significantly less than that of the 1929-39 estimates.

For the war peried, the estimates are known to be subject to appreciable error from two specific sources: the elimination of parts and other unfinished products from sales at the manufacturers' level, and the deduction of government purchases. For most of the commodity groups, purchases of durable equipment by government during the war exceeded those by business.
For the 1940-41 and postwar periods, manufacturers' commodity sales were interpolated and extrapolated largely by industry sales data, which have significant limitations in such use. And for all years since 1940, the estimates are subject to error through the use of 1939 relationships to determine the major elements of distributive costs.
Concerning the commodity groups based on other methods, the business motor vehicles series may, at best, be regarded as fairly adequate. The passenger car equipment component, forming the major portion of it, depends on an allocation between consumers and business which is based on limited information. However, errors in this allocation do not affect the gross national product total. The accuracy of the estimates for trucks and busses is impaired by the necessity of making several sizable estimating adjustments on the basis of partial information.
The series on railroad and transit equipment is believed to be relatively accurate. The basis for deriving the ships and boats series has not been satisfactory for the period since 1939.

A rough check on the postwar estimates of producers' durable equipment is possible through comparison with the results of the New Plant and Equipment Survey conducted jointly by the Office of Business Economics and the Securities and Exchange Commission. This series differs in definition from the producers' durable estimates (it is confined to nonagricultural industries, includes plant as well as equipment, but excludes purchases of equipment charged to current expense, to mention the major differences), and adjustments to secure comparability cannot be made in a fully satisfactory way. However, to the extent that comparisons are possible, they have been broadly reassuring for most of the postwar period, both as to level and as to annual movement.
The balance of this section describes the estimates of producers' durable equipment prepared by the commodity flow approachseparately for the 1929-39, 1940-45, and 1946-50 periods-and by the other methcds.

## Commodity Flow Estimates, 1929-39

As already noted, the commodity flow method was used to derive estimates for the 1929-39 period for producer durable groups comprising 69 percent of the 1939 total. The method was employed extensively for this period also in the estimation of personal consumption expenditures for commodities (yielding 84 percent of
the 1939 total), and was explained at some length in the section describing that series.

The application of the method in the estimation of producer durables and consumer commodities was substantially similar, so that no attempt has been made here to repeat the description in the earlier section. However, there were several particular aspects in which the methodology differed. Further, individual steps in the estimating procedure varied widely in relative importance between the two series and have marked bearing on their statistical reliability. These two types of differences may be summarized by reference to Exhibit 31 , which outlines for 1939 the individual steps in the derivation of total producers' durables estimated by the commodity flow method.

Distribution of finished and mixed manufactured commodities, before deduction of government purchases of durable equipment.(Line 1.) To a very large extent-much larger than in the case of consumer commodities-it was possible, from the extensive commodity detail presented in the biennial Census of Manufactures, to assign a given commodity to producers' durable equipment in its entirety or not at all. Direct selection and assignment of reported values accounted for 84 percent of the 1939 total (line 2) of manufacturers' production of finished producers' durables (before deduction of government purchases). Six percent represented allocations from the combined group of finished commodities having appreciable use both by producers and consumers. The remaining 10 percent was derived from allocations of the "mixed" category. This includes commodities which could not be classified directly as wholly finished or unfinished. They belonged in part to the unfinished category and in part to producer durable and/or consumer commodity categories, and required allocation among them.

Net errors of 20 percent in these two allocations-an unlikely extreme-would have meant an error of only 3 percent in the 1939 value of manufacturers' output of finished producers' durables (before deduction of government purchases), as contrasted with an error of 9 percent in the manufacturers' value of finished consumer commodities.

Allocations from the combined finished grouping involved only three of the producers' durable commodity groups listed in table 32 of Part V. These are nonresidential furniture and equipment, tools, and miscellaneous subsidiary durable equipment. Allocations from the mixed category affected only general and miscellaneous machinery and equipment, aircraft, and (to a very small extent) miscellaneous subsidiary durable equipment. For all of the other twelve commodity groups for which the commodity flow method was used, the values of manufacturers' production of finished producers' durables (before the government deduction) represented selections of detailed commodities given in the Census of Manufactures.

There were two related statistical differences between the producer durable and consumer commodity estimates with respect to the classification of finished and mixed manufactured commodities.
(1) In the allocation of consumer commodities primary use was made of information on the distribution of sales by class of purchaser given in the Census of the Distribution of Manufacturers' Sales. Data reported under the designation of "Sales to industrial, commercial, professional, and institutional users" were taken to indicate the unfinished part. This could not be done in the case of producers' durables since finished producers' durables as well as unfinished commodities are included in sales to these user groups. It was necessary, therefore, to allocate the mixed category for producer durables on the basis of various types of specific commodity information, with some resort to judgment and outside expert advice.
(2) Unlike the procedure that could be followed in the consumer commodity estimates, where the government deduction was made jointly with all other nonconsumer elements except exports, this deduction was carried out as a subsequent, separate step. Since the available data for making the adjustment related to

Exhibit 31.—Derivation of Total Producers' Purchases of Durable Equipment Estimated by the Commodity Flow Method, 1939
[Millions of dollars]

| 1. Distribution of finished and mized manufactured commodities, before deduction of government purchases of durable equipment. | 25,969 |
| :---: | :---: |
| a. Finished. | 13,532 |
| 1. Producers' durables | 2,873 |
| 2. Consumer commodities | 9,245 |
| 3. Combined, allocated to | 1,414 |
| a. Producers' durables | 195 |
| b. Consumer commodities | 1,219 |
| b. Mixed, allocated to - | 12,457 |
| 1. Producers' durables | 334 |
| 2. Consumer commodities | 8,233 |
| 3. Unfinished-..------- | 3,870 |
| 2. Manufacturers' production of finished producers' durables, before deduction of government purchases $[1 a(1)+1 a(3 a)+1 b(1)]$ | 3,402 |
| 3. Subtract: Change in manufacturers' inventories | -24 |
| 4. Equals: Manufacturers' sales of finished producers' duables, before deduction of government purchases. | 3,426 |
| 5. Subtract: Government purchases of durable equipment.-.....--------.-.-.-- | 294 |
| 6. Equals: Manufacturers' sales of finished producers' durables | 3,138 |
| 7. Add: Transportation charges. | 74 |
| 8. Equals: Manufacturers' sales inclusive of transportation charges, distributed to. | 3,206 |
| a. Exports | 544 |
| b. Wholesalers | 1,263 |
| c. Retailers | 1,202 |
| d. Businesses and nomprofit institutions, for own u | 1,202 |
| 9. Imports | 16 |
| 10. Total purchases by wholesalers [8b + | 1,279 |
| 11. Subtract: Change in wholesalers' inventori | 6 |
| 12. Equals: Cost of goods sold by wholesalers | 1,273 |
| 13. Add: Wholesalers' markups. | 291 |
| 14. Equals: Wholesalers' sales, distributed to | 1,564 |
| a. Retailers | +354 |
| b. Businesses and nonprofit institutions, for own use | 1,240 |
| 15. Total purchases by retailers [ $8 \mathrm{c}+14 \mathrm{a}]$ | 501 |
| 16. Subtract: Change in retailers' inventories |  |
| 17. Equals: Cost of goods sold by retailers | 542 |
| 18. Add. Retailers' markup | 193 |
|  | 735 |
| 19. Equals: Retailers' sales |  |
| 20. Producers' purchases of durable equipment estimated by the commodity How method $[8 d+14 b+19]$ | 3,147 |

government purchases, the deduction was made after manufacturers' sales had been derived from manufacturers' production by adjusting for changes in inventories.
Deduction of government purchases of durable equipment.(Line 5.) Comprehensive information on government purchases of durable equipment was lacking. Federal purchases were estimated by drawing on a number of different sources, which generally pertained to one or more of the years 1937-39 only, and required adjustment for differences in definition or timing. For earliet years, it was frequently necessary to employ indirect methods, which for the most part were not satisfactory. Such methods were necessary for estimating State and local purchases in all years of the period.
The annual (1929-39) information on Federal aircraft purchases supplied by the Department of the Navy and the Air Force was quartitatively the most important source of data on government purchases of durable equipment. Aircraft purchases alone accounted for two-fifths of the estimated government total and considerably enhanced its accuracy.
The source most generally used in estimating Federal purchases of other items was the tabulations by the Bureau of Labor Statistics of orders under the Walsh-Healey Act, available on a quar. terly basis beginning with 1937. These tabulations excluded orders classified as secret or confidential or amounting to less than $\$ 11,000$.

No adjustment for this incompleteness of scope was attempted. The reported data were always shifted ahead, generally by one quarter, to time them more nearly with actual deliveries. It frequently was necessary to estimate, and deduct, the amount of parts included in the Walsh-Healey data, and also to adjust for differences in commodity definitions underlying these data and the producer durable series.
For a number of the commodity groups, data on Federal purchases were available for 1938 from the report of the Temporary National Economic Committee on Study of Government Purchasing. These data, too, generally required adjustment for parts and accessories or for differences in commodity definition.
Data on Federal purchases of durable equipment furnished by the Treasury Procurement Division could be utilized for a few of the commodity groups. For two groups-electrical apparatus and equipment and office machinery-data obtained for part of the period from several large manufacturing concerns formed the basis for estimating Federal purchases.
The estimates of government purchases of durable equipment for the 1929-39 period are probably conservative. Walsh-Healey data, as mentioned, are not complete, and State and local purchases were estimated for only those commodity groups in which such purchases were presumed to be of appreciable magnitude.
In this period, however, government purchases were not large. Even an error of 20 percent-which seems unlikely, particularly in view of the relative accuracy of the aircraft item-would have affected the 1939 estimate of manufacturers' sales of finished producers' durables (line 6, Exhibit 31 ) by only 2 percent.
The estimated deduction for government purchases was negligible or less than 5 percent of manufacturers' sales before this deduction (line 4) in special industry machinery, mining machinery, general and miscellaneous machinery and equipment, pumps and pumping equipment, metal working machinery, farm machinery and equipment, tractors, durable containers, and professional and scientific equipment. It exceeded 15 percent only in construction machinery and aircraft.
Other steps of procedure.-Manufacturers' sales of finished producers' durables (line 6) account for all producers' sales of finished durable equipment estimated by the commodity flow method; there are no nonmanufactured producer durables. In the derivation of consumer commodities by this method, the value of nonmanufactured foods (agricultural and fishery products) had to be accounted for and added to manufacturers' sales.
It is evident from the foregoing discussion that, because of the lesser problem of commodity allocation, manufacturers' sales of finished producers' durables may safely be presumed to be a more accurate measure for the 1929-39 period than producers' sales of finished consumer commodities. Of further relevance in gauging the reliability of the producers' durable and consumer commodity series is that the adjustments which had to be made to convert producers' value to final market value were relatively small for producers' durables. The central fact here is that only a comparatively small volume of producers' durables flows through the retail channel, whereas retailers handle the large bulk of all commodities purchased by consumers. In 1939, manufacturers' sales of finished durable equipment were virtually the same as the final value of producers' durables. In broad outline, the deduction of manufacturers' sales flowing into exports was approximately offset by the additions for wholesalers' and retailers' markups on commodities flowing through trade channels. Only these three adjustments were of any quantitative importance; even unexpectedly large errors in them would not have had substantial effect on the final total.
For consumer commodities, on the other hand, producers' sales of finished commodities represented only three-fifths of the final 1939 value estimated by the commodity flow method. Three-fourths of the large remainder was accounted for by retailers' markups. While these could be estimated in generally satisfactory manner, there was nevertheless room for appreciable error. Their compara-
tive unimportance in the producer durable series ( 6 percent of the total) is an important additional element contributing to its statistical reliability.

Two further, minor differences in the application of the commodity flow method to producer durables and consumer commodities may be noted.
First, in the consumer commodity series exports were eliminated partly at the producer level and partly at the wholesale level. In the producers' durable estimates, exports were eliminated in their entirety at the producer level. They were deducted (in step 8a) as part of the distribution of manufacturers' sales, inclusive of transportation charges.

The second difference is that the consumer commodity estimates, but not the producer durable estimates, required a final adjustment for the addition of general retail sales taxes.

## Commodity Flow Estimates, 1940-45

As noted in the introductory remarks, a modified commodity flow method has been followed in estimating producers' durable equipment after 1939 for those groups to which this method was applied in detail for the 1929-39 period.

For the 1940-45 period, the main procedure, by commodity groups, involved (1) derivation of manufacturers' sales of durable equipment; (2) reduction of these sales estimates to cover sales of finished producers' durables for private domestic use only; and (3) addition of transportation charges and wholesalers' and retailers' markups.

## Derivation of manufacturers' sales

For most of the producer durable groups, comprehensive and detailed commodity sales estimates (before deduction of government purchases and exports) could be derived for the years 194245. The primary source was the reports submitted on Form WPB732 by the largest private and government-owned plants engaged in fabricating or assembling metal products beyond the primary stages. These reports-made quarterly from the fourth quarter of 1943 through the second quarter of 1945 and then monthly through the second quarter of 1946 -were collected and tabulated by the Bureau of the Census for the War Production Board, and published in the Census Facts for Industry releases. The " 732 " tabulations accounted for an estimated 90 percent of sales in the metal-products industries covered. These were raised to full coverage on the basis of similar commodity information for the first quarter of 1945 compiled by the Census Bureau for the Smaller War Plants Corporation.

The detailed commodity data derived from the " 732 " reports, as supplemented by the Smaller War Plants Corporation data, were extrapolated from the fourth quarter of 1943 back through the third quarter of 1942 on the basis of unpublished commodity sales figures collected and compiled by the Census Bureau for the War Production Board. These compilations covered about 3100 large metal-products plants accounting for four-fifths of all fabricated metal products in the first quarter of 1945.

The individual commodity data were then extended from the third quarter of 1942 through the first quarter of that year by less detailed commodity data compiled from an earlier and smaller Census-War Production Board sample.

While the number of individual commodity items which could be derived from the " 732 " and related data was substantially less than that given in the 1939 Census of Manufactures, it generally was unnecessary to make many more allocations from mixed groupings than in the prewar estimates. These allocations were made almost entirely on the basis of relationships developed for 1939 from census materials, although in some instances the availability of specific information from either Government or private sources permitted a modification of the prewar ratios.

One major problem, however, was encountered in eliminating unfinished commodities from the war-period commodity sales esti-
mates. This related to parts, which generally were not segregated in the basic sources from complete, or finished, equipment. For all of the years 1942-45, parts were eliminated from the otherwise "finished" sales estimates by application of 1939 census-based ratios of the value of parts to the value of finished commodities plus parts for each of the major producer durable groups. The method for making this sizable adjustment-apart from failing to account for changed composition of the commodity groups between 1939 and the war period-may have resulted in an understatement of the allowance for parts (and an overstatement of finished commodity sales) because of their probably more widespread use during the war.

Estimates of manufacturers' sales of producers' durables (before deduction of government purchases and exports) were obtained for 1940 and 1941 by interpolation between the 1939 and 1942 estimates on a commodity group basis. For this purpose, commodity data were almost wholly lacking.

As much information as possible was gathered from specifically relevant sources. For example, the mining machinery series was interpolated by an index based on capitalization of the Oklahoma tax on sales of oil field equipment and of the California tax on sales of oil well and refining supplies. As part basis for interpolation of the metal working machinery series, sample figures on machine tool sales were obtained from the War Production Board. For tractors, comprehensive sales data were available from the Bureau of the Census. However, it was also necessary to make considerable use of less direct indicators, such as industry payroll and sales data, chiefly the annual corporate sales tabulations of the Bureau of Internal Revenue.

## Elimination of government purchases and exports

The methods by which government purchases and exports were eliminated from the commodity sales estimates for the years 1940-45 varied among the producer durable groups and, because of differences in the underlying data, within various parts of the period. In general, however, there were two principal methods.
(a) For the period covering the third quarter of 1942 through 1945, "claimant agency" data from Census-War Production Board reports generally were used as the basis for determining the ratio of private domestic to total sales. However, these data, which recorded the value of products allocable to military and export claimants, were not strictly appropriate for this purpose. It is believed that they might also have covered to some extent products allocable to final users (such as privately owned manufacturing plants engaged in war output). On the other hand, they did not account for civilian government purchases. It is probable that, on balance, the war-period government deductions implicit in the ratios were overstated.

This limitation of the estimates may be viewed in conjunction with the probable overstatement of the commodity sales estimates because of inadequate elimination of parts and other unfinished products. The two biases, though not at all necessarily of similar magnitude, would tend to offset.
(b) For the period 1940 through the second quarter of 1942, the principal source of data for computing the ratios of private domestic to total sales was the Census-Civilian Production Administration report on Facilities Expansion, July 1940-June 1945. From this report, ratios of non-Federally financed equipment put in place to total equipment put in place were calculated for subperiods of the period extending from the third quarter of 1940 through the third quarter of 1942 for industries considered to be the main purchasers of the commodities in each major producer durable group. These ratios were used to interpolate between ratios of private domestic sales to total sales for the third quarter of 1940 and the third quarter of 1942. Ratios for 1939 generally were used for the third quarter of 1940 (as well as for the first two quarters), and the third-quarter 1942 ratios were those derived from the claimant agency data. In this process, explicit allowances
for exports and State and local government purchases were made for some commodity groups in order to avoid evident bias.
The facility equipment data were not very appropriate for this type of use. The matching of equipment values classified by industry of purchaser with producers' durable equipment purchased was necessarily quite rough.
The foregoing methods of eliminating government purchases for the years $1940-45$ did not cover Defense Plant Corporation purchases, as these were not classified in the amounts allocable to military and export claimants in the claimant agency data. Data on these purchases were obtained directly from the Corporation. They were not available by commodity groups and, after certain adjustments such as to exclude parts and site-erected equipment, were entered in table 32 in Part V in the line "Less: Government purchases not allocable."

## Addition of transportation charges and distributors' markups

For each of the producer durable groups, the percentages that transportation charges, wholesalers' markups, and retailers' markups were of manufacturers' domestic sales of finished producers' durables in 1939 were applied to the corresponding sales estimates for each of the years 1940-45. For all groups combined in 1939, these three items of distributive cost amounted to one-fifth of manufacturers' domestic sales of finished equipment to producers.

Consideration was given to extrapolating the markup ratios on the basis of Bureau of Internal Revenue data on sales and cost of goods sold from the tabulations of corporate income tax returns. However, these data-available not by commodities but only for broad industry groups-would have been seriously inadequate in this application.

## Commodity Flow Estimates, 1946-50

For the producers' durable groups estimated by the commodity flow method, a somewhat different modification of the detailed method has been employed for the years since 1946. Omitting a number of quantitatively minor steps, the procedure entails the following series of estimates: (1) Derivation of manufacturers' sales of finished durable equipment for the major commodity groups, prior to deduction of exports and government purchases; (2) addition of transportation charges; (3) deduction of exports; (4) subtraction of change in wholesalers' inventories; (5) addition of wholesalers' and retailers' markups; and (6) deduction of government purchases.

## Derivation of manufacturers' sales

Estimates of manufacturers' sales were derived for the first and second quarters of 1946, it will be recalled, from the War Production Board " 732 " data, supplemented by the Smaller War Plants Corporation data for small plants. Estimates for subsequent periods have been made for eight of the commodity groups by extrapolating the second-quarter 1946 estimates (before deduction of government purchases and exports) by industry sales data from the manufacturers' sales series of the Office of Business Economics. Currently this series is based on a sample of reporting companies which account for more than 45 percent of total manufacturing sales. For three groups, data on wholesalers' sales, by line of business, from the Census Bureau's monthly "identical firm" sample of about 3,000 service and limited-function wholesalers have been used for extrapolation. For mining machinery, CommerceSecurities and Exchange Commission estimates of equipment expenditures by the mining industry are used. For the remaining five groups estimated by the commodity flow method, Census current sample reports on manufacturers' commodity sales are available.
The use of industry data to extrapolate commodity sales has serious drawbacks. The data include indeterminate amounts of unfinished and consumer products; and they are also inappropriate for any particular group to the extent of including secondary prod-
ucts classtfied in other producer durable groups and of omitting products in that group included in the sales of manufacturing industries other than the one used for extrapolation. Moreover, these limitations cannot be minimized by employment of finely detailed industry data, because such detail is not available from the sample sales series. Mainly because of the lack of commodity data for extrapolating manufacturers' sales, the estimates of producers' durable equipment since 1946 have not been published for the individual commodity groups.

## Adjustments of manufacturers' sales

Transportation charges have been added to the commodity-group estimates of manufacturers' sales since 1946 by the application of 1939 percentages.
Exports have been estimated (and deducted) on the basis of commodity data tabulated by the Foreign Trade Division of the Bureau of the Census. The method-similar to that used in the 1929-39 estimates, but applied in summary fashion because of the comparative crudity of the postwar estimates-involves the selection of commodities listed in the export classification to match as closely as possible those included in the producer durable groups.
The adjustment for changes in wholesalers' inventories has been based on sample inventory data collected by the Census Bureau in its current identical-firm sample referred to above. The yearend 1939 inventory totals for the major commodity groups have been projected to the recent period by the type-of-business figures reported in this sample.
The addition of wholesalers' and retailers' markups to manufacturers' sales since 1946 has been made through the continued application of 1939 percentages.
The final adjustment is the deduction of government purchases. Federal purchases have been estimated by commodity groups largely on the basis of Bureau of Labor Statistics tabulations of orders under the Walsh-Healey Act, as discussed earlier in this section. State and local government purchases have been estimated and deducted in total, not by commodity groups. The series used has been developed in connection with the National Income Division's estimates of State and local government purchases. It is obtained by extrapolating a 1942 benchmark, derived from the Census of Governments, by State and selected city and county data compiled by the Census Bureau in its annual Financial Statistics series.

## Other Methods

## Business motor vehicles

The producer durable series on business motor vehicles covers passenger cars and trucks, truck trailers, and busses (other than those purchased by utilities).
The passenger car component has been discussed in the section on Personal consumption expenditures for commodities. It consists of the business share of the combined consumer-business total of new car purchases and gross margins on used car sales. The percentage allocation between consumers and business is based on limited information for the 1934-37 period, and has been held constant except for modifications in the war period to take account of the probable effects of rationing.
The estimation of producers' purchases of trucks, truck trailers, and busses, though differing somewhat for the prewar, war, and postwar periods, has involved the general method of multiplying the estimated number of units purchased by an appropriate average price.
For the 1929-41 period, the number of trucks and busses purchased by producers at retail was derived by deducting estimated government purchases from comprehensive totals reported annualiy by the Automobile Manufacturers Association in Automobile Facts and Figures. The number of units purchased by producers directly from manufacturers was taken as 20 percent of the number purchased at retail. This was a rough estimate based on data in the 1929, 1935, and 1939 Census of the Distribution of Man-
ufacturers' Sales covering sales of trucks, busses, passenger cars, bodies, parts, and accessories.
The number of trucks and busses purchased directly from manufacturers was multiplied by an annual average factory price as computed from data in Automobile Facts and Figures and raised to cover transportation charges. The latter were estimated on the basis of information provided by the Office of Price Administration. Producers' purchases at retail were multiplied by this average price series after it had been further increased to allow for dealers' markups, computed from data on passenger cars published in Automobile Facts and Figures.
The estimated total value of trucks and busses purchased by final users both directly and at retail was adjusted to include bodies sold separately from chassis and to exclude busses purchased by transportation utilities (covered in the series on railroad and transit equipment). These adjustments were small and of approximately the same magnitude.
Purchases of truck trailers were estimated separately and added. The value of truck trailers produced, benchmarked on Census of Manufactures data for 1935, 1937, and 1939, was adjusted to exclude exports and government purchases and to include transportation charges. A markup allowance was added to the estimated portion of the total sold through dealers.
The methods employed for making the prewar estimates were not suitable for the years 1942-45. The price series used in the 1929-41 estimates were greatly affected during the war by the large volume of high priced military vehicles. Also, the methods of estimating government purchases would not have been satisfactory for the war period, when such purchases were of substantial magnitude.
Data on the numbers of heavy, medium, and light trucks and busses shipped to civilian domestic users-the approximate measure desired-were supplied for the years $1942-45$ by the Office of Defense Transportation. Separately for the three size classes of vehicles, numbers shipped were multiplied by price series representing special estimates for 1939 extrapolated to 1942 by indexes of the Bureau of Labor Statistics and to 1945 by unpublished data of the Bureau of Agricultural Economics. The weights used were for 1939 in order to exclude the effects of war-period military purchases.
The Office of Defense Transportation also provided figures on the number of truck trailers shipped for civilian domestic use during the years 1942-45. These totals were multiplied by an average 1939 factory value extrapolated to 1942 and then to 1945 by the series for light trucks (noted above) used in estimating new truck purchases.

Dealers' gross margins on sales of used vehicles, assumed to be reflected in the average price data used for the 1929-41 estimates, were explicitly added to the series beginning with the 1942 estimates. For the years 1942-45, such margins were taken as 15 percent of estimated purchases of new trucks and busses.
The estimates for years since 1946 have involved, first, derivation of the total factory value of domestic sales of trucks and motor coaches, on the basis of data of the Automobile Manufacturers Association on the number of units sold and average factory value. The Census Bureau has reported data on factory sales of truck trailers. These series have been converted to final purchase values by adding the same percentage allowances for transportation costs and dealers' markups as used for 1941, deducting estimated government purchases, and adding 10 percent (again largely arbitrary) of the final value of new trucks and busses for dealers' margins on sales of used vehicles.

## Railroad and transit equipment

The most important component of this group, equipment expenditures of class I railroads, was obtained from the Bureau of Railway Economics of the Association of American Railroads for the prewar and war periods and from the Interstate Commerce

Commission for subsequent years. This series has been raised (about 6 percent) to allow for the estimated expenditures of class II and class III railroads. Other components of the group total include (1) equipment expenditures of transit corporations for electric cars, trolley coaches, and busses, data for which have been published annually by the American Transit Association in its Transit Fact Book; (2) expenditures for Pullman Corporation cars, as published in Statistics of Ratluays by the Interstate Commerce Commission; and (3) the value of tank car purchases (not included in the railroad equipment figures), estimated by multiplying the number of tank cars as reported by the American Railway Car Institute by the average value of tank cars as published annually in Statistics of Railucays.

## Ships and boats

For the years 1929-38, business purchases of ships and boats were derived by the commodity flow method. The estimates since 1939, which are subject to serious limitations, have been prepared as the sum of separate series for subsidized ships, ships completed under private contract, and boats.

The Maritime Administration has provided data on sales of subsidized merchant vessels of 2,000 tons or more. Valuation is at cost to the purchaser, exclusive of the Government subsidy. In order to match the timing of entries in the government account, no attempt has been made to convert sales to value of work in place.

The Maritime Administration also has provided lists of merchant vessels completed under private contract. These have been valued at figures given by the same source for comparable vessels, either subsidized or Government purchased, and for recent years with the aid of specific price data furnished by the National Federation of American Shipping. The resulting total values have been averaged for successive years in order to obtain a better measure of work performed during a given year.

The estimates of purchases of motor vessels and barges, lighters, and other unrigged boats, which represented about two-fifths of the ships and boats total in 1939, are benchmarked on value of output data given in the 1939 Census of Manufactures, adjusted to exclude Navy expenditures on motor vessels built in private shipyards. The base-year figure for 1939 has been extrapolated by a series representing annual tonnages of private boats documented for commercial use (after elimination of the estimated tonnage of used vessels documented) as published by the Bureau of Customs, adjusted for price changes by the Maritime Administration index of construction costs.

## Revisions

In the absence of new benchmark information such as the Census of Manufactures and Business, revisions of the estimates of producers' purchases of durable equipment which have been made since publication of the 1947 National Income Supplement have been due chiefly to the inclusion of later data and to certain changes in procedures. Therefore, the revisions to date, which have been relatively small, are not to be construed as any sorit of gauge of the reliability of the estimates for the recent period.

## 11.-CHANGE IN BUSINESS INVENTORIES

This section deals with the change in nonfarm business inventories and the inventory valuation adjustment. Farm inventories are covered in the section on the Income of unincorporated enterprises.

The basic sources of the nonfarm inventory estimates are reported accounting data on the value of inventories. These data have a high degree of coverage. Bureau of Internal Revenue tabulations from annual corporation tax returns alone account for about four-fifths of the estimated value of nonfarm inventories. Periodic
data on the value of noncorporate inventories are available from Bureau of Internal Revenue and Census Bureau compilations.

The adequacy of the inventory estimates included in national income statistics is, however, less than might be suggested by the coverage of the book value data and the reliability of the basic sources from which they are drawn. The extension of reported values to full coverage introduces some uncertainty into the estimates, but their main source of error stems from the fact that the accounting methods underlying the reported data are divergent and inappropriate for national income purposes. Inventory calculation at the level of the individual business firm is a complex problem, and existing accounting methods vary widely both with respect to the scope of the cost elements (especially overhead costs) included in the inventory account and with respect to the costing procedures used to charge goods to cost of sales and to inventories, respectively.
The scope-of-cost-limitation of the basic data reported by business is accepted in estimating the inventory components of national income and product. However, a uniform and appropriate costing procedure is substituted for the divergent procedures used by business firms (such as first-in, first-out and last-in, first-out). This results in a measure, for inclusion in the gross national product, of the physical volume change in inventories valued at average prices during the period. The excess of this measure over the bookvalue change in inventories represents the "inventory valuation adjustment". This adjustment is added to the business-income components of national income and secures measures of earnings from current production consistent with the treatment of inventories in the gross national product.
This adjustment of the reported book value data is a quite difficult procedure, involving the revaluation of the entire volume of nonfarm business inventories given only limited knowledge of the prices reflected in them.

Also important is that the estimates of inventory change included in national income and product are calculated as the difference between large and usually volatile inventory totals at two points of time. Even small errors in the data on total inventories can lead to large relative errors in the estimates of inventory change.

Finally, it should be noted that the comprehensive accounting data on inventories become available only after a lag of several years. Current estimates must be based upon less satisfactory sources.

## General Estimating Procedure

The procedure for deriving the current value of the physical change in nonfarm business inventories and the associated inventory valuation adjustment is carried out separately by detailed industry groups. The limitations already noted of the all-industry estimates of the inventory valuation adjustment attach to the individual industry estimates to an even greater degree.
The general procedure of estimation involves six principal steps, as su mmarized below.
(1) Reported book values of year-end inventories are raised to complete coverage.
(2) Estimates of the portion of total book value that is reported on a last-in, first-out (LIFO) basis are deducted from the totals and separately processed. This step is necessary because the valuation procedure underlying LIFO inventories requires an adjustment procedure which differs from that applicable to the remainder of business inventories.
(3) The estimates of book value of non-LIFO inventories are converted to a constant price basis by means of price deflation procedures.
(4) The change in these inventories at constant prices is obtained by subtracting beginning from ending inventories at constant prices.
(5) The current value of the physical change in inventories is obtained by multiplying the change in inventories at constant prices by the ratio of current prices to the constant price base.
(6) The inventory valuation adjustment is obtained by subtracting the change in the book value of inventories from the current ralue of the physical change in inventories.
Step (5) yields the inventory component (other than LIFO) of gross national product. The result of step (6) constitutes the corresponding adjustment to corporate and noncorporate enterprise incomes, which are calculated initially on the basis of the inventory accounting methods underlying reported inventory data.
The estimating procedure is illustrated in Exhibit 32 by actual data for a single industry. Calculations of a similar nature are made for each of the industries shown in table 22 of Part V. In the alcoholic beverages and tobacco manufacturing industries, however, direct quantity data instead of deflation procedures are used to estimate changes in inventories.
To simplify the exhirit, an industry was selected in which LIFO inventories are negligible, and consequently step 2 is omitted. Also, the exhibit is confined to the corporate sector of the industry. Similar calculations are made for the noncorporate sector of each industry. As will be seen, the derivation of book values differs for the two sectors. However, the data and methods used in the revaluation of these book values are the same within each industry.

| Exhibit 32.-Derivation of Change in Business Inventories and Inventory Valuation Adjustment for the Corporate Sector of the Apparel Manufacturing Industry, 1947 |  |  |
| :---: | :---: | :---: |
|  | 1946 | 1947 |
| m | (Value data in millions of dollars) |  |
| - Book value of year-end inventories | 834 | 1,066 |
| - (a) Index of cost valuation (1939 $=100$ ) | 188.7 | 208.2 |
| (b) Index of market valuation $(1939=100)$ <br> (c) Year-end inventories in 1939 dollars <br> (Line 1 divided by line 3 a or 3 b , whichever lower) $\qquad$ | 194.5 442 | 211.3 512 |
| - Change in inventories in 1939 dollars (from line 3c) |  | 70 |
| (a) Index of current valuation ( $1939=100$ ) <br> (b) Change in inventories in eurrent dollars (Line 4 times line 5a) |  | 202.1 141 |
| 0. (a) Change in book value of inventories (from line 1) ........ <br> (b) Inventory valuation adjustment <br> (Line 5 b minus line 6 a ) |  | 232 -91 |

The following comments deal with those steps of the estimating procedure which need amplification.

## Step 1: The book value aggregates

Sources and methods of estimating the book values differ for the corporate and noncorporate sectors, and as between past periods and the recent years for which final information is not yet avail-
able.
The final source of data on the book value of corporate inventories is Statistics of Income-Part 2, the annual compilation of corporate income tax returns published by the Bureau of Internal Revenue. The reported totals are raised on the basis of cost of goods sold (by about 1 percent) to take account of corporations not reporting balance sheet data. Since corporations account for atout four-fifths of nonfarm inventory holdings, a substantial portion of the estimates of the total book value of nonfarm inventories rests upon a source considered to have a high degree of reliability.
As can ke seen from Exhibit 33, the bulk of estimated noncorporate inventories is in wholesale and retail trade. Estimates are also made for mining, contract construction, manufacturing, and services. Data on noncorporate inventories in finance, insurance, and real estate; transportation; and communications and public utilities are lacking. The amounts involved must be insignificant and are not included in the estimates.
The main sources of the noncorporate inventory estimates for trade were the Censuses of Wholesale and Retail Trede for 1929, 1933, 1935 , and 1939 and Bureau of Internal Revenue tabulations for 1939, 1945, and 1947 from the income tax returns of sole pro-

| Item | Millions of dollars | Pereent |
| :---: | :---: | :---: |
| Total, all industries. | 56, 207 | 100.0 |
| Corporate. | 44,687 | 79.5 |
| Noncorporate | 11,520 | 20.5 |
| Mining --..-.-.--- | 93 | . 2 |
| MTanulaturing | 1,068 | 1.8 1.9 |
| Wholesale and retail trade | 9,543 | 17.0 |
| Wholesale trade Retail trade | 1,655 | 2.9 14.0 |
| Services. | 350 | . 0 |

prietorships and partnerships. The procedures for estimating noncorporate inventories in trade vary considerably according to the nature of the available information. For some years census data on total inventories are available which can be accepted as benchmarks. For most years, however, the procedure involves the multiplication of noncorporate sales series derived in the estimation of noncorporate business income by inventory-sales ratios. These ratios are benchmarked on the tax returns of sole proprietorships and partnerships and on industrial census data for unincorporated business. Corresponding corporate inventory-sales ratios are used widely for interpolation and extrapolation of the noncorporate ratios.

A diversity of procedures is followed for estimating noncorporate inventories in industries other than trade. As can be seen from Exhibit 33, the amounts involved are very small.
As already noted, the final sources for estimating the book value of inventories, both corporate and noncorporate, become available only with a considerable lag. Prior to the receipt of this information, inventory book values are extrapolated on the basis of interim data. The extrapolation for the large manufacturing sector-accounting for 52 percent of the nonfarm total at the end of 1947-is based upon the Industry Survey of the Office of Business Economics. Reports of inventory holdings tabulated in connection with this survey cover nearly one-half of the estimated total and are weighted by industry group and asset size class.
The extrapolation of wholesale inventories ( 14 percent of the 1947 nonfarm total) is mainly on the basis of a sample of inventories of service and limited-function wholesalers reporting to the Bureau of the Census, together with Department of Agriculture data on warehouse-stocks of selected farm products. These two sources cover about one-tenth of total stocks, and the data tabulated are weighted by kind of business.

The extrapolation of retail trade inventories (one-fourth of the 1947 nonfarm total) is based primarily on Bureau of the Census samples for chain and large independent stores and on Federal Reserve Board estimates of department store inventories. Reported data cover about one-fifth of total retail stocks and are weighted by kind of business. The main deficiency of the sample data is the virtual absence of information relating to small firms, which are of particular importance in retail trade.

Other nonfarm inventories are extrapolated into the current period mainly by data collected by the Securities and Exchange Commission for its reports on Working Capital of U. S. Corporaticns.

## Step 2: Adjustment for LIFO inventories

Estimates of LIFO inventories are deducted from total book values and separately processed because the revaluation procedure for non-LIFO inventories is not applicable to them.

The estimates of LIFO inventories in manufacturing for 1947 were based on a special questionnaire submitted to firms in con-
nection with the Industry Survey of the Office of Business Economics and on a study of the extent of the use of the LIFO method by J. Keith Butters and Powell Niland. (Effects of Taxa-tion-Inventory Accounting and Policies, Graduate School of Business Administration, Harvard University, 1949.) Ratios of LIFO to total inventories derived from these two inquiries were applied to total corporate inventories by industry and asset size class to estimate total LIFO inventories in manufacturing. Information from Moody's Manual of Industrial Securitics is used to extrapolate these ratios and also to derive similar ratios for department stores, the only other industrial sector in which LIFO inventories appear to be important. Noncorporate LIFO inventories are neglected throughout. The concentration of the LIFO method among larger firms indicates that the omission is insignificant.

The estimated value of LIFO inventories currently represents roughly one-tenth of the total book value of nonfarm inventories. In some individual industries the proportion is much higher.

To the extent that the physical volume of inventories increases, changes in the book values of LIFO inventories already reflect changes in the physical volume expressed at current prices and no adjustment of these book values to national income definitions is needed. To the extent that physical volumes decrease, changes in LIFO book values reflect these decreases in prior-period prices and a conversion to current prices is made. The price data used in each industry are the same as those described below. To date, price adjustments for declines in LIFO inventories have been negligible.

Gaps in the basic information may cause sizable errors in the estimates of the change in LIFO inventories. However, in view of the fact that LIFO inventories are a small fraction of the total, the possible error introduced into the over-all figures is much less significant.

## Step 3: Conversion of non-LIFO inventories to constant prices

Separate composite price indexes are constructed to deflate the book values of total non-LIFO inventories in each industry. For this purpose it is necessary, first, to select commodity price indexes that are representative of the commodities included in inventories; second, to weight these price indexes in accordance with the relative importance in the book value of inventories of the commodities which they represent; and, third, to determine the periods to which the unit prices reflected in the book value data pertain, so that the price indexes to be used for deflating the book values can be related to these same periods.

## Construction of composite price indexes

The selection and weighting of the price series used in the construction of the composite price indexes was for the most part an interrelated operation, based upon the estimated commodity composition of inventories in each industry.
The estimates of the commodity composition of inventories in manufacturing were built up mainly from the 1939 Census of Manufactures tabulations of inventories held by industry. Similar estimates for trade were derived from the 1939 Censuses of Wholesale and Retail Trade, which showed the distribution of inventories by kind of business. In most instances, the type of inventory commodity involved could be identified on the basis of the census designation of the industry or kind of business holding the inventory. The full industry and kind-of-business detail given in the censuses, together with the further breakdown of manufacturing inventories into finished products and materials, supplies, etc., was utilized in estimating the commodity composition of inventories. More summary methcds were used in instances in which price information was lacking to match the full detail of the commodity breakdown.

Other sources consulted for this purpose included the Census of Manufactures tabulations of materials consumed in selected industries; materials-consumed data published by private industrial research groups; material requirements studies of the War Production Board; financial reports of certain large corporations in the iron and steel industry giving information on the commodity composition of their inventories; Bureau of Internal Revenue data on industrial inventory holdings included in the "Source Book" underlying Statistics of Income-Part 2; and sales and value-ofproduct data, when more pertinent information was not available.
With few exceptions the monthly price series used in the construction of the composite price indexes were taken from the wholesale price index of the Bureau of Labor Statistics. This in dex consists of approximately 900 separately coded commodity price series which are combined into 49 subgroups, 10 major groups, and 5 economic groups.
For several reasons, BLS subgroups were used most frequently in the construction of the composite price indexes. It was not possible, in general, to estimate the commodity composition of inventories in a detail sufficient to calculate weights for individual price series comprising the subgroups. Also, in the cases in which the available price information did not match the estimated commodity composition of inventories it was thought that the use of subgroups rather than of individual price series would tend to give the better representation of inventory price movements.

Two other considerations favored the use of subgroups. Because of specification changes, the elimination of existing series, and the introduction of new ones, it is frequently difficult to maintain the continuity of the individual commodity price series. Also, in many instances the portions of the inventories which could be related to individual commodity price series were too fragmentary, from the point of view of the total industry group, to warrant separate treatment.

Further limitations of the composite price indexes may be noted. The price series underlying them do not take full account of quality change and of divergences between quoted prices and prices actually charged in market transactions. In addition to these shortcomings generally encountered in price deflation, two others appear in connection with the deflation of inventories because the price series (1) do not consistently measure the prices of purchased inventories at the transaction stage at which they are acquired by the inventory holder and (2) do not measure directly the costs that are reflected in the valuation of goods-inprocess and finished product inventories.
With respect to the weighting system employed, it should be noted that it is not strictly appropriate for the purpose at hand. Instead of using the relative commodity composition of inventories in 1939 as fixed weights for combining the commodity subgroups of the BLS index, and fixed BLS weights as internal weights for these subgroups, a shifting weighting system reflecting the changing annual commodity composition of inventories should have been used in the construction of price indexes designed to convert the book value of inventories to a 1939 basis. This could not be done for lack of information. Tests of the error that may have been introduced by the use of a fixed weighting system will be made on the basis of the information contained in the 1947 Census of Manufactures and the 1948 Censuses of Wholesale and Retail Trade. Preliminary calculations have indicated that this error is not likely to be significant.

Synchronization of composite price indexes with year-end
book values
To take account of the widespread practice of valuing inventories at the lower of "cost" or "market", separate desating indexes are constructed to represent each of these valuations at the year-end, and the lower of the two is used to deflate year-end inventories. Indexes of market valuation are derived by averaging the composite price indexes for December and the following January in order to approximate year-end prices. Market indexes
are not calculated for the transportation; communications, public utilities, and construction industries, where inventories consist largely of purchased materials customarily valued on a straight cost basis.
The construction of indexes of cost valuation is difficult. The particular accounting method used by business firms to charge goods out of inventory to cost of sales determines the period whose prices are reflected in the year-end inventories valued on a cost basis. The construction of the cost valuation indexes applicable to year-end inventories is adapted in the first instance to the first-in, first-out (FIFO) method, which is the basis of valuation of the bulk of non-LIFO inventories. Owing to lack of information, no separate procedure is developed for other methods of inventory accounting except LIFO-such as the specific identification and average cost methods-which underlie some of the book value data. It is believed that the implicit allowance for them described below gives generally satisfactory results.
The prices reflected in year-end inventories valued on a FIFOcost basis are the prices of a period immediately preceding the year end, the length of which depends on the rate of turnover of inventories. The period for which the composite monthly price indexes for each industry had to be averaged in order to reflect the cost prices implicit in year-end inventories was based on the estimated inventory "turnover period" in the industry. Initial calculations of turnover periods for industries other than trade were made by dividing year-end inventories in each industry into the total cost of goods sold, as reported in Statistics of Income-Part 2 for 1939, and then dividing the resulting turnover rate into 12 , the number of calendar months.
The turnover periods so calculated were then lengthened for three reasons: first, to take account of non-FIFO inventories (other than LIFO), whose general effect is to extend the length of the prior periods whose prices are reflected in year-end inventories; second, to give effect to the lapse of time between the purchase and delivery dates of inventory goods; and third, to allow for the fact that the use of a single turnover rate for each industry, instead of separate rates for inventories having a different turnover, overweights inventories that have a relatively quick turnover. These three factors cannot be accurately measured, but they were believed to be of sufficient importance to warrant increasing by 50 percent the turnover periods as initially calculated.
The calculation of inventory turnover periods for trade was based upon the 1939 Censuses of Wholesale and Retail Trade. Separate calculations were made by kind of business. Census data were used kecause they covered noncorporate establishments, which are of particular importance in trade, as well as corporations. Since the cost of goods sold was not reported in these censuses, sales had to be used as the numerator of the turnover rates. This tends to understate the turnover period, since sales include a gross profit margin whereas inventories are valued at cost. To offset this bias, as well as the three factors already mentioned, the turnover periods initially calculated were increased by 75 . percent.
The cost valuation indexes applicable to year-end inventories were obtained by averaging the composite price indexes for a number of months prior to the year-end equal to the estimated turnover periods.
In addition to the uncertainties that have already become apparent, it may be noted that the calculations involve the assumptions that the size of the 1939 year-end inventories was an approximation to the average of the inventory holdings during that year, and also that the turnover periods estimated on the basis of 1939 data are applicable to the entire period 1929 to date. With respect to the latter assumption, experimentation with alternative turnover periods has indicated that even considerable modification in their assumed length does not in general greatly affect the statistical result.

## Step 5: Conversion of deflated change to current prices

The indexes used to convert the deflated value change of inventories to current prices represent the annual average of the monthly composite price indexes already described. Thus, to recapitulate, the same composite price-index series are used for computing the "market", "cost", and "current" indexes. The three differ only with respect to the time period to which they refer-that is, to the span over which the monthly price indexes are averaged.

## Characteristics of Revisions

The annual inventory estimates published each July are based upon preliminary data for at least the two most recent years. Under the present schedule, the Bureau of Internal Revenue corporate income tax return tabulations, on which the book value of corporate inventories is based, are not available for the two latest years. Revisions may affect earlier years also, mainly because the noncorporate book value estimates are based on less regular benchmarks. Introduction of new benchmarks, such as periodic industrial census tabulations, may change prior year estimates through the substitution of interpolation for previous extrapolation procedures.
Revisions of the inventory change estimates for recent years occasioned by the incorporation of comprehensive data are sometimes quite sizable. As noted earlier, even small percentage revisions in the book value aggregates can cause substantial revisions in the increments computed from them.
Revisions are usually much larger in the "change in business inventories" item than in the "inventory valuation adjustment". Revisions in the latter typically are not large. The bulk of revisions in the underlying book value estimates is generally reflected in the change in business inventories rather than in the inventory valuation adjustment. Also, the price information used to revalue business inventories becomes available fairly promptly, and subsequent routine revisions of it are usually minor.

The smallness of the revisions in the inventory valuation adjustment should not be taken to mean that this item, or the underlying revaluation of book values, is firmly based. Quite to the contrary, as already has been emphasized, this is the most difficult step in the estimating procedure. The absence of major revisions in these estimates signifies only that the final sources of price information do not differ significantly from the preliminary information on which the estimates are initially based.

## 12.-NET FOREIGN INVESTMENT

The net foreign investment component of gross national product measures the net export balance on goods and services (less the net outflow of gifts), which is necessarily financed by international investment. It is taken 22 from the official balance of payments of the United States, where it appears as the "Balance on goods and services and unilateral transfers." Accordingly, the statistical sources and methods discussed below are those of the Balance of Payments Division of the Office of Business Economics. The balance of payments of the United States is published quar-

[^26]terly in the Survey of Current Business, and in occasional bulletins, the latest of which is The Balance of International Payments of the United States, 194i-48 (Washington, Government Printing Office, 1950). A more detailed description of the methods of estimating the international transactions of the United States appears in that volume, appendix B, pp. 215 ff .

These methods also produce an alternative estimate of net foreign investment in terms of the change in international assets and liabilities. Usually there is a statistical discrepancy (labeled "errors and omissions" in the balance-of-payments statement) between the two estimates. As has been noted, it is the former estimate which is included as a component of gross national product, although for most years it cannot be assumed to be more exact than the one based on changes in assets and liabilities.

Official estimates of the United States balance of payments have been prepared for all years beginning with 1919. Over this period, the sources and methods underlying the estimates have changed significantly. This section is devoted primarily to a description of the current methodology.

A substantial increase in the accuracy of the estimates, especially in the last decade, has followed from the inauguration of new techniques and data sources discussed below.

It may be noted in this connection that a new census of American direct investments abroad, taken in mid-1951 by the Office of Business Economics, will provide 1950 benchmarks for the series relating to direct-investment income.

In spite of the improvement of the data, it should be recognized that net foreign investment is subject to possibly large percentage errors of estimation because it is calculated as the difference between gross outflows and gross inflows which are usually large in relation to the net balance.

The following discussion deals in turn with net factor payments to the United States and with net purchases from the United States (including gifts), which together compose the "Balance on goods and services and unilateral transfers". The balance is obtained as gross receipts of the United States less gross payments by the United States. In the following discussion, the gross receipts and payments are described separately, with no further reference to the fact that they are differenced to obtain the net entries for net foreign investment.
The balance on goods and services and unilateral transfers reflects all current transactions of the United States with the rest of the world. Hence, a large number of the fows differenced to obtain net foreign investment also become explicit elements (with appropriate sign) of various other components of national income and national product. Thus, net factor incomes received from abroad become elements of the wages and salaries, interest, and corporate profit components of national income and personal income, and net purchases made abroad (including gifts) become elements of personal consumption expenditures for commodities and services and of government purchases of goods and services. The estimation of these elements is descriked below. However, only in the sections dealing with the national income and product components in which they are included are they explicitly identified as constituting such elements. For instance, net interest received from abroad is described in the present section under the heading Net payments of factor income, but the fact that this item is included in the interest component of national income and personal income is stated explicitly only in the section on Interest.

## Net Payments of Factor Income to the United States

Factor income transactions consist of wage and salary receipts and the international flows of property income. The latter represent interest, dividends, and branch profits. Undistributed profits of foreign subsidiaries are not included. All property incomes are measured net of taxes levied by the paying country.

## Wages and salaries

This item (included in "private miscellaneous services" in the official balance-of-payments classification) represents wages and salaries received by United States residents in this country from (1) foreign governments and (2) international organizations. Component (1) is estimated from fragmentary information supplied by certain foreign missions. Component (2) is reported by the international organizations.
It will be noted that, unlike the property income items, which are reported net of out-payments, the entry for wages and salaries represents gross receipts of United States residents. Wages paid to foreign residents employed abroad by the United States Government are counted as purchases from abroad (below, under Net purchases of miscellaneous services) rather than under the heading of factor income. This procedure has been adopted because it leads to a more useful breakdown of the tables on payrolls, employment, and average earnings of employees in Part V of this report.

## Interest

United States receipts of interest from abroad are estimated in four parts.
(1) Interest from foreign branches and affiliates (including subsidiaries) of American corporations is estimated from a 1942 benchmark provided by the Treasury Department's Census of American-Owned Assets in Foreign Countries (Form TFR 500), which is believed to have provided virtually complete coverage. The benchmark figures are extrapolated on the basis of quarterly sample reports from about 300 companies accounting for around 70 percent of total direct investment, supplemented by information,taken from income tax returns, annual reports to the Securities and Exchange Commission (Form 10 K ), and annual corporate reports to stockholders. Ninety percent of total investment income (interest, dividends, and branch profits) earned in 1947 from foreign branches and affiliates was actually reported in one or more of the above-mentioned sources.
(2) Interest received by the United States Government is reported by the recipient agencies.
(3) Interest on foreign dollar bonds is estimated chiefly from regular questionnaire surveys of the debtors' fiscal and paying agents in the United States, corrected for basic coverage by reference to holdings disclosed in the 1942 Treasury Census.
(4) Other foreign interest received by the United States is calculated by applying average bond yields, as reported from the principal issuing countries, to holdings series benchmarked on the 1942 Treasury Census and extrapolated by reference to foreign bond purchases and sales reported on Foreign Exchange Forms S-1/3. These statistics of purchases and sales, it should be noted, do not distinguish the bonds by country of debtor or by currency in which payable. The extrapolation, therefore, is a relatively rough process. However, the receipts from Canada, which account for most of the total in this fourth category, are checked against official Canadian estimates based on exchange control data.

United States payments of interest are estimated as the sum of (1) taxable and (2) tax-free interest.
(1) Taxable interest paid by the United States to foreigners is reported to the Bureau of Internal Revenue on withholding tax return Forms 1012 and 1013, for corporate bonds, and Form 1042, for other obligations. Net income payments by fiduciaries are allocated somewhat arbitrarily between interest and dividends. The tax return data are not available in time for use in the estimate for the latest year, which is therefore made by extrapolation with reference to reported changes in foreign holdings.
(2) Tax-free interest-about 40 percent of the total in 1947is estimated by applying an average-yield series to amounts of foreign holdings, the latter being benchmarked on the Treasury's 1941 Census of Foreign-Owned Assets in the United States.
(The basic Form TFR 300 was filed chiefly by banks, brokers, corporations with foreign security-holders or creditors, and individuals.) The benchmark estimate of holdings is extrapolated on the basis of known transactions in Federal issues.

## Dividends

United States receipts of dividends are estimated using sources and methods analogous to those applied in estimating components (1) and (4) of interest receipts. United States dividend payments to the rest of the world are estimated in general like taxable interest payments. For the latest year, payments by subsidiaries of foreign corporations are extrapolated by reported payments of about 90 sample foreign-controlled enterprises, and other payments are extrapolated by the product of appropriate sample dividend rates times estimated holdings.

## Branch profits

The sources and methods used in estimating the inflow of branch profits are the same as those for interest received from foreign branches and affiliates. The outflow of branch profits is estimated from tax returns (Form 1120) on which such profits must be reported to the Bureau of Internal Revenue. Pending the availability of the tax return data, preliminary estimates are made by extrapolation using data from the sample of 90 foreign-controlled enterprises mentioned above.

## Net Purchases from the United States

It is convenient to discuss sales and purchases by the United States in terms of the components distinguished in the official balance-of-payments statement-merchandise trade, transportation, travel, etc. The method of separating transactions of United States business, Government, and persons, in the manner of table 11, will be indicated in the discussion of each of the components. In table 11 sales include cash gifts received, and purchases include cash donations made. In the balance-of-payments statement these unilateral transfers are shown separately. The exclusion of unilateral transfers in kind from table 11 has been noted.
Merchandise trade accounts for the vast bulk of the transactions summarized under the heading of net purchases. The estimates represent chiefly exports and imports shown on declaration forms filed with the Collectors of Customs and tabulated by the Foreign Trade Division of the Census Bureau, and transactions carried out and reported by agencies of the Federal Government. The major limitation on the accuracy of these estimates is the likelihocd that the stated values may differ in some cases from the actual prices paid for the gocds.
Transportation service receipts and payments consist largely of ocean freight charges, estimated either from financial statements filed by the carriers or as the sums of products of reported tonnages multiplied by appropriate scheduled rates; and port expenditures of ocean carriers, estimated as sample-based percentages of the carriers' gross revenues.
Travel receipts and payments are estimated from expenditure averages based on questionnaire returns from travelers, multiplied by the adjusted numbers of such travelers reported (in most cases) by the United States Immigration and Naturalization Service.
The major components of the Miscellaneous services category (benchmarkent payments (reported by the agencies), film rentals (benchmarked on the Treasury Census), and insurance charges (estimated from financial statements). Unilateral transfers by private parties are estimated chiefly from data provided by forTarding banks, the Post Office Department, and charitable institutions; government transfers are reported by the Federal agencies involved.

[^27]States exports; these, together with the corresponding tabulations of imports, are described in some detail in Foreign Commerce and Navigation of the United States for the calendar year 1946. Merchandise trade is valued f. a. s. ("free alongside ship") port of shipment.
(2) Recorded merchandise exports, including reexports, are adjusted to eliminate certain components not giving rise to businesssector claims on the rest of the world: shipments abroad by general government and persons; business exports known not to represent merchandise sales-for example, motion picture films shipped abroad for rental and the movement of United States-owned grain to Canada for storage; and exports to the Panama Canal Zone. The data for most of these adjustments are taken directly from the export statistics; the government shipments to be excluded, however, are evaluated from the records of the responsible Federal agencies.
(3) To the residual are added several items not covered which do give rise to business-sector claims: sales by government enterprises from their stocks abroad, as reported by these enterprises; exports of silver, which the Census Bureau reports separately from merchandise exports; and the increase in official gold holdings less net purchases of gold from abroad.
United States business purchases from foreigners are estimated from the statistics of general imports, with adjustments analogous to those described above. Adjustments have also been made for a few known instances of differences between declared import valuations and the actual dollar payments made to foreigners.
United States general government purchases from and sales to foreigners are estimated from reports filed by the Government agencies involved. Such important items as United States Government sales of surplus and other property located abroad, and purchases for the use of the armed forces stationed abroad, not shown in the trade statistics, are included.
It may be noted that all of the large wartime purchases of foreign raw materials by the United States have been classified as business-sector purchases, since the public purchasing agencies were Government enterprises rather than executive departments or other administrative agencies of general government.
Purchases of foreign merchandise by United States persons are generally made through business middlemen, and are covered by the estimates of purchases by United States business described above. United States persons' shipments to foreigners consist almost entirely of gifts and, like foreign-aid shipments of Govern-ment-procured items, are excluded as unilateral transfers in kind giving rise to no claims for payment.
It is difficult to make any categorical statement about the reliability of the foreign trade statistics. For exports and for nondutiable or specific duty imports, where the Customs Service does not have a pecuniary interest in securing a correct valuation, it is probably safe to say that many instances of incorrect valuation go undetected, although certain checks are made. The reported values theoretically include inland freight and other services performed in the country of export; one of the likeliest sources of error is the omission of some of these service costs in valuing United States exports. However, even imports subject to ad valorem duties are frequently assessable (and entered in the statistics) at values which may differ from the prices actually paid. Again, in the case of imports from foreign branches or subsidiaries, there are probably differences between the values entered for customs purposes and the prices at which the articles are taken up on the domestic companies' books for income tax purposes. On balance, it is not clear whether the net effect of all the possible sources of error would be to overstate or to understate net exports.

## Transportation

International transportation transactions involving the United States are treated as United States business-sector transactions, except that passenger fare payments to foreign carriers are allo-
cated between the business and personal sectors. This allocation is described below under Travel.

## Ocean freight

Ocean freight revenues of United States ship-operators from abroad consist of freight on United States exports and on shipments between foreign ports. (Freight on United States imports carried by United States lines is classified as a domestic transaction, being defined as paid by the importer because the value placed on merchandise trade includes no allowance for ocean transportation cost.)
United States ocean freight revenues from foreigners are now estimated from financial statements filed by the carriers with the United States Maritime Administration or from data furnished directly to the Office of Business Economics.

For 1947 and earlier years, estimates of revenues from the carriage of United States exports have been based on Census Bureau or Maritime Administration data on tonnages of various commodities or commodity groups carried by American ships to various destinations abroad, multiplied by appropriate freight rates. The rates used have been taken chiefly from rate schedules of the various steamship conferences filed with the Maritime Administration (at that time, the Maritime Commission). Benchmark revenues were derived in this way for 1940, 1944, and 1946, and interpolated by tonnage totals with allowance for changes in general freight rates and in the commodity composition of the trade. The 1946 benchmark has been extrapolated forward through 1947 in four parts-coal, grain, other dry cargo, and tanker shipments-by use of tonnage and rate data applicable in each case.

Revenue received for carrying freight between foreign ports in years prior to 1948 has been estimated as a percentage (varying up to around 5 percent, and based on rather fragmentary information) of the combined revenues from carriage of United States exports and imports. Freight on imports has been estimated for this purpose by methods similar to those described above for freight on exports.

Payments to foreign ship-operators consist of freight charges for the carriage of United States imports. The estimates are derived by much the same methods and types of data used prior to 1948 in estimating American carriers' revenue from freight on exports.

## Occan passenger traffic

Passenger revenues of United States carriers consist of receipts from foreigners travelling to and from the United States. United States payments for ocean passage are those made by United States residents to foreign carriers.

Average fares plus shipboard outlays per passenger are ascertained through systematic sampling of passengers, and are multiplied by estimates of numbers based on United States Immigration and Naturalization Service records of arrivals and departures.

Expenditure information is secured from United States residents returning and from nonresidents departing, as described below in connection with the travel account. Since fares and shipboard expenses vary widely according to type of accomodation and route and purpose of travel, etc., the averages are weighted to take account of such variations, the relative importance of each category being estimated from Immigration Service records and passenger manifests supplied by carriers.
The Immigration and Naturalization Service records the number of arrivals and departures, classified by residence of traveler and also by flag of carrier. However, the data must be adjusted somewhat to fit exactly the categories appropriate for balance-ofpayments estimation. These adjustments are summarized below under Travel.

## Port service

United States port receipts from foreign vessels are estimated as fixed percentages of the vessels' gross revenues from the car-
riage of United States trade, the sources and methods for which are indicated above. Ratios are based on fragmentary information from foreign lines.

Foreign port expenditures of United States lines are similarly calculated. Ratios of port expenditures to gross earnings (for cells cross-classified by type of cargo and whether direct or wayport trade) are based on the carriers' financial statements mentioned above as filed with the Maritime Administration and the Office of Business Economics, and on supplementary details supplied by some of the largest American dry cargo operators.

## Air traffic

Receipts and payments on account of air traffic include freight, passenger, and port cost components generally analogous to those described above for ocean shipping, and are estimated by similar methods. For United States receipts, financial reports filed by the carriers with the Civil Aeronautics Board and the Office of Business Economics now provide the essential data. For United States payments, and for receipts in the years 1940-47, estimates have been calculated from tonnages of freight (benchmarked on official trade statistics for certain years), numbers of passengers (based on the Immigration Service records), and published rates or sample-based average expenditures. No estimates for air transportation were made prior to 1940 .

## Rail traffic

Rail traffic receipts by the United States from the rest of the world consist of (1) freight earnings of United States railroads operating in Canada and (2) freight on foreign merchandise carried in transit through the United States. Component (1) represents freight on United States exports and intra-Canadian shipments. It is evaluated from information furnished by the railroad companies to the Office of Business Economics. Component (2) arises largely from Canadian and Mexican export and import trade with countries other than the United States. It is estimated by applying general average freight rates to data on the weight or value of such shipments. The rate averages used are compiled by the Interstate Commerce Commission. The shipments data are derived from official trade statistics recorded by the Dominion of Canada and, for Mexican trade, from the official trade statistics of the United States.
Rail traffic payments by the United States comprise operating expenses in Canada of the United States railroads operating in that country, as well as payments to Canadian railroads for hauling United States freight in transit through Canada. The item of operating expenses, like the corresponding revenue considered under (1) above, is reported directly by the carriers. A rough allowance for Canadian railroad freight revenues from the United States is based on railroad enterprise data reported to the Canadian Government.

## Other transportation

Ship charter transactions between United States and foreign shipping lines are evaluated on the basis of financial statements filed by the United States lines with the Maritime Administration and reports to the Office of Business Economics. The estimates for Great Lakes shipping represent freight revenues and expenditures only; passenger fares on the Lakes are included with travel receipts and payments, which are described below. Average freight rates on the principal commodities, furnished by the Lake Carriers' Association of Cleveland, are multiplied by commodity tomage data taken from the official statistics of the United States and the Dominion of Canada. Foreign mail earnings accruing to United States air carriers are determined from data reported by the carriers to the Civil Aeronautics Board, and estimates of ocean mail receipts are benchmarked on data reported to the Maritime Administration.

## Travel

Inbound and outbound ocean and airplane fares and expenditures on board ship have been considered above under the heading of transportation. All other payments made by nonresidents in connection with travel in the United States, or made by United States residents in connection with travel abroad, are included under the heading of travel.
All foreign visitors' travel expenses in the United States are considered to be foreign purchases from United States business enterprises. American travel expenditures abroad, as well as the passage payments discussed above under Transportation, are allocated between business and personal outlays. For overseas travel, this allocation has been based on occasional sample studies of passport applications (on which the purpose of travel is stated). Information as to the purpose of travel to Canada or Mexico is obtained from the expenditure questionnaires.
The basic estimating formula, as in the case of passenger transportation, involves the multiplication of numbers of travelers by sample-based average expenditures per traveler. For these calculations, data on foreign visitors are cross-classified into cells by purpose of visit and country of last permanent residence, while data on United States travelers abroad are cross-classified according to means of transportation and region of the world visited. Further stratification is used where it is appropriate and feasible, as illustrated above in the discussion of ocean passenger transportation. Numbers of travelers are derived in general by adjusting data from immigration and emigration records. Expenditure averages are computed from questionnaires completed and returned by travelers upon 0 after completion of their trips. For estimating purposes, foreign travel is divided into three major segments: overseas, Canadian, and Mexican. Each of these will be considered in turn.

## Overseas

Overseas travel by United States residents accounted for about 35 percent of United States payments for travel in 1947, and United States travel by visitors from overseas accounted for about 42 percent of United States receipts under this heading.
Basic data on numbers of travelers from the records of the United States Immigration and Naturalization Service are adjusted to exclude travel between the United States and Mexico and Canada (other than travel through Canada enroute between the United States and overseas areas). In addition, the data for citizens' travel are adjusted to exclude estimated travel by Govemment employees and by residents working abroad for foreign employers or for foreign branches or subsidiaries of American frms; and the alien resident travel data are adjusted to reflect the de facto breakdown between temporary visits and migration. Immigrants are considered United States residents from the time of their admission into this country, while emigrants are treated as United States residents until they are admitted into a foreign country.
The data from which average expenditures of United States travelers are calculated are received by mail from a sample of returning residents, to whom questionnaires are distributed by mail or through Immigration Service officers at the port of entry. The possibility of bias due to failure of some travelers to complete and return their questionnaires was checked in 1948 and 1949, by comparing questionnaire results with conceptually comparable results obtained from interviews with a random sample of residents arriving at the Port of New York; this check disclosed no statistically significant bias in the results of the questionnaire sampling. However, expenditures do vary widely among individual travelers, and the possibility of significant sampling error must therefore be recognized when conclusions are drawn from the travel estimates.
Average expenditures of overseas visitors to the United States are likewise estimated from questionnaire data. Alien visitors receive questionnaire mailing cards (printed in English, Spanish,
and French) from inspectors of the Immigration and Naturalization Service at the time of their arrival in the United States. They are asked to complete and mail the questionnaires shortly before their departure from this country.

## Canada

Travel in the United States by Canadian residents accounted for about 45 percent of United States receipts from foreign travelers in 1947. The estimates are made by the Dominion Government, using methods similar to those described above in connection with overseas travel of United States residents.

United States residents' average expenditures for travel in Canada are determined from sample questionnaire data gathered by the United States Department of Commerce from United States residents returning from Canada by rail, boat, plane, or longdistance bus, and sample questionnaire data gathered by the Dominion Government from visitors entering by other means of transportation, chiefly automobiles. The data on numbers of travelers, which are collected by the Canadian authorities, are adjusted in several respects. In particular, a deduction is made for passengers in direct transit through Canada from one point in the United States to another.

## Mexico

The Bank of Mexico and the Office of Business Economics cooperate in estimating the expenditures of travelers between the United States and Mexico. Border travel and travel to the interior of each country are estimated separately. Border travel payments by the United States are made partly in pesos, partly in dollars which subsequently return to this country via nonbanking channels, and partly in dollars subsequently deposited with United States banks by their Mexican correspondents and others. Current data on the third type of transaction are raised to full coverage by use of ratios derived from a 1945 survey of banks, exchange dealers, businessmen, and customs officials in border towns. Border travel receipts by the United States are estimated by parallel methods.

United States receipts from Mexicans traveling to the interior of this country are estimated from questionnaire data. Each Mexican resident legally entering the United States for a stay of more than 24 hours or for a destination beyond the border area is handed a questionnaire by the United States immigration inspector, to be filled in shortly before the Mexican resident leaves this country. The number of questionnaires distributed provides a basis for estimating the number of persons entering, and average expenditures are calculated from the completed questionnaires returned.

Data on the number of United States citizens traveling to the interior of Mexico are collected by the Mexican Government. Average expenditures per traveler in recent years have been determined largely on the basis of occasional questionnaire sample surveys by the Mexican Government or by the Bank of Mexico.

## Miscellaneous services

Estimates of the miscellaneous service transactions to which the United States Government is a party are based on information supplied to the Office of Business Economics by the responsible Federal agencies. These transactions include (1) purchases and sales by the Department of Defense and other administrative agencies, (2) purchases and sales by the Post Office Department and other government enterprises classified, for national income purposes, in the business sector of the United States economy, and (3) personal expenditures of military and civilian employees of the United States Government abroad, which are treated as sales to United States persons. Purchases under (1) include certain items not obviously classifiable under this head: real property bought abroad for government use, and expenditures connected with official travel, as well as United States current payments to international organizations (such as the United Nations) of a character other than purely humanitarian. Item (3) is derived from the total re-
ported disbursements to employees in foreign countries by deducting such employees' personal remittances through Army Post Offices and Army Finance Offices, their cash purchases of war bonds, and net proceeds of Army Post Exchanges and Navy ship stores.

Miscellaneous service receipts and payments not involving the United States Government are estimated from a variety of materials. They include: (1) Insurance; (2) royalties, home office expenses and related items; (3) motion picture rentals; (4) etectric power transactions; (5) international communication charges; and (6) foreign representation in the United States. Except for the labor cost element in (6) which has been discussed above under the heading of factor income, all of these are treated as purchases from or sales to United States business.
(1) Insurance receipts by the United States consist chiefly of reinsurance claims paid by foreign companies, and payments consist chiefly of premiums for such reinsurance. The estimates are based partly on a 1949 questionnaire survey of United States companies and partly on annual reports filed by these companies with their State governments.
(2) United States receipts of royalties and related items are estimated largely from questionnaire returns showing United States companies' receipts from their foreign branches and subsidiaries, which are expanded by the ratio of total direct investment income from abroad to the sample companies' direct investment income from abroad. Royalties from independent licencees in most foreign countries are necessarily omitted, in the absence of data on these. United States payments of royalties and related items to foreign countries are estimated from tax return and questionnaire data by methods generally analogous to those described above for taxable interest.
(3) Motion picture rentals received by United States companies are estimated by reference to the 1942 benchmark provided by the Treasury Department's Census of American-Owned Assets in Foreign Countries, which has been extrapolated chiefly by questionnaire data from the companies.
(4) United States exports and imports of electric power are reported annually to the Federal Power Commission by United States electric utility corporations.
(5) International cable, radio and telephone companies furnish the Office of Business Economics with data on their receipts and payments.
(6) The item of foreign representation covers the administrative expenditures of foreign governments and international organizations in the United States. Disbursements for real property are included. The estimates for foreign governments are based on rather inadequate sample information, as is indicated above. The figures for international organizations, which since 1945 have made up an important part of the total, are derived from published fiscal reports or obtained directly from the fiscal officers of these organizations.

## Unilateral transfers

Cash gifts to foreign countries by United States persons and the United States Government are included in table 11 of Part V with sales by the rest of the world to persons and government respectively.

Personal remittances from the United States (included in table 11 of Part V in sales to United States persons) are estimated on the basis of reports from a very large proportion of the banks and other institutions handling such remittances. The bank-reported figures are expanded by use of ratios based on Treasury experience with wartime Foreign Funds Control, and added to totals for postal money order business reported by the Post Office Department. Since no allowance is made for currency sent out through the mails, or remittances in the form of personal checks or other domestic instruments which may be cashed abroad, the estimates may well be too low. On the other hand, some of the postal money orders
and some of the transactions reported by the banks as personal remittances may actually represent commercial payments.

During the war and postwar years, deductions from the wages of imported alien workers for remittance to their banks or relatives at home have also been included, using data or estimates from the Departments of Agriculture and Labor and other agencies.
Institutional remittances, which are also treated as sales to the personal sector of the United States economy, are estimated chiefly from replies to an annual questionnaire, response to which has been substantially complete in recent years.

Foreign purchases from United States persons as shown in table 11 include personal remittances from abroad. These are estimated from data on post office money orders from each foreign area, by use of raising ratios based on the proportion of money orders in total remittances sent to that area.

Unilateral cash transfers from the United States Government to foreign countries are entered in table 11 as sales to the Govermment; transfers to the United States Government from abroad, as purchases from the Government. Both are determined from the official records of the Federal agencies involved. Such transfers to abroad include United States contributions to international organizations of a purely humanitarian character and pensions and claim payments to nonresidents of the United States, as well as disbursements under foreign aid programs. The transfers from abroad include cash lend-lease settlements and special currency supplied to United States Government agencies by occupied countries without cost to the United States Treasury.

## 13.-GOVERNMENT RECEIPTS AND EXPENDITURES

The annual estimates of the government receipt and expenditure components of the income and product flow are based primarily upon budgetary statistics of the various governmental entities in the United States. The availability of such statistics permits a generally high standard of reliability of the estimates. (See tables 8 and 9 in Part V for a presentation of them in the form of a comprehensive statement of government receipts and expenditures.) However, accuracy is impaired to some extent by two broad limitations of the basic budgetary data. They are incomplete for most years with respect to governmental units covered; and they are inadequate for all years-from the standpoint of national income accounting-with respect to types of transactions identified. Appreciable possibilities of error are inherent in the techniques employed to overcome these shortcomings.
Even in the case of the Federal Government, where financial reporting of most (but not all) activities is channeled through a central set of accounts maintained by the Treasury, the adaptation of budgetary data to the conceptual mold of the national income statistics presents numerous problems requiring the use of corollary information not susceptible to precise integration with the basic Treasury accounts and often less reliable than the latter.

For the 48 State governments, a somewhat less uniform, but still substantially complete, budgetary record is available for most years since 1929 from the compilations of the Governments Division of the Bureau of the Census. Modifications to fit the data into the national income framework are necessary in all years, however, and alternative sources and methods are required for the interval 1933-36, when the Census reports on State finances were sus: pended.

The Census Bureau also provides summary financial statistics with respect to some 150,000 units of local government. Comprehensive summary records for all levels of local government are available from the decennial Censuses of government (1932 and 1942). Only for cities with populations of 100,000 or more, how-
ever, are data available annually throughout the period since 1929 (although the lower size limit extends to 25,000 for years since 1942 and to 30,000 prior to 1932). County finance data are available for the period 1943-46, and for years since 1945 the Census Bureau has been publishing a report covering all local government revenues. But, with these exceptions, there are no intercensal compilations for the smaller cities, counties, school districts, or other minor local units.
In view of the incompleteness of the basic data, the entire range of local estimates for the intercensal years prior to 1942 is subject to the hazards of broad interpolation and extrapolation procedures, described below, which rely in part on supplementary information regarding the movements of major components of local government receipts and expenditures. For years subsequent to 1942, available Census reports are fully utilized insofar as they provide coverage, but there remain several gaps to be filled by extrapolations or interpolations based upon supplementary information or upon assumed analogies to trends in the units for which annual tabulations are available. In terms of dollar aggregates, the types of governments for which these improvisations are necessary (in all years after 1942 for expenditures, but only in 1943 and 1944 for receipts) account for well under half of the State and local totals and for a relatively inconsequential share of the grand totals for all levels of government.

## Adjustments for classification and timing

With regard to the Federal Government, to State governments except in the period 1933-36, to all local governments in decennial census years, and to certain types of local units or phases of local operations since 1942, the development of appropriate estimates for inclusion in the national income accounts is essentially a matter of classification and timing.
The classification problems are twofold. In the first place, since What is desired is in the nature of a consolidated current operating account, it is necessary to distinguish and exclude all government loans and other financial investments, repayments thereof, borrowing and debt retirement, and purchases or sales of land and existing depreciable assets, as well as certain charges and credits which represent mere intragovernmental transfers. Large amounts of receipts and expenditures in these categories are included in the basic budgetary statistics (especially for the Federal Government), but are not germane to the present United States national income accounts. It should be noted that the process of consolidation involves, besides the exclusion of intragovernmental transfers, the combination with the basic budgetary accounts of transactions of certain government trust and other funds not ordinarily reported as an integral part thereof.
Secondly, revenues and outlays must be subdivided among the receipt and expenditure classifications employed for national income purposes. Primary subdivision in each case is in terms of four major categories cutting to a large extent across the usual budgetary classifications. These are, for receipts: direct personal tax and nontax receipts, direct taxes on corporate income, indirect business tax and nontax accruals, and contributions for social insurance; and, for expenditures: purchases of goods and services, transfer payments, net interest paid, and subsidies less the current surplus of government enterprises.
In this phase of the classification, certain budgetary items are shifted, with appropriate change of algebraic sign, from the receipt to the expenditure side of the account (or vice versa). For example, interest income, operating revenues of government enterprises, and certain general government sales are netted out of various classes of expenditure, rather than recorded as receipts. Conversely, tax refunds, which until recently were reported by the Federal Treasury as budgetary expenditures, are netted out of tax receipts in the national income series.
$T_{0}$ a considerable extent, both phases of classification can be accomplished by reference to detailed components of the basic budgetary statistics. The latter, however, are inadequate at many
points. With regard to receipts, the principal difficulty is that of distinguishing, among classes of revenue which are homogencous for budgetary purposes, the respective amounts paid by businesses and by individuals as such. In connection with expenditures, trouble arises mainly because of the fact that budgetary statistics are almost invariably compiled on a functional or organizational basis, without utilizable object classification. For these and related reasons, many pertinent details must be gleaned from secondary sources-usually specialized individual agency records-which are not always fully compatible with the basic over-all accounting records. While a degree of error is undoubtedly introduced through this necessary reliance upon unintegrated source materials, the resultant impairment of accuracy is not believed, generally speaking, to be serious.

The timing problems involved in adapting standard budgetary data to national income purposes arise chiefly from the necessity of articulating government transactions with corresponding payments and receipts recorded for other sectors of the economy. Since the budgetary accounts are very largely on a cash basis, they must be modified whenever this record diverges widely from accrual records of the same transactions maintained by private business. Similarly, foreign transactions of the Government must be adjusted in some instances to conform to the timing reflected in the United States balance of international payments, and certain other budgetary charges have to be synchronized with corresponding components of the personal sector account.
With reference to receipts, the most important divergences of accrual from cash timing appear in connection with business taxes --especially those on corporate profits. On the expenditure side of the account, analogous divergences have arisen chiefly in wartime, from the lag between deliveries of goods to the Federal Government and Treasury checks in payment therefor, from Federal Government advances and prepayments on purchases, and from retroactive allowances for renegotiation of war contracts. These and other less significant reasons for modification of budgetary timing are discussed more fully later in this section.
A minor, but pervasive, timing problem is that of converting fiscal year data to a calendar year basis. For nearly all of the States, utilizable budgetary statistics are available only in terms of fiscal years, and calendar year estimates must be derived by interpolations of varying reliability. The same situation exists with respect to some detailed components of the Federal account. Except in the case of unusually spasmodic transactions, however, the errors resulting from even the crudest conversions of fiscal year data can scarcely be significant, and they tend, moreover, to cancel out over fairly short intervals. In many instances, relevant information (e. g., on the movement of a tax base or of a correlated expenditure series) is available to guide the interpolations; but in others, the expedient of allocations yielding smooth progressions is employed.

The dates upon which the fiscal years of local governments end are extremely diverse, and no attempt is made, either in the basic Census reports or in the national income estimates, to adjust them to a uniform basis. Since the average of these fiscal yearends is closer to December 31 than to June 30, the data are treated as if they covered calendar years. In general, the latter correspond to the nominal years of the Census reports, but the 1932 decennial census data, which differed in time reference from subsequent Census compilations, are allocated to calendar 1931.
More specific discussions of the estimates of government receipts and expenditures follow.

## Government Receipts

For the Federal Government, complete accounting records covering all the relevant receipts except corporate profits tax accruals in the two most recent years are readily available. With that one exception (discussed in the section on Corporate profits), difficulties arise only with respect to minor problems of classification.

For State governments, the Census financial reports (State Finences and predecessors) provide the basic data for all years except 10:3-36, when the Census reports were suspended. For this interval, chief reliance was placed upon Tax Yields, a publication of the Tax Institute of the University of Pennsylvania, compiled mainly from questionnaires sent to State tax officials.

With respect to local governments, there is a rather sharp dichotomy between the estimates for years prior to 1942 and those for subsequent years.

For the former period, the basic Census reports are extremely fragmentary, being confined in most years other than that of the decennial census to cities with populations of 100,000 or over. The only comprehensive coverage of local revenues in these intercensal years is provided by the estimates of the National Industrial Conference Board, which are based upon the available Census material, reports of tax commissions or similar agencies, correspondence with public officials, samples obtained by questionnaires, and a miscellany of other sources. While the National Industrial Conference board data are not presented in suitable detail for national income purposes, they can be used in conjunction with the decennial census breakdowns to establish generally adequate interpolations from 1932 through 1941, as well as extrapolations back to 1920.

Since 1945, the Census Bureau has undertaken comprehensive annual estimates of local revenues, based upon complete reporting for cities over 25,000 , upon local tax data obtained from State agencies, and upon sampling of numerous minor local units. Inasmuch as Census reports for 1943 and 1944 covered all counties, as well as cities having populations over 25,000 , the only serious gaps in the data since 1942 are for cities under 25,000 , school districts, special districts, and certain types of townships in the years 1043 and 1944. These gaps are readily filled through interpolations guided by trends in the smaller of the reported cities. The classification of aggregate local revenues as estimated by the Census Bureau for recent years still derives in part from detailed breakdowns available only in the last decennial census; but the provision of control totals through sampling of minor types of governmental units now precludes any likelihood of serious error in the national income estimates of government receipts (except perhaps for the latest year, before the Census figures are compiled).

While the State and local estimates (and particularly the latter) are much less certain than the Federal, they are believed to be adequate in general, both as to level and as to movement.

## Personal tax and nontax payments

By far the preponderant element of personal taxes for the last decade has been the Federal individual income tax. The monthly collections reports of the Bureau of Internal Revenue provide a direct record of these levies with the desired timing, except that the withholding tax component must be shifted back one quarter in order to reflect it as paid by individuals rather than as deposited by employers with the Treasury.

Federal estate and gift taxes are recorded directly as reported by the Bureau of Internal Revenue in its monthly collections statistics, as were the dividends tax and a proportion of the automobile use tax (representing the estimated share paid by individuals in a nonbusiness capacity) when operative. Personal nontax payments to the Federal Government, which include fines, penalties, forfeitures, and a variety of incidental charges, are based upon detailed analyses of miscellaneous receipts of the Treasury and of minor trust fund receipts, as reported in the annual Budget of the United States Government; fiscal year data on these items are converted to calendar year estimates ly interpolations yielding smooth progressions.

Personal tax refunds-netted out of receipts in the national income accounts at the time of payment-are based essentially on the Daily Treasury Statement. The latter reports them only in combination with other types of refunds (mostly of corporate
profits taxes), but the availability of detailed fiscal year breakdowns in Annual Reports of the Commissioner of Internal Revenue, in conjunction with the distinctive timing pattern for the preponderant individual income tax component, permits reasonably accurate estimates for all calendar years. For recent years, quarterly administrative records of the Bureau of Internal Revenue have virtually eliminated all uncertainty from these estimates.

State and local personal tax and nontax receipts are based primarily upon detailed analysis of available Census and other data on governmental finances. Difficulties in allocating given types of revenue as between persons and businesses, however, are frequently solved by reference to available corollary information; for example, Public Roads Administration statistics on registrations by type of vehicle are employed in allocating motor vehicle license taxes. Such corollary data are also employed in some cases as extrapolators in estimating yields for recent periods in advance of Census tabulations.

With respect to local governments, the necessity for sweeping interpolations-based upon National Industrial Conference Board data-of the pre-1942 revenue estimates has already been mentioned. The respective personal and business shares of several broad revenue categories so interpolated are based throughout the period upon allocations derived from decennial census breakdowns. Such allocations are also applied, although in somewhat greater detail, to local revenue estimates for years after 1942.

## Corporate profits tax accruals

These estimates are described in the section on Corporate profits.

## Indirect business tax and nontax accruals

For the Federal Government, these consist primarily of excise taxes, collections of which are reported monthly by the Bureau of Internal Revenue. An approximate conversion of the Bureau of Internal Revenue figures to an accrual basis is accomplished by shifting all excise tax collections except those on alcoholic beverages and tobacco (where revenue stamps must be purchased and affixed before sale) back by one month. Customs duties, as reported in the Daily Treasury Statement are similarly shifted, while collections of the capital stock tax (as reported by the Bureau of Internal Revenue) were moved back by 6 months during the period when it was effective. Federal indirect business nontaxes are based upon the same detailed analysis of Treasury miscellaneous receipts and minor trust fund receipts from which the personal nontax estimates are drawn. The classification here may be somewhat inexact, since exhaustive investigation of the dozens of petty items involved is not feasible; and the timing is somewhat arbitrary, since basic data are readily available only for fiscal years. Nevertheless, the general order of magnitude of the estimates is not believed to be seriously in doubt.

Refunds of indirect business taxes are netted out of the latter at the estimated time of initial overpayment, in accordance with the net accrual concept underlying the series. These refunds are derived as part of the more general refund analysis described above in connection with personal taxes.
The basic Census reports, supplemented primarily by Tax Yields statistics for the years $1933-36$, provide substantially full coverage of State indirect business taxes.

The major sales taxes which account for the bulk of State revenues are readily distinguishable, and involve no serious classification problems. In principle, these taxes should be recorded on an accrual basis for present purposes. Prior to 1942, however, the distinction between accruals and collections is ignored as inconsequential, and calendar year estimates represent simply two-year moving averages of fiscal year collections. For later years, partial cognizance is taken of the accrual principle through interpolation of calendar year estimates from fiscal-year collections totals by reference to independent series indicating the movement of the respective tax bases. The retail sales estimates of the Office of Business Economics (or appropriate components thereof) are used
for this purpose with respect to general, gasoline, and liquor sales taxes, as well as for extrapolating them beyond the latest period reported by Census. Monthly data from the Bureau of Internal Revenue on tax-paid withdrawals of tobacco products from registered factories or bonded warehouses are similarly utilized in connection with State sales taxes on tobacco.
Estimates of other State taxes and nontaxes are somewhat less satisfactorily founded. Some of them involve more or less dubious allocations as between persons and businesses, and most of them are arbitrarily timed (within the fixed fiscal-year totals) to yield smooth progressions. These circumstances, however, are not believed to preclude a generally satisfactory degree of reliability in the published estimates, since errors in the detailed calculations are likely to be at least partially offsetting.
The local indirect business tax estimates are still less solidly based. They are subject to the hazards arising from fragmentary reporting by the Census Bureau prior to 1945 (except in decennial census years) and from possible sampling exror thereafter with respect to all local units except cities over 25,000 . Particularly to be noted is the somewhat dubious nature of estimates for intercensal years prior to 1942, when they hinge in large measure upon the local revenue data compiled by the National Industrial Conference Board, which are not sufficiently detailed for this usage.
The classification of local revenues as between business and persons, even in recent years, depends to a considerable extent upon the use of ratios derivable only from the detailed decennial census breakdowns, or upon unverified assumptions about changes in such ratios. These classification problems, however, are minimized by the predominance in the local revenue structure of real property taxes, all of which are allocable to the indirect business category because of the treatment of home ownership as a business. This predominance of property taxes has a special bearing upon the reliability of the local indirect business tax estimates for the most recent year (published before the Census reports become available). Since no current economic series closely correlated with property tax yields is known, the latest estimate usually represents merely a judgmental extension of the previous trend, with rough allowance for the volume of new construction and the prevalence of rate revisions.

## Contributions for social insurance

These estimates are discussed in the sections on Supplements to wages and salaries and on Wages and salaries.

## Federal grants-in-aid

These do not appear in the consolidated government account, but become an element of Federal expenditures and of State and local receipts if the accounts are segregated. The series is described in general terms below, in connection with the derivation of estimates of Federal purchases, and its components are listed in footnote 15 to table 8 in Part V.

## Government Expenditures

The derivation of government expenditure data for the national income accounts centers upon the estimation of government purchases of goods and services. The method, in general, is to start with budgetary totals drawn in summary fashion from broad fiscal reports, then to make various additions to and deductions from these totals so as to achieve as residuals the desired purchases series. The alternative method of building up such a series item by item would be much more informative; but it is not statistically feasible, owing to the absence of satisfactory comprehensive sources of basic data classified by object of expenditure.
With purchases of goods and services established, other outlays within the national income framework-transfer payments, interest, grants-in-aid (for the separate Federal account), and subsidies (less the current surplus of government enterprises) -are added to complete the government expenditure account. In the main, these additions represent restoration (not necessarily with
the same timing) of many of the budgetary items deducted in estimating purchases. They also include, however, certain outlays from non-budgetary funds consolidated with the budgetary accounts for national income purposes.

The general approach sketched above is employed in deriving Federal expenditures throughout the period of the estimates, and is applied to State expenditures in all years except 1933-36, and except also in the most recent year (when Census tabulations are not yet available). These gaps are filled mainly by interpolations (discussed more fully below) based upon independent statistics covering major types of outlay.

With respect to local governments, the general method is fully applicable only to decennial census years. Estimates for all other years before 1942 represent interpolations or extrapolations similar to those utilized for State expenditures from 1933 through 1936. The City Finances data available for those years are discarded, since they cannot readily be integrated with estimates based on interpolating series covering all local units (although not all types of expenditure). Subsequent to 1942, available Census data on local expenditures are utilized, but the estimates for local units other than cities with populations of 25,000 or over (and also counties, prior to 1947) represent rough extrapolations from 1942 benchmarks.

## Purchases of goods and services-Federal

Exhibit 34 summarizes the derivation of estimates of Federal purchases for selected years. Attention may be called to the fact that the magnitude of the items entering the derivation varies widely from year to year, depending to a considerable extent upon the changing content of the initial budgetary expenditures. A brief description of sources and methods may conveniently be given in the form of annotations to this exhibit.

1. Total budgetary expenditures.-At least three major Federal fiscal reports-the annual Budget document, the Treasury's Combined Statement of Receipts, Expenditures, and Balances, and the Daily Statement of the United States Treasury-might be considered in choosing a point of departure for the estimates of Federal purchases. These three documents represent essentially the same accounting record (varying, from an over-all standpoint, only because of slightly divergent closing dates), but differ widely with regard to the type and arrangement of details reported. Although the Daily Treasury Statement is the least informative of the three in many respects, it is the only one available on other than a fiscal year basis, and has accordingly been adopted as the basic source of initial summary totals.
2. Transfers to trust accounts are reported directly in the Daily Statement, and do not have to be estimated. Some of them are purely bookkeeping transfers, to be eliminated from budgetary expenditures in the process of consolidating the various Treasury accounts, while others, although viewed as substantive expenditures, are given a different timing for national income purposes (see note to line 13, below).
3. Tax refunds, which are netted out of tax receipts in the national income accounts, must be eliminated from budgetary expenditures in those years when they were so classified by the Treasury. The Daily Statement provides a record of the amounts refunded.
4. General government loans, investments, and capital transfers are compiled partly from the Daily Statement itself (where separately identifiable in that document) and partly from the Budget document and from reports of individual lending agencies. In the two latter cases, the estimates doubtless diverge to some extent from the amounts implicit in the initial budgetary expenditure totals, but close approximation can usually be assured. Loans and investments of government enterprises are not included under the present heading, being treated separately in line 11.
5. Purchases of land and existing capital assets are estimated for some years on the basis of title clearance records of the Department of Justice, and for other years on the basis of obliga-
tions (not expenditure) data provided by the annual Budget document. In neither case do the estimates represent more than a rough order of magnitude (relatively small) for government acquisitions of goods neither currently produced nor coming out of business inventories or imports.
6. Budgetary trousfer payments, except for certain veterans' benefits, are not distinguishable in the Daily Statement from other outlays of the agencies involved. From administrative records of these arencies, however, most items under this heading can be ascertained with only minor timing discrepancies; in a few instances of reliance upon the Budget document, proportionately larger timing errors are probably present.

Exhilit 3.1.-Summary Derivation of Federal Government Purchases of Goods and Servires, Selected Calendar Years
[Millions of dollarev

| Itmm | 1913 | 1945 | 1047 |
| :---: | :---: | :---: | :---: |
| 1. Total bulpetary expenditures, ay reported in Daily Triasury shatement. | 88,08. | 90,5:32 | 41,543 |
| Lc: <br> 12 Tranafery to trust accounte | 47.4 | 1,787 | 2,064 |
| 3. Tatreluada. ... | 74 | 2,133 | 2.014 |
| 4. Gemeral government loans, investments, and capital transfers. | 31 | -5 | 5,544 |
| 8. lurchase of tandabiexiding eapitalasets | 87 | 74 |  |
| (i. Bhatary trasfer peymerats | 596 | 2,674 | 5,406 1,738 |
|  | 012 | 870 | 1,738 |
|  | 2.104 | 4,107 | 5,000 |
| 9. Subsidies (other than these paid by government | 607 | 338 | 382 |
| 10. Overpuyments enthbished hy renegotiation of war | 3.853 | 771 |  |
| 11. Budestary expenditures relating to covermment entorprises..... | 1,149 | 750 | 1,832 |
| Phas: |  |  |  |
|  | 2,987 128 | -686 1.434 | 777 |
| 14. Clame in net puableato private business | 800 | -1,100 |  |
| 15. Miscellateous other mjustments. | $-74$ | -262 | -657 |
| 16. Efunls: Pederal Government purchases of goods and services (gross) | 81,864 | 76,90.4 | 17,079 |
| 17. Less: Cowernment as | 6.41 | 2,158 | 1,295 |
| 15. Fefuals: Federal Goternment purchases of goods and wrotices (thet). | 81,223 | 74,790 | 15,784 |

7. Grants-in-aid to State and lccal goverwments are firmly founded, for fiscal years, upon special tabulations appearing in Anmual Reports of the Secretary of the Treasury or in the Budget. The calendar ycar timing of some of the largest grants (e. g., for Social Security and for highways) is specified either precisely or within very narrow limits (where reported in combination with relatively small associated administrative expenses) by the Daily Statement. Arbitrary interpolation is employed, however, in connection with a number of minor grant programs for which relevant monthly or quarterly data are not readily available.
8. Interest puyments, except for trivial amounts not associated with the public debt, are precisely reported in the Daily Statement.
9. Subsidies paid by general government agencies consist chiefly of soil conservation and other similar payments to farmers, which are reported monthly by the Bureau of Agricultural Economics on a basis not likely to diverge significantly from corresponding charges implicit in the Daily Statement. With respect to several small nonfarm subsidy programs, estimates are derived through interpolation of obligations data given in the Budget. It should be noted that all of the major wartime subsidies were paid by government enterprises, and hence are treated in line 11, rather than here.
10. Overpayments established by renegotiation of war contracts are deducted from budgetary expenditures in order to bring government purchases into line with related data on colporate profits and business sales, which are computed, for purposes of national income measurement, with retroactive allowance for renegotiation of war contracts. The estimates of gross recoveries from renegotiation, timed as of the dates of initial overpayments, are based upon data compiled by the War Contracts Price Adjustment Board.
11. Budgetary expenditures relating to government enterprises represent a combination of contributions by the general government to the capital of the enterprises and expenditures by the enterprises themselves (to the extent included in the budgetary totals). Most components of this series are reported directly in the Daily Statement, but several important segments are diawn, with varying degrees of precision, either from annual financial reports of individual government enterprises or from the Budget document.

With the present adjustment designed to eliminate all budgetary charges relating to government enterprises, there is then substituted (in line 12, below) an estimate of such of their transactions as are relevant to the measurement of government purchases of goods and services.
12. Capital formaticn of government enterprises consists of the gross acquisition of newly-produced fixed assets by these agencies, plus the net change in their inventories. Both components are based largely upon the business-type financial statements maintained by most government enterprises. In cases where such statements are lacking, the gap is filled somewhat less satisfactorily, through resort to relevant budgetary or administrative data.

In combination, the two adjustments listed in lines 11 and 12 have these principal effects: (1) To exclude from government purchases, in accordance with national income concepts, the lending and subsidy activities of government enterprises, as well as their net current operating expenses; and (2) to convert the record of their purchases of fixed assets and inventories (net) to an accrual basis.
13. Government contributions for social insurance, which are viewed as supplementary compensation of government employees, are equivalent to the shares of Federal civilian employee retirement funds and veterans' life insurance funds in transfers to trust accounts (line 2, above), except that the timing is modified and a deduction is made for a portion of the retirement fund contribution ascribable to covered government enterprise employees. (See section on Supplements to wages and salaries.) The latter item becomes an imputed operating expense of the enterprises in the calculation of their current surplus.
14. Change in net payables to private business, an adjustment aimed at articulating the record of government purchases with that of corresponding business sales, represents the net increase in Federal Government accounts payable to business, less the net increase in outstanding advances and prepayments by the Federal Government. Both sets of data are taken from Securities and Exchange Commission surveys of working capital of United States corporations, and are available only for the years 1940 through 1946 (although collection of similar data was resumed as of the end of 1950). The adjustment is ignored for other years, as is the failure of the data to cover noncorporate businesses.
15. Miscellaneous other adjustments embrace a wide variety of items. In general, they relate either to peculiarities of Treasury accounting practices or to the maintenance of consistency with other segments of the national income accounts. For example, certain sizable payments to United States personnel in Germany and Japan after World War II were made in the form of "military payments certificates". These were expensed by the Treasury on the basis of the issuance of the certificates to disbursing officers, but it is the timing (substantially different) of payments by the latter to employees which is relevant for present purposes. Or again, acquisitions of silver are debited by the Treasury directly to the general fund, rather than charged to budgetary expenditures; accordingly, an explicit addition to the latter is required to include silver in Government purchases.

The requisite data for items under the present heading are drawn from diverse sources, including the Daily Statement, the Budget document, the United States balance-of-payments statistics, and individual ageney records.
17. Government sales, which include all sales by general gov-
ernment agencies except those of fixed assets to domestic business, are estimated in two groups. Domestic sales are derived from the detailed breakdowns of miscellaneous receipts given in the Budget document, except for the peak years of World War II surplus property disposal, when data compiled by the War Assets Administration are the primary source. Because of classification difficulties, the reliability of these estimates is relatively low. Foreign sales, which include cash unilateral receipts from abroad, are taken directly from the official balance-of-payments statistics, thus assuring proper integration of the accounts regardless of accuracy in an absolute sense (although this, too, is probably much higher than in the case of domestic sales).

## Purchases of goods and services-State and local

The method of estimating State and local government purchases parallels, in years of full Census coverage, that employed for the Federal Government. Again, budgetary statistics constitute the foundation of the estimates and numerous adjustments in the direction of national income classification are required.

While these adjustments are less complex with respect to types of transactions covered, the derivation is in other ways more difficult because of the several types of governmental units to be dealt with and because of the necessity for rather tenuous statistical improvisations to fill in the gaps for intercensal periods.
For segments of the estimates depending directly upon the basic Census data (involving all non-Federal governmental units in decennial census years, States in most other years, cities of 25,000 or more since 1942, and counties from 1943 through 1946), the principal items to be excluded from total governmental expenditures as reported by the Census Bureau are debt service charges, intergovernmental transfers of various types, and transfer payments. The capital outlays of government enterprises, on the other hand, must usually be added, since public service enterprises are separately reported (for most years) in the Census tabulations. This is also true of a few other outlays from nonbudgetary funds. Data for most of the necessary adjustments are obtained from the same Census tabulations (or from unpublished details thereof) from which the control totals are drawn.
In interpolating or extrapolating from benchmark totals (as Well as in establishing, since 1942, the calendar year timing of series reported only by fiscal years), chief reliance has been placed upon the government payroll estimates of the National Income Division and upon the public construction estimates of the Construction Division (now Building Materials Division) of the Department of Commerce. Such outlays account in most years for about 75 percent of all State and local purchases.
Interpolations (or extrapolations) geared chiefly to these series (or components of them) are employed in estimating purchases for the following types of governmental units: States for the years 1933-36 (and for the most recent year, before compilation of the Census data); all local units during the interval between the 1932 and 1942 Censuses and prior to the former (as well as for the most recent year); counties after 1946; and cities with populations under 25,000 , townships, towns, school districts, and special districts after 1942.

In the pre-1942 interpolations, it is assumed that, except for new construction and a few other items, all purchases followed trends between the benchmark years (and back to 1929 in the case of local governments) corresponding to those of the respective State and local payroll series. With the estimates of payrolls and of purchases related to them, there are then combined the estimates of construction and other expenditures not assumed to have been so related. Among the latter, by far the most important were various types of purchases under programs supervised by the Federal Emergency Relief Administration. Estimates of these purchases are based upon the Final Statistical Report of the Federal Emergency Relief Administration: 1942, with due allowance for non-purchase items there included.

Extrapolations of local purchases after 1942 are undertaken separately for several groups of unreported governmental units, utilizing in each case the most nearly appropriate detailed components of the available payroll and construction series.

## Breakdowns of government purchases

In table 9 of Part V, govermment purchases are subdivided into compensation of employees, new construction, and other purchases from business (with a further distinction, for the Federal Government only, between net purchases from abroad and those from domestic business). The data used in effecting these breakdowns are to a considerable degree independent of those from which the estimates of total purchases of goods and services are derived.

The employee compensation figures-which cover only general government employees, since government enterprise payrolls are treated not as government purchases, but as operating expenses of the enterprises-are described in the section on Wages and salaries. The estimates of new public construction are those published by the Construction Division. (See section on New construction.) Net purchases from abroad, which include cash gifts of the Government to (and from) foreign countries, are taken from the official United States balance-of-payments statistics, as described in the section on Net foreign investment.
Deduction of the three series discussed in the foregoing paragraph from estimated total government purchases gives other purchases from business as a residual. Although clearly defined in principle, this item is peculiarly subject to statistical imperfections, owing to its absorption of whatever errors or inconsistencies may be present in the other series.
In table 2 of Part V, a different breakdown of Federal Government purchases-between war and nonwar activities-is given for the years 1939-46. This classification conforms, in general, to the Daily Treasury Statement classification of general and special account expenditures for this period. War purchases include also that part of the capital formation of government enterprises which is attributable to their war activities. Government contributions to the National Service Life Insurance Fund are classified as war; all other government contributions for social insurance as nonwar.

## Transfer payments

The derivation of these figures, for all levels of government, is described in the section on Transfer payments. It should be noted that the totals carried under this heading substantially exceed the amounts of transfer payments deducted from budgetary expenditures in estimating purchases, since transfer payments charged against non-budgetary trust funds (and in two cases against the Federal public debt accounts) are included.

## Net interest paid by government

This series is explained in the section on Interest.

## Sulsidies less current surplus of government enterprises

This item consists of the Federal general government subsidies described in the discussion of Exhibit 34 above, plus the operating deficit or minus the operating surplus of both Federal and State and local government enterprises.

For the Federal Government, the enterprise surplus is based primarily upon the business-type profit and loss statements of Federal corporations, modified to exclude capital gains or losses, interest income or expense (which is consolidated with general goverment interest), and depreciation charges (which are not recognized for national income purposes in connection with gov-ernment-owned assets), and to include as an expense an imputed share of the government contribution to employee retirement funds. For a few Federal enterprises not actually organized as corporations, it is necessary to construct business-type financial statements from available budgetary data.
It may be noted that direct subsidies paid by Government cor-
porations are included as operating expenses in their profit and loss statements. The combination of operating deficits of enterprises with direct subsidies thus has the merit of statistical expediency, in addition to its more basic purpose of achieving parallel treatment for all subsidy programs, whether accomplished through direct payments or through the deliberate incurrence of losses on purchase and sale operations.

The State and local enterprise surplus is calculated (with similar modifications) from the summary operating statements of public service enterprises compiled by the Census Bureau as a supplementary feature of its Government Finances series. Since the census tabulations cover some types of enterprises only in decennial census years, the estimates for other periods represent rough interpolations or extrapolations based upon the most relevant data available.

For a list of Federal Government enterprises and major types of State and local enterprises, see footnotes to the table on industrial classification in the Introduction to this Part.

## Il grants-in-aid to State and local governments

discussion of "Government receipts" above.)

## Characteristics of Revisions

## … $2 l$ Government

Nearly all of the basic data underlying the Federal Government : estimates become available within a few weeks or months after the close of any calendar year. The only important exception is in the case of corporate profits tax accruals, which for the two most recent years are extrapolated from the latest Statistics of Income year, as explained in the section on Corporate profits.

For a number of minor items, such as nontax revenues and numerous detailed elements in the derivation of Federal purchases, reliance upon the Budget document and other fiscal year reports has the effect of leaving the figures for the latter half of the latest calendar year on a tentative basis at the time full annual estimates are first prepared. By and large, however, the revisions eventually arising from substitution of more definitive data in these areas tend to be trivial.

## State governments

The Census reports from which State government receipts and expenditures are chiefly derived are ordinarily available for a fiscal year ending (for most States) on June 30 of the latest calendar year covered by the national income estimates. Only for the latter half of that year, therefore, are the estimates completely dependent upon rough extrapolating procedures. Moreover, the proportions of expenditures covered by currently available payroll and construction series, and of receipts fairly closely correlated with current retail sales data, are such as to insure against errors of large magnitude.

## Local governments

It is at the local level that divergences between preliminary and final results are likely to be widest. Fundamentally, of course, all of the local estimates are preliminary for all years after 1942, and will not be solidly pegged again until the results of the decennial Census of Governments planned for 1952 become available.
There is a considerable difference in the probable margins of error, however, as between the estimates of receipts and those of expenditures. The former are currently based upon much more nearly comprehensive coverage than the latter, and may be expected to change correspondingly less, at least in the aggregate, when linked to the new decennial census benchmarks.

There is also a distinction, as to degree of tentativeness, between the local estimates for the most recent year and those for other years after 1942. Because of delays in reporting, the latest year's figures must be prepared without benefit of any of the
basic Census compilations. This is perhaps more hazardous in the case of receipts than in that of expenditures, since current payroll and construction data provide a guide for the latter, while no current economic indicator closely correlated with the preponderant property tax component of local revenues is known to exist.

## 14.-TRANSFER PAYMENTS

Accurate information on nearly all types of government transfer payments has been available for years since 1933 from the fiscal records of agencies administering the payments or from such summary sources as the Daily Treasury Statement and Budget of the United States Government. For years prior to 1933, the State and local series are not so precise and the government totals for this period are accordingly less accurate.

Business transfer payments, on the other hand, are comprised largely of items for which statistical sources are weak. Considerable estimation is necessary to derive approximate orders of magnitude. Business transfers constituted only 6 percent of total transfers in 1947, but as much as 40 percent in 1929.

## Government Transfer Payments

## Federal Government

Except for several components of the "Other" category, as shown in table 36 in Part $V$ of this report, requisite data on Federal transfer payments have been available from Government sources. The data have required but little adjustment for use by the National Income Division. In some instances, data were reported for fiscal years and had to be converted to a calendar year basis; in others, payments to nonresidents of the continental United States had to be eliminated from available totals. In several component series, minor adjustments for timing discrepancies were required.

Reported, direct data have not been available for several items included in the "Other" grouping. This is true of the series on profits of ships' service stores for years prior to 1948. Magnitudes for these years were obtained by extrapolating the 1948 figure by strength of the naval forces. The series on Federal payments to nomprofit institutions may not, because of unavailability of data, be quite complete. Also, a few types of such payments must be derived by indirect methods. An example is furnished by payments to nonprofit educational institutions under veterans' training programs. Such payments are estimated by making an allocation of data on total expenditures, as reported by the Veterans Administration, to nonprofit schools, State and local government schools, and commercial schools. This is based on two types of periodic data for the several types of schools: Enrollment of veterans (from the Veterans Administration) and average tuition costs (from the Office of Education and the President's Committee on Higher Education).

## State and local government

For components forming in recent years over four-fifths of State and local transfer payments, data based on the fiscal records of disbursing agencies are available for years since 1933. The amounts of direct relief (special types of public assistance and general assistance) and of cash sickness compensation are provided by the Social Security Administration from reports made to it by State government agencies. The figures on bonuses to veterans of World War II are secured directly from the individual States making such disbursements.

State and local direct relief for the years 1939-32 was estimated by the National Income Division from the available partial data contained in the following publications: Summary of Relief and Federal Work Program Statistics, 1933-40, by T. E. Whiting and
T. J. Woofter; and Trends in Different Types of Public and Private Relief in Urban Areas, 1929-35, by E. A. Winslow. The estimates, at best, are approximate orders of magnitude.
The remaining types of State and local government transferspensions, veterans' aid, payments for the care of foster children in private family homes, and payments to nonprofit institutionshave required estimation for the entire period since 1929.
Estimates of State and local government pension payments for years subsequent to 1935 have been prepared'by the Social Security Administration by procedures described in the section on Supplements to wages and salaries in connection with employer contributions to State and local employee retirement systems. The total for 1936 from this source was extended back to 1929 by an extrapolating series utilizing available data (converted to a calendar year basis) on State and local pension payments. Data for States were reported for the fiscal years 1929-31 and 1937 in the Census Bureau's Financial Statistics of States and obtained for intervening years by straight-line interpolation. Data for local units were derived by extrapolating the 1941 value given in the Census Bureau's publication on Retirement Systems for State and Local Government Employées: 1941 by pension payments in cities of 100,000 and over, as provided in the annual Census reports on Financial Statistics of Cities.
State and local government aid to veterans (not including State bonuses to World War II veterans) has been estimated largely from data reported by the Census Bureau in its government financial statistics series. Consisting in large part of pensions paid in the Southern States to veterans of the Confederacy, the item amounted to $\$ 24$ million in 1929 and $\$ 11$ million in 1949.
The small amount of payments by State and local governments for the care of foster children in private homes has been estimated from periodic data of the Bureau of the Census, the Children's Bureau of the Department of Labor, and a few State welfare departments on the number of children cared for, and from data of the Children's Bureau on the average cost of foster home boarding in 10 urban areas in 1938, extrapolated to other years by the Bureau of Labor Statistics Consumers' Price Index.
Estimates of State and local government contributions to nonprofit institutions are derived by multiplying total contributions to such institutions (by individuals, corporations, and governments, as estimated from scattered, piecemeal data) by the estimated proportion of total receipts of nonprofit institutions obtained from State and local governments. This proportion is based on studies for a group of urban areas for 1938, 1940, and 1942 made by theChildren's Bureau.

## Business Transfer Payments

The only component of business transfer payments for which direct information is available is corporate gifts to nonprofit institutions. The estimates of the other components-consumer bad debts, personal injury payments by business other than to employees, unrecovered thefts from business of cash and capital assets, and cash prizes-must be derived from indirect and partial data.
Data on corporate gifts to nonprofit institutions (forming 36 percent of total business transfers in 1947) have been reported by the Bureau of Internal Revenue, beginning with 1936, in its Statistics of Income tabulations of corporate income tax returns. Pending the availability of Bureau of Internal Revenue data, the latest Bureau figure is held constant for the two most recent years of the published series. To obtain estimates for 1929~35; the 1936 figure was extrapolated by corporate gifts to social and welfare agencies, derived from rather fragmentary sample information.
Consumer bad debts ( 38 percent of business transfer payments in 1947) are estimated through an allocation of total bad debts (consumer and intra-business) by industry, as reported in Bureau of Internal Revenue tabulations of corporate and noncorporate income tax statistics. This allocation is a twofold one: (1) elimina-
tion, by assumption, of those industries in which consumer bad debts do not arise (or are very small), and (2) apportionment of the remaining total of bad debts, by industry, between consumers and business on the basis of sales, with sales to consumers being approximated from groupings of the personal consumption expenditure estimates, and business sales being derived as the difference between reported total sales and estimated consumer sales.
As in the case of corporate gifts to nomprofit institutions, the most recent estimate is held constant pending receipt of Bureau of Internal Revenue data. For the numerous years for which noncorporate bad debt data were not available from Bureau of Internal Revenue tabulations, estimates were made by industry by extrapolating the noncorporate ratio of bad debts to sales by the similar corporate ratio, and then applying the resulting ratios to estimated noncorporate sales.
Personal injury payments by business to persons other than employees ( $\$ 139$ million in 1947) are estimated as the sum of automobile liability payments for personal injury, payments by railroads, and miscellaneous liability payments.
The procedure of deriving automobile liability payments is to allocate total losses paid on automobile policies (reported by the Spectator Company) between business and individuals, and then to allocate estimated business losses between personal injury and property damage. The first allocation ( 30 percent to business in all years except 1942-45, when it was 50 percent) is the same as the one used in the apportionment of consumer and business expenditures for gasoline and oil. As described in the consumer expenditure notes, it is "thinly based". The basis for the second allocation was provided by the American Management Association's Insurance Series, Compulsory Automobile Insurance (\#24). The 80 percent allocation of business losses to personal injury payments derived for 1935 has been held constant over the whole period of the estimates.
Railroad personal injury payments to persons other than employees represent total payments to all persons, as reported by the Interstate Commerce Commission, minus the estimated amount of employees' benefit compensation (see notes on Supplements to wages and salaries). Miscellaneous liability payments-with virtually no data as a basis-are entered at $\$ 10$ million each year.

Unrecovered thefts from business of cash and capital assets are estimated from data on the value of currency and goods stolen and recovered contained in the annual publication Unifcrm Crime Reports of the United States of the Federal Bureau of Investigation. The business allocation is made on the basis of data on thefts by place of commission.
The figures on cash prizes included in the published data represent a token estimate of $\$ 25$ million annually.

## 15.-PERSONAL SAVING

Personal saving is obtained by subtracting personal consumption expenditures from disposable personal income. As the difference of these much larger totals, it is subject to large percentage errors in level as well as in movement, and it is necessary, therefore, to check the series for reasonableness against other available estimates. There are three other series that can be used for comparison.

The first of these is another residual estimate of personal saving that can be derived within the framework of the national income accounts, by deducting the various types of nonpersonal saving from investment and the government deficit. This alternative estimate of personal saving equals "personal saving" (obtained as the difference between disposable income and consumption) plus the "statistical discrepancy", as can be seen from table 5, Part V. It is not possible to say which of the two residual estimates is likely to be more reliable. However, they are to a considerable
extent statistically independent, and close correspondence between them-in other words, a small statistical discrepancy-constitutes strong, although by no means conclusive, evidence of their validity.

A second independent estimate of personal saving is provided by the Securities and Exchange Commission through direct estimates of changes of the assets and liabilities of persons. This estimate is published in table 6 , Part $V$ of this report. It may be noted that data deficiencies make the direct estimate of personal saving a hazardous procedure also. However, the availability of a series which is to a very large extent statistically independent of the two residual estimates of personal saving provides a useful check.

Finally, reference may be made to the saving data which become available as a part of the Federal Reserve Board's Survey of Consumer Finances. A conceptual and statistical reconciliation of this series with the Office of Business Economics estimates will be available shortly.

## 16.-CAPITAL CONSUMPTION ALLOWANCES

The bulk of capital consumption allowances in the national income and product tables represents charges for the depreciation, including obsolescence, of business fixed capital and for accidental damage to such capital, deducted in arriving at business net income. An insignificant amount represents the depreciation of fixed assets held by nonprofit institutions. Depletion is not included.

In general, the valuation of these charges reflects the type of accounting practices pursued under Bureau of Internal Revenue regulations. Estimates of farm depreciation are an exception to this rule. The Bureau of Agricultural Economics, the source of the farm income estimates, measures depreciation on the basis of replacement cost rather than original cost.

About one-third of total capital consumption allowances is taken directly from corporate accounting records for all but the two most recent years. With the improvement in coverage of income tax return data for partnerships and sole proprietorships, and with more frequent tabulation of such data, it has recently become possible to derive noncorporate components making up an additional 10 percent of the total from these materials. The remainder of the allowances is estimated on the basis of a wide variety of sources and methods, and some of them are subject to a wide margin of error.

Eahibit 35 gives a breakdown of capital consumption allowances in which segments based on distinct types of estimating methods are listed separately.

## Depreciation Charges

Estimates under this heading comprised more than 80 percent of all capital consumption allowances in 1947.


## Corporate business

Nearly half of all depreciation is on corporate property and is reported annually by the corporations. Federal income tax returns are the chief source of data. The totals compiled from the tax returns are increased by the addition of depreciation charged by Federal Reserve Banks, which is reported to the Federal Reserve Board.

A variation in the use of the tax return data was necessary in wartime, because of legislation affecting the length of useful life to be assumed in calculating depreciation of certain capital assets for tax purposes. The assets involved were facilities acquired after 1939 which had been certified to be necessary in the interest of national defense. Taxpayers were allowed, until the end of the war, to amortize their investments in such facilities over an assumed useful life of 60 months. Such emergency amortization allowances were reported in the tax return tabulations, and were included with depreciation for national income purposes.

However, subsequent legislation modified the assumption as to useful life, by permitting the taxpayers to recompute their amortization charges on such facilities retroactively in such a way that the cost of the facilities would all be charged off by September 30,1945 . The effect of such recomputation on emergency amortization allowances was estimated, and the adjusted allowances were then added to ordinary depreciation and deducted from profits.

The estimates were made by capitalizing the original emergency amortization allowances as reported, and decumulating to determine the amount of emergency investment made annually; each year's investment was then prorated forward over a period extending from the middle of that year through the third quarter of 1945. (The corresponding estimates for noncorporate business, made by applying to the corporate manufacturing adjustment a 1939 Manufactures Census ratio of noncorporate to corporate value of product, were extremely small.)

Pending the availability of tax return data for the latest two years, preliminary estimates of corporate depreciation are prepared by using data from various other sources as extrapolators. The main sources are the Federal Trade Commission-Securities and Exchange Commission figures for depreciation and depletion combined reported in the Quarterly Industrial Financial Report Series for manufacturing corporations; combined depreciation and depletion totals for large corporations in selected industries, compiled by the Federal Reserve Board from financial returns and used generally for nonmanufacturing other than public utilities and banks; Interstate Commerce Commission figures on depreciation charges for Class I railroads, interstate motor carriers, and oil pipeline companies; and similar compilations by the Federal Communications Commission, the Federal Power Commission, the Civil Aeronautics Board, and the Federal Deposit Insurance Corporation for the industries reporting to these agencies.

## Noncorporate nonfarm business, except real estate industry

For most noncorporate enterprises in each industry other than farming and real estate, depreciation is estimated as the amount reported on income tax returns, raised by the ratio of total gross receipts from business to gross receipts from business reported to the Bureau of Internal Revenue. The estimates of total gross receipts of noncorporate businesses are discussed in the section on the Income of unincorporated enterprises. The reported depreciation and receipts figures were taken from mandatory informational returns filed with the Bureau of Internal Revenue by business partnerships for 1939, 1945, and 1947 and from individual income tax returns filed by sole proprietors for 1945.
In the absence of information on depreciation for nonprofit organizations serving business, depreciation was assumed to bear the same relationship to operating receipts for these organizations as for partnerships or corporations in industries carrying on similar operations. Total operating receipts of nonprofit organizations serving business were estimated chiefiy from informational re-
turns filed by such organizations with the Bureau of Internal Revenue in 1943. The coverage of this source is known to have been incomplete in some categories; the amounts involved are generally small, however, and data for expanding them are generally not available.
Interpolation and extrapolation of the benchmark depreciation estimates have generally been accomplished for each industry or group of industries by use of the corporate depreciation series for that industry or group. In instances in which significant shifts in the legal form of organization occurred, the corporate depreciation series used as extrapolators were multiplied by the ratio of noncorporate to corporate sales.
The estimates for mutual savings banks and savings and loan associations represent minor exceptions to the general procedure just outlined. In these cases, annual compilations from financial reports to government regulatory agencies provide asset values and indicate the applicable depreciation rates.

## Farms

The estimates of depreciation on all farm property are prepared by the Bureau of Agricultural Economics, by methods outlined in the discussion of Income of unincorporated enterprises. Exhibit 35 shows under this heading only the portion chargeable to farm property owned by persons living on farms, which accounts for about one-third of all noncorporate depreciation. The portion chargeable to farm property owned by landlords living off farms is classified for national income purposes in the real estate industry. The farm estimates, unlike the other depreciation figures, represent depreciation of estimated stocks of capital valued at current prices rather than at original cost.

## Noncorporate real estate industry

In addition to the farm property component mentioned above, the item of noncorporate real estate depreciation shown in Exhibit 35 covers nonfarm real estate owned by persons and nonfarm property of unincorporated real estate firms. This nonfarm portion is estimated as the sum of two components: for owneroccupied nonfarm dwellings, as described in the section on Rental income of persons; and for other property, as the product of rentals on nonfarm noncorporate business and personal real estate holdings multiplied by ratios of depreciation to contract rent. The depreciation ratios used were computed from data on rental housing, and were accepted as applicable to nomresidential real estate after they had been compared with ratios based on tax return data for real estate partnerships in selected years. The basic series used are described in the section on Rental income of persons.

## Institutional depreciation

The minor item of institutional depreciation charges relates to nonprofit organizations furnishing services primarily to individuals -nonprofit hospitals, nonprofit schools, religious organizations, and a variety of other organizations such as social and welfare agencies, fraternal societies, charitable organizations, labor unions, foundations and funds, civic leagues, and social and athletic clubs. The total is derived by summing component estimates, and is included in the amounts shown in Part $V$ of this report under the heading of depreciation allowances by private business.
The largest components are for nonprofit hospitals, nonprofit schools, and religious organizations. In each of these cases, depreciation rates are applied to estimates of the value of depreciable property. Such value estimates were based, for hospital buildings and equipment, on the 1935 Census of Hospitals and a 1944 tabulation by the Journal of the American Medical Association; for buildings and equipment of educational institutions, on reports compiled in the Biennial Survey of Education; and for religious edifices, on the 1926 and 1936 Censuses of Religious Bodies. Values for each group for the missing years are obtained by straight-line
interpolation and extrapolation. The depreciation rates for hospital buildings and equipment were estimates for the Conmitte on the Costs of Medical Care (C. R. Rorem, The Public's Investment in Hospitals, University of Chicago Press, 1930). That for buildings was applied also to the value of educational buildings, and the hospital building and equipment depreciation rates were modified downward for application to religious buildings and educational institution equipment, respectively.

Estimates for the other types of nonprofit institutions were generally based on informational returns filed for 1943 with the Bureau of Internal Revenue. These returns indicated the nonprofit organizations' gross receipts from business, which were multiplied by the ratios of depreciation charges to gross receipts reported by partnerships in industries carrying on similar operations. Most of the resulting totals are extrapolated either by total corporate depreciation in similar industries or by such indicators as consumer expenditures for related services, although in a few minor cases it has been necessary to move them arbitrarily.

## Capital Outlays Charged to Current Expense

Business purchases of certain types of capital goods, instead of being amortized through depreciation allowances in the purchasers' books, are customarily charged off as current expense. The estimated amounts of such purchases are included in capital consumption in lieu of an allowance for depreciation on these types of capital equipment. This treatment is consistent with the inclusion, in the gross private domestic investment component of gross national product, of all types of producers' goods having a normal useful life of three years or more, irrespective of the manner of accounting for their purchase.
The estimates of capital outlays charged to current expense are prepared in two sections: drilling and development costs of oil and gas wells, which are included in the new construction component of gross private domestic investment; and purchases of producers' durable goods charged to current account, including tools, dies, durable containers, etc.

## Oil and gas well drilling

It is believed that, except for the cost of casings, expenditures for oil and gas well drilling are charged to current expense by almost all companies. These expenditures are described in the section on New construction.

## Producers' durable equipment

Business accounting practice with respect to charges for tools and similar items of small unit cost varies from item to item and from firm to firm. Data on the actual distribution of charges between current and capital account are not available. It may be supposed, however, that most firms charge most such items to current account, simply for reasons of bookkeeping economy. In preparing the estimates, the further assumption is made that the occasional cases of depreciation accounting for small items are offset by occasional cases in which larger items are charged off to expense. The total charged to current expense is thus estimated in terms of the total value of certain selected items believed to be customarily accounted for in this fashion. The results should be considered merely as rough approximations.
In general, the estimating procedure has been to select from the detailed commodity groups given in the Census of Manufactures those producers' durable goods which appear likely, from a general knowledge of accounting practice, to be charged to current expense. For each major group of producers' durable equipment, the census value of all commudities selected was divided by the total census value of all products in the major group. The ratios so derived for odd-numbered years of the 1929-39 period were interpolated to secure intercensal figures, and have been held constant at 1939 values for all succeeding years. The ratio series for each major group is applied to the annual estimates of the final value of business purchases of producers' durable goods in
that group, to derive annual estimates of such purchases charged to current expense.

Exhibit 36 shows the value of product allocated to the "current expense" category within each major group of producers' durables for 1939 and the ratios calculated for that year.

| Major zroup of producest durable equipment | Total value of produc: s | Value of products charged to current expense |  |
| :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Millions of } \\ \text { dolars } \end{gathered}$ | Milions of dollars | Percent of grous totals |
| Sipecial industry machinery | 405 | 10 | 3 |
| Metal working machinery- | 298 | 78 | 34 |
| Pumps not pumpine equipuent | 108 | 10 | 9 |
| Trofessional and se.tentite extupment | 80 65 | $\frac{29}{65}$ | 100 |
| Durabo container | 136 | 84 | 62 |
| Miscellanoms subsidiary durable equipment.- | - 282 | 257 | 91 |

## Accidental Damage To Fixed Capital

The estimates of accidental damage represent the value of fixed capital of private business lost annually due to fire, natural events, and other accidents not provided for by depreciation allowances. The coverage of this series corresponds generally to that of gross private domestic investment, particularly in its exclusion of public works and government and consumer durables. Since the investment series is net of loss due to accidental damage to inventories and also excludes repair work, inventory losses and reparable damage are excluded from the estimates of accidental damage.

Losses by fire account for about 60 percent of the total. The estimates are based chiefly on loss reports to insurance companies tabulated by the National Board of Fire Underwriters and the National Fire Protection Association, with an addition for losses not covered by insurance. Forest fire losses are estimated from damage reports filed by State Foresters and local representatives of the United States Forest Service.

The value of business motor vehicles destroyed by accident is estimated mainly from State and city police reports compiled by the National Safety Council; the value of ship losses, from mandatory reports by marine carriers to the United States Coast Guard and the United States Maritime Administration; and losses (excluding crop losses) from tornadoes, windstorms, and floods, from damage investigation reports by field offices of the Weather Bureau. Accident investigation reports to the Interstate Commerce Commission and to the Civil Aeronautics Administration and the Civil Aeronautics Board have been used in estimating the value of damage to railway equipment and the value of business aircraft destroyed.

In most of these cases, the accuracy of the estimates is impaired by the necessity either of adjusting reported values to exclude reparable or nonbusiness losses or of multiplying reported physical unit losses by value averages from other sources to obtain the final aggregates.

## Characteristics of Revisions

Estimates of corporate depreciation are based on interim data for the two most recent years, and have been subject to substantial revisions as corporate income tax tabulations became available. Revisions in some of the nonfarm business components of noncorporate depreciation have been even larger, percentagewise, reflecting heavier reliance upon extrapolation procedures as well as a lack of appropriate extrapolating series. Revisions in farm depreciation were also substantial in some years. It is hoped that recent improvements in the corporate extrapolating series and in the availability of the basic noncorporate tax return data will enhance the reliability of the nonfarm depreciation estimates.

It may be noted that the absence of major revisions in the largest component of noncorporate depreciation shown in Exhibit 35 -noncorporate real estate-reflects a lack of benchmark data, and cannot be taken as evidence of reliability. A similar comment applies to capital outlays charged to current expense and to the series on accidental damage.

# Gross National Product in Constant Dollars, 1929-50 

This part of the report presents annual estimates of the gross national product in constant (1939) dollars for the period 1929-50. These estimates are the results of an Office of Business Economics study in which con-stant-dollar gross national product totals are being built up through price deflation of the detailed components of the published current dollar series. To obtain the estimates presented here, the completed portions of this study were drawn together and shortcut estimating procedures were adopted for segments on which work is still in progress.

## Need for constant-dollar gross national product

Until recently, the estimates of gross national product published by the Office of Business Economics were stated only in terms of current dollars. In times of changing prices, however, many uses of the statistics require the separation of the price and volume factors underlying the current dollar estimates. For some purposes, the current dollar data cease to be relevant, as in studies of real output and of productivity. For others, they need to be supplemented by constant dollar data, as in analyses of inflationary processes. In the current economic situation, in which questions relating both to the production potential and to inflation loom large, constant dollar data on the volume of production are of unusual relevance and value.
This consideration, together with the fact that the basic deflation study was sufficiently advanced to permit the derivation of reasonably reliable estimates, underlay the decision to publish summary totals. ${ }^{\text {² }}$ The final estimates of gross national product in constant dollars will include additional statistical detail and will be accompanied by a full explanation of their conceptual and statistical bases. The present report is limited mainly to a discussion of the considerations that are most essential to the use of the interim data.

## Characteristics of Constant-Dollar Gross National Product

The constant dollar data have the same scope as the current-dollar gross national product described in earlier parts of this report. Moreover, the two magnitudes are closely related in statistical estimation. In general, the constant dollar series are derived by dividing the current dollar estimates, in as fine a product breakdown as possible, by appropriate price indexes based on 1939 as 100 , in order to eliminate from the current dollar estimates all price change as compared with 1939. The statistical sources and methods used in this price deflation procedure are explained below. Certain major features of the deflated dollar data will be summarized first. In this

[^28]connection reference will be made to the general characteristics of volume series based upon the direct measurement of physical units, with which the deflated gross national product is likely to be compared.


## A comprehensive measure of real output

The constant-dollar gross national product is a comprehensive measure of the real volume of national production, including not only the manufacturing industries, but also the extractive industries, construction, distribution, services, and government. Although estimates of production-usually based on direct volume measurement -are available for a large number of industries, gaps in our information about others have made it impossible so far to build up a production measure for the economy as a whole via such individual industry calculations. The constant-dollar gross national product fills the demand for such a measure. However, given the present statistical sources, only a very limited breakdown of the constant-dollar gross national product by sectors of production is possible. In more detailed types of analysis this series will have to be supplemented by the individual industry measures now available.

## Output measure free of duplication

A significant characteristic of the measurement of production in the gross product framework is that-in conformity with the definition of gross national product -the implied measure of output for each industry of the business sector is the output of that industry less its purchases of intermediate products. In most other measurements of production by industries, no such deduction for intermediate purchases is made. Output totals obtained by aggregating such industry measures will tend to overstate increases of output (and understate decreases) to the extent that the ratio of intermediate products to the total increases, and understate increases of outrut (and overstate decreases) to the extent that the ratio of intermediate products declines. The gross product mensurement of real output is free from this imperfection.

## Partial measurement of long-term quality improvements

In common with all other measures of the volume of production, constant-dollar gross national product cannot take full account of changes in the quality and type of products. The price indexes by the use of which constant-dollar gross national product is derived from the current dollar figures are sometimes adjusted to take account of quality and related changes in the products whose prices they measure. But quality change cannot, in general, be reduced to quantitative terms. In practice, the price indexes and the constant-dollar gross national product do not refect part of the secular quality improvement and of the emergence of superior products-factors which are characteristic of our economy.

## Short-run fluctuations in output overstated

Another point relevant to the interpretation of the measures here presented is that they overstate somewhat short-run fluctuations in output, because available price information understates effective short-run fluctuations in prices. The major factors in this connection are an incomplete accounting of short-run changes in premiums, discounts, and bargain sales. It may be noted that direct measurement of volumes is not subject to this imperfection.

Incomplete reflection of quality change may also be a factor working in the same direction, for instance, dur-
ing extreme sellers' markets associated with short supplies and inflationary demands. This shortcoming is common to both deflation and direct volume measurements.

## Output valued at constant market prices

In conformity with the definition of current-dollar gross national product, output is expressed at constant market prices. The alternative of expressing output at constant factor prices (that is, at market prices less indirect business taxes plus subsidies) was not used.

In regard to the practical reasons for this choice, the quantitative difference between the two measures of output would be negligible, since indirect business taxes and subsidies are not important in the United States price structure. The market price concept afforded a simpler and more accurate basis of statistical measurement, particularly in view of the degree of detail in which the results were desired. Available information refers to market prices of goods and services, and the detailed allocation of indirect taxes and subsidies that would be necessary to arrive at their factor prices is a complex statistical problem that cannot be solved accurately.

## Quality shifts and industrial shifts reflected as changes in output

The consistent valuation of output at constant prices by deflation procedures yields a series having two important characteristics.

If a shift occurs from a product of lower quality to a product of higher quality-relative quality being measured by relative price-the constant-dollar gross national product will register an increase. This is so because current values will have increased and there is no change in the prices which are used to deflate them. An opposite quality shift will have the opposite effect. In ordinary market conditions, this would seem to be a proper way of measuring real production.
Direct measures of physical volume should behave similarly, in principle. But in practice they do so only to the extent that separate volume series are maintained for products of different qualities and that these separate volume series are given differential weights in proportion to their relative values in the base period. The allowance that can be made for quality differentials in direct volume measurement is usually quite limited.

Another consequence of the systematic valuation of each component of gross national product at constant prices is that shifts of workers from industries in which gross product per unit of labor input is relatively low (high) to industries in which it is higher (lower) will lead to an increase (decrease) in the over-all measure of production even if no increase (decrease) in production occurs within the individual industries. This characteristic of constant-dollar gross national product should particularly be kept in mind in studies of productivity. Some measures of productivity are constructed to exclude the effects of such industry shifts in order to isolate the effects of technical changes as distinct from economic factors.

## Choice of 1939 market prices

Market prices of the year 1939 were used to value output. (A departure from the use of 1939 prices in the case of munitions purchases will be noted later.) The
choice of a particular set of prices as a basis of valuation is a matter of concern only to the extent that it influences the relative importance of the components of gross national product and the relative movements of the aggregates. Unless the various physical quantities or their relative prices all change in the same proportion, the use of prices of different years as the basis of valuation will result in different percentage movements of the composite series, and no unique measure of the change in real output is possible.
While theoretical considerations indicate that under these circumstances comprehensive output comparisons call for calculations in terms of the prices of each year to which the comparisons refer, the vast additional labor involved in constructing the full array of output series did not seem warranted. Various tests indicated that choice of market prices prevailing in other years as the basis of valuation would not, in general, have greatly affected the relative movements and proportions of gross national product and its major components.
However, these tests also suggested that the choice of the prices of a more recent year would have tended to reduce somewhat the indicated long-term growth in gross national product. The reason for this is that the products whose output expands most tend to be the ones that decline in relative price. Hence, they receive a smaller weight in the total if recent year market prices are used to value output.
Prices of 1939 were chosen primarily because the use of the prices of a more recent year, for which statistical information is still tentative, as the basis of valuation might have necessitated frequent revisions in the entire constant dollar series. However, the basic data are equally well adapted for calculating national output in terms of the prices of any other year of the 1929-50 period. Publication of the full detail of the product breakdown of deflated gross national product will, in conjunction with current dollar information, provide the users of the data with all the information necessary for undertaking such calculations.
It should be emphasized that to the very considerable extent that the relative movements and composition of the constant-dollar gross national product series are unaffected by the choice of the particular set of constant prices in which they are expressed, that choice is really a matter of indifference. For it is only percentage relations that matter. In themselves, the absolute levels of the dollar magnitudes have no significance.

## Statistical Sources and Methods

## General deflation procedure

As already stated, the general statistical procedure for obtaining constant-dollar gross national product is to divide the current dollar estimates, in as fine a product detail as possible, by appropriate price indexes based on 1939 as 100 , in order to eliminate from the current dollar estimates all price change as compared with 1939.
In most cases the information on prices is available in greater detail than the current dollar estimates. For instance, personal consumption expenditures for shoes and other footwear cannot be further broken down for all years in the current dollar estimates; but price indexes are available separately for an extensive list of footwear items. In situations such as these, the full information
on prices is utilized by combining the various indexes into composites and by dividing the current dollar series by them.

The weights given to the various indexes are usually proportionate to their relative importance in terms of expenditures for the products in 1939 or some other year for which detailed expenditure data are available. In many cases, the availability of industrial censuses for 1939 facilitates the estimation of detailed expenditure patterns for that year.

From the standpoint of deriving data in terms of constant prices of 1939, this procedure of assigning fixed weights to the price series is not strictly appropriate. Ideally, shifting weights, reflecting the expenditure patterns of the years for which current values are to be expressed in terms of 1939 prices, should be used. However, as has just been noted, this detail on current dollar expenditure patterns is lacking. The constant dollar estimates for the various components will be in error to the extent that price movements are disparate and current quantity expenditure patterns depart from the one used for weighting the individual price series.

Conclusive tests of the magnitude of the error cannot be made. They would require exactly the type of information for lack of which the statistical procedure being judged is adonted. However, relevant tests indicate that the error is likely, in general, to be negligible.

These tests are applied to series for which in all years the product detail of the current dollar estimates matches that of the price indexes. Deflated estimates derived by the correct procedure-in which separately deflated components are combined without committing a weighting error-are compared with estimates obtained by deflating the sum of the components by composite price indexes based on fixed weights.

Such comparisons show that differences are small even when the fixed weighting procedure is applied to fairly broad segments, and that they tend to become even smaller as the segment is narrowed. If this tendency carries through to the still narrower segments for which there is actual resort to price indexes with fixed weights, the resulting error must be unimportant.

In the following sections the major statistical sources and methods used in deriving the constant dollar components of gross national product are outlined.

## Personal consumption

The general procedure for deriving constant-dollar personal consumption expenditures for goods and services was to divide the current dollar estimates, in a detail sometimes finer than that of the published annual estimates, by price series that are components of the Consumers' Price Index of the Bureau of Labor Statistics and of the series on Prices Paid by Farmers of the Bureau of Agricultural Economics.

These two sets of prices were combined to give representation to prices paid by both urban and rural purchasers. It should be noted, however, that this procedure by no means secures complete representation of all major purchaser groups. For instance, the prices reflected in the Bureau of Labor Statistics Consumers' Price Index are those paid by moderate income families in large cities. Prices paid by other urban groups-families living in small cities and in towns, and families in low and in high income brackets, for instance-are not included.

Any differences in movement between these prices and those covered by the indexes lead to error in the deflation of the current dollar estimates of personal consumption by means of the indexes. To the extent, however, that differences in the cost of living of various groups are due merely to different consumption patterns-while the prices of similar goods and services are the same-no errors, of course, are introduced.

For the years 1942-47 an adjustment was made to the published price indexes for the fact that they did not take account of the full price increase that took place during and immediately after World War II. The basic study in which the techniques for making these adjustments were first developed is the "Report of the Technical Committee Appointed by the Chairman of the President's Committee on the Cost of Living, June 15, 1944."

For the types of commodities and services for which Bureau of Labor Statistics and Bureau of Agricultural Economics price series are not appropriate, a wide variety of sources was used. These included special price indexes computed by other agencies; price indexes derived from published price data, such as mail-order catalogues; price indexes constructed by adjusting information on costs to a price basis by allowing for changes in profit margins; and physical volume indexes, in instances in which this direct approach was superior to the price deflation approach.

Estimates for all components of personal consumption expenditures have not yet been completed with the degree of detail which is planned for the final estimates. The present estimates of personal consumption, in which the partial results of the longer-run study were rounded out by short-cut procedures, are likely to differ most from the final ones in the case of expenditures for services. This is the area in which statistical information is most deficient and in which most of the improvising was done.

## Investment

The deflated series on private new construction represents largely the constant dollar estimates of construction prepared by the Construction Division (now Building Materials Division) of the Department of Commerce. These estimates-a regularly published series-are obtained by dividing the components of the current dollar estimates of new construction by a detailed list of construction cost indexes, prepared by private and other Government agencies. These indexes are derived, in general, by pricing fixed lists of construction materials and labor.

Since the current dollar estimates of new construction are in terms of selling prices, their deflation by means of these indexes is not strictly appropriate. Their movement will vary from that of selling prices if there are changes in productivity and in profit margins.

It was not found possible to make an adjustment for productivity changes. However, a rough adjustment for changing profit margins was introduced. There is strong evidence that in the construction industry changes in profit margins and in productivity are inversely correlated during the business cycle. Hence the errors due to the neglect of profit margins and of productivity are additive, and adjustment for only one of these factors will make the indexes a closer approximation of changes in selling prices.

Bureau of Labor Statistics wholesale price indexes and Interstate Commerce Commission price indexes were
the major data used for deflating producers' purchases of durable equipment, in a product detail which went somewhat beyond that in which the estimates have been published for the years 1929-45. Further breakdowns were estimated, for deflation purposes, in instances in which there were indications that the alternative procedure of dividing broader current dollar components by fixed-weighted composite price indexes might yield significantly erroneous results.

Whenever composite price indexes were used, the weights for combining their components were as far as possible based on 1939 product values, derived mainly from the 1939 Census of Manufactures. For price series used for products for which values were not enumerated separately in the census, and for composite price indexes that could not be broken down further, the weights underlying the Bureau of Labor Statistics and Interstate Commerce Commission composites were accepted. The information from these two agencies was supplemented by price indexes compiled by other agencies or constructed from mail-order catalogs and other published sources of price data.

The deflated estimates of net change in nonfarm business inventories were derived in the process of estimating the inventory component of the current-dollar gross national product series. This process consisted of converting year-end book values of inventories into a series expressed in 1939 dollars; taking the difference of these results; and multiplying the increments by the ratio of current prices to base year prices. The required constant dollar series was available directly from the second step.

Bureau of Labor Statistics wholesale price indexes were the principal source of price information used for deflation of the book value inventory data. In general, the inventories of each industry listed in the annual industrial breakdown of the national income were deflated separately. Total inventories for each industry were deflated by composites of price indexes appropriate to the industry. The indexes were weighted, as far as possible, by the relative importance in 1939 of the principal types of inventory goods represented by the indexes. The inventory data used for weights were derived mainly from the 1939 industrial censuses. In instances in which relative inventory weights could not be ascertained, Bureau of Labor Statistics weights (based on sales) were employed.

Year-end book values of inventories reflect the prices prevailing at various points of time. The exact time pattern reflected depends on the methods of inventory accounting used and on the rate of turnover of goods. Accordingly, the price indexes had to be appropriately lagged before being used to deflate the year-end book value of inventories. These lags were estimated on the basis of available sample information on the methods of inventory accounting in the various industries and of turnover ratios computed from Census and Bureau of Internal Revenue information for 1939. (For a more detailed discussion of some of the aspects of inventory deflation, see Part III, section on Change in business inventories.)

In estimating the net change in farm inventories, quartity data furnished by the Bureau of Agricultural Economics on year-end stocks of crops and livestock were utilized. (See Part III, notes on Income of unincorporated enterprises.) The net changes in these physical stocks were valued at prices prevailing at the end of 1939 .

The net foreign investment component of gross na-
tional product was deflated by separately adjusting for price change the receipts and payments items in the current balance of payments, whose difference net foreign investment represents. The alternative procedure of deflating the net balance directly will be given consideration in the final report.
The deflators for merchandise exports and imports are the indexes of unit value prepared by the Office of International Trade of the Department of Commerce. The weighting procedures used in deriving these indexes are not strictly appropriate for purposes of expressing merchandise exports and imports in terms of 1939 dollars, but tests indicated that theoretically superior weighting procedures would not yield significantly different over-all results.
Statistical information for deflating the service items in the current balance of payments is deficient. Moreover, problems that do not even admit of a clear-cut theoretical solution are involved. Further work is planned on this segment, but it is not anticipated that revisions will be large, in absolute terms.

## Government purchases

The deflation of government purchases of goods and services was particularly difficult because information on the product breakdown of government purchases, as well as on the prices paid by government, is deficient. The task of deffating government purchases for World War II was further complicated by the fact that munitions of changing types and quality were acquired by the Federal Government in large amounts.

For purposes of deflation the current dollar breakdown of Federal Government purchases as published on an annual basis was supplemented by further detail in each of the categories listed-compensation of employees, net purchases from business, and net purchases from abroad. Compensation of employees was divided into military, civilian except work relief, and work relief wages; and supplements to wages and salaries were also broken down further, to the extent necessary for deflation. Construction was subdivided in the considerable detail in which the Commerce Construction Division estimates are available.

Other purchases from business were divided further by segregating net purchases of silver; the net change in the inventories of government enterprises; munitions expenditures, for years in which their size was significant; and rough groupings of the remaining purchases into the object classes used in the Federal budget. Within these object classes a fixed pattern of expendituresthe one prevailing in 1938-was assumed for all years for want of better information. Net purchases from abroad were also broken down further.
In general, the deflated Federal compensation of employees items are an extrapolation of the base year figures by man-hours wherever possible and by employment when man-hours were not available or appropriate, as for military service. It may be noted that this series and the corresponding one for State and local government measure the gross product originating in government, as shown in table $A$.
Deflated estimates of Federal construction represent the Construction Division's data, with the allowance for changing profit margins noted in the discussion of private construction. The volume of silver purchases was based on direct quantity data. The net change in the inventories of Federal Government enterprises was estimated for the Commodity Credit Corporation from quantity data, which were valued at 1939 prices, and for other enter-
prises by less satisfactory procedures involving the deflation of book values by lagged price-index composites.

The deflation of munitions purchases, which constituted a special problem, is described and evaluated below. The remaining types of Fedaral purchases from business were deflated by matching them with price series that appeared most nearly representative-largly selected from Bureau of Labor Statistics wholesale price data. The deflation of net purchases from abroad is subject to limitations similar to those noted for the services component of net foreign investment.

Further work is projected on the deflation of Federal Government purchases. Two aspects of this work should be distinguished. First, there will be refinements of the methodology just outlined. It is not likely that they will substantially modify the results. The additional information on the object breakdown of purchases and on the prices relevant to this breakdown which can be made available by further investigation is not likely to be large. Moreover, even considerable modifications in the object breakdown and in the price series used probably would not affect materially the over-all results. This judgment is based upon experimentation with alternative weighting systems and price series in connection with deflating government purchases and other components of gross national product.

The second aspect of the projected work relates to the treatment of munitions expenditures. Here the generalization just made does not apply. In this case experimentation has indicated that alternative methods of constructing a volume measure and alternative weights given to this measure would have a significant influence on constant-dollar gross national product.

In the measures presented in this report, munitions expenditures were deflated for the war years by a special index of mumitions prices based on series compiled by the War and Navy Departments. For the postwar years this index was not available, and an extension of it was made on the basis of price series that seemed most ap-propriate-selected mainly from those used for the deflation of producers' purchases of durable equipment.

The general procedure of expressing all volumes in 1939 prices was not followed. Relative munitions prices in 1939 were high as compared with later years, owing largely to the small scale and experimental state of munitions production. It seemed more reasonable to assign to munitions purchases a weight in proportion to their relative prices in 1944, by which year the prices of munitions reflected a lower relative cost pattern.

This method of deflating munitions expenditures appears to be the most satisfactory. However, the final estimates will be accompanied by a full discussion of alternatives and a presentation of their quantitative results. In view of the conceptual and statistical difficulties involved, such a discussion is essential for intensive use of the data; in the meantime, the movement shown by the series during the war period should be interpreted with caution.

The general procedure for deflating State and local government purchases of goods and services was similar to that adopted for Federal Government purchases. Changes in the employee compensation component of deflated purchases reflect the movement of employment. Deflated construction represents. Construction Division data, adjusted for changing profit margins. An estimate available for 1947 of the distribution of other purchases from business was applied in all years for lack of further information; and the current breakdown so obtained
was deflated by price series that seemed most nearly applicable, selected chiefly from Bureau of Labor Statistics wholesale price data. Further work is projected on this component of deflated gross national product also, but material modifications are not expected.

## Summary Talles

Table A summarizes the results of the deflation procedure which has been described. The "implicit price deflators" presented in table B are obtained by dividing the current dollar expenditure estimates (as shown in Part $V$, table 2 of this report) by the corresponding constant dollar series shown in table $A$.

In the price indexes so derived, price relatives receive shifting weights in proportion to expenditures incurred each year for the goods and services which they represent. This is in contrast to the more usual type of price index in which weights are based on constant expenditure patterns.

The latter type of price index can be interpreted as tracing the change in the tolal value of an identical list of physical goods and services over the period of time specified. The implicit deflators cannot be so interpreted. They trace the change in the value of the physical goods and services of any given year as compared with their value in the base year 1939. Thus, in comparisons not involving 1939, the movement of the implicit deflators
cannot be taken as a pure measure of the price change because it is affected by changes in product composition as well.

It may also be noted that it is not possible, strictly speaking, to obtain constant-dollar gross national product in prices of years other than 1939 by dividing the current dollar series by the implicit deflators with the base year shifted. What would be needed for that purpose are price indexes showing the value of the goods and services of any given year as compared with their value stated in the prices of the year in terms of which con-stant-dollar gross national product was to be expressed. However, for many practical purposes both of these points may be neglected.

The implicit deflators for the change in business inventories and net foreign investment are not shown. In the case of inventory change, the current and constant dollar figures often include components of opposite algebraic sign. In the case of net foreign investment, such components are always present, since net foreign investment is the difference between current receipts and payments in the balance of payments. Even small movements of prices, provided that they affect the positive and negative components dissimilarly, may cause large changes in the ratios of the current dollar to the constant dollar series, and disqualify these ratios from serving as indicators of price movement.

Table A.-Gross National Product or Expenditure in Constant Dollars, 1929-50 ${ }^{1}$
(Billions of 1939 dollars)

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gross national product. | 85.9 | 78.1 | 72.3 | 61.9 | 61.5 | 67.9 | 73.9 | 83.9 | 87.9 | 84.0 | 91.3 | 100.0 | 115.5 | 129.7 | 145.7 | 156.9 | 153.4 | 138.4 | 138.6 | 143.5 | 143. | 154.3 |
| Personal consumption expendilures | 62.2 | . 6 | 56.6 | 51 | 51.1 | 54.0 | 57 | 62.8 | 65.0 | 63.9 | . 5 | 71.3 | 76 | 75.8 | 78.0 | 81.1 | 86. | 95. | 98.3 | 100,3 | 102. | 108.7 |
| Durable goods. Nondurable cood | 8.00 | 27.7 | 27.5 | 25.2 | ${ }_{24}^{3.8}$ | 27.0 | 28.4 | ${ }^{6.6}$ | 72.0 | 33.7 | 35. |  |  | 51.7 |  |  | 5.3 | 10.4 | 12.3 | 12.6 | 12 | 15.5 |
| Services.--..... | 23.1 | 24.5 | 23.9 | 22.7 | 22.4 | 22.6 | 23.2 | 24.4 | 25.1 | 24.8 | ${ }_{25.5}$ | 26.5 | 27.6 | 28.8 | ${ }_{30.4}^{42.6}$ | 32.0 | 37.2 | 35.2 | 36.4 | 38.0 | 39 | ${ }^{31.6}$ |
| Gross private domestic investment. | 14.9 | 10.1 | 5.9 | 1.1 | 1.6 | 3.5 | 6.7 | 9.3 | 11 | 6.3 | 9.9 | 13.7 | . 1 | . 3 | 5.4 | 6.6 | . 3 | 20.3 | 19.3 | 22.7 | 17 | 24.8 |
|  | $7.4$ | $\begin{array}{r\|} 5 \cdot 4 \\ 4: 8 \\ -4 \end{array}$ | 3.8 <br> 3.3 <br> 1. | 2.1 1.9 -3.0 | 1.5 <br> 2.0 <br> 1.0 | 1.7 <br> 2.8 | $\begin{gathered} 2.2 \\ 3.6 \end{gathered}$ | 3. 8 | $\begin{gathered} 3.8 \\ 5.5 \\ 5.5 \end{gathered}$ | $\begin{gathered} 3.3 \\ 3.9 \end{gathered}$ | 4.9 |  | 7.2 | 3.3 | ${ }_{3}^{1.6}$ | 2.0 | 2.6 | 9.9 | ${ }_{11}^{6.8}$ |  | 11. |  |
| Change in business inventories | 1.5 |  |  |  | -1.8 |  | . 9 | 1.4 | 2.1 | -1.0 |  | 2.3 | 3.8 |  |  |  | -1.0 |  |  |  | -1. | 2.2 |
| Net foreign investment | . |  | 3 | 2 | 1 | . 3 |  | -. 2 | $\cdot 1$ | 1.0 | . 9 | 1.2 | . 7 | -. 4 | -2.1 | -2 | -1.8 | 2.7 | 4.8 | 1.4 |  |  |
| Government purchases of goods and serrices.. | 7.9 | 8.7 | 9.4 | 8.9 | 8.7 | 0.1 | 10.1 | 11.9 | 11.4 | 12.7 | . 1 | 13. | 21 | 45.0 | 64.3 | 71.3 | 60.6 | 19.6 | 16. | 19.2 | 22.2 | 20 |
| Freteral Statc and iocal | $\begin{aligned} & 1.3 \\ & 6.3 \end{aligned}$ | 7.5 | 8 | 7.2 | 6. 4 | . 0 | . 1 | 7.9 | 4.4 | 7.4 | 7.2 | ${ }_{7}^{6.1}$ |  | ${ }_{6.7}^{38.3}$ | 58.2 | 65.4 6.0 | 54.6 6.0 | 12.8 6.8 | 8.5 | 10.9 8.2 | 13.0 9.2 | ${ }_{9}^{11.0}$ |
| Gross private product | 81.5 | 73.5 | 67 | 57 | 56 | 62.0 | 67 | 76.4 | 80.9 | 76.4 | 83.7 | 92 |  |  |  |  |  | 125.6 |  |  |  | 143.8 |
| Gross government p |  |  |  | 4.6 | 5.0 | 5.9 | 6.3 | 7.5 | 6.9 | 7.6 | 7.6 | 7.8 | 9.3 | 13.1 | 20 | 23.9 | 23.7 | 12.8 | 9.8 | 9.7 | 10.3 | 10.5 |

I Detail will not neemsarily add to totali because of rounding.
${ }^{2}$ Grow mational product less compe nation of peneral government employees.

* Compensation of general government employees.

Table B.-Implicit Price Deflators for Gross National Product by Major Segments, 1929-50
[Index Numbers, 1939=100]

|  | 1929 | 1930 | 1931 | 1032 | 1033 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gross national product | 120.9 | 1 | . | 94.2 | 90.7 | 95.5 | 97.7 | 98.3 | 102.71 | 100.9 | 100.0 | 101.5 | 1 | 124,6 | 133.4 |  | 140 | 15 | 168 | 18 | 179. | 183.2 |
| Personal consumption expendilures | 12 | 120 | 108.0 | 94.9 | . 6 | 96.0 | 98.3 | 99 | 103.2 | 100.9 | 100.0 | 101.1 | 107.4 | 12 | 131.1 | 137.5 | 14 | 153.5 | 168.4 | 177.4 | 175 | 178.0 |
| Durable goods |  | $\left\lvert\, \begin{aligned} & 113.3 \\ & 123.3 \end{aligned}\right.$ | 104.8 | $93.5$ | $\begin{aligned} & 91.5 \\ & 89,2 \end{aligned}$ | $\begin{aligned} & 96.1 \\ & 99.1 \end{aligned}$ |  |  |  | 160.2 |  |  |  |  |  |  |  |  |  |  | 185 | 188.7 |
| Services--....- | 126.0 | 120.0 |  | 100.3 | ${ }_{92}{ }^{81}$ | 92.3 |  |  |  |  |  |  | 109 |  |  |  |  | 171 |  |  | 195.7 |  |
| Gross private domestic investment. | 106 | 101 | 90.3 | 83.9 | 80.8 | 79.7 | 91.7 | 89.1 |  |  |  |  |  | 108.4 |  |  |  | 126.4 |  |  |  | 197.2 |
|  |  | 102.3 | 93 |  | 77.2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 106.0 | 102.0 | 97.0 | 91.9 | 89.8 | ${ }_{94.7}^{85.6}$ | ${ }_{94.4}$ | 94. 3 | ${ }_{90.0}^{98.1}$ | 10.9.5 | 100.0 | 102.7 | 110.9 109.9 | 120.5 | \| 132.8 | 141.8 | 149. | 124.3 | 144.6 | 157 | 163 | 170.0 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net foreign investment... |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Government purchases of goods and services.. | 107.5 | 104.8 | 7.6 | . 1 | 91.9 | 97.0 | 97.4 | 98.4 | 02. | 10 | 100.0 |  |  |  |  |  |  |  |  |  |  | 204.3 |
| Federal. | 100.7 |  |  | 89.6 |  | 97.0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| State and loc | 108.8 | 106.6 | 98.0 | 91.4 | 93.2 | 97.0 | 97.7 | 98.1 | 101.3 | 100.4 | 100.0 | 101.3 | 106.7 | 135.9 | 121.5 | ${ }_{125.9}^{136}$ |  |  | 185. 16 |  |  | 201.1 |
| Gross private product. | 122.0 | 4 | 105.3 | 93.9 | 90.4 | 95.5 | 97.9 | 98 | 102.9 | 100 | 100 | 101.6 |  |  |  |  |  |  |  |  | 178 | 182.0 |
| Gross government product | 9. | 99.4 | 100.2 | 7.6 | 94.1 | 95.1 | 95.0 | 97.5 | 99.8 | 100.9 | 100.0 | 99.6 |  |  |  |  |  |  |  |  |  | 199.1 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 170.0 |  |  |  |

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# National Income and Product Accounts, 1950 

Table I.-National Income and Product Account, 1950
[Millions of dollars]

|  | Personal consumption expenditures $\qquad$ 193,568 <br> Gross private domestic investment. $\qquad$ 48,867 |
| :---: | :---: |
| Income of unincorporated enterprises and inventory valuation <br>  | Net foreign investment $\qquad$ -2,304 Government purchases of goods and services 42,499 |
|  |  |
| Corporate profits and inventory valuation adjustment: |  |
| Corporate profits before tax: <br>  Corporate profits after tax: |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| Less: Subsidies minus current surplus of government enterprises..- 260 |  |
| Charges against net national product ${ }^{2}$-------.......--------------- 261,453 |  |
|  |  |
| CILARGES AGAINST GROSS National Product ${ }^{2}$ - $-\ldots . .{ }^{\text {282,630 }}$ | GROSS NATIONAL PRODUCT ${ }^{3}$-...............-.-.-.-.-....- 282,630 |

${ }^{1}$ Data for other years in table 1. : Data for other years in table 4. ${ }^{3}$ Data for other years in table 2.
Table II.-Consolidated Business Income and Product Account, 1950 :
[Millions of dollars]

| Compensation of employees: | Consolidated net sales: |  |
| :---: | :---: | :---: |
| Wages and salaries: | To consumers | 184,547 |
|  | To government. | 18,129 |
| Excess of accruals over disbursements_-...............-. 0 | To business on capital accoun | 44,529 |
| Supplements: | To abroad. | 1,111 |
|  | Change in inventories. | 4,338 |
| Income of unincorporated enterprises and inventory valuation adjustment. $35,964$ |  |  |
|  |  |  |
| Corporate profits and inventory valuation adjustment: Corporate profits before tax: |  |  |
| Corporate profits tax liability................................... 18,593 Corporate profits after tax: |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| Less: Subsidies minus current surplus of government enterprises.------1, 260 |  |  |
|  |  |  |
|  |  |  |
| CHARGES AGAINST BUSINESS GROSS PRODUCT | BUSINESS GROSS PRODUCT | 252,654 |

[^29]
## Table III.-Personal Income and Expenditure Account, 1950

[Millions of dollars]

| Personal consumption expenditures: | Wage and salary receipts: |
| :---: | :---: |
| Purchases of direct services: | Disbursements by: |
| Compensation of employees: | Business 2- |
|  |  |
| Supplements paid: |  |
| Employer contributions for social insurance ${ }^{1}$-- 41 |  |
|  |  |
|  | Other labor income: |
| Incone originating in and net and gross product of house- |  |
|  |  |
| Net purchases from business ${ }^{2}$-.-.-.-..............-......... 184,547 |  |
|  | Income of unincorporated enterprises and inventory valuation ad- |
|  |  |
|  |  |
|  |  |
|  |  |
|  | Government transfer payments ${ }^{6}$. ................................ 14,330 |
|  |  |
| PERSONAL OUTLAY AND SAVING.............-.-.-.......-. 224,721 |  |
| ${ }^{1}$ Data for other years in table 12. <br> ${ }^{2}$ Data for other years in table 7 . <br> ${ }^{4}$ Data for other years in table 11. | Data for ather years in table 3. <br> Data for other years in table 35. <br> Data for other years in table 4. |

Table IV.-Consolidated Government Receipts and Expenditures Account, $1950{ }^{1}$
[Millions of dollars]

| Purchases of goods and services: | Personal tax and nontax receipts . . . . . . . . . .-................. 20,460 |
| :---: | :---: |
| Purchases of direct services: |  |
| Compensation of employees: | Indirect business tax and nontax accruals...................... 23,798 |
|  | Contributions for social insurance: |
| Supplements: |  |
| Employer contributions for social insurance ${ }^{2}$-- 791 | Employer contributions: 3,185 |
| Other labor income ${ }^{2}--\ldots-{ }^{\text {---------------- }} 315$ |  |
| Income originating and net and gross product.....-. 20,926 | Government ${ }^{2}-10$ |
| Net purchases from business Net purchase |  |
|  | Deficit ( + ) or surplus ( - ) on income and product transactions ${ }^{5}$.-- $-8,014$ |
|  |  |
| Subsidies minus current surplus of government enterprises.............. 260 |  |
| GOVERNMENT EXPENDITURES.........-................. 61,799 |  |
| ${ }^{1}$ Data for other years in tables 8 and 9 except where otherwise noted. <br> : Data for other ycars in table 12. <br> 4 Data for other years in table 7. <br> ${ }^{2}$ Data for other years in table 35 . <br> Data for other years in table 5 . |  |
| Table V.-Rest of the World Account, $1950^{1}$ [Millions of dollars] |  |
|  |  |
| Net payments of factor income to the United States: | Net disinvestment in the United States . . .-.................... - $\mathbf{- 2 , 3 0 4}$ |
| Wages and salaries |  |
|  |  |
|  |  |
|  |  |
|  |  |
| Net purchases from the United States: From business |  |
|  |  |
|  |  |
| NET CURRENT PAYMENTS TO THE UNITED STATES. - -2,304 | NET DISINVESTMENT IN THE UNITED STATES_....-. - - 2,304 |

${ }^{1}$ Data for other years in table 11.
Table VI. Gross Saving and Investment Account, 1950²
[Millions of dollars]

| Millio | dollars] |
| :---: | :---: |
| Business purchases on capital account ${ }^{2}$ - 44,529 | Excess of wage accruals over disbursements.-..-.........-.....- 0 |
| Change in business inventories 2 account ${ }^{2}-\ldots \ldots \ldots$ - |  |
| Net disinvestment in the United States by rest of world | Corporate inventory valuation adjustment ............................... -126 |
| Government deficit ( + ) or surplus ( - ) on income and product transactions. |  |
| GROSS INVESTMENT AND GOVERNMENT DEFICIT .... $\overline{38,549}$ |  |

[^30]2 Data for other years in table 7.
${ }^{3}$ Data for other years in table 11.
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1033 | 1031 | 1935 | 1936 | 1037 | 1938 | 1939 | 1930 | 1941 | 1942 | 1943 | 19.4 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| National income | 87,355 | 75,003 | 58,873 | 41,690 | 39,584 | 48,613 | 56,789 | 64,719 | 73,627 | 67,375 | 72,532 | 81,347 | 103.834 | 137,119 | 169,686 | 183,838 | 182,691 | 180,286 | 198,638 | 223.463 | 216,716 | 238,963 |
| Compensation of emplo | 50,780 | 46,515 | 39,470 | 30,826 | 29,330 | 34,067 | 37,107 | 42,075 | 47,696 | 44,747 | 47,820 | 51,786 | 0,230 |  | 103,212 | 121,163 |  |  |  | 140,166 | 133,887 | 153,333 |
| Wages and salaric | 30,165 | 45,894 | 38,886 | 30,284. | 28,825 | 33,520 | 36,508 | 41,754 | 45,948 | 42,312 | 45,745 | 49,587 | 61,708 | 81,88 | 105,617 | 116,02 | 117,6 | 111,227 | 27,05 | 13,357 | 133,432 | 145,814 |
| ${ }^{1} \mathrm{Privatc}$. ${ }^{\text {Pilitary }}$ | 45, 316 | 40,720 | 33,607 | 25.297 | 23,660 | 27.420 | 29,188 | 33,866 | 38,432 | 34,564 | 37,519 | 41,130 | 51,537 | 8, 088 | 78,814 | 83, 414 | 82, 101 | 90.577 | 104,803 | 115,653 | 113,041 | 123,593 |
| Military |  | 315 |  | 235 | 270 | 271 | 306 | 338 |  |  |  |  | 1,862 | 6,330 | 14,445 | 20,638 | 22,098 | 7,962 | 4,008 | 3,970 | 4,218 | 5.101 |
|  | ,647 | 4,853 | 4,971 | 4,692 | 4.895 | 5,829 | 6,218 | 7,650 | 7,158 | 7,878 | 7,328 | 7,866 | 8,303 | 0,763 | 12,388 | 12,83 | 12,974 | 12,688 | 13,188 | 14.728 | 16,137 | 17.150 |
| Supplements to wages and salaries, | ce | 621 | 584 | 542 | 505 | 547 | 599 | 921 | 1,748 | 1,935 | 2,075 | 2,199 | 2,i72 | 3,008 | 3,565 | 4,233 | 5,353 | 5,871 | 5,923 | 5,803 | 6,455 | 7.483 |
| insurance... | 101 | 106 | 111 | 126 | 133 | 147 | 171 | 418 | 1,234 | 1,423 | 1,540 | 1,624 | 1,983 | 2,302 | 2,077 | 2,937 | 3,805 | 3,970 | 3,565 | 3,042 | 3,503 | 4,017 |
| Other lator income. | 520 | 515 | 473 | 416 | 372 | 400 | 428 | 503 | 514 | 512 | 335 | 575 | 589 | 706 | 888 | 1,302 | 1,548 | 1,901 | 2,364 | 2,767 | 2,952 | 3,472 |
| Income of unincorporated enterprises and inventory valuation adjustment | 13,927 | 10,963 |  |  | 5,207 |  | 9,858 | 9,942 |  | 10,768 | 11,282 | 12,660 |  | 23,041 | 26.731 |  |  | 35,375 | 35,365 | 39.751 | 33,903 |  |
| Business and professional. | 8,262 | 7,032 | 5,316 | 3,206 | 2,925 | 4,276 | +, 488 | 6,074 | 6,630 | 6,347 | 6,776 | 7,720 | 9,566 | 12,573 | 14,963 | 17,156 | 18,719 | 35, 385 | 19,776 | 29,085 | 20,902 | 22,277 |
| Income of unincorporated enterprises | 8,120 | 0,277 | 4,705 | 2,911 | 3.450 | 4,330 | 5,037 | 6, 197 | 6, 689 | 6,126 | 6,942 | 7,772 | 10,210 | 12,945 | 15, 117 | 17,226 | 18,832 | 22.484 | 21,323 | $\underline{29} 480$ | 20,271 | 23,899 |
| Jarm.-.-........------- | 5,665 | 3,031 | 2,838 | 1,715 | -2,282 | 2,327 | 4,871 | - 3,868 | 5,619 | 4,421 | 4,500 | +,040 | 6,938 | 10,468 | 11,768 | 11,841 | 12,528 | 14,790 | -15,583 | 17,666 | 13,002 | -13,532 |
| Rental income of perso | 5,811 | 4,786 | 3,620 | 2,508 | 2,018 | 2,095 | 2,288 | 2,682 | 3,140 | ,27 | 3,465 | 3,620 | 4,322 | 5,395 | 6,109 | 6,493 | 6,25 | 6,620 | 7,0 | 7,506 | 7,54E | 8,039 |
| Corporate profits and inventory valuation adiustment |  | 563 | 1,631 | -1,995 | -1,981 | 1,09 |  | 4,946 | 6,166 | 4,2 | 5,75 | 9,177 | 14,615 | 19,894 |  | 24 | 19,153 | 18,271 | 24,732 | 31.711 |  |  |
| Corporate profits before | 0,.818 | 3,303 | -783 | -3,042 | 162 | 1.723 | 3,22 | 5.68 .4 | 6,197 | 3,32 | 6,467 | 9,325 | 17,232 | 21.008 | 2, | ${ }_{2}$ | 19,717 | 18, ${ }^{2}$ |  | 31.76 |  | 41 |
| Corporate profity tax lia | 1,398 | 818 | 500 | 382 | 524 | 746 | 905 | 1,411 | 1,512 | 1,040 | 1,462 | 2,878 | 7,846 | 11,665 | 14,406 | 13,52 | 11,215 | 9,583 | 11.940 | 13,028 | 10,989 | 18,573 |
| Corporate profits after | 8,420 | 2,455 | -1,283 | -3.424 | -362 | 977 | 2,259 | 4,273 | 4,685 | 2,283 | 5.005 | 6,447 | 9,386 | 9,433 | 10,646 | 10,808 | 8,502 | 13,881 | 18,549 | 20,734 | 17,347 | 22,774 |
| Dividends | 5,823 | 5,500 | 4,098 | 2,574 | 2,066 | -2,596 | ${ }^{2,872}$ | 4,557 | 4,693 | 3,193 | 3,796 | 4,049 | 4,465 | 4,247 | 4.4138 | 4,680 | 4,699 | 5,808 | 6,56 | 7,250 | 7,55 | 9,16) |
| Undistributed profits | 2,597 | -3,0.45 | -5,381 | $-5,998$ | -2,428 | -1,619 | -613 | $-284$ | -8 | -006 | 1,203 | 2,398 | 4,921 | 5,136 | 6.153 | 6,128 | 3,80 | 8,073 | 11,98 | 13,484 | 9,795 | 13,65 |
| Inventory valuation adjustment. | 472 | 3,260 | 2,414 | 1,047 | -2,143 | -625 | -227 | -738 | 31 | 963 | -714 | 148 | -2,617 | -1,204 | $-773$ | -287 | -564 | $-5,193$ | -5,757 | -2,031 | 2,137 | -5,126 |
| Net interest. | 6,541 | 6,176 | 5,038 | 5,430 | 5,010 | 4,750 | 4,539 | 4,474 | 4,370 | 90 | 4,212 | 4,104 | 4,113 | 3,894 | 3,355 | 3,137 | 3,009 | 2,922 | 3,544 | 4,335 | 4,903 | 5,386 |

${ }^{\text {t }}$ Includes the pay of employees of government enterprises and of permanent United States residents employed in the United States by foreign governments and international organtzations.

Table 2.-Gross National Product or Expenditure, 1929-50
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1039 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gross national product | 103,828 | 90,857 | 75,930 | 58,340 | 55,760 | 64,868 | 72,193 | 82,483 | 90,212 | 84,683 | 91,339 | 1,443 | 6,417 | 161,551 | 194,338 | 213,688 | 215,210 | 1,110 | 233,264 | 259,045 | 257,3 | 232,630 |
| Personal consumpti | 78,761 | $\mathbf{7 0 , 7 8 9}$ | $61,153$ | $49,208$ | $46,346$ | $51,882$ | $56,215$ | 62,515 | $67,121$ | 64,513 | 67,466 |  |  |  |  |  | 123,079 |  |  |  | 189.174 | 193,568 |
| $\cdots$ | $\begin{aligned} & 9,362 \\ & 37,742 \end{aligned}$ | $\begin{gathered} 7,275 \\ 34,052 \end{gathered}$ | $\begin{array}{r} 5,503 \\ 28,955 \end{array}$ | $\begin{array}{r} 3,694 \\ 22,743 \end{array}$ | $\begin{array}{r} 3,503 \\ 22,254 \end{array}$ | $\begin{gathered} 4,255 \\ 26,732 \end{gathered}$ | $\begin{gathered} 5,158 \\ 29,377 \end{gathered}$ | $\begin{array}{r} 6,374 \\ 32,887 \end{array}$ | 35,003 | - $\begin{array}{r}54,754 \\ \hline 1\end{array}$ | -6,729 | $\begin{gathered} 7,854 \\ 37,594 \end{gathered}$ | 9,750 <br> 43,960 | 72,871 | 6,824 60,970 | 7,103 | 8,472 74,886 | 16,573 | 95,142 | $\stackrel{22,833}{100,839}$ | $\begin{aligned} & 23,899 \\ & 98,720 \end{aligned}$ | r 202,157 |
| Services. | 31,657 | 29,462 | 26,629 | 22,771 | 20,589 | 20,895 | 21,680 | 23,254 | 24,884 | 24,727 | 25,478 | 26,604 | 28,545 | 31,230 | 34,450 | 37,343 | 39,721 | 44,485 | 4, 0 , 059 | 54,118 | 57,555 | 62,101 |
| Gross private domestic investment | 15,824 | 10,209 | 5,362 | 886 | 1,306 | 2,807 | 6,143 | 8,318 | 11,440 | 6,311 | 9,917 | 13,949 | 18,334 | 10,873 | 5,703 | 7,714 | 10,733 | 28,726 | 30,187 | 42,693 | 33,047 | 48,867 |
| Now construction- | 7,824 | 5,566 | 3,561 | 1,668 | 1,142 | 1,420 | 1,890 | 2,783 | 3,68i | 3,303 | 4,899 | 5,566 | 6,784 | 3,951 | 2,549 | 2,81 | 3,934 | 10,2,1 | 13,904 | 17,716 | 17,250 | 22,068 |
| Producers' durable equipment Change in | 6,438 1,562 | 4,926 -283 | 3,162 $-1,361$ | 1,781 $-2,563$ | -1,783 | 1,531 $-1,144$ | ${ }^{3,351}$ | 4,531 1,004 | 2,30: | 3,975 -973 | 4,577 441 | 6,108 2,275 | 7,676 | 2,065 | 4,082 -922 | 5,706 -809 | 7,545 -746 | 12,328 6,107 | ${ }^{17,080}$ | 19,948 | ${ }_{-3,213}^{19,010}$ | 22,461 4,338 |
| Net foreign investment | 771 | 690 | 97 | 169 | 150 | 429 | -54 | 93 | 62 | 1,109 | 888 | 1,509 | 1,124 | -207 | -2,245 | -2,099 | $-1,438$ | 4,561 | 8,895 | 1,864 | 528 | -2,304 |
| Government purchases of goods and services- | 8,472 | 9,169 | 9,218 | 8,077 | 7,958 | 9,750 | 9,886 | 11,743 | 11,500 | 12,750 | 13,068 | 13,933 | 24,704 | 59,724 | 88,630 | 96,523 | 82,836 | 30,916 | 28,612 | 36,5]8 | 43,599 | 42,499 |
| Federal | 1,311 | 1,410 | 1,537 | 1,480 | 2,018 | 2,991 | 2,031 | 4,815 | 4,552 | 5,280 | 5,157 | 6,170 | 16,923 | 52,027 | 81,223 | 83,0 | 74,796 | 20,946 | 15,78 | 21,022 | 25,473 | 22,831 |
|  | 1,344 | 1,432 | 1,549 | 1,484 | 2,022 | 2,997 | 2,935 | 4,818 | 4,557 | 5,286 | 1,258 | 2,223 | 13,794 | 49,567 | 80,384 | 88 | 75,923 | 21,177 | 17,079 | 21,653 | 25,868 | 23,056 |
| Less: | 33 | 22 | 12 |  |  |  |  |  |  | 6 |  |  |  |  | 1,481 | 1,161 | 2,158 | 2,700 | 1,295 | ,31 | 395. | 225 |
| State and local | 7,161 | 7,759 | 7.681 | 6,597 | 5,940 | 6,769 | 6,955 | 6,928 | 7,038 | 7,470 | 7,911 | 7,763 | 7,781 | 7,697 | 7,40: | 7,517 | 8,040 | 9,970 | 12,828 | 15,576 | 18,126 | 19,668 |

Table 3.-Personal Income and Disposition of Income, 1929-50
[Millions of dollars]

|  | 1029 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Personal income | 85,127 | 76,195 | 64,835 | 49,274 | 46,629 | 53,230 | 59,861 | 68,353 | 73,976 | 68,327 | 72,607 | 78,347 | 95,308 | 122,721 | 150,286 | 165,892 | 171,927 | 177,724 | 191,000 | 209,494 | 205,065 | 224,721 |
| Wage and salary receipts. | 50,023 | 45,747 | 38,735 | 30,132 | 28,673 | 33,363 | 30,340 | 41,574 | 45,382 | 42,258 | 45,149 | 48,929 | 60,907 | 80,721 | 103,599 | 114,881 | 115,326 | 109,246 | 119,926 | 132,143 | 131,243 | 142,899 |
|  | 50,165 | 45,894 | 38,886 | 30,284 | 23,825 | 33,520 | 36,508 | 41,754 | 45,948 | 42,812 | 45,745 | 49,587 | 61,708 | 81,887 | 105,438 | 117,117 | 117,659 | 111,257 | 122,044 | 134,327 | 133,477 | 145,844 |
| social insurance. | 142 520 | 147 515 | 151 | 152 416 | 152 | 400 | 102 | 180 503 | 514 | 512 | 596 | ${ }_{5}^{658}$ | 801 | 1,166 | 1,889 | 2,2 | 2,333 | 2,011 | 2,118 | 2,178 | , 234 | 2,945 |
| Proprietors' and renta | 19,738 | 15,749 | 11,834 | 7.429 | 7,225 | 8,698 | 12,146 | 12,624 | 15,389 | 14,046 | 14,747 | 16,280 | 20,826 | 28,436 | 32,840 | 35,492 | 17,503 | 41,905 | 42,364 | 2,767 | 2,952 | 3,472 |
| Dividends | 5,823 | 5,500 | 4,098 | 2,574 | 2,066 | 2,596 | 2,872 | 4,557 | 4,693 | 3,195 | 3,796 | 4,049 | 4,465 | 4,297 | 4,493 | 4,680 | 4,699 | [,808 | 6,561 | 7,250 | 7,55 | -14,003 |
| Personal interest in | 7,524 | 7,140 | 7.022 | 6,571 | 6,180 | 5,980 | 5,680 | 5,575 | 5,580 | 5,482 | 5,417 | 5,395 | 5,402 | 5,411 | 5,495 | 5 | 6,672 | 7,35 | 7,922 | 8,786 | 9,518 | 10,076 |
| Transfer paymen | 1,499 | 1.544 | 2,673 | 2,152 | 2,113 | 2,193 | 2,389 | 3,520 | 2,418 | 2,834 | 2,063 | 3,119 | 3,119 | 3,150 | 2,971 | 3,597 | 6,179 | 11,420 | 11,803 | 11,285 | 12,352 | 15,082 |
| ss: Personal tax and nontax paym | 2,643 | 2,507 | 1,858 | 1,455 | 1,464 | 1,595 | 1,888 | 2,258 | 2,921 | 2,862 | 2,440 | 2,004 | 3,293 | 5,981 | 17,845 | 18,935 | 20,867 | 18,808 | 21,506 | 21,142 | 18,638 | 20,460 |
| Federal | 1,263 | 1,134 |  | 31 | 474 | 595 |  | 1,130 | 1,723 | 1,635 |  | 1,364 | 2,016 | 4,668 | 16,517 | 17,536 | 19,379 | 17,162 | 19,650 | 18,997 | 16,15 | 17,774 |
| State and loca | 1,380 | 1,373 | 1,251 | 1,124 | 990 | 1,060 | 1,061 | 1,128 | 1,198 | - 1,227 | 1,205 | 1,240 | 1,277 | 1,313 | 1,328 | 1,399 | 1,488 | 1,646 | 1,856 | 2,145 | 2,479 | 2,686 |
| Equals: Disposable personat i | 82,484 | 73,688 | 62,977 | 47,819 | 45,165 | 51,635 | 57,973 | 66,035 | 71,05 | 65,465 | 70,167 | 75,743 | 92,015 | 6,74 | 132,441 | 146,957 | 151,060 | 158,916 | 169,494 | 188,352 | 186,427 | 204,261 |
| Less: Personal consumption expenditures | 78,761 | 70,789 | 61,153 | 40,208 | 46,346 | 51,882 | 56,215 | 62,515 | 67,121 | 64,513 | 67,466 | 72,052 | 82,255 | 91,161 | 102,244 | 111,550 | 123,079 | 146,907 | 165,570 | 177,890 | 180,174 | 193,568 |
| Equals: Personal saving | 3,723 | 2,809 | 1,824 | 1,389 | -1,181 | -247 | 1,758 | 3,580 | 3,934 | 052 | 2,701 | 3,601 | 9,760 | 25,579 | 30,197 | 35,407 | 27,981 | 12,009 | 3,924 | 10,462 | 6,253 | 10,693 |

Table 4.-Relation of Gross National Product, National Income, and Personal Income, 1929-50
[Millions of dollars]

[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1035 | 1936 | 1037 | 1938 | 1939 | 1040 | 1041 | 1942 | 1943 | 1944 | 19.5 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gross private saving | 15,528 | 11,156 | 8,357 | 2,760 | 2,728 | 5,591 | 7,941 | 11,104 | 10,817 | 8,910 | 12,672 | 16,005 | 22,951 | 41,829 | 47,381 | 56,977 | 48,534 | 28,706 | 25,339 | 36,351 | 36,360 | 38,549 |
| Personal saving-.....-. | 3.723 | -3,809 | 1,884 | - 1,389 | -1,188 | -247 | 1.708 | 3,580 | 3,934 | 8,952 | 2,701 | 3,691 | 9,760 | 25,579 | 30,197 | 35, | 27,981 | 12,009 | 3,924 | 10,462 | 6,253 | 10,6,3 |
| Undistributed corporate profis. <br> Corporate inventory valuation adjustment. | 2,547 742 | -3,045 | $-5,381$ 2,414 | $-5,998$ 1,047 | $-2,428$ $-2,143$ | $-1,619$ -6.95 | -613 | -284 -738 | -8 -31 | -906 | 1,209 -714 | 2,398 -1.48 | 4,921 | 5,136 | 6,153 -773 | 6,128 -287 | 3,803 -564 | 8,073 $-5,193$ | 11,988 | 13,484 <br> $-2,011$ | 9,795 2,137 | 13,605 -5.126 |
|  | 7,553 | 7,653 | 7,483 | 6,950 | 6,608 | 6,526 | 6,577 | 6,607 | 6,838 | 6,894 | 7,082 | 7,228 | 7,878 | 8,712 | 9,504 | 10,584 | 10,885 | 9,817 | 12,080 | 14.368 | 16,036 | -5,686 |
| Accidental damage to fixed business capital. |  | 389 | 351 | 329 |  | 237 | 236 | 381 | 304 | 387 | 22 | 246 |  |  | 390 | 360 |  | 407 |  |  | \%18 | 568 |
| Capital outlay charged to eurrent expense | 850 | 705 | 478 | 38.4 | 362 | 455 | 556 | 696 | 830 | 711 | 797 | 966 | 1,143 | 78 | 777 | ${ }_{9} 9$ | 1,144 | 1,939 | 2,192 | 2,670 | 2.444 | 2,923 |
| ments. .age accrual over dishurse- |  |  |  |  |  | 0 |  |  |  | 0 |  |  |  |  | 200 | -193 |  | 30 | 15 |  | 4 |  |
| Statistical diserepaney | 80 | -70.5 | 1,188 | 1,437 | 1,235 | 864 | 346 | 862 | -1,050 | 1 | 1,375 | 1,624 | 1,593 | 2,337 | 915 | 4,035 | 4,890 | 1,684 | 324 | -3,180 | -8.38 | $-1,800$ |
| Gross investment | 16,505 | 10,899 | 5,585 | 1,055 | 1,456 | 3.236 | 6,092 | 8.225 | 11,502 | 7.420 | 10,805 | 15,458 | 19,458 | 10,666 | 3.464 | 5,615 | 9,295 | 33,287 | 39,082 | 44,557 | 33,575 | 46,563 |
| Gross private domestic investment | 15,884 | 10,209 | 5,362 | 889 | 1,306 150 | 2,807 +29 | 6,146 -54 | 8,318 -93 | 11.440 62 | 6,311 1,109 | ${ }^{9,917} 8$ | 13,049 | 18,334 | 10,873 -207 | - $\begin{array}{r}5,709 \\ -2,245\end{array}$ | 7,714 $-2,009$ | 10,733 -1.438 | 28,726 | 30,187 8,895 | 42,693 1,814 | 33,047 | $\xrightarrow{\mathbf{4 8 , 8 6 7}} \mathbf{- 2 , 3 0 4}$ |
| Government deferit ( + ) or surplus ( - ) on incone and product transactions. |  |  |  | 1,705 |  |  |  |  |  |  |  | 547 | 3,493 | 31,163 | 43.917 | 51.362 | 39,239 | -4.581 | -13.743 | -8,206 | 3.785 | -8,014 |
| Federa! | -1,185 | $-276$ | 2,093 | 1,465 | 1,310 | 2,850 | 2,538 | 3,475 | 176 | 1,960 | 2,213 | 1,403 | 4,889 | 32,949 | 46,38, | 54,004 | 41,819 | -2,612 | -12,855 | -8,468 | 1,878 | ${ }_{-8,90 \overline{1}}^{-8,014}$ |
| State and loea | 118 | 533 | 705 | 240 | -38 | -495 | -689 | $-596$ | -861 | $-470$ | -346 | -862 | -1,306 | -1.786 | -2,472 | -2,642 | -2,580 | -1,900 | -888 | 262 | , 907 | 801 |

Table 6.-Liquid Saving Estimates of the Sccurities and Exchange Commission and Their Reconciliation with Personal Saving Estimates of the Department of Commerce, 1933-50 ${ }^{1}$
[Eillions of dollars)

|  | 1033 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Liquid saving (S. E. C. estimates) ${ }^{\text {a }}$ | $-.97$ | 2.67 | 1.60 | 4.30 | 4.09 | 3.12 | 4.37 | 4.29 | 10.22 | 29.84 | 39.07 | 41.61 | 37.66 | 12.32 | 6.30 | 4.34 | 2.80 | 2.63 |
| Currency and bank deposits | -1.17 | 1.78 | 1.34 -23 -23 | 3.61 | .39 .09 | . 31 | 3.00 | 2.88 | 4.80 | 10.96 | 10.18 | $17.5 \pm$ | 19.06 | 10.58 | 2.04 | -1.23 | -1.24 | 4.26 |
| Suvings and loan associations- nnsurance and pension reserves | -. 68 | - 1.41 | -1.79 | $\overline{-1.22}$ | .09 3.14 | 2.64 | 3.06 | ${ }_{3} .214$ | $\begin{array}{r}\text { 4. } \\ \hline .81 \\ \hline\end{array}$ | 5. ${ }^{.88}$ | 6.79 | 8.82 | 1.06 8.59 | 1.18 6.97 | 1.20 7 | 1.25 | 1.43 6.06 | 1.49 |
| Insurance and pension rese | . 57 | 1.33 | 1.55 | 1.67 | 1.76 | 1.54 | 1.72 | 1.85 | 2.14 | 2.49 | 2.85 | 3.21 | 3.46 | 3.43 | 3.68 | 3.75 | 3.73 | 5.55 4.35 |
| Government | . 11 | . 16 | . 24 | . 55 | 1.38 | 1.10 | 1.30 | 1.30 | 1.86 | 2.55 | 3.92 | 4.96 | 5.14 | 3.55 | 3.39 | 3.57 | 2.34 | 1.20 |
|  | $-.71$ | ${ }^{.23}$ | -1.76 -59 | - 1.34 | 1.02 | -. 38 | -. 41 | -. 01 | ${ }_{3}^{2.94}$ | 10.38 | 13.87 | 15.14 | 9.97 | -. 11 | 3.43 | 4.12 | 2.68 | 1.38 |
| United States Government | -. ${ }^{.14}$ | - $\begin{array}{r}1.14 \\ -1.11\end{array}$ | -. 13 | 1.00 -.55 | $\begin{array}{r}1.06 \\ -.01 \\ \hline\end{array}$ | -. $\mathrm{-} .14$ | .06 -.23 | .51 -.46 | 3.47 -.28 | 10.37 -.22 | 14.15 -.12 | 15.74 -.08 | $\begin{array}{r}10.49 \\ -.18 \\ \hline\end{array}$ | -. 15 | $\begin{array}{r}2.09 \\ \hline .36\end{array}$ | 1.52 1.03 | 1.35 .50 | . 38 |
| Corporate and other--- | -. 08 | -1. 20 | -1.0才 | -.79 | -. 03 | -. 16 | -. 24 | -. 05 | -.25 | . 22 | -. 16 | $-.52$ | -. 34 | -. 61 | . 97 | 1.57 | .83 | 1.11 |
| Liquidation of mortgage debt on nonfarm dwellings <br> Liquidation of debt, not elsewhere classified | . 73 | -. 12 | -. 29 | - 1.28 | -. 04 | -. $\mathbf{- 2 0}$ | $-.50$ | -78 -1.16 | -.94 | - $\mathbf{- . 0 6}$ | $\begin{array}{r}1.36 \\ \\ \hline\end{array}$ | -.12 | -. 20 | ${ }_{-3.30}^{-3.24}$ | -4.06 -3.39 | -4.64 <br> -2.47 | -3.83 -2.30 | -6.98 -3.22 |
| Adjustments of liquid saying to Department of Commerce personal saving concept | $-1.23$ | -1.32 | -. 69 | $-1.08$ | -. 63 | -3.53 | . 63 | 1.38 | . 79 | 1.84 | -3.95 | -5.04 | -6.14 | -. 64 | -1.04 | 6.68 | 3.69 | 9.92 |
| On account of persons other than unineorporated enterprises: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net purchases of nonfarm residences -....-- | -. 08 | . 01 | . 268 | . 90 | 1.21 1.18 | 1.34 .21 | $\begin{array}{r}2.93 \\ .24 \\ \hline\end{array}$ | 3.26 .22 | 3.82 .25 | 2.11 .12 | 1.33 .03 | 1.13 .08 | $\begin{array}{r}1.23 \\ \hline 14\end{array}$ | 3.74 .41 | ${ }_{5.67} .51$ | ${ }_{7}^{7.61}$ | 7.06 1.09 | 11.25 1.29 |
| Less: Depreciation.........-..........-- | 1.55 | 1.55 | 1.57 | 1.59 | 1.62 | 1.65 | 1.70 | 1.75 | 1.81 | 1.85 | 1.89 | 1.93 | 1.96 | 2.03 | 2.14 | 2.28 | 2.47 | 2.68 |
| Less: Incrense in government insurance and pension reserves. | . 11 | . 16 | . 24 | . 55 | 1.38 | 1.10 | 1.30 | 1.30 | 1.86 | 2.55 | 3.92 | 4.96 | 5.14 | 3.55 | 3.39 | 3.57 | 2.34 | 1.20 |
| On account of unincorporated enterprises other than farms: |  | -. 01 | . 21 | . 53 | . 24 | -. 19 | . 09 | . 40 | .25 | . 29 | -. 04 | . 81 | . 43 | . 30 | . 03 | 1.56 | -. 32 | 1.18 |
| New construction and producers durable- | -. 48 | -. 01 | . 21 | . 53 | . 24 | -.19 | . |  | 2. |  |  |  | . 43 |  |  |  |  |  |
|  | . 33 | . 78 | . 60 | . 80 | 1.00 .84 | . 81 | 1.36 .85 | 1.61 .86 | 1.89 .92 | 1.80 | 1.01 | . 62 | 1.73 .95 | ${ }_{1.43}^{4.22}$ | 4.79 2.03 | 4.94 2.53 | 5.47 2.73 | 6.32 3.03 |
| Less: Incrcase in bank and mortgage debt- | -. 22 | -. 08 | . 04 | .17 | .14 | -. 19 | . 10 | . 05 | . 74 | -. 29 | $-.41$ | -. 07 | . 77 | 2.18 | 2.36 | . 90 | 2.21 | 5.12 |
| Less: Increase in net payables to other corporations and financial intermediaries_ | -1.57 | -2.58 | -. 62 | -. 49 | -. 02 | 1.97 | . 34 | . 36 | 1.02 | $-1.72$ | -. 42 | -. 30 | 1.12 | . 41 | . 73 | . 28 | -. 28 | . 17 |
| On arcount of farms: <br> Increase in inventories. | -. 27 | $-1.32$ | . 48 | -1.11 | . 54 | . 14 | . 10 | . 24 | . 46 | 1.31 | -. 42 | -. 54 | -. 15 | -. 23 | -2.21 | 1.31 | -. 72 | . 75 |
| New construction and producers' durable equipment ${ }^{5}$ | . 38 | .60 | . 92 | 1.12 | 1.35 | 1.13 | 1.23 | 1.32 | 1.73 | 1.57 | 1.33 | 1.74 | 1.75 | 2.79 | 4.28 | 5.19 | 5.31 | 5.50 408 |
| Less: Depreciation ${ }^{\text {7 }}$.-. | . 80 | . 83 | . 87 | . 94 | 1.04 | 1.05 | 1.09 | 1.10 | 1.24 | 1.36 | 1.53 | 1.85 | 2.05 | 2.10 | 2.63 | 3.21 | 3.71 | 4.08 |
| Less: Increase in farm holdings by corporations and financial intermediaries. | . 19 | . 14 | . 08 | . 08 | -. 03 | -. 01 | . 00 | -. 10 | -. 18 | -. 17 | -. 18 | -. 11 | -. 08 | -. 05 | -. 02 |  |  | --- |
| Less: Increase in mortgare debt to corporations and financial intermediaries. | -. 26 | .49 | . 06 | -. 07 | -. 08 | -. 09 | -. 13 | -. 03 | -. 06 | -. 30 | -. 48 | -. 36 | -. 25 | -. 01 | . 03 | . 10 | . 19 | . 28 |
| Less: Increase in other debt to corporations and financial intermediaries | -. 17 | -. 15 | . 22 | -. 10 | . 26 | . 55 | . 06 | . 39 | . 26 | . 05 | -. 14 | . 01 | -. 38 | . 24 | . 80 | 1.94 | . 84 | -. 20 |
| Equals: Lifuid saving plus adjustment to personal saving concept | $-2.20$ | 1.35 |  | ${ }_{3} 3.22$ | 3.46 3 | -. 41 | 5.01 | 5 | 11.01 | 31.68 | 35.12 | 36.57 35.41 1 | 31.52 27.98 3 | ${ }_{12}^{11.67}$ | 5.26 3.92 | 11.02 10.46 | 6.49 | 12.55 |
|  | -1.18 | $-.25$ | 1.76 -.85 | 3.58 | 3.93 | -1.36 | $\mathbf{2} .70$ $\mathbf{2}, \mathbf{3 1}$ | 3.69 1.90 | 9.76 $\mathbf{3 . 2 5}$ | 25.58 $\mathbf{6 . 1 0}$ | 30.20 4.92 | 35.41 1.16 | $\begin{array}{r}27.98 \\ \hline 3.54\end{array}$ | $\underline{12.01}$ | ${ }_{1} \mathbf{3 . 9 2}$ | 10.46 .56 | 6.24 | 10.69 1.86 |

 or fifros in three major respects from tho personal saving concept as pabilshed in this report. First, ifiguid saving
 ance funds. Second, liquid saving includids the net Hiquidation of mortzage debt on residential dwellinks, but it does not include nct acquisttions (ufter allowances for depreciation) of such dwellings. Hence it does not measure net saving in the formo of residential dwellings, the item which is included in the coneept of personal saving. (A
siminilar diference exists with respect to construction by non-proft institutions.) the net change in the liquid assets or unincorporated enterprises, whereas personal saving includes the net income less the personal consumption expenditures of the owners of unincornorated enterprises. On this score, thereffre,
 Trable 6 summarizes the best statistieal datat that are ayailable to adjust liguid saving to personal saving. The
diference between liquid saving adjusted to the personal saving concept and personal saving is due to statistical
arrors ind ointsslons which may be inliquild saving, in personal saving. or in the adjustments. The data avnilable saving estimates. This is particentarly truc of the estimated increase in net payables to corporations and ninanela) imternediaries by unincorporated enterprises other than farms, which is subject to a substantial margin of error $\mathbf{T}_{\mathbf{F}}$ Fe. C. data are not available or the period prior to 1933
a Excludes Armed Forces Learent releases or Sccuritics and Exchange Commission.
and $\mathbf{~ F o u n t i n g ~ t o ~} \$ 0.60$ billion, $\$ 0.16$ billion, $-\$ 0.30$ billion, $-\$ 0.12$ billion and - $\$ 0.12$ billion in 1946, 1047, 1948, 1949 , and 1950, respectively,
${ }^{5}$ Includes nurehases of used plant and equipment proprictorships and partnerships.
${ }^{6}$ Includes rarm dwellings.
TThis series is higher than farm depreciation in the national income accounts where the portion chargeable to Source: Securities and Exchange Commission.

Table 7.-Consolidated Business Income and Product, 1929-50
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Business gross produ | 94,323 | 82,055 | 67,762 | 51,043 | 48,516 | 56,631 | 63,426 | 72,200 | 80,017 | 73,812 | 80,418 | 90,064 | 113,239 | 142,401 | 164,455 | 176,440 | 174,545 | 184,877 | 210,659 | 234,169 | 230,075 | 252,654 |
| Consolida | 92,761 | 82,338 | 69,123 | 53,606 | 50,135 | 57,775 | 62,521 | 71,196 | 77,708 | 74,785 | 79,977 | 87,789 | 109,365 | 140,336 | 165,377 |  |  | 178,770 |  |  |  | 48,316 |
| To consumers. | 73,460 | 66,394 | 57,492 | 46,215 | 43,662 | 49,113 | 53,317 | 59,282 | 63,533 | 61,151 | 64,003 | 68,465 | 78,4133 | 87,218 | 97,893 | 106,338 | 117,298 | 141,367 | 159,0¢5 | 170,452 | 172,111 | 184,547 |
| To yovernment | 4,046 <br> 14,262 | 4,533 10,492 | $\underset{4,759}{6,723}$ | $\xrightarrow{3,551} \begin{aligned} & 3,449\end{aligned}$ | 3,191 2,925 | 4,109 3,951 | 3,862 5,241 | $\begin{array}{r} 4,390 \\ 7,314 \end{array}$ | $\begin{gathered} 4,571 \\ 9,131 \end{gathered}$ | 5,036 <br> 7,284 | 5,375 <br> 9,476 | 6,032 | 14,960 14,460 | $\begin{array}{r} 43,252 \\ 4,808 \\ 8,808 \end{array}$ | 61,343 6 | 62,810 8,523 | 41,479 | 10,821 22,619 | 11,981 | 16,93 37,66 | 20,341 36,260 | 18,129 44,529 |
| Ta abr | 993 | 919 | 449 | ${ }^{391}$ | ${ }^{2} 327$ | ${ }^{6} 602$ | 101 | 210 | ${ }^{+176}$ | 1,314 | 1,123 | 1,618 | 1,482 | 1,058 | $-490$ | - | - ${ }^{1} 31$ | 3,963 | 8,826 | 4,00 | 4,576 | 1,111 |
| Change in invent | 1,562 | 283 | -1,361 | -2,563 | -1,619 | -1,144 | 005 | 1,004 | 2,300 | 973 | 441 | 2,275 | 3,874 | 2,065 | 2 | 809 | -746 | . 107 | 797 | 5,029 | -3,213 | 4,338 |
| Charges against business gross prod | 94,323 | 82,055 | 67,762 | 51,043 | 48,516 | 56,631 | 63,42 | 72,200 | 80,017 | 73,812 | 80,418 | 90,064 | 113,239 | 142,401 | 164,455 | 176,440 | 174,545 | 184,877 | 21 | 2 | 230,075 | 252,654 |
| Income originating in busi | 77,850 | 66,201 | 50,705 | 34,393 | 32,340 | 40,376 | 48,022 | 54,436 | 63,431 | 50,504 | 61,011 | 69,068 | 90,656 | 117,009 | 139,803 | 146,590 | 142,026 | 154,053 | 175,48? | 198,593 | 189,44 |  |
| Compensation of empl | 43,710 | 30,423 | 32,614 | 24,565 | 23,001 | 26,738 | 29,334 | 33,429 | 38,597 | 35,029 | 38,011 | 41,643 | 52,442 | 60,860 | 80,253 | 84,868 | 83.281 | 92,161 | 106,612 | 117,542 | 115,03 | 26,383 |
| Wares and ralaries | 43 | 38,961 | 32,195 | 24, 204 | 22,676 | ${ }_{26}^{26,382}$ | 28,951 | 32,741 | 37,120 | 33,385 | 36,250 | 39,773 | 50,108 | 64,192 | 77,093 | 81,361 81,554 | 79,766 | 88.284 | 101,958 | 112,635 | 109,986 | 120,062 |
| Exceas of wage accruals over disbursements <br> Supplements to wares and sal. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 81,534 |  |  | 101,943 ${ }^{15}$ |  | 10,031 | 120,062 0 |
| Supplements to wages and salaries. | 69 | 402 | 419 | 361 | 325 | 356 | 38 | 688 | 1,477 | 1,644 | 761 | 870 | ,274 | 2,668 | 3,160 | 3,507 | 3,515 | 3,877 | 4,654 | ,90 | 5,04 | 6,321 |
| Empioyer contributions for social insurance. Other labor income | $457$ |  | 406 | 348 | 312 | 16 340 | 359 | 261 <br> 427 | 1,049 428 | 1,223 421 | 1,330 431 | 1,404 466 | 1,747 | 2,014 | 2,335 | $\xrightarrow{2,314}$ | $\stackrel{2}{1,129}$ | $\stackrel{\text { 2,112 }}{1,765}$ | 2,479 <br> 2,175 | 2,380 2,527 | $\begin{aligned} & 2,395 \\ & 2,654 \end{aligned}$ | $\begin{aligned} & \mathbf{3 , 1 8 5} \\ & 3,136 \end{aligned}$ |
| Income of unineorporated enterprises and inventory valuation adjustment | 13,927 | 10,963 |  |  | 5,207 | 6,603 | 9,858 | 9,942 | 12,249 |  |  | 12,6\%0 | 16,504 | 23,041 | 26,731 | 28,997 | 31,247 | 35,375 | 35,36E | 39,75I | 33,903 | 35,964 |
| Business and professional | 8,262 | 7,032 | 5,316 | 3,206 | 2,925 | 4,276 | 4,987 | 6,074 | 6,630 | 6,347 | 6,776 | 7,720 | 0,566 | 12,573 | 14,963 | 17,156 | 18.719 | 20,585 | 19,776 | 22,085 | 20,903 | 22,277 |
| Income of unincorporated enterprises | 8,120 | 6,277 | 4,705 | 2,911 | 3,45 | 4,330 | 5,037 | 6,10 | 6,659 | 12 | 6,942 | 7.772 | 10,210 | 12,945 | 15, 117 | 17,22 | 18,83 | 22,404 | 21,323 | 22,480 | 20,271 | 23,829 |
| Inventory valuation adjustment |  | 750 | 611 | 295 | -525 | -5. | -50 | -12 | -29 | 221 | -166 | -52 | -644 | -372 | -154 | -70 | -113 | -1,819 | -1,547 | -395 | 632 | -1,552 |
| Farm. | 5,60 | 3,931 | 2,89 | 1,715 | 2,282 | 2,327 | 4,871 | 3,86 | 5,619 | 4,421 | 4,506 | 4,940 | 6,938 | 10,468 | 11,768 | 11,841 | 12,528 | 14,790 | 15,58 | 17,666 | 13,000 | 13,687 |
| Itental income | 5,811 | 4,786 | 3,620 | 2,508 | 2.018 | 2,005 | 2,288 | 2,68 | 3,140 | 3,278 | 3,46 | 3,620 | +,322 | 5,395 | 6,109 | 6,495. | 6,256 | 6,620 | 7,05 | 7,506 | 7,545 | 8,039 |
| Corporate profits and valuation adjustment | 10,0:8 | 6.426 | 1,635 | -1,061 | -1,979 | 1.038 | 2,838 | ,842 |  |  | 5,50 | 8,043 | 14,38+ | 19,669 | 24,041 |  | 18,925 | 17,817 |  | 30,845 |  |  |
| Corporate profits before | 0,586 | 3,166 | -779 | -3,008 | 164 | 1,663 | 3,065 | 5,580 | 6,075 | 3,082 | 6,28, | 9,091 | 17,001 | 20,873 | 24,814 | 24,040 | 19,489 | 23,010 | 29,765 | 32,896 | 27,495 | 40,276 |
| Corporate profits tax liability | 1,398 |  | 500 | 382 | 524 | 746 | 965 | 1,411 | 1,512 | 1,040 | 1,462 | 2,878 | 7,846 | 11,605 | 14,406 | 13,525 | [1,215 | 9,583 | 11,040 | 13,028 | 10,989 | 18,593 |
| Corporate profits after tax | 8,188 | 2,318 | -1,279 | $-3,390$ | $-360$ | 917 | 2.100 | 4,169 | 4,563 | 2,042 | 4,821 | 6,213 | 9,155 | 9,208 | 10,408 | 10,515 | 8,274 | 13.427 | 17,82 | 19,808 | 16.506 | 21,683 |
| Dividends.........- | 6,734 | 5,474 | 4,135 | 2,618 | 2,088 | 2,588 | 2,812 | + 4,563 | 4,682 | 2,978 | 3,6,59 | 3,900 | +,356 | 4,190 | 4, 4,052 | 4,577 $\mathbf{5 , 9 3 8}$ | 4,624 3,650 | ${ }_{7} \mathbf{7}, 1,667$ | 11,510 | 6,991 | 7,239 | 8,782 |
| Undistributed profits <br> Inventory valuation adjustnent | $\begin{array}{r} 2,454 \\ 472 \end{array}$ | -3,156 | -5,414 | $\begin{array}{r} \mathbf{6}, 008 \\ 1,0+7 \end{array}$ | $\left\|\begin{array}{l} -2,4+8 \\ 2,143 \end{array}\right\|$ | $\begin{array}{r} 1,671 \\ -625 \end{array}$ | $\begin{aligned} & -712, \\ & -227, \end{aligned}$ | $\begin{aligned} & -396 \\ & -738 \end{aligned}$ | -119 -31 | $\begin{array}{r} 936 \\ -963 \end{array}$ | 1,162 -714 | $\begin{array}{r}2,313 \\ -148 \\ \hline\end{array}$ | -4,799 | - $\begin{array}{r}5,018 \\ -1,204 \\ \hline\end{array}$ | 6,052 | ${ }^{\mathbf{5}, 938}$ | 3,650 | -5,167 | 11,515 | 12,877 | $\mathbf{9 , 2 0 7}$ <br> $\mathbf{2 , 1 3 7}$ | -5,126 |
| Net interest | 4,344 | 4,603 | 4,622 | 4,360 | 4,093 | 3,00 | 3.704 | 3,541 | 3,401 | 3,384 | 3,284 | 3,102 | 3,00: | ,004 | 2,669 | 2,477 | 2,31 | 2,080 | 2.43 | 2,9 | 3,3 | 3,451 |
| Adjustments to husiness | 7,657 | 7,107 | 8,745 | 8,98 | 8,931 | 9,037 | 8,035 | 10,0 |  | 9,316 | 10,70 | 11,056 | 13,28 | 4,451 | 13,972 | 17,96 | 20,109 | 18,661 | 19,731 | 17,96 | 21,57 | 22,490 |
| Indireet busincss tax and liability |  |  |  |  |  |  | 8,190 |  |  | 9,154 |  |  | 11,290 |  | 12,735 | 14,127 | 15,522 | 17,349 | 18,658 | 20,390 | 21,65 | .798 |
| Business transfer payr | 587 | , 534 | 6, 64 | 737 | 1659 |  | ${ }^{1} 594$ | . 994 |  | + 420 | 451 | 431 | 502 | 495 | 30.5 | 50 | :32 | 55 | 674 | , | 742 | 752 |
| Statistical diserepancy-. | -80 | -70.5 | 1,188 | 1,437 | 1,235 | 864 | -346 | 862 | -1,050 | -91 | 1,375 | 1,024 | 1,503. | 2,337 | 91 | 4,035 | 4,890 | 1,684 | 324 | -3,186 | -838 | -1,800 |
| Less: Subsidies minus current surplus of government enterprises..- | -147 | 23 |  |  |  |  | 403. | 39 | 60 |  | S | 0 | 102 | 150 | 3 | 705 | 835 | 023 | -75 | -21 | -12 | 260 |
| Copital consumption allowances | 8,816 | 8,747 | 8,312 | 7,663 | 7,245 | 7,218 | 7,369 | 7,684 | 7,972 | 7.902 | 8,101 | 8,440 | 9,294 | 9,981 | 10,680 | 11,887 | 12,410 | 12,163 | 14,845 | 17,612 | 19,0.58 | 21,177 |


|  | 1929 | 1930 | 331 | 1932 | 1933 | 1934 | 1935 | 193 | 1937 | 193 | 1939 | 19 | 1941 | 1932 | 1913 | 194 | 1945 | 194 | $19+7$ | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total receipts | 11.287 | 10,763 | 9,479 | 8,883 | 9,32 | 10,460 | 11,370 | 12,930 | 90 | 15.033 | 15,403 | 17,780 | 25.219 | 32.883 | 49,502 | 51.760 | 53.742 | 51.721 | 57.787 | 39,780 | 57,022 | 6,8813 |
| Felleral | $\left\|\begin{array}{c} 3,833 \\ 1,323 \\ 1,238 \\ 61 \\ \hdashline \cdots \end{array}\right\|$ | $\begin{aligned} & 3,053 \\ & 1,183 \\ & 1,033 \\ & \mathbf{1 , 0 3 1} \\ & 6.61 \end{aligned}$ | $\begin{array}{r} 2,049 \\ 643 \\ 567 \\ 564 \end{array}$ | $\begin{array}{r} 1,705 \\ 360 \\ 300 \\ 300 \\ 30 \\ \cdots \end{array}$ | 2,673 | 3,543 | 3,078 | $5,026$ | $7,049$ | $6.491$ | 6,742 | 8,683 | 15,656 | 23.199 | 39,590 | 41,590 | 43,021 | 39,672 | 43,968 | 43,956 | 33,0 | 50 |
| Persotal tax and nontax reccipts <br> before refunds. <br> Income taxes ${ }^{3}$ <br> Estate und fift taxes <br> Foner taxess |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | 375 | 452 | 580 | 1.748 | 1,319 | 1,24t | 1,874 | 1,036 | 2,6+4 | 4,062 | 16,923 | ${ }_{\text {17,133 }}^{17}$ | ${ }_{19,848}^{20,710}$ | ${ }^{18,885}$ | 21,323 | 20,783 | 18.7819 | 17,483 18.781 |
|  |  |  |  |  | ${ }_{35}^{69}$ | 129 |  |  | 402 |  |  |  | 401 | ${ }_{121}^{471}$ | 461 | - 565 | 663 | 734 | ${ }^{83}{ }^{\text {c }}$ | 900 | 74 | 658 |
| Leses: Tax refunds | co | 49 | 36 | 35 | 1. | 1.4 | 15 | 13 | 19 | 19 | 25 | 29 | 28 | 28 | 23 | 344 | 1,331 | 1,653 | 1,673 | 1,886 | 2,368 | 1,709 |
| Equals: Personal tax and nontax receipts. | 1,263 | 1,134 |  | 331 | 47 | 595 | 827 | 1,130 |  | 1,635 | 1,235 | 1,364 | 2,016 | 4.668 | 17 | 17,536 | 19,379 | 17,162 | 10,050 | 18, | 16, | 74 |
| Corporate profits tax | 1,253 | 750 | 425 | 325 | 465 | $\mathrm{crf}^{6}$ | $83+$ | 1,254 | 1,347 | 006 | 1,306 | 2,674 | ,569 | 11,321 | 13,948 | 13.066 | 10,760 | 9,121 | , 33 | 12,358 | 10,370 | 17,638 |
| Indirect business tax and nontax aecruals before refunds. | 1,219 | 1,067 | 912 | 937 | 1,658 | 2.270 | ${ }^{2}, 235$ | 2.273 | 2.425 | 2,238 | 2.347 | ${ }_{2}^{2.662}$ | 3,593 | 4,073. | 4,979 | 6,226 | 7,180 | 7.975 |  |  | 30 | ${ }^{9} .074$ |
| Exesise Litues | Stis | 11 | 190 | ${ }^{635}$ | ${ }^{1,2188}$ | ${ }^{1,838} 3$ | -1,730 | ci,693 | 1,775 | , 5 | - |  | 2.8178 | 1,2154 | - ${ }^{4,4756}$ | 2.083 | 2, 2,74 |  | -7,337 <br> 2,39 |  |  |  |
| $\xrightarrow{\text { Oother }}$ | 44920 | 8 | 425 | 387 | 409 | 1, 1060 | 478 793 | ${ }_{5}^{536}$ | 563 | (567 | -5931 | $\begin{array}{r}645 \\ \hline 756 \\ \hline 20\end{array}$ | 1.1481 | 1,2590 | 1,932 | 2, ${ }_{248}^{1925}$ | 2,80 | (1,219 | 1, 3 , 260 | (1,312 |  | (1,3+8 |
| Customs dut Capital stock | 599 | 474 | 373 | 259 | 296 | 308 92 37 | 371 | [403 | 469 | $\begin{array}{r}357 \\ 127 \\ \hline 15\end{array}$ | 34 <br> 133 <br> 4 | 327 167 4 | ${ }^{438}$ | - $\begin{array}{r}313 \\ 3829 \\ \hline 68\end{array}$ | 410 381 1 1 | 378 372 371 | ${ }^{397}$ | ${ }^{503}$ | 436 | 410 | 381 | ${ }_{5} 550$ |
| Leess: Tax refun | 26 | 22 | 18 | 13 | 39 | 89 | 54 | 22 | 19 | 22 | 25 | 35 | 26 |  | 35 |  | 52 | 79 | 69 | 83 | 2 | 67 |
| Equals: Indirect business tax and notatax aceruals. | 1,193 | 45 | 894 | 924 | 19 | 81 | 2,181 | 2,251 | 2,406 | 2,216 | 2,322 | 2,627 | 3,567 | 4,0 | 4,944 | 6,171 | 7,128 | 7,896 | 7,874 | 8,030 | 8,158 | 9,007 |
| Contributions for social insurance | 124 | 124 | 123 | 125 | 115 | 121 | 136 | 391 | 1,573 | 1,734 | , 879 | 2,015 | 2,504 | 3.161 | 4,181 | 4,817 | 5,754 | 5,493 | 5,108 | 4,511 | 4,937 | 5,999 |
| te and lo | 7,571 | 835 | 7,743 | 7,31 | 7,157 | 8,550 | 9,104 | 8,62 | 9,105 | 9,320 | 0,649 | 9,0 | 10,370 | 10,572 | 10,854 | 1,117 | 11,591 |  | 15,557 | 17,8 | 19,620 | 21,674 |
| Personal ta | 1,38. | 1,373 | 1,251 | 1,124 | 990 | 1,000 | 1,061 | 1,128 | 1,198 | 1,227 | 1,205 | 1,240 |  | 1,313 | 1,328 | 1,399 | 1,488 | 1,646 |  | ,145 |  | . 781 |
| Death andesfititix |  | 1182 | 168 | 137 | 110 | ${ }^{87}$ | 109 | ${ }_{116} 11$ | 129 | ${ }_{187}^{138}$ | 122 | 115 | 115 <br> 115 <br> 1 | 210 | 110 | 3124 | 146 | - 152 | 4 | - | ${ }_{173}$ | 16 |
| Motor vehicie elice | ${ }_{148}^{187}$ | ${ }_{154}^{183}$ | 171 | 158 <br> 144 <br> 1 | 152 129 |  | 163 129 | 178 178 | 183 134 | 181 137 | 137 |  | 219 <br> 142 | 19 | 183 <br> 145 | $\begin{array}{r}178 \\ 147 \\ \hline 18\end{array}$ | 182 149 |  | 171 | 233 183 | $\stackrel{230}{231}$ | ${ }_{23}^{333}$ |
|  | $\begin{gathered} 48 \\ 694 \\ 694 \end{gathered}$ | 695 | 4 <br> 642 | $\begin{array}{r}148 \\ \hline 57\end{array}$ | 48 485 48 | $\begin{gathered} 525 \\ 485 \\ 485 \end{gathered}$ | 60 479 | ${ }^{64}$ | 69 479 | 75 489 489 | 78 477 | 83 478 | 148 478 | 195 504 504 | 145 492 49 | $\begin{array}{r}148 \\ \hline 912 \\ \hline 12\end{array}$ | 99 542 | (120 | 139 <br> 693 <br> 9 | 153 <br> 835 <br> 8 | 183 <br> 952 <br> 18 | -1,042 |
| Corporate profits tax acerrual | 145 | 08 | 75 | 57 | 59 | 100 | 131 | 157 | 165 | 134 | 156 | 199 | 277 | 344 | 458 | 459 | 455 | 462 | 604 | 670 | 613 | 895 |
| Indirect business notax atax and |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sales taxes $\mathrm{I}^{2}$ - | (14) 4 | ${ }^{5000}$ | 545 | ${ }^{5} 512$ | ${ }_{6}$ | - 904 | 1,096 | 1,306 | 1,417 | 1,463 | 1,542 | 1,705 | 1,942 | 1,900 | 1,831 | 1,866 | 2,110 | ${ }^{2} 2.76$ | 3,202 | 3 3,715 | , | ${ }_{4}^{4,7}$ |
| Casosilin | ${ }^{41}$ | 500 | 524 | 522 | 524 | 563 | 620 141 | ${ }^{369}$ | 748 <br> 748 | ${ }_{175}^{782}$ | 815 | - 805 | -958 | 855 <br> 865 | ${ }_{704} 7$ | 681 <br> 81 <br> 281 | 777 <br> 39 | 1,02 | 1,176 | (318 | 1,447 | ${ }_{1}^{1,662}$ |
| Tobac | (16) | (11) |  | ${ }_{16}^{4}$ | -34 | ${ }_{24}^{89}$ | 145 3 | ${ }_{49}$ | ${ }^{175}$ | 175 | ${ }_{78} 8$ | 209 102 | ${ }_{122}$ | 137 | 151 | ${ }_{153}$ | 168 | ${ }^{427}$ | ${ }_{289}^{407}$ | ${ }_{374}$ | 40 |  |
| Motor vechicle | 153 |  | ${ }_{1}^{148}$ | ${ }^{137}$ | ${ }^{133}$ | 140 | 153 | 166 | 170 | 178 | 182 | 200 | 213 | 212 | 212 | 215 | 231 | 271 | 324 | 368 | 41 | 463 |
| Property taxes ${ }^{\text {P }}$ | 4,443 | 4,727 | 4,5391 | 4,424 | 3,962 | ${ }^{3,907}$ | ${ }^{4.023}$ | 4,058 | ${ }^{4.162}$ | 4, 732 | 4,285 | 4,407 | ${ }^{4,449}$ | 4,893 |  | 4,565 | 4,642 | $\xrightarrow{4,836}$ |  | 5, $\begin{aligned} & \text { 5,388 } \\ & 1,747\end{aligned}$ | ${ }_{6}^{6,64}$ | 2,057 |
| Nontaxes 1"..... | 208 | 216 | 232 | 253 | 248 | 247 | 260 | 263 | 280 | 288 | 285 | 296 | 303 | 318 | 314 | 327 | 347 | ${ }_{4}$ | ${ }_{4}{ }_{48}$ | , 532 | 60 | 650 |
| Contributio | 119 | 129 | 139 | 153 | 170 | 183 | 197 | 207 | 227 | 243 | 257 | 267 | 0 | ${ }^{7}$ | 5 | 56 | 84 | 88 | 575 | 709 | 800 | ${ }^{96}$ |
| Federal grants-in-aid ${ }^{15}$. | 117 | 125 | 313 | 134 | 502 | 1,633 | 1,706 | 724 | 764 | 778 | 988 | 857 | 807 | 888 | 942 | 47 | 0 | 1,108 | 1,738 | 1,980 | 2,22 | 2,339 |

[^31]${ }^{10}$. Consists of poll taxes and miscellaneous licenses, and all local personal taxes with the exception of the property ${ }_{1 i}$ Consists of eharges for Government products and scrvices not accounted for under Government enterprises (such as tuition fees and public hospital fees); fines and penalties; donations; and special assessments for outlay paid by unincorporated business, including home-owners. ${ }_{12}$ Minor sales taxes not specified below are included in "other taxes."
${ }^{12}$ Minor sales taxes not specified below are included in "other taxes." taxes, minor sales taxes, and all local indirect business taxes other than the property tax.
it Consists mainly of charges for Government products and services not accounted for under Government 14 Consists mainly of charges for Government products and services net aceounted for under Government
enterprises, including rents and royalties; of fines and penalties; special assessments for operation; and donations. enterprises, including rents and royalties; of fines and penalties; special assessments for pperation; and donationts
15 Includes shared receipts as well as grants-in-aid. The latter consist of highway grants, education grants
The (agricultural researeh and education, vocational education, and rehabilitation, war training and researcen pra grams, and veterans' postwar training programs, , pubice assistance grants miny
the Social Sccurity program), grants for the administration of the Unemployment Compensation program and of the U. S. Employment Services, Public Health grants, grants made by the Bureau of Community Facilitios
of the Federal Works Aqeency to war-congested communities, the Federal contribution to the District of Columbia,
grants made by the Federal Emergency Relief Administration and the Public Works Administration, and miscel lancous other grants.
14
Small amounts included in "other taxes."

Table 9.-Government Expendituree, 1929-50; ${ }^{1}$
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1037 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total expenditures ${ }^{2}$ | 10,220 | 11,020 | 12,277 | 10,588 | 10,600 | 12,815 | 13.225 | 15,809 | 14,705 | 16,523 | 17,270 | 18,332 | 28,712 | 64,046 | 93,419 | 103,122 | 82,981 | 47,140 | 44,044 | 51,574 | 69,807 | 61,799 |
| Federal | 2,648 | 2,777 | 4,142 | 3,170 | 3,983 | 6,393 | 6,516 | 8,501 | 7,225 | 8,451 | 8,955 | 10,094 | 20,545 | 56,148 | 85,979 | 95,584 | 84,840 | 37,060 | 31,113 | 35,488 | 41,508 | 41,573 |
| Purchases of goods and services..... Compensation of employees.. | $\begin{array}{r}1,311 \\ \hline 900\end{array}$ | 1,410 | $\begin{array}{r}1,537 \\ \hline 942\end{array}$ | $\begin{array}{r}1,480 \\ \hline 901\end{array}$ | 2,018 | 2,991 | 2,931 | 4,815 | 4,552 | 5,280 3,529 | 5,157 $\mathbf{3 , 4 4 4}$ 1 | 6,170 3,537 | 16,923 5,046 | 52,027 10,836 | (1251,223 | 89,006 27,905 | 74,796 | 20,946 | 15,784 ${ }_{\mathbf{9}, 356}$ | 21,022 | 25,473 | 22,831 10,783 |
| Net purchases from business...- | 341 | 404 | 515 | 519 | +782 | 1,234 | 1,085 | 1,158 | 1,422 | 1,687 | 1,649 | 2,549 | 11,547 | 39,998 | 58,557 | 60,176 | 43,239 | 6,931 | 6,415 | 9,875 | 11,660 | 10,783 8,604 |
| New construction.---....- | 155 | 209 | 271 | 333 | 334 | 404 | 467 | 502 | . 529 | 476 | 1537 | , 974 | 3,588 | 9,279 | 5,363 | 1,761 | 1,440 | -931 | -957 | 1,186 | 1,490 | 1,654 |
| Other <br> Less: Domestic sales of surplus consumption goods and materials. $\qquad$ | 186 | 195 | 244 | 186 | 448 | 830 | 618 | 656 | 893 | 1,211 | 1,116. | 1,581 | 7,966 | 30,735 16 | 53,261 | 58,624 209 | 42,221 422 | 6,716 716 | 5,751 293 | 8,832 143 | 10,253 83 | 6,980 30 |
| Net purchases from abroad...-- | 70 | 71 | 80 | 60 | 49 | 39 | 55 | 65 | 94 | 64 | 64 | 84 | 330 | 1,193 | 1,411 | 925 | 943 | $-726$ | 13 | 2,225 | 3,834 | 3,444 |
| Purchases from abroad...-- | 103 33 | 93 <br> 28 | 92 12 | 64 4 | 53 | 45 6 | ${ }_{5}{ }_{4}$ | $\begin{array}{r}68 \\ 3 \\ \hline\end{array}$ | 99 | 70 | ${ }_{59}^{68}$ | 87 3 | 367 <br> 37 | 1,381 188 | 1,985 | $\begin{array}{r}1,877 \\ \mathbf{9 5 2} \\ \hline\end{array}$ | 2,679 <br> 1,736 | 1,258 | 1,015 | 2,713 488 | $4,146$ | $\begin{array}{r} 3,639 \\ \mathbf{3} \\ \hline 195 \end{array}$ |
| Transfer payments | 694 | 746 | 1,675 | 913 | 605 | 599 | 623 | 2,064 | 828 | 1,196 | 1,240 | 1,426 | 1,375 | 1,426 | 1,246 | 1,850 | 4,324 | 9,223 | 8,903 | 7,656 | 8,742 | 10,887 |
| Grants-in-aid to State and local governments ${ }^{3}$. | 17 | 25 | 313 | 134 | 602 | 1,633 | 1,706 | 724 | 764 | 778 | 988 | 857 | 807 | 888 | 942 | 947 | 870 | 1,108 | 1,738 | 1,986 | 2,228 | 2,339 |
| Net interest paid | 441 | 380 | 444 | 479 | 517 | 590 | 526 | 485 | 616 | 619 | 643 | 726 | 774 | 1,038 | 1,707 | 2.420 | 3,334 | 4,164 | 4,117 | 4,179 | 4,327 |  |
| Interest paid | 733 | 684 | 679 | 718 | 845. | 1,016 | 1,025 | 1,062 | 1,240 | 1,158 | 1,189 | 1,298 | 1,379 | 1,726 | 2,481 | 3,262 | 4,335 | 5,217 | 5,230 | 5,354 | 5,611 | 5,803 |
| Less: Intoreat received | 292 | 304 | 235 | 239 | 328 | 426 | 499 | 577 | 624 | 539 | 546 | 572 | 60.5 | 688 | 774 | 842 | 1,001 | 1,053 | 1,113 | 1,175 | 1,284 | 1,387 |
| Subsidiea less current surplus of government enterprises 4 | 85 | 116 | 173 | 164 | 251 | 80 | 3 | 413 | 465 | 578 | 927 | 915 | 666 | 769 | 861 | 1,371 | 1,516 | 1,619 | 571 | 645 | 738 | 1,100 |
| State and local. | 7,689 | 8,368 | 8,448 | 7,552 | 7,119 | 8,055 | 8,415 | 8,032 | 8,244 | 8,850 | 9,303 | 9,005 | 8,974 | 8,786 | 8,382 | 8,475 | 9,011 | 11,188 | 14,669 | 18,072 | 20,527 | 22,56\% |
| Purchases of goods and service | 7,161 | 7,759 | 7,681 | 6,597 | 5,940 | 6,759 | 6,055 | 6,928 | 7.038 | 7,470 | 7,911 | 7.763 | 7.781 | 7.697 | 7,407 | 7.517 | 8,040 | 9,970 | 12,828 | 15,576 | 18,126 | 19,668 |
| Compensation of employees.-.- | 3,456 | 3,630 | 3,737 | 3,565 | 3,531 | 3,884 | 4,178 | 3,696 | 3,889 | 4,121 | 4.185 | 4.280 | 4,368 | 4,443 | 4,621 | 4,883 | 5,296 | 6.080 | 7,262 | 8,517 | 9.485 | 10,143 |
| Purchases from business......- New construction | 3,705 $\mathbf{2 , 2 3 6}$ | 4,129 | $\xrightarrow{3,293}$ | 3,032 1,445 | 2,409 | $\xrightarrow{2,875} 1$ | 2,777 | 3,232 <br> 1,592 | 3,149 1,410 | 3,349 1,488 | 3,726 1,809 | 3,483 1,559 | 3,413 1,416 | 3,254 | ${ }^{2,786}$ | 2,634 | 2,744 | 3,890 1,431 | 5,566 <br> $\mathbf{2 , 5 3 9}$ | 7,059 $\mathbf{3 , 7 2 1}$ | 8,681 4,913 | $\underset{5}{\mathbf{5 , 5 2 5}}$ |
| Other.- | 1,469 | 1,585 | 1,651 | 1,587 | 1,525 | 1,744 | 1,803 | 1,640 | 1,739 | 1,861 | 1,917 | 1,924 | 1,997 | 2,162 | 2,114 | 2,082 | 2,092 | 2,459 | 3,027 | 3,338 | 3,768 | 4,066 |
| Transfer payments | 218 | 264 | 349 | 502 | 759 | 953 | 1,172 | 862 | 1,023 | 1,209 | 1,272 | 1,262 | 1,242 | 1,229 | 1,220 | 1,241 | 1,323 | 1,640 | 2,220 | 2,890 | 2,868 | 3,443 |
| Not interest paid. | 5 | 584 | 640 | 662 | 653 | 640 | 615 | 616 | 588 | 573 | 562 | 565 | 515 | 479 | 433 | 383 | 329 | 268 | 261 | 272 | 283 | 294 |
| Interest paid | 773 | 829 | 842 | 856 | 844 | 833 | 806 | 806 | 779 | 762 | 752 | 761 | 709 | 681 | 660 | 627 | 581 | 535 | 533 | 554 | 587 | 621 |
| Less: Interest received. | 231 | 245 | 202 | 194 | 191 | 193 | 191 | 190 | 191 | 189 | 190 | 196 | 194 | 202 | 227 | 244 | 252 | 267 | 272 | 282 | 304 | 327 |
| Less: Current surplus of government enterprises | 232 | 230 | 222 | 209 | 233 | 297 | 327 | 374 | 405 | 402 | 442 | 495 | 564 | 619 | 678 | 666 | 681 | 690 | 646 | 660 | 750 | 840 |

- Subsidies reflected consist of Covernment payments to farmers, payments for the exportation and diversion

Table 10.-Social Insurance Funds, 1929-50
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 19.8 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Federal: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Contributions for social insurance Employce contributions.... | 124 95 | ${ }^{124}$ | 123 90 | 125 <br> 95 | 115 89 | 121 92 | 136 92 | 391 <br> 104 | 1.573 480 | 1,734 | 1,879 491 | 2,015 | ${ }^{2,504}$ | 3,161 1,044 | 4,181 1,706 | 4,817 2.092 | 5,754 <br> 2,174 <br> 1 | 5,493 $\mathbf{1} 773$ | 5.108 1.833 | 4,511, | 4,937 | 2, $\mathbf{2} \mathbf{4 9 6}$ |
| Employer contributions...............- | 29 | 28 | 27 | 30 | 26 | 29 | 44 | 287 | 1,093 | 1,276 | 1,388 | 1,469 | 1,818 | 2,117 | 2,475 | 2,725 | 3,580 | 3,720 | 3,275 | 2,682 | 3,081 | 3,503 |
| enterprises-..............- | 29 | 28 | 27 | 30 | 26 | 26 | 37 | 47 | 66 | 79 | 86 | 95 | 104 | 138 | 174 | 447 | 1,485 | 1,654 | 840 | 342 | 732 | 393 |
| Private..........-...............- |  |  |  |  |  | 3 | 7 | 240 | 1,027 | 1,197 | 1,302 | 1,374 | 1,714 | 1,979 | 2,301 | 2,278 | 2,085 | 2,066 | 2.435 | 2,340 | 2,349 | 3,110 |
| Less: Transferred to general government- |  |  |  |  |  | ) | 7 | 52 | 133 | 138 | 160 | 147 | 186 | 172 | 212 | 182 | 196 | 244 | 114 | 17.3 | 226 | 341 |
| Equals: Retained by social insurance | 124 | 124 | 123 | 125 | 115 | 118 | 129 | 330 | 1,440 | 1,596 | 1,719 | 1,868 | 2,318 | 2,989 | 3,969 | 4.635 | 5,558 | 5,249 | 4,994 | 4,336 | 4,711 | 5,6,38 |
| Plus Investiment income | 21 | 26 | 20 | 19 | 25 | 25 | 26 | 37 | 154 | ${ }^{1} 9$ | 122 | 1152 | 183 | 224 | 279 | 305 | 492 | 608 | 667 | $7{ }^{756}$ | - 8.73 | ${ }_{6}^{884}$ |
| Equals: Net receipts. | 145 | 150 | 149 | 144 | 140 | 143 | 15.5 | 376 | 1,594 | 1,690 | 1,841 | 2.020 | 2.513 | 3,213 | 4,248 | 5,000 | 6,050 1,336 | $\mathbf{5 , 8 5 7}$ $\mathbf{2 , 3 5 7}$ | 5.661 8.139 | 5,032 | 5, 3 , 395 | 6, 6.827 |
| Legre Benefit payments | 102 | 99 | 88 | 72 | 58 | 97 <br> 49 | 62 | 281 | 1,452 | 1,084 | 1,145 | 1,180 | 1,788 | 2,459 | 3,703 | 4,336 | 4,714 | 3,500 | 3,522 | 2,862 | 2,000 | 417 |
| State and local: |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 335 | 356 | 384 | 488 | 575 | 709 | 800 | 963 |
| Contributions for tocial insurance. Employec | 119 | 129 51 | 139 55 | 153 57 | 170 63 | 183 65 | 197 | ${ }^{207} 7$ | 227 | 243 | 105 | 112 | ${ }_{115} 8$ | 122 | 133 | 144 | 159 | 238 | 285 | 349 | 378 | 449 |
| Employer (government and govern- | 72. |  |  |  |  |  |  |  |  |  | 152 | 155 |  | 185 | 202 | 212 | 225 | 250 | 290 | 3 n 0 | ${ }^{2} 422$ | ${ }^{1} 514$ |
| Less: Transferred to gencral government. | 1 | 1 | 8 | 1 | 2 | 2 | 2 | 2 | 14 | 5 | 3. | S | , | 4 | , | 4 | 5 | 6 | 7 | 11 | 16 | 23 |
| Fquals: Retained by social insurance |  |  |  |  |  |  |  |  |  |  | 254 | 264 | 277 | 303 | 331 | 352 | 279 | 482 |  | 693 |  |  |
| Plunds......... | 118 | 128 | 138 | 152 | 168 | 181 | 19.5 | 205 | $\stackrel{225}{4}$ | 48 | 53 | 20.8 | ${ }_{66} 6$ | 69 | ${ }_{74}{ }^{1}$ | 78 | 82 | 88 | 91 | 102 | 115 | 131 |
| Equals: Net receipts. | 134 | 1.47 | 159 | 176 | 196 | 212 | 230 | 244 | 268 | 288 | 307 | 323 | 343 | 372 | 405 | 430 | 461 | 568 | 659 | 799 | 839 | 1,071 |
| Leas: Benefit payments Equals: Surplus $(+)$ or de | 72 | 789 | 86 73 | 95 81 | ${ }_{1}^{110}$ | 119 | 127 | 137 107 | 144 | 131 | 157 <br> 150 | 163 160 | 175 | 178 | 213 <br> 192 | ${ }_{207}^{223}$ | 221 | 308 | 362 | 473 | 543 | Gfirs |


${ }^{1}$ See Part III, scetion on Net foreign investment.

Table 12.-National Income by Legal Form of Organization, 1929-50


Table 12.-National Income by Legal Form of Organization, 1929-50-Continued
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Income of unincorporated enterprises and inventory valuation adjustment. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 13,8816 | 10,992 | 5,292 | 3,193 | 2,911 | 6,589 <br> 4,262 | 9,836 4,965 | 6,908 | $\begin{array}{r}12,207 \\ \hline 688\end{array}$ | 10,737 6,316 | 11,252 6,746 | 12,663 | 16,444 | 22,945 | 26,582 | 28,830 | 31,062 | 35,175 | 35,1501 | 21,880 | 33,728 20,728 | $\begin{aligned} & 35,778 \\ & 22,091 \\ & \hline \end{aligned}$ |
| Income of unincorporated enterprises | 8,074 | 6,236 | 4,681 | 2,898 | 3,436 | 4,316 | 5,015 | 6,160 | 6,617 | 6,095 | 6,912 | 7,735 | 10,159 | 12,849 | 14,968 | 17,059 | 18,047 | 22,204 | 21,108 | 22,275 | 20,096 | 23,643 |
| Inventory valuation adjustment |  |  |  |  | -525 |  |  | -120 | -29 | 221 | -166 | -52 |  | -372 | -154 |  | -113 | -1,819 |  | -395 | 632 |  |
| Farm.-- | 5,665 | 3,931 | 2,898 | 1,715 | 2,282 | 2,327 | 4,871 | 3,868 | 5,619. | 4,421 | 4,506 | 4,940 | 6,938 | 10,468 | 11,768 | 11,841 | 12,528 | 14,790 | 15,58? | 17,666 | 13,000 | -13,687 |
| Net interest | 632 | 759 | 777 | 714 | 628 | 554 | 516 | 464 | 456 | 474 | 503 | 497 | 505 | 461 | 369 | 321 | 293 | 283 | 346 | 446 | 524 | ${ }_{499}$ |
| Other private business ${ }^{1}$ | 8,681 | 7,644 | 6,352 | 4,969 | 4,305 | 4,318 | 4,475. | 4,887 | 5,389 | 5,463 | 5,643 | 5,823 | 6,607 | 7,676 | 8,511 | 8,939 | 8,740 | 0,361 | 10,154 | 11,213 | 11,519 | 12,429 |
| Compensation of employces | 729 | 715 713 | ${ }_{663}^{665}$ | 561 559 | 523 522 | 568 567 | 603 602 | 651 <br> 646 | 725 706 | 726 701 | 757 730 | 785 757 | 832 806 | 800 776 | 902 875 | 966 938 | 1,019 | 1,214 | 1,392 | $1,566^{\prime}$ 1,519 | 1,655 1,597 | 1,800 1,730 |
| Supplements to wages and salaries. |  | 73 | 663 | 558 | 522 | 507 | 602 | 646 | 706 19 | 701 25 | 730 27 | 757 28 | 806 26 | $\begin{array}{r}76 \\ 24 \\ \hline\end{array}$ | 875 27 | $\begin{array}{r}938 \\ \hline 28\end{array}$ | 987 32 | 1,181 33 | 1,357 35 | 1,519 | 1,597 58 | 1,730 70 |
| Income of unincorporated enter-prises-business and professional ${ }^{5}$ | 46 | 41 | 24 | 13 | 14 | 4 | 22 | 34 | 42 | 31 | 30 | 37 | 60 | 96 | 49 | 167 | 185 | 200 | 15 | 205 | 175 | 186 |
| Rental income of person | 5,811 | 4,786 | 3,620 | 2,508 | 2,018 | 2,095 | 2,288 | 2,682 | 3,140 | 3,278 | 3,465 | 3,620 | 4,322 | 5,395 | 6,109 | 6,495 | 6,250 | 6,620 | 7,059 | 7,506 | 7,54s | 8,039 |
| Net interest. | 2,095 | 2,102 | 2,043 | 1,887 | 1,750 | 1,641 | 1,562 | 1,520 | 1,482 | 1,428 | 1,391 | 1,381 | 1,393 | 1,385 | 1,351 | 1,311 | 1,280 | 1,327 | 1,488 | 1,933 | 2,144 | 2,404 |
| Government enterprises. | 758 | 771 | 768 | 705 | 631 | 603 | 778 | 842 | 870 | 898 | 921 | 979 | 1,065 | 1,166 | 1,363 | 1,423 | 1,513 | 1,826 | 1,911 | 2.170 | 2,380 | 2,508 |
| Compensation of employees | 758 | 771 | 768 | ${ }_{691}^{705}$ | 631 617 | 693 678 | 778 760 | 842 818 | 870 838 | 878 860 | 881 | 938 | 1,020 | 1,169 | 1,315 | 1,472 | 1,455 | 1,764 | 1,949 | 2,093 | 2,299 | 2,414 |
| Supplements to wages and salarics | 745 13 | 757 | 754 | 691 14 | 614 14 | 67 | 768 18 | 818 24 | 838 32 | 80 38 | 881 40 | 938 | 1,020 45 | +47 | 1,315 48 | re3 51 | 1,455 58 | 1.764 62 | 1,849 62 | 2,09, 71 | 2,293 81 | 2,414 94 |
| Income originating in general go | 4,356 | 4,565 | 4,679 | 4,466 | 4,718 | 5,002 | 5,969 | 7,288 | 6,925 | 7,650 | 7,629 | 7.817 | 9,414 | 15,279 | 25,876 | 32,788 | 35,910 | 20,821 | 16,618 | 17.433 | 19.424 | 20.026 |
| Compensation of employees...-..-....-. | 4,256 | 4,565 | 4, 679 | 4,466 | 4.718 | 5,602 | 5,960 | 7,288 | 6,925 | 7,650 | 7,629 | 7,817 | 9,414 | 15,279 | 25,876 | 32,788 | 35,910 | 20,821 | 16,618 | 17,433 | 19,424 | 20,926 |
| Wages and salaries.-...---.-.-.-- | 4,213 | 4,416 | 4,524 | 4,295 | 4,547 | 5,420 | 5,763 | 7,069 | 6,677 | 7,383 | $\begin{array}{r}7,343 \\ \hline 286\end{array}$ | ${ }^{7} \mathbf{7} 516$ | 9,145 | 14,970 | 25,504 372 | 32,031 | 34,10¢ | 18,869 1,952 1 | $\begin{array}{r}15,370 \\ 1,228 \\ \hline\end{array}$ | 16.584 | 18,071 1,353 | 19,820 1,106 |
| Supplements to wages and snlaries_- Employer contributions for | 143 | 149 | 155 | 171 | 171 | 182 | 206 | 219 | 248 | 263 | 286 | 301 | 263 | 303 | 372 | 697 | 1,804 | 1,952 | 1,228 | 850 | 1,353 | 1,106 |
| Other labor income..............- | 80 54 | $\stackrel{93}{56}$ | 98 57 | 113 58 | 120 51 | 131 51 | 147 59 | 155 64 | $\begin{array}{r} 176 \\ 72 \end{array}$ | $\begin{array}{r} 189 \\ 74 \end{array}$ | $\begin{gathered} 199 \\ 87 \end{gathered}$ | 210 91 | 225 44 | 277 32 | 329 43 | 609 88 | 1,663 141 | 1,843 109 | 1,069 | 632 223 | 1,072 | 315 |
| Income originating in households and institutions ${ }^{6}$ | 4,339 | 3,491 | 2,042 | 2,438 | 2,203 | 2,332 | 2,431 | 2,695 | 2.988 | 2,835 | 2,979 | 3,205 | 3,401 | 3,506 | 3,640 | 4,037 | 4,386 | 4,801 | 5,673, | 6,331 | 6,782 | 7,727 |
| Compensation of employees | 2,719 | 2,526 | 2,176 | 1,794 | 1,610 | 1,726 | 1,803 | 1,957 | 2.173 | 2,067 | 2.178 | ${ }_{2}^{2,323}$ | 2,418 | 2,746 | 3,063 | 3,495 | 3,824 | 4,099 | 4,741 | 5,179 | 5,413 | 6,007 |
| Wages and salaries --......-.-- | 2,710 | 2,516 10 | 2,166 10 | 1,784 10 | 1,601 ${ }_{9}$ | 1,717 | 1,793 10 | 1,943 14 |  | 2,038 | 28 28 |  |  | 2,715 | 3,033 3 | ${ }^{3,45}$ | ${ }^{3} \mathbf{3 4}$ | $\stackrel{42}{ }$ | ${ }^{4,047}$ | 5,123 4 | 53 53 | 8, 0 |
| Employer contributions for social insurance. Other labor income | $0$ | 10 | $\begin{array}{r} 0 \\ 10 \end{array}$ | $\begin{array}{r} 0 \\ 10 \end{array}$ | $\begin{aligned} & 0 \\ & 9 \end{aligned}$ | $0$ | 10 | $\begin{array}{r} 2 \\ 12 \end{array}$ | 9 14 | $\begin{aligned} & 11 \\ & 17 \end{aligned}$ | 11 17 | $\begin{aligned} & 10 \\ & 18 \end{aligned}$ | $\begin{aligned} & 11 \\ & 18 \end{aligned}$ | $\begin{aligned} & 11 \\ & 20 \end{aligned}$ | 13 20 | $\begin{aligned} & 14 \\ & 21 \end{aligned}$ | $\begin{aligned} & 13 \\ & 21 \end{aligned}$ | $\begin{aligned} & 15 \\ & 27 \end{aligned}$ | $\begin{aligned} & 17 \\ & 30 \end{aligned}$ | $\begin{gathered} 30 \\ 17 \end{gathered}$ | $\begin{gathered} 36 \\ 17 \end{gathered}$ | ${ }_{21}^{41}$ |
| Net interest ${ }^{\text {P }}$. | 1,020 | 065 | 766 | 644 | 593 | 606 | 628 | 738 | 815 | 768 | 801 | 882 | 883 | 760 | 571 | 542 | 562 | 702 | 932 | 1,161 | 1,369 | 1,720 |
| Income originating in the rest of the world Wages and salaries ${ }^{\text {s }}$ | 810 | 746 1 | 547 | 393 1 | 323 1 | 303 1 | 367 1 | 300 1 | $\begin{gathered} 283 \\ 1 \end{gathered}$ | 386 1 | $\begin{array}{r} 313 \\ 2 \end{array}$ |  | $\begin{array}{r} 363 \\ 6 \end{array}$ | $\begin{gathered} 365 \\ 10 \end{gathered}$ | $\begin{array}{r} 367 \\ 14 \end{array}$ | $\begin{array}{r} 423 \\ 12 \end{array}$ | $\begin{array}{r} 369 \\ 11 \end{array}$ | $\begin{array}{r} 611 \\ 17 \end{array}$ | 914 17 | $\begin{array}{r} 1,106 \\ 15 \end{array}$ | $\begin{array}{r} 1,067 \\ 15 \end{array}$ | $\begin{aligned} & 1,323 \\ & \hline 17 \end{aligned}$ |
| Corporate profits after tax ${ }^{\text {P }}$. | 232 | 137 | -4 | -34 | 2 | 0 | 59 | 104 | 122 | 247 | 4 | 234 | 231 | 225 | 38 | 293 | 228 | 454 | 72.4 | 86.6 | 841 | 1,091 |
| Net interest.- | 577 | 608 | 550 | 426 | 324 | 242 | 207 | 195 | 160 | 138 | 127 | 120 | 126 | 130 | 115 | 118 | 130 | 140 | 173 | 225 | 211 | 215 |

${ }^{1}$ The natlonal income is classified by distributive shares in table 1 , and income originating in business is classifled by distributive shares in table 7 .
This serles is net ouly of imputed interest received, and of cash interest recelved by firms enpaped in tending as a prineipal activity: cash interest received by other proprietors is consldered to be received in the proprietnr's personnl capaeity.
'Ineludes all mutual finanelal institutions; producers' and consumers' cooperatives nonpront organizations
such ns trade associations. furnishing services to business; individually-owned property including owner-occupied such as trade issociations. furnishing services to business;

- Estimated patronage refunds and stock dividends paid by tarmers' cnoperatives.
- Inctudes grivate households: and relleious orkanizations, social and athlectic clubs, labor organizations, nonprofit schools and hospituls, charitable and welfare organizations, and all other nonpront organizations furnishing
services to individuals. This series measures gross interest paid; it is termed "net interest" only because it is a component of that
distributice share. distributive share. ${ }^{\text {Paty }}$ of permanent United States residents employed in the United States by foreign governments and international organizations.
: Measnres net inflow from abroad of dividends and branch profts; the net inflow from ahroad of undistributed Measnres net inflow from abroad of dividends and branch profts; the net inflow from abroad of undistribu
profts and corporate profits tax liability is excluted from this line and from the uational income aggregate.

Table 13.-National Income by Industrial Origin, 1929-39 ${ }^{1}$
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, tolal. | 87,355 | 75,003 | 58,873 | 41,690 | 39,584 | 48,613 | 56,789 | 66,941 | 73,627 | 67,375 | 72,532 |
| Agriculture, forestry, and fisheries.- | 8,002 | 6,022 | 4,625 | 3,080 | 3,521 | 3,568 | 6, 6.231 | 7,549 7,414 | 7,249 | 6,003 5,837 | 6,120 5,951 |
|  | 7,791 | 5,836 | 4,458 | 2,951 | 3,402 | 3,454 | 6,94 | , 87 | , 127 | 114 | 117 |
| Agrirultural and similar service esta blishments.- | 119 26 | 116 | 122 | 100 | 11 | 13 13 | 13 | 13 | ${ }_{38}^{16}$ | 13 89 | ${ }_{40}^{12}$ |
|  | 60 | 52 | 32 | 19 | 21 | 27 | 32 | 35 | 38 | 39 | 40 |
| Mining | 2,097 | 1,665 | 994 | 680 | 662 | 1,173 | 1,243 | 1,551 | 1,941 | 1,483 | 1,601 |
| Mictal mining | 478 | 282 | 109 | 21 | 41 | 127 | 173 | 269 | ${ }_{137}^{458}$ | 113 | ${ }^{348}$ |
| Anthracite mining | 285 | ${ }_{5}^{281}$ | 229 | 150 | 130 | ${ }_{416}$ | 139 | 146 537 | 137 | 113 | ${ }_{503}^{126}$ |
| Bituminous and other soft coal mining | 652 486 | 530 <br> 383 | 372 176 | 2239 | ${ }_{195}^{255}$ | 416 390 | 446 | 487 | 604 | 536 | 497 |
| Crude petroleum and natural gas.... Nonmetallic mining and quarrying. | 196 | 189 | 108 | 50 | 41 | 68 | 81 | 112 | 139 | 103 | 127 |
| Contract construction. | 3,691 | 3,088 | 2,139 | 1,030 | 735 | 1,034 | 1,257 | 1,918 | 2,017 | 1,930 | 2,254 |
| Manufacturing | 22,012 | 18,270 | 12,434 | 7,196 | 7,563 | 10,922 | 13,336 | 16,183 | 19,304 | 14,997 | 17,935 |
| Food and kindred prod | 2,157 | 2,395 | 1,865 | 1,408 | 1,335 | 1,600 | 1,882 | 2,077 | 2,400 | 2,255 | 2,280 |
| Tobacco manufactures | 258 | . 299 | ${ }_{1} 147$ | 311 | 142 697 | 146 1.100 | 204 1,200 | 1,356 | 1,597 | 1,033 | 1,253 |
|  | 1,797 | 1,401 | 1, 807 | 713 491 | 697 532 | 1,775 | 1,841 | 1,958 | 1,982 | 1910 | 1,016 |
| Apparel and other finished fabric products....... | 1,240 | 613 | 881 | 118 | 122 | 263 | 327 | 447 | 561 | 428 | 491 |
| Furniture and finished lumber products | 678 | 508 | 372 | 211 | 183 | 284 | 342 | 442 | 508 | 423 | 508 |
| paper and allied products. | 563 | 503 | 388 | 270 | 290 | 419 | 463 | 502 | . 562 |  | 1,205 |
| Printing, publishing, and allicd indus | 1,580 | 1,490 | 1,213 | 880 | 790 | 925 | 1,037 810 | 1,161 | 1,246 1,165 | 1,132 | 1,205 |
| Chemieals and allied products- | 1,130 903 | 1,035 | 827 329 | 557 128 | 690 17 | 725 | 810 256 | - 370 | 1,165 | 1,507 | ${ }^{1} 458$ |
|  | 356 | 274 | 232 | 113 | 103 | 134 | 214 | 214 | 292 | 204 | 279 |
| leather und leather produets | 601 | 490 | 389 | 305 | 270 | 412 | 376 | 423 | 459 | 401 | ${ }_{6} 42$ |
| Stone, clay, and glass produets. | 709 | 611 | 439 | 123 | 208 | 329 | 409 | 573 | 649 | 502 | 662 |
| Iron and steel and their products, ineluning <br>  | 2,978 | 2,212 | 1,109 | 410 | 682 | 1,085 | 1,478 | 2,061 | 2,586 | 1,592 | 2, 2594 |
| Nonferrous metals and their products---........ | 767 | 640 | 415 | 197 | 155 | 385 | 469 | 561 | 702 | 440 |  |
| Machincry, except electrical. | 1,903 | 1,485 | 755 | 298 | 426 | 735 | 1,021 | 1,398 | 1,759 | 1,247 | 1,492 |
| Eleetrical machinery .- | 1,048 | 824 | 502 | 244 | 276 | 376 | 526 | 708 | 908 | 659 | ${ }_{397}$ |
| Transportation equipment, except automobiles | , 317 | 288 | 142 | 89 | 69 | 119 | 139 | 231 | +332 | 200 | 1,188 |
| Automoliles and automobile equipment <br> Miscellaneous | 1,394 | 842 490 | 561 339 | 168 | 384 192 | 649 314 | 935 407 | 1.153 | 1,298 | 439 | 516 |
| Wholesale and retail trade. | 13,090 | 11,998 | 9,604 | 6,290 | 5,375 | 7,892 | 9,006 | 10,319 | 11,938 | 11,652 | 12,126 |
| Wholesale trade- | 3,955 | 3,777 | 2,963 | 1,994 | 1,631 | 2,297 | 2,726 | 3,005 | 3,693 | 3.507 |  |
| Retail trade and automobile serv | 9,135 | 8,221 | 6,641 | 4,296 | 3,744 | 5,595 | 6,280 | 7,314 | 8,245 | 8,145 | 8,568 |
| Finance, insurance, and real estate. | 13,098 | 10,693 | 8,511 | 6,452 | 5,681 | 5,861 | 6,294 | 7,165 | 7,943 | 8,026 | 8,216 |
|  | 1,960 | 1,478 | 984 | 728 | 493 | 541 | 665 | 776 | 892 | 842 |  |
| exchanges-.- | 644 | 140 | 70 | 96 | 256 | 222 | 172 | 265 | 242 | 161 | ${ }_{160}^{160}$ |
| Finance, nee.c | 195 | -5 | -39 | -74 | $-9$ | 8 | 69 | 123 | 135 | 211 | ${ }_{854}$ |
| Insurance carriers- | 788 | 712 | 629 | 510 | 514 | 591 | 656 | 733 | 833 | $\begin{array}{r}847 \\ 482 \\ \hline\end{array}$ | 491 |
| Insurance agents and | 533 8,978 | 510 7,858 | 6,402 | 414 4,778 | 367 4,060 | 400 4,099 | 419 4,313 | 435 4,833 | 5,488 | 5,483 | 5,675 |
| Transportation. | 6,562 | 5,513 | 4,285 | 3,133 |  |  |  |  |  | 3,961 | 4,543 |
| Ruilroads. | 4,600 | 3,753 | 2,814 | 1,965 | 1,849 | 2,040 | 2,236 | 2,614 | 2,797 | 2,368 | 2,735 |
| Local railways and bus lines. | 592 | 553 | 461 | -388 | , 331 | , 355 | ${ }^{2}, 337$ | 2, 374 | -371 | 332 | ${ }_{177}$ |
| Highway passenger transportation, n.e.c.----- | 231 | 210 | 171 | 122 | 118 | 129 | 140 | 159 | 174 | ${ }_{5}^{166}$ | 642 |
| Highway freight transportation and warehousing- | 482 | 458 | 413 | 357 | 356 | 399 | 451 | 502 | 564 | 569 | 642 |
| Water transportation. | 267 | 216 | 172 | 127 | 153 |  |  |  | 292 | 206 | 280 |
| Air transportation (common | $-3$ | -10 | 4 | 10 | 10 | 8 | 15 | 22 | 29 | 30 | 44 |
| Pipe-line transportation------ | 130 | 105 | 81 | 56 | 47 | 104 | 107 | 106 | 129 | 121 | 196 |
| services alled to transportation | 263 | 228 | 169 | 108 | 94 | 113 | 126 | 148 | 177 | 169 |  |
| Communications and public utilities- | 2, 878 | 2,787 | 2, 625 | 2,281 | 2,000 | 2,195 | 2,285 | 2,478 | 2,713 | 2,713 | 2,863 1,008 |
| Telephone, telograph, and related services | 1,130 128 | 1,097 | 991 | 2,794 | 2,692 | 2,740 | 2,279 | 2,471 | ${ }^{2} 982$ | - 948 | 1,008 |
| Ratio broadcasting and television. | 1,640 | 1,606 | 1,562 | 1,404 | $\begin{array}{r}1,237 \\ \hline 14\end{array}$ | 32 1,359 | 39 1,405 | 52 1.522 | 64 1.662 | 64 1.639 | 1,716 |
| Local utilities and public services, n.e.c | , 80 | 1,76 | 1,56 | 1,42 | 1, 57 | 1,359 | 1,405 62 | 1,522 | 1,684 | 1,62 | 64 |
| Services | 10,168 | 9,019 | 7,714 | 6,006 |  |  |  |  |  | 7,728 | 8,080 |
| 110 tels and other lodging place |  | 512 | 394 | , 242 | -193 | -,274 | 6,514 | 7,316 | 8,431 | 412 | 8,436 1.001 |
| Personal services- | ${ }_{3}^{1,220}$ | 1,148 | 985 | 763 | 667 | 749 | 819 | 915 | 1,058 | ${ }^{977}$ | 1,761 |
| Commercial and trade schools and employment agencies. | 19 49 | 1,246 43 | 1,734 29 | 1,321 16 | 1,177 15 | 1,301 22 | 1,382 28 | 1,591 34 | 1,829 | 1,633 33 | 35 |
|  | 504 | 561 | 448 |  | 332 | 435 | 472 |  | 605 | 596 | ${ }_{238} 63$ |
| Miscellaneous repair services and hand trades--- | 284 | 274 | 249 | 205 | 175 | ${ }_{186}$ | 479 | ${ }_{210}$ | 605 225 | 236 | ${ }_{428}^{238}$ |
|  | 432 | 429 | 355 | 191 | 209 | 280 | 326 | 384 | 430 | 420 | ${ }_{278}$ |
| Medical and other health services.....--....- | 1,522 | 1, 1,461 | 263 1.292 | 176 1,025 | 152 | 192 | 205 | 243 | 293 | ${ }_{1}^{256}$ | 1,365 |
|  |  |  |  | 1,025 | 937 | 1,024 | 1,103 | 1,239 | 1,308 | 1,313 |  |
|  | 689 | 683 | 701 | 591 | 561 | 600 | 624 | 647 | 680 | 666 | ${ }_{210}^{692}$ |
| Engineering and other professional services, n.e.c- Educational services, | 243 | 217 | 179 | 120 | 113 | 126 | 136 | 168 | 179 | 19.4 | 452 |
| Religious organizations... | 473 355 | 482 356 | 473 | 438 | 400 | 397 | 402 | 414 | 434 | 446 | 303 |
| Nonprofit membership organizations, n.e.e.------ | 272 | 279 | 271 | 243 | 227 | 285 235 | $\stackrel{284}{232}$ | ${ }_{246}^{288}$ | 2295 | 340 240 | 244 |
| Government and government enterprises. |  |  |  |  |  |  |  |  |  |  | 8,550 |
| Federal-general government--. | +900 | 5,935 | -942 | 5,901 | 1,349 | 6,295 1,718 | 6,747 1,791 | 8,130 3,592 | 7,795 3,036 | 8,548 | 3,444 |
| Federal-government enterprises | 581 | 584 | 582 | 544 | 1,185 | 1,718 | 1,791 | 3,592 | 3,036 675 | 3,598 | ${ }^{716}$ |
|  | 3,456 | 3,630 | 3,737 | 3,565 | 3,531 | 3,884 | 4,178 | 3,606 | 3,889 | 4,121 | ${ }_{4}^{4}{ }_{205}$ |
|  |  | 187 | 186 | 161 |  | 153 | 164 | 180 | 195 | 200 |  |
| Rest of the world ${ }^{2}$.-. | 643 | 612 | 495 | 371 | 293 | 241 | 252 | 164 | 148 | 334 | 243 |

${ }^{5}$ National ineome originating in each industry is the sum of factor costs incurred by the industry in production. Hence, it is the net value added to production by the industry, measured at factor costs. In the business sector of the economy, except povernmententerprises, it is equal to the excess of the market value of the industry's product and the subsidies it receives over the sum of the following costs: purchases of goods and services from other
enterprises, indirect business tax and nontax liability, business transfer payments, and enterprises, indirect business tax and nontax liability, business transfer payments, and
capital consumption charges. In the other scctors of the economy (government, personal, and rest-ol-the-world) and also in go rernment enterprises, this value added in production and test-ol-theworid) and also in gorernment enterprises, this value added in production
(as measured in the present series) can be described only as factor costs incurred. "National income originating", is a more net concept of value-added than that used by the Bureau of income originating" is a more net concept of value-added than that used by the Bureau of
the Census in compiling the Census of Manulactures. "Value added by manufacture" was
obtained in the 1939 Census of Manufactures by deducting from the value of products only work ,ost of materials, supplies, containers, fuel, purchased electric energy, and coa National income by industrial origin is obtalned statistically by aggregating the dati presented in tables $14,15,16,17,22$, and 23 , together with the rental income of persons (shown in table 12 and all classified in the real estate industry). Footnotes to these tables are, the fore, relevant also to table 13 .
${ }_{12}^{2}$ This series differs from income oricinating in the rest of the world shown in tables 11 and 12 hecause profits received by domestic corporations from foreign branches are excluded from are not available by industry.

Table 13.-National Income by Industrial Origin, 1940-501
[Millions of dollars]

|  | 1940 | 1941 | 1042 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1049 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, |  | 103,834 | 137,119 | 9,686 | 183,838 | 82,6 |  | 8,6 | ,469 | 216,716 | 238,963 |
| icultare, forestry, and fisheries <br> Farms--aral and similar service establishments Forestry <br> Fisheries |  | $\begin{gathered} 8,880 \\ 8,655 \\ \hline, 654 \\ 148 \\ 14 \\ 63 \end{gathered}$ |  |  | $\begin{gathered} 14,830 \\ 14,450 \\ \substack{421 \\ 31 \\ 92} \\ 92 \end{gathered}$ |  |  | $\begin{gathered} 19,424 \\ 18,249 \\ \substack{238 \\ 508 \\ 127} \end{gathered}$ |  |  |  |
|  |  | $\begin{gathered} 2,341 \\ \mathbf{2 1 3} \\ 165 \\ 869 \\ 654 \\ 200 \end{gathered}$ | $\begin{gathered} 2,599 \\ 599 \\ 590 \\ 589 \\ 583 \\ 545 \\ \hline 245 \end{gathered}$ | $\begin{gathered} 2,757 \\ 507 \\ 1,671 \\ 1,601 \\ 238 \end{gathered}$ |  |  |  | $\begin{aligned} & 4.350 \\ & 505 \\ & 1.827 \\ & 1.8207 \end{aligned}$ | 5.4.45 | 4,588 | ¢,038 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | (1,750 | ci, 1 |
|  |  |  |  |  |  |  | (124. |  |  |  |  |
| Contract eonstruction | 593 | ,370 | 6,625 | 5,551 | 4,375 | 4,571 | 6,651 | 8,550 | 0,551 | 10,564 | 2, 204 |
| Manuracturing |  |  |  |  |  |  |  |  |  |  |  |
| Toberand |  |  |  |  |  |  |  |  |  |  |  |
| Aersiemin product | (1,51100 |  |  |  |  |  |  |  |  |  |  |
| Furniture aad Ginished lumber products. Praper and allied produets - <br>  Prodicts of petroleunc and coal |  |  |  |  |  |  |  |  |  |  |  |
|  | $\begin{aligned} & 5.5060 \\ & \hline \end{aligned}$ |  |  | $\begin{aligned} & \text { B. } 935 \\ & \text { By } \end{aligned}$ |  | $\begin{aligned} & 1,052 \\ & 1,230 \\ & ., 250 \\ & 3,250 \\ & 1,250 \end{aligned}$ |  |  | $\begin{aligned} & 1,7967 \end{aligned}$ |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 1,679 |  |  |  |  |
|  Stone, clay, and glass product Iron and steel and their products, including Nonderrous metals and their products. | $\begin{aligned} & 319 \\ & \begin{array}{l} 457 \\ 757 \end{array} \end{aligned}$ | $\begin{gathered} 485 \\ \hline, .674 \\ 1,072 \end{gathered}$ | $\begin{gathered} 587 \\ 1, i 67 \\ \hline 1.168 \end{gathered}$ | ( | $\begin{gathered} 991 \\ 1,18597 \\ 1,139 \end{gathered}$ |  | (1,090 | (1, |  | (inco | come |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | ${ }^{3.007} 7$ | 5,048 | 6,897 | ¢ $\begin{aligned} & \text { 9,099 } \\ & 1,393\end{aligned}$ | -9,081 <br> 1,942 <br> 0.9 | ${ }^{7} \mathbf{7}, 1,679$ | 3,588 | 7,067 | ciris |  | cine |
| Machinery, except electrical.-.------... |  |  |  |  |  |  | $\begin{aligned} & 4, ~ \\ & \hline, ~ \end{aligned}$ | $\begin{aligned} & 6,39 \\ & \hline, 292 \end{aligned}$ | $\begin{aligned} & 7,115 \\ & 3,061 \\ & \hline \end{aligned}$ |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Automobiles and aut |  |  |  |  |  |  |  |  |  |  |  |
| Noesale and reater | $\begin{gathered} 13,788 \\ 4,768 \\ 9,640 \end{gathered}$ |  | $\begin{aligned} & 19,055 \\ & 5,565 \\ & 5,437 \end{aligned}$ |  |  | $\begin{aligned} & 27,999 \\ & \begin{array}{l} 27,998 \\ 20,4010 \end{array} \end{aligned}$ |  | , 8.824 |  | , 7787 |  |
| Reta |  |  |  |  |  |  |  |  |  |  |  |
| Finatce, Insurance, | $\begin{array}{r} 8,489 \\ \mathbf{9 7 3} \\ 109 \\ 176 \\ 8,81 \\ 5,907 \\ 5,903 \end{array}$ |  | $\begin{array}{r} 111,052 \\ 1,175 \\ 89 \\ \text { 3950 } \\ \text { f950 } \\ 7,910 \end{array}$ |  |  |  |  |  |  |  |  |
| unit and commodity |  |  |  |  |  |  |  |  |  |  |  |
| nan, |  |  |  |  |  |  |  |  |  |  |  |
| Urance |  |  |  |  |  |  |  |  |  |  |  |
| Transportation |  | $\left.\begin{gathered} 6,188 \\ 8.791 \\ 3,727 \\ 257 \\ 957 \\ 436 \\ 177 \\ 145 \\ 266 \end{gathered} \right\rvert\,$ |  |  | $\begin{gathered} 11,197 \\ 6,97 \\ \hline, 57 \\ \hline 670 \\ \hline 720 \end{gathered}$ |  |  |  |  |  | $\begin{gathered} 13,236 \\ 7,599 \\ \hline, 596 \\ 2,794 \\ 2,75 \end{gathered}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Pipe-line transportation |  |  | $\begin{aligned} & 112 \\ & \begin{array}{l} 127 \\ 295 \end{array} \end{aligned}$ |  | 509 |  | $\begin{aligned} & 128 \\ & 478 \end{aligned}$ | ${ }_{581}^{152}$ | ${ }_{653}$ | (1043 | 584 |
|  | $\begin{aligned} & 3,039 \\ & 1,022 \\ & 1,960 \\ & 1,96 \end{aligned}$ | $\begin{aligned} & 3,313 \\ & \hline 1,135 \\ & 2.105 \\ & 2.002 \end{aligned}$ |  |  | $\begin{aligned} & 1,6176 \\ & 2,167 \\ & \hline 160 \end{aligned}$ |  | $\begin{aligned} & 4,250 \\ & \hline, 287 \\ & 2,506 \\ & 2,560 \end{aligned}$ |  |  |  |  |
| bro |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | $\begin{aligned} & 8,637 \\ & \hline, 1,297 \\ & 1,933 \end{aligned}$ | $\begin{aligned} & 9,9 \\ & \hline \end{aligned}$ |  |  |  | $\begin{gathered} 14,105 \\ \begin{array}{c} 1,2055 \\ 2 \end{array}, 0650 \end{gathered}$ | $\underset{\substack{16,614 \\ 1,180}}{\substack{180 \\ \hline}}$ $\underset{\substack{1,1180 \\ 2,452 \\ 2}}{\substack{10 \\ \hline}}$ | $\begin{aligned} & 18,35 \\ & \hline \end{aligned}$ | coin |  | (2, |
| nal |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | $\begin{array}{r}1,882 \\ 186 \\ \hline\end{array}$ | $\begin{array}{r}2,290 \\ 147 \\ \hline\end{array}$ | 84 | 112 | $\begin{array}{r}3,070 \\ 144 \\ \hline 10\end{array}$ |  | ${ }^{3,624}$ |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Asefia |  |  | com |  |  |  |  |  |  | 798 |  |
|  |  | ${ }_{338}$ |  |  |  |  |  |  |  |  | ${ }_{314}^{741}$ |
| Medican and other health servi | 1,44 | 1,588 | 1,816 | 1,998 | 2,315 | 2,450 | 2,900 | 3,36 | 3,746 | 3,956 | ,314 |
|  |  |  |  |  |  |  | ${ }^{1,165}$ |  |  | 766 | 1583 |
|  |  |  |  |  | - 39 | 速 |  |  |  |  |  |
| gious organizations, ögiàzitans |  |  |  |  |  |  | ${ }_{665}^{373}$ | ${ }_{722}^{402}$ |  |  |  |
| Government and government enterprises_ |  |  | $\underset{\substack{16,445 \\ 10,886}}{ }$ |  | ${ }_{\substack{34,211 \\ 27,905}}$ | 378,422 | ${ }_{\substack{22,647 \\ 14.71}}^{\substack{\text { a }}}$ | ${ }_{\substack{18,523 \\ 9,36}}$ | 19, ${ }_{\text {che }}$ | 21, 89.98 | 23,434 <br> 10,783 <br> 18 |
| Sederal-zovernment |  |  |  |  |  |  |  | \% ${ }_{7}^{1,2626}$ | ${ }_{\substack{1,611}}^{1,615}$ | ${ }_{\substack{1,745 \\ 9,475}}^{1,780}$ | (1, |
|  | ${ }^{4,288}$ | 4, | ,296 | S36 | 340 |  | ${ }_{4}{ }_{4}$ | 185 | 552 |  | 617 |
| Rest of the world ${ }^{\text {a }}$. | 260 | 231 | 238 | 259 | 226 | 158 | 282 | 403 | 447 | 458 | 545 |

${ }^{1}$ National income originating in each industry is the sum of factor costs incurred by the ndustry in production. Hence, it is the net value added to production by the industry, measured at factor costs. In the business sector of the economy, excent government enterPrises, it is equal to the excess of the market value of the industry's product and the subsidies treceives over the sum of the following costs: purchases of goods and services from othe enterprises, indirect business tax and nontax liability, business transfer payments, and and rest consumption charges. In the other sectors of the cennomy (government, personal, and rest-of-the-world) and also in government enterprises, this value added in production (is measured in the present series) can be described only as factor costs incurred. "National Income originating" is a more net concept of ralue-added than that used by the Bureati of
the Census in compiling the Census of Manufactures. "Value added by manufacture" was
obtained in the 1939 Census of Manufactures by deducting from the value of products only "the cost of materials, supplies, containers, fuel, purchased electric energy, and contrict work.
National income by Industrial origin is obtained statistically by agcregating the data presented in tables $14,15,16,17,22$ and 23, together with the rental income of persons (shown in tahle 12 and nill classified in the real estate industry). Footnotes to these tables are, thete fore, rele vant also to table 13.
${ }^{2}$ This series liffers from income originatink in the rest of the work shownin tables 11 and
 are not available by industry.

Table 14.-Wages and Salarics, by Industry, 1929-39

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total | 50,165 | 45,894 | 38,886 | 30,284 | 28,825 | 33,520 | 36,508 | 41,754 | 45,948 | 42,812 | 45,745 |
| Agriculture, forestry, and fisheries | 1,416 | 1,274 | 989 | 708 | 642 | 707 | 834 | 955 | 1,134 | 1,097 | 1,086 |
|  | 1,284 | 1,156 | 884 | 626 | 569 | 635 | $\begin{array}{r}749 \\ 55 \\ \hline\end{array}$ | 872 | 1,022 | ${ }^{995}$ | ${ }^{982}$ |
| Agricultural and similar service establishments-- | 69 21 | 67 17 | 71 13 | 11 | 50 10 | 43 12 | 55 11 | ${ }_{11}$ | 75 14 | 67 12 | $\stackrel{69}{11}$ |
| Fisherstry... | 42 | 34 | 21 | 13 | 13 | 17 | 19 | 21 | 23 | 23 | 24 |
| Mining | 1,515 | 1,327 | 993 | 683 | 686 | 911 | 969 | 1,133 | 1,305 | 1,101 | 1,137 |
| Metal mi-ing | 200 | 166 | 102 | 53 | 52 | 68 | 88 | 127 | 194 | 138 | 156 |
| Anthracite mining | 261 | 252 | 205 | 151 | 132 | 159 | 140 | 138 | 136 | 117 | 124 |
| Pituminous and other soft coal min | 609 | 506 | 380 | 259 | 279 177 | 388 | ${ }_{257}$ | 504 287 | ${ }_{333}$ | 437 <br> 33 | 456 315 |
| Crude petroleum and natural gas. Nonmetallic mining and quarrying | 324 | 110 | ${ }^{223}$ | 168 | 46 | 246 | 257 60 | 78 | ${ }^{33} \mathbf{9}$ | 78 | 86 8 |
| Contract construction. | 2,484 | 2,085 | 1,477 | 823 | 611 | 759 | 889 | 1,300 | 1,383 | 1,259 | 1,546 |
| Manufacturing. | 16,492 | 13,850 | 10,810 | 7,678 | 7,827 | 9,643 | 10,829 | 12,410 | 14,571 | 11,837 | 13,585 |
| Food and kindred prod | 1,565 | 1,513 -131 1,209 | 1,326 109 | 1,096 | 1,131 | 1,325 | 1,386 | $\begin{array}{r}1.492 \\ \\ \hline 9\end{array}$ | 1,652 188 | 1,552 | 1,612 1,98 |
| Tobacco manufactures. | 142 1,458 1,05 | 1,200 | 109 1,065 | 85 768 | $\begin{array}{r}74 \\ 896 \\ \hline\end{array}$ | 1,006 | 1,108 | 1,159 | 1,255 | 1,011 | 1,167 |
| Apparel and other finished fabric producta | 1,051 | , 913 | , 781 | 558 | 569 | 1,690 | , 780 | - 840 | 1,864 | 806 | 926 |
| Lumber and timber basic products......... | 1708 | 542 | 306 | 177 | 199 | 253 | 300 | 378 | 442 | 374 | 412 |
| Furniture and finished lumber products | 611 | 486 | 384 | 251 | 251 | 274 | 325 | 391 | 447 | 377 | 437 |
| Paper and allied products- | 430 | 412 | 351 | 273 | 279 | 332 | 357 | 394 | 456 | 409 | 444 |
| Printing, publishing, and allied | 1,236 | 1,241 | 1,065 | 837 | 718 | 809 | 866 | 943 | 1,040 | 981 | 991 |
| Chemicals and allied products | ${ }^{664}$ | ${ }_{6}^{621}$ | 529 | 413 | 421 | 495 | 525 | 572 | 672 | 621 | ${ }_{250}^{667}$ |
| Products of petroleum and coal | 236 | 238 | 190 | 157 | 149 | 174 | 192 | 202 | 242 | 244 | 250 |
| Rubber products. | 281 | 222 | 167 | 131 | 141 | 176 | 182 | 209 | 235 | 185 | 226 |
| Leather and leather products | 491 | 418 | 363 | 291 | 304 | 351 | 367 | 375 | 407 | 359 | 386 |
| Stone, clay, and glass products----- | 618 | 528 | 384 | 238 | 227 | 285 | 329 | 400 | 483 | 404 | 466 |
| ordnance | 2,117 | 1,791 | 1,203 | 717 | 804 | 1,069 | 1,290 | 1,659 | 2,095 | 1,394 | 1,789 |
| Nonferrous metals and their products | 541 | 418 | 323 | 206 | 206 | , 266 | 318 | $1.67 \%$ | , 467 | 359 | 432 |
| Machinery, except electrical | 1,396 | 1.173 | 774 | 489 | 494 | 679 | 822 | 1,029 | 1,339 | 960 | 1,111 |
| Electrical machinery-..-----.-.-.-.--- | 859 | 713 | 485 | 286 | 302 | 409 | 461 | 569 | 745 | 539 |  |
| Transportation equipment, except automobiles-- | 262 979 | 254 | ${ }_{512}^{167}$ | 117 | -93 | ${ }_{569}^{133}$ | 145 | 205 787 | 276 970 | 224 600 | 310 823 |
| Miscellaneous.-.-.-- | 447 | 399 | 321 | 219 | 218 | 264 | 301 | 340 | 986 | 344 | 401 |
| Wholesale and retail trade | 9,293 | 8,659 | 7,562 | 5,897 | 5,280 | 6,107 | 6,617 | 7,222 | 8,162 | 7,990 | 8,366 |
| Wholesale trade. | 3,127 | 2,944 | 2,537 | 1,980 | 1,743 | 2,018 | 2,190 | 2,370 | 2,673 | 2,664 | 2,791 |
| Retail trade and automobile ser | 6,166 | 5,715 | 8,025 | 3,917 | 3.537 | 4,089 | 4,427 | 4,852 | 5,489 | 5,326 | 5,575 |
| Finance, insurance, and real estate. | 2,796 | 2,621 | 2,357 | 2,006 | 1,822 | 1,908 | 1,971 | 2,143 | 2,307 | 2,229 | 2,287 |
|  | 758 | 716 | 649 | 565 | 485 | 502 | 1,507 | , 522 | , 547 | - 555 | 567 |
| exchanges.--- | 406 | 319 | 265 | 234 | 244 | 233 | 205 | 250 | 253 | 191 | 174 |
| Finance, n.e.c | 242 | 234 | 212 | 186 | 170 | 176 | 190 | 215 | 233 | 208 | 206 |
| Insurance carriers ----7---7--7- | ${ }_{697}^{690}$ | 698 | 658 | 553 | 498 | 517 | 548 | 578 | 629 | 637 | 664 |
| Insurance agents and combination | 237 463 | 229 | 208 | 185 | 164 | 178 | 188 | 203 | 217 | 220 | ${ }_{452}^{24}$ |
| Real estate----.-...---- | 463 | 425 | 365 | 283 | 261 | 302 | 333 | 375 | 428 | 418 | 452 |
| Transportation. | 4,719 | 4,237 | 3,531 | 2,656 | 2,455 | 2,660 |  |  |  | 3,179 | 3,429 |
| I ocal railways and bus lines. | 3.226 | 2.849 | 2,334 | 1,688 | 1,560 | 1,689 | 1,831 | 2,058 | 2,219 | 1,962 | 2,091 |
| Highway passenger transportation, n.e.e. | ${ }_{173}^{482}$ | 452 | 401 | 328 | 283 | 296 | 306 | , 323 | , 338 | 313 | 313 |
| Highway treight transportation and warehousing- | 327 | 316 | 289 | 101 257 | 252 | 89 280 | 94 321 | 104 356 | 115 407 | 115 393 | 441 |
| Water transportation.- | 213 | 193 | 166 |  |  |  |  |  |  |  |  |
| Air transportation (common carriers) | 5 | 9 | 13 | 14 | 14 | 153 | 161 | 195 | 232 | 174 | 34 |
| Pipe-line transportation...ta...- | 48 | 42 | 38 | 29 | 29 | 34 | 36 | 40 | 47 | 45 | 43 |
| Nervices allied to transportation. | 245 | 214 | 157 | 104 | 89 | 105 | 118 | 139 | 165 | 148 | 169 |
| Communications and public utitities---.--- | 1,520 | 1,543 | 1,408 | 1,191 | 1,059 | 1,139 |  |  |  |  | 1,469 |
| Telephone, telegraph, and related services | 740 | 739 | 659 | 1550 | 1,477 | ${ }^{2} 507$ | 1,518 | 1,2948 |  | 1,632 | 643 |
| Radio broadcasting and television | 739 | 758 | 21 | 24 | 21 | 25 | 27 | 34 | 42 | 46 | 52 747 |
| Iocal utilities and pubil services, n.e. | 31 | 188 31 | ${ }_{29}$ | ${ }_{59}$ | 539 22 | 583 24 | ${ }_{25}^{623}$ | 675 | 745 | 740 | ${ }_{27}$ |
| Services. | 5,371 |  |  |  |  |  |  |  |  |  |  |
| Hotels and other lodging place | , 425 | 5,407 | 4,341 | -,655 | $\begin{array}{r}3,278 \\ \hline 217\end{array}$ | $\begin{array}{r}3,586 \\ \mathbf{2 7 0} \\ \hline\end{array}$ | 3,798 | 4,172 | 4,583 | 4,429 | , 361 |
| Personal services ${ }^{\text {Private }}$ households | $\begin{array}{r}752 \\ +587 \\ \hline\end{array}$ | $\begin{array}{r}727 \\ \hline 1373\end{array}$ | 643 | 523 | 456 | 497 | 5 | 313 576 | ${ }_{633} 3$ | 611 | 617 |
|  | 1,587 | 1,373 | 1,060 | 772 | 678 | 788 | 846 | 943 | 1,100 | 947 | 1,040 |
| agencies.-.-.-......--------- | 33 | 32 | 26 | 18 | 15 | 17 | 21 | 25 | 29 | 27 | 26 |
| Business services, n.e.c.-- | 367 | 379 | 318 | 267 | 249 |  |  |  |  |  | 424 |
| Miscellaneous repair services and hand trades | 107 | 104 | 96 | 82 | 72 | 75 | 330 80 | 892 | 409 | 90 | -93 |
| Amusementandrecreation, except motion pictures- | 308 | 311 <br> 298 | 305 | 239 | 225 | 249 | 280 | 311 | 349 | 332 | 329 |
| Medical and other health services .-.-.-.........- | 383 | 390 | 371 | 190 33 | 160 | 175 | 179 | 202 | 231 | 207 | 457 |
|  |  |  |  |  | 305 | 311 | 336 | 373 | 415 | 447 |  |
|  | 124 | 131 | 132 |  |  |  |  |  |  |  | 139 |
| Engineeringand other professional services, n.e.c. | 81 | 75 | 55 | 126 | 118 | 116 | 121 | 126 | 133 | 135 | 73 |
|  | 294 319 | 303 319 | 307 | 298 | 277 | 275 | 279 | +51 | $\begin{array}{r}55 \\ 304 \\ \hline\end{array}$ | 318 | 927 |
|  | 319 269 | 319 275 | 304 267 | 276 239 | 251 | 247 | 247 | 288 | -304 | 262 | ${ }_{232}^{265}$ |
|  |  |  | 267 | 239 | 221 | 220 | 226 | 239 | 229 | 234 |  |
| Government and government enterprises Federal-general government. | 4,958 | 5,173 | 5,278 | 4,986 | 5,164 |  |  |  |  |  | 8,224 |
| Federal-general government- Civilian, except work relief $^{\text {a }}$ | $\begin{array}{r}845 \\ 533 \\ \hline\end{array}$ | 879 | 888 | 842 | 1,138 | 1,669 | 1,727 | 3,818 | 2,944 | 3,428 | 3, 325 |
| Military ${ }^{2}$ - | ${ }_{312}$ | 315 | 578 308 | $\begin{array}{r}547 \\ 295 \\ \hline\end{array}$ | 512 | 634 | +810 | 1,006 | 2,948 | -948 | 1,0598 |
| Work relief. | 0 | 3 0 | 308 | 295 | 270 | 271 | 306 | . 338 | 358 | 370 | 1,875 |
| Federal-government enterprises | 569 | 572 | 570 | 532 | 356 473 | 764 528 | ${ }_{508}^{608}$ | 2.174 | 1,638 | 2,110 | 1,679 |
| State and local-general government. | 3,368 |  |  |  |  |  | 508 | 641 | 646 | 603 |  |
| Public education.. | 1,563 |  | 3,638 | 3,453 | 3.409 | 3.751 | 4,036 |  |  | 3,959 | ${ }^{4,718}$ |
| Nonschool, except work relief. | 1,805 |  | 1,953 | 1,552 | 1,409 | 1.370 | 1,438 | 1,507 | 1,593 | 1,681 | 1,717 |
| Work relief_--..---.-...-.-.-. |  | 1,918 | 1,983 48 | 1,809 92 | 1,659 $\mathbf{3 4 1}$ | 1,701 | 1,807 | 1,970 | 2,092 | 2,270 | 2,20 |
| State and local-government enterprises-......-- | 176 | 185 | 184 | 159 | 144 | 680 151 | 791 | ${ }^{74}$ | 48 | ${ }_{197}^{8}$ | 202 |
| Rest of the world ${ }^{\text {P }}$ | 1 | 1 | 1 | 1 |  |  | 162 | 177 | 192 |  | 2 |
| Addendum: All private industries.. | 45,206 | 40,720 |  |  |  | 1 | 1 | 1 | 1 | 1 |  |
|  |  |  | 33,607 | 25,297 | 23,660 | 27,420 | 29,984 | 33,866 | 38,432 | 34,564 | 37,519 |

[^32]the ferritorins is excluded.
${ }^{3}$ Pay of permanent United States residents employed in the United States by foreign governments und international orgapizations.

Table 14.-Wages and Salaries, by Industry, 1940-50 [Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 1845 | 1046 | 1847 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total. | 49,587 | 61,708 | 81,887 | 105,647 | 116,924 | 117,673 | 111,227 | 122,059 | 134,357 | 133,432 | 145,844 |
| Agriculture, forestry, and flsheries | 1,108 | 1,323 | 1,786 | 2,192 | 2,398 | 2,528 | 2,798 | 3, 102 | 3,354 | 3,223 | 3,109 |
| Farms | 1,000 70 | 1,197 | 1,633 | 2,019 | 2.197 | 2,312 | 2,550 | 2,837 | 3,062 | 2,940 | 2,805 |
|  | 10 | 11 | 10 | 1012 | 123 | 115 32 | 129 | 144 4 | 152 | 154 | 162 |
| Fisheries | 28 | 36 | 42 | 50 | 52 | 69 | 78 | 78 | ${ }_{91}^{49}$ | 83 | ${ }_{93}$ |
| Mining-ta- | 1,287 | 1,540 | 1,769 | 1,983 | 2,197 | 2,173 | 2,368 | 2,920 | 3,340 | 2,931 | 3.158 |
| Metal mining. | 190 | 1,232 | 1, 270 | 1,308 | 2, 263 | 2, 227 | 2,362 | $2 \cdot 237$ | 3,340 | 2,931 | ${ }^{3} 1847$ |
| Anthracite mining- | 118 | 135 | 156 | 178 | 202 | 196 | 237 | 250 | 277 | 223 | 233 |
| Crude petroleum and natural gas. | 532 336 | 678 363 | 823 355 | 918 407 | 1,052 | $\begin{array}{r}1,020 \\ \hline 569\end{array}$ | 1,065 | 1,378 | 1,529 | 1,164 030 | 1,290 |
| Nonmetallic mining and quarrying | 101 | 132 | 165 | 472 | 165 | 161 | ${ }_{211}^{623}$ | 742 253 | ${ }_{284}^{914}$ | ${ }^{930}$ | 970 318 |
| Contract construction | 1,709 | 2,889 | 4,670 | 3,919 | 2,888 | 2,951 | 4,412 | 5,825 | 7,093 | 6,887 | 7,859 |
| Manufacturing | 15,584 | 21,714 | 30,922 | 40,883 | 42,913 | 38,229 | 36,476 | 42,500 | 46,455 | 43,828 | 49,386 |
| Food and kindred prodid | 1,694 | 1,918 | 2,285 | 2,639 | 2,946 | 3, 105 | 3,578 | 4,083 | 4,359 | 4,416 | 4,658 |
| Tobacco manufacture | 1, 104 | 1115 | 119 | 2 146 | +158 | 171 | 185 | 195 | 202 | 211 | 219 |
| Apparel and other finished fabric prod | 1, ${ }^{1} 068$ | 1, 1, $\mathbf{1}$, 209 | 1,923 1,436 | 2,055 1,711 | 2,046 | 2,113 1,984 | 2,700 | 3,103 | 3,541 | 3,157 | 8,578 |
| Lumber and timber basic products....- | 467 | , 625 | , 763 | 1846 | , 874 | , 818 | 1,048 | 1,346 | 1,508 | 1,318 | 1,587 |
| Furniture and finished lumber products | 470 | 600 | 672 | 734 | 768 | 799 | 1,063 | 1,322 | 1,434 | 1,352 | 1,605 |
| Paper and allied products--1- | 490 | ${ }_{+}^{622}$ | 703 | 818 | -879 | 932 | 1,138 | 1,347 | 1,504 | 1,463 | 1.678 |
| Chemicals and allied products. | 1,808 | 1,098 | 1,662 | 2,026 | 1,060 | 2,072 | 1,912 | 2,255 | 2, ${ }_{2}$ | 2,428 | 2,814 |
| Products of petroleum and coal | 295 | 1,355 | 1,441 | , 522 | , 600 | , 641 | +697 | 2.823 | 2,957 | -957 | -998 |
| Rubber products. | 247 | 336 | 400 | 555 | 645 | 637 | 749 | 833 | 826 | 761 | 882 |
| Stone, clay, and ger products products | 382 514 | 507 673 | 583 772 | 622 836 | 650 839 | 782 | +876 | ${ }^{939}$ | 973 | 935 | 1,002 |
| Iron and steel and their products, including | 514 | 673 | 772 | 836 | 839 | 857 | 1,128 | 1,344 | 1,530 | 1,465 | 1,687 |
|  | 2,187 | 3,156 748 | 4,475 1,028 | 6,488 1.311 | 6,740 1,340 | 5,784 1,250 | 4,502 1,353 | 5,706 1,431 | 6,290 1,546 | 5,628 1,387 | 6.640 1,635 |
| Machinery, except electrical. | 1,436 | 2,331 | 3,585 | 4,162 | 4,180 | 3.900 | 3,987 | 4,821 | 5,359 | 4.653 | 5,211 |
| Electrical machinery-.---.... | 768 | 1,165 | 1,731 | 2,367 | 2.673 | 2,390 | 2,215 | 2,672 | 2,804 | 2,526 | 2.992 |
| Transportation equipment, except automobiles | 531 1,050 | 1,468 | 4,713 1,656 | 9,753 | 10,121 1,058 | 6,490 | 1,762 1,877 1,809 | 1,611 | 1,696 2,590 | 1,656 2,680 | 1,674 |
| Miscellaneous | 1,472 | +650 | $\begin{array}{r}1,681 \\ \hline 88\end{array}$ | 1,140 | 1,153 | 1,174 | 1,309 | 1,427 | 1,507 | 1,427 | 1,677 |
| Wholesale and retail trade | 9,010 | 10,322 | 10,958 | 11,862 | 13,016 | 14,638 | 19,529 | 22,818 | 25,318 | 25,618 | 27,442 |
| Wholesale trade --.- | 2,982 | 3,492 | 3,719 | 3,880 | 4,253 | 4.700 | 6,068 | 7,232 | 8,175 | 8,121 | 8,741 |
| Retail trade and automobile se | 6,028 | 6,830 | 7,239 | 7,982 | 8,763 | 9,938 | 13,461 | 15,526 | 17,143 | 17,497 | 18,701 |
| Finance, insurance, and real estate | 2,359 | 2,498 | 2,606 | 2,725 | 2,875 | 3,141 | 3,925 | 4,292 | 4,759 | 5,003 | 5,539 |
| Banking-....... | 581 | 611 | 660 | 700 | 758 | 826 | 991 | 1,122 | 1,233 | 1,300 | 1,399 |
| Security and commodity brokers, dealers and exchanges | 165 | 152 | 126 | 150 | 163 | 222 | 277 | 231 | 238 | 232 | 302 |
| Finance, n.e.c | 222 | 246 | 247 | 224 | 219 | 236 | 302 | 348 | 389 | 427 | 481 |
| Insurance carrier | 687 | 731 | 768 | 793 | 820 | 878 | 1,083 | 1,237 | 1,392 | 1,513 | 1.646 |
| Insurance agents | 223 | 237 | 259 | 275 583 | 283 626 | 314 | 418 | ${ }_{901}^{453}$ | 518 989 |  | 615 1.096 |
| Transportation | 3,635 | 4,261 |  | 6,547 | 7,525 | 7,888 | 8,478 | 9,045 | 9,664 | 9,295 | 9,760 |
| Railroads. | 2,207 | 2,615 | 3,285 | 3,957 | 4,377 | 4,405 | 4,771 | 4,956 | 5,376 | 4,937 | 5,159 |
| Local railways and bus lines | 283 | 283 | 341 | 421 | 464 | 495 | 554 | 587 | 538 | 547 | 527 |
| Highway passenger transportation, n.e.c | 132 | 162 | 244 | 336 | 384 | 424 | 527 | 563 | 592 | . 575 | ${ }_{2}^{568}$ |
| Highway freight transportation and warehousing. | 498 | 613 | 738 | 848 | 926 | 1,013 | 1,211 | 1,412 | 1,617 | 1,704 | 2,024 |
| Water transportation. | 234 | 267 | 292 | 471 | 743 | 885 | 683 | 667 | 653 | 575 | 556 |
| Air transportation (common | 43 | 55 | 77 | 113 | 130 | 150 | 231 | 268 | 287 | 238 | 313 |
| Pipe-line transportation. | 45 | 50 | 57 | 68 | 79 | 81 | 88 | 105 | 123 | 121 | ${ }_{4} 16$ |
| Services allied to transportatio | 187 | 210 | 226 | 333 | 422 | 435 | 413 | 487 | 478 | 468 | 497 |
| Communications and public utilities | 1,543 | 1,681 | 1,778 | 1,886 | 1,994 | 2,209 | 2,824 1,479 |  | 3,809 1,924 |  | 4,212 $\mathbf{2 , 0 2 3}$ |
| Telephone, telegraph, and related se | $\begin{array}{r}660 \\ 59 \\ \hline\end{array}$ | 735 67 | 813 72 | ${ }^{920} 8$ | ${ }^{983}$ | 1,123 | 1,479 | 1,661 | 1,924 | 2,000 | +249 |
| Radio broadcasting and television | $\begin{array}{r}59 \\ 795 \\ \hline\end{array}$ | $\begin{array}{r}67 \\ 849 \\ \hline\end{array}$ | 72 861 | $\begin{array}{r}82 \\ 852 \\ \hline\end{array}$ | 100 | ${ }_{932}^{116}$ | 1,143 | 1,407 | 1,631 | 1,759 | 1,881 |
| Local utilities and public services, n.e.e.e. | 29 | 30 | 82 32 | ${ }^{82}$ | 34 | 38 | , 45 | 51 | 55 | 58 | 59 |
| Services | 4,895 | 5,309 | 6,039 | 6,817 | 7,643 | 8,344 | 9,767 | 11,015 | 11,867 | 12,236 | 13, 128 |
| Hotels and other lodging | 376 | 399 | 425 | 496 | 576 | 630 | 770 | , 824 | 856 | -856 | , 860 |
| Personal services | 690 1.129 | 774 1.168 | $\begin{array}{r}899 \\ 1 \\ \hline\end{array}$ | 1,046 1,479 | 1,145 1,743 | 1,273 1,943 | 1,588 1,955 | 1,703 $\mathbf{2 , 2 1 0}$ | 1,773 2,283 | 1,783 2,336 | 1,887 |
|  | 1,129 | 1,168 | 1,342 | 1,479 | 1,743 | 1,943 | 1,955 | 2,210 | 2,283 | 2,336 | 2,636 |
|  | 26 | 44 | 87 | 126 | 95 | 54 | 63 | 90 | 107 | 121 | 135 |
| Business services, n | 436 | 487 | 505 | 555 | 651 | 749 | 956 | 1,091 | 1,244 | 1.266 | 1,379 |
| Miscellaneous repair services and hand | 90 | 121 | 142 | 206 | 235 | 236 | 296 | 345 | 350 | 350 | 370 |
| Motion pictures............ | 339 | 371 | 410 | 459 | 503 | 552 | 679 | ${ }_{528}^{6.7}$ | 655 | 657 | ${ }_{569}^{651}$ |
| Amusementandrecreation, except motion pictures. <br> Medical | 235 489 | 256 530 | 266 604 | 276 693 | 319 773 | 382 840 | 493 988 | 1,244 | 1,444 | 1.554 | 1,778 |
| Legal services | 142 | 148 | 150 | 152 | 161 | 175 | 222 | 257 | 283 | 302 | 822 |
| Engineering and other professional services, n.e.c- | 78 | 119 | 207 | - 193 | 191 | 215 | 269 | 325 | 397 | 404 | 431 |
| Educational services, n.e.c........... | 335 | 341 | 357 | 394 | 420 | 440 | 507 | 640 | 763 | 835 | 893 |
| Religious organizations...- | 267 | 263 | 267 | 280 | 302 523 | 315 560 | ${ }_{651}$ | 705 | 39 | 785 | 453 824 |
| Nonprofit membership organizations, n.e.c.-.-- | 263 |  | 378 | 462 |  |  |  |  |  |  | 824 |
| Government and government enterpris | 8,454 | 10, 165 | 16,089 | 26,819 | 33,463 | 35,561 | 20,633 | 17,239 | 18,683 | 20,370 | 22, 234 |
| Federal-general government- | 3,406 | 4,958 | 10,727 | 21,100 | 27,434 | 23,051 | 13,054 | 8,433 4,365 | 8,442 4,472 | 9,061 4.813 | 10,181 |
| Civilian, except work relief ${ }^{-1}$ | 1,236 | 1,883 | 3,817 6,330 | 6,605 14.445 |  |  |  |  |  |  | 5,180 5,101 |
| Military ${ }^{2}$-....... | ${ }^{591}$ | 1,862 | 6,330 580 | 14.445 |  | 22,58 |  |  |  |  |  |
| Federal Work relief... | 1,303 | 1,746 | 827 | 983 | 1,0036 | 1,099 | 1,347 | 1,370 | 1,554 | 1,7is | 1,808 |
| Federal-goverament enterpr |  |  |  |  |  |  |  |  |  |  |  |
| State and local-general government | 4,110 1,763 | 4,187 1,806 | 4,243 1,853 | 4,404 1,931 | $\mathbf{4 . 6 5 7}$ $\mathbf{2 , 0 4 9}$ | 5,055 $\mathbf{2 , 2 2 3}$ | $\mathbf{5 , 8 1 5}$ $\mathbf{2}, 487$ | 6,957 2,995 | 8,142 3,503 | 9,010 3,871 | 9,639 4.171 |
| Public education--.--- Nonschool except work | -1,7637 | 1,875 | 1,388 | 2,473 | 2,608 | 2,826 | 3.328 | 3,962 | 4,633 | 3,13) | 5,468 |
| Work relief except ......- |  |  | ${ }^{2}$ |  | 336 | 356 | 417 | 479 | 545 | 581 | 606 |
| State and local-government enterprises........-- | 235 | 274 | 292 | 332 |  |  | 417 | 479 | 540 | 581 | 006 |
| Rest of the world | 3 | 6 | 10 | 14 | 12 | 11 | 17 | 17 | 15 | 15 | 17 |
| Addendum : All priva | 41,130 | 51,537 | 65,788 | 78, 814 | 83,449 | 82,101 | 90,577 | 104,803 | 115,659 | 113,047 | 123,598 |

U'Includes pay of United States citizens but not of foreigners employed abroad by the
United States Oovernment.
${ }^{2}$ The pay of personnel stationed abroad is included, but that of personnel recruited from
the territories is excluded. governments and international organizations.

Tuble 15.-Supplements to Wages and Salaries, by Industry, 1929-39 1
[Millions of dollars]


1 Data shcwing surplements to wages and salaries by type are presented in table 34. Forestry, and the Rest of the World are omitted from table 15 because supplements are estimated at less
than $\$ 500,000$ in ali years.

Table 15.-Supplements to Wages and Salaries, by Industry, 1940-50
[Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 19.9 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total.---------------------- | 2,199 | 2,572 | 3,008 | 3,565 | 4,239 | 5,353 | 5,871 | 5,929 | 5,809 | 6,455 | 7,489 |
| Agriculture, forestry, and fisheries.-- | 7 | 6 |  | 7 | 9 | 10 | 13 | 14 | 14 | 16 | 17 |
| Axricalture, | ${ }_{3}^{4}$ | 3 | 3 4 4 | 3 | 5 | 6 | 9 | 9 | 9 | 10 | 10 |
|  | 3 0 | 3 0 | 4 0 | 4 0 | 4 | $\stackrel{4}{4}$ | 3 | 3 2 | 3 2 2 | 4 2 | $\stackrel{5}{2}$ |
| Mining | 72 | 80 | 85 | 88 | 87 | 86 | 103 | 151 | 202 | 192 | 271 |
| Metal mining - | 12 | 13 | 16 9 | 15 | 13 | 12 | 10 | 13 12 | 16 | 17 | 20 |
| Anthracite mining.-.---.-.- ${ }^{\text {Bituminous and other soft minin }}$ | $\begin{array}{r}6 \\ 28 \\ \hline\end{array}$ | 34 | 35 | $\begin{array}{r}9 \\ 39 \\ \hline\end{array}$ | 7 3 | 7 36 | 11 46 | 85 | 16 123 | 115 | 17. |
| Crude petroleum and natural gas.... | 21 | 20 | 19 | 18 | 23 | 25 | 29 | 33 | 39 | 40 | 45 |
| Nonmetallic mining and quarrying-.-.-.-.-.-.--- | 5 | 5 | 6 | 7 | 5 | 6 | 7 | 8 | 8 | 8 | 10 |
| Contract construction | 111 | 173 | 253 | 200 | 148 | 155 | 210 | 274 | 317 | 319 | 400 |
| Manufacturing | 758 | 993 | 1,235 | 1,662 | 1,900 | 1,791 | 1,717 | 2,069 | 2,185 | 2,180 | 2.898 |
| Food and kindred products | 88 | 92 | 99 | 115 | 144 | 149 | 174 | 202 | 204 | 216 | 252 18 |
| Tobacco manufactures .-.-------------------- | ${ }_{54}^{4}$ | $\stackrel{4}{6}$ | 5 76 | 80 | 6 79 | 82 | 103 | 118 | 1145 | 16 126 | 178 |
|  | 41 | 51 | 60 | 74 | 88 | 92 | 107 | 119 | 125 | 132 | 163 |
| Lumber and timber basic products....----------- | 22 | 29 | 32 | 35 | 36 | 35 | 42 | 49 | 52 | 48 | 65 |
| Furniture and finished lumber products.-.....- | 22 | 29 | 28 | 31 | 31 | 31 | 40 | 50 | 49 | 49 | 67 |
|  | 23 40 | 28 | 26 38 | 31 37 | 38 <br> 43 | 40 <br> 54 | 49 70 | 62 82 | 72 | 75 96 | 94 116 |
| Printing, publishing, and allied industries ---.-- | 40 | 41 | 38 63 | 37 84 84 | $\begin{array}{r}43 \\ 101 \\ \hline\end{array}$ | $\begin{array}{r}54 \\ 120 \\ \hline\end{array}$ | $\begin{array}{r}70 \\ 125 \\ \hline\end{array}$ | - 142 | 855 | $\stackrel{96}{102}$ | 116 187 |
|  | 22 | 22 | $\stackrel{63}{6}$ | 40 | 80 | 104 | 127 | 175 | 175 | 184 | 10.5 |
| Rubber products. | 11 | 15 | 13 | 19 | 24 | 24 | 29 | 33 | 31 | 32 | 41 |
| Leather and leather products. | 18 | ${ }_{35}^{22}$ | 23 | 35 | 23 | $\stackrel{24}{39}$ | $\stackrel{29}{52}$ | 40 | 38 63 | $4^{40}$ | 88 |
|  | 27 | 35 |  |  |  |  |  |  |  | 04 |  |
| Iron and steel and their products, including ordnance. | 131 | 172 | 219 | 297 | 316 | 279 | 204 | 239 | 250 | 246 | 447 |
| Nonferrous metals and their products-.---.-.--- | 23 | 31 | 36 | 47 | 51 | 50 | 60 | 61 | 6.4 | 62 | 78 |
| Machinery, except electrical. | 66 | 99 | 120 | 148 | 164 | 156 | 157 | 222 | 244 | 213 | 237 |
| Electrical machinery.......- | 36 | 53 | 66 | -9985 | 141 | 135 | 138 | 191 | 197 | 183 | ${ }^{234}$ |
| Transportation equipment, except automobiles.- | 23 47 | 59 67 | 183 55 | 385 32 | 414 | 137 30 | 85 | ${ }_{85}^{64}$ | 88 | ${ }_{93}$ | 225 |
| Automobiles and automobile equipment. | 22 | 27 | 33 | 41 | 45 | 43 | 52 | 64 | 76 | 75 | 101 |
| Wholesale and retail trade. | 340 | 373 | 365 | 379 | 430 | 471 | 639 | 757 | 764 | 820 | 1,005 |
| Wholesale trade. | 125 | 136 | 135 | 128 | 143 | ${ }_{313}^{158}$ | ${ }_{4} 212$ | 5 | 5 | 265 | 331 .674 |
| Retail trade and automobile services.-.-------- | 215 | 237 | 230 | 251 | 287 | 313 | 427 | 505 | 508 | 555 |  |
| Finance, insurance, and real estate-. | 126 | 132 | 126 | 138 | 155 | 154 | 210 | 222 | 285 | 321 130 | 381 |
| Banking-............ | 33 | 35 | 37 | 41 | 56 | 61 | 87 | 98 | 117 | 130 |  |
| Security and commodity brokers, dealers and |  |  |  |  |  |  | 9 | 7 | 8 |  |  |
| Finananges | 17 | 18 | 17 | 20 | 20 | 10 | 12 | 14 | 25 | 28 | 33 |
| Finance, n.e.c | 33 | 32 | 29 | 32 | 31 | 31 | 43 | 41 | 65 | 76 | 90 |
| Insurance agents and combination offices | 8 | 8 | 7 | 8 | 9 | 10 | 12 | 14 | 17 | 19 | 26 |
|  | 30 | 33 | 31 | 33 | 35 | 36 | 47 | 48 | 53 | 59 | 69 |
| Transportation. | 223 | 260 | 329 | 393 | 439 | 467 | 504 | 641 | 557 | 556 | 594 |
|  | 158 | 189 | 235 | 294 | 324 | 340 | 363 | 480 | 388 | 377 |  |
| Local railways and bus line | 12 | 11 | 12 | 12 | 13 | 15 | 17 | 18 28 | 15 | 15 | 18 30 |
| Highway passenger transportation, n.e.c------- | 88 | 10 | 12 | 16 35 | 39 | 40 | 44 | 48 | 53 | 60 | 70 |
| Highway freight transportation and warehousing- | 26 | 30 | 33 | 35 |  | 40 | 44 |  |  |  |  |
| Water transportation. | 6 |  | 22 |  | 17 | 17 | 18 |  | 28 | 18 |  |
| Air transportation (common carriers) | 2 | 2 | 3 | 5 | 5 3 3 | 5 | 14 | 7 | ${ }_{9}^{16}$ | 8 |  |
|  | 10 | 10 | 11 | 14 | 19 | 19 | 16 | 20 | 19 | 22 | 26 |
| mmanications and public utilities | 106 | 117 | 118 | 130 | 159 | 184 | 245 | 279 | 315 | 350 | 403. |
| Telephone, telegraph, and related services. | 60 | 72 | 77 | 86 | 94 | 104 | 136 | 155 | 172 | 188 | 217 |
| Radio broadcasting and television.-. | 2 | 3 | 3 | 4 | 4 | 73 | 104 | 117 | 134 | 153 | 174 |
| Utilities: electric and gas-.....- | 43 | 4 | ${ }_{1} 1$ | 1 | $\stackrel{1}{2}$ | 2 | 1 | 1 | 2 | 2 | 3 |
|  |  |  |  |  | 164 | 173 | 216 | 232 | 244 | 267 | 320 |
| Services ${ }_{\text {Hotela }}$ and orner lodging places. | 114 | 16 | 16 | 18 | 20 | 23 | 27 | 25 | 27 | 30 | 35 |
| Hotels and other lodging places Personal services_-......... | $\stackrel{15}{23}$ | 27 | 28 | 32 | 34 | 36 | 43 | 43 | 44 | 47 | 59 |
| Prisona gervices-1-............ | $\stackrel{3}{3}$ | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 3 |
| Commercial and trade schools and employment agencies | 2 | 2 | 4 | 6 | 6 | 4 | 6 | 2 | 3 | 4 | 5 |
| Business services, | 16 | 16 | 16 | 18 | 22 | 27 | 34 | 43 | 47 | 50 | 62 |
| Miscellaneous repair services and hand trades..- | 4 | $\stackrel{4}{4}$ | ${ }^{6}$ | 8 16 | 88 | ${ }^{9}$ | $\stackrel{12}{24}$ | ${ }_{24}^{13}$ | $\stackrel{13}{26}$ | 28 | 32 |
|  | 12 | 13 9 | 10 | $\stackrel{1}{9}$ | 11 | 12 | 14 | 14 | 16 | 17 | 21 |
| Amusementandrecreation, except motion pictures- | 8 | 9 | 5 | 6 | 6 | 6 | 9 | 13 | 13 | 15 | 18 |
|  |  |  |  |  |  |  | 3 | 4 |  |  |  |
|  |  | 3 4 4 | 3 | 6 | 6 | 6 | 6 | 9 | 11 | 11 | 13 |
| Engineering and other professional services, n.e.c- | ${ }_{8}^{2}$ | 8 | 6 | 7 | 7 | 7 | 10 | 10 | 10 | 12 | 13 |
| Educationa services, n.e.c | 8 | 8 | 10 | 10 | 10 9 | 10 9 | 114 | 16 14 | 16 12 | 19 | 20 17 |
| Nonprofit membership organizations, n.e.c...- | 7 | 7 | 7 | 9 | 9 | 9 | 11 | 14 |  |  | 17 |
|  | 342 | 314 | 356 | 420 | 748 | 1,862 | 2,014 | 1,290 | 926 | 1,434 | 1,200 |
| Federal-general government.-..................- | 131 | 88 | 109 | 155 | 471 | 1,563 | 1,687 | ${ }_{56}$ | ${ }_{64}$ | 72 | 88 |
|  | 38 | 42 | 43 | 217 | - 226 | 241 | 265 | 305 | 375 | 435 | 504 |
| State and local-general government.-.---.-.-- | 170 | 181 3 | 200 | ${ }_{4}$ | 4 | 4 | 5 | 6 | 7 | 9 | 11 |
| State and local-government enterprises.......- |  |  |  |  |  |  |  |  |  |  |  |

[^33]Table 16.-Income of Unincorporated Enterprises, by Industry, 1929-391
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total | 13,785 | 10,208 | 7,603 | 4,626 | 5,732 | 6,657 | 9,908 | 12, 284 | 12,278 | 10,547 | 11,448 |
| Agriculture, forestry, and fisheries.- | 5,728 | 3,990 | 2,954 | 1,759 1,715 | 2,322 | 2,365 2,327 | 4,918 4,871 | 6,135 6,090 | 5,681 5,619 | 4,477 4,421 | 4,562 4,506 |
|  | 6,665 44 | 3,931 43 | 2,898 4 | 1,715 | 2,282 +32 | 2,327 |  |  | ${ }^{6} 47$ | 4,421 | 4,506 |
| Agriculural and similar service estabishments | 44 2 17 | 1 1 | 1 | 1 | $\begin{array}{r}1 \\ \hline\end{array}$ | 10 | 1 | 1 | 2 | 1 | 1 |
|  | 17 | 15 | 10 | 6 |  |  |  |  |  |  |  |
| Mining. | 54 | 30 | -3 | 10 | 11 | 31 | 35 | 52 | 71 | 48 | 59 |
| Metal mining. | 3 | 1 | 1 | 0 | 1 | 2 | 3 | 4 | 6 |  | 6 |
|  | 8 | 2 | -2 | -3 | -1 | 2 | 3 | 7 | 11 | 3 | 8 |
|  | 38 | 26 | $-1$ | 15 | 11 | 26 | 28 | 39 | 50 | 39 | 41 |
| Nonmetallie mining and quarrying- | 3 | 1 | -1 | -1 | 0 | 0 | 1 | 1 | 3 | 2 | 3 |
| Contract construction. | 1,008 | 774 | 544 | 212 | 171 | 272 | 336 | 543 | 520 | 547 | 578 |
| Manufacturing | 512 | 272 | 114 | 11 | 187 | 225 | 279 | 374 | 339 | 253 | 378 |
| Food and kindred produc | 74 | 60 | 40 | 25 | 53 | 62 | 66 | 82 | 66 | 71 | 101 |
| Tobaceo manufactures | 3 19 | 3 4 | 3 3 3 | ${ }_{1}^{2}$ | 11 | 1 | 10 | 14 | 11 | $\frac{1}{6}$ | 12 |
| Apparel and other finished fabric products.....- | 109 | 27 | -5 | -27 | 45 | 44 | 48 | 69 | 45 | 39 | 60 |
| Lumber and timber basie products... | 34 | 17 | 4 | -1 | 7 | 9 | 14 | 22 | 29 | 19 | 27 |
| Furniture and finished lumber products. | 18 | 6 | 0 |  |  | 6 | 9 | 15 | 15 | 12 | 17 |
|  | 4 | 3 | 1 | 0 | 2 | 3 | 3 | 4 | 4 | 2 | 4 |
| Printing, publishing, and allied industries....... | 89 27 | 63 31 | 36 17 | ${ }^{9} 3$ | ${ }_{13}^{23}$ | 32 | 44 | 53 | 47 | 33 | 46 |
| Products of petroleun and coal | 27 | ${ }_{0}$ | 17 | 13 0 | 13 0 | 14 | 16 0 | 18 | 18181 | 14 1 1 | 14 |
| Rubber produrts. | 0 | -2 | -1 | -1 | 0 | 0 | 0 | 1 | 0 | 0 |  |
| Leather and leather products | 13 | 2 | -1 | -2 | 8 | 6 | 9 | 8 | 6 | 4 | 8 |
| Stone, clay, and glass products...-----.-.-.-- | 20 | 10 | 2 | -3 | 2 | 5 | 7 | 13 | 12 | 6 | 11 |
| ordnance. <br> products, including | 23 | 13 | 4 | 0 | 4 | 7 | 11 | 16 | 20 | 9 | 17 |
| Nonferrous metals and their products-....-...-- | 24 | 8 | 2 | -1 | 5 | 8 | 10 | 14 | 15 | 6 | 17 |
| Machincry, except electrical.- | 27 | 13 | 2 | -4 | 2 | 8 | 12 | 20 |  |  |  |
| Electrical machinery ....-...... | 3 | 2 | 1 | 0 | 0 | 1 | 2 | 3 | 3 | 2 | 3 |
| Transportation equipment, execpt automobiles.- | $\stackrel{2}{2}$ | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | $\frac{1}{2}$ |
| Automobiles and automobile equipmen | 20 | 10 | 5 | -1 | $\underline{1}$ | 10 | 15 | 3 16 | 3 17 | ${ }^{2}$ | 2 16 |
| Wholesale and retail trade. | 2,614 | 1,776 | 1,145 | 482 | 1,006 | 1,509 |  |  |  | 2,388 | 2,890 |
| Whulesale trade. | 362 | 251 | 157 | 64 | 135 | 207 | 1,271 | 2,366 | 2, 412 | ,362 | 2,891 |
| Retail trade and automobile sorvices | 2,252 | 1,525 | 988 | 418 | 871 | 1,302 | 1,596 | 2,021 | 2,247 | 2,026 | 2,459 |
| Floance, insurance, and real estate. | 765 | 468 | 322 | 252 | 345 | 307 | 351 |  | 426 | 377 | 399 |
|  | 0 | 0 | 0 | 0 | 0 | , | 5 | 0 | 0 | 0 | 0 |
| exchanges. | 376 | 106 | 5 | -21 | 103 | 43 |  |  |  |  | 60 |
| Finance, n.e.c.----..---.-.-. | 10 | 11 | 11 |  | 8 | 8 | 9 | 11 | 14 | 14 | 15 |
| Insurance agents and combination o | 273 | 265 | 241 | 214 | 191 | 207 | 218 | 216 | 250 | 240 | 244 |
| Real estate.------...- | 106 | 86 | 65 | 50 | 43 | 49 | 57. | 67 | 79 | 74 | 80 |
| Transportation. | 139 | 132 | 114 | 97 | 93 | 104 | 118 | 130 |  | 139 |  |
| Railroads....-... | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  | 13 | 0 |
| I ocal railways and bus lines---.. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Highway passenger transportation, n.e.c.e.i.j.- | 37 95 | 35 91 | 8 | 19 74 | 16 73 | 19 | 20 | 21 | 24 | 24 | 25 |
| Water transportation. - |  |  |  |  |  |  |  |  |  |  |  |
| Air transportation (common carriers) | 0 | ${ }_{0}^{1}$ | 1 | 0 |  |  |  | 2 | 3 | 3 | 4 |
| Pipe-line transportation.-.-. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Scrvices allied to transportation. | 5 | 4 | 3 | 0 | 2 | 2 | 2 | 3 | 3 |  | 3 |
| Communications and public utilities.-- | 8 | 8 | 5 |  | 0 | 0 |  |  |  |  |  |
| Telephone, telegraph, and related services......- | 3 | 3 | 2 | 2 | 0 | 0 | $\begin{aligned} & 0 \\ & 0 \end{aligned}$ | 1 | 1 | ${ }_{2}$ | 2 |
| Radio broadcasting and telerision.- | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| Local utilites and public services, n.--- | 0 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2,957 | 2,758 | 2,408 | 1,798 | 1,597 | 1,844 | 2,004 | 2,261 |  |  | 2,425 |
| Hotels and other lodging places. | 100 434 | 70 398 | 31 330 | 1.13 -249 | - 29 | 1,844 | 2,004 | 2,261 | 2,438 | 2,38 | 2, 46 |
| Commercial and trade schools and employment |  |  |  | 249 | 206 | 241 | 278 | 317 | 389 | 334 | 348 |
| pugencles..-.-.-.-.-.-------------- | 8 | 7 | 5 | 3 | 3 | 3 |  | 6 | 6 |  | 5 |
|  | 160 | 154 | 123 | 94 | 85 | 117 | 122 | 150 | 157 | 150 | 163 |
| Miscellaneous repair services and hand trades..-- | 164 | 157 | 142 | 113 | 93 | 100 | 109 | 116 | 125 | 133 | 134 |
| Motion pictures |  | 36 |  |  |  |  |  |  |  |  |  |
| Amusementandrecreation, except motion pictures- | 38 | 31 | 20 | 8 | ${ }_{9}$ | ${ }_{21}^{10}$ | 15 | ${ }_{34}^{23}$ | 24 | 21 | 42 |
| Medical and other health services-.-------.--- | 1,145 | 1,075 | 924 | 694 | 633 | 713 | 768 | $\begin{array}{r}34 \\ 866 \\ \hline\end{array}$ | 8 | $\begin{array}{r}35 \\ 863 \\ \hline\end{array}$ | 904 |
| 1 l gl services | 571 |  | 574 | 470 | 447 | 488 | 506 | 525 | 892 | 831 | 553 |
|  |  | 144 129 | 120 115 | 84 | 78 78 | 89 89 | 96 96 | 117 | 549 122 | 129 | 135 |
|  | 133 | 129 | 115 | 87 | 70 | 69 | 70 | 73 | 78 | 75 | 74 |
| and nartnerships, except that the series for wholesale trade includes estimated patronage refunds and stock dividends paid by farmers' cooperatives (shown separately in table 12). |  |  |  | "Income of unincorporated enterprises" excludes the inventory valuation anjustment which is shown by industries in table 22B. Industries for which income of unincorporated enterprises is estimated at zero in all years are omitted from table 16. |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

Table 16.-Income of Unincorporated Enterprises, by Industry, 1940-50¹
[Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1940 | 1.47 | 1948 | 1940 | 1960 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total. | 12,712 | 17,148 | 23,413 | 26,885 | 29,467 | 31,360 | 37,194 | 36,912 | 40,146 | 33,271 | 37,516 |
| Agriculture, forestry, and fisheries... | 5,005 | 7,026 | 10,571 | 11,875 | 11,973 | 12,667 | 14,960 | 15,788 | 17.881 | 13,195 |  |
| - Farms.---i- ${ }^{\text {Agricultural and similar service establishments. }}$ | 4,940 49 | 6,938 | 10,468 72 | 11,768 | 11,841 | 12,588 | 14;790 | 15,588 | 17,686 | 13,000 | 13,804 |
| Agricultural and similar service establishments. | ${ }_{1} 1$ | 1 | 72 2 | $\begin{array}{r}72 \\ 2 \\ \hline\end{array}$ | 92 | 86 4 | 115 5 | 149 5 | 157 5 | 1.17 4 | 153 |
|  | 15 | 24 | 29 | 33 | 37 | 49 | 50 | 45 | 53 | 44 | 50 |
| Mining | 71 | 96 | 113 | 141 | 140 | 107 | 138 | 232 | 334 | 208 | 284 |
| Mntal minarite mining | 8 | 10 2 | 11 | 7 | 6 | 5 | 6 | 14 | 15 | 7 | ${ }_{13}^{284}$ |
|  | 14 | 18 | 24 | $3{ }_{3}^{2}$ | 35 | 34 | $\begin{array}{r}6 \\ 30 \\ \hline\end{array}$ | ${ }_{6}^{6}$ | $8^{7}$ | 4 | 5 |
| Crude petroleum and natural gas.- | 45 | 62 | 71 | 97 | ${ }_{93}$ | ${ }_{62}$ | 88 | 137 | 215 | 46 139 | 638080 |
| Nonmetallic mining and quarrying. | 3 | 4 | 5 | 4 | 4 | 4 | 8 | 12 | 14 | 12 | 190 |
| Contract eonstruction. | 714 | 1,142 | 1,392 | 1,198 | 1,220 | 1,375 | 1,885 | 2,265 | 2,629 | 2,578 | 3,106 |
| Manufacturing | 459 | 751 | 1,136 | 1,562 | 1,936 | 1,929 | 1,976 | 1,480 | 1,072 | 790 | 1,217 |
| Food and kindred prod | 106 | 157 | 243 | 309 | 356 | 349 | 388 | 215 | 1,137 | 130 | 1.119 |
| Tobacco manufactures | 14 | ${ }_{28}^{2}$ | 5 47 | 6 35 | 47 | 8 | ${ }^{3}$ | ${ }_{3}^{2}$ | ${ }^{2}$ | 2 | 2 |
| Apparel and other finished fabric products | 68 | 132 | 47 194 | 266 | 378 | 54 408 | 60 404 40 | 35 246 | ${ }^{29} 192$ | 134 | 25 |
| Lumber and timber basic products.......-- | .39 | 65 | 80 | 90 | 87 | 68 | 126 | 151 | 127 | 60 | 130 |
| Furniture and finished lumber products. | 20 | 32 | 38 | 51 | 77 | 87 | 94 | 65 | 52 | 28 | 60 |
| Paper and allied products ------- | 5 | 9 | 11 | 16 | 19 | 17 | 17 | 12 | 6 | 4 | 0 |
| Printing, publishing, and allied industries....-. | - 50 | 65 | 53 | 40 | 88 | 131 | 166 | 165 | 137 | 121 | 132 |
| Chemicals and allied products-1.-.- | 16 | $\stackrel{21}{1}$ | 35 1 | $\stackrel{62}{2}$ | 71 2 | 67 2 | 66 5 | 48 5 | 40 5 | 34 3 | 64 |
| Rubber products | 1 | 3 | 2 | 4 |  | 1 | 1 | 1 | 1 | 1 |  |
| Leather and leather products. | 8 | 16 | 27 | 36 | 37 | 43 | 46 | 25 | 16 | 11 | 17 |
| Stone, clay, and glass products | 14 | 23 | 29 | 31 | 32 | 38 | 60 | 50 | 45 | 40 | 67 |
| Iron and steel and their products, including | 24 | 46 | 83 | 127 | 128 | 105 | 100 | 85 | 77 | 50 | 96 |
| Nonferrous metals and their products.-.-.-.-..-- | 24 | 40 | 46 | 89 | 106 | 81 | 82 | 55 | 38 | 23 | 45 |
| Machinery, excfpt electrical. | 32 | 59 | 145 | 231 | 300 | 287 | 195 | 145 | 125 | 80 | 115 |
| Electrical machinery-.-.-.-.-. | 5 | 9 | 16 | 29 | 33 | 27 | 24 | 17 | 11 | 9 | 21 |
| Transportation equipment, except automobiles.- | 3 3 | 5 | $\begin{array}{r}24 \\ 3 \\ \hline\end{array}$ | 43 | 41 | 16 | 12 | 3 | $\stackrel{4}{9}$ | 3 6 | 14 |
| Miscellaneous | 19 | 33 | 54 | 82 | 115 | 133 | 116 | 66 | 49 | 39 | 85 |
| Wholesale and retail trade. | 3,311 | 4,412 | 5,855 | 7,270 | 8,424 | 9,626 | 11,733 | 10,330 | 10,694 | 9,132 | 10,968 |
| Wholesale trade. | 491 | , 661 | 911 | 1,086 | 1,286 | 1.500 | 1,944 | 1,605 | 1,650 | 1,460 | 1.686 |
| Retail trade and automobile services | 2,820 | 3,751 | 4,944 | 6,184 | 7,138 | 8,126 | 9,789 | 8,725 | 9,044 | 7,666 | 0,282 |
| Finance, insurance, and real estate Banking $\qquad$ | 377 0 | 407 0 | ${ }_{4}^{485}$ | 624 2 | 769 3 | 843 4 | 910 4 | 949 5 | 1,091 5 | 1,003 | 1,262 |
| Security and commodity brokers, dealers and exchanges. | 17 | 5 | 21 | 120 | 118 | 166 | 81 | 22 | 88 | 55 | 160 |
| Finance, n.e.c. | 16 | 18 | 17 | 16 | 21 | 25 | 32 | 40 | 49 | 49 | 61 |
| Insurance agents and combinatio | 258 | 279 | 300 | 318 | 372 | 411 | 505 | 578 | 629 | 605 | 678 |
| Real estate. | 88 | 105 | 146 | 168 | 195 | 237 | 288 | 304 | 320 | 289 | 358 |
| Transportation. | 171 | 242 | 290 | 330 | 348 | 362 | 422 | 471 | 509 | 468 | 543 |
| Railroads. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| I ocal railways and bus lines. | 1 | 1 | 1 | 1 | 2 | ${ }^{2}$ | ${ }^{2}$ | 3 | ${ }^{3}$ | 83 | ${ }^{3}$ |
| Highway passenger transportation, n.e.c-----.- | 26 136 | 30 201 | 44 232 | 60 256 | -638 | 63 280 | 318 | 353 | 388 | 362 | 432 |
| Higway irght transportation and warehousing. |  |  |  |  |  |  |  |  |  |  |  |
| Water transportation. |  | 5 | 7 | 7 |  | 9 | 9 | 11 |  | 11 |  |
| Air transportation (common carriers) --.-.-......- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pipe-line transportation-------.-. | 0 | ${ }_{5}^{0}$ | 0 | 0 | 0 | 8 | 0 10 | ${ }_{12}^{0}$ | ${ }_{13}^{0}$ | ${ }_{12}^{0}$ |  |
| -ervices allied to transportation. | 4 |  |  |  |  |  |  |  |  |  |  |
| Communications and public utilities.-.-...-........- |  |  | 11 | 15 | 15 | 17 | 18 | 18 | 19 | ${ }_{2} 2$ |  |
| Telephone, telegraph, and related services......- | 2 | 3 | 4 | 5 | 5 | ${ }_{6}^{6}$ | ${ }_{6}$ | ${ }^{6}$ | $\begin{array}{r}6 \\ 2 \\ \hline\end{array}$ | $\begin{array}{r}7 \\ 2 \\ \hline\end{array}$ | 7 3 |
| Radio broadcasting and television. | $\stackrel{1}{0}$ | 1 | 1 | ${ }_{0}^{2}$ | $\stackrel{2}{0}$ | $\stackrel{2}{0}$ | $\stackrel{2}{0}$ | 2 | $\begin{array}{r}2 \\ 0 \\ \hline\end{array}$ | $\stackrel{2}{0}$ | 3 0 |
| Local utilities and public services, n.e.e. |  | 5 | 6 | 8 | 8 | 9 | 10 | 10 | 11 | 11 |  |
| Services |  | 3,663 |  | 3,870 | 4,302 | 4,434 | 5,152 | 5,459 | 5,917 | 5,877 | 6,220 |
| Hotels and other lodging places | ${ }^{2} 56$ | -69 | 103 | 171 | 187 | 210 | 225 | 174 | 178 690 | ${ }_{613}^{170}$ | 174 644 |
| Personal services - .-......... | 397 | 490 | 530 | 639 | 690 | 702 | 756 | 735 | 690 | 613 | 644 |
| Commercial and trade schools and employment agencies |  |  | 15 | 22 | 17 | 10 | 12 | 16 | 19 | 19 | 21 |
| Pusiness services, | 175 | 200 | 233 | 2.57 | 302 | 344 | 383 | 406 | 465 | 440 | 471 |
| Miscellaneous repair services and hand trades.-. | 133 | 252 | 342 | 398 | 423 | 294 | 297 | 379 | 429 | 396 | 408 |
|  | 22 | 26 |  | 70 | 78 76 | 80 81 |  | 67 101 |  | 54 86 | 50 86 |
| Anusementand recreation, excrptmotionpictures | 44 | +55 | 53 1,206 | 65 1,209 | $\begin{array}{r}\text { \% } \\ \hline 1.585 \\ \hline\end{array}$ | 91 1,604 | 118 1,902 | 2.101 | 2,283 | 86 2.379 | 86 2.512 |
|  | 951 <br> 578 <br> 18 | 1,053 615 | 1,206 | 1,209 | $\begin{array}{r}1,535 \\ \hline 732\end{array}$ | 1,609 | 1,902 | 1,022 | 1,174 | 1,195 | 1,260 |
| Engineerirgs and other professional services, n.e.c- | 161 | 211 | 296 | 194 | 178 | 191 | 282 | - 301 | ${ }_{176}^{35}$ | 355 | 417 |
| Educational services, n.e.c.-.....................- | 75 | 84 | 81 | 83 | 84 | 109 | 145 | 157 | 176 | 170 | 177 |

"Income of unincorporated enterprises" measures the nit income of sole proprictorships and partnerships, except that the series for wholesale trade includes estimated patronage refunds and stock dividends paid by farmers' cooperatives (shown separately in table 12).
"Incorre of unincorporated enterprises" exclures he intentory valuation adjustrent which is shown by inclustrics in tible 22B. Industries for which income of unincorporated enterprises is estimated at zero in all years are omitted from table 16.

Table 17.-Corporate Income Before Federal and State Income and Excess Profits Taxes, by Industry, 1929-391
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total ${ }^{1}$. | 9,818 | 3,303 | -783 | -3, 042 | 162 | 1,723 | 3,224 | 5,684 | 6, 197 | 3,329 | 6,467 |
| Agriculture, forestry, and fisheries. | 20 | -35 | -68 | -69 | $\xrightarrow[-29]{-26}$ | -28 | 16 | ${ }_{28}^{28}$ | 14 | $-7$ | 9 |
| Farms ${ }_{\text {Forestry }}$ | 16 | -33 | -63 -2 | -62 | -26 | -23 | -18 | 28 0 | -16 | -6 -1 | 10 |
| Fisheries. | 3 | -1 | -3 | -4 | -2 | -3 | -1 | 0 | -1 | 0 | 0 |
| Mining | 466 | 125 | -122 | -89 | -12 | 179 | 195 | 322 | 469 | 219 | 318 |
| Motal mining. | 262 | 47 | -34 | -50 | 17 | 55 | 84 | 140 | 243 | 117 | 182 |
| Anthracite mining | 12 | 14 | 8 | $-12$ | -7 | 0 | -10 | -4 | -13 | -18 | -12 |
| Bituminous and other soft coal mining | 122 | -12 | -78 | $\begin{array}{r}-34 \\ \hline 16\end{array}$ | -29 | 103 | ${ }_{99}^{5}$ | 9 145 | 188 | -178 | 9 106 |
| Nonmetalic mining and quarrying.-...--..........- | 56 | 41 | 7 | -9 | -2 | 9 | 17 | 32 | 37 | 17 | 33 |
| Contract construction. | 121 | 93 | 1 | -88 | -51 | -27 | 0 | 27 | 42 | 28 | 32 |
| Manufacturing. | 5,038 | 1,704 | -274 | -1, 291 | 840 | 1,388 | 2,234 | 3,606 | 3,711 | 1,601 | 3,712 |
| Food and kindred prod | 492 | 374 | 206 | 89 | 341 | 397 | 408 | 519 | 345 | 360 | 543 |
| Tobacco manufactures | 142 | 15.5 | 159 | 166 | 65 | 112 | 112 | 128 | 126 | 130 | 137 |
| Textile-mill products. | 155 | -203 | -161 | -178 | 157 | 33 | 78 | 189 | 102 | -16 | 172 |
| Apparel a d other finished fabric products.....-- | 42 88 | -33 -29 | -60 | -74 | -25 | 14 | 21 | 46 | 16 | 4 | 39 |
| Lumber and limber basio prordicts.----------- |  |  |  |  | -25 | -20 | 6 | 42 | 67 | 7 | 43 |
| Furniture and finished lumber products. | 41 | -37 | -60 | -77 | -18 | -7 | 8 | 36 | 32 | 12 | 51 |
| Paper and allied products- | 111 | 51 | -6 | -56 | 32 | 69 | 76 | 105 | 126 | 48 | 111 |
| Printing, publishing, and allied industriz | 246 | 150 | 69 | -16 | 39 | 75 | 115 | 147 | 132 | 80 | 123 |
| Chemicals and allied products. | 430 | 284 | 183 | 98 | 294 | 280 | 305 | 307 | 391 | 300 | 519 |
| Products of petrolemmand coal. | 674 | 255 | -123 | 3 | -40 | -9 | 75 | 220 | 337 | 100 | 228 |
| Rubber products.. | 17 | -51 | -20 | $-34$ | 7 | 5 | 22 | 46 | 29 | 19 | 62 |
| Leather and leather produets | 49 | -20 | -28 | -35 | 39 | 25 | 46 | 40 | 22 | 8 | 41 |
| Stone, clay, and ghass products -.-.-.-........- Iron and steel and their products, including | 148 | 55 | -25 | -84 | -6 | 37 | 68 | 149 | 145 | 66 | 158 |
| ordnance..---.-.-.---.................. | 817 | 225 | -222 | -381 | -108 | 29 | 148 | 346 | 479 | 14 | 318 |
| Nonferrous metals and their products | 220 | 52 | -16 | -57 | 54 | 114 | 144 | 190 | 199 | 48 | 154 |
| Machinery, except electrical. | 512 | 185 | -66 | -208 | -34 | 111 | 201 | 357 | 455 | 200 | 327 |
| Eleetrical machinery --..----.-.-.-.-....- | 208 | 89 | 15. | $-40$ |  |  |  | 135 | 170 | 82 | 185 |
| Transportation equipment, except automobiles.- | 62 472 | $\stackrel{22}{162}$ | -31 | -30 -192 | -22 | -89 | -75 | 22 387 | ${ }^{62}$ | 21 | 76 330 |
| Miscellaneous | 112 | 18 | -43 | -192 | -24 | 99 47 | ${ }_{91} 25$ | 387 105 | 372 104 | 65 53 | 330 92 |
| Wholesale and retail trade. | 776 | $-17$ | -416 | -726 | 85 | 409 | 544 |  |  |  |  |
| Wholesale trade -...... | 319 | -35 | -176 | -243 | 94 | 217 | ${ }_{257} 68$ | 9127 | 8150 | 142 | ${ }_{358}$ |
| Retail trade and automobile | 457 | 18 | -240 | -483 | -9 | 192 | 287 | 485 | 455 | 259 | 480 |
| Finance, insurance, and real estate............. | 1,200 | 199 | -303 | -661 | -672 | -575 | -299 | 22 |  | 295 | 340 |
|  | 699 | 409 | 128 | -9 | -58 | -1 | -298 | 244 | 338 | 291 | 339 |
| exchanges--... | 147 | -140 | -110 | -60 | -38 | -8 | -68 | -46 | -55 | -48 | -41 |
| Finance, n.e.c. ${ }^{\text {a }}$ - |  | -168 | -221 | -238 | -243 | -204 | -210 | -164 | -113 | -102 | -108 |
|  | 206 30 | 93 21 |  | 23 17 | 65 | 110 | 129 | -134 |  |  |  |
|  | 30 <br> 84 | 21 -16 | 19 -165 | 17 -394 | [r 13 | 16 -398 | 15 -313 | 16 -162 | 17 -101 | 17 -46 | 18 -35 |
| Transportation. | 1,056 | 433 | -96 | -330 | -241 |  |  |  |  |  |  |
| Railroads | 824 | 297 | $-147$ | -329 | $-275$ | - -25 | -174 | 93 -34 | $\begin{array}{r}57 \\ -68 \\ \hline\end{array}$ | $-178$ | -12 |
| Local railways and bus lines---....-- | 56 | 55 | 15 | 10 | 8 | -5 | -35 | $-12$ | $-36$ | -57 | -44 |
| Mighway pasenger ransportation, n.e.c----.-- | $\stackrel{0}{35}$ | -9 20 | ${ }^{-8}$ | -18 | -4 | 5 | 11 | 18 | 17 | 8 | 15 |
|  |  |  |  |  | 4 | 12 | 13 | 16 | 14 | 29 | 45 |
| Water transportation-.---.-.-.-.-- | 51 | 17 | -1 | -15 | 4 | 16 | 29 | 38 |  | 17 |  |
| Pipe-line transportation...- | -6 | -19 | $-9$ | -2 | -2 | -6 | $-2$ | 0 | -2 | $-1$ | 8 |
| Services allied to transportation. | 9 | 68 4 | 4 | -30 | 24 0 | 69 2 | 70 | 65 2 | 79 | 73 | ${ }_{12}^{86}$ |
| Communications and public utilities. | 925 | 715 | 587 |  |  |  |  |  |  |  |  |
| Telephone, telegraph, and rdated services | 313 | 206 | 239 | 157 | 313 132 | 558 | 569 | 661 | 785 | 728 | ${ }_{257} 8$ |
| Radio broadcasting and television- | 20 | -6 | -4 | -2 | -6 | 148 7 | 177 | 195 | 19 19 | 205 | 20 |
|  | 565 27 | 436 19 | 350 | 295 | 251 | 387 | 366 | 436 | 543 | 494 | 578 |
|  |  |  | 2 | 1 | 6 | 16 | 14 | 13 | 16 | 14 | 15 |
| Services | 151 | 83 | -36 | -183 | -109 |  |  |  |  |  |  |
| Hotels and other lodging places. | ${ }_{22}^{1}$ | -18 | -29 | -43 | -33 | -30 | -26 | -22 | 66 -18 | -27 | -19 |
| Commercial and trade schools and employment |  |  | 0 | -18 | -6 | 0 |  | 7 | 11 | 3 |  |
| apencies. <br> Business services, n.e.c........................................ | 10 49 | $\begin{array}{r}6 \\ \hline 8\end{array}$ | $-2$ | -6 | -5 | 0 | 0 | 2 |  |  | 2 |
|  |  |  | 12 | -3 | -1 | 18 | 18 | 25 | 29 | 28 | 34 |
| Miscellaneous repatr services and hand trades. .- |  |  |  | -1 | -1 |  |  |  |  |  |  |
|  | $\stackrel{62}{3}$ | -82 | -19 | -83 | -40 | 3 | 14 | 30 | 34 | 40 | 42 |
|  |  |  |  |  |  | -9 | 4 | 1 | 5 | 2 |  |
| Rest of the world | 65 | 3 | -56 | -56 | -32 | -2 | 44 | -32 | -13 | 195 | 114 |

[^34][^35]Table 17.-Corporate Income Before Federal and State Income and Excess Profits Taxcs, by Industry, 1910-50
[Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1044 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total ${ }^{2}$. | 9,325 | 17,232 | 21,098 | 25, 052 | 24,333 | 19,717 | 23,464 | 30,489 | 33,762 | 28,336 | 41,367 |
| Agriculture, forestry, and fisheries. | 24 | 63 | 84 | 117 | 120 | 119 | 171 | 199 | 204 | 168 | 154 |
| Farms | 26 | 62 | 83 | 114 | 117 | 115 | 167 | 197 | 201 | 165 | 150 |
| Forestry-- | -2 | 1 | 0 | 0 <br> 3 | $\frac{1}{2}$ | 0 4 | $\frac{1}{3}$ | 1 | $\frac{1}{2}$ | $\stackrel{1}{2}$ | $\frac{1}{3}$ |
| Mining - | 442 | 622 | 616 | 536 | 517 | 422 | 543 | 1.123 | 1,647 | 1,154 | 1,438 |
| Metal mining- | 236 | 273 | 302 | 184 | 140 | 113 | 111 | 267 | 352 | 2:0 | ${ }^{107}$ |
| Anthracite mining -...-.-.-. min | 37 | 15 75 | 17 | $\begin{array}{r}17 \\ 140 \\ \hline\end{array}$ | $\begin{array}{r}23 \\ 145 \\ \hline\end{array}$ | 113 | 34 116 | 35 317 | 45 | 91 | 28 |
| Crude petroleum and natural gas. | 124 | 198 | 127 | 141 | 145 159 | 115 | 116 900 98 | 317 395 | 396 717 | 217 534 | 8983 |
| Nonmetallic mining and quarrying. | 38 | 61 | 68 | 54 | 50 | 51 | 82 | 103 | 137 | 132 | 140 |
| Contract construction. | 70 | 188 | 311 | 240 | 127 | 94 | 219 | 389 | 583 | 694 | 993 |
| Manufacturing | 5,601 | 11, 140 | 12,695 | 14,615 | 13,972 | 10,437 | 12,0.46 | 17,355 | 19,02] | 15,020 | 23,831 |
| Food and kindred product | 559 | 881 | 1,244 | 1,542 | 1.591 | 1,490 | 2,106 | 1,905 | 1,605 | 1,563 | 1,842 |
| Tobacco manufactures | 152 | 173 | 188 | 194 842 | 176 | 149 | 180 | , 200 | 250 | 250 | +276 |
| Apparel and other finished fabric products | - 47 | ${ }_{135}$ | 216 | 260 | 270 | 258 | , 512 | 466 | 294 | 196 | 1,276 |
| Lumber and timber basic products.......- | 95 | 202 | 213 | 101 | 170 | 117 | 273 | 634 | 518 | 260 | 508 |
| Furniture and finished lumber products | 71 | 150 | 142 | 141 | 167 | 140 | 243 | 287 | 249 | 138 | 262 |
| Paper and allied products - | 197 | 398 | 370 | 406 | 426 | 352 | 583 | 954 | 811 | 551 | 980 |
| Printing, publishing, and allied industries | 154 | 190 | 239 1080 | 473 1220 | ${ }^{613}$ | - ${ }^{614}$ | $\begin{array}{r}673 \\ 1 \\ \hline\end{array}$ | +63.5 | + 584 | ${ }^{501}$ | ${ }^{5554}$ |
| Products of petroleum and coal | 321 | , 590 | 1,697 | ,928 | , 662 | , 550 | 1.964 | 1,708 | 2,617 | 1,685 | 2,285 |
| Rubber products. | 62 | 155 | 181 | 290 | 307 | 250 | 317 | 208 | 219 | 147 | 349 |
| Leather and leather products. | 40 | 100 | 140 | 159 | 150 | 145 | 244 | 226 | 140 | 85 | 148 |
| Stone, clay, and glass products. | 204 | 359 | 345 | 290 | 239 | 222 | 375 | 460 | 549 | 524 | 887 |
| Iron and steel and their products, including ordnance. | 647 | 1,672 | 2,108 | 2,179 | 1,895 | 1,245 | 1,059 | 1,972 | 2,434 | 1,885 | 3,304 |
| Nonferrous metals and their products | 226 | 394 | 372 | 496 | 443 | 278 | 340 | ¢9.4 | 656 | 292 | 632 |
| Machinery, except electrical. | 688 | 1,443 | 1,650 | 1,515 | 1,373 | 895 | 736 | 1,540 | 1,824 | 1.419 | 1,904 |
| Electrical machinery. | 342 | 720 | 708 | . 862 | 893 | 536 | 144 | 790 | 90.4 | 791 | 1,644 |
| Transportation equipment, except automobiles-- | 273 | 792 | 1,336 | 1,952 | $\begin{array}{r}1,943 \\ \hline 318\end{array}$ | 985 | $-34$ | $\stackrel{-7}{1,259}$ | 231 1,680 | 2.118 | 3.415 |
|  | 540 117 | 892 | 346 <br> 257 | 338 325 | 318 320 | 175 258 | 103 236 | 1,259 | $\begin{array}{r}1,680 \\ \hline 280\end{array}$ | 2,118 205 | 3,415 346 |
| Wholesale and retail trade | 1,116 | 2,179 | 2,624 | 3,183 | 3,429 | 3,536 | 5,748 | 6,263 | 5,935 | 4,872 | 6,869 |
| Wholesale trade- | 492 | 1,028 | $\frac{1}{1,111}$ | 1,280 1,903 | 1,349 2,080 | 1,347 2,189 | 2,523 3,225 | 3,788 | 2,449 3.480 | 1,875 2,997 | 2.719 4.150 |
| Retail trade and automobile services. | 624 | 1,151 | 1.513 | 1,903 | 2,080 | 2.189 | 3,225 | 3,488 | 3.480 | 2.907 | 4,150 |
| Finance, insurance, and real estate. | 487 | 671 | 871 | 1,174 | 1,447 | 1,573 | 1,723 | 1,675 | 2,321 | 2,560 | 2,823 |
| Banking- | 438 | 541 | 522 | 709 | 923 | 1,072 | 1,241 | 1,049 | 1,310 | 1,393 | 1,474 |
| Security and commodity brokers, dealers and exchanges | -45 | -39 | -31 | -22 | -25 | -32 | -36 | -40 | -60 | -69 | $-49$ |
| Finance, n.e.c.-.... | -46 | -35 | 99 | 58 | 43 | 47 | 77 | 108 | 168 | 229 | 303 |
| Insurance cartiers | 98 | 67 | 132 | 188 | 174 | 108 | $-30$ | 34 | 311 | 368 | 405 |
| Insurance agents and combination offices | 25 17 | 34 103 | 29 120 | 217 | 27 305 | 324 | 38 433 | 57 473 | $\begin{array}{r}67 \\ 825 \\ \hline\end{array}$ | 77 562 | 85 605 |
| Real estate | 17 | 103 | 120 | 217 | 305 |  |  |  |  |  | 60. |
| Transportation | 332 | 910 | 2,092 | 2,945 | 2,452 | 1,386 | 561 | 1,199 | 1,703 | 1,246 | 2,112 |
| Railroads. | 80 | 517 | 1,591 | 2,340 | 1,865 | ${ }^{028}$ | 123 | 751 | 1,213 | 745 | 1,459 |
| local railways and bus lines.--.-.-..........- | -22 | -18 | 144 | 213 | 207 | 176 | 148 | 86 | 73 | 49 | 46 |
| Highway freight transportation and warehousing- | 29 | 51 | 67 | 65 | 62 | 43 | 93 | 123 | 167 | 150 | 243 |
| Water transportation. | 90 | 157 | 106 | 100 | 90 | 81 | 12 a | 179 | 137 | 165 | 193 |
| Air transportation (common carriers) | 12 | 20 | 33 | 34 | 43 | 35 | -23 | -40 | 0 | 22 | 35 |
| Pipe-line transportation..- | 83 | 93 | 58 | ${ }_{5}^{61}$ | ${ }_{61}^{65}$ | 47 | 41 | 50 71 | 65 47 | 67 47 | 83 52 |
| Services allied to transportation | 30 | 42 | 51 | 54 | 61 |  | 44 | 71 | 47 |  | 52 |
| Commmications and public utitities. | 1,012 | 1,171 | 1,370 | 1,556 | 1,588 | 1,534 |  | 1,402 | 1,539 | 1,792 | 2,247 |
| Teld phone, telegraph, and related serv | 259 | 285 | 416 | 489 52 | 335 72 | 491 65 | 598 | ${ }^{232}$ | 296 | ${ }_{36}$ | 49 |
| Radio broadcasting and television.Uilities: electric and gas | 708 | 835 | 904 | 991 | 956 | 955 | 1,150 | 1,087 | 1,173 | 1,350 | 1,545 |
| Local utilities and public services, n.e.e.c.......-- | 17 | 19 | 19 | 24 | 25 | 23 | 22 | 28 | 27 | 31 | 35 |
| Services. | 104 | 189 | 337 | 556 | 585 | 599 | 759 | 671 | 594 | 598 | 587 |
| Hotels and other lodging places | -9 | 2 | 34 <br> 38 | $\stackrel{97}{50}$ | 99 | 111 | ${ }_{6}^{125}$ | 115 | 114 | 110 62 | 111 |
| Personal services --.-.-.-.... | 13 | 23 | 38 | 50 | 60 | 56 | 67 | 73 |  |  |  |
| Commercial and trade achools and employment agencies |  |  | 29 | 32 | 28 | 16 | 30 | 36 131 | 39 146 | 44 | 49 148 |
| Business services, n.e.c.-.-.-- | 32 | 53 | 51 | 70 | 81 | 88 | 114 | 131 | 146 |  |  |
| Miscellaneous repair services and hand trades_.- |  |  | 11 | 13 | 14 | 6 9 | 6 | 12 | 14 | 14 | 15 |
| Motion pictures.-.-......................-- | 52 | 79 | 156 | 259 35 | 258 45 | 248 74 | 322 95 | 240 64 | 158 59 | 166 62 | 142 60 |
| Amusementand recreation, exceptmotion pictures. | 9 | 17 |  |  |  |  |  |  |  |  |  |
| Rest of the world ${ }^{\text {s }}$ | 137 | 99 | 98 | 130 | 96 | 17 | 125 | 213 | 207 | 232 | 313 |

${ }^{1}$ A complete reconciliation of the all-industry totals for these incorre series with Burmau of Intrram Revenue fifures for "con piled nel profit" is presenied in table $3 x$. It he deftinition wih tespect to cepletion charges has an irrportant effect on itr data fur the mining industries. profits before in which there are no corporations organized cor pron, or in which chis table.
${ }^{3}$ Thits anties differs from profis in the Rest of the World shown in table 12, and the sum of branch profits and net dividends shown in table 11, beciuse profits received hy domestic curfsirations from fureign branches are excluded from this tine and included in the faduatr
of the recipient corporation. Data for their elimination are not available by industry.

Table 18.-Federal and State Corporate Income and Excess Profits Tax Liability, by Industry, 1929-39
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1,398 | 848 | 500 | 382 | 524 | 746 | 965 | 1,411 | 1,512 | 1,040 | 1,462 |
| Azriculture, forestry, and lisheries---................. | 7 | 4 | 1 | 1 | 2 | 5 | $\begin{aligned} & 8 \\ & 8 \end{aligned}$ | 10 10 | 9 8 | 5 5 |  |
| Fartus | 6 1 | ${ }_{0}^{4}$ | 0 | 1 | 0 | 0 | 8 | 10 | 1 | 0 | 7 |
| Iisheries | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mining.-..... | 50 | 24 | 8 |  | 11 | 25 | 27 | 43 | 65 | 36 | 46 |
| Mlatal mining. | 24 2 | $\stackrel{4}{2}$ | 1 | 1 | 3 1 | 7 1 | 10 0 | 17 | 36 0 | 17 | 23 0 |
|  | $\stackrel{2}{5}$ | ${ }_{3}^{2}$ | $\frac{1}{2}$ | 1 | 1 | 4 | 4 | 4 | 4 | 2 | 4 |
| Crude petroleum and natural gas...-.---.......... | 12 | 10 | 1 | 4 | 4 | 10 | 10 | 15 | 19 | 13 | 13 |
| Nonmetallic mining and quarrying--.---........ | 7 | 5 | 3 | 2 | 2 | 3 | 3 | 6 | 6 | 4 | 6 |
| Contract construction. | 19 | 18 | 9 | 4 | 4 | 5 | 9 | 13 | 16 | 13 | 14 |
| Manufacturing. | 635 | 377 | $2 \times 6$ | 132 | 257 | 332 | 492 | 721 | 775 | 454 | 754 |
| Food und kintred products.................-.-. -- | 64 | 59 | 40 |  | 60 | 71 | 120 | 105 |  |  | 113 |
|  | 18 | 21 | 22 | 26 | 12 | 17. | 18 | 22 | $\stackrel{23}{ }$ | 25 | 26 |
| Textile-mill products.-.-.-................... | 32 | 11 | 7 |  | 31 | 20 | 25 | 44 | 33 | 16 | 41 |
| Apparel and olher hanished fabric products...... I.unber and timber basic products.......... | $\begin{array}{r}8 \\ \mathbf{8} \\ \hline\end{array}$ | 3 <br> 3 <br> 3 | ${ }_{0}^{2}$ | 2 0 | 6 1 | 6 2 | 7 <br> 3 | 10 | 6 10 | 6 4 4 | 11 |
| Furniture and f.nished lumber products | 8 | 2 | 2 | 1 | 3 | 3 | 4 | 10 | 8 | 7 | 12 |
| Peper and allied products | 16 | 11 | 5 | 3 | 10 | 15 | 17 | 24 | 28 | 14 | 24 |
| printing, publishing, and allied industries -...-- | 34 | 24 | 17 | 11 | 13 | 21 | 26 | 34 | 33 | 24 | 30 |
| Chemicals and allied products-................... | 54 60 | 42 33 | 31 6 | 23 6 | 37 11 | 47 9 | 11 | 77 27 | 76 42 | 63 18 | 103 24 |
| nubber products. . | 7 | 2 | 2 |  | 2 | 2 |  | 10 |  |  |  |
|  | 10 | ${ }^{5}$ | 4 | 3 | 9 | 7 | 9 | 9 | ${ }_{6}$ |  | 9 |
| Gone, clay, and class products...-...-.-.-.-. lron and steel and their products, including | 21 | 13 | 6 | 2 | 6 | 11 | 17 | 30 | 31 | 17 | 31 |
| ordnance....-....-.................................... | 98 | 39 | 5 | 3 | 7 | 18 | 34 | 72 | 103 | 28 | 69 |
| Nonferrous metals and their products.-..... | 26 | 12 | 6 |  | 10 | 20 | 24 | 35 | 41 | 13 | 30 |
| Machinery, except electrical. | 64 | 36 | 13 |  | 11 | 26 | 38 | 73 | 101 | 46 |  |
| Electrical machinery-...................-. --. - | 30 | 16 | 3 | 1 | 2 | 4 | 13 | 27 | 34 | 19 | 37 |
| Transportation equipment, except automobiles.. Auton obiles and automobile equipment. | $\begin{array}{r}9 \\ 48 \\ \hline\end{array}$ | ${ }^{6}$ | 20 | -2 | 19 | $\stackrel{2}{19}$ | 2 | 7 | 15 | 9 | 20 |
| Auton Miscllaneous.............................................. | 19 | 12 | $\stackrel{20}{8}$ | -2 | 19 6 | 19 12 | 47 | 74 24 | 73 24 | 31 14 | 70 19 |
| Wholesale and retail trade. | 125 | 75 | 57 | 41 | 77 | 118 | 137 | 207 | 200 | 139 | 197 |
| Wholesale trade....... | 52 | 29 | 17 | 15 | 33 | 59 | 64 | 97 | 87 | 52 | 82 |
| letail trade and automobile services | 73 | 46 | 40 | 26 | 44 | 59 | 73 | 110 | 113 | 87 | 115 |
| Finance, insurance, and rcal estate..................- | 283 | 149 | 81 | 66 | 56 | 95 | 123 | 193 | 191 | 154 | 148 |
| Sankirg-...-.....-ility brokers, dealers ard | 66 | 34 | 11 | 4 | 3 | 5 | 9 | 19 | 14 | 16 | 18 |
| exchanges .-.......-............................ | 42 | 9 | 2 | 2 | 5 | 3 | 7 |  |  |  |  |
| Finance, n.e.c.-.- | 67 | 24 | 9 | 8 | 10 | 28 | 44 | 93 | 97 | 65 | 60 |
| Insurare carriers. Insurance agents and combination offes | 39 5 | 29 4 | 22 | 21 3 | 12 | 22 | 23 | 23 | 25 | 30 | 26 |
|  | 64 | 49 | 34 | $\begin{array}{r}38 \\ 28 \\ \hline\end{array}$ | $\stackrel{2}{24}$ | 3 34 | 37 | $\begin{array}{r}3 \\ 44 \\ \hline\end{array}$ | 3 50 | 37 | - 38 |
| Transpertation.-. | 137 | 74 | 36 | 27 | 28 |  |  |  |  |  |  |
|  | 107 |  |  |  |  |  |  |  | 37 | 22 | 39 |
| 1 ocal railways ard bus lines.........-........- |  | 4 | 4 4 | 4 | 38 3 | 3 3 3 | $\stackrel{1}{4}$ | ${ }_{3}$ | $\begin{array}{r}37 \\ 1 \\ \hline\end{array}$ | $\stackrel{1}{2}$ | 0 |
| llighway treight trans portation ard warehousing. | $\stackrel{2}{4}$ | $\frac{1}{3}$ | 1 2 | 1 | $\stackrel{2}{2}$ | 3 3 3 | 4 <br> 3 | 5 <br> 3 | $\begin{array}{r}\text { [ } \\ \hline\end{array}$ | 5 5 | 7 |
| Water transportation. | 7 |  |  |  |  |  |  |  |  |  |  |
| Air trarsportation irommon carriers) | 0 | 0 | 0 | 1 | 0 | ${ }_{0}$ | 8 | 10 | 13 |  | 12 |
|  | 9 | 6 | 5 | 3 | 3 | 11 | 11 | 13 | 11 | 13 | 17 |
| Eervices allied to transportation... | 4 | 2 | 2 | 2 | 2 | 3 | 3 | 13 3 | ${ }_{3}$ | 5 |  |
| Communiratiens and public utilities. .-...... | 113 | 104 | 91 | 94 |  |  |  |  |  |  |  |
| Teliphore, teleqtaph, ard related services. | 38 | 35 0 | 31 | 28 | 23 | 26 | 29 | 137 | 14 | 45 | 54 |
| Utilities plectric ard pes....................... | 2 70 | - 6 | 57 | 63 | 0 | 1 | 2 | 4 | 4 | 3 | ${ }^{4}$ |
| local utilities and publie services, n.e.e. | 70 3 | $\stackrel{66}{3}$ | 57 | 63 2 | $\stackrel{5}{2}$ | 71 3 | 66 3 | 81 3 | 102 3 | 99 3 | 113 3 |
| Servires ...................-..... |  |  |  |  |  |  |  |  |  |  |  |
| Hotels and other lodging places. peronel saryites. | 2 2 2 | $\begin{array}{r}1 \\ 1 \\ \hline\end{array}$ | 1 | 1 | 0 | 15 1 | 17 1 | 27 1 |  | 29 2 | $\begin{array}{r}32 \\ 3 \\ \hline\end{array}$ |
|  | 2 | 2 | 1 |  | 1 | 1 |  | 1 | 2 | 3 | 3 |
|  | 3 | 2 | 1 | 1 |  |  |  |  |  |  |  |
|  | 0 | 7 | 3 | 3 | 3 | 6 | 6 | 8 | 9 | 8 | 9 |
| Miscellancous repeir scrvis es cnd hend tradis...- | 1 | 1 | 0 |  |  |  |  |  |  |  |  |
|  | 10 | 9 | 4 | 2 | 3 | 4 | 5 | 10 | 10 | 11 | 12 |
|  |  |  |  | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 3 |

[^36]Table 18.-Federal and State Corporate Income and Excess Profits Tax Liability, by Industry, 19 10-50 [Millions of dollars]

| [Millions of dollars] |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1940 | 1941 | 1942 | 1943 | 1344 | 1945 | 1046 | 1947 | 1948 | 1949 | 1950 |
| All industries, total ${ }^{1}$ - | 2,878 | 7,846 | 11,665 | 14,406 | 13,525 | 11,215 | 9,583 | 11,940 | 15,023 | 10,989 | 18,593 |
| Agriculture, forestry, and fisheries. | 11 |  | 43 | 67 | 70 | 70 | 73 | 83 | 85 | 69 |  |
| Farms.-- | 10 | 23 | 41 | 64 | 68 | 67 | 70 | 79 |  |  |  |
| Forestry | 0 | 1 |  | 1 | 1 | 1 | 2 | 3 | ${ }_{8} 8$ | 6 2 | 68 2 |
| Fisheries | 1 | , | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 |
| Mining - | 78 | 158 | 211 | 179 | 156 | 131 | 146 | 320 | 456 | 306 | 441 |
| : Metal mining--- | 43 | 77 | 110 | 58 | 30 | 23 | $\underline{23}$ | 76 | 97 | ${ }^{306}$ | 115 |
|  | 1 | ${ }_{2}^{2}$ | 4 | 4 | 7 | 4 | 10 | 10 | 14 | 0 | ${ }^{1}$ |
| Bituminous and other soft coal mining--------- | 8 | 21 | 36 | 54 | 52 | 39 | . 33 | 99 | 125 | 03 | 100 |
| Crude petroleum and natural gas..-.---...-- | 17 | 36 | 28 | 37 | 38 | 35 | 48 | 99 | 173 | 120 | 101 |
| Nonmetallic mining and quarrying------------- | 9 | 22 | 33 | 26 | 23 | 24 | 27 | 36 | 47 | 45 | 56 |
| Contract construction_ | 26 | 91 | 198 | 167 | 91 | 66 | 92 | 154 | 231 | 277 | 478 |
| Manufacturing | 1,761 | 5,427 | 7,486 | 8,863 | 7,987 | 6, 160 | 4,972 | 6,791 | 7,331 | 5,808 | 10,884 |
| Food and kindred products | 151 | 334 | 643 | 903 | . 964 | 883 | 88.54 | 782 | '687 | 6, 664 | 10,878 |
| Tobaco manufactures.- | 40 | 70 | 93 | 101 | 83 | 68 | 72 | 81 | 101 | 95 | 129 |
| Textile-mill products--7------------------ | 65 | 273 | 536 | 542 | 534 | 479 | 59. | 643 | ${ }_{6}^{639}$ | 302 | 688 |
| Apparel and other finished fabric products--.--------- | 15 22 | 55 79 | 125 | 157 102 | 169 89 | 152 58 | 103 | 185 | 135 199 | $\begin{array}{r}94 \\ 102 \\ \hline\end{array}$ | 133 248 |
| Furniture and finished lumber products. | 21 | 65 | 80 | 82 | 99 | 80 | 99 | 118 | 105 | 67 | 121 |
| Paper and allied products...-.-.-.......------ | 60 | 189 | 214 | 248 | 267 | 210 | 233 | 377 | 323 | 217 | 434 |
| Printing, publishing, and allied industries.----- | 46 | 76 | 125 | 274 | 379 | 386 | 267 | 258 | 238 | 210 | 247 |
| Chemicals and allied products----------1.---- | 207 | 514 | 612 | 717 | 725 | 608 | 586 | 707 | 677 | 012 | 1,231 |
|  | 56 | 152 | 222 | 296 | 92 | 105 | 236 | 447 | 683 | 372 | 641 |
| Rubber products. | 16 | 70 | 85 | 208 | 216 | 172 | 130 | 84 | 80 | 49 | 144 |
| Leather and leather products | 11 | 36 | 79 | 96 | 90 | 85 | 99 | 94 | 64 | 43 | 74 |
| Stone, clay, and glass products-..-.-.-.-- | 63 | 175 | 213 | 186 | 145 | 128 | 146 | 181 | 217 | 206 | 428 |
| Iron and steel and their products, including ordnance | 208 | 884 | 1,352 | 1,384 | 1,139 | 776 | 445 | 772 | 964 | 796 | 1,603 |
| Nonferrous metals and their products.- | 78 | 208 | ${ }_{227}$ | , 291 | ${ }^{256}$ | 146 | 153 | 222 | 209 | 116 | . 207 |
| Machinery, except electrical.-.-...-------.----- | 240 | 774 | 1,076 | 1,017 | 818 | 563 | 358 | 630 | 732 | 576 | 920 |
| Electrical machinery-..-- | 118 | 407 | 463 | 580 | 463 | 353 | 121 | 336 | 374 | 305 | 810 |
| Transportation equipment, except automobiles.- | 106 | 472 | 857 | 1,272 | 1.080 | 624 | 68 | 70 | 105 | 80 | 151 |
| Automobiles and automobile equipment.....-.-. | 199 | 482 | 210 | 195 | 176 | 125 | 78 | 484 | 664 | 803 | 1,651 |
|  | 39 | 112 | 158 | 212 | 197 | 159 | 116 | 114 | 123 | 87 | 180 |
| Wholesale and retail trade. | 331 | 944 | 1,464 | 1,860 | 2,053 | 2,060 | 2,216 | 2,449 | 2,327 | 1,894 | 3,230 |
| Wholesale trade | 143 | 461 | 631 | 766 | 801 | 775 | 930 | 1,124 | 978 | 744 | 1,298 |
| Retail trade and automobile services | 188 | 483 | 833 | 1,034 | 1,252 | 1,285 | 1,226 | 1,325 | 1,349 | 1,150 | 1,932 |
| Finance, insurance, and real estate | 211 | 341 | 413 | 496 | 595 | 718 | 787 | 759 | 1,017 | 1,149 | 1,444 |
|  | 26 | 57 | 64 | 129 | 224 | 330 | 360 | 326 | 467 | 549 | 050 |
| Security and commodity brokers, dealers and exchanges | 4 | 3 | 2 | 10 | 9 | 20 | 15 | 6 | 6 | 4 | 5 |
| Finance, n.e.c.-. | 98 | 157 | 118 | 85 | 87 | 92 | 103 | 113 | 132 | 142 | 220 |
|  | 23 | 28 | 105 | 126 | 101 | 77 | - 52 | 42 20 | 110 | 131 | 162 |
| Insurance agents and combination offices. Real estate | ${ }_{5}^{7}$ | 8 | 16 108 | 134 | 161 | 188 | 237 | 252 | 271 | 289 | 359 |
| Transportation. | 153 | 340 | 997 | 1,659 | 1,414 | 849 | 367 | 556 | 713 | 515 | 738 |
| Railroads- | 64 | 154 | $70 \ni$ | 1,303 | 1,079 | 567 | 160 | 327 | 489 | 288 | 383 |
| Local railways and bus lines. | 1 | 3 | 17 | 37 | 35 | 24 | 12 | 12 | 5 | 4 | 5 |
| Highway passenger transportation, ne.e.c----.-- | 9 9 | 21 | $\begin{array}{r}\text { - } 91 \\ \hline 36\end{array}$ | 141 38 | 133 35 | 119 27 | 62 36 | 40 48 | 35 66 | $\stackrel{24}{65}$ | 27 125 |
| Highway freight transportation and warehousing- | 9 | 19 | 36 | 38 | 35 | 27 | 36 | 48 | 60 | 65 |  |
| Water transportation. | 34 | 82 | 73 | 59 | 52 | 47 | 54 | 78 | 65 | 52 | 110 |
| Air transportation (common carriers)------.-...-. | 4 | 10 | 15 | $\begin{array}{r}16 \\ \hline 8\end{array}$ | 17 27 | 10 | 16 | 3 10 | 27 | 10 20 | 25 36 |
| Pipe-line transportation_---1.-......-. | 23 9 | 33 18 | 26 30 | 27 32 | 27 36 | 26 | 16 20 | 29 | 27 21 | 22 | 36 27 |
| Communications and public utilities | 264 | 438 | 669 | 794 | 820 | 816 | 616 | 549 | 607 | 723 | 1,042 |
| Telephone, telegraph, and related services.-.-.-. | 68 | 112 | 231 | 284 | $30)$ | 301 | 147 | 98 | 130 | 168 | 332 |
| Radio broadcasting and television.-.---------- | 9 | 15 | 17 | 32 | 47 | 42 | 24 | 22 418 | 19 | 168 | 24 |
|  | 182 | 304 7 | 413 8 | 467 11 | 453 | 463 10 | 436 9 | 418 | 44 | 527 | $\underline{14}$ |
| Local utilities and public services, n.e.c.---...- | 5 |  |  |  | 11 |  |  |  |  |  |  |
| Services. | 43 | 82 | 184 | 321 | 339 | 345 | 314 | 279 | 261 | 248 |  |
| Hotels and other lodging places | 4 | 8 | 23 17 | 45 25 | 52 28 | 59 26 | 51 24 | 49 | 48 26 | 46 24 | 52 20 |
| Personal services .-.-. | 5 | 9 | 17 | 25 | 28 | 26 |  | 27 | 26 | 24 |  |
| Commercial and trade schools and employment | 3 | 6 | 20 | 24 | 17 | 13 | 14 | 17 | 18 | 20 | 25 |
|  | 12 | 20 | 26 | 35 | 44 | 48 | 47 | 53 | 59 | 57 | 65 |
| Miscellaneous repair services and hand trades..- | 0 | $\begin{array}{r}3 \\ 26 \\ \hline\end{array}$ | 79 | 88 156 | $15{ }^{8}$ | 147 | 2 135 | $10{ }^{4}$ | 76 | 65 | ${ }_{60}^{6}$ |
| Amusementandrecreation, exceptmotionpictures- | 14 | 10 | 12 | 24 | 34 | 48 | 41 | 29 | 29 | 29 | 31 |

 omitted from this table.

Table 19.-Corporate Income After Federal and State Income and Excess Profits Taxes, by Industry, 1929-391
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total ${ }^{2}$ - | 8,420 | 2,455 | -1,283 | -3,424 | -362 | 977 | 2,259 | 4,273 | 4,685 | 2,289 | 5,005 |
| Agriculture, forestry, and fisherie | 13 | -39 | -69 | -70 | -31 | -33 | 8 | 18 | 5 | -12 |  |
| Farms --- | 10 | -37 | -64 | -63 | -28 | -28 | 10 | 18 | 8 | -11 | ${ }_{3}^{2}$ |
| Forestry | 0 3 | -1 | -2 | -3 -4 | -1 | -3 -3 | -1 | 0 0 | $-2$ | -1 | 1 |
| Mining | 416 | 101 | -130 | -97 | -23 | 154 | 168 | 279 | 404 | 183 |  |
| Metal mining. | 238 | 48 | -35 | -51 | 14 | 48 | 74 | 123 | 209 | 100 | 272 159 |
|  | 10 | -12 | 7 -30 | -12 | -8 | -1 | -10 | -5 | -13 | $-18$ | -12 |
| Bituninous and other soft coal mining.......-. Crude petroleum and natural gas........-- | 9 110 | -15 | -30 -76 | $\begin{array}{r}-35 \\ \hline 12\end{array}$ | -30 | 8 98 | 1 89 | 5 130 | 8 169 | -197 | 5 |
| Crude petroleum and natural gas-........------ | 110 49 | 25 36 | -76 4 | -12 | -4 | 93 6 | 89 14 | 130 26 | 169 31 | 107 | 93 87 |
| Contract construetion. | 102 | 75 | -8 | -92 | -55 | -32 | -9 | 14 | 26 | 15 | 18 |
| Manufacturing. | 4,403 | 1,327 | -480 | -1,423 | 583 | 1,056 | 1,742 | 2,885 | 2,936 | 1,147 | 2,958 |
|  | 428 | 315 | 160 | . 56 | 281 | , 326 | $\checkmark 286$ | 2,814 | , 263 | , 270 | - 2130 |
| Tobacco manufactures....-.-.--................- | 124 | -134 | $\begin{array}{r}137 \\ -168 \\ \hline\end{array}$ | 140 -183 | 53 126 | 95 13 | 94 <br> 53 | 106 | 103 | 105 | 111 |
| Apparel and other finished fabric products | 34 | $-36$ | -62 | $-76$ | 11 | ${ }_{8}$ | 14 | 145 36 | 10 | -32 | 131 28 |
| Lumber and timber basie produets.......- | 79 | -32 | -101 | -106 | $-26$ | $\rightarrow 22$ | 3 | 35 | 57 | 3 | 36 |
| Furniture and finished lumber products. | 33 | -39 | -62 | -78 | -21 | -10 |  | 26 | 24 | 5 | 39 |
|  | ${ }^{95}$ | 40 126 | -11 | $-59$ | 22 | 54 | 59 | 81 | 98 | 34 | 87 |
| Printing, publishing, and allied industries.---. | 212 376 | 1242 | $\begin{array}{r}52 \\ 157 \\ \hline\end{array}$ | -27 | 26 | 54 | 89 | 113 | 99 | 56 | 96 |
| Products of petroleum and coal. | 614 | 222 | -129 | -3 | -51 | -18 | 252 64 | 320 193 | 315 295 | 237 82 | 416 204 |
| Rubber products | 10 | -53 | -22 | -34 | 5 | 3 | 17 | 30 | 23 |  |  |
| Leather and leather products | 39 | -25 | -32 | -38 | 30 | 18 | 37 | 31 | 16 | ${ }_{3}$ | ${ }_{32}$ |
| Stone, clay, and glass products.........-.-.--- | 127 | 42 | -31 | -86 | -12 | 26 | 51 | 119 | 114 | 49 | 127 |
| Iron and steel and their products, including ordnanee. | 719 | 186 | -227 | -384 | -115 | 11 | 114 | 274 | 376 |  |  |
| Nonferrous metals and their products....---.-.-- | 194 | 40 | -22 | $-62$ | 44 | 94 | 120 | 155 | 158 | 35 | 124 |
| Machinery, except electrical | 448 | 149 | -79 | -213 | -45 | 85 | 163 | 284 | 354 | 154 | 261 |
| Electrical machinery-.-----.-.-.-.-.-.-.-.-. | 178 | 73 16 | -12 | $-41$ | -16 | -19 | 51 | 108 | 136 | 63 | 148 |
| Transportation equipment, except automobiles-- | 53 424 424 | 136 | -32 -21 | -31 -190 | -23 | -10 | -9 | 15 | 47 | 12 | 56 |
| Miscellaneous. | ${ }_{98}$ | 15 | -41 | -190 -83 | 45 -8 | 80 | 208 | 313 | 299 | 34 | 260 |
| Wholesale and retail trade | 651 | -92 | -473 |  |  |  |  |  |  |  |  |
| Wholesale trade | 267 | -64 | -193 | -767 | 8 | 291 | 407 | 705 | 615 | 262 | 641 |
| Retail trade and automobile service | 384 | -28 | -280 | -509 | -53 | 133 | 193 | 330 375 | $\begin{array}{r}273 \\ 342 \\ \hline\end{array}$ | 90 | 276 365 |
| Finance, insurance, and real estate. | 917 | 50 | -384 | -727 |  |  |  |  |  |  |  |
|  | 633 | 375 | 117 | $-13$ | -61 | -670 | -422 139 | $\begin{array}{r}-171 \\ \hline 225\end{array}$ | 60 | 141 | ${ }_{3}^{192}$ |
| Security and commodity brokers, dealers and exchanges. | 105 | -149 | -112 | -62 |  |  |  |  | 324 | 275 |  |
| Finance, n.e.c.-...-.-.-.-. | $-33$ | -192 | -230 | -62 | -43 | -322 | -75 | $-57$ | $-57$ | -50 | -43 |
|  | 167 |  |  | -2 |  | -328 | -254 |  | -210 | -167 | -188 |
| Insurance agents and combination offices Real estate | 25 20 | 17 -65 | 16 -199 | - 14 | 11 -11 -435 | $\begin{array}{r}88 \\ 13 \\ \hline\end{array}$ | 106 12 | 111 13 | 140 14 | 153 | 111 |
| Real estate...-- | 20 | -65 | -199 | -422 | -435 | -432 | -350 | -206 | -14 | -83 | -73 |
| Transportation. | 919 | 359 | -132 | -357 |  |  |  |  |  |  |  |
| Railroads-.-----7.-.-.-. | 717 | 244 | -165 | $-341$ | -288 | $-275$ | -138 | 21 -69 | -20 | -238 | 70 -51 |
| Local rail ways and bus lines--1.-.-.-.-. | 52 -2 | 51 -10 | - 11 | -68 | - 5 | -27 | -196 | -69 -15 | -99 | -278 | -44 |
| Highway freight transportation and warehousing. | 31 | -17 | -989 | -19 | -6 | 2 9 | 7 | ${ }^{13}$ | 12 | 3 | 8 |
| Water transportation.-..- | 44 | 12 |  |  |  |  |  | 13 | 11 |  |  |
| Air transportation (common carrie | 46 | -19 | -5 | -17 -3 | 1 | 9 | 21 | 28 | 33 | 9 | 38 |
| Pipe-line transportation.-. | 78 | 62 |  |  |  |  | $-2$ | 0 | -3 | -2 | 6 |
| Services allied to transportation-- | 5 | 2 | ${ }^{3}$ | $-27$ | -21 | 58 | 59 | 52 | 65 | 60 | 69 |
| Communications and public utilities. | 812 | 611 |  |  |  |  | -1 | -1 | -2 |  |  |
| Telcphone, telegraph, and related services | 275 | 231 | 496 | 357 | 303 | 457 | 469 | 536 | 635 | 578 | 696 |
| Radio broadcasting and television........ | 18 | -6 | 208 | 129 | 109 -6 | 122 | 148 | 158 | 166 | 160 | 208 |
| Utilities: electric and gas------- | 495 | 370 | 293 | 232 | ${ }^{-6}$ | ${ }_{316}^{6}$ | 10 | 13 | 15 | 12 | 46 |
| Local utilities and public services, n.e.c. | 24 | 16 | 0 | $\underline{-1}$ | 196 4 | 316 | 300 | 355 | 441 | 395 | 465 12 |
| Services | 122 |  |  |  |  |  | 11 | 10 | 13 | 11 |  |
| Hotels and other lodging places | -1 | -19 | -47 | -192 -44 | -118 | -32 | -10 |  |  |  | 42 |
| Personal services ....-. | 20 | -888198 | -30 | -19 | -33 | -31 | -27 | -23 | -19 | -29 | $-22$ |
| Commercial and trade schools and employment |  |  |  | -19 | -7 | -1 | 3 | -6 | - 9 | 0 |  |
| Business services, n .-.-.------ | 7 | 4 | -3 | -7 | -6 | -1 |  |  |  |  | 0 |
|  | 40 | 31 | 9 | -6 | -4 | 12 | $-12$ | $-17$ | 20 | 20 | 25 |
| Miscellaneous repair services and hand trades... Motion pictures Amusementandrecreation, except motionpictures. | 3 52 1 | 2 43 -9 | 0 -2 -20 | -1 -85 -3 | -1 -43 -24 | -11 ${ }_{-1}^{1}$ | $\begin{array}{r}1 \\ 9 \\ -6 \\ \hline\end{array}$ | 1 20 -2 | 1 24 24 | 1 -1 -1 | 10 3 2 |
| Eest of the world ${ }^{\text {d }}$. | 65 | 3 | -56 | -56 | -32 | -2 | 44 | -32 | -13 | 195 | 114 |
| ${ }^{2}$ Industries in which there are no corporations organised for profit, or in which corporate |  |  |  | profits after tax are estimated at less than $\$ 500,0 c 0$ in all years, are omitted from this table. <br> ${ }^{3}$ See table 17, footnote 3. |  |  |  |  |  |  |  |

'Table 19.-Corporate Income After Federal and State Income and Excess Profits Taxes, by Industry, 19.40-50'
[Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 1045 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total ${ }^{2}$ - | 6,447 | 9,386 | 9,433 | 10,646 | 10,808 | 8,502 | 13,881 | 18,549 | 20,734 | 17,347 | 32,774 |
| Agricultore, forestry, and fisheries. | 13 | 38 | 41 | 50 | 50 | 49 | 98 | 116 | 119 | 99 | 83 |
| Farms. | 16 | 39 | 42 | 50 | 49 | 48 | 97 | 118 | 120 | 99 | 82 |
| Forestry -- | -1 | -1 | -1 | -1 | 0 | -1 | -1 | -2 0 | $\begin{array}{r}-2 \\ 1 \\ \hline\end{array}$ | -1 | -1 |
| Mining--- | 364 | 464 | 405 | 357 | 361 | 291 | 397 | 803 | 1,191 | 848 | ${ }^{997}$ |
| Metal mining- | 193 | 196 | 192 | 120 | 104 | 84 | 83 | 191 | 205 | 184 | $2 \overline{512}$ |
| Anthracite mining----.---- | $\begin{array}{r}6 \\ 29 \\ \hline\end{array}$ | 13 | 13 66 | 13 86 | 16 | 9 76 | 24 83 | ${ }_{9} 25$ | 31 | 15 | 19 |
| Crude petroleum and natural gas. | 107 | 162 | 99 | 104 | 121 | 95 | 152 | 296 | 54 | 414 | $4{ }_{4} 19$ |
| Nonmetallic mining and quarrying- | 29 | 39 | 35 | 28 | 27 | 27 | 55 | 73 | 00 | 87 | 8. |
| Contract construction. | 44 | 97 | 113 | 73 | 36 | 28 | 127 | 235 | 352 | 417 | 515 |
| Manufacturing | 3,840 | 5,713 | 5,209 | 5,752 | 5,985 | 4,277 | 7,074 | 10,564 | 13,698 | 9,212 | 12,947 |
| Food and kindred produ | 408 | 547 | 595 | 639 | 627 | 607 | 1,252 | 1,123 | 918 | 893 | 964 |
| Tobacco manufactures | 112 | 103 | 95 | 93 | 87 | 81 | 108 | 119 | 1.55 | 155 | $14 \%$ |
| Textile-mill products-.-. | 151 | 345 | 327 | 300 | 288 | 275 | 863 | 950 | 9.43 | 399 | 688 |
| Apparel and other finished fabric produ | 73 | 80 123 | 103 | 103 89 | 101 | 106 59 | 308 165 | 278 331 | 159 318 | 102 | 136 320 |
| Fursiture and finished lumber products | 50 | 85 | 62 | 59 | 68 | 60 | 144 | 169 | 144 | 71 | 141 |
| Paper and allied products | 137 | 209 | 156 | 158 | 159 | 142 | 350 | 577 | 488 | 337 | 546 |
| Printing, publishing, and allied industries | 108 | 114 | 114 | 199 | 234 | 228 | 406 | 377 | 346 | 991 | 307 |
| Chemicals and allied products-1.------ Products of petroleum and coal. | 443 265 | 5278 | 468 <br> 475 | 503 632 | 469 570 | 416 445 | 888 728 | 1,003 | 1.013 1.928 | 883 1.313 | 1,275 |
| Products of petroleum and coal-.------ |  |  |  |  |  |  |  |  |  |  | 1,644 |
| Rubber producta. | 46 | 85 | 96 | 88 | 91 60 | 78 60 | 187 | 124 | 133 | ${ }_{42}^{98}$ | 205 |
| Leather and leather products.-.-.-.--.-.------- | 29 | 64 | $\begin{array}{r}61 \\ 132 \\ \hline\end{array}$ | $\begin{array}{r}63 \\ 110 \\ \hline\end{array}$ | 60 94 | 60 94 | 145 | 132 279 | 76 3 | $\begin{array}{r}42 \\ 318 \\ \hline\end{array}$ | 74 459 |
| Stone, clay, and glass products----------...-- Iron and steel and their products, including | 141 | 184 | 132 | 110 | 94 | 94 | 229 | 279 | 332 | 318 | 459 |
| ordnance | 439 | 788 | 756 | 795 | 756 | 469 | 614 | 1.200 | 1,470 | 1,089 | 1.701 |
| Nonferrous metals and their products--- | 148 | 186 | 145 | 205 | 187 | 132 | 243 | 372 | 347 | 176 | 36.5 |
| Machinery, except electrical. | 448 | 669 | 574 | 498 | 555 | 332 | 378 | 910 | 1.092 | 843 | 1.068 |
| Electrical machinery--- | 224 | 313 | 245 | 282 | 430 | 183 | - 23 | +60 | 530 | 486 | ${ }_{143}$ |
| Transportation equipment, except automobiles -- Automobiles and automobile equipment.-.-. | 167 341 | 320 410 | 479 | ${ }_{143}^{680}$ | 803 142 | 50 50 | -102 | 775 | 1.016 | 1,309 | 1,764 |
| Miscellaneous................-- | 78 | 123 | 99 | 113 | 123 | 99 | 120 | 135 | 157 | 118 | 166 |
| Wholesale and retail trade. | 785 | 1,235 | 1,160 | 1,323 | 1,376 | 1,476 | 3,532 | 3,814 | 3,608 | 2.978 | 3,639 |
| Wholesale trade.... | 349 | 567 | 480 | 514 | 548 | 572 | 1,533 | 1,651 | 1,471 | 1,131 | 1,421 |
| Retail trade and automobile services.- | 436 | 668 | 680 | 809 | 828 | 904 | 1,999 | 2,163 | 2,137 | 1,847 | 2.218 |
| Finance, insurance, and real estatc. | 276 | 330 | 458 | 678 | 852 | 855 | 936 | 916 | 1,304 | 1,411 | 1.379 |
| Banking --.....-.-.--.......... | 412 | 484 | 458 | 580 | 699 | 742 | 881 | 723 | 8.43 | 844 | 818 |
| Security and commodity brokers, dealers and | -49 | -42 | -33 | -32 | -34 | -52 | -51 | -52 | -66 | -73 | -54 |
| Finance, n.e.c.-. | -144 | -192 | -19 | $-27$ | -44 | -45 | -32 | -5 | 36 | 87 | ${ }_{8}^{83}$ |
| Insurance carriers. | 75 | 39 | 27 | 62 | 73 | 31 13 | -82 | -87 | ${ }_{36} 201$ | $\begin{array}{r}237 \\ 43 \\ \hline\end{array}$ | ${ }_{74}{ }_{4}$ |
| Insurance agents and combination offices Real estate | -18 | 22 19 | 12 | 83 | 144 | 166 | 196 | 221 | 254 | 273 | 246 |
| Transportation. | 179 | 570 | 1,095 | 1,286 | 1,038 | 537 | 194 | 643 | 990 | 731 | 1,374 |
| Railroads. | 16 | 363 | 882 | 1,031 | 786 | 361 | -37 | 424 | 724 | 457 | 1,076 |
| Local railways and bus lines | -23 | -21 | 25 | 41 | 24 | 11 | -3 | $-33$ | -4 | -3 | $-4$ |
| Highway passenger transportation, n.e.c------- | 21 | 27 32 | $\stackrel{53}{31}$ | 27 | 27 | 16 | 57 | 75 | 101 | 85 | 118 |
| Highway freight transportation and warehousing- | 20 | 32 | 31 | 27 |  |  |  |  |  |  |  |
| Water transportation. | 56 | 75 | 33 | 41 | 38 | 34 | 72 | 101 | 72 | 83 | 83 |
| Air transportation (common carriers) | 8 | 10 | 18 | 18 | 26 38 | 16 | -35 | -43 | -5 38 | 12 | 10 47 |
| Pipe-line transportation...---.-- | 60 21 | 60 24 | 32 21 | 22 | 25 | 15 | 24 | 42 | 26 | 25 | 25 |
| Communications and public utibitis | 748 | 733 | 701 | 762 | 768 | 718 | 953 | 853 | 932 | 1,069 | 1.205 |
| Telephone, telegraph, and related services | 191 | 173 | 185 | 205 | 226 | 190 | 191 | 134 | 166 | 201 | 286 |
| Radio broadcasting and television.-- | 19 | 20 | 14 | 20 | 503 | +23 | $\begin{array}{r}35 \\ 714 \\ \hline\end{array}$ | 33 669 | 724 | 20 829 | 25 873 |
| Utilities: electric and gas........ | 526 | 528 | 491 | 524 | 503 14 | ${ }_{13}$ | 714 13 | 669 17 | 16 16 | -19 | 21 |
| Local utilities and public services, n.e.c........ | 12 | 12 | 11 | 13 | 14 | 13 | 13 | 17 |  |  |  |
| Serrices | 61 | 107 | 153 | 235 | 246 | 254 | 445 | 392 | 333 | 350 | 322 |
| Hotols and other lodging places. | -13 | -6 | $\xrightarrow{11}$ | 48 25 | 47 32 | 52 30 | 74 43 | 66 46 | 66 38 | 64 38 | ${ }_{36}$ |
|  | 8 | 14 |  |  |  |  |  |  |  |  |  |
| Commercial and trade schools and employment | 2 |  |  | 8 | 11 | 3 | 16 | 19 | 21 | 24 | ${ }_{83}^{24}$ |
| Business services, n.e.e.c | 20 | 33 | 25 | 35 | 37 | 40 | 67 | 78 | 87 | 83 |  |
| Miscellaneous repair services and hand trades..- |  |  |  | ${ }^{5}$ | 6 | 101 | 187 | $\begin{array}{r}8 \\ 140 \\ \hline\end{array}$ | 88 | 99 | 8 |
|  |  | 53 | 7 | 103 | 11 | 26 | 54 | 35 | 30 | 33 | 29 |
| Amusementand recreation, except motion pictures- <br> Rest of the worlds | 4 137 | 99 | 98 | 130 | 96 | 17 | 125 | 213 | 207 | 232 | 313 |

${ }^{2}$ See table 17, lootnote 1 .
${ }^{1}$ Industries in which there are no corporations organized for proft, or in which corporate
profits after tax are estimated at less than $\$ 500,000$ in all years, are omitted from this table. ${ }_{3}$ See table 17, footnote 3.

Table 20.-Net Corporate Dividend Payments, by Industry, 1929-39
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1983 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 5,823 | 5,500 | 4, 098 | 2,574 | 2,066 | 2,696 | 2,872 | 4,557 | 4,693 | 3,195 | 3,796 |
|  | 14 | 8 | 15 | 7 | 0 | 17 | 19 | - 36 | 29 | 11 | 15 |
| Agriculture, forestry, and isheries | 14 | 4 | 13 | 6 | -1 | 16 | 17 | 34 | 27 | 10 | 13 |
|  | 4 | 3 | $\stackrel{2}{2}$ | 1 | 1 | 1 | 2 0 | 2 0 | 2 0 | 1 | 2 0 |
|  | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | 338 | 230 | 120 | 72 | 65 | 174 | 148 | 192 | 257 | 167 | 175 |
| Mining Metal mining | 194 | 92 | 38 | 11 | 13 | 31 | 41 | 79 | 128 | 65 | 94 |
| 1. ${ }^{\text {a }}$ Anthracite mining | 16 | 13 | 9 | 6 | 1 | $\begin{array}{r}3 \\ \hline\end{array}$ | 3 | $\begin{array}{r}3 \\ \hline\end{array}$ | 12 | 1 | 0 |
| - Bituminous and other soft coal mining---------- | 27 | 24 | 16 | 7 36 | 4 38 | 28 98 | 11 | 76 | 91 | 79 | 54 |
| Crude petroleumand natural gas...----------- | 69 | 79 | 37 20 | 36 12 | 38 9 | 14 | 20 | 24 | $\stackrel{95}{ }$ | 15 | 18 |
| Nonmetallic mining and quarrying-.----..---- | 32 | 22 | 20 | 12 | 9 | 14 | 20 | 24 |  |  |  |
| Contract construction. | 60 | 67 | 40 | 19 | 19 | 15 | 21 | 36 | 42 | 21 | 22 |
| Manufacturing. | 2,647 | 2,539 | 1,862 | 1,102 | 992 | 1,186 | 1,517 | 2,333 | 2,358 | 1,211 | 1,741 |
| I ood and kindred products | ${ }^{2} 305$ | 328 | 1,863 | -198 | 190 | 242 | 247 | 337 | 296 | 254 | 272 |
| Tobacco manufactures . . - | 83 | 95 | 99 | 92 | 86 | 90 | 80 | 99 | 99 | 91 | 89 |
| Textile-mill products. | 142 | 103 | 79 | 46 | 50 | 81 | 77 | 121 | 120 | 44 | 67 |
| Apparel and other finished fabric products | 36 | 26 | 18 | 8 | 8 | 11 | 15 | 27 | 22 | 14 | ${ }_{24}^{18}$ |
| Lumber and timber basic products | 69 | 46 | 20 | 8 | 9 | 24 | 23 | 35 | 40 | 15 | 24 |
| Furniture and finished lumber products. | 32 | 22 | 13 | 8 | 5 | 8 | 11 | 22 | 23 | 19 | 25 |
| Ireper and allied products. | 56 | 51 | 36 | 20 | 27 | 39 | 46 | 61 | 75 | 39 | 48 |
| Printing, publishing, and allied industries. | 132 | 127 | 95 | 59 | 35 | 66 | 72 | 104 | 93 | 63 | 74 |
| Chemicals and allied products...........---.----- | 217 | 269 | 196 | 169 | 174 | 156 | 264 | 249 | 257 | 172 67 | 251 79 |
|  | 254 | 320 | 258 | 109 | 120 | 7 | 39 | 193 | 147 | 67 | 79 |
| Rubber products. | 29 | 26 | 20 | 13 | 6 | $-1$ | 7 | 31 | 27 | 12 | 22 |
| I eather sund leather products. | 37 | 38 | 28 | 20 | 19 | 21 | 22 | 28 | 28 | 19 | 88 |
| Stone, clay, and glass products | 83 | 73 | 53 | 27 | 22 | 39 | 50 | 95 | 101 | 45 | 80 |
| Iron and steel and their products, including ordnance. | 360 | 331 | 181 | 82 | 37 | 101 | 225 | 201 | 260 | 84 | 145 |
|  | 106 | 78 | 58 | 42 | 40 | 67 | 60 | 124 | 122 | 29 | 50 |
| Machinery, except electrical. | 256 | 214 | 137 | 70 | 47 | 81 | 105 | 182 | 220 | 140 | 154 |
| Electrical machinery..-. --. | 90 | 81 | 65 | 22 | 24 | 22 | 12 | 82 | 111 | 59 | ${ }_{9}^{96}$ |
| Transportation equipment, except automobiles.. | 40 | 39 | 25 | 10 | 3 | 26 | 25 | 23 | 38 | 12 | 32 |
| Autonobiles and automobile equipment.-.-...-- | 245 | 205 | 168 | 70 | 64 | 74 | 77 | 255 | 213 | ${ }^{2}$ | 145 |
|  | 75 | 66 | 50 | 28 | 26 | 32 | 60 | 64 | 66 | 31 | 42 |
| Wholesale and retail trade. | 537 | 474 | 376 | 210 | 173 | 328 | 419 | 646 | 607 | 347 | 425 |
| Wholesale trade.....- | 193 | 177 | 134 | 71 | 61 | 160 | 194 | 270 | 260 | 111 | 155 |
| Retail trade and automobile services. | 344 | 297 | 242 | 139 | 112 | 168 | 225 | 376 | 347 | 236 | 270 |
| Finance, insurance, and real estate.---------------- | 845 | 635 | 520 | 319 | 154 | -17 | -310 | 315 | 331 | 315 | 309 |
|  | 420 | 399 | 344 | 255 | 143 | 175 | 178 | 176 | 181 | 189 | 199 |
| Security and commodity brokers, dealers and exchanges. | 5 | 6 | 5 | 5 | 4 |  |  |  |  | 7 | 4 |
|  | 0 | -81 | -91 | -90 | -94 | -351 | -689 | -81 | $-74$ | -59 | -86 |
| Insurance carriers.- | 64 | 56 | 56 | 24 | 18 | $\begin{array}{r}-\quad 18 \\ \hline\end{array}$ | -681 | 17 | 16 | 37 | 43 |
| Insurance agents and combination offices........ | 16 | 15 | 16 | 8 | 7 | - 8 | 10 | 19 | 10 | 11 | 11 |
| Real estate.. | 340 | 240 | 190 | 117 | 76 | 128 | 154 | 173 | 197 | 130 | 138 |
| Transportation | 571 | 581 | 378 | 177 | 124 | 233 | 320 | 287 | 287 | 174 | 228 |
| Railroads | 303 | 353 | 219 | 26 | 20 | 78 | 73 | 119 | 125 | 45 | 77 2 |
| I ocal railways and bus lines ---.-.-.---------- | 107 | 72 | 62 | 60 | 50 | 42 | 39 | 17 | 12 | 4 | 13 |
| Highway passenger transportation, n.e.e.--.-- | 8 | 7 | 4 | 4 | 5 | 8 | 17 | 18 | 19 | 12 | 13 |
| Highway treight transportation and warehousing. | 12 | 11 | 8 | 8 | 7 | 7 | 8 | 9 | 9 | 11 | 14 |
|  | 29 | 30 | 20 | 12 | 8 |  |  |  |  | 20 | 32 |
| Air transportation (common carriers)..---....-- | 0 | 0 | 0 | 0 | 0 | 24 | 56 3 | 40 3 | 41 | 1 | 0 |
| Pipe-line transportation.-.--------------------- | 92 | 90 | 49 | 53 | 23 | 59 | 112 | 66 | 64 | 64 | ${ }^{69}$ |
|  | 20 | 18 | 16 | 14 | 11 | 12 | 12 | 15 | 15 | 17 | 21 |
| Communications and public utilities .-.-.-.-.-...-.-- | 634 | 861 | 772 | 677 | 540 | 618 |  |  |  | 671 | 683 |
| Telephone, telegraph, and related services.....- | 167 | 201 | 217 | 192 | 190 | 187 | 644 191 | 649 | 692 179 | 187 | 174 |
| Radio broadcasting and television...-.-.---.--- | 4 | 6 | 215 | 1 | 190 | 187 | 191 | 174 | 179 12 | 18 | 11 |
| Utilities: electric and gas | 449 | 601 | 526 | 471 | 333 | 411 | 428 | 446 | 485 | 459 | 488 |
| Local utilities and public services, n.e.c-------- | 14 | 53 | 24 | 13 | 16 | 17 | 17 | 4 | 16 | 16 | 15 |
| Services------------------ | 88 | 79 | 52 | 35 | 21 |  |  |  |  | 61 | 61 |
| Hotels and other lodging places | 6 | 4 4 | 2 | 1 | 21 | 34 1 | 34 1 | 71 | 79 2 | 61 3 | 5 |
| Personal services--.------------------------ | 11 | 7 | 5 | 3 | 2 | 2 | 3 | 5 | 5 | 6 | 7 |
| Commercial and trade schools and employment agencies. |  |  |  |  | 2 | 3 | 3 | 5 | 5 |  | 5 |
|  | 37 | 24 | 13 | 16 | 11 | 17 | 3 16 | 25 | 5 29 | 21 | 22 |
| Miscellaneous repair services and hand trades..- | 3 | 2 | 1 | 1 | 0 |  | 1 | 1 |  | 1 | 15 |
|  | 17 | 33 | 26 | 10 | 5 | $\frac{1}{7}$ | 1 | 26 | 28 | 21 | 15 |
| Amusementandrecreation, except motion pictures. | 11 | 8 | 4 | 2 | 1 | 3 | 6 4 | 26 | 18 9 | 21 | 6 |
| Rest of th: world.. | 89 | 26 | -37 | -44 | -22 | 8 | 60 | -8 | 11 | - 217 | 137 |

${ }^{1}$ Industries in which there are no corporations organized for proft, or in which net corporate dividend payments are estimated at less than $\$ 500,000$ in all years, are omitted from this table.

Table 20.-Net Corporate Dividend Payments, by Induatry, 1940-50
[Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1940 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total ${ }^{\text {- }}$--------------------- | 4,049 | 4,465 | 4,297 | 4,493 | 4,680 | 4,609 | 5,808 | 6,561 | 7,250 | 7,552 | 9, 169 |
| Agriculture, forestry, and fisheries. | 19 | 22 | 22 | 27 |  | 14 | 23 | 52 | 55 | 43 |  |
| Farms.-------...-...--- | 17 | 19 | 20 | 23 | 22 | 13 | 23 | 50 | 53 | 43 | 5 |
| Forestry Fisheries.-. | ${ }_{0}^{2}$ | 2 | 2 0 | 4 0 | $\begin{array}{r}2 \\ 0 \\ \hline\end{array}$ | 1 0 | $\stackrel{4}{4}$ | $\stackrel{2}{2}$ | 2 | $\stackrel{2}{2}$ | 2 |
| Mining- | 238 | 265 | 237 | 175 | 157 | 138 | 177 | 260 | 361 |  | 361 |
| Metal mining - | 103 | 107 | 145 | 70 | 61 | 44 | 53 | 84 | 118 | 319 | 129 |
| Anthracite mining .-.-.---...-----.-.-.----- | 15 | ${ }_{18}^{4}$ | 7 | 6 | 7 | ${ }^{6}$ | 13 | 10 | ${ }^{9}$ | 7 | 6 |
| Bituminous and other sott cox mining. | 15 92 | 116 | 44 | $\stackrel{23}{57}$ | 23 48 | 26 | 28 60 | 37 | 141 | 49 | 46 144 |
| Nonmetallic mining and quarrying---- | 19 | 122 | $\stackrel{47}{20}$ | 57 19 | 18 | 17 | 23 | 38 31 | 141 | 125 3.5 | 144 |
| Contract construction. | 22 | 27 | 25 | 23 | 21 | 18 | 30 | 36 | 56 | 57 | 63 |
| Manufacturing | 1,923 | 2,270 | 2,138 | 2,271 | 2,395 | 2,419 | 2,857 | 3,415 | 3,732 | 3,852 | 4.767 |
| Food and kindred products | 288 | $2{ }_{90}$ | ${ }^{282}$ | 304 | 301 | 313 | 405 | $\begin{array}{r}439 \\ 75 \\ \hline\end{array}$ | 418 | 434 | 465 |
| Tobacco manufactures | 85 | 100 | 67 | 63 | 68 | ${ }^{62}$ | 693 | $\begin{array}{r}75 \\ 237 \\ \hline\end{array}$ | 887888 | 25 | 998 |
|  | 73 19 | 104 23 | 100 21 | 106 | 111 | 110 | 200 | 237 43 | 268 55 | 211 49 | 226 48 |
| Lumber and timber basic products....... | 35 | 51 | 43 | 38 | 35 | 38 | 44 | 62 | 82 | 63 | 82 |
| Furniture and finished lumber products. | 26 | 28 | 24 | 24 | 25 | 22 | 36 | 47 | 47 | 42 | 48 |
| Paper and allied products - | 58 | 83 | 65 | 71 | 67 | 70 | 96 | 136 | 154 | 135 | 165 |
| Printing, publishing, and alilied industries-----. | 73 | 70 | 63 | 78 | 93 | 88 | 123 | 123 | 133 | 133 | 141 |
| Chemicals and alied products | 254 80 | 200 103 | 237 244 | 262 236 | 271 272 | 298 293 | 360 292 | 401 376 | 417 | 43.4 450 | 564 538 |
| Rubber products | 16 | 25 | 19 | 29 | 33 |  | 44 | 35 | 29 | 24 | 31 |
| Leather and leather products- | 21 | 27 | 25 | 27 | 27 | 26 | 34 | 43 | 40 | 36 | 35 |
| Stone, clay, and glass products--------- | 84 | 95 | 62 | 62 | 52 | 58 | 85 | 97 | 112 | 126 | 163 |
| ordnance.--.........-......... | 171 | 246 | 275 | 273 | 295 | 287 | 278 | 370 | 413 | 410 | 558 |
| Nonferrous metals and their products.... | 52 |  | 60 | 81 | 92 | 90 | 97 | 129 | 125 | 102 | 122 |
| Machinery, except electrical | 200 | 238 | 211 | 188 | 189 | 182 | 230 | 299 | 355 | 380 | 429 |
|  | 132 | 131 | 88 | 120 | 109 | 122 | 125 | 162 | 181 | 193 | 272 |
| Transportation equipnent, except automobiles.. | -64 | $\begin{array}{r}84 \\ 204 \\ \hline\end{array}$ | $\begin{array}{r}172 \\ 43 \\ \hline\end{array}$ | 213 31 | 259 30 | 269 23 | 83 147 | 210 | 86 271 | 72 405 | 630 |
|  | 179 38 | 204 | $\stackrel{4}{37}$ | 38 | 39 | 48 | ${ }_{57}$ | 53 | 59 | 58 | 67 |
| Wholesale and retail trade. | 432 | 501 | 447 | 485 | 490 | 499 | 816 | 867 | 948 | 933 | 1,033 |
| Wholesale trade.... | 149 | 200 | 169 | 174 | 179 | ${ }_{323}^{176}$ | 300 516 | 332 535 | 373 575 | 370 563 | 430 603 |
| Retail trade and automobile services.-: | 283 | 301 | 278 | 311 | 311 | 323 | 516 | 535 | 575 |  |  |
| Finance, insurance, and real estate. | 251 | 253 | 435 | 445 | 492 | ${ }_{273}^{532}$ | 645 249 | 579 310 | 643 327 | 788 345 | $\begin{array}{r}1,085 \\ \hline 88\end{array}$ |
|  | 217 | 224 | 212 | 227 | 252 | 273 | 299 | 310 | 327 |  |  |
| Sceurity and commodity brokers, dealers and exchanges. | 13 |  | 0 | -4 | -1 | -2 | 6 | -1 | 0 | 0 | 0 |
|  | -173 | -174 | 69 | 33 | 58 | 84 | 108 | 45 | 74 | 188 | 383 |
| Insurance carriers. | 35 | 23 | $\stackrel{25}{9}$ | 49 | 30 9 | 30 8 8 | 27 10 | 11 14 | $\stackrel{23}{20}$ | $\stackrel{25}{25}$ | 31 27 |
| Insurance agents and combination offes | 13 146 | 14 159 | 9 120 | 10 130 | $\begin{array}{r}144 \\ \hline\end{array}$ | 139 | 195 | 191 | 190 | 205 | 262 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Transportation. | 259 | 271 | 233 | 257 | 292 | 292 | 285 | 246 | 312 | 302 | 369 |
| Railroads. | 114 | 83 | 131 | 150 | 189 | 203 | 167 | 127 8 | 198 6 | 18.7 6 | 232 6 |
| local rail ways and bus lines.-............. | 4 | $\begin{array}{r}5 \\ 18 \\ \hline 18\end{array}$ | ${ }_{1}^{5}$ | +989 | 2989 | 20 | ${ }_{37}^{12}$ | 27 | 27 | 24 | 20 |
| Highway passenger transportation, n.e.c.-.....- | 12 | 18 18 | 17 | 12 | 12 | 11 | 15 | 16 | 19 | 20 | 23 |
| Higw fright cransportation and warehousing- |  |  |  |  |  |  |  |  |  |  |  |
| Water transportation. .-........... | 43 | 51 | 28 | $\stackrel{23}{8}$ | $\begin{array}{r}24 \\ 6 \\ \hline\end{array}$ | 21 | ${ }_{3}{ }_{3}$ | 4 | ${ }_{3}$ | 3 | 6 |
| Air transportation (common carriers) | 50 | 78 | 17 | 19 | 17 | 10 | 15 | 15 | 13 | 17 | 24 |
| Services allied to transportation | 20 | 20 | 15 | 16 | 15 | 13 | 12 | 12 | 12 | 12 | 13 |
| Communications and public utilities |  | 675 | 591 | 592 | 624 | 623 | 687 | 714 | 741 | 828 | 925 |
| Telephone, telegraph, and related services | 175 | 174 | 185 | 171 | 181 | 183 | 114 | 180 | 182 | 223 8 | ${ }^{27}$ |
| Radio broadcasing and television.- | 12 | 472 | 9 386 | 12 400 | 12 421 | 414 | 470 | 510 | 539 | 588 | 637 |
| Local utilitiectric and ras --..-.-. | 483 15 | 472 15 | 386 11 | 409 | ${ }_{10}$ | 10 | 11 | 10 | 9 | 9 | 9 |
| , |  |  |  |  |  |  | 145 | 141 | 143 |  |  |
| Services | 66 | 72 |  |  | 8 | 10 | 14 | 16 | 20 | 20 | 21 |
| Hotels and other lodging places. | 5 |  | 6 7 | 8 | 10 | 10 | 13 | 12 | 13 | 15 | 15 |
| Personal services .--7.-.-.-...............-- | 7 | 7 |  |  |  |  |  |  |  |  |  |
|  | 25 | ${ }^{3}$ | ${ }_{15}^{4}$ | $\begin{array}{r}5 \\ 18 \\ \hline\end{array}$ | 19 | 20 | 26 | 29 | 32 | 30 | 30 |
| Business services, n.e.e.c.-.----- | 25 | 23 | 15 | 18 |  |  |  |  |  |  |  |
| Miscellaneous repzir services and hand trades.-- |  |  |  | 35 | $3{ }^{1}$ | $3{ }^{\frac{1}{3}}$ | 64 | 61 | $5{ }^{1}$ | 40 | 38 |
| Motion pictures. | 18 6 | $\stackrel{8}{8}$ | 20 4 | 5 | 6 | 10 | 18 | 16 | 15 | 13 | 10 |
| Rest of the world | 149 | 109 | 107 | 137 | 103 | 75 | 148 | 251 | 259 | 313 | 387 |



Table 21.—Undistributed Corporate Income, by Industry, 1929-39
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1033 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total ${ }^{1}$. | 2,597 | -3,045 | -5,381 | -5,998 | -2,428 | -1,619 | -613 | -284 | -8 | -906 | 1,209 |
| Agriculture, foreatry, and fisheries | -1 | -47 | -84 | $-77$ | -31 | -50 | $-11$ | -18 | -24 -19 | -23 -21 | -13 |
| Farms.-- | - | -41 | -77 | $\bigcirc$ | -27 | -44 | - -3 | -18 | -19 | -21 | -10 |
| Forestry--- | -4 2 | $\mathrm{-2}_{-4}$ | -4 | -4 -4 | -2 | $-3$ | -1 | -0 | -4 -1 | - | -3 |
| Mining | 78 | -129 | -250 | -169 | -88 | -20 | 20 | 87 | 147 | 16 | 97 |
| Mnink-tal mining. | 44 | $-49$ | -73 | -62 | 1 | 17 | 33 | 44 | 81 | 35 | 65 |
| Anthrarite mining.-. | -6 | -19 | $-2$ | -18 | -99 | -4 | -13 | -11 | -14 -4 | -19 | -12 |
| Bitunirvous and oifur soft roal mining-.........- | -18 | -39 | -46 -113 | -42 | -34 | -20 | -10 | -11 60 | 78 78 | -28 | -49 |
| Crude petroleunand natural mas................. | 41 | -54 | -113 -10 | -24 -23 | -13 -13 | $-5$ | -16 | 60 2 | 78 6 | -28 | 39 9 |
| Contract construction. | 42 | 8 | -48 | -111 | -74 | -47 | -30 | -22 | -16 | -6 | -4 |
| Manufacturing | 1,756 | -1,212 | -2,342 | -2,525 | -409 | -130 | 225 | 552 | 578 | -64 | 1,217 |
| Fcod und Lindred produc | 123 | -13 | -103 | -142 | 91 | 84 | 39 | 77 | -33 | 16 | 158 |
| Tobarco manufactures-.. | 41 | 39 | 38 | 48 | $-33$ | 5 | 14 | 7 | 4 | -14 | ${ }^{22}$ |
| T, x ild-mill products.- | -19 | -317 | $-247$ | -229 | 76 | $-68$ | -24 | 24 9 | $-51$ | -76 -16 | ${ }_{10}^{64}$ |
| Apparel and other t.nished fabric products...... | $-10$ | -62 -78 | -80 | -85 -114 | $\begin{array}{r}3 \\ -35 \\ \hline\end{array}$ | -3 -46 | -20 | 9 | -12 | -16 -12 | 12 |
| Furniture and finished lumber produ | 1 | -61 | -75 | -86 | -24 | -18 | -7 | 4 | 1 | -14 | 14 |
| Paper and allied products . .-... | 39 | -11 | -47 | -79 | -5 | 15 | 13 | 20 | 23 | -5 | 39 |
| Printing, publishing, and ullied indu | 80 | -1 | -43 | -86 | $-11$ | -12 | 17 | 9 | 6 | $-7$ | 22 |
| Chemicals and altied products. | 159 | -27 | -39 | -94 | 83 | 77 | -12 | 71 | 58 | 65 | 165 |
| Products of petroleum and coal. | 360 | -98 | -387 | -112 | -171 | -25 | 25 | 0 | 148 | 15 |  |
| Rubber products. | -19 | -79 | -42 | -47 | -1 | 4 | 10 | 5 | -4 | 2 | 28 |
| 1.eather and leather produrts. | 2 | -63 -31 | -60 -84 | $-58$ | -11 | -3 | 15 | 3. | $-12$ | -16 4 | 10 |
| Stone, clay, and glase products-.....--.-....- Iron and steel and their produts, including | 44 | -31 | -84 | -113 | -34 | -13 | 1 | 24 | 13 | 4 |  |
| fron and steel and their products, inchadiag ordnance. | 359 | -145 | -408 | $-466$ | -152 | -90 | -111 | 73 | 116 | -98 | 104 |
| Nonferrous metals and their products----.-.... | 88 | $\sim 30$ | -80 | -104 | 4 | 27. | 60 | 31 | 36 |  |  |
| Machincry, except eleetrical. | 192 | -65 | -216 | -283 | -92 | 4 | 58 | 102 | 134 | 14 | 107 |
| Electrimal machinery-...................-.----- | 88 | -8 | $-53$ | -63 | -40 | $-41$ | 39 | 26 | 25 | 4 |  |
| Tramprortation equpmuent, except automobiles-- | 173 | -23 -70 | $-57$ | -41 | -26 | $-36$ | -34 | -8 | 9 | 0 | 115 |
| Automobiles nnd automobile equipment | 179 18 | -70 -60 | -147 | -260 | -19 -34 | 6 3 | 131 | 17 | 14 | ${ }_{8}$ | 31 |
| Wholesale and retail trade | 114 | -566 | -849 | -977 | -165 | -37 | -12 | 59 | 8 | -85 | 216 |
| Wholesale trade- | 74 | -241 | -327 | -329 |  | -2 | -1 | 60 | 13 | -21 | 121 |
| letail trade and autonobile servic | 40 | -325 | -522 | -648 | -165 | -35 | -11 | -1 | -5 | -64 | 95 |
| Finance, insurance, and real estate... | 72 | -585 | -904 | -1,046 | -882 | -653 | -112 | -486 |  |  |  |
| Banking. | 213 | -24 | -227 | -268 | -204 | -181 | -39 | -49 | -143 | 86 | 122 |
| Sechrity and commodity brokery, dealers and exchanges | 100 | -155 | -117 | -67 | -47 | -16 | -81 | -78 | -58 | -57 | -47 |
| Finance, n.e.e. --. | $-33$ | -111 | -139 | $-156$ | -159 | - 29 | 435 | -176 | -136 | -108 |  |
| Insurance carriers-1---...-. | 103 | 8 2 | -32 -0 | -22 | 35 | 70 | 75 | 94 | 124 | 116 | ${ }_{3}^{98}$ |
| Real estate...--..........--- | -320 | $-305$ | -389 | -539 | -511 | -560 | -504 | 4 -379 | $\begin{array}{r}4 \\ -348 \\ \hline\end{array}$ | -213 | -211 |
| Transportation | 348 | -222 | -510 | -534 | -393 |  |  |  |  | -412 | -158 |
| Railroads--- | 414 | -109 | -384 | -367 | -308 | $-353$ | -458 | -266 | -307 | -321 | -128 |
| I ocal railways and bus lines. | -55 | -21 | -51 | -54 | -45 | $-50$ | -75 | - -32 | -49 | -62 | -46 |
| Highway pasenger trancportation, n.e.c- | -10 | $\rightarrow{ }^{-17}$ | $-13$ | -23 | -11 | -6 | -10 | -5 | -7 | -9 | 24 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Water transportation.-- | 15 | -18 | -25 | -29 | -7 | -15 | -35 | -12 | -8 | -11 |  |
| Air trans portation (common carriers | -6 | -19 | -9 -13 | -3 | -2 | -9 | -35 | -3 | -5 | -3 | 0 |
| Services allied to transportation. | -14 -15 | -28 -16 | -13 -16 | -26 -18 | $-2$ | -1 -13 | $-53$ | -14 | -17 | -4 -15 | -15 |
| Communirations and public utilities. |  |  |  |  |  |  |  |  |  |  | 13 |
| Telephone, telegreph, and related serevices........ | 108 | - 30 | -9 | $-323$ | ${ }_{-237}-81$ | $-161$ |  | -113 | $-57$ | -93 | 29 |
| Radio broadcasting and television. | 14 | $-12$ | $-10$ | $-4$ | -7 | -65 | -43 | -16 | -13 | -3 | 5 |
|  | 46 10 | -231 -37 | -233 | -239 -14 | $-137$ | -95 | -128 | -91 | -44 | -64 | -18 |
|  |  | -37 | -24 | -14 | -12 | -4 | -6 | -8 | -3 | -5 |  |
| Servirest....-.-.-. | 34 | -19 | -99 | -227 | -139 |  |  |  |  |  |  |
| Hotels and other lodging places. | -5 | -23 | -32 |  | $-33$ | -32 | -28 | -25 | -21 | -32 | $-27$ |
|  | 9 | 1 | -6 | -22 | -9 | -3 | - 0 | 1 | - 4 | -6 | -1 |
|  |  |  | -4 |  |  |  |  |  |  |  | -5 |
| Rusiness services, n.e.c.-.----. | 3 | 7 | $-4$ | $-22$ | -15 | -4 | -5 | $-5$ | $-5$ | -1 | \$ |
| Misrellaneous repair services and hand trades. |  |  | -1 |  |  |  |  |  |  |  |  |
| Motion pictures...-.-...-............-.-....- | 35 | 10 | -28 | -95 | $-48$ | 0 -8 | 0 | - | - | 0 <br> 8 | 15 |
| Arusementandrecrcation, except motion pictures. | -12 | -17 | -24 | -32 | -25 | -14 | -10 | -10 | $-7$ | -7 | -4 |
| Rest of the world ${ }^{\text {2 }}$ | -24 | -23 | -19 | -12 | -10 | -10 | -16 | -24 | -24 | -22 | -23 |

${ }^{3}$ Industries in which there are no corporations organized for proft, or in which undis. tributed corporato profts are estimated at less than $\$ 500,000$ in all years, are omitted from
this table.
${ }^{2}$ Represents zero minus the gross outflow of branch profits to foreigners. This series difiers from net branch profits shown in table 11, because profits received by domestic cor poratlons from foreign branckes are excluded from this line and inclutied in the ind

Table 21.—Undistributed Corporate Income, by Industry, 19:10-:50
[Millions of dollars]


Table 22.-Inventory Valuation Adjustment, by Industry, 1929-39 1
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1833 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total. | 614 | 4,015 | 3,025 | 1,342 | -2,668 | -679 | -277 | -858 | -60 | 1,184 | -880 |
| A. CGRPCRATIONS, TOTAL. | 472 | 3,260 | 2,414 | 1,047 | -2,143 | -625 | -227 | -738 | -31 | 963 | -714 |
| Mining | 5 | 122 | 64 | 23 | -67 | -4 | -9 | -16 | 0 | 11 | -12 |
| Metal minitg | $\stackrel{2}{0}$ | 65 4 | $\begin{array}{r}35 \\ 4 \\ \hline\end{array}$ | 12 2 | -35 | -2 | -4 | $-7$ | $\begin{aligned} & \mathbf{0} \\ & \mathbf{0} \end{aligned}$ | 6 1 | 7 0 |
|  | 1 | ${ }_{13}^{4}$ | 4 6 | $\stackrel{2}{2}$ | -6 | 0 | -1 | -2 | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | 1 | -1 |
| Crude petroleum and natural gas........-.-.--- | 1 | 16 | 10 | 4 | -15 | -1 | -2 | $-3$ | 0 | 2 | -2 |
| Nommetallic mining and quarrying.-..-.-......... | 1 | 24 | 9 | 3 | -7 | -1 | -1 | -3 | 0 | 1 | -2 |
| Contract construction. | 3 | 30 | 23 | 11 | -22 | 0 | -1 | -3 | -7 | 4 | -4 |
| Manufacturing | 301 | 2,215 | 1,585 | 655 | -1,340 | -457 | -161 | -478 | -11 | 619 | -471 |
|  | -35 | 372 | 238 | 159 | $-208$ | -209 | $-15$ | -63 | -227 | 152 -8 | $-79$ |
|  | -25 | 15 | $\begin{array}{r}56 \\ 219 \\ \hline\end{array}$ | $\begin{array}{r}66 \\ 110 \\ \hline 27\end{array}$ | -10 | -45 -38 | 8 -13 | -81 | $-169$ | -83 | - 57 |
|  | 139 28 | 372 64 | 219 74 | 110 | $-368$ | 38 19 | -13 | -31 | 169 17 | 33 17 | $-12$ |
| Apparel and other tnished fabric products.-.... Lumber and timber basic products. | 28 | 64 59 | 50 | 32 | -66 | 19 6 | -5 | -8 | -2 | 2 | -16 |
| Furniture and finished lumber products....--. | 1 | 41 | 37 | ${ }_{38}^{27}$ | -54 -37 | 6 | -5 | -17 | -5 | 2 79 | -18 |
| Jeper and pllipd products- ${ }^{\text {Printing }}$ publishing, and alied industries | 4 | ${ }_{15}^{22}$ | 25 22 | 38 30 | -37 -5 | $-1$ | 11 | -17 -3 | $-52$ | 79 -9 | -37 |
| Chemicals and allied products | 23 | 102 | 97 | 38 | $-30$ | $-63$ | -37 | $-35$ | - 59 | 45 | $-20$ |
| Products of petroleum and coal-...-................. | 69 | 341 | 230 | -64 | -121 | -27 | -24 | -70 | -7 | 135 | -50 |
| Rubber products.- | 46 | 92 | 77 | 10 | -52 | -54 | 6 | -49 | 17 | -11 | -25 |
| Stone, clay, and glass products.-.-.-.-.-.-. | 44 3 | 88 | 53 <br> 64 | 50 -36 | -79 -25 | -68 | -48 | $-7$ | 7 -13 | 12 | ${ }_{-1}{ }_{-1}$ |
| Iron and steel and their products, including ordnance $\qquad$ | 3 | 8 161 | 86 | -36 41 | -25 -53 | -6 | -1 -15 | -1 -31 | -13 -157 | 1 63 | -14 -14 |
| Nonferrous metals and their products............. | -11 | 153 | 97 | 46 | -109 | -7 | -9 | -27 | 0 | 7 | -30 |
| Machinery, except clectrical. | -16 | 122 | 60 | 34 | -22 | -50 | -5 | -9 | -96 | 42 | -3 |
| Electrical machinery.....-. | -4 | 36 | 16 | 8 | -6 | -13 | -2 | -3 | -35 | 15 |  |
| Transportation equipment, except automobiles-- | -17 | 14 | 87 | $\begin{array}{r}3 \\ 18 \\ \hline\end{array}$ | -10 | -5 | 0 | -1 -18 | -17 | 8 | 0 |
| Automobiles and automobile equipment. | 17 | 64 | 39 | 18 | $\square_{-31}^{-10}$ | -7 -7 | -2 | -18 | -68 -10 | ${ }_{13} 21$ | -10 |
| Wholesale and retail trade | 152 | 8 c 4 | 663 | 318 | -627 | -143 | -48 | -226 | 34 | 309 | -219 |
| Wholesale trade. | 78 | 432 | 315 | 140 | -281 | -128 | -7 | -162 | 107 | 158 |  |
| Retail trade and automobile services | 74 | 372 | 348 | 178 | -346 | -15 | -41 | -64 | -73 | 151 | -98 |
| Transportation. | 7 | 53 | 46 | 24 | -52 | -12 | -5 | -9 | -28 | 11 | -5 |
| Railroads-..- | 5 | 43 | 38 | 21 | -43 | -10 | -5 | -8 | -24 | 9 | -5 |
| I ocal railways and bus lines--.-.-.-.-....... | 1 | 3 0 | ${ }_{0}^{2}$ | 1 | -3 0 | -1 | 0 0 | -1 | -1 | 1 | 0 |
| Highway passerger transportation, n.e.e--3.-. | 0 | 2 | 1 | 1 1 | -1 | 0 | 0 0 | 0 | -1 | 0 | 0 |
| Water transportation. | 0 | 1 | 1 | 0 | -1 | 0 | 0 | 0 |  | 0 |  |
| Ait transportation (common carriers) | 0 | 1 | 1 | 0 | -1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1'ipe-lire drarsportation.-...- | 1 | 2 | 2 | 1 | -2 | -1 | 0 | 0 | -1 | 1 | 0 |
| Services allied to transportation.. | 0 | 1 | 1 | 0 | -1 | 0 | 0 | 0 | -1 | 0 | 0 |
| Communications and pullic utilities | 4 | 36 | 33 | 16 | -35 | -9 |  | -6 | -19 | 9 | $-3$ |
| Telephone, telegraph, and related services | 1 | 8 | 8 | 4 | -8 | -2 | -1 | -1 | -4 | 2 | -1 |
| Padio broadcastirg and television..... | 0 | ${ }^{0}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - |
|  | 3 0 | 27 | 24 | 12 0 | -26 | -7 | -2 | -5 0 | -14 -1 | 7 | -20 |
| B. UNINCCRPORATED ENTERPRISES, TOTAL. | 142 | 755 | 611 | 295 | -525 | -54 | -50 | -120 | -29 | 221 | -166 |
| Mining-.......... |  |  |  |  | -4 | -1 | -1 |  |  |  | 1 |
| Metal mining -- | 0 | 2 | 1 | 0 | -1 | 0 | 0 |  | 0 | 0 | 0 |
| Anthracite mining--.-...---.-.-- | 0 | 0 | 0 | 0 | - 0 | 0 | 0 | 0 | $\begin{aligned} & 0 \\ & 0 \end{aligned}$ | 0 | 0 |
| Tituminous and other soft coal mining | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crude petroleumand natural gas..-- | 1 | $\stackrel{8}{3}$ | 1 | 1 | -2 | $-1$ | -1 | -1 | 0 | 1 0 | -1 |
| Contract construction. | 3 | 22 | 18 | 9 | -17 | 0 | -1 | -3 | -5 | 3 | -3 |
| Manufacturing | 12 | 85 | 60 |  |  |  |  |  |  |  | -28 |
| Food and kindred produc | -2 | 19 | 12 | ${ }_{9}^{36}$ | -66 | -11 | -7 | -13 | 15 |  | $-7$ |
| Tobacco manufactures. | 0 | 0 | 0 | 0 | $\bigcirc$ | -11 | -3 | -6 0 | 15 0 | 0 | . 0 |
| Textile-mill products----7 | 4 | 10 | 5 | 4 | -10 | 1 | 0 | -1 | 3 | 1 | -4 |
| Apparel and other f.nished fabric products | 10 | 26 5 | 19 5 | 10 | -25 -6 | 7 1 | $\begin{array}{r}-3 \\ \hline 0\end{array}$ | -2 | 5 -1 | 4 0 | -2 |
| Furniture and finished lumber products. | 0 |  |  |  |  |  |  |  |  |  |  |
| Pr per and allied products....................... | 0 | 0 | 4 | 3 1 | -6 | 0 | 0 | -1 | - | 0 | 0 |
| Printirg, publishirg, ard allied industries......-. | 0 | 2 | 2 | 3 | -1 | 0 | 0 | 0 | -1 | -1 | 0 |
| Chemicals and allied products | 2 | 2 | 2 | 1 | -1 | -1 | -1 | 0 | 0 | 1 | 0 |
| Products of petrolcum and coal. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| Rubber products-...----.-. |  |  | 0 |  |  |  |  |  |  |  | 0 |
|  | 0 | 0 | 0 | 1 | -1 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | 0 | 1 | 3 | -2 | 2 | 0 | 0 | 0 | -1 | 0 |  |
| ordnance | 0 |  | 1 | 0 |  |  |  |  |  |  | 0 |
| Nonferrous metals and their products.. | -2 | 7 | 4 | 1 | -3 | $-1$ | 0 | -1 | -2 | 0 | -2 |
| Machinery, except electrical. | -1 | 3 | 0 |  |  |  |  |  |  |  | 0 |
| Electrical machinery ....-.-.......-............- | 0 | 0 | 0 | 0 | - 0 | -1 | 0 | 0 | -2 | 0 | 0 |
| Transportation equipment, except automobiles.- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
|  | 0 | 0 3 | 0 | $\cdots$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  |  | 0 |  | -1 | -1 |  |  |
| Wholesale trade. | 126 | 634 | 527 | 248 | -438 | -48 | -41 | -103 | -39 | 199 | -134 |
| Retail trade and automobile services | 99 | 149 | $10 \pm$ | + 205 | -76 | -32 | $-1$ | -39 | 33 | 47 | ${ }_{-96}^{-38}$ |
|  | 9 | 485 | 423 | 205 | -362 | -16 | -40 | -64 | -72 | 152 | - |

Table 22.-Inventory Valuation Adjustment, by Industry, 1940-50 ${ }^{1}$
[Millions of dollars]

${ }^{1}$ The inventory valuation anjustment has been estimated ouly in those in lustriu divisions

an important income-tet ermining factor. Within these industrial divisions stubs have been onitte 1 for detsile 1 industries for which the Inventory valuation adjustment is estimated at less than $\$ 500,030$ in all years.

Table 23.-Net Interest, by Industry, 1929-39
[Millions of dollars]

|  | 1929 | 1030 | 1031 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1989 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total. | 6,541 | 6,176 | 5,938 | 5,430 | 5,010 | 4,750 | 4,539 | 4,474 | 4,376 | 4,290 | 4,212 |
| Agriculture, forestry, and flsheries_ | 833 | 788 | 745 | 677 | 582 | 520 | 459 | 427 | 414 | 430 | 456 |
| Farms | 822 | 778 | 735 | 668 | 574 | 512 | 451 | 421 | 407 | 423 | 449 |
| Agricultural and similar service estabindments - | 5 | 5 | 5 | 4 | 4 | 3 | 3 2 2 | 3 | $\stackrel{3}{1}$ | 3 | 3 |
|  | $\stackrel{2}{4}$ | 4 | 1 | 4 | 3 | 3 | ${ }_{3}^{2}$ | 2 | 3 | $\frac{1}{3}$ | $\frac{1}{3}$ |
| Minins | 32 | 25 | 38 | 36 | 34 | 41 | 38 | 32 | 34 | 35 | 34 |
| MIotal mining | 7 | $-2$ | 2 | 5 | 6 | 3 | 1 | 2 | 2 | 0 | 0 |
| Anthracite mining.-.-.-.-.-- | ${ }_{11}^{6}$ | 11 | 9 | 8 | 7 | 8 | 7 9 | 8 | 8 | 8 | 7 |
| Crude petroleum and natural gas... | -2 | 0 | 10 | 12 | 10 | 18 | 18 | 11 | 15 | 18 | 18 |
|  | 10 | 9 | 8 | 3 | 1 | ${ }^{18}$ | 3 | 3 | ${ }_{2}$ | 2 | 2 |
| Contract construction. | 16 | 27 | 24 | 23 | 15 | 1 | 3 | 4 | 4 | 0 | 2 |
| Manufacturing. | -81 | 13 | 26 | 11 | 28 | 32 | 45 | 43 | 97 | 51 | 66 |
| Food and kindred products -....................... | 44 | 32 | 25 | 13 | 13 | 19 | 21 | 18 | 22 | 25 | 22 |
|  | -5 | -5 | -5 | -8 | -8 | -6 | -1 | -2 | 0 10 | $\stackrel{2}{9}$ | 1 |
| Apparel and other finished fabric produets | -4 | -3 | -5 | -6 | -5 | -2 | 0 | 1 | 4 | 9 3 | 3 |
| Lumber and timber busic products...-...- | 13 | 14 | 14 | 11 | 11 | 12 | 9 | 8 | 9 | 7 | 7 |
| Furniture and finished lumber products | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 |
|  | 9 | 10 | 12 | 10 | 11 | 9 | 11 | 8 | 10 | 12 | 10 |
| Printing, publishing, and allied industries...--- | -16 | -13 | -14 | -12 | -12 | 6 -6 | 6 -4 | - 7 | -6 | -6 | ${ }_{-8}^{4}$ |
| Iroducts of petroleun and coal....- | -168 | - 22 | -12 | -12 | -13 | $\begin{array}{r}-6 \\ 4 \\ \hline\end{array}$ | -4 | -4 | -5 | -6 | 7 |
| Iubber products. | 10 | 10 | 7 | 5 | 6 | 5 | 2 | 3 | 3 | 2 | 5 |
| Leather and leather products. | 1 | 1 | -1 | -2 | -2 | -1 | 0 | 1 | 2 | 1 | 1 |
| Stone, clay, and glass products. | 1 | 4 | 5 | 5 | 4 | 3 | 1 | 2 | 1 | 2 | 1 |
| Iron and steel and their products, including ordnance. | -8 | -6 | 11 | 15 | 19 | 23 | 22 | 30 | 55 | 20 | 41 |
|  | -8 | -1 | 2 | 15 | 1 | $\stackrel{3}{3}$ | 3 | 2 | $\begin{array}{r}5 \\ 4 \\ \hline\end{array}$ | 3 | 3 |
| Machinery, except electrical. | -20 | -22 | -23 | -21 | -19 | -18 | -18 | -18 | -12 | -16 | -16 |
| Electrical machinery-..-.-.-....-.-............ | $-25$ | -22 | $-20$ | -13 | $-9$ | -9 | -3 | -7 | -4 | -6 | ${ }^{-6}$ |
| Transportation equipment, except automobiles.-- Automoliles and automobile equipmrnt....-. | -10 | -52 | --3 | -28 | $-{ }_{-23}$ | -15 | - 0 | - 0 | - ${ }^{0}$ | -18 | -14 |
|  | 1 | -32 | -3 | -28 | $\begin{array}{r}-23 \\ \hline 1\end{array}$ | -15 | -18 | -17 | -15 | ${ }_{-1}^{-1}$ | -2 |
| Wholesale and retail trade. | 80 | 92 | 77 | 29 | 32 |  |  |  | 50 |  |  |
| Wholesale trade.---.....-.-.. | 26 | 21 | 12 | -3 | 5 | 4 | 2 | 9 | 16 | 16 | 15 |
| Retail trade and automobile services. | 24 | 71 | 65 | 32 | 27 | 17 | 20 | 20 | 34 | 29 |  |
| Finance, insurance, and real estate. | 2,463 | 2,559 | 2,461 | 2,301 | 2,131 | 2,089 | 1,939 |  | 1,715 | 1,727 | 1,602 |
| Sanking---7--....- ${ }_{\text {Security }}$ | 480 | 332 | 188 | , 157 | , 54 | $\because 28$ | 1, -4 | 1,85 | 1,-16 | 1, -30 | - 56 |
| exchanges | -287 | -147 | -92 | -58 | -54 | -47 |  | -46 | -46 | $-37$ | -39 |
| Finance, n.e.c--. | -103 | $-93$ | $-50$ | -40 | 50 | 112 | -72 | $\begin{array}{r}-46 \\ \hline 47\end{array}$ | -16 | 72 | 28 |
| Insurance carriers. | -115 | -86 | -82 | -73 | -54 |  | -28 | 4 | -13 | -6 | -12 |
| Insurance agents and combination offices | , 10 | -88 | -5 | -4 | $-3$ | -41 | -28 | -3 | -3 | -3 | -3 |
| Real estate...... | 2,498 | 2,561 | 2,502 | 2,319 | 2.138 | 2,040 | 1,936 | 1,855 | 1,783 | 1,731 | 1,684 |
| Transportation_ | 559 | 575 | 613 |  |  |  |  |  |  |  |  |
| Railroads............-. | 480 | 499 | 530 | 534 | ${ }_{556}^{638}$ | 653 546 | 640 537 | 517 | 510 | 516 | 516 |
| Local railways and bus lines-. | 52 | 41 | 41 | 47 | 42 | 64 | ${ }_{64}$ | ${ }_{60}$ | 58 | 60 | 54 |
| Highway passenger transportation, n.e.c......... Highway freight transportation and warehousing. | 15 19 | ${ }_{23}^{16}$ | 14 23 | $\stackrel{15}{23}$ | 16 | 12 | 11 | 11 | 11 | 11 | 14 |
|  |  |  |  |  | 2 | 20 | 18 | 17 | 16 | 16 |  |
| Water transportation-.-.----------........... | 0 | 2 | 3 |  |  |  |  |  |  |  |  |
| Air transportation (common carriers) | -2 | - 7 | -1 | -2 | -1 | \% | 0 | $\begin{array}{r}5 \\ -\quad 0 \\ \hline\end{array}$ | $\stackrel{5}{0}$ | 9 | 0 |
| Pipeline transportation..---..... Services allied to transportation. | -6 | -7 | 0 3 | -4 | -4 | 2 | 1 | 1 | 2 | 1 |  |
|  |  |  |  |  |  |  | 2 | 1 | 1 |  |  |
| Communications and public utilities -----.... | 394 | 458 | 565 | 594 | 564 |  |  |  |  | 429 | 422 |
| Telephone, telegraph, and related services | -57 | 66 | 68 | 66 | 69 | 45 | 491 | 478 59 | 424 51 | 55 | 85 |
| Utilities: electric and gas............ | 323 | 374 | 478 | -197 | -1 | 0 |  | 0 | 0 | 0 | 349 |
| Local utilities and public services, n.e.c. | 16 | 19 | 20 | 497 | 467 29 | 390 23 | 408 22 | 398 21 | 353 20 | 354 20 | 18 |
|  | 1,668 | 1,031 | 839 |  |  |  |  |  |  |  | 852 |
| Hotels and other lodging plac | 1,49 |  | 49 | 74 40 |  |  |  |  |  |  | ${ }^{33}$ |
| Personal services Private houscholds | 1, 928 | 88 | $\begin{array}{r}9 \\ \hline 87\end{array}$ | 40 5 | $\begin{array}{r}36 \\ 8 \\ \hline\end{array}$ | 39 8 | 38 8 8 | 36 7 | 35 6 | $\begin{array}{r}33 \\ 6 \\ \hline\end{array}$ | 68818 |
| Private households ${ }^{\text {Commercial and trade schools and employment }}$ | 1,528 | 871 | 672 | 548 | 498 | 512 | 535 | 647 | 726 | 683 | 718 |
| agencies-.......-....... | -3 | -3 | -1 |  |  |  |  |  |  |  |  |
| Business services, n.e.c... | $-14$ | -12 | $-7$ | -2 | -1 | 1 | 2 | 0 -2 | -1 | - 0 | -1 |
| Miscellaneous repair services and hand trades.-- | 8 | 8 | 9 |  |  | 9 |  |  |  |  | 6 |
|  | 21 | 28 | 27 | 24 | 20 | 15 | 15 | 8 | 13 | 14 | 12 |
| Amusementand recreation, except motionpictures. | $-7$ | 6 -5 | -4 | 6 | 5 | 4 | 4 | 3 | 4 | 3 | ${ }_{0}^{2}$ |
|  | $-6$ | -5 | -5 | -3 | $-2$ | -1 | 0 | -1 | -2 | -1 | -3 |
| Engineering and other professional services, n.e.c- |  |  |  |  |  |  | -3 | -4 | -4 |  |  |
| Educational services, n.e.c......................-- | 4 | -2 | 48 |  |  |  |  |  | 0 | 0 | 4 |
| Religious organizations......... | 32 | 33 | 48 | 49 34 | 50 | 50 | 49 | 48 | 48 | 45 | 30 |
| Nonprofit membership organizations, n.e.c----- | 3 | 4 | 4 4 4 | 34 4 | ${ }_{6} 6$ | 34 | 33 | 33 | 32 | 31 | 5 |
| Leat of the world... | 577 | 608 | 550 | 426 |  |  |  |  |  |  | 121 |
|  |  |  |  |  | 324 | 242 | 207 | 195 | 160 | 138 | 1 |

Table 23.-Net Interest, by Industry, 19:10-50
[Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1044 | 1945 | 10.40 | 1977 | 198 | 19.419 | 1960 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total | 4,104 | 4,113 | 3,894 | 3,355 | 3,137 | 3,009 | 2,922 | 3,544 | 4,335 | 4, 90x | 5.386 |
| Agriculture, forestry, and fisheries... | 455 | 462 | 427 | 370 | 330 | 318 | 309 | 321 | 376 | 431 | 483 |
|  | 449 | 455 | 423 | 366 | 320 | 315 | 305 | 317 | 372 | 427 | 179 |
| Agricultural and similar service establishments.- | 3 1 | 3 2 | 2 <br> 1 <br> 1 | 2 1 1 | 2 $-\quad 1$ | 2 0 0 | 2 | $\stackrel{1}{1}$ | $\stackrel{2}{1}$ | 2 <br> 1 <br> 1 | $\stackrel{2}{1}$ |
|  | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mtning | 30 | 22 | 19 | 13 | 12 | 6 | 7 | 8 | 12 | 16 | 10 |
| Metal mining- | -2 | -6 | -5 | -5 | -4 | -6 | $-13$ | $-7$ | -10 | -11 | $-13$ |
| Anthracite mining ---- ${ }_{\text {Bituminous and }}$ other soft coal mining-- | 6 7 | 6 6 | 6 5 | $\stackrel{5}{2}$ | ${ }_{0}^{4}$ | ${ }_{0}^{1}$ | -1 | -1 | -31 | - ${ }_{-1}^{1}$ | -4 |
| Crude petroleum and natural gas.-.--- | 17 | 15 | 12 | 10 | 11 | 11 | 14 | 15 | 24 | 28 | 20 |
| Nonmetallic mining and quarrying. | 2 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Contract construction. | 2 | 4 | G | 2 | 0 | 2 | 4 | 15 | 16 | 16 | 12 |
| Manufacturing | 55 | 31 | 22 | -39 | -44 | -33 | -118 | -13 | 6 | 28 | -43 |
| Food and kiadred produc | 18 | 19 | 19 | 16 | 11 | 8 | 5 <br> 15 | 14 | 26 | 32 | 92 |
| Textile-mill products.-. | 10 | 10 | 7 | -1 | -4 | $-6$ | -0 | -7 | -19 | -5 | -10 |
| Apparel and other finished fabric products. | 4 | 6 | 7 | 1 | -2 | -3 | -3 | -4 | 0 | 2 | 0 |
| Lumber and timber basic products....---- | 7 | 3 | 2 | 2 | 1 | 0 | 1 | 5 | 8 | 8 | - |
| Furniture and finished lumber products | 3 | 3 | 2 | 0 | -1 | -1 | -1 | 2 | 4 | 5 | 5 |
| Paper and allied products-1---.-.-. | 7 | 5 | 5 | 1 | -1 | 0 -7 | -6 -10 | -3 -8 | $-3$ | -3 -8 | -11 |
| Chemicals and allied products.......... | -10 | -11 | -12 | $-19$ | -15 | -13 | $-27$ | -19 | -17 | -17 | -23 |
| Products of petroleum and coal | -18 | -14 | - 32 | - 26 | 22 | 17 | 3 | 12 | 10 | 12 | $f$ |
| Rubber products. | 4 |  |  | 3 | 3 | 2 | -1 | 2 | ; | 8 | 6 |
| Leather and leather products. | 1 | 1 | 1 | -2 | $-3$ | -2 | -2 | $-2$ | 0 | 1 | 0 -2 |
| Stone, clay, and glass products-..-------.-.--- | 0 | 0 | -1 | -3 | -4 | -3 |  | -1 | 0 | 0 | -2 |
| Iron and steel and their products, including ordnance | 60 | 42 | 14 | 7 | 4 | 18 | -13 | 10 | 3 | 6 | -3 |
| Nonferrous metals and their products------------- | -1 | 0 | 0 | -3 | 0 | 1 | -4 | -4 | -5 | -6 | -8 |
| Machinery, except electrical. | -19 | -22 | -27 | -24 | -17 | -14 | -23 | -9 | $-10$ | -9 | -16 |
| Electrical machinery. | -6 | $-7$ | 0 | $-3$ | -7 | $-9$ | -4 | 1 | -3 | -3 | -6 |
| Transportation equipment, except automobiles-- | $-12$ | -11 | $-26$ | -35 | -24 | -25 | - 10 | -18 | $-20$ | -21 | -25 |
| Automobiles and automobile equipment Miscellaneous $^{\text {a }}$ - | $-24$ | -18 | -13 -2 | -8 -3 | -0 | -1 | -1 | -184 | -2 | -6 |  |
| Wholesale and retail trade | 47 |  | 31 | -21 | -55 | -74 | -86 | -49 | 10 | 28 | -23 |
| Wholesale trade..- | 13 | 17 | 14 | -4 | -7 | -3 | 1 | 14 | 23 | 29 | 13 |
| Retail trade and automobile services. | 34 | 34 | 17 | -17 | $-48$ | -71 | -87 | -63 | $-13$ | -1 | -36 |
| Finanee, insurance, and real estate. | 1,520 | 1,493 | 1,569 | 1,467 | 1,407 | 1,311 | 1,308 | 1,469 | 1,818 | 2.007 | 2,207 |
|  | -79 | -99 | -45 | -59 | $-73$ | $-109$ | -123 | -94 | -221 | -229 | -203 |
| Security and commodity brokers, dealers and | -33 | -33 | -32 | -39 | -45 | -50 | -50 | -41 | -42 | -47 | -74 |
|  | -33 | -41 | $-35$ | $-46$ | -32 | -44 | -82 | -96 | -82 | -144 | -270 |
| Insurance carriers. | 3 | 12 | 14 | 11 | -3 | -9 | -19 | -31 | -15 | -10 | $-{ }_{-7}$ |
| Insurance agents and combination offices | -5 | -5 | - -57 | 1, $\stackrel{-4}{4}_{4}^{4}$ | -5 1,565 | 1,528 | 1,587 | 1,739 | 2,190 | $\bigcirc .449$ | 2,784 |
|  | 1,667 | 1,659 | 1,672 | 1,604 | 1,565 | 1,528 | 1,587 | 1,739 | 2,190 | $\underline{2} 449$ | 2,784 |
| Transportation. | 568 | 545 | 501 | 471 | 445 | 414 | 361 | 338 | 322 | 329 | 323 |
| Railroads- | 501 | 484 | 448 | 419 | 398 | 379 |  | 299 | 27 | $\stackrel{13}{13}$ | 12 |
|  | 42 | 39 | 33 6 | $\begin{array}{r}34 \\ 3 \\ \hline\end{array}$ | $\begin{array}{r}34 \\ 3 \\ \hline\end{array}$ | 28 3 | ${ }^{2}$ | 5 | 0 | 11 | 11 |
| Highway passenger transportation, n.e.c.------ | 6 13 | 13 | 12 | 11 | 10 | 8 | 11 | 16 | 18 | 19 | 18 |
| Water transportation | 3 | 0 | 1 | 2 | 0 | -1 | -6 | -2 | 3 | 4 |  |
| Air transportation (common carriers) | 0 | 0 | -1 | -1 | $-1$ | -2 | -3 | 0 | 3 | 3 | 2 |
| Pipe-lire transportation.-.--.-.-.- | 2 | $\stackrel{2}{0}$ | 1 | 1 | 0 | -1 | -2 | -2 | -2 | -2 | -2 |
| Services allied to transportation.. | 1 |  |  |  |  |  |  |  |  |  |  |
| Communications and public utilities. | 380 | 355 | 389 | 375 | 350 | 350 50 | ${ }^{277}$ | 314 66 | 351 94 | 425 | 448 |
| Telephone, telegraph, and related services | 43 | 45 | 60 | 59 | -1 | 50 | $\xrightarrow{-1}$ | -2 | 1 | 1 | 1 |
| Radio broadcasting and television.- | ${ }^{0}$ | ( 0 | 0 316 | 304 | 286 | 289 | 220 | 237 | 242 | 283 | 302 |
| Utilities: electric and gas --.-.-.-- | 321 16 | 295 15 | 16 13 | 13 | 11 | 12 | 11 | 13 | 14 | 16 | 15 |
| Serpices |  |  |  |  | 574 | 585 | 720 | 968 | 1,199 | 1,417 | 1,754 |
|  | 923 |  | 32 | 33 | 32 | 31 | -33 | 39 | ${ }_{4}^{40}$ | 45 | $\stackrel{4}{4}$ |
| Personal services | 6 | 6 | 5 | 501 | 2 474 | -2 499 |  | 858 | 1,084 | 1.28\% | 1.633 |
| Private households -............ | 801 | 905 | 685 | 501 |  |  |  |  |  |  |  |
| Commercial and trade schools and employment |  |  |  |  |  | 0 | 1 | 0 | 1 | 1 | 1 |
|  | -3 | -3 | -1 | -3 | -3 | -3 | -6 | -6 | -6 | -6 |  |
|  |  |  |  |  | 3 | 3 | 3 | 5 | 5 |  | 4 |
| Miscellaneous repair services and hand trades--- | $\begin{array}{r}6 \\ 10 \\ \hline\end{array}$ | $\stackrel{5}{8}$ | $\stackrel{4}{8}$ | 6 | 6 | 6 | 2 | 3 5 | 4 | 3 | -1 |
| Amusenentand recreation, exceptmotionpictures- | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 5 | 0 | 8 | 6 |
| Medical and other health services.-....-.-.-.-- | 0 | 0 -3 | - ${ }_{-1}$ | 0 -3 | -3 | -2 | -3 | -3 | $-4$ | -4 | -5 |
|  | -3 | -3 | -3 | -3 |  |  |  |  |  |  |  |
| Engineering and other professional services, n.e.c. | -1 | -1 | -2 | $-2$ | $-28$ | -3 | -28 | -32 | 34 | 36 | 36 |
| Educational services, n.e.c..............-.-....-- | 42 | 38 | 35 30 | 30 | 29 | 29 | 29 | 30 | 30 | 35 | 38 |
|  | 29 |  | 30 4 | 4 | 4 | 2 | 3 | 3 | 3 | 3 |  |
| Nonproft membership organizations, n.e.c.-.-- |  |  |  |  |  |  | 140 | 173 | 225 | 211 | 215 |
| Rest of the world. | 120 | 126 | 130 | 115 | 118 |  |  |  |  |  |  |

Table 24.-Numher of Full-Time Equivalent Employees, by Industry, 1929-39 ${ }^{1}$
[Data in thousands]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total. | 35,295 | 33,245 | 30,107 | 26,661 | 27, 100 | 30,230 | 31,651 | 34,824 | 36,187 | 34,582 | 36,038 |
| Agriculture, forestry, and fisheries.- | 3,110 | 2,970 | 2,809 | 2,607 | 2,539 | 2,451 | 2,539 $\mathbf{2 , 4 2 9}$ | 2,664 2,561 | 2,759 2,631 | 2,734 2,620 | 2,698 2,595 |
| Farms .-.....-.-........... | 2,984 | 2,850 | 2,690 | 2,498 | 2,433 | ${ }^{2,34}$ | -45 | 2,42 | 60 | -53 | , 54 |
| Agrieutural and similar service establishments.-- | 49 | 48 | 52 | 42 | 42 | 46 | 43 | 38 | 45 | 37 | 25 |
| Forestry-.-.............. | 52 | $\stackrel{49}{23}$ | ${ }_{22}^{45}$ | ${ }_{21}^{42}$ | 21 | 22 | 22 | 23 | 23 | 24 | 24 |
| - |  |  |  |  |  | 822 | 840 | 897 | 955 | 859 | 832 |
| Mining | 993 | 932 | 813 79 | 572 | 693 50 | 60 | 71 | 92 | 119 | 95 | 103 |
| Nutalminink | 124 151 | 107 | $\begin{array}{r}79 \\ 128 \\ \hline 18\end{array}$ | 104 | ${ }_{92}$ | 106 | 99 | 98 | 988 | 89 416 | 88 881 |
|  | 471 | 452 | 418 | 358 | 373 | 431 | 443 | 457 | 470 192 | ${ }_{1}^{416}$ | 381 187 |
| Crume petroleutu nut natural gas.....-...-.-...- | 159 | 148 | 118 | $\begin{array}{r}103 \\ 55 \\ \hline\end{array}$ | 124 | 163 62 | 165 | 180 70 | 196 | 67 | 187 |
| Nommetallic mining and duarrying..............-- | 88 | 81 | 70 | 55 |  |  |  |  |  |  |  |
| Contracl construction- | 1,484 | 1,366 | 1,198 | 907 | 703 | 806 | 866 | 1,104 | 1,082 | 1,055 | ,219 |
| Manufacturing | 10,428 | 9,309 | 7,895 | 6, 678 | 7,204 | 8,364 | 8,904 | 9,645 | 10,591 | 9,131 | 9.967 |
| Food and kindred produ | 1.041 | 1,020 | 914 | 841 | 939 | 1,085 | 1.106 | 1.157 | 1,223 | 1,108 | , 107 |
| Tobacco manifactures- | 145 | - 133 | 120 | 108 | 1.081 | 1,139 | 1,196 | 1,218 | 1,263 | 1,092 | 1.215 |
| Textile-mill products | 1,262 | 1,095 | 1,025 |  | 1,681 | 1,699 | 1.768 | 1,829 | 1.843 | , 807 | 903 |
| Apparel and other tinished fabric products Lumber and tituber basic products. | 772 | 7429 | 303 | 225 | ${ }_{270}$ | 320 | 360 | 415 | 459 | 398 | 431 |
| Furniture and finiahed lumber produch |  | 371 | 321 | 261 | 279 | 289 | 329 | 364 | 398 | 342 | 384 |
| Praper and ullied projuct | 284 | 277 | 250 | 226 | 244 | 260 | 289 | 300 | 325 | 301 | 314 |
| Printink, pablishing, nad aillied industri | 615 | 617 | 548 | 481 | 440 | 492 | 510 | 554 | 604 | 578 | 577 |
| Chemicaly and alleet produets...... | 397 | 377 | 329 | 291 | 321 | 369 | 379 | 393 | 431 | 383 131 | 135 |
| Products of petrolemmand coal | 128 | 125 | 105 | 97 | 99 | 115 | 121 | 124 | 132 | 131 |  |
| Rubber products. | 176 | 142 | 120 | 110 | 124 | 141 | 134 | 142 | 154 | 127 | ${ }_{372}^{146}$ |
| I.enther and leather produets | 370 | 344 | 315 | 300 | 320 | 345 262 | 352 281 | 359 317 | 375 356 | 353 310 |  |
| Stone, clay, and plase products. | 397 | 345 | 277 | 204 | 212 | 262 | 281 | 317 | 356 |  |  |
| lron and steel and their products, including ordmance........................................ | 1,217 | 1,092 | 857 | 687 | 749 | 917 | 996 | 1,147 | 1,317 | 1,026 | 1,155 284 |
| Nonferrous metals ath their products.. | 325 | 269 | 222 | 175 | 182 | 220 | 249 | 277 | 313 | 256 |  |
| Muchinery, exrept electrical. | 764 | 671 | 509 | 373 | 392 | 505 | 577 | 664 | 791 | 626 | ${ }_{698}^{661}$ |
| Ehectrical machinery... | 519 | 430 | 332 | 242 | 251 | 319 | 338 | 385 | 461 | 353 | 186 |
| Tratsportation equipment, except automobiles -- | 150 | 147 | 105 | 80 | 71 | 101 | 105 | 137 | 171 | ${ }_{363}^{141}$ | 467 |
| Automubiler and automobile equipment........-- | [540 | 403 260 | 352 210 | 299 178 | 300 187 | 421 | 464 | 492 | 384 284 | 270 | 300 |
| Wholesale and retail trad | 5,820 | 5,523 | 5,052 | 4,473 | 4,448 | 4,958 | 5,164 | 5,561 | 6,017 | 5,890 | 6,129 |
| Wholesale trade. | 1.445 | 1,393 | 1,258 | 1,133 | 1,131 | 1,247 | 1,279 | 1,374 | 1,513 | 1,514 | 1,574 |
| Retail trade and automobile sertices | 4.375 | 4,130 | 3,794 | 3,340 | 3,317 | 3,711 | 3,885 | 4,187 | 4,504 | 4,376 | 4,530 |
| Finance, insurance, and real extate | 1,338 | 1,310 | 1,250 | 1,189 | 1,145 | 1, 167 | 1,182 | 1,227 | 1,268 | 1,265 | 1,299 |
| Manking-....-..- | 385 | 375 | 345 | 311 | 281 | 284 | 277 | , 276 | 285 | 286 |  |
| Security and commodity brokers, dealers and exchangers. | 128 | 103 | 88 | 80 | 89 | 83 | 74 | 85 | 83 | 68 | 62 98 |
| Finance, ne.e. | 130 | 128 | 120 | 114 | 108 | 106 | 108 | 114 | 116 | 102 | 337 |
| Insurance earrier | 281 | 288 | 283 | 278 | 267 | 273 | 285 | 290 | 305 |  | 119 |
| Insurature ngents and combin | 120 | 122 | 119 | 117 | 112 | 113 | 112 | 114 | 115 | 177 | 385 |
| Heal estate. | 294 | 204 | 295 | 289 | 288 | 308 | 326 | 348 | 364 | 373 |  |
| Transportation. | 2,874 | 2,632 | 2,280 | 1,934 | 1,841 | 1,910 | 1,933 | 2,046 | 2,159 | 1,897 | 1,990 1,114 |
| Mailroads. | 1,845 | 1,659 | 1,405 | 1,155 | 1,084 | 1,122 | 1,113 | 1,194 | 1,251 | 1,061 | 1.184 |
| Iocal railway and bus lines | 280 | 263 | 239 | 214 | 199 | 201 | 202 | 204 | 207 | 187 | 92 |
| Highway passenger transportation, nee.c---.-- Highway treight transportation and warehousing. | 130 | 124 | 117 | 109 | 103 | 93 | 92 | 94 | 94 | 93 270 | 290 |
| Hiphway treight transportation and warehousing. | 252 | 240 | 235 | 218 | 215 | 232 | 254 | 268 | 289 | 270 |  |
| Water transportation. | 167 | 159 | 144 | 130 | 135 | 145 | 148 | 142 | 151 | 134 | 140 |
| Air transportation (common carriers) | 3 | 4 | 5 | 6 | 6 | 6 | 8 | 10 | 12 | 13 | 15 |
| Pipe-line tranyportation.-.-... | 25 | 24 | 21 | 17 | 20 | 22 | 23 | 25 | 26 | -23 | 133 |
| Services allied to transportation | 172 | 150 | 114 | 85 | 79 | 89 | 93 | 109 | 129 | 116 |  |
| Communirations and public utilities. | 1,031 | 1,031 | 930 | 828 | 784 | 799 | 803 | 850 | 898 | 862 | ${ }_{402}^{868}$ |
| Telephone, telcuraph, and related se | 53.4 | 524 | 459 | 412 | 383 | 379 | 376 | 393 | 422 | 400 | 21 |
| Ratho broalcasting and television- | 46.5 | 473 | 437 | 384 | 371 | 386 | -13 | 15 418 | $\begin{array}{r}18 \\ 437 \\ \hline\end{array}$ | 423 | 423 |
| local utilities and public services, n | 28 | 28 | 26 | 23 | 22 | 18 23 | ${ }_{22}$ | 18 24 | 21 | 21 | 22 |
| Servires. | 5,023 | 4,844 |  | 4,001 | 3,858 | 4,2¢9 |  |  |  | 4,724 | 4,893 |
| Motels and other lodging | 387 | ${ }^{1} 371$ | , 331 | -282 | 3,868 | 4,313 | +327 | 4,649 | , 373 | , 373 | ${ }_{612}$ |
| Presonal services | 617 2,263 | 606 2.113 | 566 1.891 | 525 1.619 | 513 1.535 | $\begin{array}{r}549 \\ \hline\end{array}$ | + 575 | 613 | ${ }_{2}^{647}$ | 616 1.871 | 2,000 |
| Commercial and trade schools and employment agencies | 2,203 20 | 2.113 18 | 1,801 16 | 1,619 12 | 1,535 | 1.731 | 1,810 | 1,936 | 2.051 | 1.871 18 | 17 |
| Business servires, n.e.c. | 168 | 164 | 146 | 149 | 156 | 181 | 182 | 217 | 215 | 219 | 232 |
| Misedlanfous repair services and hand trades.-- | 59 | 58 | 57 | 56 | 56 | 56 | 56 | 57 | 57 | 58 | 58 |
| Motion pictures. | 142 | 143 | 140 | 122 | 119 | 135 | 148 | 164 | 177 | 171 | 173 |
| Amusementardrecreation, except motion pictures. | 253 | 235 | 205 | 156 | 135 | 147 | 148 | 164 | 182 | 163 | 1504 |
| Medical and other health services | 414 | 419 | 405 | 385 | 377 | 389 | 406 | 439 | 474 | 498 | 116 |
| I.ecal services.... | 90 | 94 | 99 | 100 | 101 | 100 | 104 | 105 | 108 | 112 |  |
| Engineering and other professional service | 35 | 37 | 29 | 21 | 21 | 23 | 25 | 29 | 31 | 33 | ${ }^{36}$ |
| Educational services, nee.e ${ }^{\text {2 }}$ | 224 | 228 | 232 | 233 | 233 | 234 | 240 | 244 | 251 | 259 | 15 |
| Religious organizations ....-- | 198 | 199 | 197 | 195 | 194 | 192 | 191 | 190 | 188 | 189 | 142 |
| Nonproht membership organizations, n.e.e. | 153 | 159 | 157 | 146 | 141 | 147 | 147 | 152 | 144 | 144 |  |
| Covernment and government enterprises. | 3,194 | 3,328 | 3,408 | 3,371 | 3,884 | 4,743 |  |  |  |  | 6,112 2 |
| Federal-general cowernment- ${ }^{\text {a }}$ | 538 | 581 | 562 | 551 | ,928 | 1,406 | 1,452 | 3,155 | 2,467 | 2,974 | 2,571 |
| - Cinilian, except work relief |  |  |  | 300 251 | 306 249 | $\begin{array}{r}1,369 \\ 250 \\ \hline\end{array}$ | $\begin{array}{r}1.461 \\ \hline 263 \\ \hline\end{array}$ | - 5.51 | $\begin{array}{r}2,527 \\ \hline 313\end{array}$ | 518 326 | 342 1.990 |
| Work relief ${ }^{\text {a }}$ | 20 | 201 | 257 | 251 | 249 373 | 250 | 7263 | $\begin{array}{r}290 \\ 2.334 \\ \hline\end{array}$ | 313 1.627 | 518 2,130 | ${ }^{1,996}$ |
| Federal-government enterp | 299 | 300 | 298 | 297 | 300 | 787 323 | 728 336 | 2.334 | 1,6279 | 2,366 | 373 |
| State and local-general government | 2.247 | 2,331 |  |  |  |  |  |  |  |  | 2,733 |
| Public education? | 1,082 | 1.110 | 1,120 | 1,109 | 1,084 | 2,909 | 3.145 1.112 | 2,541 1,134 | 2, 1,169 | 1,190 | 1,497 |
| Nonschool except work relief | 1.165 | 1.217 | 1,267 | 1,223 | 1,174 | 1,223 | 1,268 | 1,135 | 1,401 | 1,496 | 1. |
| State and local-government enterprise | 110 | 116 | 147 |  | 299 | ${ }^{603}$ | . 765 | ${ }^{1} 55$ | , 33 | ${ }^{6}$ | 128 |
|  |  |  | 117 | 104 | 99 | 105 | 110 | 119 | 125 | 126 |  |
| Rest of the world | 0 | 0 | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 |  |
| Addendum: All private industries - | 32,101 | 29,917 | 26,698 | 23,289 | 23,215 | 25,485 | 26,607 | 28,665 | 30,646 | 28,417 | 29,693 |

${ }^{1}$ Full-time equivalent employment measures man-years of full-time employment of wape and siment is tefinet simply in terms of puther by parime wor ticular time and place. For a full eaplanation of the concept. see Survey of Current 1 School teachers are con

Table 24.-Number of Full-Time Equivalent Employees, Iby Industry, 1940-;0):
[Data in thousuds]

|  | 1940 | 1941 | 1042 | 1043 | 1944 | 1945 | 1946 | 10.17 | 1948 | 19.94 | 14,0) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total. | 37,981 | 42,556 | 47,630 | 53,782 | 55. 154 | 53,315 | 46,962 | 46.977 | 47,836 | 46,563 | 4H, 236 |
| Agriculuure, forestry, and fisheries. | 2.668 | 2,632 | 2. 666 | 2.540 | 2.367 | 2, 223 | 2, 298 | \#, 366 | 2,440 | 2,390 | 2.277 |
| Farms --1.-.-. | 2,506 | 2,532 | 2.560 | 2.43) 5 | 2,260 6 | 2,115 | 2.173 | 2.216 | 2,317 | 2, 2108 | 2, 71 |
| Forestry | 24 | 22 | 22 | 22 | 20 | 20 | 21 | 2 | 2.4 | 23 | 22 |
| Fisheries- | 24 | 24 | 24 | 24 | 24 | 27 | 27 | 27 | 28 | 30 | 30 |
| Mining. | 927 | 975 | 985 | 917 | 879 | 829 | 871 | 938 | 986 | 915 | 919 |
| Metal mining | 118 | 131 | 132 | 132 | 107 | 83 | 88 | 8 | 101 | ${ }_{7}^{81}$ | 818 |
| Anthracite mining |  | ${ }_{4}^{9}$ | 817 | $\begin{array}{r}84 \\ 434 \\ \hline 174\end{array}$ | $\begin{array}{r}80 \\ 415 \\ \hline\end{array}$ | 73 388 | 38 | 42, | 452 | 398 | 36 |
| Crude petroleum and natural gas. | 196 | 204 | 183 | 177 | 198 | 208 | 22 | 235 | 25.5 | 298 | 238 |
| Nonmetallic mining and quarrying | 83 | 96 | 101 | 90 | 79 | 73 | 83 | 95 | 97 | 96 | 38 |
| Contract construction. | 1,285. | 1,764 | 2,131 | 1,566 | 1,110 | 1,135 | 1,739 | 2,060 | 2,274 | 2,123 | 2,342 |
| Manufacturing | 10,882 | 13,137 | 15,284 | 17.412 | 17,050 | 15, 186 | 14.993 | 15.215 | 15,285 | 14, 172 | 14,951 |
| Food and kindred prod | 1,223 | 1,303 | 1.388 | 1,405 | 1,441 | 1.431 | 1. 100 | 1.530 | 1, ${ }^{129}$ | 1,101 | 1,017 |
| Tobacco manufactures | 104 | 103 | 96 | 102 | 100 | 102 | 104 | ${ }_{1} 1199$ |  | 1,231 | 1,2073 |
| Textile-mill products | 1,223 | 1,383 | 1,388 | 1,321 | 1,217 | 1,1631 | 1,313 1,117 | 1,327 1,128 | 1,174 | 1,235 | 1,183 |
| Appirel and other finished fabric p | 918 500 | 1,043 603 | 1,073 | $\begin{array}{r}1.073 \\ 585 \\ \hline\end{array}$ | 1,049 | 1.624 | - 578 | '608 | ©69 | 67.4 | 630 |
| Furniture and finished lumber produd | 406 | 460 |  | 421 | 406 | 402 | 480 | 0.52 | 5.51 | 510 | 564 |
| Papar and allied products. | 336 | 378 | 380 | 373 | 390 | 324 | 449 | 464 | 470 | 483 | 483 |
| Printirg, publishing, and allied i | 508 | 581 | 55.5 | 550 | 5.50 | 569 | ${ }^{\text {Gfi }}$ | 70.5 | 72 | 689 | 741 |
| Chemicals and allied products | 463 | 580 | 780 | 847 | 790 | 776 | 70.7 | - 228 | 7235 | 22. | 769 231 |
| Products of petroleum and coal | 151 | 168 | 183 | 180 | 197 | 207 |  |  | 23.8 | 22. |  |
| Rubber products | 156 | 187 | 187 | 224 | 239 | 234 | 266 | 4270 | 459 | 2368 | 2.50 393 |
| Leather and leather produc | 367 369 | 410 | 403 | 375 | 38.5 | 381 | 47.4 | ${ }_{5}^{403}$ | 523 | 480 | 517 |
|  | 369 | 433 | 436 | 413 | 386 |  |  |  |  |  |  |
| ordnance ---.-.-.-.-.-.-.-............. | 1,331 | 1,641 | 1,960 | 2,460 508 | 2.424 | 2.072 457 | 1,670 498 | $\begin{array}{r}1,863 \\ \hline 88\end{array}$ | 1.872 476 | 1,600 | 1.830 4.2 |
| Nonferrous metals and their products............ | 328 | 410 |  |  |  |  |  |  |  | 1,338 | 1.387 |
| Machinery, except electrical | 792 | 1,087 | 1,363 | 1,457 | 1,405 | 1,331 | 1,373 | 1.549 | 1,662 | 1,338 | 1.388 |
| Electrical machinery... | 455 | 607 | 1757 | 3, 971 | 1.037 | 2,024 | 873 | 512 | 471 | 400 | 416 |
| Transportation equipment, except automobiles-- | 301 543 | 675 | 1,745 | 3,275 | ${ }_{3}{ }^{1} 171$ | 2308 | 667 | 747 | 76 | 743 | 810 |
| Automobiles and automobile equipment. | 342 | 422 | 468 | 524 | 407 | 483 | 536 | 537 | 52.5 | 482 | 634 |
| Wholesale and ret | 6,479 | 6,922 | 6,763 | 6,605 | 6, 625 | 6,857 | 8,127 | 8,574 | 8.832 | 8.725 | 8, 904 |
| Wholesale tra | 1,626 | 1,725 | 1,653 | 1,557 | 1.573 | 1,675 | 1,971 | 2.158 | 2,255, | ${ }_{6}^{2}, 212$ |  |
| Retail trade and automob | 4,853 | 5,197 | 5,110 | 5,046 | 5,032 | 5,182 | 6,150 | 6,416 | 6.577 |  |  |
| Finance, insurance, and real e | 1,345 | 1,384 | 1,364 | 1,320 | 1,300 | 1,326 | 1,511 | 1,553 | 1.603 | 1,623 | 1,689 |
| Banking-......... | 296 | 303 | 319 | 328 | 336 | 343 | 374 | 313 | 407 | 411 |  |
| Security and commodity brokers, dealers and exchanges | 58 | 50 | 41 | 38 | 39 | 42 | 53 | 49 | 43 | 46 | 49 |
| Finance, nee.-...-.......- | 105 | 113 | 105 | 86 | 78 | 81 | 97 | 102 | 109 | 113 | 124 |
| Insurance earriers | 348 | 357 | 35.3 | 337 | 323 | 3337 | 372 14 | 1424 | 4.54 | 158 | 197 |
| Insurance agents and | 118 | 120 435 | 121 | 118 413 | 115 | 48 | 455 | 433 | 441 | 422 | 438 |
| Real estate.- | 420 | 435 |  |  |  |  |  |  |  |  |  |
| Transportation. | 2,072 | 2,257 | 2,413 | 2,630 | 2,810 | 2,886 | 2,876 $1,56.4$ | 2,874 | 2,808 | 2,610 | 2.649 |
| Railroads. | 1,160 | 1,285 | 1.427 167 | 1,534 | $\begin{array}{r}1.810 \\ 185 \\ \hline 185\end{array}$ | 1.187 | 1.003 | 1.178 | 171 | 168 | 15.5 |
| Local railways and bus lines. | 170 100 | 1161 | 125 | 184 | 157 | 165 | 197 | 208 | 21.4 | 208 | 198 |
| Highway passenger transportation, n.e.e.--.---- Highway freight transportation and warehousing- | 100 | 110 | 337 | 395 | 330 | 338 | 440 | 461 | 482 | 479 | 531 |
|  |  |  |  | 137 | 205 | 247 | 200 | 178 | 163 | 137 | 120 |
| Water transportation..- | 142 | 144 | 107 | 46 | 47 |  | 81 | 82 | 78 | 77 | 70 |
| Air transportation (common carriers) | 19 | 24 | +37 | 25 | 2 f | 25 | 27 | 29 | 30 | 29 | 101 |
| Pervices allied to transporta | 137 | 133 | 127 | 153 | 181 | 181 | 162 | 170 | 167 | 161 | 101 |
| mmunications and public utilit | 898 | 952 | 944 | 909 | 897 | 911 | 1,100 | 1,177 | 1,263 | 1,231 | 1,269 |
| mmunications and public uti | 410 | 450 | 474 | 493 | 483 | 577 | 613 | 64 | 47 | 4 | 53 |
| Radio broadcasting and television. | $\underline{23}$ | $\stackrel{26}{454}$ | 427 | 329 | 31 353 | 359 | 427 | 470 | 5006 | 521 | 527 |
| Utilitiest electric and gas- | 443 22 | 454 22 | ${ }_{21}$ | 18 | 18 | 19 | 22 | 23 | 23 | 23 | 22 |
| Local athles and publo services, |  |  |  |  |  |  |  | 5,503 | 5,621 | 5.645 | 5,930 |
| Services | 5,156 | 5,227 | 5,340 | 5,097 419 | 5.033 419 | 4,993 | 5.283 | 5.456 | 4.1 | 431 | 432 |
| Hotels and other lodgin | 387 | 403 734 | 464 | ${ }^{477}$ | 4.75 | 767 | 884 | 8306 | 838 1.617 | 815 1.6 .58 | 810 1,864 |
| Personal services | 677 2,120 | 734 2,020 | 768 1,980 | 1,689 | 1.616 | 1,572 | 1,472 | 1.603 | 1,617 | 1,6.38 | 1,864 |
| Commercial and trade schools and employment |  |  |  |  |  | 21 | 25 | 31 | 34 | 37 | 39 |
|  | ${ }_{2} 16$ | 246 | 236 | 226 | 238 | 254 | 307 | 329 | 350 | 347 | 357 |
| Businers services, n.e.c.---...-- | 234 |  |  |  |  |  |  |  | 106 | 101 | 102 |
| Miscetlaneous repair setvices and hand trades...- | 56 | 63 | 65 173 | 75 | ${ }^{79} 9$ | 815 | 122 | 22, | 22.5 | 225 | 223 |
| Motion pictures...-------------.- | 174 | 184 | 173 <br> 204 | 173 | 176 | 197 | 233 | 235 | 242 | 237 | 234 |
| Amusementand recreation, except motion pictures. | $\begin{array}{r}186 \\ 530 \\ \hline\end{array}$ | 55 | 572 | 621 | 641 | 630 | 646 | 70. 130 | 761 135 | 77. | 814 142 |
| Medical and other health services.-- | 116 | 117 | 115 | 111 | 105 | 103 | 123 | 130 | 135 | 138 | 142 |
|  |  |  |  | 63 | 57 | 66 | 82 | 93 | 106 | 103 | 104 |
| Engineering and other professional services, n.e.c- |  | 270 | 266 | 266 | 269 | 266 | 280 | 319 | 346 | 353 | 363 199 |
|  | 100 | 190 | 173 | 175 | 176 | 177 210 | 115 218 | 113 215 | 215 | 212 | 211 |
| Nonproft membership organizations, n .e.c.e.-.--- | 157 | 162 | 193 | 210 | 213 | 210 | 218 |  |  |  |  |
| Government and government enterpri | 6, 267 | 7,303 | 9,735 | 14,789 | 17,088 | 16,767 | 8,729 | 6,712 3,061 | 6.707 2,870 | 7.063 3.047 | 7,301 |
| Federal-general government-1................- | 2,911 | 3,937 | 6,4i4 | 11.575 | 13, 910 | 13, | 1,874 | 1,462 | 1,403 | 1,443 | 1.430 |
| Civilian, excapt work relief | 653 | ${ }^{857}$ | 1.719 4.154 | 9,027 | 11,365 | 11,302 | 3.434 | 1,539 | 1,408 | 1.63 | 1.704 |
| Mititary ${ }^{\text {- }}$ | 549 | 1,676 | 4,601 |  |  |  |  |  |  |  |  |
| Work relist ${ }^{\text {b }}$. | 1.787 | 1,364 | 416 | 433 | 442 | 462 | 434 | 504 | 513 | 551 | 563 |
| Federal-government enterprises | 385 | 333 |  |  |  |  |  |  |  |  |  |
| State and local-gencral gover | 2,745 | 2,743 | 2.672 | $\stackrel{2,603}{1,178}$ | 2,587 | 2,604 | 2,776 | 2.37\% | 1,312 | 1,363 | 1,425 |
| Public education ${ }^{\text {2 }}$. | 1,228 | 1.234 | 1, 223 | 1,403 | 1,181 | 1,181 1,423 | 1,552 | 1,700 | 1;827 | 1,922 | 1,995 |
| Nonschool, except work relief. |  | 1.503 6 | 1.467 | 1.403 | 1,400 | , |  | 170 | 170 | 180 | 184 |
|  | 146 | 158 | 153 | 155 | 149 | 148 | 101 | 170 | 179 | 180 | 18. |
|  | 2 | 3 | 5 | 7 | 5 | 5 | 5 | 5 | 5 | 5 |  |
| Rest of the world ${ }^{\text {a }}$ |  |  |  |  |  |  |  | 40,260 | 41.124 | 39,490 | 40.930 |
| Addendum: All private ind | 31,712 | 35.230 | 37.890 | 38.986 | 38.061 | 36.3.0 |  |  |  |  |  |

1Full-time equivalent employment messures man-ye irs of full-time employment of wage
 ticular time and dine simply in terms or an of the concept, sce Surver of Current Business, June 1955 po $17-18$
Digitized ASthonterehers are considere 1 to be employed durinz vacation perio is Inelu les United States citizens, but not foreigners, employe. 1 abroid by the United http://frastates (roverameato
Federal Reserve Bank of St. Louis

+ Inclules personnel stationel abrosil, but personnel rectuited from the territories is oxclu ien.
BRecume of the exceptional character of work relief employment full-time equivalent
empent has been computed for all years by use of a 40 hour week as a measure of fulfemplayment his
time employment. Unite 1 States by foreign governments an 1 international organizations.

Table 25.-Average Number of Full-Time and Part-Time Employees, by Industry, 1929-39 1
[Data in thousands]

|  | 1029 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, totat. | 37,029 | 34,993 | 32,064 | 28,812 | 30,293 | 33,497 | 34,891 | 37,924 | 39,129 | 37,847 | 39, 174 |
| Agriculture, forestry, and nisheries. | 3,136 | 2,995 | 2,836 | 2,631 | 2,561 | 2,469 2,346 | 2,562 $\mathbf{2 , 4 2 9}$ | 2,685 2,561 | 2,788 2,631 | 2,761 2,620 | 2,726 $\mathbf{2 , 5 4 5}$ |
| Agricuture, Forestry, and nateries. | 2,984 | 2,8:0 | 2,690 | 2,498 | 2,433 | 2,346 | 2,429 68 | 2,561 | 2,031 | 2,80 | ${ }^{2} \times 2$ |
| Agricuitural and similar service establishments.- | 75 | 73 49 | 79 45 | ${ }_{42}^{70}$ | 42 | 46 | 43 | 38 | 45 | 37 | 25 |
| Foreatry...-- | 25 | $\stackrel{4}{23}$ | $\stackrel{45}{42}$ | 21 | 21 | 22 | 22 | 23 | 23 | 24 | 24 |
|  |  |  | 813 | 672 | 693 | 822 | 840 | 897 | 955 | 859 | 832 |
| Mining.- | 124 | 107 | 79 | 50 | 50 | 60 | 71 | 92 | 119 | 95 | 103 |
| Metal mining- | 151 | 144 | 128 | 104 | 92 | 106 | 99 | 98 | 98 | 89 | 888 |
| Anturainots and other soft coal | 471 | 452 | 418 | 358 | 373 | 431 | 443 165 | 457 180 | 470 192 | ${ }_{192}^{416}$ | ${ }_{187}$ |
| Crade petroleuna and natural cas. Sonmetalic mining and quarry ing. | 159 88 | 148 81 | 118 70 | 105 | $\begin{array}{r}124 \\ 54 \\ \hline\end{array}$ | 163 62 | 165 62 | 180 70 | 196 | 67 | 73 |
| Contract constru | 1,484 | 1,366 | 1,198 | 907 | 703 | 806 | 866 | 1,104 | 1,082 | 1,055 | 1,219 |
|  |  |  | 7,895 | 6,678 | 7,204 | 8,364 | 8,904 | 9,645 | 10,591 | 9,131 | 9,967 |
| Manufacturing Food and kiadred pro | 10,428 1,041 | 9,309 | 7,814 | 6,641 | 7,939 | 1,085 | 1,106 | 1,157 | 1,223 | 1,166 | 1,175 |
| Tobareo manufactures | 14is | 133 | 120 | 108 | 102 | 112 | 108 | 109 | 113 | 108 | , 215 |
| Textile-mill products. | 1,262 | 1,095 | 1,025 | 907 | 1,081 | 1,139 | 1,196 | 1,218 | 1,243 | , 807 | , 903 |
| Apparel and other thinhed fabric proder | 772 | 722 469 | 072 303 | 293 | 632 270 | ${ }_{320}^{699}$ | 768 360 | 415 | 459 | 398 | 431 |
| Lumber and timber busic products | 604 | 469 | 303 |  |  |  |  |  |  |  |  |
| Furniture und finished lumber products | 437 | 371 | 321 | 261 | 279 244 | 289 280 | 329 289 | 364 300 | 398 | 342 301 | 314 |
| Paper and allied products - -------- | 284 | ${ }_{617}^{277}$ | 231 548 | 226 | 449 | ${ }_{492}$ | 510 | 554 | 604 | 578 | 577 |
| Chemimests and allied products......-. | 397 | 377 | 329 | 291 | 321 | 369 | 379 | 393 | 431 | 383 | ${ }_{135}^{414}$ |
| I'roducts of petroleum and coal | 128 | 125 | 105 | 97 | 99 | 115 | 121 | 124 | 132 | 131 |  |
| Rubber produets. | 176 | 142 | 120 | 110 | 124 | 141 | 134 | 142 | 154 | 127 | ${ }_{3}^{146}$ |
| Leather and lenther proshert | 370 | 344 | 315 | 300 | 320 | 345 | ${ }_{281}$ | 359 317 | 375 356 | 310 | 343 |
| Stone, chay, und chass products---...-.-.-.-..- | 397 1,217 | 345 1,092 | 277 857 | 687 | 749 | ${ }_{917}^{262}$ | ${ }_{996}^{281}$ | 1,147 | 1,317 | 1,020 | 1,155 |
| Nonferrons metnla und their iroducts. | 1217 325 | 1,092 | 222 | 175 | 182 | 220 | 249 | 277 | 313 | 256 | 284 |
| Machinery, exeept eleetrical. | 764 | 671 | 509 | 373 | 392 | 505 | 577 | 664 | 791 | 626 | ${ }_{398}^{661}$ |
| Electridal machinery. | 519 | 430 | 332 | 242 | 251 | 319 | 338 | 385 | 461 | 353 |  |
| Trnnsportation equipment. except antom | 150 | 147 | 105 | 80 | 71 | 101 | 105 | 137 | 171 | 141 | 467 |
| Automotiles and anomobile equipment. Miscellaneors. | 580 285 | 403 260 | 352 210 | 239 178 | 300 187 | ${ }_{221}^{433}$ | 464 242 | ${ }_{262}^{492}$ | 580 284 | $\begin{array}{r}363 \\ 270 \\ \hline\end{array}$ | 300 |
| Wholegale and retail trade | 6,419 | 6,139 | 5,662 | 5,049 | 5,061 | 5,552 | 5,696 | 6,145 | 6,659 | 6,527 | 6,805 |
| Wholesale trade. | 1,557 | 1,501 | 1,356 | 1,222 | 1,221 | 1,323 | 1,336 | 1,429 | 1,569 | 1,566 | 5,180 |
| Retail trade and automoh | 4,862 | 4,638 | 4,306 | 3,827 | 3,840 | 4,229 | 4,360 | 4,716 | 5,090 | 4,801 |  |
| Finance, insurance, and real estate | 1,442 | 1,411 | 1,345 | 1,281 | 1,235 | 1,257 | 1,273 | 1,323 | 1,367 | 1,359 | 1,393 |
|  | 387 | 377 | 347 | 313 | 281 | 286 | 279 | 278 | 287 | 288 |  |
| Eccurity and commodity brokers, dealers and exchanges- | 156 | 126 | 107 | 97 | 109 | 101 | 89 | 103 | 101 | 82 | ${ }^{76}$ |
| Finatuce, ne.e | 153 | 151 | 143 | 135 | 128 | 126 | 129 | 135 | 138 | 122 | 346 |
| Insurance carrie | 289 | 296 | 291 | 286 | 274 136 | 280 | 293 | 298 | 314 139 | 142 | 144 |
| Insurance agenta Real entate. | 145 312 | 148 313 | 144 | 142 308 | 136 307 | 137 327 | 1347 | 1381 | 138 | 397 | 420 |
| Transportation. | 2,959 | 2,711 | 2,352 | 1,998 | 1,899 | 1,974 | 2,004 | 2,121 | 2,240 | 1,973 | 2,073 |
| Mailroads | 1,84i | 1,659 | 1,405 | 1,155 | 1,084 | 1,122 | 1,113 | 1,194 | 1,251 | 1,061 | 1,184 |
| l ocal railways and hus line | 280 | 263 | 239 | 214 | 199 | 201 | 202 | 204 | 207 | 187 | 93 |
| Hichway paskenger transportation, n.e.e.---...- | 133 303 | ${ }_{299} 120$ | 120 282 | ${ }_{263}^{112}$ | 104 | 97 | 94 | 96 | 96 346 | $\begin{array}{r}94 \\ 324 \\ \hline\end{array}$ | 347 |
| Hizhway freight transportation amd warehousing. | 303 | 299 | 282 | 263 | 258 | 278 | 305 | 322 | 346 |  |  |
| Water transportation_- | 176 | 167 | 152 | 137 | 141 | 152 | 155 | 149 | 158 | 141 | 15 |
| Services allied to transportation | 194 | 160 | 128 | 94 | 87 | 99 | 104 | 121 | 144 | 130 |  |
| Communications and public utitities | 1,031 | 1,031 | 930 | 828 | 785 | 800 | 804 | 852 | 900 | 864 | 8700 |
| Telephone, telegraph, and related services | 534 | 524 | 459 | 412 | 383 | 379 | 376 | 393 | 422 | 400 | ${ }_{23}$ |
| Radio broadcasting and television | 465 | 6 473 | 48 | $\begin{array}{r}9 \\ 38 \\ \hline\end{array}$ | ${ }^{9}$ | 12 | 14 | 17 | 20 | $\stackrel{20}{423}$ | 423 |
| Local utilities and public services, n.e.c |  | 478 28 | 437 26 | 38 23 | 371 22 | 386 23 | ${ }_{29}$ | 4 | 437 | 21 | 22 |
| Services.. | 5,579 | 5,379 |  |  |  | 4,688 | 4,857 | 5, 183 |  | 5,228 | 5, ${ }^{405}$ |
| Hotels and other lorging plac | 398 | 384 | 344 | 296 | 281 | ${ }^{3} 31$ | , 346 | ${ }^{570}$ | 5 397 | 398 | 656 |
| Prersonal servicey- ${ }^{\text {Prate }}$ | - $\mathbf{6 , 5 1}$ | 2, 357 | 607 2.109 | 564 1,806 | 553 1,712 | 591 1,931 | 618 2.019 | 658 2.159 | 694 2.288 | 661 $\mathbf{2 , 0 8 7}$ | 2,231 |
| Commercial and trade schonls and employment arencics. | -r-4 | 2, 22 | -18 | 1,800 15 | 1,712 14 | 1,931 15 | 2,019 | 2,159 20 |  | 21 | 21 |
| Business services, n.e.c | 201 | 196 | 173 | 178 | 185 | 216 | 218 | 253 | 258 | 262 |  |
| Miscellaneous repair services and hand trades..- | 76 | 74 | 73 | 72 | 72 | 72 | 72 | 72 | 73 | 73 | 74 |
| Motion pictures.- | 158 | 160 | 156 | 135 | 133 | 147 | 159 | 178 | 193 | 187 | ${ }_{215}$ |
| Amusementand recreation, except motion pictures | 313 | 290 | 261 | 205 | 183 | 193 | 190 | 205 | 224 | 201 | 504 |
| Aedical and other health services ${ }^{3}$ | 414 | 419 | 405 | 385 | 377 | 389 | 406 | 439 | 474 | 498 | 126 |
| Legal services... | 98 | 103 | 108 | 109 | 110 | 109 | 113 | 114 | 118 | 122 |  |
| Engineering and other professional services, | 35 | 37 | 29 | 21 | 21 | 23 | 25 | 29 | 31 | 33 | $\stackrel{37}{ }$ |
| Educational scrvices, n.e.c.' | 224 | 228 | 232 | 233 | 233 | 234 | 240 | 244 | 251 | 259 | 209 |
| Religious organizations ${ }^{2}$ - | 222 | 223 | 221 | 219 | 217 | 215 | 213 | 213 | 210 | 210 | 211 |
| Nonprofit membership organizations, $n$. | 231 | 237 | 229 | 223 | 215 | 223 | 221 | 229 | 215 | 216 |  |
| Government and government enterprises | 3,558 | 3,720 | 4,067 | 4,306 | 5,845 |  |  |  |  | 8,089 | 7,865 4,129 |
| Federal-general government | 538 | 581 | 562 | 551 | 1,026 | 1,759 | 1,714 | 4,474 | 3,547 | 4,416 | 4,571 |
| Civilian, except work relief | ${ }_{261}^{277}$ | 320 | 305 |  | 306 | 369 | , 461 | , 531 | 527 | 518 | 342 |
| Wort relief | 261 | 261 | 257 | 251 | 249 | +250 | 263 | 290 | 313 | - 326 | 3.216 |
| Federal-government enterprise | $3 \overline{3} 7$ | 339 | 336 | 333 | 475 335 | 1,140 | 990 374 | 3,653 | 2,707 | 3,512 | 410 |
| State and local-general gover | 2,562 | 2,673 |  |  |  |  |  |  |  | 3.129 | 3.183 |
| Public education ${ }^{\text {- }}$ | 1,120 | 1,150 | 1,160 | 1,148 | 1,122 | 1,122 | 4,870 | 2,978 | 3,024 | 1,239 | 1, 1.867 |
| Nonschool, except work r | 1,442 | 1,503 | 1,580 | 1,564 | 1,524 | 1,570 | 1,621 | 1,713 | 1,762 1,762 | 1,871 | 1,879 |
| Work relief |  | 20 | 299 | 592 | 1,724 | 1,834 | 2,097 | 1, 91 | 1, 56 | 19 | 143 |
| State and local-government enterp |  | 127 | 130 | 118 | 114 | 120 | , 126 | 135 | 140 | 140 |  |
| Rest of the world ' | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  |
| Addendum: All private industries. | 33,471 | 31,273 | 27,936 | 24,505 | 24,447 | 26,732 | 27,806 | 29,955 | 32,030 | 29,757 | 31,30 |

Table 25.-Average Number of Full-Time and Part-Time Employees, by Industry, 19:10-50 1
[Data in thousands]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | $19: 7$ | 1948 | 1939 | 1230 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total | $\begin{gathered} 40,930 \\ 2,96 \\ 2,566 \\ 2662 \\ 24 \\ 24 \\ 24 \\ 927 \\ 118 \\ 4.91 \\ 139 \\ 196 \\ 83 \end{gathered}$ | $\begin{array}{r} 45,353 \\ 2,66 \\ 2,632 \\ 2_{2}, 62 \\ 822 \\ 24 \\ 24 \end{array}$ | 49,926 | 55,735 | 57,064 | 55, 269 | 49, 154 | 49,26,5 | 50, 185 | 48,903 | 50,666 |
| gulture, forestry, and |  |  |  |  |  | $\begin{gathered} 2,252 \\ \substack{2,150 \\ 2,150 \\ 200 \\ 202 \\ 27} \\ 27 \end{gathered}$ | $\begin{gathered} 2,322 \\ 2,173 \\ \substack{172 \\ 201 \\ 21 \\ 0, ~} \end{gathered}$ |  | ${ }_{2}^{2.478}$ |  | 2.314 |
| Farms $A$ and and and similar serviee estabishm Forcstry |  |  |  |  |  |  |  |  |  |  | (230 |
|  |  |  |  | $\begin{gathered} 1172 \\ \hline 184 \\ \hline 84 \end{gathered}$ | $\begin{aligned} & 100 \\ & 100 \\ & 40 \end{aligned}$ |  | 871$\begin{gathered}88 \\ 82\end{gathered}$88 | $\begin{gathered} 938 \\ 908 \\ 90 \\ 80 \end{gathered}$ |  | 945 | 9199878 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | $\begin{aligned} & 1777 \\ & 90 \end{aligned}$ | $\begin{aligned} & 458 \\ & 1,98 \\ & 79 \end{aligned}$ | $\begin{aligned} & 388 \\ & 2068 \\ & 73 \end{aligned}$ | $\begin{aligned} & 3.31 \\ & 3,21 \\ & 89 \end{aligned}$ |  |  |  |  |
|  |  |  | $\begin{gathered} 480 \\ \hline 180 \\ 100 \end{gathered}$ |  |  |  |  | - |  |  |  |
| Contract construction. | 1,2ss | 1,664 | 2,131 |  |  |  | 1,739 | 2,060 | 2,274 | ${ }^{2.129}$ | 2,342 |
| Manulaturing Forind $^{\text {a }}$ | 10, ${ }_{\text {cese }}^{1223}$ | $\begin{array}{r} 13,137 \\ 1,303 \\ 1,103 \\ 1,83 \\ 1,043 \end{array}$ | $\begin{aligned} & 15,284 \\ & 1,385 \\ & 1,38 \\ & 1,388 \\ & 1.38 \\ & \hline 18 \end{aligned}$ |  |  | $\begin{gathered} 15,186 \\ 1,402 \\ 102 \\ 102 \end{gathered}$ | cisitis3 | (15,215 |  | ${ }_{\substack{14,172 \\ 1,50, 1}}$ | cise |
| Toobaco manuta |  |  |  |  |  |  |  |  |  |  |  |
| Textie-mill products |  |  |  |  |  |  | -1,117 | 1,1,288 | 1,39 | 1,1:3 |  |
| Lumber and tim |  | $\begin{aligned} & 1,383 \\ & \hline, 030 \\ & 609 \end{aligned}$ | $\begin{aligned} & 1,0,088 \\ & \hline, 033 \\ & \hline, 038 \end{aligned}$ | $\begin{aligned} & 1,075 \\ & 5850 \\ & 505 \end{aligned}$ |  |  |  |  |  |  |  |
| Furniture and finished lumber products. <br>  Chemicals and allied products- Products of petroleum and coal | ${ }^{406}$ | $\begin{gathered} 460 \\ \begin{array}{c} 378 \\ 888 \\ 550 \\ 580 \end{array} \end{gathered}$ | $\begin{aligned} & 3.450 \\ & 3805 \\ & 5050 \end{aligned}$ |  |  | - 480 |  |  | 70 |  | ${ }_{741}$ |
|  | ${ }_{568}^{368}$ |  |  |  |  |  |  |  | 行 |  |  |
|  | ${ }_{151}^{469}$ |  | ${ }_{183}^{780}$ | 819 180 180 |  |  | (10.5 | 723 <br> 228 | ${ }_{23}^{723}$ | $\xrightarrow{\substack{29 \\ 20}}$ | ${ }_{231}^{736}$ |
| Rubber products <br> eather and leather products. <br> Stone, clay, and glass product |  | $\begin{gathered} 410 \\ 433 \end{gathered}$ |  | 224 <br> 375 <br> 413 <br> 15 |  | 81 | 26, | 270 | (en9 |  |  |
|  | ${ }_{369}^{367}$ |  |  |  |  |  |  |  |  |  |  |
| Iron and steel and their products, including | 1,331 | 1,641 | - 1.9600 | 2,460 | ${ }^{2}+1424$ | ${ }^{2} .8078$ | 1.670 | 1.863, | 1.872 4.86 | 1.6.690 |  |
| Nonierrous metals and their |  |  |  |  |  | $\begin{gathered} 1,335 \\ \hline, 024 \\ \hline \end{gathered}$ |  |  |  |  |  |
| Me | 792 | $\left.\begin{gathered} 1,087 \\ 607 \\ 675 \\ 652 \\ 422 \end{gathered} \right\rvert\,$ | $\begin{gathered} 1,363 \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |
| Transportaion | 301 <br> 543 <br> 5 |  |  |  |  |  |  |  |  |  |  |
| Miscellineous.--.--- |  |  |  |  |  |  |  |  |  |  |  |
| Wholesale and rotail trade <br> Wholesale trade. $\qquad$ |  | $\begin{aligned} & 7,692 \\ & \hline \\ & 5,920 \end{aligned}$ |  |  |  | (i,623 | ( |  |  | (ta | ${ }_{\text {2, }}^{7,515}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Finance, insorance, and real estate. <br> Security-and commodity brokers, dealers and FinchangesInsurance, carriers <br>  | $\begin{array}{r} 1,440 \\ 298 \\ 71 \\ 124 \\ 347 \\ 443 \\ 447 \end{array}$ |  | $\begin{gathered} 1,456 \\ 321 \\ 50 \\ 505 \\ 362 \\ 145 \\ 453 \end{gathered}$ | $\begin{array}{r} 1,406 \\ 306 \\ 306 \\ 106 \\ 3+6 \\ 142 \\ 442 \\ 440 \end{array}$ | 1,3838 | 1,419 | 1,610 | ${ }^{1.657}$ | 1.715 | . 71.7 | 1,801 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | 47 |  | ${ }^{64}$ | ${ }_{91}^{61}$ | ¢ |  |  |
|  |  |  |  |  | - | - | - | +177 | \% ${ }_{6}$ | (196 | 为 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Transportation Railronds <br> Local railways and bus lines <br> Highway passenger rtansportation, n.e.e <br> ighway freight transportation and warehousing |  |  | $\begin{gathered} 2,5166 \\ 1,+120 \\ 1,199 \\ 1027 \\ 107 \end{gathered}$ | $\begin{aligned} & 2,740 \\ & \hline \end{aligned}, 53+5$ |  | - | , 6.9 | ${ }^{3,000} 1,543$ | 2,50, | i,34, | , 1,375 |
|  |  |  |  |  |  |  |  |  | 171 | ${ }_{211}^{118}$ | 201 |
|  |  |  |  |  |  | 178 |  | ${ }_{5}{ }^{5}$ | \% | 375 | 637 |
|  |  |  |  |  | 216 |  |  |  |  |  |  |
| Pipeline |  |  | $\stackrel{3}{35}$ | \% | ${ }_{26}^{26}$ |  | ${ }^{27}$ |  | $\begin{array}{r}30 \\ 188 \\ \hline 188\end{array}$ | 181 | 181 |
| Serctices allied to transportation | 155 | 150 | ${ }^{143}$ | 180 | 203 | 204 |  |  |  |  |  |
| Commu |  | ${ }^{954}$ | 946 |  | 890 <br> 486 |  |  |  | ${ }^{3}$ |  |  |
|  |  | ${ }^{28}$ | + |  | ${ }_{353}{ }^{33}$ | -36 | $\stackrel{40}{42}$ | 40 |  | , | - |
| Uocal utilititites and public serserices, | ${ }_{22}$ | ${ }_{22}{ }^{454}$ | ${ }_{21}$ | 18 | 18 |  | 22 |  | 23 |  |  |
| vices |  | 5,789 | 5,913 | 5,640 | 5,5780 | 5,533 |  |  | ${ }_{6}{ }_{4}{ }_{4}^{231}$ |  |  |
| Hetels and oth |  | ${ }_{8}^{786}$ | - | 832 | - | 1,752 | -1,696 | 1.788 | 1,800 | 1,849 |  |
| Private heorstesod | 2,365 | 2,253 | 2,209 |  |  |  |  |  |  |  |  |
| Commercial and trade shools an | 19 280 | 28 29 | 48 282 | $\stackrel{60}{271}$ | $\begin{array}{r}43 \\ 285 \\ \hline 8\end{array}$ | ${ }_{303}^{25}$ | ${ }_{367}^{367}$ | ${ }_{3}^{37}$ | 419 | 14 | ${ }^{26}$ |
|  |  |  |  |  |  | ${ }^{02}$ | 130 |  | 134 | ${ }^{128}$ |  |
| ${ }^{\text {Miscellaneons }}$ R |  |  |  |  |  | 2+1 |  |  |  |  |  |
| Amuseniertandrecreation, |  |  |  | $\underset{\substack{692 \\ 129}}{\substack{29 \\ \hline}}$ | 64 <br> $\substack{64 \\ 114 \\ \hline}$ | $\xrightarrow{630}$ | ${ }_{137}^{961}$ | ${ }_{1}^{705}$ | ${ }_{6} 91$ | \% ${ }^{159}$ | ${ }_{159}^{819}$ |
| T.egal serv |  |  |  |  |  |  |  |  |  | , | , |
| Catio |  |  |  |  |  |  |  |  |  | cois | (18) |
| Relitious orzanizes, | $\begin{aligned} & 210 \\ & 234 \end{aligned}$ | $\begin{aligned} & 210 \\ & 243 \\ & 243 \end{aligned}$ | $\begin{aligned} & 214 \\ & 286 \end{aligned}$ |  | ${ }_{305}^{200}$ |  | 319 | 321 |  |  |  |
| Gorerament and gover |  |  |  |  |  | 17.378 13.746 13 | 9,180 |  | \%7,194 <br> 2,86 | ${ }_{\text {7, }}^{7,061}$ |  |
|  | 3,993 | ${ }^{4,857}$ |  | coin | cole |  | -1.894 |  | 1,4is | 1,604 | 1,7304 |
|  | 2,792 |  | ${ }_{\text {- } 903}$ | - |  | 1, | 5+3 | 5is | з $\square_{6}$ | ${ }^{60 \mathrm{os}}$ | ¢ $\mathrm{i}_{1} 1$ |
| Federal-goverument en |  |  |  |  |  |  |  |  |  |  |  |
| $\xrightarrow{\text { Prabdicoc }}$ | ci,3,183 <br> 1,273 <br> 1 | - | 3,069 | 1,244 |  |  |  | (i,34 | ¢ | cin | ${ }^{1}, 3,363$ |
| Nonscho | . 3 | ${ }_{17} 8$ | \% |  |  |  |  |  |  | 196 | 0 |
| State and lockil-zo |  | 172 | 71 |  |  |  |  |  |  |  |  |
| Rest of the |  |  |  |  |  |  |  |  | 42,986 | 41,337 | 42,847 |
| um: Al | 33, 205 | 810 | 39,446 | 40,497 |  |  |  |  |  |  |  |

${ }^{1}$ This series measures the average number of full-time and part-time fobs filled during the Jear by wage and salary earners. The diference between the data shown in tab
i' Data represent the number of persons employed; the number of full-time and part-time

Table 26．－Average Annual Earnings per Full－Time Employee，by Industry，1929－391
［Dollars］

|  | 1923 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industrices，total | $\begin{aligned} & 1,421 \\ & 4.45 \\ & 1,40 \\ & 1,44 \\ & 1,632 \\ & 1,652 \end{aligned}$ | $\begin{array}{r} 1,380 \\ 429 \\ 406 \\ 1,3.16 \\ 1,450 \end{array}$ |  | $\begin{array}{r} 1,136 \\ \hline \end{array}, 2726$ |  |  |  |  |  |  | 1,269403 |
| culture |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | 析 |
| Tiorsury－．．．．．．．．．．．．． |  |  |  |  |  |  |  |  |  |  | 1，002 |
| Mining$\begin{aligned} & \text { Cude petroleumnd natural gis- } \\ & \text { Nontretalic mining and quarrying } \end{aligned}$ |  |  |  | $\begin{aligned} & 1,906 \\ & \hline \end{aligned}$ |  | $\begin{aligned} & 1,108 \\ & \substack{1,102 \\ 1,500 \\ 1,500 \\ 1,472 \\ 1,901} \end{aligned}$ |  | $\begin{aligned} & 1,263 \\ & 1,283 \\ & 1,1,103 \\ & 1,103 \\ & 103 \end{aligned}$ |  |  | ${ }_{\text {l }}^{1,3,367}$ |
|  |  |  |  |  |  |  |  |  |  |  | ${ }_{1}^{1,406}$ |
|  |  |  |  |  |  |  |  |  |  |  | ， |
|  |  |  |  |  |  |  | 1，976 | 1，108 | 1，207 |  | 1，171 |
| Contract construction．． | 1，674 | 1，526 | 1，233 | 907 | 869 | 942 | 1，027 | 1，178 | 1，278 | 1．193 | 268 |
| Manufacturi <br> Food and kindred products <br> Tobacco manufactures <br> Appirel and other tinished fabric products Lumber and timber basic products．．．．．．．． |  |  | $\begin{aligned} & 1,369 \\ & 1,451 \\ & 1,039 \\ & 1,039 \end{aligned}$ | （ | $\begin{aligned} & 1,026 \\ & \substack{205 \\ 7205} \end{aligned}$ | $\xrightarrow[\substack{1,53 \\ 1,221}]{\substack{251}}$ | （1，216 |  | 退1，3765 | ci， |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | $\begin{aligned} & 1,039 \\ & 1 \\ & 1,0020 \end{aligned}$ | 817 <br> $\substack{871 \\ 787 \\ \hline 87 \\ \hline}$ |  | 883 <br> 87 <br> 791 | （1066 | 1，${ }_{\text {，} 013}{ }_{91}$ | 1，963 ${ }_{\text {，}}^{1023}$ | －999 ${ }_{9}^{990}$ |  |
| Furniture and finished lumber products． <br>  Chemicells and aniled drodicess． Troducts of petroleunin and coil． | （ |  |  |  |  |  |  |  | － |  |  |
|  |  | cosile |  |  |  |  | （1，638 | （1， |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | 1， 1,419 | 1，555 | ${ }_{1}^{1,513}$ | 1，588 | 1，${ }_{\text {1，} 623}$ | 1，833 | 1，863 |  |
| Rubber prodictes－．．．äü Stone，clany，nad tlass prodicts． on and cteel and iner products，inciuding Nonferrouns meteily and their products． | $\begin{aligned} & 1,597 \\ & 1,527 \\ & 1,557 \end{aligned}$ | ci， | $\begin{gathered} 1,352 \\ 1,1382 \\ 1,386 \end{gathered}$ | $\begin{aligned} & 1.191 \\ & 1,970 \\ & 1,167 \end{aligned}$ | $\begin{aligned} & 1,137 \\ & \text { a, }, 50 \end{aligned}$ | come | － | （1，472 | （1，526 | （1，457 |  |
|  |  |  |  |  |  |  | 1，171 |  |  |  |  |
|  |  | 1，640 | － | 1，044 | － | （1，1,166 <br> 1,203 | 1，295 | $\xrightarrow{1,346}$ | （1，591 | （1，402 | ${ }_{1}^{1,562}$ |
| Marhinery，except electrical <br>  |  |  |  | $\begin{aligned} & 1,31 \\ & \hline 1,182 \\ & \hline 1.462 \\ & \hline 1.230 \end{aligned}$ | $\begin{aligned} & 1,260 \\ & \hline 1.203 \\ & \hline 1.300 \\ & 1.3170 \\ & 17200 \end{aligned}$ | $\begin{aligned} & 1,9 \end{aligned}$ | $\begin{aligned} & 1,425 \\ & \hline \end{aligned}$ |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Wholesale and retail trade． <br> Wholesale trade． |  | 退 | ci， |  | $\begin{aligned} & 1,187 \\ & \hline 1,541 \\ & \hline 1047 \end{aligned}$ | cos |  |  | （1，366 | （1， |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Finance，insurance，and real estatce．．．．．．．．．．．．．．．．．． Security and commodity brokers，dealers and | ${ }^{2,090} 1$ | $\xrightarrow{2,001} 1$ | － 1,886 | － | 1，7915 | $\underset{\substack{1,635 \\ 1,769}}{1,68}$ | （1，668 | （1，847 | 1， 1,919 | 1，7621 | 1,7611,692,8962， |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | $\begin{aligned} & 3,097 \end{aligned}$ |  | $\begin{aligned} & 2,959 \\ & \hline 1,65 \\ & \hline \end{aligned}$ | $\begin{aligned} & 2,74, ~ \\ & \hline \end{aligned}$ |  |  |  |  |  |  |
| Insurance carriers |  |  |  |  |  |  |  |  |  |  |  |
| Real estate． |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | $\begin{aligned} & 1,373 \\ & \hline \end{aligned}, 463$ |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | 1，172 | － 1,207 |  |  |  |  |  |
|  Air trans portation（cotmin Pipe－line transportation． <br> Services allied to transportation |  |  | $\begin{aligned} & 1,146 \\ & \substack{1,46 \\ 1,781 \\ 1,375 \\ 1,375} \end{aligned}$ |  | $\begin{aligned} & \text { conc }, 067 \\ & \hline 2.227 \\ & \hline \end{aligned}$ |  |  |  |  | coin |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Communications and public utifities <br> Telephone，，elegraph，and related services． Rado Rroad cesting ，nd tclevision <br>  Local utiliticies and public services，n．e．e．：． |  |  |  |  | cosis |  | （1，486 | ¢ |  |  | （in |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | ci， 1.561 |  | （1，137 | ci， |  |  |
| Serrices <br> Hotele and othier Iodging places Privanate thourverolids Commercial and trade schioois and employment Business services，n．e．e．c． |  | $\begin{aligned} & 1,058 \\ & \substack{1,027 \\ 1,2000 \\ \hline 500} \end{aligned}$ |  |  |  |  |  |  |  |  | 析 |
|  |  |  |  | 996 | $\begin{array}{r}816 \\ 881 \\ \hline 8\end{array}$ |  | 915 | 40 | 978 | 992 |  |
|  |  |  |  |  | 442 | 455 | 467 | 97 | 533 | ${ }_{506}$ |  |
|  |  | $\underset{\substack{1,778 \\ 2 ; 31}}{\substack{\text { a }}}$ | －${ }^{1,625}$ | 1，500 | － $\begin{aligned} & 1,536 \\ & 1,536\end{aligned}$ | 1，417 | 1，400 |  | 1，5266 | 1，5000 | ${ }_{\text {l }}^{1,88}$ |
| Miscellaneous re | 1，814 | 1，793 | 1.684 | 1.464 | 1.286 |  |  |  |  |  |  |
| Atorion pieturs | ${ }_{\substack{2,273}}^{1.169}$ | $\underset{\substack{2,1268 \\ 1,268}}{1.20}$ | $\underset{\substack{2,1729 \\ 1,24 \\ 1}}{1}$ | （i，259 | （1，813 |  |  | （1，886 | （1，972 |  | 1，27 |
|  | 1，385 | － $1,3.31$ | 1，3164 | （865 | － 1.169 | 799 | ${ }^{828}$ | 析 | ，${ }^{876}$ | （1， 8.81 | 1,20 |
| Entineerirrand | ${ }^{2}, 3,34$ | ${ }^{2,027}$ | 1．877 |  | 1，619 |  |  |  |  |  |  |
| Eoucationa seryices | ${ }_{1}^{1,610}$ | ， |  |  |  |  | 1，163 | 1，180 | ${ }_{1,211}^{1,25}$ |  |  |
| Nor protit membership organizations， | 1，7 | 1，730 |  | i，${ }^{1,637}$ | 1，567 | 1，558 | 1，537 | （1，572 | ci， | 1，625 |  |
| $\xrightarrow{\text { ernment and goornn }}$ Federal general gover | 1，552 | 1，554 | 1，549 | ＋，479 | 1，330 | ${ }^{1,2,66}$ | ，233 |  | ，356 | ${ }^{1,338}$ |  |
| Civilina except | －1，925 | － |  | （1，823 | － | （1， 1 | －1，783 |  | ¢， | 1， 1.830 |  |
| Niork | 1，195 | 1，207 | 1，198 | 1，175 | 1，084 | 1，084 | 1，163 | ${ }^{1}$ 1，166 | ${ }_{1}^{1,144}$ | 1，135 |  |
| Federal－govern | ${ }^{1.903}$ | 1，907 | 1，913 | 1，791 | 1，577 | 1，635 | ${ }_{\text {1，780 }}$ | － 1,831 | $\xrightarrow{1,851}$ | 1，811 |  |
| State and local－reneral | $\xrightarrow{1,499}$ | 1，517 | （1，47 | （1．427 | ci， 1.338 | 1，283： | 1，283 | 1，372 | ${ }^{1,426}$ | ， | 退 |
|  | 1，519 |  | cieti | ＋1，479 | 1， 1,413 | ， | （i， | cient |  |  | 1，503 |
| State and local－goveriment enterpri | 1，600 | 1，595 | 1．573 | ［1：52） | 1，455 | $\underset{\substack{1,438 \\ 1,123}}{ }$ | ，473 |  | 1，536 | ：603 | ， |
| Rest of the | 2，000 | 1，900 | ，，sco | 1，800 | 1，700 | 1，800 | 1，800 | 1，90 | 1，900 | 1，900 |  |
| Addendum ：All private | 1，408 | 1，361 | ，239 | 1，086 | 1，01 | 1，076 | 1，127 | 1，181 | 1，2 | 1，2，6 | 1，2 |

explanimin of the conceqt or＂aversae annual earnings per full－time employee＂，see SURVE sable 24 ．Footnotes to tablis 14 and 24 are，therefore，rele vant also to table 26 ．${ }^{\text {as }}$ For a full

OF CURRENT BCsINE：s，June i945，pp．17－18．

Table 26.-Average Annual Earnings per Full-Time Employec, hy Industry, 1940-50 1
[Dollars]

|  | 1940 | 1941 | 1042 | 1043 | 1944 | 1945 | 1946 | 1347 | 1948 | 193) | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total | 1,306 | 1,450 | 1,719 | 1,964 | 2,120 | 2,207 | 2,363 | 2,598 | 2,809 | 2, 866 | 3,024 |
| Agriculture, forestry, and fisheries. | 415 | 503 | 670 | 863 | 1,013 | 1,138 | 1,223 | 1,311 | 1,375 | 1,349 | 1,365 |
|  | 390 1.296 | 473 1.463 | $\begin{array}{r}638 \\ 1,583 \\ \hline\end{array}$ | 823 1836 | 1.972 | 1.013 | 1,173 | 1, 26.3 | 1,322 | 1, 216 | 1,302 |
| Agricultural and similar service establishments.-- | 1,296 | 1,463 .498 | 1,583 | 1,836 1,000 | 1,952 1,300 | 1,917 1,600 | 1.925 | 2,028 | 2,141 | (2, 232 | 2,293 |
| Fisheries | 1,161 | 1,517 | 1,750 | 2,083 | 2,167 | 2.556 | 2,885 | 1, 2,883 | 3,250 | 2.707 | 3,100 |
| Mining | 1,388 | 1,579 | 1,796 | 2,162 | 2,499 | 2.621 | 2,719 | 3,113 | 3,387 | 3, 203 | 3,436 |
| Metal mining | 1,610 | 1,771 | 2,045 | 2,333 | 2.458 | 2.651 | 2,636 | 3.000 | 3.327 | 3.411 | 3.541 |
|  | 1,306 1,235 | 1,466 1,500 | 1,753 1,715 | 2,119 | 2,525 | 2.685 2.629 | 2,810 2.724 | 3.125 3.212 | 3.420 3.383 | 2, ${ }^{2} 176$ | 3.107 3.260 |
| Crude petroleum and natural gas | 1,714 | 1,779 | 1,940 | 2,233 | 2,601 | 2,762 | 2,81: | 3.157 | 3,383 | $\frac{3,735}{3.75 \%}$ | 3.863 |
| Nonmetallic mining and quarrying | 1,217 | 1,375 | 1,634 | 1,911 | 2,083 | 2,205 | 2,371 | 2.663 | 2,928 | 3,021 | 3.24.5 |
| Contract eonstruction | 1,330 | 1,638 | 2,191 | 2,503 | 2,602 | 2,600 | 2,537 | 2,828 | 3,119 | 3,235 | 3,351 |
| Manufacturing | 1,432 | 1,653 | 2,023 | 2,349 | 2.517 | 2,517 | 2,517 | 2.793 | 3,039 | 3.093 | 3,303 |
| Food and kindred pro | 1,385 | 1,472 | 1,650 | 1,878 | 2,044 | 2,170 | 2,385 | 2.663 | 2,85.3 | 2,026 | 3.071 |
| Tobacco manufacture | 1,000 | 1,117 1,159 | 1,240 1,385 | 1,431 | 1,58) | 1,670 | 1,773 | 1,950 2,338 | 2,040 <br> 2,587 | 2,089 | $\frac{2,258}{2,767}$ |
| Apparel and other finished fabric | 1,022 | 1,159 | 1,331 | 1,595 | 1,785 | 1,943 | 2,192 | 2,327 | 2,485 | 2.383 | 2.492 |
| Lumber and timber basic products. | 934 | 1,026 | 1,205 | 1,440 | 1,564 | 1,618 | 1,813 | 2,046 | 2,25.4 | 2,296 | 2.519 |
| Furniture and finished lumber produc | 1,158 | 1,304 | 1,514 | 1.743 | 1,872 | 1,988 | 2,187 | 2.375 | 2,603 | 2.651 | 2.846 |
| Paper and allied products- | 1,458 | 1,646 | 1,850 | 2,076 | 2,254 | $\frac{2}{2}, 365$ | 2.58 .5 | 2.903 | 3.200 | 3,23: | 3.474 |
| Printing, publishing, and allied Chemicals and allied products | 1,764 1,723 | 1,852 | 2,131 | 2,150 2,380 | 2,376 2,608 | $\stackrel{2}{2,676}$ | $\frac{2,869}{2,765}$ | 3,210 $\mathbf{3 , 1 1 9}$ | 3, 3178 | 3, 3,53 | 3.798 |
| Products of petroleum and coal | 1,954 | 2,113 | 2,410 | 2,806 | 3,046 | 3,037 | 3,183 | 3,610 | 4,072 | 4,170 | 4,320 |
| Rubber products | 1,583 | 1,778 | 2,116 | 2,478 | 2,639 | 2,722 | 2,826 | 3.085 | 3.18') | 3,22.5 | 3.328 |
| I eather and leather products | 1,041 | 1,230 | 1,447 | 2,05. ${ }_{2}$ | 1,831 | 1,972 | $\frac{2}{2}, 131$ | 2, 313 | $\frac{9.414}{2}$ | 2.410 | $\frac{2}{3}, 503$ |
|  | 1,3.33 | 1, 55.4 | 1,771 | 2,024 | 2,174 | 2,243 | 2.380 | 2,672 | 2,925 | 3,014 | 3 |
| ordnance....-...-. | 1,6.13 | 1,923 | 2,283 | 2,637 | 2,781 | 2,702 | 2,696 | 3.063 | 3,360 | 3,390 | 3.698 3,617 |
| Nonferrous metals and their products | 1,534 | 1,824 | 2,230 | 2,581 | 2,724 | 2,735 | 2,717 | 2,963 | 3,248 | 3,271 | 3,617 |
| Machinery, except clectrical | 1,813 1 1 | 2,144 | 2,630 2,287 | 2,857 | 2,975 2,578 | 2,930 2,584 | $\stackrel{2,862}{2,015}$ | 3,112 2,870 | 3.431 | 3.478 <br> 3.29 | 3,757 |
| Electrical machinery-.. | 1,688 | 2,919 | 2,287 2,695 | 2,466 | 2, ${ }^{2,188}$ | - 2,585 | 2,615 | 2,876 | 3.154 | 3,247 | 3,369 |
| Automobiles and automobile equipment | 1,934 | 2,243 | 2,880 | 2,978 | 3, 103 | 2,968 | 2,814 | 3,143 | 3,381 | 3.6107 | 4.007 |
| Miscellaneous.-....... | 1,380 | 1,540 | 1,882 | 2,176 | 2,320 | 2,401 | 2,442 | 2,607 | 2,870 | 2,901 | 3,140 |
| Wholesale and retail trade- | 1,391 | 1,491 | 1,620 | 1,796 | 1,965 | 2, 135 | 2,403 | 2,661 | 2,867 | 2,936 | 3,082 |
| Wholesale trade. | 1,834 | 2,024 | 2,250 | 2,483 1,582 | 1,670 1,741 | 2,806 1,918 | 3,079 2,187 | 3,379 2,420 | 3,625 | -3,671 | 3,900 |
| Finance, insurance, and real | 1,754 | 1,805 | 1,911 | 2,064 | 2,212 | 2,369 | 2,598 | 2,764 | 2,958 | 3,083 | 3,279 |
| Banking-... | 1,962 | 1,976 | 2,069 | 2,134 | 2,256 | 2,408 | 2,050 | 2,855 | 3,029 | 3,163 | 3,331 |
| Security and commodity brokers, dealers and |  |  |  |  |  | .5,286 | 5,226 | 4,714 | 4,058 | 5,013 | 6.163 |
| Finance, ${ }^{\text {exchang }}$ | 2,845 2,114 | 3,040 $\mathbf{2 , 1 7 7}$ | 3,073 2,352 | 3,605 | 2,808 | 2,914 | 3,213 | 3,412 | 3,680 | 3,779 | 3.879 |
| Insurance carriers | 1,974 | 2,048 | 2,176 | 2,353 | 2,500 | 2,605 | 2,778 | 2,917 | 3,073 | 3,197 | 3,3:2 |
| Insurance agents | . 1,890 | 1,975 | 2,140 | 2,331 | 2,513 | 2,601 | 2,923 | 3,103 | 3,364 | 3.475 | 3.683 |
| Real estate...... | 1,145 | 1,198 | 1,285 | 1,412 | 1,550 | 1,642 | 1,864 | 2,052 | 2,243 | 2,327 | 2,502 |
| Transportation_ | 1,754 | 1,888 | 2,180 | 2,489 | 2,678 | 2.733 | 2,948 | 3,147 | 3,442 | 3,557 | 3,684 |
| Railroads-...-- | 1,903 | 2,035 | 2,299 2 | 2,580 2,288 | 2,703 $\mathbf{2 , 4 6 8}$ | 2,706 2,619 | 3,051 | 3,212 | 3,577 <br> 3,146 | 3,704 <br> 3,250 | 3.752 3.400 |
| Local railways and bus lines- | 1,700 1,320 | 1,795 1,473 | 2,018 | 2,288 $\mathbf{2 , 2 7 0}$ | $\stackrel{\text { 2, }}{\mathbf{2}, 468}$ | 2,619 2,570 | 2,729 2,648 | 2,965 2,707 | 3,146 2,766 |  | $\frac{3}{3} \cdot 869$ |
| Highway freight transportation and warehousing- | 1,551 | 1,630 | 1,859 | 2,147 | 2,374 | 2,545 | 2,752 | 3,063 | 3,3.50 | 3,557 | 3.812 |
| Water transportation | 1,648 | 1,854 | 2,723 | 3,388 | 3,624 | 3,583 | 3,415 | 3,747 | 4.096 | 4,137 | 4.413 |
| Air transportation (common carriers) | 2,239 | 2,258 | 2,265 | 2,457 | 2,766 | 2,830 | 2,8.52 | 3,268 | 3,679 | 3,870 | 4,118 |
| Pipe-line transportation. | 1,928 | 2,039 | 2,280 | 2,720 | 3,038 | 3,240 | 3,259 | 3.750 | 4.100 | 4,172 | 4.2108 |
| Services allied to transportation | 1,305 | 1,579 | 1,780 | 2,034 | 2,331 | 2,403 | 2,549 | 2,767 | 2,892 | 2,907 | 3.087 |
| Communications and public utilitie | 1,718 | 1,766 | 1,883 | 2,075 | 2,248 | 2,425 | 2,567 | 2,792 | 3,002 | 3,151 | 3,319 3.033 |
| Telephone, telegraph, and related | 1,610 | 1,633 | 1,715 | 1,878 | ${ }_{3}^{2,035}$ | ${ }_{3,515}^{2,246}$ | 2,413 | 2,583 4.073 | 2,776 | 2,1507 4.463 | 4,033 |
| Radio broadcasting and television. | 2,554 | 2,581 | 2,667 2 2 | 2,923 2,284 | 3,333 2,467 | -3,515 | 2,937 | -4,934 | 3,223 | 3.376 | 3,7if9 |
| Uilitiss: electric and gas ...-.-..-- | 1,795 1,318 | 1,870 | 2, 1,524 | 1,778 | 1,883 | 2,000 | 2,045 | 2,217 | 2,3,1 | 2,522 | 2,682 |
| Services | 949 | 1,016 | 1,131 | 1,337 | 1,519 | 1,669 | 1,870 | 2,002 | 2,111 | 2,168 | 2,214 |
| Hotels and other lodging | 967 | 990 | 1,052 | 1,210 | 1,378 | 1,518 | 1,681 | 1,807 | 1.898 | 1.9 .0 | 1,991 |
| Personal services | 1,019 | 1,0ı4 | 1,171 | 1,346 | 1,513 | 1.655, | 1,328 | 1,379 | 1,412 | 2,403, | 1,414 |
| Private households....-. | 533 | 578 | 678 | 870 | 1,079 | 1,250 |  |  |  |  |  |
| Commercial and trade schools and employment agencies |  | 1,833 | 2,175 | 2,520 | 2,714 | 2,571 | 2,520 | 2,903 | 3,147 | 3.270 | 3,462 |
| Business services, n.e.c.- | 1,863 | 1,980 | 2,140 | 2,456 | 2,735 | 2,949 | 3,114 | 3,310 | 3,554 | 3,648 | 3,863 |
| Miscellaneous repair services and hand trades... | 1,007 | 1,921 | 2,185 | 2,747 | 2,975 | 2,914 | 2,902 | 3,165 | 3,358 | 3.465 | 3,627 |
| Motion pictures...-......-. | 1,948 | 2,016 | 2,124 | 2,250 | 2,379 | 2,567 | 2,978 2,116 | 3, 2,241 | 2,28) | 2,320 | 2,432 |
| Amusementandrecreation, except motion pictures. | 1,263 | 1,267 | 1,304 | 1.430 1.102 | 1,628 1,206 | 1,838 | 1.516 1.529 | 1.765 | 1,898 | 1, 9105 | 2,107 |
| Medical and other health services | -923 |  | 1,1,004 | 1,102 | 1,533 | 1,639 | 1,805 | 1,977 | 2,036 | 2,188 | 2,268 |
| Legal services | 1,228 | 1,260 | 1,304 |  | 1,533 |  |  |  |  |  |  |
| Engineering and other professional services, n.e.c. | 1,902 | 2,245 | 2,654 | 3.063 | 3.237 | 3,258 | 3.280 | ${ }^{3.495}$ | 3,745 | 3,929 | 4.144 |
| Educational services, n.e.c.... | 1,241 | 1,263 | 1,342 | 1.481 | 1,579 | 1,654 | 1,811 | 2,006 1,860 | 2,015 | $\stackrel{2}{2}, 163$ | 2,270 |
| Religious orgarizations...-. | 1,407 | 1,382 | 1,383 | 2,200 | 1, 2.45 | 2,667 | 2,986 | 3,279 | 3,530 | 3,717 | 3,005 |
| Nonproit membership organizations, n.e.c.-...- | 1,675 | 1,778 | 1,899 | 2,200 | 2.45 | 2,007 |  |  |  |  |  |
| Government and government enterp | 1,349 | 1,392 | 1,653 | 1,813 | 1,958 | 2.097 | 2,364 | 2,568 | 2,786 | $\stackrel{2}{2}, 882$ | 3,045 |
| Federal-general government | 1,13, | 1,240 | 1,657 | 1,820 | 1, $1 ; 72$ | 2,113 2,640 | 2,464 | 2,735 | $\stackrel{2}{2.175}$ | 2, 3,345 | 3,549 |
| Civilian, except work relief | 1.833 | 1,968 | $\stackrel{2,220}{1,524}$ | 2,622 | 2,670 1,816 | 1,993 | 2,319 | 2,544 | 2,704 | 2,648 | 2,994 |
| Wilitary ${ }^{\text {Work relief }}$ | 1,877 | 1,111 | 1,965 |  |  |  |  |  |  |  |  |
| Federal-government enterprises | 1,883 1,826 | 1,870 | 1,988 | 2,270 | 2,34 | 2.370 | 2,727 | 2,718 | 3.023 | 3,118 | 3,211 |
| Federal-government enterprise | 1,820 | 1,870 | 1,388 |  |  |  |  |  |  | 2.737 | 2,818 |
| State and local-general government. | 1,477 | 1,523 1,464 | 1,576 1.515 | 1,630 | 1,800 1,735 | 1,941 1,887 | 2,032 | 2,345 | 2,675 | 2,830 | 2,927 |
| Public education_--. ${ }^{\text {Nonschool, except work reli }}$ | 1,436 1,552 | 1,464 1,574 | 1, 1,628 | 1,756 | 1,855 | 1,986 | 2,144 | 2,331 | 2,536 | 2,674 | 2,741 |
| Wonschool, except work | $\begin{array}{r}1,502 \\ \hline 1,09\end{array}$ | 1,000 | 1,000 |  |  |  |  |  |  | 3,228 | 3.203 |
| State and local-government enterprises.........- | 1,610 | 1,734 | 1,903 | 2, 442 | 2,255 | 2,405 | 2,590 | 2,818 | 3,045 | 3,228 |  |
| Rest of the world | 2, 000 | 2,000 | 2,100 | 2,100 | 2,200 | 2,400 | 3,400 | 3,400 | 3,000 | 3,000 | 3,400 |
| Addendum: All private indust | 1,297 | 1,462 | 1,736 | 2, $\mathrm{C22}$ | 2,193 | 2,259 | 2,369 | 2,603 | 2,812 | 2,863 | 3,020 |

Jiable 27.-Number of Aetive Proprietors of Unincorporated Enterprises, by Industry, 1929-39 I
[Data in thousands]

${ }^{2}$ This zeries mearures the number of active preprietors of unincorfcrated enterprises devoting the majar portion of their time ta the business. It eacluces unjaid family workers
tut includes so-ralled "crin-accent" warkers. Incustrtes in which the rumber of active proprietcrs is estiniated at less than $E C O$ in all years ane cmitted frim the table.

Table 27.-Number of Active Proprietors of Unincorporated Enterprises, by Industry, 1910-501
[Data in thousands]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 19.46 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total | 10,107* | 9,945 | 9,749 | 9,266 | 9,231 | 9,531 | 10,333 | 10,927 | 10,810 | 10,785 | 10,599 |
| Agriculture, forestry, and fisheries | 5,250 | 5,146 | 5,063 | 4,977 | 4,910 | 4.873 | 5,040 | 5,224 | 4.926 4 | 4,875 | 4,607 |
|  | 5,078 | 5,004 | 4,929 | 4,855 | 4,780 | 4.713 | 4.847 150 | 5,015 | 4,708 | 4.655 | -1,381 |
| Agricultural and similar service establishments- - | 134 2 | 104 | ${ }^{96}$ | $\begin{array}{r}84 \\ 2 \\ \hline\end{array}$ | 92 | 119 | 150 3 | ${ }^{165}$ | 173 | 173 4 | 178 |
| Fisheries.-.- | 36 | 36 | 36 | 36 | 30 | 39 | 40 | 40 | 41 | 43 | 45 |
| Mining | 38 | 42 | 40 | 36 | 34 | 36 | 41 | 44 | 46 | 45 | 47 |
| Metal mining. | 13 | 14 | 11 | 8 | 8 | 7 | 8 | 8 | 9 | 9 | 9 |
| Anthracite mining | ${ }_{8}^{2}$ | 2 | 2 | 1 | 1 | 1 | $\frac{1}{5}$ | $\stackrel{2}{6}$ | 2 | 2 | 7 |
| Bituminous and other soft coal minin | 8888888 | ${ }_{13}^{8}$ | $\stackrel{6}{15}$ | 17 | 17 | 18 | 20 | 21 | 21 | 22 | 22 |
| Crude petroleum and nal gas.Nonmetallie mining and quarrying. | 10 5 | 13 5 | +6815 | 17 | 17 | 18 | 7 | 7 | - 7 | 7 | 2 |
| Contract construction. | 656 | 614 | 584 | 519 | 507 | 589 | 817 | 984 | 1,090 | 1,137 | 1,216 |
| Manufacturing | 130 | 138 | 144 | 150 | 157 | 169 | 185 | 184 | 172 | 163 | 157 |
| Food and kindred product | 40 | 43 | 43 | 42 | 42 | 41 | 41 | 40 | 37 | 33 1 | 29 |
| Tobacce manufactures | $\stackrel{1}{3}$ | $\frac{1}{2}$ | $\frac{1}{3}$ | $\frac{1}{3}$ | $\frac{1}{3}$ | $\frac{1}{3}$ | 1 | $\underline{1}$ | 2 | 1 | 2 |
|  | 17 | 18 | 19 |  | 24 | 27 | 29 | 27 | 25 | 24 | 34 |
| Lumber and timber basic products......-- | 11 | 11 | 11 | $: 2$ | 13 | 14 | 17 | 20 | 20 | 18 | 17 |
| Furniture and finished lumber products. | 6 | 7 | 7 | 8 | 8 | 9 | 10 | 10 | 9 | 9 | 8 |
| Paper and allied products. | 1 | 1 | 18 | 18 | 18 | 1 | 1 | 20 | ${ }_{21}^{1} \cdot$ | 21 | 21 |
| Printing, publishing, and allied industries. | 18 | $\stackrel{19}{4}$ | 18 5 | 18 5 | 18 5 | 19885 | 20 |  | 4 | $\stackrel{3}{3}$ | ${ }_{3}$ |
| Chemicals and allied products---..----- | $\stackrel{4}{0}$ | $\stackrel{4}{0}$ | ${ }^{5}$ | 0 | 0 | $\stackrel{5}{0}$ | 0 | 0 | 0 | 0 | 0 |
| Rubber products | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Leather and leather products. | 2 | 2 | 2 | 2 | 2 | 3 |  | 3 | $\stackrel{2}{8}$ | $\stackrel{2}{7}$ | $\frac{2}{7}$ |
| Stone, clay, and glass products.-.----.-.-.-.-- | 4 | 4 | 5 | 5 | 5 |  |  |  |  |  |  |
| Iron and steel and their products, ineluding ordnance | 4 | 5 | 5 | 5 | 5 6 | 6 | 6 | 6 7 | 6 6 | 6 | - $\begin{array}{r}0 \\ 6\end{array}$ |
| Nonferrous metals and their products --- | 4 | 5 | 5 |  |  |  |  |  |  |  |  |
| Machinery, except electrical. | 6 | 8 | 12 | 13 | 15 | 18 | 19 | 19 | 18 | 18 | 18 |
| Electrical machinery | 1 | 1 | 1 | 1 | 1 | 1 | 2 1 | $\stackrel{2}{1}$ | 1 | 1 | 1 |
| Transportation equipment, except automobiles- | 1 | ${ }_{1}^{1}$ | 1 | - 1 | 1 | $\stackrel{1}{0}$ | 1 | 1 | 1 | 1 | 1 |
| Automobiles and antomobile equipment. Miscellaneous. | ${ }_{6}^{1}$ | $\frac{1}{6}$ | 0 6 | 0 6 | 7 | 9 | 11 | 11 | 9 | 9 | 9 |
| Wholesale and retail trade. | 2,167 | 2,170 | 2,115 | 1,904 | 1,909 | 2,011 | 2,194 | 2,319 | 2,352 | 2,331 | 2,321 |
| Wholesale trade. | ,161 | 2,174 | 179 | . 159 | , 166 | -186 | - 2304 | 2,070 | 2, 2406 | 2,085 | 2,074 |
| Retail trade and automobile services | 2,006 | 1,996 | 1,936 | 1,745 | 1,743 | 1.825 | 1,904 | 2,070 |  |  | 2,07 |
| Finance, insurance, and real estate. | 283 | 278 | 292 | 279 | 288 | 305 | ${ }^{333}$ | 344 1 | 348 1 | 351 1 | 358 1 |
| Banking------....--------- | 0 | 0 | 1 | 1 | 1 |  |  |  |  |  |  |
| Security and commodity brokers, dealers and exchanges | 16 | 14 | 13 | 13 | 13 | 13 | 14 | 14 | 14 | 14 | 14 |
|  | 5 | 5 | ${ }^{7}$ | 7 7 | 8 | 175 | 11 195 | 205 | 212 | 216 | 222 |
| Insurance agents and combination offices | 168 | 168 91 | 173 98 | 165 93 | 167 99 | 175 106 | 112 | 113 | 110 | 109 | 110 |
| Real estate.- |  |  |  |  |  |  |  |  |  | 238 | 244 |
| Transportation | 180 | 178 | 172 | 144 | 149 | 170 |  | 22 | 236 0 | 230 | 0 |
| Railroads -- | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| Local railways and bus lines--......-- | - | 20 | 19 | 16 | 17 | 19 | ${ }^{23}$ | ${ }^{25}$ | ${ }^{26}$ | ${ }_{2}^{27}$ | 27 209 |
| Highway passenger transportation, n.e.c----.--- | 150 | 153 | 19 148 | 124 | 128 | 147 | 174 | 193 | 203 | 204 | 209 |
|  |  |  |  |  |  |  |  |  | 3 | 3 |  |
| Water transportation... | 2 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Air transportation (common carriers) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 3 | 0 3 | 4 |
| Services allied to transportation-- | 3 | 3 | 3 | 2 | 2 | 2 |  |  |  |  |  |
| Communications and public uthities | 4 | 4 | 4 | 5 | 6 | 7 | 7 2 2 | $\stackrel{8}{2}$ | $\begin{array}{r}8 \\ 2 \\ \hline\end{array}$ | 8 2 | 8 2 |
| Telephone, telegraph, and related services. | 1 | 1 | 1 | 1 | $\stackrel{2}{1}$ | 1 | 1 | 1 | 1 | 1 | 1 |
| Radio broadcasting and television------------- | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | $\stackrel{0}{5}$ | $\stackrel{0}{5}$ |
| Utilities: electric and gas....-........---------- | 2 | 2 | 2 | 3 | 3 | 4 | 4 |  |  |  |  |
| Services | 1,399 | 1,375 | 1,335 | . 1,252 | 1,271 | 1,371 | 1,512 | 1,595 | 1,632 | 1,635 | 1,641 |
| Hotels and other lodging pla | 150 | 153 | 160 | 156 | 156 390 | 155 422 | ${ }_{4}^{156}$ | 4 | ${ }_{460}$ | 457 | 453 |
| Personal services | 401 | 399 | 400 | 387 | 390 |  |  |  |  |  |  |
| Commercial and trade schools and employment | 3 | 4 | 4 | 4 | 3 | 8 | ${ }_{9}^{2}$ | 3 103 | $\begin{array}{r}3 \\ 98 \\ \hline 8\end{array}$ | +38 | 103 |
|  | 74 | 78 | 73 | 69 | $\begin{array}{r}69 \\ 168 \\ \hline\end{array}$ | 218 | 276 | 302 | 318 | 318 | 325 |
| Miscellaneous repair services and hand trudes.-- | 218 | 189 | 176 | 15 |  |  |  |  |  |  |  |
| Motion pictures | 7 | 8 | 81 | ${ }_{27}^{9}$ | 9 26 | 10 20 | 11 28 | $\stackrel{12}{29}$ | ${ }_{33}$ | 35 | 35 |
| Amusementandrecreation, except motion pictures- | $\begin{array}{r}29 \\ 98 \\ \hline 188\end{array}$ | $\begin{array}{r}31 \\ 282 \\ \hline\end{array}$ | $\begin{array}{r}31 \\ 263 \\ \hline 1\end{array}$ | 27 239 | 240 | 245 | 279 | 292 | 300 | 302 | 302 |
| Medical and other health services-.--------- | 128 | 128 | 117 | 107 | 107 | 110 | 130 | 135 | 140 | $\begin{array}{r}143 \\ 57 \\ \hline\end{array}$ | 145 |
| Engineering and other professional services, n.e.e. | 49 | 50 | 50 | 50 | 50 53 | 53 | $\stackrel{53}{53}$ | $\stackrel{53}{5}$ | 53 | 53 | 53 |
| Educational services, n.e.c.------------1.- | 53 | 53 | 63 | 53 | 53 |  |  |  |  |  |  |

${ }^{1}$ This series measures the numher of actire proprietors of unincorporated enterprises
This series measures the number of actire proprietors of unincorporated enter
deroting the major portion of their time to the business. It excludes unpaid family workers
but includes so-called "own-account" workers, Industries in which the num proprictors is estimated at less than 500 in all years are omitted from the table.

Table 28.-Number of Persons Engaged in Production, by Industry, 1929-391
[Data in thousands]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 193.5 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total. | 45,683 | 43,725 | 40,623 | 37,188 | 37,655 | 40,921 | 42,206 | 45,301 | 46.567 | 44,832 | 46,157 |
| Agriculture, forestry, and fisheries. | 8,850 | 8,804 | 8,741 | 8,636 | 8,669 | 8,652 | 8,590 | 8,534 | 8.447 | 8, 240 | 8,020 |
| Farms-.-.--...-...--- | 8,550 | 8,513 | 8,450 | 8,355 | 8,387 | 8,397 | 8,300 | 8,2.33 | S. 141 | 7,3i3 | 7,748 |
| Agricultural and similar service establishments. | 182 | 181 | 187 | 184 | 185 | 180 | 189 | 183 | 113 | 187 | 185 |
| Forestry----- | 56 62 | 53 57 | 49 55 | 45 <br> 5 <br> 2 |  | 5 | - 419 | 41 | 4 | 40 60 | 27 60 |
| Mining | 1,017 | 956 | 839 | 701 | 724 | 857 | 876 | 934 | 993 | 897 | 870 |
| Metal mining | 130 | 113 | 86 | 59 | 60 | 712 | 84 | 10.3 | 132 | 105 | 116 |
| Anthracite mining------7- | 151 476 | 144 | 128 | 105 | 94 379 | 103 438 | 101 | 100 | 8 | 91 | $\begin{array}{r}90 \\ 380 \\ \hline\end{array}$ |
| Crude petroleum and natural gas | 168 | 157 | 127 | 114 | 133 | 173 | 17.7 | 1!0 | 202 | 202 | 197 |
| Nonmetallic mining and quarrying--.-- | 92 | 85 | 74 | 59 | 58 | 66 | ais | 7 | S1 | 72 | 78 |
| Contract construction. | 2,306 | 2,183 | 1,983 | 1,644 | 1,383 | 1,460 | 1.514 | 1,763 | 1,738 | 1,686 | 1,827 |
| Manufacturing | 10,561 | 9,423 | 7.987 | 6,749 | 7,276 | 8,444 | 8,986 | 9,736 | 10,690 | 9,234 | 10,091 |
| Food and kindred prod | 1,083 | 1,058 | 945 | 866 | 964 | 1,111 | 1,130 | 1,184 | 1.9is | 1.203 | 1,216 |
| Tobaceo manufactures | 147 | . 134 | 1.121 | 103 903 | +1033 | 113 | 1109 | 110 | 112 | 1097 | 1108 |
| Apparel and other finished fabric products. | 1,793 | , 740 | 1.687 | 604 | 1,642 | 1.710 | $\cdots$ | '811 | 18\% | -820 | . 920 |
| Lumber and timber basic products...--..- | 620 | 480 | 309 | 229 | 274 | 320 | 368 | 423 | + 17 | 401 | 441 |
| Furniture and fnished lumber products | 442 | 375 | 324 | 264 | 282 | 292 | 33.3 | 3 ns | 102 | 344 | 389 |
| Paper and allied products ----------------- | 285 | 278 | 251 | 227 | 245 | 281 | 290 | 301 | 334 | 302 | 315 |
| Printing, publishing, and allied indus | 630 | 632 | 561 | 492 | 460 | 504 | 523 | ists | 619 | 894 | 595 |
| Chemicals and allied products. | 401 | 380 | 332 | 293 | 323 | 372 | 382 | 346 | 431 | 3 sc | 417 |
| Products of petroleum and coal | 128 | 125 | 105 | 97 | 99 | 115 | 121 | 124 | 132 | 131 | 135 |
| Rubber products-- | 176 | 142 | 120 | 110 | 124 | 141 | 131 | 112 | 1.1 | 127 | 146 |
| Leather and leather products | 372 | 346 | 317 | 301 | 321 | 346 | 3.38 | $33 \%$ | 376 | 3.3 | 374 |
|  | 402 | 349 | 280 | 206 | 214 | 261 | 283 | 3:0 | 3.99 | 313 | 347 |
|  | 1,219 | 1,094 | 859 | 688 | 750 | 919 | 908 | 1,140 | 1.319 | 1.025 | 1,159 |
| Nonferrous metals and their products | 330 | 273 | 225 | 177 | 184 | 223 | 2.52 | 2 SO | 314 | 2.99 | 288 |
| Machinery, except electrical. | 769 | 676 | 513 | 376 | 396 | 509 | 581 | misis | 79\% | 030 | 666 |
| Electrical machinery. | 519 | 430 | 332 | 242 | 251 | 319 | 338 | $38:$ | 161 | 3.33 | 399 |
| Transportation equipment, except automo | 150 | 147 | 105 | 80 | 71 | 101 | 10.5 | 138 | 171 | 1.41 | 186 |
| Automobiles and automobile equipmen | 541 290 | 403 | 352 222 | 299 181 | 300 100 | 43.3 | 46 | 492 | 280 | 363 <br> 264 <br> 8.4 | ${ }_{305}$ |
| Wholesale and retail trade. | 7,736 | 7,437 | 6,959 | 6,371 | 6,347 | 6,877 | 7,097 | 7.551 | 8,064 | 7,982 | 8,277 |
| Wholesale trade-.-- | 1,548 | 1,497 | 1,363 | 1,239 | 1,238 | 1,360 | 1,397 | 1.500 | l.fis | 1, i, 3,7 | 1,726 |
| Retail trade and automobil | 6,188 | 5,940 | 5,596 | 5,132 | 5,109 | 5,517 | 5,700 | 6.0 .91 | 6.416 | 6,323 | 6,551 |
| Finance, insurance, and real estate. | 1,576 | 1,551 | 1,490 | 1,428 | 1,382 | 1,412 | 1,435 | 1,486 | 1,536 | 1,538 | 1,588 |
| Sanking-and and commodity brokers, dealers and | 385 | 375 | 345 | 311 | 281 | 284 | 274 | -276 | 28.7 | 286 | 288 |
| exchanges.-.-. | 147 | 122 | 107 | 99 | 108 | 102 | (13 | 109 | 102 | 87 | 81 |
| Finance, n.e.c. | 134 | 132 | 124 | 118 | 112 | 111 | 113 | 110 | 121 | 107 | 103 |
| Insurance carriers. | 281 | 288 | 283 | 278 | 267 | 273 | 28. | 209 | 30.5 | 319 | 337 |
| Insurance agents and co | 265 | 270 364 | 260 365 | 264 358 | 257 | 261 | 263 | 206 | 272 | 277 | 284 489 |
| Transportation. | 3,035 | 2,795 | 2,444 |  |  |  |  |  |  |  | 2,169 |
| Railroads- | 1,845 | 1,659 | 1;405 | 2,150 | 2,008 | 2,077 | 2,102 | 2,218 | 2, 33.3 | 2,073 1,041 | 2,1114 |
| Local railways and bus lines | 280 | 263 | 1. 239 | ${ }^{1} 14$ | 109 | 1,201 | 1.20 | 1.198 .201 | 1.006 | 1,187 | 184 |
| Hiphway passenger transportation, n.e.c.------ | 158 | 151 | 143 | 134 | 127 | 1:5 | 113 | 11. | 115 | 113 | 112 |
| Highway freight transportation and warehousing- | 381 | 381 | 369 | 355 | 354 | 373 | 397 | 41.4 | 4.37 | 421 | 444 |
| Water transportation.- | 168 | 160 | 145 | 131 |  | 146 |  |  | 153 | 130 | 142 |
| Air transportation (common carriers) | 3 | 4 | 5 | 6 | - 6 | 14 | 8 | 10 | 12 | 13 | 15 |
| Pipe-line transportation | 25 | 24 | 21 | 17 | 20 | 22 | 23 | 2.5 | $2{ }^{\text {a }}$ | 23 | 22 |
| Services allied to transportation | 175 | 153 | 117 | 88 | 82 | 92 | 96 | 112 | 132 | 119 | 136 |
| Communications and public utilities- | 1,034 | 1,034 | 933 | 831 | 787 |  |  |  | 901 | 865 | 871 |
| Telephone, telegraph, and related services | 535 | 525 | 460 | 413 | 384 | 380 | 378 |  | 423 | 401 | 403 |
| Radio broadcasting and television | 4 4 4 | 6 473 | 8 437 | ${ }_{38}^{9}$ | 8 | 11 | 13 | 15 | 18 | 18 | 21 |
| Local utilities and public services, n.e.c.- | 30 | 30 | 488 | 384 25 | 371 24 | 386 25 | 392 | 418 | 4387 | 423 | 24 |
| Services | 6,374 | 6,214 | 5,838 |  |  |  |  |  |  |  |  |
| Hotels and other lodging places | -518 | . 504 | 5, 468 | 5,356 | 5,194 | 5,566 | 5,756 | 6,067 | 6,324 | 6,142 | 6,307 |
| Personal services | 1,008 | 996 | 941 | 889 | 860 | ${ }_{910}^{40}$ | 469 | 498 | -1.939 | 1,008 | 1,010 |
|  | 2,263 | 2,113 | 1,891 | 1,619 | 1,535 | 1,731 | 1.810 | 1,936 | 2,0:1 | 1,871 | 2,000 |
|  | 24 | 22 | 20 | 15 | 14 | 15 |  |  |  |  | 20 |
| Business services, n.e.c. | 222 | 220 | 203 | 208 | 215 | 242 | 24.5 | 278 | 282 | 289 | 304 |
| Miscellaneous repair services and hand trades..-- | 264 | 281 | 299 | 315 | 312 | 308 |  |  | 311 | 314 | 300 |
| Motion pictures-..-....-........-.-.-.-.--- | 153 | 153 | 147 | 128 | 124 | $1+1$ | 317 | 3171 | 318 | 178 | 179 |
| Amusement ${ }^{\text {Medical }}$ andrecreation, except motion pictures | 276 73 | 258 732 | 229 | 180 | 159 | 172 | 175 | 190 | 208 | 190 | 200 |
| Legal services-.--.---. | 194 | 202 | 212 | 676 214 | 66.5 217 | 680 216 | 699 | 732 | 766 | 780 | 242 |
| Engineering and other professional services, n.e.c- | 81 |  |  | 68 |  |  |  |  |  |  | 86 |
| Educational services, n.e.c. | 287 | 291 | 292 | 289 | 289 | 887 |  | 77 | 80 | 82 | 318 |
| Religious organizations .-.----.-.-. | 198 | 199 | 197 | 195 | 194 | 192 | 191 | $\underline{890}$ | 304 <br> 188 | 189 | 188 |
| Nonprofit membership organizations, n.e.c. | 153 | 159 | 157 | 146 | 141 | 147 | 147 | 152 | 144 | 144 | 142 |
| Govermment and government enterprises | 3,194 | 3,328 | 3,408 | 3,371 | 3,884 |  |  |  |  |  |  |
| Federal-general government---- | 5388 | 581 300 | 562 | , 551 | -928 | 1,406 | 1,4,2 | 6,158 | 2,540 | 2,974 | 2,909 |
| State and local-general government | 2,247 | 2,300 2,31 | 2, 2938 |  | 300 | 323 | , 336 | ${ }^{3} 43$ | -340 | 306 | 2 ${ }^{373}$ |
| State and local-government enterprises.. | -110 | 2,116 | 2,431 | 2,419 104 | 2.597 9 | 2,909 | 3,145 | 2,541 | 2,599 | 2,698 | ${ }^{2,728}$ |
|  |  |  |  |  |  |  | 110 | 119 | 125 | 120 |  |
| Rest of the world.- | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Addendum: All private industries | 42,489 | 40,397 | 37,214 | 33,816 | 33,770 | 36,177 | 37, 162 | 39,142 | 41,026 | 38,657 | 40,014 |
|  |  |  |  |  |  |  |  |  |  |  |  |

${ }^{1}$ This series measures man-years of full-time employment by persons working for wages or
salaries and by uctive proprictors of unincorporated enterbrises. "Pessons engage salaries and hy active proprictors of unincorporated enterprises. "Persons engaged" falls
short of total man-years of full-time employment because of the exclusion from the data of
unpaid family workers. This exclusion is due to unresolved dillicultes in their definition and measurement. Tahle 28 is obtained by addition of tables 24 and 27 ; footnotes to those tables are, therefore, relevant also to table 28 .

Table 28.-Number of Persons Engaged in Production, by lndustry, 1940-50 ${ }^{1}$
[Data in thousands]

|  | 19.40 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total. | 48,088 | 52,501 | 57,379 | 63, 048 | 64,385 | 62,846 | 57,295 | 57,904 | 58,646 | 57,348 | 58,835 |
| Agriculure, forestry, and fisheries. | 7,918 | 7,778 | 7,729 | 7,517 | 7,277 | 7,095 | 7,328 | 7,590 | 7,366 | 7,265 | 6,884 |
|  | 7,644 | 7,536 | 7,489 | 7,29.4 | 7,040 | 6,828 | 7,020 | 7,261 | 7,025 | 6,923 | 6,535 |
| Agricultural and similar nervice establishments.- | 188 | ${ }_{158}^{158}$ | 156 | 139 | 155 22 | 179 22 | 217 | 236 26 | $\begin{array}{r}244 \\ 28 \\ \hline\end{array}$ | 242 27 | 248 26 |
| Forestry-............... | 26 60 | 24 60 | 24 60 | 24 60 | 22 60 | 22 66 | 24 67 | 26 67 | 28 69 | 27 73 | 26 75 |
| Mining. | 965 | 1,017 | 1,025 | 953 | 913 | 865 | 912 | 982 | 1,032 | 962 | 966 |
| Metal minine | 131 | 145 | 143 | 140 | 115 | 96 | 96 | 107 | 110 | 104 | 107 |
| Anthracite minug Bituminous and oth | 93 | ${ }_{4} 9$ | ${ }^{91}$ | 85 439 | 818 | 74 392 | 838 | +82 | 83 459 | $\begin{array}{r}79 \\ 405 \\ \hline\end{array}$ | 77 402 |
| Crude petroleum and natural | 206 | 217 | 198 | 194 | 215 | 224 | $2+1$ | 256 | 276 | 271. | 275 |
| Nonmetallic mining amd guarry | 88 | 101 | 107 | 95 | 83 | 79 | 96 | 102 | 104 | 103 | 105 |
| Contratt construction. | 1,941 | 2,378 | 2,715 | 2,085 | 1,617 | 1,724 | 2,556 | 3,044 | 3,364 | 3,266 | 3,558 |
| Manufacturing | 11,012 | 13,275 | 15,428 | 17,552 | 17,207 | 15,355 | 14,678 | 15,399 | 15,457 | 14,335 | 15,108 |
| Food and kindred pro | 1,263 | 1,346 | 1,428 | 1,447 | 1,483 | 1,472 | 1,541 | 1.570 | 1,565 | 1,542 | 1,546 |
| Tobacco manufacture | 105 | + 104 | 1.37 | 1.103 | 101 | 1103 | +105 |  | 1, 100 | 1,233 |  |
| Textilenmill produrts.-.jab | 1,2096 | 1,385 1,061 | 1,391 1,098 | 1,324 1,094 | 1,220 | 1,106 1,048 | 1,316 1,146 | 1,329 1,155 | 1,371 1,199 | 1,233 1,179 | 1,295 |
| Lumber and timber basic jreduct | 511 | 1.620 | . 644 | ${ }^{1} \mathbf{5 9 7}$ | , 572 | , 538 | -595 | 678 | , 689 | 592 | 647 |
| Furniture and finished lumber produc | 412 | 467 | 451 | 429 | 414 | 411 | 496 | 562 | 560 | 519 | 572 |
| Paper and allied producks. | 337 | 379 | 381 | 394 | 391 | 395 | 450 | 465 | 471 | 454 | 484 |
| Printing, wathishong, and allied | 586 | 600 | 573 | 568 | 568 | 588 | 688 | 725 | 742 | 748 | 762 |
| Chemicals and allied mroducts | 473 | 584 | 785 | 854 | 795 197 | 781 | 710 219 | 727 228 | ${ }^{727}$ | ${ }_{229} 6$ | 709 231 |
| Products of petroleunand coal | 151 | 168 | 183 | 186 | 197 |  |  |  |  |  |  |
| Rubler products | 150 | 189 | 189 | 224 | 239 | 234 | 265 | 270 | 259 | 236 | 250 |
| Lesther und leather product | 369 | 412 | 405 | 377 | 337 391 | 359 386 | 414 482 | 409 512 | ${ }_{531}$ | 493 | -395 |
| Stone, clay, and glass products <br> Iron and stect and their products, including | 373 1335 | 437 1.645 | 441 1,964 | 418 2.465 | 391 2,429 | 386 2,078 | 482 1,676 | 1,869 | $\begin{array}{r}\text { 1,878 } \\ \hline 1.878\end{array}$ | 1,666 | 1,836 |
| Nonferrous metals and their products--......----- | 1,335 | 1,645 | 1,964 466 | 2,400 | 2,498 | 2,078 | 1,505 | 1,889 | 1,888 | 1,430 | 1,858 |
| Machinery, exerpt electrical | 798 | 1,095 | 1,375 | 1,470 | 1,420 | 1,349 | 1,412 | 1,568 | 1,580 | 1,356 | 1,405 |
| Electrical machinery. | 456 | 608 | 758 | 961 | 1,038 | 926 | 849 | 931 | 890 | 779 | 889 |
| Transportation equipment, except aut | 302 | 676 | 1,750 | 3,272 | 3,176 | 2,045 | 594 | 513 | 472 | 744 | 447 |
| Antomobiles and antomotile cquipuent | 544 | 656 | 575 | 325 | 341 504 | 408 | ${ }_{5}^{608}$ | ${ }_{5}$ | 753 | 491 | $\stackrel{513}{ }$ |
| Miscellaneous-. | 348 | 428 | 474 | 530 |  |  |  |  |  |  |  |
| Wholesale and retail trade. | 8,646 | 9,092 | 8,878 | 8,509 | 8,534 | 8,868 | 10,321 | 10,893 2,407 | 11, 184 | 11,056 | 11,225 |
| Whotesale trade. | 1,787 | 1,899 | 1,832 | 1,718 | 6,775 | 1,861 | 2,201 8,120 | 2,407 8,486 | 2,501 8,683 | - 8,598 | 8,737 |
| Retail trude and automokil | 6.859 | 7.193 | 7,046 | 6,791 |  |  |  |  |  |  |  |
| Finance, insurance, and real estate | 1,628 | 1,662 | 1,636 | 1,599 | 1,588 | 1,631 | 1,844 | 1,897 | 1,957 | 1,974 412 | 2,047 |
| bankink......- | 290 | 309 | 320 | 329 | 337 | 344 | 375 | 394 | 408 | 412 |  |
| Security and rommodity brokers, dealers and |  | 64 | 54 | 51 | 52 | 55 | 67 | 63 | 62 | 60 | 63 |
|  | 110 | 118 | 112 | 93 | 86 | 91 | 105 | 113 | 117 | 124 | 135 |
| Insurance carriers | 348 | 357 | 353 | 337 | 328 | 337 | 392 <br> 338 | $\begin{array}{r}424 \\ 351 \\ \hline\end{array}$ | 453 366 | $\begin{array}{r}473 \\ 374 \\ \hline\end{array}$ | 489 |
| Insurance agents | 286 | 288 | 294 | 283 506 | 503 | 511 | 567 | 5 | 551 | 531 | 548 |
| Real estate | 514 |  |  |  |  |  |  |  |  | 2,848 | 2,893 |
| Transportation. | 2,252 | 2,435 | 2,585 | 2,774 | 2,959 | 3,056 1,698 | 3,080 1,564 | 3,099 | 3,503 | 1,349 | 1,375 |
| Railroudx- | 1,160 | 1,285 | 1,429 | 1,534 | $\begin{array}{r}1,616 \\ 188 \\ \hline\end{array}$ | 1,628 | 1,564 | 1,513 | 1,172 | 1.169 | 156 |
| Local railways and bus lines.... | 170 | 161 130 | 169 | 184 <br> 164 | 174 | 184 | 222 | 233 | 240 | 235 | 225 |
| Ilighway passenger transportation, n.e.c-...-...- | 120 476 | 130 529 | 5 | $\underline{164}$ | 518 | 545 | 614 | 054 | 685 | 683 | 740 |
|  |  |  |  |  | 207 | 249 | 203 | 181 | 166 | 142 | 129 |
| Water transportation | 144 | 146 | 109 | 146 |  |  |  | 82 | 78 | 77 | 76 |
| Air transportation (common | ${ }^{19}$ | 24 | 34 <br> $\mathbf{2 5}$ | 25 | 26 | 25 | 27 | 28 | 30 | ${ }_{10}^{29}$ | $\stackrel{27}{165}$ |
| Pipeline transportation...-.-- | $\begin{array}{r}140 \\ \hline\end{array}$ | 130 | 130 | 161 | 183 | 183 | 163 | 179 | 170 | 164 | 165 |
| Communications and public utilities | 902 | 956 | 948 | 914 | 893 | 918 | 1,107 | 1,185 | 1,277 | 1,289 | 1,277 |
| Teleptoone, telegraph, and related | 411 | 451 | 475 | 491 | 488 | 502 | ${ }_{6}^{615}$ | 645 | ${ }^{695}$ | 60 | ${ }_{54}$ |
| Radio broadcasting and television. | 24 | 27 | 28 | 29 373 | 31 353 | $\begin{array}{r}34 \\ 359 \\ \hline\end{array}$ | 429 | 470 | 506 | 521 | 527 |
| Utilitiess electric and gas-- | 443 24 | 454 24 | 422 | 37 | ${ }_{21}$ | ${ }_{23}$ | 26 | 28 | 28 | 28 | 27 |
| Lecal utilites and miblic ser |  |  |  |  |  |  | 6.735 | 7,098 | 7,253 | 7,280 | 7,571 |
| Services. | 6, 555 | 6,602 | 6,675 | 6,349 | 6, 304 | 6,369 $\mathbf{5 7 0}$ | 6,714 | ,61.4 | , 609 | 594 | ${ }^{585}$ |
| Hotels and other lodg | 1539 | + 5056 | $\begin{array}{r}564 \\ 1,108 \\ \hline\end{array}$ | 566 1,164 1,68 | ¢, 51.147 | 1,191 $\mathbf{1 , 5 9}$ | 1,284 | 1,309 | 1,298 | 1,272 | 1,263 |
| Personal scrvices | 1,078 2,120 | 1,133 2,020 | 1,108 1,980 | 1,168 | 1,616 | 1,572 | 1,472 | 1,603 | 1,617 | 1,658 | 1,864 |
| Commercial and trade schools and employment |  |  |  |  | 38 | 23 | 27 | 34 | 37 |  | 42 460 |
| Buginess services, n.-.-.-....... | 19 308 | 324 | 409 309 | 295 | 307 | 334 | 401 | 432 | 448 | 447 |  |
| Miscellaneous rep |  | 252 | 241 | 226 | 247 | 299 | 378 | 411 | 424 | 419 | 427 235 |
| Motion pietures.- | 181 | 192 | 201 | 213 | 223 | 225 | ${ }_{261}^{239}$ | 241 264 | 275 | 272 | 269. |
| Amusement andrecreation, except notion pictures- | 215 | 233 | 235 | 220 868 | 222 | 885 | 925 | 997 | 1,061 | 1,081 | 1,146 |
| Medical and other health services-.-.......... | 817 | 841 245 | 862 232 | -818 | 212 | 213 | 253 | 265 | 275 | 281 | 287 |
| Legal services-..................... | 244 | 245 |  |  |  |  |  |  |  |  |  |
| Engineering and other professional services, n.e.c. | 90 | 103 | 128 | 113 | 109 319 | 116 319 | 135 <br> 333 | 148 | 399 | 411 | 422 |
| Educational services, n.e.c......-.......-...-...- | 323 | 323 | 319 193 | 319 195 | 109 196 | 199 | 195 | 193 | 195 | 196 | 199 |
|  | 190 | 190 | 193 199 | 198 | 213 | 210 | 218 | 215 | 215 | 212. | 211 |
| Nonprofit membership organizations, n.e.c. | 157 |  | 199 |  |  |  |  |  | 6,707 | 7,068 | 7,301 |
| Government and government enterprises | 6,267 | 7,303 | 9,735 | 14,789 | 17,088 13,910 | 16,960 13,746 | 8,729 5,298 | 3,061 | 2,876 | 3,047 | 3,134 |
| Federal-general government--- | 2,991 | 3,997 | 6,474 | 11,595 433 | 13,910 | 13,746 462 | - 494 | ${ }^{5} 504$ | , 513 | 551 | 563 |
| Federal-government enterprises. | - 385 | - 399 | 416 2,692 | 13,43 -606 | 2,587 | 2,604 | 2,776 | 2,977 | 3,139 | 3,290 | 3,420 |
| State and local-peneral government | 2,745 | $\begin{array}{r}2,749 \\ \hline 158\end{array}$ | ${ }^{2,092}$ | - ${ }^{155}$ | 2, 149 | 148 | 161 | 170 | 179 | 180 |  |
|  |  |  | 5 | 7 | 5 | 5 | 5 | 5 | 5 | 5 |  |
| of the world.. |  |  |  |  | 47,292 | 45,881 | 48,561 | 51,187 | 51,934 | 50,275 | 51,529 |
| Addendum: All private industries. | 41,819 | 45,195 | 47,639 | 48,252 | 47,202 |  |  |  |  |  |  |

${ }^{1}$ This series measures man-ycars of full-time employment by persons working for wapes or salaries and by active proprietors of unincorporated enterprises. "Persons engaged fall short of total man-years of full-time employment becauso of the exclision from the data of
unpaid family workers. This exclusion is due to unresolved difficulties in their defnition and measurement. rabere 28 also to table 28 .

Table 29.-Corporate Sales, by Industry, 1929-391
[Millions of dollars]

|  | 1989 | 1030 | 1031 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total: | 138,640 | 118,294 | 92,365 | 69,185 | 73,027 | 89,553 | 101,953 | 119,462 | 128,884 | 108, 551 | 120,789 |
| Arriculture, forestry, and fisheries | 731 | 522 | 413 | 319 | 338 | 469 | 509 | 688 | 677 | 571 | 577 |
| Warmst-.-.-.-...-........... | $\begin{array}{r}137 \\ \hline 27\end{array}$ | 468 20 | 380 12 | 302 | 314 9 | 444 9 | 477 12 | 585 16 | 628 18 | $\stackrel{522}{17}$ | 528 18 |
| Forestry | 27 4 | $\stackrel{20}{34}$ | 12 21 | ${ }^{6} 11$ | 9 15 | 9 16 | $\stackrel{12}{20}$ | 27 | 31 | 32 | ${ }_{31}$ |
| Mining. | 3,700 | 2,707 | 2,052 | 1,511 | 1,817 | 2,293 | 2,413 | 2,836 | 3,295 | 2,594 | 2,731 |
| Metal mining | 1,157 | 728 | +48 | 238 | , 375 | 375 | 504 | 671 | 939 | 598 | 798 |
| Anthracite minisg | 300 | 293 | 327 | 252 | 251 | 258 | 225 | 241 | 209 | 197 | 194 |
| Bituminous and other soft roal | 937 | 888 | 591 | 442 | 491 | 684 | 729 730 | 8845 | 889 | 685 895 | 784 704 |
| Crude petrolenmand natural gats. Fonmetallic mining and cuarrying | 871 435 | + <br> 388 <br> 88 | 408 | 397 182 | 515 185 | 759 217 | 730 225 | 806 273 | 969 289 | 895 219 | 251 |
| Contract construction | 2,802 | 2,789 | 2,035 | 1,290 | 962 | 1,110 | 1,334 | 1,793 | 2,208 | 1,926 | 2,208 |
| Manufacturing | 70,305 | 58,484 | 42,759 | 30, 995 | 34,303 | 40,131 | 46,782 | 55,959 | 61,459 | 50,031 | 57,159 |
| Food and kindred products...................-. - | 13,279 | 11,822 | 9,212 | 7,142 | 7,744 | 9,206 | 10,491 | 11,895 | 12,542 | 11,615 | 11,877 |
| Tobacco manufactures---.-........................ | -1,204 | 1,151 4,179 | 1.167 3,383 | 1,025 2,450 | $\begin{array}{r}\text { 927 } \\ 3,074 \\ \hline 10\end{array}$ | 1,046 3,402 | 1,089 | 1,200 4,445 | 1,283 | 1,2910 | 3,869 |
| Apparel and other finished fabric producte...... | 2,553 | 2,144 | 1,836 | 1,360 | 1,516 | 1,784 | 1,926 | 2,266 | 2,234 | 2,114 | 2,342 |
| lumber and timber busie producta | 1,48; | 1,052 | -622 | 380 | 456 | 504 | 637 | 830 | 968 | 740 | 903 |
| Furniture and finished lumber products | 1,308 | 932 | 712 | 455 | 527 | 590 | 688 | 931 | 977 | 1,029 | 1,224 |
| Paper and alliod products-0.-.............. | 1.732 | 1,515 | 1,221 | 1966 | 1,126 | 1,285 | 1,459 | 1,687 | 1,846 | 1,512 | 1,747 2220 |
| Printing, publighing, and allied industries . . . . . | 2.777 <br> +025 <br> 1.005 | 1,562 4,878 | $\begin{array}{r}2,213 \\ \mathbf{2} \\ \hline\end{array}$ | $\stackrel{1,727}{2}$ | 1,594 | $\begin{array}{r}1,804 \\ 2 \\ \hline\end{array}$ | 1,963 | 2,165 3,783 | 2,363 4,088 | 2,163 3,657 | 4,220 |
| Chemicais and ablied products. | +1,685 | -5,708 | 2,781 4,131 | 3,951 | 3,794 | 3,620 | 3,952 | 3,419 4 | 5,086 | 4,956. | 5,254 |
| Rubluer produrts | 1.350 | 1,042 | 771 | 595 | 665 | 682 | 730 | 903 | 1,039 | 852 | 1,069 |
| Leather ind lenther produrts.-.-....------.... | 1,715 | 1,368 | 1,092 | 828 | 974 | 1,022 | 1,153 | 1,270 | 1,319 | 1,130 | 1,236 |
| Stone, rlay, and glasy products ande....e.ai...- | 1,610 | 1,380 | 1,013 | 651 | 701 | 818 | 989 | 1,345 | 1,502 | 1,206 |  |
| ordtature--..-............. | 8,254 | 5,850 | 3,716 | 1,986 | 2,574 | 3.170 | 3,952 | 5,462 | 6,518 | 4,282 | 5,974 1,617 |
| Nonferrous metals and their prod | 2,664 | 1,084 | 1,378 | 940 | 1,169 | 1,585 | 1,797 | 2,230 | 2,693 | 1,240 | 1,617 |
| Machinery, exeppt electrical. | 4,531 | 3,498 | 2,295 | 1,342 | 1,458 | 1,898 | 2,419 | 3,358 | 4,144 | 3,006 | 3,463 |
|  | 1,689 | 1,327 | 913 | 532 | 536 | 764 | 923 | 1,263 | 1,554 | 1,565 | 1,844 |
| Transportation equppment, except nutomohice. - | ${ }_{0} 711$ | . 605 | 310 | 195 | -168 | ${ }^{295}$ | 322 | ${ }^{555}$ | + 824 | - 624 | 3,577 |
|  | 6,091 2,033 | 3,869 | 2,731 1,264 | -1,417 | 2,134 -915 | 1,007 | 1,202 | 4,703 1,249 | 1,369 | -894 | 1,028 |
| Wholesale and retail trade. | 43,108 | 36,897 | 30,242 | 22,903 | 23,978 | 32,813 | 37,417 | 43,145 | 45,383 | 38,575 |  |
| Wholesale trade-.-..... | 20,747 | 17,621 | 13,787 | 10.398 | 11,166 | 17,731 | 20,479 | 23,771 | 24,391 | 19,577. | 21, 314 |
| Retail trade and automohile servi | 22,361 | 10,276 | 16,455 | 12,505 | 12,812 | 15,082 | 16,938 | 19,374 | 20,992 | 18,998 | 20,948 |
| Transportation | 9,688 | 8,453 | 6,985 | 5,525 | 5,470 | 6,139 | 6,453 | 7,319 | 7,683 | 6,682 | 7,364 |
| Mailrnads- | 6,033 | 5,840 | 4,737 | 3,584 | 3,520 | 3,702 | 3,853 | 4,511 | 4,630 | 4,138 | 4,632 |
| Local mailways and bus lines | 867 | $79+$ | 658 | 609 | 551 | 685 | 673 | 695 | 668 | 503 | 464 |
| Highway passenger transportation, n.e.e --.-.-- | 245 | 247 | 222 | 178 | 180 | 245 | 275 | 306 | 341 | 299 | 328 728 |
| Highway freight transportationand warehousing. | 613 | 628 | 559 | 461 | 497 | 548 | 619 | 692 | 786 | 653 | 728 |
| Water transportation. | 476 | 408 | 339 | 308 | 350 | 559 | 599 |  | 703 |  | 664 |
| Air transportation (common carriers) | 34 | 4 | 67 | 01 | 59 | 32 | 44 | . 52 | 63 | 65 | 88 |
| Pipe-line tranaportation. | 350 | 318 | 248 | 190 | 175 | 216 | 219 | 244 | 275 | 257 | 260 |
| Strvices allied to transportation | 170 | 174 | 155 | 128 | 138 | 152 | 171 | 192 | 217 | 181 | 201 |
| Communcations and public utilities- | 4,994 | 5,232 | 5,067 | 4,485 | 4,222 | 4,251 | 4,491 | 4,782 | 5,037 | 4,937 | 5, 161 |
| Telephore, telegraph, and related services | 1,856 | 1,851 | 1,660 | 1,376 | 1,229 | 1,112 | 1,172 | 1,266 | 1,337 | 1,336 |  |
| Radio broadcasting and television. | 172 2.851 | 125 3,136 | 130 3.129 | 1,96 2,873 | 1,92 2,770 | 279 | 1, 95 | + 116 | , 123 | 123 | 136 3,505 |
| local utilitics and public servicter, nee.e. | -115 | -120 | 3,148 | 2,873 140 | 2,771 | 2,947 113 | 3,111 | 3,283 | 3,458 $\mathbf{1 1 9}$ | 3,360 118 | ${ }^{119}$ |
| Services................. | 3,312 | 3,210 | 2,812 | 2,157 | 1,937 | 2,347 | 2,554 | 3,000 | 3,142 | 3,235 |  |
| Hotels and other lodking places. | ${ }^{679}$ | 601 | 489 | 367 | , 321 | 2,390 | 2,455 | 3,521 | - 573 | - 544 |  |
|  | 672 | 643 | 557 | 449 | 394 | 442 | 491 | 5.49 | 614 | 606 | 622 |
| Business services, n.e.e. ${ }_{\text {a }}$ | 228 | 219 | 178 520 | 142 | 133 | 173 | 188 | 225 | 232 | 253 | ${ }_{725}^{255}$ |
| Business services, n.e.c... | 666 | 641 |  | 414 | 387 | 504 | 550 | 657 | 676 | 688 |  |
| Miscellaneous repair setvices and hand trades-.- | 63 | 61 | 50 | 39 | 36 | 48 | 52 | 62 | 64 | 61 |  |
|  | 749 | 824 | 836 182 | 611 135 | 546 | 642 | 654 | 797 | 765 | 887 | ${ }_{212}^{883}$ |
| Amusementandrecreation, except motion pictures- | 25.5 | 221 |  | 135 | 120 | 148 | 164 | 189 | 218 | 196 |  |

${ }^{1}$ For the general sources used in muking these estimates, see Part III, section on Corporate
${ }_{2}$ Industries in which there are no corporations organized for profit, or in which corporate
sales are estimated at less than $\$ 500000$ in all years, are omitted from this table. The in-
dustrial division of Finance, insurance, and real estate is excluded from the table because the presentation of sales data for these industries would be misleading in view of the large part of their receipts which is in the form of property income.

Table 29.-Corporate Sales, by Industry, 19:10-501
[Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 194\% | 19.46 | 14.48 | 19.48 | 1949 | 1480 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All industries, total ${ }^{2}$. | 135,248 | 176,181 | 202,777 | 233,435 | 246,737 | 239, 512 | 270,898 | 347,801 | 388, 744 | 367,805 | 122,245 |
| Agriculture, forestry, and fisheries | 608 | 712 | 768 | 826 | 879 | 931 | 1,208 | 1,595 | 1,783 | 1,628 | 1,669 |
| Farms. | 366 | 663 | 727 | 787 | 841 | 88.5 | 3,150 | 1,527 | 1.714 | 1,548 | 1,519, |
| Fisherest | 14 28 | 16 33 | 21 20 | 15 24 | $\stackrel{10}{22}$ | 14 | 23 35 | 30 | 23 46 | 20 10 | 45 |
| Mining- | 3,114 | 3,723 | 3,865 | 3,579 | 3,875 | 3,789 | 4,123 | 5,809 | 7,597 | 6,343 | 7,138 |
| Metal mining-- | 973 | 1,095 | 1,260 | , 818 | 744 | 712 | 641 | 9198 | 1.219 | 1,018 | 1.318 |
|  | ${ }_{922}^{222}$ | 1256 | +303 | 323 | 378 | 35.4 | 440 | 408 | 510 | 430 | 409 |
| Bituminous and other soft coal mining Crude petroleum and natural gas ---- | 920 | 1,167 | 1.271 | 1.417 | 1,573 | 1,509 | 1,580 | 2,245 1,498 | 2, 2.641 | 1,886 2,178 | -2,188 |
| Nonmetallic mining and quarrying | 272 | 354 | 395 | 373 | 859 | 357 | 467 | 1.400 | 2. 714 | 2.751 | 2.811 |
| Contract construction | 2,473 | 3,452 | 4,643 | 4,219 | 3,101 | 2,869 | 4,220 | 6,929 | 9,227 | 10,122 | 14.596 |
| Manufacturing | 65,755 | 92,023 | 116,278 | 141,930 | 150960 | 138,725 | 136,906 | 177,777 | 197,115 | 184, 194 | 215.364 |
| Food and kindred produc | 12,372 | 15,767 | 20,602 | 22,373 | 23,806 | 23,751 | 28,321 | 35,703 | 36,9088 | 36.167 | 38,821 |
| Tobacco manufactures | 1,415 | 1,581 | 1,800 | 2,101 | 2,148 | 2.243 | 2,640 | 2,869 | 3,05, | 3.034 | 3.103 |
| Textile-mill products- | 4,207 | 6,068 | 7,616 | 8,011 | 7,718 | 7.690 | 10,257 | 11,631 | 12.418 | 10.602 | 12,044 |
| Apparel and other finished fabric products.....- Lumber and timber basic product3.-- | 2,509 1,071 | 3,379 1,505 | 3,961 1,710 | 4, 115 1,659 | 3,957 | 4,001 1,423 | 6,737 2,033 | 7,779 | 8.128 3,603 | 7,899 3,061 | 8,155 3.435 |
| Furniture and finished lumber products | 1,389 | 1,797 | 1,881 | 1,936 | 1,998 | 2,005 | 2,771 | 3,420 | 3,565 | :3,082 | 3,869 |
| Paper and allied products | 2,023 | 2,791 | 2,877 | 3,268 | 3,473 | 3,565 | 4,35.3 | 5,690 | 5,973 | :1,301 | 6,5,30 |
| Printing, publishing, and allied industr | 2,369 | 2,577 | 2,663 | 3,096 | 3,449 | 3,804 | 4,792 | 5,672 | 6, 2018 | 6,667 | 6,350 |
| Chemicals and allied products | 4,764 | 6,437 | 7,205 | 8,612 | 9,822 | 9,834 | 10,737 | 13,487 | 14,413 | 13,35.7 | 15.919 |
| Products of petroleum and coal | 5,523 | 6,659 | 7.478 | 8,500 | 9,853 | 10,007 | 10,374 | 14,792 | 19,493 | 18,023 | 19.942 |
| Rubber products. | 1.153 | 1,689 | 1,883 | 2,906 | 3,332 | 3,366 | 3,127 | 3,420 | 3,353 | 3,088 | 1.156 |
| Leather and leather products | 1,287 | 1,780 | 2,112 | 2, 165 | 2,150 | 2,201 | 2,845 | 3,298 | 3,165 | 2,750 | 2.894 |
| Stone, clay, and glass products | 1,682 | 2,283 | 2,298 | 2,352 | 2,290 | 2,322 | 2.938 | 3,673 | 4,116 | 3,917 | 4,982 |
| ordnance.---.-.-.--- | 7,549 | 11,756 | 16,333 | 20,534 | 20,837 | 18,495 | 13.717 | 18,778 | 21.78i | 19,234 | 23.709 |
| Nonferrous metals and their product | 1,988 | 2,882 | 3,157 | 4,286 | 4,379 | 3,969 | 4,315 | 5,337 | 5,638 | 4,818 | 6,791 |
| Machinery, except electrical. | 4,568 | 7,222 | 9,437 | 10.732 | 11,012 | 9,801 | 9,117 | 13,145 | 14,694 | 18, 139 | 14,917 |
| Electrical machinery--- | 2,462 | 3,747 | 5,022 | 6,585 | 8,012 | 7,070 | 5,488 | 8.214 | 8.918 | 8, 469 | 11.529 |
| Transportation equipment, except automobiles Automobiles and automobile equipment | 1,568 4,701 | 3,924 | 12,271 3 | 22,322 3,788 | 24,622 $\mathbf{3 , 7 1 5}$ | 17,141 3,092 | -6,595 | 11,483 | 13,641 | 15,268 | 19,288 |
|  | 1,155 | 1,624 | 1,982 | 2,589 | 2,779 | 2,745 | 2,894 | 3,305 | 3,574 | 3,209 | 3,708 |
| Wholesale and retail trade | 46,638 | 57,081 | 55,184 | 57,616 | 61,023 | 65,905 | 95,736 | 122,185 | 136,200 | 128,221 | 142,590 |
| Wholesale trade.-...-- | 23,532 | 29,707 | 29,026 | 30, 306 | 32,311 | 34,746 | 41,408 |  |  |  |  |
| Retail trade and automobile | 23,106 | 27,374 | 26,158 | 27,310 | 28,712 | 31,159 |  |  | 63, 967 | $6.3,634$ | 70,589 |
| Transportation_ | 7,769 | 9,526 | 11,527 | 13,661 | 14,307 | 14,052 | 13,786 | 16,717 | 18,378 | 17,915 | 20,314 |
| Railroads-- | 4,722 | 5,840 | 7,887 | 9,610 | 10,045 | 9,699 | 8,612 | 9. 5608 | 10,645 | 9,453 | 16.436 |
| Local railways and bus lines | 431 | 436 | 497 | 602 | ${ }_{6}^{612}$ | 8801 | $\begin{array}{r}603 \\ -\quad 953 \\ \hline\end{array}$ | 1,068 | 1,113 | 1.178 | 964 |
| Highway passenger transportation, n.e.c------ | 341 793 | 421 1,006 | 635 1,061 | 804 1,160 | r 1,188 | $\begin{array}{r}1,238 \\ \hline 1801\end{array}$ | $\begin{array}{r}1.541 \\ \hline 953\end{array}$ | 1,099 | 2,45, ${ }^{2}$ | 2,821 | 3,625 |
| Water transportation. | 832 | 1,047 | 729 | 680 | 726 | 670 | 523 | 2,073 | 2,023 | 2.399 | . 844 |
| Air transportation (common carriers) | 131 | 187 | 191 | 223 | 263 | 327 | 193 | 6 ff 2 | 782 | 870 |  |
| Pipe-line transportation. | 293 | 318 | 236 | 243 | 252 | 219 | 912 | 200 | 337 | 3.10 | 401 |
| Services allied to transportation. | 226 | 271 | 291 | 339 | 379 | 420 | 449 | 577 | 543 | 9,38 | 6.03 |
| Communications and public utilities. | 5,352 | 5,806 | 6,259 | 6,775 | 7,310 | 7.658 | 8,118 | 8,985 | 10,159 | 10,987 3.553 | 12,000 4,008 |
| Telephone, telegraph, and related | 1,364 | 1,495 | 1,841 | 2,064 | 2,210 | 2,400 | 2,583 | 2,779 | 3.204 | 3.5.33 | 4.008 |
| Uadio broadcasting and television. | 161 3,708 | 181 4,007 | 4,132 | 4,368 | 4,687 | 4,818 | 5,058 | 5,670 | 6. 371 | 6,830 | 7.342 |
| Local utilities and publio services, n.e.e. | -119 | 4,123 | -104 | +109 | 106 | 113 | 134 | 154 | 171 | 183 | 196 |
| Services | 3,539 | 3,858 |  | 4,829 | 5,282 | 5,583 | 6,801 | 7.804 | 8,290 | 8.395 | 8, 574 |
| Hotels and other lodging places | 603 | 665 | . 715 | 896 | 966 | 1,035 | 1,233 | 1,341 | 1,473 | 1,367 1,458 | 1, 1,473 |
| Personal services .-.----.-- | 653 | 724 | 803 | 858 | 903 | 950 | 1,151 | 1,364 | 1,473 | 1,458 | 1,473 |
| Commercial and trade schools and employment agencies | 252 | 251 | 380 | 425 | 420 | 355 | 429 | 582 | 644 | 734 | 822 2.223 |
| Business services, n.e.c. | 789 | 849 | 812 | 911 | 1,045 | 1,169 | 1.461 | 1,7.51 | 1,901 | 2,039 | 2,223 |
| Miscellaneous repair services and hand trades Motion pictures | $\begin{array}{r}61 \\ 949 \\ \hline 93\end{array}$ | $\begin{array}{r}98 \\ 1,004 \\ \hline 267\end{array}$ | $\begin{array}{r}128 \\ 1,149 \\ \hline\end{array}$ | $\begin{array}{r}148 \\ 1,327 \\ \hline 264\end{array}$ | 157 1.483 308 | $\begin{array}{r}122 \\ 1,574 \\ \hline 378\end{array}$ | $\begin{array}{r}130 \\ 1,823 \\ \hline 574\end{array}$ | 213 1,942 $\mathbf{6 0 3}$ | 246 1.914 643 | 248 1.883 666 | 263 1,732 667 |
| Amusement and recreation, except motion pictures- | 232 | 267 | 266 |  |  | 378 | 574 | 603 |  | 660 |  |

1 For the general sources used in making these estimates, see Part III, section on Corporate profits.
${ }^{2}$ Industries in which there are no corporations organized for profit, or in which corporate sales are estimated at less than $\$ 5(0), 000$ in all years, are omitted from this table. The in
dustrial division of Finance, insurance, and real estate is excladed from the table because the of their receipts wbich is in the form of property income.

Table 30.-Personal Consumption Expenditures, by Type of Product, 1929-39
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| I. Food ${ }^{1}$ and tobacco | 21,374 | 19,519 | 16,272 | 12,719 | 12,777 | 15,636 | 17,693 | 20,030 | 21,629 | 20,662 | 21,072 |
| 1. Food purchased for off-premise consumption (nde) $\qquad$ | 14, 520 | 13,255 | 10,633 | 8,033 | 8,457 | 10,576 | 11,960 | 13,734 | 14,589 | 13,889 | $13 ; 976$ 3 |
| 2. Purchased meals and beverages.-.-.-.-- | 3,055 | 2,892 | 2,590 | 2,116 | 1,834 | 2,332 | 2,674 | 3,054 | 3,583 | 3,446 | 3,748 |
| a. Retail, serviee, and amusement | 2,415 | 2,307 | 2,130 | 1,775 | 1,519 | 1,927 | 2,228 | 2,550 | 3,047 | 2,947 | 3,254 |
| b. IIotels (nde) | 396 | 363 30 | 301 23 | 230 14 | ${ }_{12}^{225}$ | 322 | 359 16 | 416 20 | 447 24 | 420 21 | 435 22 |
| c. Dining and buffet cars (nde) <br> d. Schools and school fraternities | 35 88 | 30 88 | 23 82 | 14 75 | 12 71 | 15 76 | 16 84 | 20 90 | 97 | 98 | 89 |
| e. Institutions, clubs, andindustrial lunchroons (nde). | 269 | 24.4 | 180 | 121 | 96 | 105 | 117 | 128 | 145 | 130 | 124 |
| f. Tips (ndc). | 110 | 104 | 92 | 79 | 64 | 83 | 95 | 108 | 126 | 121 | 131 |
| g. Less: nonconsumer purchases included in lines a-f (nde) | 258 | 244 | 218 | 178 | 153 | 196 | 225 | 258 | 303 | 291 | 317 |
| 3. Food furnished government (including military) and commercial employees, and withdrawn by nonfarm proprietons (nde) | 514 | 490 | 398 | 330 | 324 | 366 | 404 | 431 | 474 | 440 | 441 |
| 4. Food produced and consumed on farms (nde) | 1,585 | 1,428 | 1,158 | 915 | 926 | 992 | 1,217 | 1,271 | 1,304 | 1,184 | 1,134 |
| 5. Tobaeco products and smoking supplies (ndc) | 1,585 1,700 | 1,454 | 1,493 | 1,325 | 1,236 | 1,370 | 1,438 | 1,540 | 1,679 | 1,703 | 1,773 |
| II. Clothing, accessories, and jewelry--.-.---..- | 11,018 | 9,575 | 8,115 | 5,973 | 5,365 | 6,479 | 6,928 | 7,558 | 7,964 1,279 | 7,876 1,257 | 8,299 1,226 |
| 1. Shoes and other footwear (ndc)---------- | 1,675 | 1,375 141 | 1,207 | 1,022 100 | 887 98 | 1,072 102 | 1,031 | 1,145 | 1,279 122 | 1,857 118 | 1.114 |
| 3. Clothing and accessories except footwear (nde) | 7,502 | 6,516 | 5,606 | 3,948 | 3,653 | 4,497 | 4,896 | 5,296 | 5,414 | 5,376 | 5,776 |
| 4. Standard clothing issued to military personnel (nde) | 12 | 11 | 5 9 | 10 | 11 | 7 | , | 12 | 13 | 14 | ${ }_{26}^{22}$ |
| 5. Fur storage and repair (s)-.-.-.....-- | 25 | 21 | 17 | 12 | 10 | 13 | 17 | 20 | 23 | 25 | 26 |
| 6. Cleaning, dyeing, pressing, alteration, storage, and repair of garments, n.e.c. (in shops) (s) | 448 | 399 | 335 | 240 | 220 | 252 | 285 | 319 | 360 | 366 | 371 |
| 7. Dressmakers and seamstresses (not in shops) (s) |  | 50 | 38 | 27 | 24 | ${ }^{27}$ |  | 31 | 36 | 30 308 |  |
| 8. Laundering in establishmenta (s) ${ }_{\text {a }}$ 9.-.... | 475 4 4 | 458 | 392 | 310 | 252 | 262 | 272 | 301 3 | 323 3 | 308 3 | 312 3 |
| 9. Costume and dress suit rental (s) | 3 | 3 | 3 | 2 | 2 | 2 | 2 |  |  |  |  |
| ing dealers (s) | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 |
| 11. Miscellaneous personal services (s) | 11 | 10 | 8 | 6 | 5 | 6 | 7 | 8 | 8 | 8 | 8 |
| 12. Jewelry and watehes (de)........-....- | 560 80 | 513 73 | 328 53 | 252 39 | 172 | 198 | 233 | 265 | 333 46 | 323 44 | 355 49 |
|  | 1,116 | 1,039 | 979 | 817 | 660 | 760 | 802 |  | 961 | 951 | 1,004 |
| 1. Toilet articles and preparations (nde) -. | 1,591 | + 515 | 504 | 420 | 320 | 377 | 8 | 8895 | 428 | 442 | 486 |
| 2. Barber shop services (s) --.....-------- | 350 | 349 | 310 | 253 | 213 | 221 | 230 | 245 | 272 | 254 | ${ }_{258}^{252}$ |
| 3. Beauty parlor services (s) .-.-....------- | 167 | 167 | 158 | 138 | 122 | 157 | 192 | 217 | 253 | 248 | 258 8 |
| 4. Baths and masseurs (s) ---............-- | 8 | 8 | 7 | 6 | 5 | 5 | 6 | 7 | 8 | 7 |  |
| [IV. Housing | 11,421 | 10,992 | 10,235 | 8,964 | 7,849 | 7,538 | 7,597 | 7,882 | 8,378 | 8,733 | 8,940 |
| 1. Owner-occupied nonfarm dwellings-space-rental value : (s) | 5,898 | 5,581 | 5,127 | 4,440 | 3,865 | 3,662 | 3,665 | 3,778 | 3,969 | 4,124 | 4,200 |
| 2. Tenant-occupied nonfarm dwellings (including lodging houses)-space rent ${ }^{2}$ (s) - | 4,445 | 4,346 | 4,139 | -3,691 | 3,244 | 3,099 | 3,142 | 3,295 | 3,560 | 3,773 | 3,898 |
| 3. Rental value of farm houses (s) | +829 | 830 | +754 | ${ }^{6} \mathbf{6 5 5}$ | - 587 | -616 | -142 | 3,615 | 3,638 | -620 | 619 107 |
| 4. Transient hotels and tourist cabins (s) -- | 124 125 | 113 122 | 97 118 | 74 104 | $\begin{array}{r}64 \\ 89 \\ \hline\end{array}$ | 72 89 | 79 95 | 91 103 | 103 108 | 103 113 | 116 |
| V. Houschold operation_- | 10,509 | 9,378 | 8,264 | 6,675 |  |  |  |  |  |  | 9,461 |
|  | 1,167 | 0905 | 8,264 | 6,6486 | 6,396 | 7,195 |  | 8,660 830 | 9,340 |  | ${ }_{3}^{931}$ |
|  | +485 | 356 | 338 | ${ }_{232}^{488}$ | 180 | 238 | ${ }_{273}^{648}$ | 830 385 | 382 | 321 | 383 |
| 3. Refrigerators, and washing and sewing machines (do) | 348 | 309 | 268 | 171 | 230 | 280 | 319 | 373 | 439 | 321 | 362 |
| 4. Miscellaneous electrical appliances except radios (dc) | 132 | 121 | 103 | 55 | - 74 | - 28 | 319 | 373 | 439 | 167 | 174 |
| 5. Cooking and portable heating equipnent (dc) | 288 | 241 | 194 | 55 118 | 74 104 | 99 139 | 113 182 | 137 223 | 154 252 | 167 223 | 238 |
| 6. China, glassware, tableware, and utensilk (dc) | 628 | 442 | 429 | 406 |  |  |  |  |  |  | 475 |
| 7. Durable house furnishings, n.e.c. (dc)--- | 511 | 458 | 353 | 269 | 229 | 265 | 262 | 345 | 392 | 383 |  |
| 8. Products of custom establishments, n.e.c. (dc) | 30 | 24 |  |  |  |  |  |  |  |  | 24 |
|  | 74 | 62 | 47 | 31 | ${ }_{26}^{13}$ | 30 | ${ }_{30}^{18}$ | 43 | 47 | 44 | 45 |
| 10. Net purchases from second-hand furniture and antique dealers (s) $\qquad$ | 34 | 32 | 29 | 23 | 20 | 19 | 18 | 18 | 19 | 18 | 18 |
| 11. Upholstery and furniture repair (s)_ | 24 | 23 | 23 | 22 | 22 | 26 | 30 | 31 | 30 | 44 | 48 |
| 12. Rug, drapery, and mattress cleaning and |  |  |  |  |  |  | . 30 | 34 | 30 |  | 20 |
| 13. Care of electrical equipment except | 20 | 18 | 16 | 11 | 10 | 13 | 16 | 18 | 20 | 20 | 20 |
| 14. radios and of stoves (s) .-.---.----- | 20 | 19 | 18 | 15 | 13 |  | 22 | 24 | 27 |  | 32 |
| 14. Semidurable house furnishings (ndc)-..-- | 799 | 632 | 547 | 408 | 441 | 512 | 536 | 6. 29 | 724 | $\cdots 641$ | 760 86 |
| 15. Lighting supplies (nde)-----------------1- | 86 | 76 | 71 | 70 | 76 | 86 | 93 | ${ }_{98}$ | 97 | 80 |  |
| 16. Cleaningand polishingpreparations (nde)- | 359 | 356 | 309 | 227 | 222 | 260 | 265 | 299 | 334 | 353 | 359 |
| 17. Miscellaneous household paper products (ndc) |  |  |  |  |  |  | 265 | 29 | 69 |  | 71 |
| 18. Stationery and writing supplies (ndo)--- | 143 | 133 | 103 | ${ }_{71}$ | 69 | 44 87 | 199 | 56 | 62 131 | 58 129 | 149 |
| 19. Fuel (expept gas) and ice ------------- | 1,608 | 1,542 | 1,318 | 1,138 | 1,152 | 1,263 | 1.281 | 1,411 | 1,417 | 1,311 | 1,398 |
| b. Purchased (nde)--.......-.--- | 1,494 | 1,433 | 1,222 | 1,045 | 1,055 | 1,165 | 1,177 | 1,308 | 1,311 | 1,212 | 1,280 |
| farms (nde) | 114 | 109 | 96 | 93 |  |  |  |  |  |  | +110 |
|  | 1,397 | 1,475 | 1,484 | 1,439 | 1,374 | + 98 | ${ }_{1} 104$ | 103 | 106 | 99 1.612 | 1,680 |
| a. Electricity (s) | - 616 | ${ }^{660}$ | 1,674 | 1.462 | 1,645 | 1,427 | 1,468 697 | 1.519 | 1,574 | 1,612 810 | 84 |
| b. Gas (s) --- | 548 | 567 | 562 | 544 | 645 504 | 504 | 697 511 | 726 <br> 520 <br> 20 | 766 531 | 818 | ${ }_{287}^{544}$ |
| c. Water (s) | 233 | 248 | 248 | 233 | 225 | ${ }_{252}$ | 260 | ${ }_{273}^{520}$ | ${ }_{277}$ | 274 | 287 |
|  | 543 | 551 |  | 490 | 444 | 428 |  |  |  | 511 | 533 |
| 22. Telegraph, cable, and wireless (s)......-- | 16 | 14 | 12 | 9 | 9 | 10 | 10 | 11 | 11 | 11 | 12 |

Table 30.-Personal Consumption Expenditures, by Type of Product, 1910-50
[Millions of dollars]

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \& 1940 \& 1941 \& 1942 \& 1943 \& 1944 \& 1945 \& 1946 \& 1047 \& 1948 \& 1940 \& 1950 \\
\hline \begin{tabular}{l}
1. Food \({ }^{1}\) and tobacco \\
1. Food purchased for off-premise consump-
\end{tabular} \& 22,600 \& 26,476 \& 32,793 \& 37,893 \& 41,461 \& 45,924 \& 53,738 \& 60,483 \& 63,884 \& 62,870 \& 65, 347 \\
\hline  \& 15,029 \& 17,441 \& 21,320 \& 23,508 \& 25,348 \& 27,436 \& 34, 610 \& 40,455 \& 43.528 \& 13,200 \& 45,229 \\
\hline 2. Purchased meals and beverages a. Retail, service, and amusement \& 094 \& ,983 \& 6,306 \& 7,802 \& 8,854 \& 10,427 \& 11,514 \& 11,863 \& 11,933 \& 11,585 \& 11,815 \\
\hline a. establishments (nde) \& 3,581 \& 4,440 \& 5,736 \& 7,307 \& 8,489 \& 9,850 \& 10,481 \& 10,544 \& 10,522 \& 10,216 \& 10.419 \\
\hline b. Hotels (nde) \& 459 \& 502 \& 590 \& 780 \& 891 \& 976 \& 1,115 \& 1,120 \& 1,114 \& 1.073 \& 1,092 \\
\hline c. Dining and buffet cars (nde) ----- \& 23 \& 30 \& 62 \& 92 \& 98 \& 98 \& 85 \& 83 \& 82 \& 73 \& 69 \\
\hline  \& 102 \& 109 \& 118 \& 124 \& 125 \& 143 \& 210 \& 284 \& 317 \& 320 \& 324 \\
\hline e. Institutions, clubs, and industrial lunchrooms (ndc) \& 132 \& 152 \& 187 \& 226 \& 222 \& 249 \& 331 \& 424 \& 492 \& 480 \& 499 \\
\hline f. Tips (ndc) \& 144 \& 174 \& 225 \& 289 \& 333 \& 382 \& 410 \& 415 \& 416 \& 403 \& 411 \\
\hline g. Less: nonconsumer purchases included in lines a.f (ndc) \& 347. \& 424 \& 612 \& 956 \& 1,304 \& 1,271 \& 1,118 \& 1,007 \& 1,010 \& 980 \& 999 \\
\hline 3. Food furnished government (including military) and commercial employees, \& \& \& \& \& \& \& \& \& \& \& \\
\hline and withdrawn by nonfarm propriea tors (nde) \& 475 \& 685 \& 1,168 \& 1,914 \& 2,626 \& 2,090 \& 1,638 \& 1,382 \& 1,470 \& 1.431 \& 1,502 \\
\hline 4. Food produced and consumed on farms \& 1,12\% \& 1,29 \& 1,670 \& 2,030 \& 2,066 \& 2,135 \& 2,493 \& 2,909 \& 2,806 \& 2,388 \& 2,392 \\
\hline 5. Tobacco products and smoking supplies \& 1,12 \& 1,294 \& 1,670 \& 2,570 \& 2,567 \& 2,030 \& 3,453 \& 3,874 \& 4,147 \& 4,200 \& 4,409 \\
\hline \& 1,875 \& 2,073 \& 2,329 \& 2,579 \& 2,507 \& 2,930 \& 3,453 \& 3,844 \& 4,147 \& \& \\
\hline II. Clothing, accessories, and jewelry \& 8,791 \& 10,483 \& 13,136 \& 16,287 \& 18,058
2,009 \& 20,247
2,281 \& 22,419
2,808 \& 23,144
2,975 \& 24,213
3,023 \& 22,890
2,920 \& 22,909
\(\mathbf{3 , 0 3 9}\) \\
\hline 1. Shoes and other footweat (nde) \& 1,270 \& 1,486
144 \& 1,858 \& \(\begin{array}{r}1,914 \\ \hline 256\end{array}\) \& 2,009
\(\mathbf{2 5 6}\) \& ,2,250 \& 2,808
300 \& 2,975 \& \({ }^{271}\) \& 2.24 \& 3,039 \\
\hline \begin{tabular}{l}
2. Shoe cleaning and repair (s) \\
3. Clothing and accessories except footwear (ndc)
\end{tabular} \& 127
6,061 \& 144
\(.7,085\) \& 179
8,439 \& 10,488 \& 11,567 \& 13,074 \& 15,209 \& 15,903 \& 16,877 \& 15.730 \& 15,520 \\
\hline 4. Standard clothing issued to military persontel (nde) \& 54 \& 210 \& 745 \& 1,318 \& 1,712 \& 1,74t \& 508 \& 230 \& 191 \& 213 \& 249 \\
\hline 5. Fur storage and repair (s) \& 28 \& 34 \& 41 \& 47 \& 50 \& 57 \& 74 \& 87 \& 90 \& 90 \& \\
\hline 6. Cleaning, dycing, pressing, alteration, storage, and repair of garments, n.e.c. (in shops) (s) \& 409 \& 479 \& 567 \& 658 \& 719 \& 821 \& 1,054 \& 1,244 \& 1,333 \& 1.836 \& 1,357 \\
\hline 7) Dressmakers and seamstresses (not in \& \& \& \& \& \& \& 60 \& 68 \& 72 \& 72 \& 81 \\
\hline \& 35
329 \& \(\begin{array}{r}36 \\ 374 \\ \hline\end{array}\) \& 449 \& 503 \& 558 \& 606 \& 729 \& 850 \& 872 \& 844 \& 841 \\
\hline 9. Laundering in establishments (s) \(-\cdots-\cdots-\) \& 3
3 \& 3
3 \& 4 \& \({ }^{3}\) \& 3 \& , \& 5 \& 5 \& 6 \& 6 \& 0 \\
\hline 10. Net purchases from second-hand clothing dealers ( \()\) - \(C\) \& 4 \& 4 \& 5 \& 6 \& 6 \& 6 \& 7 \& 8 \& 0 \& 9 \& 0 \\
\hline 11. Miscellaneous personal services (s) \& 10 \& 11 \& 11 \& 14 \& 15 \& 16 \& 18 \& 18 \& 18 \& 18 \& 18 \\
\hline 12. Jewelry and watches (de) \& 406 \& 547 \& 715 \& 931 \& 1,010 \& 1,203 \& 1.419 \& 1,348
130 \& 1, 324 \& 1.279
124 \& 1,328 \\
\hline 13. Watch, clock, and jewelry repairs (s)--- \& 55 \& 70 \& 82 \& 103 \& 105 \& 119 \& 138 \& \& \& \& \\
\hline III, Personal care. \& 1,107 \& 1,208 \& 1,401 \& 1,702 \& 1,877 \& 2,077 \& 2,186 \& 2,261 \& 2,245 \& 2,214 \& 2,291 \\
\hline 11. Toilet artieles and prepara \& - 510 \& 592 \& 711 \& 853 \& 965 \& 1,088 \& 1,130
+503 \& 1. 208 \& 1.256

508 \& 1.1921 \& <br>
\hline 2. Barber shop services (s)- \& 289
299 \& ${ }_{312}^{295}$ \& 332
347 \& ${ }_{4}^{405}$ \& 421
477 \& 453 \& 536 \& 532 \& 495 \& 486 \& 1,050 <br>
\hline 3. Beauty parlor services (s) \& 299
9 \& 312
9 \& 11
11 \& ${ }_{13}$ \& ${ }_{14} 1$ \& 15 \& 17 \& 17 \& 10 \& 10 \& <br>
\hline \& 217 \& 9,863 \& 10,594 \& 11,125 \& 11,702 \& 12,205 \& 13,047 \& 14,603 \& 16,466 \& 18,129 \& 19,894 <br>
\hline 1. Owner-occupied nonfarm dwellings- \& \& \& \& \& \& 6,470 \& 7,174 \& 8,324 \& 0,580 \& 10,757 \& 12,006 <br>
\hline 2, space-rental value ${ }^{\text {a }}$ (s) \& 4,326 \& 4,655 \& 5,109 \& 5,507 \& 5,998 \& 6,470 \& 7,174 \& 8,3,4 \& \& \& <br>
\hline 2. Tenant-occupied nonfarm dwellings (including lodging houses)-space rent ${ }^{2}$ (s) \& 4,039 \& 4,312 \& 4,544 \& 4,599 \& 4,615 \& 4,531 \& 4,488 \& 4,618
1,220 \& 5,009
1,334 \& 5,517 \& 1,002 <br>
\hline 3. Rental value of farm houses (s)......- \& , 624 \& 658 \& 688 \& 731 \& 784 \& 863
184 \& 206 \& 1,230 \& 1, 2.53 \& $1 \cdot 264$ \& ${ }^{1} 275$ <br>
\hline 4. Transient hotels and tourist cabins (s) -- \& 109
119 \& 116 \& 127
126 \& ${ }_{137}^{151}$ \& 142 \& 157 \& 184 \& 211 \& 228 \& 240 \& 247 <br>
\hline 5. Clubs, schools, and institutions (s) .-..- \& 119 \& 122 \& \& \& \& \& \& \& \& 23,529 \& 26,439 <br>
\hline V. Household operation. \& 10,292 \& 11,724 \& 12,325 \& 12,714
1
1 \& 13,524
1,295 \& 14,865
1,541 \& 19,012
2,319 \& 22,717
$\mathbf{2 , 7 0 0}$ \& 24, 2,53 \& 2,820 \& 3,341 <br>
\hline 1. Furniture (dc) \& 1,044 \& 1,295 \& 1,260
536 \& 1,222 \& 1,295 \& 1.543 \& - 844 \& 1,049 \& 1,131 \& , 964 \& 1,082 <br>

\hline | 2. Floor coverings (dc) |
| :--- |
| 3. Refrigerators, and washing and sewing machines (dc) | \& 417

422 \& 513
557 \& 536 \& b91 \& 55 \& \& \& \& \& \& <br>
\hline 4. Miscellaneous electrical appliances except radios (dc) \& 197 \& 254 \& 705 \& 254 \& 150 \& 317 \& 1,587 \& 2,791 \& 2,927 \& 2,403 \& 3,021 <br>
\hline 5. Cooking and portabie heating equipment (dc) \& 265 \& 354 \& \& \& \& \& \& \& \& \& <br>
\hline 6. China, glassware, tableware, and uten(2i) sils (de) \& 517 \& 633 \& 674 \& 631 \& 670 \& 841 \& 1,339 \& 1,442 \& 1,504 \& 1,422 \& 1,500 <br>
\hline 8. Products of custom establishments, \& 457 \& \& \& \& \& 904 \& 1,286 \& 1,391 \& 1,402 \& 1,324 \& 1,427 <br>

\hline | n.e.c. (de). |
| :--- |
| tablishments, | \& 26 \& \& 689 \& $72 \overline{5}$ \& 782 \& 904 \& 1,280 \& 1,391 \& 1,102 \& \& <br>

\hline 6. Writing equipment (de)--.-.--- \& \& \& \& \& \& \& 20 \& 21 \& 23 \& 23 \& 25 <br>
\hline 10. Net purchases from second-hand furniture and antique dealers $(\Leftrightarrow)$ - c. \& 18 \& 19 \& 19 \& 19 \& 20 \& 20 \& \& \& \& \& <br>
\hline 11. Upholstery and furniture repair (s) \& 53 \& 57 \& 66 \& 71 \& 76 \& 80 \& 87 \& 99 \& 110 \& 117 \& 125 <br>
\hline 12. Rug, drapery, and mattress cleaning and \& \& 26 \& 33 \& 34 \& 35 \& 40 \& 52 \& 67 \& 73 \& 75
170 \& 78
179 <br>
\hline epair (s) $\qquad$ \& \& 20 \& \& \& \& \& \& \& 159 \& \& <br>
\hline 13. Care of electrical equipment except radios and of stoves (s) \& 35
811 \& \& 49
1,114 \& 62
1,278 \& 73
1,393 \& 86
1,430 \& 1,836 \& 1,868 \& 1,948 \& 1,889 \& 2,044 <br>
\hline 14. Semidurable house furnishings (nde)...-- \& \& $\begin{array}{r}+950 \\ \hline 123\end{array}$ \& 1,112 \& \& \& \& \& \& \& \& <br>
\hline  \& \& \& \& 684 \& 691 \& 638 \& 693 \& 1,146 \& 1,240 \& 1,143 \& 1,212 <br>
\hline 16. Cleaningandpolishingpreparations(ndc) - \& 353 \& 335 \& 300 \& \& \& \& \& \& \& \& <br>
\hline 17. Miscellaneous household paper products (ndc) \& 79 \& 81 \& \& \& \& \& 379 \& 391 \& 391 \& 398 \& 398 <br>
\hline 18. Stationery and writing supplies (nde) \& $\square 162$
$\square$ \& 1.791 \& 215
$\times \quad 1,945$ \& 2,112 \& 314
2,123 \& 2,225 \& 2,378 \& 2,897 \& 3,247 \& 2,892 \& 3,163 <br>
\hline 19. Fuel (except gas) and ice......-...... \& - $\begin{array}{r}1,553 \\ 1,448\end{array}$ \& 1,707
$\mathbf{1}, 601$ \& $\bigcirc \begin{array}{r}1,985 \\ 1,834\end{array}$ \& 1,993 \& 1,997 \& 2,103 \& 2,246 \& 2,711 \& 3,117 \& 2,775 \& 3,052 <br>

\hline | a. Purchased (ndc) |
| :--- |
| b. Produced and consumed on | \& 1,448

105 \& 1,1001
106 \& \& 119 \& 126 \& - 122 \& ${ }_{2}^{132}$ \& 186
0.692 \& 2, 130 \& 117
3.200 \& <br>
\hline farms (nde) \& 1,785 \& 1,851 \& 1,962 \& 2,022 \& 2,134 \& 2,254
1,194 \& 2,397
1,270 \& 2,662
1,406 \& 2,920 \& 3,200
1,740 \& 3,593 <br>
\hline 20. Household utilities \& 1,910 \& - 965 \& 1,017 \& 1.045 \& 1,125 \& 1, 719 \& 1,270 \& 1, 860 \& 1,058 \& 1,031 \& 1,188 <br>
\hline \& 584 \& 587 \& \& 656
321 \& \& \& 360 \& 387 \& +04 \& -423 \& 450 <br>

\hline | b. Gas (s): |
| :--- |
| c. Water (s) | \& 291 \& 299 \& \& 321 \& 336 \& 347 \& 360 \& 387 \& 40t \& \& <br>

\hline \& 568 \& 614 \& 757 \& 914 \& 1.030
22 \& 1,154
23 \& 1,271
24 \& $\begin{array}{r}1,366 \\ \hline 28\end{array}$ \& 1,640
28 \& 1.829 \& $\begin{array}{r}2,089 \\ \hline\end{array}$ <br>
\hline 21. Telephone (8) ${ }_{\text {22 }}$ Telegraph, cable, and wireless (s).....-- \& 13 \& 16 \& 18 \& 21 \& \& \& \& \& \& \& <br>
\hline
\end{tabular}

Table 30.-Personal Consumption Expenditures, by Type of Product, 1929-39—Continued
[Millions of dollars]


Table 30.-Personal Consumption Expenditures, by Type of Product, 1929-39—Continued
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| VIII. Transportation-Continucd |  |  |  |  |  |  |  |  |  |  |  |
|  | ${ }_{5}^{5}$ | 53 | 50 $-\quad 2$ | 48 | $\begin{array}{r}46 \\ 3 \\ \hline\end{array}$ | 44 4 | ${ }_{6}^{62}$ | 72 8 | 78 | 84 8 | ${ }_{11}^{92}$ |
| e. Coastal and inland waterway (s)- | 41 | 24 | 17 | 26 | 17 | 22 | 20 | 23 | 22 | 22 | 22 |
| 1. Baggage transier, carriage, storage, and excess charges (s) | 12 | 10 | 8 | 5 | 4 | 4 | 4 | 5 | -5 | 4 | 4 |
|  | 96 | 78 | 55 | 39 | 28 | 28 | 33 | 46 | 58 | 56 | 53 |
|  | 4,327 | 3,986 | 3,298 | 2,439 | 2,199 | 2,437 | 2,625 | 3,014 | 3,374 | 3,235 | 3,446 |
| 1. Admissions to specined spectator amuse- | 913 | 892 | 854 | ${ }_{6}^{631}$ | 573 | ${ }_{518}^{625}$ | ${ }_{659}^{672}$ | 759 | 818 | 816 | 821 |
|  | 720 91 | 732 61 | 719 47 | $\begin{array}{r}527 \\ 33 \\ \hline\end{array}$ | 482 19 | 518 18 | 556 19 | 626 .21 | 676 21 | 663 27 | 659 32 |
| b. Entertainments of nomprofit or-- |  | 61 | 47 |  |  |  |  |  |  |  |  |
| ganizations, exceptathletics (s)- | 33 | 32 | 30 | 23 | 21 | 23 | 24 | 27 | 30 | 29 | 30 |
| d. Professional baseball (s)---.----- | 17 1 | 17 1 | 14 1 1 | 12 | 11 | 13 1 | 15 | 18 2 | 19 2 | 20 2 | 22 |
| f. Professional hockey (s)...---.-- | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 3 |  | 3 | 3 |
| g. Horse and dog race tracks (s)--- | 2 | 2 | 2 | 1. | 2 | ${ }^{6}$ | 7 | 8 | 9 | 12 | 11 |
| i. College football (s)--------7 | 22 18 | $\stackrel{22}{18}$ | 20 15 | 18 12 | 20 13 | 25 16 | 27 16 | 31 19 | 33 21 | 37 19 | 10 20 |
| j. Ticket broker9' markup on ad- |  |  |  |  |  |  |  |  |  |  |  |
| missions (8) | ${ }_{2}^{4}$ | 2 2 | 1 2 | 1 | 1 | 1 2 | $\begin{aligned} & 1 \\ & 2 \end{aligned}$ | $\stackrel{2}{2}$ | $\stackrel{2}{2}$ | $\stackrel{2}{2}$ | 2 |
|  | 8 | 7 | 6 | 4 | 6 | 19 | 26 | 29 | 38 | 44 | 41 |
| 3. Nonvending coin machines-receipts minus payoff (s). | 8 | 6 | 6 | 6 | 9 | 14 | 22 | 34 | 52 | 55 | 58 |
| 4. Specified commercial participant amusements | 207 | 203 | 175 | 132 | 121 | 135 | 141 | 165 | 194 | 164 | 183 |
| a. Biliard parlors and bowling | 58 | 57 | 48 | 35 | 34 | 41 | 44 | 57 | 73 | 57 | 70 |
| b. Dancing, riding, shooting, skat- |  |  |  |  |  |  |  |  |  |  |  |
| c. Amusement devices and parks (s).- | 16 | 29 16 | 24 13 | 18 10 | 18 10 | ${ }_{11}^{21}$ | 21 12 | 26 14 | 31 17 | 23 13 | 15 |
| d. Daily fee golf courses-greens | 16 | 1 | 13 | 10 |  |  |  |  |  |  |  |
|  | 13 | 13 | 12 | 12 | 12 | 13 | 14 | 14 | 15 | 16 | 17 |
| caddy fees (s) --............. | 78 | 76 | 68 | 51 | 41 | 41 | 41 | 43 | 46 | 44 | 43 |
| f. Sightseeing busses and guides (s) g. Private flying operations (s). | 3 9 | 3 9 | 3 7 | 2 4 | 2 4 | 3 5 | 4 | 5 6 | 6 6 | 5 6 | 5 6 |
|  | 2,546 | 2,273 | 1,744 | 1,255 | 1,114 | 1,240 | 1,345 | 1,566 | 1,765 | 1,693 | 1,857 |
| a. Books and maps (dc)...........-- | 307 | 261 | 250 | 150 | 149 | 162 | 179 | - 204 | - 239 | - 217 | 222 |
| b. sheet music (ndc) - | 538 | 512 | 479 | 428 | 419 | 441 | 456 | 490 | 518 | 514 | 554 |
| c. Book rental and repair (s)--...-- | 2 | 3 | 3 | 3 | 3 | 3 | 4 |  | 4 | 4 |  |
| d. Nondurable toys and sport supplies (nde) | 336 | 281 | 266 | 207 | 181 | 200 | 216 | 242 | 269 | 268 | 285 |
| e. Wheel goods, durable toys, and sport equipment (dc) | 182 | 145 | 136 | 97 | 81 | 102 | 115 | 144 | 179 | 186 | 195 |
| f. Boats and pleasure aircraft (de) - | 24 | 14 | 11 | 4 | 4 | 6 | 9 | 13 | 16 | 10 | 19 |
| g. Boat and bicycle rental, storage, |  | - 0 | 8 | 4 | 4 | 6 | 9 | 13 | 16 |  | 8 |
| h. Radio and television receivers, | 9 | 9 | 8 | 6 | 5 | 6 | 7 | 8 | 8 | 8 | 8 |
| phonographs, parts, and records (de) | 905 | 840 | 418 | 232 | 171 | 198 | 206 | 278 | 322 | 278 | 350 |
| i. Pianos and other musical instru- |  |  |  |  |  |  | 200 | 278 | 322 |  |  |
| j. Radio and television repair (s) | 107 | 818 | 60 | 36 | 24 | 31 | 42 | 55 | 63 | 61 | 64 28 |
| j. Radio and television repair (s)-. |  |  | 24 | 19 | 14 | 17 | 21 | 21 | 23 | 25 |  |
| k. Photo developing and printing (s).- | 13 60 | $\stackrel{11}{53}$ | 10 47 | 8 | 7 | 8 | 10 | 13 | 15 | 17 | 18 61 |
| 1. Photographic studios (8) -------1/ | 60 |  | 47 | 39 | 31 | 39 | 47 | 55 | 62 | 62 |  |
| stamps and coins (s) --.....- | 2 | 2 | 2 | 1 | 1 | 2 | 4 | 7 | 12 | 9 | 8 |
| n. Hunting dog purchase and training, and sports guide service (s). | 8 | 8 | 8 | 7 | 7 | 7 | 7 | 8 | 9 | 9 | 10 |
| o. Veterinary service and purchase of pets ( s ) | 27 | 26 | 22 | 18 | 17 | 18 | 22 | 24 | 26 | 25 | 25 |
| 6. Flowers, seeds, and potted plants (ndc)- | 221 | 190 | 134 | 89 | 90 |  |  |  |  |  | 191 |
|  | 32 | 32 | 28 | 25 | ${ }_{24}^{90}$ | ${ }_{1}^{16}$ | 130 27 | 159 29 | 186 | 176 26 | 28 |
| 8. Clubs-athletic and social clubs-dues | 302 | 294 | 277 | 242 | 208 | 199 | 197 | 198 | 203 | 200 | 199 |
|  | 148 | 143 | 127 | 94 | 72 | 71 | 71 | 74 | 79 | 75 | 4 |
| b. School fraternities-dues and fees (s) $\qquad$ | 14 | 14 | 14 | 14 |  |  | 14 | 16 |  |  | 18 |
| c. Fraternal, patriotic, and women's |  | 14 | 14 | 14 | 13 | 14 | 14 | 16 | 16 | 17 |  |
| organizations except school and insurance-net payments ${ }^{3}$ (s) |  |  |  |  |  |  |  |  |  |  |  |
| insurance-net payments ${ }^{3}$ (s) <br> d. Luncheon clubs (s) ............- | 134 6 | 130 7 | 130 6 | 128 |  |  | 106 | 102 | 101 |  | 99 88 |
| 9. Commercial amusements, n.e.c. (s) ----- | 90 | 89 | 74 | 55 | 54 | 63 | 6 65 | ${ }_{75}^{6}$ | 87 | 61 | 68 |
| X. Private education and research | 664 | 683 | 665 | 571 |  |  |  |  |  |  | 628 |
|  | 219 | $\stackrel{242}{170}$ | 251 | 227 | 205 | 213 | 228 | 546 242 | 649 | 256 | ${ }_{195}^{267}$ |
| , 1 2. Elementary and secondary schools ${ }^{\text {5 }}$ (s)- | 162 | 170 | 185 | 158 | 121 | 121 | 122 | 140 | 174 | 192 |  |
| 12 3. Commercial, business, and trade schools | 27 | 27 |  | 19 |  |  |  |  |  |  | 26 |
| 4. Correspondence schools-fees (s) --- | 32 | 24 | 20 | 18 | 16 | 17 | 18 | 25 18 | 28 | 20 | 20 |
| 5. Other instruction (except athletics)fees (s) | 133 | 129 | 115 | 88 | 70 | 69 |  |  |  | 75 | 74 |
| 6. Foundation expenditures for education |  |  |  |  |  | 69 | 70 | 72 | 78 | 75 |  |
| and research ${ }^{5}$ (s)- | 91 | 91 | 69 | 61 | 53 | 45 | 47 | 49 | 51 | 48 | 46 |
| XI. Religious and welfare activities | 1,196 | 1,209 | 1,125 | 973 |  | 870 |  |  |  |  | 938 |
|  | 912 | 893 | 837 | 743 | 665 | 641 | 862 | 821 | 900 | 651 | 659 |
| 2. Social welfare and roreign relief agencies <br> (s) $\qquad$ |  | 253 | 244 | 166 |  |  |  |  |  |  | 237 |
| 3. Museums and libraries ${ }^{5}$ (s) | 15 | 15 | 15 | 14 | 13 | 13 | 195 | 204 14 | 15 | 16 | 16 |

Table 30.-Personal Consumption Expenditures, by Type of Product, 1910-50-Centinued
[Aillions of dollars]


Table 30.-Personal Consumption Expenditures, by Type of Product, 1929-39-Continued
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| XI. Religious and welfare activities-Contimed <br> 4. Foundation expenditures (except eduration and research $)^{3}(\mathrm{~s})$ <br> 5. Political organizations ${ }^{\text {s }}$ <br> (--.............- <br> ).......-.......- | 30 9 | 30 18 | 23 6 | $\stackrel{20}{30}$ | 18 | 15 19 | 16 10 | 16 44 | 17 | ${ }_{21}^{16}$ | 16 10 |
| XII. Foreign travel and remittances-nct.........-- | 799 | 756 | 601 | 467 | 367 | 339 | 352 | 412 | 452 | 376 | 317 |
| United States residents.-.-........ | 992 | 931 | 727 | 553 | 454 | 443 | 478 | 556 | 620 | 548 | 497 |
| a. Payments to United state ressels and uircraft (s) | 34 | 33 | 25 | 16 | 16 | 17 | 18 | 24 | 23 | 23 | 20 |
|  | 508 | 578 | 420 | 318 | 242 | 259 | 285 | 344 | 410 | 356 | 313 |
| c. Expenditures by United States Government personnel (military and civilian) (nde). | 21 | 20 | 20 | 20 | 18 | 16 | 20 | 18 | 18 | 18 | 20 |
| d. Personal cash remittances to for- | 339 | 300 | 202 | 199 | 178 | 151 | 155 | 170 | 169 | 151 | 144 |
| 2. Less: expenditures and remittances by foreichers. | 193 | 175 | 126 | 86 | 87 | 104 | 126 | 144 | 168 | 172 | 180 |
| a. Expenditures in the United states (s) | 142 | 132 | 98 | 69 | 70 | 85 | 106 | 122 | 140 | 135 | 144 |
| b. Persona Cash remittances to the | 51 | 43 | 28 | 17 | 17 | 19 | 20 | 22 | 28 | 37 | 36 |
| Total personal consumption expenditures......- | 78,761 | 70.789 | 61,153 | 49,208 | 46,346 | 51,882 | 56,215 | 62,515 | 67,121 | 64,513 | 67,466 |
| Durable commodities (dc). | 9,362 | 7.275 | 5,569 | 3,694 | 3,503 | 4,255 | 5,158 | 6,374 | 7,005 | 5,754 | 6,729 |
| Nondurable commodities (ndc) | 37,742 | 34,052 | 28,955 | 22,743 | 22,254 | 26,732 | 29,377 | 32,887 | 35,232 | 34,032 | 35,258 |
| Services (s). | 31,657 | 29,462 | 26,629 | 22,771 | 20,589 | 20,895 | 21,680 | 23,254 | 24,884 | 24,727 | 25,479 |

' Expenditures for food (items 1-4) excluding ulcoholic beverages are estimated as follows
 $1045-35,220 ; 1946-11,615 ; 1947-47,739 ; 1948-51,587 ; 1918-50,674 ; 19: 0-52,538$.
${ }^{2}$ Space rent covers heating and plumbing facilities, lifhting fixtures, storm windows and doars, window sereens and sercen doors, and window blinds or shades, hut excludes other furnishings, equipment, and related services-furmiture, stoves and ranges, refrigerators, repairs of furniture and appliances, fuel, electrielty, ete.
${ }^{3}$ Net payments are premiums minus claims paid, or in the case of labor pnions and fraternal patriotic, and women's organizations are gross payments minus cash benefits.
Includes value of meals furnisted.
These series include the current expenditures of nonprofit organizations providing serviers principally to individuals, including depreciation but excluding relief payments within the nied slates.
and conpanies excluding payments to policyholder and expenses allocated to accident and health insurance.

Table 31.-New Construction Aetivity, by Type, 1929-39!
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total new construction activity_ | 10,793 | 8,741 | 6,427 | 3,538 | 2,879 | 3,720 | 4,232 | 6,497 | 6,999 | 6,980 | 8,198 |
| New private construction activity, | 8,307 | 5,883 | 3,768 | 1,676 | 1,231 | 1,509 | 1,999 | 2,981 | 3,903 | 3,560 | 4,389 |
| Lesidential building (excluding farm) | 3,625 | 2,075 | 1,565 | 630 | 470 | 625 | 1,010 | 1,565 | 1,875 | 1,990 | 2,680 |
| New dwellinganits--....... | 3,040 | 1,570 | 1,320 | 485 | 290 | 380 | ${ }^{7} 710$ | 1,210 | 1,475 | 1,620 | 2,270 |
| Additions and alterations Nonhousekeeping units. | 340 245 | 305 200 | 175 70 | 105 40 | 145 35 | 200 45 | 250 50 | $\begin{array}{r}+295 \\ \hline 60\end{array}$ | $\begin{array}{r}1 \\ \hline 80 \\ \hline 80 \\ \hline\end{array}$ | $\bigcirc$ | 320 90 |
| Nonresidentia! building (excluding farm) | 2,694 | 2,003 | 1,099 | 502 | 406 | 456 | 472 | 713 | 1,085 | 764 | 786 |
| Industrial builditge ${ }^{1}$ Warehonses, office and lof building | 949 619 | 532 596 | 221 276 | 74 117 | 176 44 | 191 | 158 | 266 | 1,0892 | 232 | 254 |
| Warehonses, office and iot building | 619 516 | 596 297 | 276 178 | 117 106 | 44 86 | 66 107 | 75 136 | - $\begin{array}{r}111 \\ \hline 179\end{array}$ | 137 250 | 95 190 | 211 |
| Other nonresidential buildings....... | 610 | 578 | 424 | $20 \overline{0}$ | 100 | ${ }^{107}$ | 103 | 157 | 206 | 197 | 240 |
| Relizious..- | 147 | 135 | 87 | 45 | 22 | 21 | 28 | 34 | 44 | 51 | 48 |
| Educational --.....- | 120 | 118 109 | 100 | 53 | 15 | 14 | 17 | 40 | 42 | 40 | 39 |
| Hocpital and institution | ${ }_{173}^{104}$ | $1+8$ | 123 | 34 60 | 10 34 | $\begin{array}{r}9 \\ 3 \\ \hline\end{array}$ | 10 | 17 54 | 31 73 | 35 97 | 31 100 |
| Miscellaneous | $6{ }_{6}$ | 68 | 43 | 13 | 19 | 15 | 14 | 12 | 16 16 | 24 | 22 |
| Public utility. | 1,578 | 1,527 | 946 | 467 | 261 | 326 | 363 | 518 | 705 | 605 | 683 |
| Railrosds.- | 310 | 521 | 292 | 139 | 94 | 128 | 116 | 149 | 199 | 119 | 137 |
| Telcphone and telegray Other public utility | 354 714 | ${ }_{673}^{333}$ | 166 488 | 87 241 | +45 | 47 151 | 52 195 | 67 302 | 102 404 | $\begin{array}{r}92 \\ 394 \\ \hline\end{array}$ | 93 453 |
| Farm construction. | 307 | 193 | 97 |  |  |  |  |  |  | 171 | 212 |
| Residential | 147 | 107 | 39 | 24 | $\bigcirc \quad 29$ | 36 | 61 | 76 | 100 | 79 | 106 |
| Nonresidential. | 160 | 86 | 38 | 13 | 20 | 30 | 65 | 85 | 107 | 92 | 106 |
| All other private s. | 103 | 85 | 61 | 40 | 45 | 36 | 28 | 24 | 31 | 30 | 28 |
| New public construction artivity | 2,486 | 2,858 | 2,659 | 1,862 | 1,648 | 2,211 | 2,233 | 3,516 | 3,096 | 3,420 | 3,809 |
| Residential building |  |  |  |  |  |  | 9 | 61 | 93 | 35 | 65 |
| Nonresidential building | 659 | 660 | 612 | 415 | 230 | 363 | 328 | 701 | 550 | 672 | 970 |
| Industrial ${ }_{\text {Eductional }}$ | 389 | 364 | 285 |  | ${ }_{52}^{2}$ | 118 | 2. | 4 | ${ }^{2}$ | 12 | 23 |
| Hospital and institutional,---- | 101 | 118 | 110 | 130 83 | 52 49 | 148 51 | $\begin{array}{r}153 \\ 38 \\ \hline\end{array}$ | 366 | 273 | 311 97 | 127 |
| Other nonresidential building s.... | 169 | 178 | 217 | 202 | 127 | 153 | 135 | 257 | 222 | 252 | 352 |
| Military and Naval. | 19 | 29 | 40 | 34 | 36 | 47 |  |  |  | 62 | 125 |
| Highway-...-. | 1,266 | 1,516 | 1,355 | 958 | 847 | 1,000 | 845 | 1,302 | 1,226 | 1,421 | 1,381 |
| Sewer and water ${ }^{\text {Miscellaneous public service enterprise. }}$ | ${ }_{151}^{253}$ | $3+3$ 157 | 270 | 156 | 95 | 173 | 175 | 342 | 1311 | 1355 | 371 |
| Conservation and development .-.....- | 115 | 137 | 156 | 150 | 65 359 | 518 | 71 700 | 167 658 | 134 | 137 | 570 |
| All other public ${ }^{2}$-....-.-.-.-.-.-.-. | 23 | 16 | 17 | 14 | 16 | 54 | 700 | 608 196 | 605 140 | 185 | 191 |
| Petroleum and natural gas well drilling ${ }^{\text {a }}$ | (3) | (*) | ${ }^{(9)}$ | ( ${ }^{8}$ ) | (") | (8) | ${ }^{(8)}$ | ( ${ }^{8}$ ) | (3) | $\left.{ }^{8}\right)$ | 368 |

${ }^{1}$ These construction data are as published by the Building Materials Division of the National Production Authority. For an explanation of the differences between the series hown in this table and the new construction activity series in the other tables of this report,
see the concluding paragraph of the section on New construction in Part III
: Public industrial and commereial building not segregable from prirate construction, 1929-32; amount belfered negligible
1929-32; amount belis red negigibie.
Consists of local transit, petroleum pire line, electric light and power (including con struction with Rural Electrification Administration funds), and manniactured and natural gas.
${ }^{5}$ Consists of sewer and water, roads, bridges, and miscellaneous nonstructural items such as parks and play grounds.
${ }^{3}$ Consists of public administration, social and recreational, commercial, and miscellaneous nonresidential.
${ }^{T}$ Includes publicly-owned parks and play grounds, memorials, etc. Includes petroleum pipe lines as follows: $\$ 25$ million in 1942 , $\$ 125$ million in 1943, and $\$ 4$ million in 1944 ${ }^{5}$ Estimates for this item by the Buildine Materials Division for the years $1929-38$ are not available. Rough approximations, in bilifions of dollars, are as follows-1929:.4, 1930:3. 1931:.2. 1932:2, 1933:.2, 1934:.2, 1935:3, 1936:3, 1937:.5, 1938:.4.

Table 30.-Personal Consumption Expenditures, by Type of Product, 1940-50-Continued
[Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1940 | 1947 | 1948 | 1949 | 1050 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| XI. Religious and welfare activities-Continued <br> 4. Foundation expenditures (except education and research ${ }^{1}$ (8) <br> 5. Political organizations ${ }^{8}$ (s) <br> -.-.-.............. | 15 39 | 16 9 | 16 19 | 17 | 18 35 | 18 9 | 20 20 | 22 | ${ }_{42}^{24}$ | 25 10 | 25 |
| XII. Foreign travel and remitlances-net.-.......... <br> 1. Foreign travel and remittances by | 223 | 269 | 316 | 555 | 1,004 | 1,621 | 734 | 804 | 954 | 1,070 | 1,086 |
| United States residents.---.-.-.-.-- | 387 | 406 | 478 | 740 | 1,218 | 1,918 | 1,059 | 1,238 | 1,345 | 1,507 | 1,525 |
| a. Payments to United States vessels and aircraft (s) <br>  | 13 | 13 | 4 | 3 | 3 | 21 | 45 | 71 | 1,37 | 107 | 107 |
| c. Expenditures by United States | 159 | 176 | 124 | 140 | 172 | 246 | 405 | 526 | 590 | 697 | 780 |
| Government personnel (military and civilian) (ndc) | 27 | 77 | 251 | 417 | 822 | 1,394 | 347 | 417 | 382 | 466 | 41.5 |
| d. Personal countries (s) | 188 | 140 | 99 | 180 | 221 | 257 | 202 | 224 | 267 | 237 | 217 |
| 2. 1.ess: expenditures and remittances by foreigners.- <br> a. Expenditures in the United |  | 137 | 162 | 185 | 214 | 297 | 325 | 434 | 391 | 437 | $43: 1$ |
| sitates (s) | 105 | 94 | 122 | 140 | 169 | 203 | 297 | 370 | 340 | 305 | 409 |
| United States (s) | 59 | 43 | 40 | 45 | 45 | 94 | 28 | 55 | 51 | 42 | 30 |
| Total personal consumption expenditures | 72,052 | 82,255 | 91,161 | 102, 244 | 111,550 | 123,079 | 146,907 | 165,570 | 177,890 | 180, 174 | 193,568 |
| Durable commodities (dc) | 7,854 | 9,750 | 7,060 | 6,824 | 7,103 | 8,472 | 16,573 | 21,369 | 22,883 | 23,899 | 29,157 |
| Nondurable commodities (ndc). | 37,594 | 43,960 | 52,871 | 60,970 | 67,0.54 | 74,886 | 85,849 | 95, 142 | 100,889 | 98,720 | 102,310 |
| Services (s). | 26,604 | 28,545 | 31,230 | 34,450 | 37,393 | 39,721 | 44,485 | 49,059 | 54, 118 | 57,555 | 62, 101 |

${ }^{1}$ Expenditures for food (items 1-4) excluding alcoholic beverages are estimated as follows in millions of dollars: 1933-10,876; 1934-12,256; 1935-13,690; 1936-15,295; 1937-160.465 1938-15,669; 1939-15,849; 1940-17,085; 1941-20,148; 1942-25,254; 1943-29,324; 1944-31,879
194- 25,$229 ; 1946-41,615 ; 1947-47,49 ; 1948-51,87 ; 1949-50,67 ; 1950-52,838$.
2pace rent covers heating and plumbing facilities, lighting fixtures, storm windows and
doors, window sereens and screen doors, and window blinds or shades, but excludes other furnishings, equipment, and related services-furniture, stoves and ranges, refrigerators, repairs of furniture and appliances, fuel, electricity, etc.
${ }^{3}$ Net payments are premiums minus claims paid, or in the case of labor tulions and fraternal patriotic, and womon's organizations are gross payments minus cash benefls.
Includes ralue of meals furnished.
principally to individuals, including denditures of nonproft organizations providing serviers principaly to individuals, including depreciation but excluding relief payments within the United States.
${ }^{6}$ Total operating expenses of life insurance companies excluding payments to policyholders and expenses allocated to accident and health insurance.

Table 31.-New Construction Activity, by Type, 1940-50 ${ }^{1}$
[Millions of dollars]

|  | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1917 | 1948 | 1949 | 1050 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total new construction axtivity | 8,682 | 11,957 | 14,075 | 8,301 | 5,259 | 5,633 | 12,000 | 16,627 | 21,572 | 22,584 | 27,902 |
| New private construction activity | 5,054 | 6, 206 | 3,415 | 1,979 | 2,186 | 3,235 | 9,638 | 13,131 | 16,665 | 16, 181 | 20,789 |
| Residential building (excluding farm) | 2,985 | 3,510 | 1,715 1,440 | 885 710 | 815 570 | 1,100 | 4,015 3,300 | 6,310 $\mathbf{5 , 4 5 0}$ | 8.580 7.500 | 8, ${ }^{8} \mathbf{2 6 7}$ | 12,600 |
| Ndditions and alterations. | - 335 | ${ }^{+375}$ | ${ }^{1} 225$ | 160 | 220 | 340 | +570 | , 735 | ${ }^{925}$ | -825 | $\begin{array}{r}11.525 \\ \hline 000\end{array}$ |
| Nonhousekeeping units..... | 90 | 95 | 50 | 15 | 25 | 40 | 145 | 125 | 155 | 185 | 175 |
| Nonresidential building (excluding farm) : | 1,025 | 1,482 | 635 | - 233 | 351 | 1.020 | 3,341 | 3,142 | 3,621 | 3,228 | 3,777 |
| Industrial buildings ${ }^{3}$---.------ | 442 | 801 | 346 | . 156 | 208 | 642 | 1,689 | 1,702 | 1,397 | 972 | 1,062 |
| - Sarehouses, office and loft buildings | $\begin{array}{r}91 \\ 297 \\ \hline\end{array}$ | 128 | 62 93 | $\begin{array}{r}14 \\ -19 \\ \hline\end{array}$ | 17 39 | 56 147 | 331 <br> 801 <br> 8 | 237 619 | 352 901 | 321 706 | 402 886 |
| Other nouresidential buildinges....... | 235 | 272 | 134 | 44 | 87 | 175 | 820 | 584 | 971 | 1,229 | 1,427 |
| Religious.-- | 59 | 62 | 31 | 6 | 11 | 26 | 76 | 126 | 251 | 360 | 409 |
| Educational | 50 | 58 | 24 | 6 | 11 | 31 | 123 | 174 | 253 | 269 | 294 |
| Hospitaland institutiona | 33 | 46 | 29 | 11 | 26 | 37 | 85 | 110 | 126 | 202 | 344 |
| Social and recreational. | 67 | 72 | 30 | 7 | 17 | 27 | 125 | 99 | 224 | 262 | 247 |
| Miscellaneous. | 26 | 34 | 20 | 14 | 22 | 54 | 111 | 75 | 117 | 136 | 133 |
| Public utility | 771 | 872 | 786 | 570 | 725 | 827 | 1,374 | 2,338 | 3,002 | 3.316 | 3,130 |
| Railroads. | 167 | 187 | 197 | 211 | 247 | 264 | 258 | 318 | 379 | 352 | 315 |
| Telephone and telegrap | 122 | 179 506 | 155 434 | $\begin{array}{r}61 \\ \hline 298\end{array}$ | 83 395 | 117 446 | 305 811 | 510 1,510 | 713 1,910 | 533 2,431 | 2, ${ }^{475}$ |
| Other public utility ${ }^{4}$ | 482 | 506 |  |  |  | 446 | 81 | 1,510 | 1.910 |  | 2,375 |
| Farm construction. | 240 | 310 | 260 | 284 | 283 | 267 | 856 | 1,272 | 1,397 | 1,292 | 1,170 |
| Residential--7 Nonresidential | 145 95 | 188 | 135 125 | 121 163 | 108 175 | 1167 | 4 | 611 | 671 726 | 621 671 | 608 |
| All other private ${ }^{\text {s }}$ | 33 | 32 | 19 | 7 | 12 | 21 | 52 | 69 | 65 | 78 | 112 |
| New public construction activity | 3,628 | 5,751 | 10,660 | 6,322 | 3,073 | 2,398 | 2,362 | 3,496 | 4,907 | 6,403 | 7,113 |
| Residential building | 200 | 430 | 545 | 739 | 211 | 80 | 374 | 200 | 156 | 359 | 345 |
| Nonresidential building | 615 | 1,646 | 3,685 | 2.010 | 1,361 | 937 | 354 | 599 | 1,301 | 2,068 | 2,402 |
| Industrial. | 164 | 1.280 | 3,437 | 1,870 | 1,230 | 755 | 113 | 96 | 196 | 177 | 1224 |
| Educational | 156 | 158 | 128 | 63 | 41 | 59 | 101 | 287 | 618 | 934 | 1,163 |
| Hospital and institutional Other nonresidential buildi | 54 241 | 42 166 | 35 <br> 85 | 44 34 | 58 32 | 85 38 | 85 55 | 85 131 | 223 264 | 477 480 | 476 |
| Highway | 1,302 | 1,066 | , 734 | 446 | 362 | 398 | 895 | 1,514 | 1.856 | 2,129 | 2,350 |
| Sewerand water | , 338 | ${ }^{-252}$ | 169 | 107 | 79 | 97 | 194 | 351 | 535 | 619 | 671 |
| Miscellaneous public service enterprises | 131 | 141 | 85 | 49 | 46 | 55 | 99 | 164 | 185 | 203 | 188 |
| Conservationand development... | 528 | 500 | 357 | 285 | 163 14 | 130 11 | 240 | 394 70 | 629 87 | 793 95 | ${ }_{98}^{886}$ |
| All other public ${ }^{1}$............... | 129 | 96 | 69 | 136 | 14 | 11 | 18 | 70 | 87 | 95 | 96 |
| Petroleumand natural gas well drilling ${ }^{\text {s }}$ - | 398 | 423 | 306 | 347 | 526 | 598 | 653 | 773 | 1,051 | 1,069 | 1,279 |

${ }^{1}$ These construction data are as published by the Building Materials Division of the National Production Authority. For an explanation of the differences between the series hown in this table and the new construction activity series in the other tables of this report see the concluding paragraph of the section on New construction in Part III.
${ }^{3}$ Publude industrial and commercial building not segregable from private construction 1029-32; amount believed negligible.
${ }^{\text {© Consists of local transit, petroleum pipe line, electric light and power (ineluding con- }}$ struction with Rural Electrification Administration funds), and manufactured and natural gas.
s Consists of sewer and water, roads, bridges, and miscellaneous nonstruetural items such as parks and play grounds. nonresidential.
nonfesliential.
Includes publicly-owned parks and play grounds, mernorials, etc. Includes petroleum pipe lines as follows: $\$ 25$ million in 1942, $\$ 125$ million in 1943, and \&t million in $194 t$. Estimates for this item by the Building Materials Division for the years 1929-38 are not arailable. Rough approximations, in billions of dollars, are as follows-1929:4, 1930:3, 1931:2, 1932:.2, 1233:.2, 1934:2, 1935:3, 1936:3, 1937:5, 1838:.4.

|  | 1423 | 1930 | 1931 | 1032 | 1933 | 1934 | 1938 | 1936 | 1937 | 1933 | 1939 | 1940 | 19.1 | 1942 | 1943 | 1444 | 1945 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total producers' dirable equipmett | 6.438 | 4.920 | 3.162 | 1.781 | 1,783 | 2,531 | 3,351 | -4,331 | 5,44 | 3,975 | 4,587 | 6, 103 | 7,676 | 4,837 | 4,082 | 6,700 | 7,545 |
| Special industry mactiner | 530 | 394 | 360 | 182 | 198 | 2:96 | 399 | 435 | \%143 | 378 | 405 | 311 | 619 | 601 | 3it | 316 | $8: 3$ |
| Construction machinery | 107 | ${ }^{601}$ | ${ }^{26}$ | 20 17 |  | 38 <br> 38 <br> 8 | 39 <br> 16 | 100 80 80 | 11.4 | 8 | 87 | 114 | 318 | 1.46 |  | ${ }_{1}^{188}$ |  |
| Metal working machinery- | 279 | 160 | 87 | 38 | 4 if | 81 | 131 | 197 | 102 | 199 | 298 | - 49 | 830 | 408 | 331 | 170 | 325 |
| Pumbs and pumping cruipment | 1.17 | 118 | 80 | 46 | 40 | 38 | 61 | 95 | 124 | 101 | 10s | 150 | 213 | 196 | 178 | 239 | 314 |
| General and miscellaneous machinery and | 581 | 414 | 312 | 179 | 171 | 237 | 316 | 431 | 503 | 363 | 406 | 407 | 546 | 403 | 401 | 4 | 676 |
| Enpines and turbines- | 6.5 | \%is | 32 | 15 | 12 | 20 | 28 | 40 | 51 | 32 | 35 | +18 | is ${ }^{\text {S }}$ | 57 |  | 73 | 91 |
| Tram machinery and ertuipmen | 33 | 336 | 189 | 120 | 129 | 148 | 221 | 27.4 | 3.4 | 327 | 949 | 375 | 495 | 517 | 353 | cosi | 74 |
| Electrical npparatus and equpment | 480 | 376 | 260 | 119 | 87 | $1+3$ | 207 | 264 | 4 | 181 | 175 | - 236 | 316 | -334 | 170 305 |  | 424 |
| Office machinery - | 154 | 107 | 75 | 83 | 62 | 64 | 83 | 103 | 129 | 109 | 115 | 14.5 | 200 | 170 | 119 | 174 | 034 |
| Nonresidential furniture and cquipue | 51.4 | 411 | 278 | 164 | 111 | 192 | 208 | 246 | 317 | 291 | 28.5 | 341 | 425 | 389 | 277 | 28: | 318 |
| Tools-..onal and scientife equprmer | 88 | 888 | 4 | 330 | 39 | 43 | 4.4 | is | 8 | 62 | $8{ }^{80}$ | 88 | 104 | 88 | 118 | 134 | 1.45 |
| Durable containers | 167 | 1.1 | 99 | 7 fi | 87 | 111 | 113 | 132 | liatit | 129 | 136 | 1.13 | 161 | 152 | 197 | 188 | 160 |
| Miseellaneous subsidiary durable equipment | 3.19 | 303 | 220 | 157 | 150 | 183 | 214 | 367 | 292 | 247 | 282 | 323 | 39.5 | 908 | 117 | 139 | $\stackrel{30}{ }$ |
| Business motor vehicles- | 1.656 | 1,093 | 733 | 407 | 493 | 705 | 977 | 1,204 | 1,312 | 835 | 1,142 | 1,418 | 1,74i | 303 | 394 | 501 |  |
| Hailroad and transit equipment | 391 | 387 | 94 | $5{ }^{5}$ | 33 | 118 | 125 |  | , 383 | 162 | -200 | 1.353 | ${ }^{1} .463$ | 461 | $\underline{-187}$ | 385 | 378 |
| Aireraft-...... | 4.11 | 17 | $\stackrel{8}{9}$ | 18 | 12 | 21 | 8 | 5 | 68 | 123 | 88 | 145 | 191 | 233 | 310 | $2 \mathrm{ti7}$ | 28.9 |
| Less: Government purchases, not allocable |  |  |  |  |  |  |  |  |  |  |  | 6 | 333 | 353 | $6+4$ | 181 | 73 |



Table 33.-Net Change in Business Inventories, 1929-50
[Millions of dollars]

|  | 1029 | 1930 | 1931 | 1932 | 1933 | 1934 | 1035 | 1930 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Net change in business inventories, total. | 1,562 | $-283$ | -1,361 | -2,563 | -1,619 | -1,144 | ${ }_{4}^{905}$ | -1,004 | ${ }^{2,309}$ | -973 140 | ${ }_{4}^{41}$ | 2,275 | $\begin{array}{r}\text { 3,874 } \\ \hline 158\end{array}$ | 2,065 1,309 | - ${ }_{-420}$ | -809 | -746 -148 | 6,107 | -2,205 | 5,029 1,312 | $-3,213$ -720 | 4,338 |
| Nonfarm | 1,814 | -34 | -1,669 | -2,599 | $-1,348$ | 173 | 427 | 2,115 | 1,764 | -1,113 | 344 | 2,035 | 3,416 | 7256 | -502 | -264 | -598 | 6,334 | 1,408. | 3,717 | -2,493 | $\begin{aligned} & 6,586 \\ & \hline 0.02 \end{aligned}$ |
| Net change in nonfarm inventori | 1,814 | -34 | $-1,669$ | -2,599 | -1,348 | 173 | 427 | 2,115 | 1,764 | $-1,113$ | 344 | 2,035 | 3,416 | 756 | $-502$ | -1.070 | -598 -1.027 | 6,334 | 1,408 1,383 | 3,717 <br> 2 <br> 153 | -2,493 | $\xrightarrow{3,586}$ |
| Corporate- | 1,558 | 191 -225 | $-1,149$ -520 | -1,816 | -871 <br> -477 | 182 -9 | ${ }_{210}^{217}$ | 1,5896 | 1,520 244 | -920 -193 | 251 93 | 1,633 402 | 3,165 | 480 | -457 <br> -45 | -1,070 | $-1,027$ 429 | 6,037 | 1,383 <br> 25 | 2,153 | $-2,176$ -317 | 2,402 |
| Change in book | 1,200 | -4,049 | -4,694 | -3,941 | 1,320 | 852 | 704 | 2,973 | 1,824 | -2,297 | 1,224 | 2,235 | 6,677 | 2,332 | 425 | 93 | 79 | 13,346 | 8,712 | 6,103 | -5.262 | 10,264 |
| Corporate. | 1,086 | -3,069 | -3,563 | -2,863 | 1,272 | 807 | 444 | 2,327 | 1,551 | -1,883 | 965. | 1,781 | 5,782 | I,674 | 316 | -783 | $-463$ | 11,230 | 7.140 | 4,201 | $-4,313$ | 7,528 |
| Noncorporate | 114 | $-980$ | -1,131 | -1,078 | 48 | 45 | 260 | 646 | 273 | $-414$ | 259 | 454 | 895 | 658 | 109 | 876 | 542 | 2,116 | 1,572 | 1,959 | -949 | 2,736 |
| Inventory valuation a | 614 | 4,015 | 3,025 | 1,342 | -2,668 | -679 | $-277$ | -858 | -60 | 1,184 | -880 | -200 | $-3,261$ | -1,576 | $-927$ | -357 | -677 | -7,012 | -7,304 | -2,446 | 2,769 | -6,678 |
| Corporate- | 472 | 3,260 | 2,414 | 1,047 | -2,143 | -625 | -227 -50 | $-738$ | -31 -29 | 921 293 | -714 -160 | -148 -52 | $\xrightarrow[-644]{-2,617}$ | $\underline{-1,204}$ | -773 -154 | -287 -70 | $-564$ | -5,193 | $-5,757$ <br> $-1,547$ | $-2,051$ <br> -395 | 2,137 | $-5,126$ $-1,552$ |
| Noncorporate | 142 | 755 | 011 |  | -525 | -54 | -50 | -120 | -29 | 221 | -166 | -52 | -64 | -372 | -154 | -70 | -113 | -1,819 | -1,047 |  |  |  |
| Net change in nonfarm inventories by industrial groups. | 1,814 | -34 | -1,669 | -2,509 | -1,348 | 173 | 427 | 2,115 | 1,764 | -1,113 | 344 | 2,035 | 3,416 | 756 | $-502$ | -264 | -598 | 6,334 | 1,408 | 3,717 | $-2,493$ | 3,586 |
|  | ,911 | 747 | -594 | -1,155 | $-578$ | 136 | 213 | 1,095 | 1,344 | -631 | 214 | 1,274 | 2,321 | 1,552 | ${ }^{247}$ | -814 | -1,557 | 2,968 | 565 | 1,214 | -1,721 | 1,360 |
| Change in book value | 598 | $-1,553$ | -2,239 | $-1,846$ | 828 | 598 | 381 | 1,586 | 1,340 | $-1,268$ | - 713 | 1,363 | -1,053 | $\xrightarrow{2,323}$ | 826 -579 | -593 | $-1,122$ | -3,192 | -3,852 | -1,532 | 1,311 | 4,574 $-3,214$ |
| Inventory valuation adjustment | 313 | 2,300 | 1,645 | 691 | -1,406 | -462 | -168 | -491 |  |  | -499 |  |  | -771 |  |  |  |  |  |  |  |  |
| Wholesale trade | 31 |  | -413 | $-175$ | -89 | ${ }^{66}$ | 1 | 286 487 | 210 70 | $-198$ | $\begin{array}{r}77 \\ \hline 236\end{array}$ | 162 157 | 168 794 | -588 | $-280$ | 264 293 | 542 646 | 837 2,073 | $1,067$ | 785 | -588 -579 | 1,531 |
| Change in book value. <br> Inventory valuation adjustment.-. | -74 | -527 581 | -832 419 | -358 <br> 183 | - ${ }^{2688}$ | -160 | -88 | -201 | 140 | - 205 | -159 | 15 | -626 | -272 | $-161$ | 29 | 104 | $-1,236$ | -1,088 | 58 | 531 | $-1,236$ |
| Retail trade | 260 | -533 | -377 | -753 | -485 | -47 | 313 | 703 | 64 | -187 | 118 | 575 | 501 | -272 | $-336$ | 191 | 288 | 1,943 | 598 | 1,750 | -588 | 1,891 |
| Change in book valu | 87 | -1,390 | -1,148 | -1,136 | 223 | $-16$ | 394 | 831 | 209 | -490 | 312 | 656 | 1,309 | 234 | -185 | 269 | 382 | 4,133 | 2,305 | $\stackrel{2,337}{-587}$ | -1,294 | - $\begin{array}{r}1.647 \\ -1.756\end{array}$ |
| Inventory valuation adjustment | 173 | 857 | 771 | 383 | -708 | -31 | -81 | -128 | -145 | 30 | -194 | -81 | -808 | -506 | -151 | -78 | -94 | -2,190 | $-1,707$ | -587 | 706 | -1,756 |
| All other. | 612 | -302 | -285 | -516 | -196 | 18 | $-100$ | 31 | 146 | -97 | -65 | 24 | 426 | 64 | -124 | 95 | 129 |  |  |  | $-136$ | 40 |
| Change in book | 589 23 | - ${ }_{-579}$ | $\begin{array}{r}-475 \\ \hline 190\end{array}$ | -601 <br> 85 | -197 | 44 | -80 -20 | 69 -38 | -205 | -136 39 | -37 | - 59 | -95 | 91 -27 | -88 -36 | -29 | 173 | -980 | -9237 | -385 | -221 | 512 -472 |

[Millions of dollars]

|  | 1929 | 1030 | 1931 | 1032 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1050 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total supplements to wages and salaries | 621 | 621 | 584 | 542 | 505 | 547 | 599 | 921 | 1,748 | 1,935 | 2,075 | 2,199 | 2,572 | 3,008 | 3,565 | 4,239 | 5,353 | 5,871 | 5,929 | 5,809 | 6,455 | 7,489 |
| Employer contributions for social insurance.-Old-age and survivors insurance. | 101 | 106 | 111 | 126 | 133 | 147 | 171 | 418 | 1,234 | 1,423 261 | 1,540 | 1,624 <br> 329 | 1,983 | 2,302 | 2,677 | 2,037 | 3,805 | 3,970 687 | 3,565 <br> 780 | 3,042 839 | 3,503 | 4,017 1,351 |
| State unemployment insurance |  |  |  |  |  | 3 | 7 | 159 | 588 | 780 | 815 | 813 | 1,011 | 1,089 | 1,246 | 1,177 | 1,011 | 893 | 1,029 | 965 | 1,010 | 1,219 |
| Fedoral unemployment tax-..-. |  |  |  |  |  |  |  | 81 | 89 62 | 102 54 | 105 58 | ${ }_{6}^{98}$ | $\begin{array}{r}124 \\ 80 \\ \hline\end{array}$ | 161 98 | 183 | $\begin{array}{r}184 \\ 140 \\ \hline\end{array}$ | $\begin{array}{r}174 \\ 140 \\ \hline\end{array}$ | 184 163 | ${ }_{271}^{212}$ | 228 | ${ }_{277}^{223}$ | 234 282 |
| Railroad unemployment insurance |  |  |  |  |  |  |  |  |  |  | 33 | 67 | 80 | 99 | 118 | 129 | 130 | 139 | 143 | 28 | 23 | 24 |
| Federal civilian employee retirement systoms. | 21 | 21 | 22 | 22 | 22 | 22 | 32 | 45 | 63 | 77 | 84 | 93 | 102 | 109 | 147 | 192 | 227 | 241 | 41 | 244 | 273 | 313 |
| State and local employec retirement |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Cash sickncess compensation funds-...-.-.-- | 72 | 78 | 84 | 96 | 107 | 118 | 127 | 131 | 141 | 147 | 152 | 155 | 165 | 185 | 202 | 212 | 225 | 250 | 290 | 360 | 420 | 490 |
| Government life insurance---..---------- | 8 | 7 | 5 | 8 | 4 | 4 | 5 | 2. | 3 | 2 | 2 | 2 | 2 | 29. | 27 | $2 \overline{5} \overline{5}$ | 1,268 | 1,413 | 509 | 98 | 459 | 80 |
| Other labor income | 520 | 515 | 473 | 416 | 372 | 400 | 428 | 503 | 514 | 512 | 535 | 575 | 589 | 706 | 888 | 1,302 | 1,548 | 1,901 | 2,364 | 2,767 | 2,952 | 3,472 |
| Compensation for injuries | 278 | 278 | 246 | 207 | 180 | 188 | 201 | 228 | 263 | 253 | 255 | 278 | 318 | 367 | 403 | 443 | 478 | 495 | 560 | 614 | . 643 | , 671 |
| Employer contributions to private pension and welfare funds. | 128 | 124 | 121 | 113 | 103 | 123 | 129 | 169 | 139 | 145 | 156 | 170 | 183 | 247 | 392 | 724 | 881 | 1,241 | 1,585 | 1,864 | 1,961 | 2,417 |
| Ohher ${ }^{1}$-...-.........- | 80 | 77 | 69 | 59 | 58 | 58 | 60 | 64 | 67 | ${ }_{66}$ | 66 | 66 | 74 | 89 | 91 | 134 | 184 | 138 | 94 | 101 | 104 | 269 115 |

${ }^{\prime}$ Consists of dircetors' fees, jury and witness fecs, compensation of prison inmates, Government payments to enemy prisoners of war, marriage fees to justices of the peace, and merchant marine war-risk life and injury claims.
Table 35.-Employee Contributions for Social Insurance, 1929-50


Table 36.-Transfer Payments, 1929-50
[Millions of dollars]

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1035 | 1936 | 1937 | 1038 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total transfer payments | 1,409 | 1,544 | 2,673 | 2,152 | 2,113 | 2,103 | 2,380 | 3,520 | 2,418 | 2,834 | 2,963 | 3,119 | 3,119 | 3,150 | 2,971 | 3,597 | 6,179 | 11,420 | 11,803 | 11,285 | 12,352 | 15,082 |
| Federal government. | 60.4 4 | 746 51 | 1,675 60 | ${ }_{7}^{913}$ | ${ }_{6}^{69}$ | 599 | 693 | 2,069 | 828 142 | 1,196 | 1,240 096 | 1,426 840 | 1,375 713 | 1,426 | 1,246 545 | 1,850 | 4,324 1,336 | 2,357 | 8,903 2,139 | 2,230 | 8,742 3,495 | $\begin{array}{r} 10,887 \\ 6,125 \end{array}$ |
| Old-aga and survivors insurance benefits. |  |  |  |  |  |  |  |  | 1 | 10 | 14 | 40 | 94 | 137 | 172 | 218 | 287 | 387 | 470 | 550 | 667 | 961 |
| State unemployment insurance benefits |  |  |  |  |  |  |  |  | 2 | 393 | 429 | 518 | 344 | 34.4 | 80 | 62 | 440 | 1,094 | 775 | 790 | 1,730 | 1,367 |
| Railroad benefits_.-.-.-ment insurance |  |  |  |  |  |  |  |  | 40 | 98 | 110 | 118 | 4. | 128 | 132 | 137 | 146 | 169 | 212 | 283 | 320 | 337 |
| Railroad unemployment insurance benefits- |  |  |  |  |  |  |  |  |  |  |  | 16 <br> 73 |  |  |  |  |  |  |  |  | 103 | ${ }^{677}$ |
| Federal civilian pensions. Government life insurance benefits. | 18 26 | 29 | 373 | 40 | 420 | 42 | 57 36 | 60 <br> 34 | ${ }_{30} 3$ | 465 | 68 | $\begin{array}{r}73 \\ 75 \\ \hline\end{array}$ | $\begin{array}{r}78 \\ 69 \\ \hline\end{array}$ | 83 56 | ${ }_{67}{ }^{1}$ | 1116 | ${ }_{272}^{18}$ | 328 | . 352 | 353 | 243 <br> 43 | 3,123 |
| Direct relief -- |  |  |  |  |  |  |  | 20 | 36 | 23 | 22 | 63 | 137 | 108 |  |  |  |  |  |  |  |  |
| Military pension, disability, and retirement payments | 4.43 | 118 | 648 | 571 | 450 | 382 | 418 | 433 <br> 1.430 | 434 134 | 446 59 | 462 36 | 470 28 | $\begin{array}{r}474 \\ \hline 19\end{array}$ | 476 10 | ${ }_{6}^{491}$ | $649$ | 1,013 <br> 189 | 1,693 | 2,181 | 2,2973 | 2,380 | 2,467 |
| Adjisteft rompensation benefits ${ }^{2}$ <br> Mastering-out payments to diseharged serveemen and terminal-leave benetits | 96 | 117 | 055 | 152 | 5. |  |  | 1.430 |  |  |  |  |  |  |  | 230 | 1,404 | 2,131 | 1,577 | 431 | 167 | 116 |
| Readjustuent, self-employment, and sulsistence allowances to veterang |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 25 | 142 | 2,780 | 2,603 | 2,284 | 2,280 | 1,699 |
| Other ${ }^{2}$ | iii |  | 112 |  |  |  |  |  |  |  |  |  |  |  | 105 | 295 | 240 |  |  |  | 409 | ${ }^{478}$ |

Sec footnotes at end of table, on p. 202.
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|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1037 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| State and local government $\qquad$ <br> Benefits from social insurance funds $\qquad$ | 218 72 | 264 78 | 340 80 | 502 95 | 750 10 | 953 119 | 1,172 127 | 802 <br> 137 | 1,023 | 1,209 | 1,272 | 1,262 163 | 1,242 | 1,229 | 1,220 | 1,241 | 1,323 | 1,640 | 2,226 | 2,890 | 2,868 | $\begin{array}{r}3,443 \\ 406 \\ \hline\end{array}$ |
| Government pensions Cash sickness compensation | 72 | 78 | 86 | 95 | 110 | 119 | 127 | 137 | 144 | 151 | 157 | 163 | 175 | 19. | 210 <br> 4 | 218 | 235 | 255 | $\begin{array}{r}2975 \\ 275 \\ \hline 2\end{array}$ | 320 <br> 300 <br> 20 | 300 <br> 325 <br> 31 | 400 350 565 |
| Direct relief.-.-----.-.-........... | 71 | 105 | 176 | 317 | 558 | 745 | 954 | 635 | 787 | 965 | 1,024 | 1,013 | 985 | 956 | 929 | 939 | 986 | 1,177 | 1,478 | 1,727 | 2,160 | 2,360 |
| Special types of public assistanco-.- | 71 | 105 | 176 | 317 | 72 486 | 60 | 115 830 | ${ }_{417}^{218}$ | 397 390 | 509 | ${ }^{566}$ | ${ }^{1} 638$ | 718 | 778 | 818 | 850 | 300 | 1,057 | 1,314 | 1,529 | 1,889 | 2,069 |
| Other ${ }^{\text {d }}$ | 75 | 81 | 87 | 00 | 01 | 80 | 1 | 0 | 8 | 8 | 1 | - | 8 |  |  | - |  |  |  |  |  |  |
| Rusiness. | 587 | 534 | 649 | 737 | 659 | 641 | 594 | 504 | 507 | 429 |  | 431 | 502 | 495 | 505 | 506 | 532 |  |  |  |  |  |
| Corporate gifts to nomprofit institutions. | 32 | 35 | 40 | 31 | 27 | 27 | 28 | 30 | 33 | 27 | 31 | 38 | 58 | 48 | 159 | 234 | 266 | 214 | ${ }_{241}$ | 239 | 239 | 239 |
|  | ${ }_{103}^{452}$ | 390 100 | ${ }_{112}^{49}$ | 598 | 530 | 508 | 458. | 461 | 428 | ${ }^{296}$ | 316 | 287 | 332 | 283 | 246 | 165 | 150 | 193 | 258 | 298 | 298 | 298 |
|  |  |  |  |  | 1 | 10 | 108 | 103 | 10. | 106 | 104 | 10. | 112 | 114 | 100 | 107 | 116 | 150 | 175 | 202 | 205 | 215 |

${ }^{1}$ Consists of Farm Security Administration grants and the value of freo stamps issued under the surplus food and cotton stamp programs. World War Veterans Adjusted Compensation Act of May 19, 1924, as amended,
and
and bers bencfts under the
 this serics represents very largely net loans to veterans on the security of their adjusted service certificites Jrom the U. S, Government Life Insurance Fund and the Adjusted Service Certificate Fund; for the period since June 1036 serits includes (1) payments to beneficiaries on certificates matured by death of veterans; ( 2 ) "adfusted service
dependent pay", which comprises cash payments (netligible in amout) to verans dependent pay,', which eomprises cash payments (negligible in amount) to vetcrans and thelr beneficiaries where,
under certain circumstances, no certincates were issued (3) payments to veterans in settlenent of adusted service under certain eircumstances, no certincates were issued; (3) payments to veterans in settiminent of adjusted se

S Consists of military and naval insurance payments, payments to nonproflt institutions, profits of military nost exchanges and nayy exchanges and ships stores, payments under the Panama Canal Construction Annuity Act, enemy alien and cyilian war assistance, payments to U. S. mijitary and civilian prisoners of war, and atomic
Energy Commission elelowships.
4 Consists of veterans' aid and bonuses, payments for the care of foster children in private family homes, and payments to nonpraft institutions.
con
Consists of cash prizes, urrecovered thefts from business of cash and capital assets, and personal-injury payments from business other than to employees.

Table 37.-Monctary and Imputed Interest, 1929-50

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Net interest (component of national income)- | 6,541 | 6,176 | 5,938 | 5,430 | 5,010 | 4,750 | 4,539 | 4,474 | 4,376 | 4,290 | 4,212 | 4,104 | 4,113 | 3,894 | 3,355 | 3,137 | 3,009 | ${ }_{2}^{2,922}$ | 3,544 | 4,335 | 4,908 | 5,386 |
| Originating in private businoss....-- | 9,344 | 9,603 | 4,622 8,418 | 7,588 | 4,093 | -3,902 | 5,91I | -3,541 | 5,401 | 3,274 | 3,284 5,193 | 5,102 | 3,004 | 3,004 | $\underset{\substack{2,669 \\ 4,618}}{ }$ | $\xrightarrow{2,477} 4$ | 2,317 | 2,080 | 2,439 5,280 | 6,177 | ${ }_{6}^{3,328}$ |  |
| Imputed interest paid | 3,311 | 3,053 | 2,810 | 2,594 | 2,361 | 2,399 | 2,374 | 2,497 | 2,583 | 2,560 | 2,606 | 2,694 | 2,821 | 2,996 | 3,178 | 3,450 | 3,757 | 4,181 | 4,502 | 4,970 | 5,317 | 5,804 |
| Less: Monetary interest received. | 7,697 | 6,636 | 5,876 | 5,158 | 4,359 | 4,242 | 4,060 | 4,030 | 4,118 | 3,896 | 3,957 | 4,028 | 4,173 | 4,180 | 4,356 | 4,752 | 5,228 | 5,804 | 6,179 | 6,922 | 7,530 | 8,222 |
| Less: Imputed interest recoived..--- | 1,081 | 899 | 730 | 664 | 570 | 539 | 521 | 541 | 554 | 554 | 558 | 614 | 660 | 682 | 771 | 750 | 792 | 981 | 1,164 | 1,276 | 1,371 | 1,488 |
| Originating in households and institutions Monetary interest paid | 1,620 | 965 | 766 | 644 644 | 593 <br> 593 | $\begin{gathered} 608 \\ \mathbf{6 0 0 6} \end{gathered}$ | 628 | 738 738 | 815 815 | 768 768 | 801 801 | 8882 | ${ }_{983}^{983}$ | 760 | '571 571 | 542 | 562 | 702 | ${ }_{932}^{932}$ | 1,161 | 1,369 <br> 1,369 | $\begin{aligned} & 1,720 \\ & 1,720 \end{aligned}$ |
| Originating in rest of the world | 577 | 608 | 550 | 426 | 324 | 242 | 207 | 195 | 160 | 138 | 127 | 120 | 126 | 130 | 15 | 118 | 130 | 140 | 173 | 225 | 211 | 215 |
| anbrad..e.est ceened rom. | 71 | 701 | 612 | 458 | 349 | 265 | 1 | 221 | 191 | 170 | 8 | 2 | 152 | 155 | 5 | 9 | 8 | 179 | 222 | 263 | 259 | 278 |
| Less: Monotary interest paid to abroad. | 134 | 93 | 62 | 32 | 25 | 23 | 24 | 26 | 31 | 2 | 31 | 32 | , | 25 | 30 | 31 | 38 | 39 | 49 |  | 48 | 63 |
| Personal interest income (component of personal income) | 7,524 | 7,140 | 7,022 | 6,571 | 6,180 | 5,980 | 5,680 | 5,575 | 5,580 | 5,482 | 5,417 | 5,395 | 5,402 | 5,411 | 5,495 | 5,840 | 6,672 | ,354 | 7,922 | 8,786 | 9,518 | 10,096 |
| Net interest (component of national in- come) | 6,541 | 6,176 | 5,938 | 5,430 | 5,010 | 4,750 | 4,539 | 4,474 | 4,376 | 4,290 | 4,212 | 4,104 | 4,113 | 3,894 | 3,355 | 3,137 | 3,009 | 2,922 | 3,544 | 4,335 | 4,908 | 5,386 |
| Net interest paid by government |  |  |  |  | 1,170 | 1,230 | 1,141 | 1,101 | 1,204 | 1,192 | 1,205 | 1,291 | 1,289 | 1,517 | 2,140 | ${ }^{2,803}$ | 3,663 |  | 4,378 | 4,451 | 4,610 | 4,710 |
| Monetary interest paid.-.---..--- | 1,506 | 1,513 | 1,521 | 1,574 | 1,689 | 1,849 | 1,831 | 1,868 | 2,019 | 1,920 | 1,941 | ${ }^{2,059}$ | 2,088 | 2,407 | 3,141 | $\xrightarrow{3,889} 1$ | 4,916 1,253 |  | 5,763 <br> 1,385 | 1,457 | 1,588 |  |
| Less: Monetary intereat received---1 | 523 | 549 | 437 | 433 | 519 | 619 | 690 | 767 | 815 | 728 | 736 | 768 | 799 | 890 | 1,001 | 1,086 |  | 1,320 | 1,385 | 1,457 | 1,588 | 1,14 |

Table 38.—Reconciliation of Department of Commerce Estimates of Corporate Profits with Bureau of Internal Revenue Tabulations, 1929-48 ${ }^{1}$
[Millions of dollars]

|  | 1029 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Compiled net profit, B. I. R. 2 | 11,870 | 4,649 | -777 | -3,829 | $-930$ | 2,970 | 5,423 | 7,771 437 | 7,830 | 4,131 ${ }_{437}$ | $\begin{array}{r}7,178 \\ +38 \\ \hline\end{array}$ | 9,348 | 16,075 | 23,389 | 28,126 | $26,546$ | 21,345 <br> 693 | 25,399 | 31,615 | $\begin{array}{r} 34,588 \\ 1,711 \end{array}$ |  |  |
|  | 500 | ${ }_{935}^{463}$ | 1,702 | 1,705 | 1,086 | 298 | 239 | 142 | 164 | 75 | 65 | 703 | 1,000 |  |  |  |  |  |  |  |  |  |
| PIns net loss, sales of property, other than capital assets, B. I. R. |  |  |  |  |  |  |  |  |  |  | 186 | 336 | ${ }_{2}^{297}$ | 486 | 584 | 504 428 | 464 | ${ }_{2}^{240}$ | 325 | 889 |  |  |
| I ess net capital gain, B. I. R.-....-than capital assets, B. I. R. | 1,316 | 646 | 299 |  |  | 243 |  | 581 |  | 207 95 | 1212 | 188 178 | 163 | 179 131 | 294 130 | 428 | 182 | 1,211 298 | 323 | 869 369 |  |  |


|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Less domestic dividends received, B. I. R. | 2,593 | 2.571 | 1,969 | 1,260 | 1,026 | 2,217 | 3,014 | 2,676 | 2,682 | 1,791 | 1,906 | 2,021 | 2,235 | 1,344 | 1,334 | 1,429 | 1,419 | 1,713 | 1,882 | 2,194 |  |
| liess foreign dividends received, rast of the world" industry, |  |  |  |  |  |  | 163 |  |  | 312 | 250 | 245 |  |  |  |  | 134 |  |  | 382 |  |
| Commerce --.-.-.-.-.-. | 65 | 53 | -56 | -56 | -32 | -2 | 44 | -32 | -13 | 195. | 114. | 137 | 99 | 98 | 130 | 96 | 17 | 125 | 213 | 207 |  |
| Plus profits diselosed hy audit, Commerce panies, based on B. I. R. | $\begin{aligned} & 854 \\ & 123 \end{aligned}$ | $\begin{gathered} 590 \\ 110 \end{gathered}$ | 405 96 | 104 | 432 17 | 560 33 | 610 7 | 584 12 | 629 -19 | 505 -30 | 673 -41 | 571 -57 | 918 -59 | 910 1,030 | 1,300 1,056 | 1,670 1,118 | 1,100 | 1,150 1,229 | 1,350 | 1,505 |  |
| Iess profits of mutual nonlife insurance companies, B. I. R. | -69 | -86 | -62 | -48 | -59 | -81 | -88 | -96 | -79 | -79 | -98 | -131 | -156 | 12 | 14. | 16 | 18 | 19 | 21 | 24 |  |
| Jeass forcign income tax on branch profits, Commerce |  |  |  |  |  |  |  |  |  |  |  | 14 | 23 |  | 24 | 43. |  |  |  |  |  |
| Plus State income taxes, Commerce.....-- | 145 | 98 | 75 | 57 | 59 | 100 | 131 | 157 | 165 | 134 | 156 | 199 | 277 | 344 | 458 | 459 | 455 | 462 | 604 | 670 |  |
| Plus profits of Federal Reserve banks, Federal Reserve Board. <br> Less gross renegotiation refunds, B . İ. R. |  |  |  |  |  |  |  |  |  |  |  | 14 |  |  | $\begin{array}{r} 26 \\ 2,893 \end{array}$ | $\begin{array}{r} 55 \\ 1,478 \end{array}$ |  | 93 |  | 232 |  |
| Less emergency amortization acceleration, Commerce. |  |  |  |  |  |  |  |  |  |  |  |  | 18 | 145 | 337 | 912 |  |  |  |  |  |
| Phus war losses, Commerce |  |  |  |  |  |  |  |  |  |  |  |  |  | 77 |  |  |  |  |  |  |  |
| Profits before taxes, Department of Commerce Less Federal income taxes, B. I. R. | 9,818 1,193 | 3,303 712 | -783 -399 | $\begin{array}{r}-3.042 \\ \hline 286\end{array}$ | ${ }_{423}^{162}$ | 1,723 | 3,224 | 5,684 1,192 | 6,197 1,276 | 3,369 <br> 86 | 6,467 1,232 | $\xrightarrow{\mathbf{9}, 549}$ | 17,232 | 21,098 |  |  |  |  |  |  |  |
| - Less Fedcrai income taxes, B. ${ }^{\text {Less }}$ State income taxes, | ${ }^{1,193}$ | $\begin{array}{r}712 \\ 98 \\ \hline\end{array}$ | $\begin{array}{r} \\ \\ 759 \\ \hline\end{array}$ | 286 <br> 58 | 423 | 1596 100 | 131 | 1,192 | 1,276 | 860 <br> .134 | 1,232 | ${ }^{2,549}$ | ${ }^{7} 168$ | 12,254 | $\begin{array}{r}15,926 \\ \hline 58 \\ \hline\end{array}$ | 11,884 1459 | 10,795 | 8,875 462 | 11,011 6 | $\begin{array}{r}11,920 \\ 670 \\ \hline\end{array}$ |  |
| Lesstaxesresulting fromaudit, Commerce | 91 | 67 | 45 | 44 | 61 | 78 | 87 | 98 | 110 | 88 | 118 | 189 | 473 | 550 | 783 | 1,020 | 603 | 417 | 490 | 561 |  |
| Pus tax refunds resulting from renegotiation, B. I. R. |  |  |  |  |  |  |  |  |  |  |  |  |  | 1,316 | 2,141 |  | 395 |  |  |  |  |
| Plus tax refunds resulting from emergency amortization acceleration, Commerce. |  |  |  |  |  |  |  |  |  |  |  |  | 9 | 101 |  |  |  |  |  |  |  |
| L.ess income taxes, Federal Reserve banks, Federal Reserve Board |  |  |  | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 75 | 167 |  |
| Plus taxes paid by mutual nonlife insurance companies, 13. I. R. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 8 |  |  | 12 |  |
|  |  |  |  |  |  |  | 44 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Less excess profits tax, Vinson Act, Commeree. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Plus foreign income tax on dividend income, Commerce | 22 |  |  |  |  |  |  |  | 26 | 38 | 38 | 46 | 40 | 42 | 56 | 50 | 48 | 79 | 110 | 113 |  |
| Plus forcign income tax on branch profits, Commerce. <br> Plus carry-back tax refund, Comineree. |  |  |  |  |  |  |  | 14 | 13 |  |  | 14 |  |  | $\begin{array}{r}24 \\ 280 \\ \hline\end{array}$ | 43 <br> 93 | 188 | 83 | 120 | 165 |  |
| Profits after taxes, Department of Commerce- | 8,490 | 2,455 | -1,283 | $-3,424$ | -302 | 377 | 2,259 | 4,273 | 4,685 | 2,289 | 5,005 | 6,447 | 9,386 | 9,433 | 10,646 | 10,808 | 8,502 | 13,881 | 18,549 | 20,734 |  | 1 For a discussion of this table see Part I

Tahle 39.-Major Items of Personal Income and Personal Consumption Expenditures in Kind, 1929-50

|  | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1035 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1043 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Personal income and consumption expenditures in kind. |  | 4,252 |  |  |  |  | 2,206 |  | 2,049 | 2,736 | 2,830 | 2,915 | 3,519 | 5,029 | 6,696 | 8,359 | 8,795 | 6,282 | 5,871 | 6,342 | 6,797 | 7,313 |
| Food furnished government (including military) and commercial cmployece |  | $245$ |  | 100 | 155 | 185 | 214 |  | 271 | 2,77 | 254 | 283 | 475 | 5,0.. | 1,677 | 2,309 | 2,753 | 1,348 | 1,023 | 1,084 | 1,069 | 1,142 |
| Standard clothing issued to military personnel | 12 | 1. |  | 10 | 11 | 7 | 9 | 12 | 3 | 14 | 22 | 54 | 10 | 745 | t, 318 | 1,712 | 1,744 | 8 | 230 | 191 | 13 | 248 |
| Meals furnished domestic servants and nurses. | 298 | 5 | 95 | 0 | 128 | 161 | 180 | 194 | 214 | 82 | 88 | 201. | 210 | 242 | 230 | 217 | 216 | 232 | 307 | $3{ }^{\text {a }}$ | 330 | 376 |
| Net rent of owner-oceupied farmand nonfarm dwellings- | 2,772 | 2.403 | 2.126 | 1,604 | 1,162 | 949 | 937 | 1,023 | 1,190 | 1,388 | 1,459 | 1,494 | 1,678 | 2,106 | 2,418 | 2,728 | 2,633 | 2,577 | 2,657 | 2,889 | 3,212 | 3,394 |
| Services furnished without payment by financial intermediaries except insurance cornpanies. | 1,278 | 1,141 97 | 1,017 | 872 78 | 757 71 | 793 71 | 792 74 | 843 78 | 888. | 818 87 | 817 90 | ${ }_{792}^{701}$ |  |  | 948 105 | 1.180 117 | 1,325 124 | 1.499 188 | 1,532 | 1,710 132 | ${ }^{1.838}$ | 2,009 |
| Personal income and consumption expendi- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| tures partially in kind ......-.-...-...... | 1,609 | 1,537 | $\xrightarrow{1,254} 1$ | 1,008 | 1,023 | 1,090 | 1,321 | 1,374 | 1,410 1,304 | 1,283 | 12,244 | 1,232 | $c14001294$ | 1,781 1,670 | $\mathbf{2 , 1 4 9}$ $\mathbf{2 , 0 3 0}$ | $\underline{2,192}$ | $\stackrel{2}{2,135}$ | 2,625 | 3,093 | 2,836 | 2,505 | 2,303 |
| Fuel produced and consunted on farms.- | 11.4 | 1.109 | ${ }^{1} 96$ | 93 | 97 | 98 | 104 | 103 | 106 | 99 | 110 | 10.2 | ${ }_{1064}$ | 111 | 119 | 126 | 122 | 132 | 186 | 130 | 117 | ${ }^{111}$ |
| Personal consumption expenditures in kind not included in personal income. | 2,203 | 2,232 | 2,186 | 2,104 | 2,000 | 2,034 | 2,058 | 2,053 | 2,084 | 2,098 | 2,094 | 2,1:0 | 2,221 | 2,259 | 2,397 | 2,546 | 2,707 | 2,940 | 3,332 | 3,944 | 4,588 | 5,314 |
| Depreciation of owner-occupied farm and nonfarm dwellings. | 1,007 | 1,003 | 973 | 973 | 946 | 172 | 79 | 91 | 1,012 | 1,008 | 1,027 | 1,058 | 1,119 | 1,141 | 1,226 | 1,313 | 1,407 | 1,541 | 1,760 | 1.9 | 2,038 | 2,215 |
| Taxes on owner-occupied farm and nonfarm dwellings | 1,017 | 1,051 | 1,037 | 987 | 879 | $\mathbf{8 8 7}$ | 903 | $88:$ | 892 | 909 | 880 | 908 | 910 | 923 | 97 | 1,033 | 1.097 | 1,188 | 1,353 | 1.808 | $\underline{2,310}$ | 2,845 |
| Institutionsl depreciation.- | 1.079 | ${ }^{1} 178$ | 176 | 174 | 175 | 176 | 176 | 177 | 180 | 184 | 187 | 140 | 102 | 195 | 197 | 200 | 203 | 211 | 219 | 223 | 240 | 2.4 |


| [Billions of doilars] |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1945 |  |  |  |  | 1946 |  |  |  |  | 1947 |  |  |  |  | 1948 |  |  |  |  | 1949 |  |  |  |  | 1950 |  |  |  |  |
|  | I | II | III | IV | Year | I | II | III | IV | Year | I | II | III | IV | Year | I | II | III | IV | Year | I | II | III | IV | Year | 1 | II | III | IV | Year |
| National income. | 47.5 | 47.9 | 44.8 | 42.5 | 182.7 | 41.9 | 44.3 | 46.0 | 48.0 | 180.3 | 47.5 | 48.8 | 50.0 | 52.4 | 198.7 | 52.8 | 55.6 | 57.2 | 57.9 | 223.5 | 54.2 | 54.2 | 54.5 | 53.8 | 216.7 | 53.8 | 57.6 | 62.0 | 65.6 | 239.0 |
| Compensation of employe | 31.4 | 31.8 | 30.7 | 29.1 | 123.0 | 27.6 | 28.7 | 29.8 | 31.0 | 117.1 | 30.6 | 31.4 | 32.3 | 33.7 | 128.0 | 33.3 | 34.4 | 36.0 | 36.4 | 140.2 | 34.6 | 34.9 | 35.0 | 35.4 | 139.9 | 35.0 | 37.1 | 39.5 | 41.8 |  |
| Wages and salaries. | 30.2 | 30.5 | 29.4 | 27.7 | 117.7 | 26.1 | 27.1 | 28.4 | 29.6 | 111.2 | 29.0 | 29.8 | 30.9 | 32.4 | 122.1 | 31.8 | 32.9 | 34.5 | 37.1 | 134.4 | 33.0 | 33.2 | 33.4 | 33.9 | 133.4 | 33.1 | 35.2 | 37.5 | 40.0 | 145.8 |
| Private. | 21.1 | 21.2 | 20.3 | 19.6 | 82.1 | 19.9 | 22.0 | 23.9 | 24.8 | 90.8 | 24.6 | 25.5 | 26.9 | 27.9 | 104.8 | 27.3 | 28.3 | 30.0 | 30.0 | 115.7 | 27.9 | 28.1 | 28.6 | 28.5 | 13.0 | 27.8 | 29.8 | 32.3 | 33.7 | 123.6 |
| Military...--7-7.-. | 5 | 5.9 | ${ }^{6.0}$ | 4.9 | ${ }_{13.6}^{22.6}$ | 3.2 | 1.9 | 1.5 | 1.3 | 8.0 | 1.2 | 1.0 |  | 1.0 | 4.1 | ${ }_{3}^{1.0}$ | 1.0 | 1.0 | 1.0 | 4.0 | $\stackrel{1}{1.0}$ | 1.0 4 | 1.1 | 1.1 | ${ }_{16}^{4.2}$ | 1.1 | 1.1 4.3 | 1.3 | 1.6 4.6 | 17.1 |
| Government civilian---- | 3.3 1.3 | 3.4 1.4 | 3.1 1.4 | 3.2 1.4 | 13.0 5.4 | 3.1 1.5 | 3.3 | 3.0 1.4 | 3.4 | ${ }_{12.9} 12$ | 3.3 1.6 | 3.3 1.6 | 3.1 1.4 | 3.5 1.3 | 13.2 5.9 | 3.5 1.5 | 3.6 1.5 | 3.5 1.5 | 1.0 | 14.7 5.8 | 4.0 1.6 | 4.1 1.7 | 3.8 1.6 | 4.3 | $\begin{array}{r}16.1 \\ 6.5 \\ \hline\end{array}$ | 4.2 1.9 | 4.3 | 4.0 | 4.6 1.8 | ${ }_{7}^{17.5}$ |
| Proprietors' and rental income ${ }^{1}$ | 9.4 | 9.4 | 0.2 | 9.4 | 37.5 | 9.9 | 10,3 | 11.0 | 10.8 | 42.0 | 10.6 | 10.2 | 10.4 | 11.2 | 42.4 | 11.4 | 12.1 | 12.0 | 11.7 | 47.3 | 10.9 | 10.4 | 10.1 | 10.1 | 41.4 | 10.4 | 10.5 | 11.4 | 11.8 | 44.0 |
| Busincss and professional | 4. 6 | 4.7 | 4.7 | 4.7 | 18.7 | 5.0 | 5.2 | 5.3 | 5.1 | 20.6 | 4.9 | 4.9 | 4.9 | 5.1 | 19.8 | 5.4 | 5.5 | 5.6 | 5.5 | 22.1 | 5.4 | 5.3 | 5.2 | 5.1 | 20.9 | 5.3 | 5.5 | 5.8 | 5.8 | 22.3 |
| Farm- | 3.2 | 3.1 | 3.0 | 3.2 | 12.5 | 3.3 | 3.4 | 4.0 | 4.1 | 14.8 | 4.0 | 3.6 | 3.7 | 4.2 | 15.6 | 4.2 | 4.7 | 4.5 | 4.3 | 17.7 | 3.6 | 3.3 | 3.0 | 3.1 | 13.0 | 3.1 | 3.0 | 3.6 | 4.0 | 13.7 |
| Rental income of persons. | 1.6 | 1.6 | 1.5 | 1.5 | 6.3 | 1.6 | 1.7 | 1.7 | 1.7 | 6.6 | 1.7 | 1.7 | 1.8 | 1.8 | 7.1 | 1.8 | 1.9 | 1.0 | 1.9 | 7.5 | 1.8 | 1.9 | 1.9 | 1.9 | 7.5 | 2.0 | 2.0 | 2.0 | 2.1 | 8.0 |
| Corporate profits and inventory valuation ad- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| justment <br> Corporate profits before tax | 5.8. | 6.9 | 4.1 | 3.3 3.4 | 19.2 | 3.7 4.0 1 | 4.7 5.4 | 4.5 | 5.4 | 18.3 | 5.4 | ${ }_{6}^{6.4}$ | ${ }_{7.4}^{6.4}$ | 7.6 | 24.7 30.5 | 7.1 | 8.0 | 88.1 | 8.5 | 31.7 33.8 | 7.6 | 7.7 | 8.2 | 7.0 6.8 | 30.5 | 7.1 | 8.8 | 11.8 | 10.6 | 36.2 41.4 |
| Corporate profits before tax. Corporate profits tax liability | 6.0 <br> 3.4 | 6.1 | $\stackrel{4.2}{2.3}$ | 3.4 | 19.7 | 4.0.8. | 5.4 | 6.5 2.6 3.0 | 7.0 | ${ }^{23.5}$ | 7.9 | 7.4 2.9 | 7.4 | 7.8 | 30.5 11.9 | 8.3 <br> 3.2 | 8.6 3.3 | 8.9 | 8.1 | 13.8 | 7.5 | 6.7 2.6 | 7.8 | 6.8 | 128.3 | 7.5 | 9.4 | $\begin{array}{r}11.8 \\ 5.3 \\ \hline 8\end{array}$ | 12.7 | 18.4 |
| Corporate profits after tax. | 2.6 | 2.7 | 1.9 | 1.3 | 8.5 | 2.2 | 3.2 | 3.9 | 4.6 | 13.9 | 4.8 | 4.4 | 4.5 | 4.8 | 18.5 | 5.1 | 5.3 | 5.5 | 4.9 | 20.7 | 4.6 | 4.1 | 4.5 | 4.2 | 17.3 | 4.1 | 5.2 | 6.5 | 7.0 | 22.8 |
| Inventory valuation adjustment. | -. 1 | 1 | -. 1 | -. 2 | -. 6 | -. 3 | -. 7 | -2.0 | -2.2 | -5.2 |  |  | -1.0 | -1.2 | -5.8 | -1.2 |  | . 8 | . | -2.1 | .1 | 1.0 | . 9 | 2 | 2.1 | 3 | -. 7 | -2.1 | -2.0 | -5.1 |
| Net interest | .. 8 | 8 | . 7 | . 7 | 3.0 | . 7 | . 7 | . 7 | 8 | 2.9 | . 8 | . 9 | . 0 | . 9 | 3.5 | 1.0 | 1.1 | 1.1 | 1.2 | 4.3 | 1.2 | 1.2 | 1.2 | 1.3 | 4.9 | 1.3 | 1.3 | 1.4 | 1.4 | 5.4 |
| Addendum: Compensation of general government employees. | 9.1 | 9.3 | 9.2 | 8.3 | 35.9 | 6.4 | 5.3 | 4.5 | 4.7 | 20.8 | 4.4 | 4.3 | 3.8 | 4.2 | 16.6 | 4.2 | 4.3 | 4.2 | 4.7 | 17.4 | 4.8 | 4.9 | 4.6 | 5.1 | 19.4 | 5.0 | 5.1 | 5.0 | 5.9 | 20.9 |

${ }^{1}$ Includes noncorporate inventory valuation adjustment.


1 Includes noncorporate inventory valuation actjustment

Talle 41.-National Income bylDistributive Shares, Seasonally Adjusted Quarterly Totals at Anmual Rates, 19:15-50
[Billions of dollars]

${ }^{1}$ Includes noncorporate inventory valuation arljistment.
'Table 42.—Gross National Product or Expenditure, Quarterly, 1939-4


Table 42.-Gross National Product or Expenditure, Quarterly, 1945-50
[Billions of dollars]


Table 43.-Gross National Product or Expenditure, Scasonally Adjusted Quarterly Totals at Annual Rates, 1939-44
[Billions of dollars]


Table 44.-Disposition of Personal Income, Quarterly, 1939-4t


## Table 44.-Disposition of Personal Income, Quarterly, 1945-50

[Billions of dollars]

|  | 1945 |  |  |  |  | 1946 |  |  |  |  | 1947 |  |  |  |  | 1948 |  |  |  |  | 1949 |  |  |  |  | 1950 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | I | II | III | IV | Year | I | II | III | IV | Year | I | II | III | IV | Year | I | II | III | IV | Year | I | II | III ${ }^{\text {- }}$ | IV | Year | I | II | III | IV | Year |
| Personal income. | 43.0 | 43.6 | 42.5 | 42.8 | 171.9 | 41.8 | 43.8 | 45.2 | 47.0 | 177.7 | 45.7 | 46.3 | 48.3 | 50.7 | 191.0 | 49.9 | 52.0 | 53.1 | 54.4 | 209.5 | 50.9 | 51.2 | 50.6 | 52.3 | 205.1 | 53.3 | 54.1 | 56.5 | 60.8 | 224.7 |
| Less: Personal tax and nontax payments Federal | 8.5 | 4.9 4.5 | 3.9 3.6 | 3.6 | 19.9 | 7.6 | 3.4 2.9 | ${ }_{3}^{4.2}$ | 3.6 | 17.8 | 8.7 | 4.0 | 4.7 | 4.1 3.7 | ${ }_{19}^{21.5}$ | 9.3 8.7 | 3.9 3.3 | 4.2 | 3.7 <br> 3.2 | 21.1 | 7.3 6.6 | 3.4 | 4.4 | 3.6 | 18.6 | 7.0 6.2 | 3.9 | 4.8 | 4.7 | 17.5 |
| Equals: Disposable personal | . | 38.8 | 38.6 | 39.2 | 151 | 34.2 | 40.4 | 41.0 | 43.3 | 158.9 | 37.0 | 42.3 | 43.6 | 46.6 | 169.5 | 40.6 | 48.1 | 48.9 | 50.7 | 188.4 | 43.6 | 47.9 | 46.3 | 48.7 | 186.4 | 46.3 | 50.2 | 51.7 | 56.1 | 204.3 |
| Less: Personal consumption expenditures | 28.5 | 29.4 | 30.0 | 35.1 | 123.1 | 32.3 | 35.2 | 37.1 | 42.4 | 146.9 | 37,6 | 40.4 | 40.7 | 40.8 | 195.6 | 41.3 | 43.6 | 43.9 | 49.0 | 177.9 | 42.0 | 44.6 | 44.1 | 49.5 | 180.2 | 43.6 | . 46.6 | 49.7 | 53.6 | 193.6 |
| Equals: Personal saving | 6.0 | 0.3 | 8.5 | 4.1 | 28.0 | 1.9 | 5.3 | 3.9 | . 9 | 12.0 | -. 6 | 1.9 | 2.8 | -. 2 | 3.9 | -. 7 | 4.5 | 5.0 | 1.7 | 10.5 | 1.6 | 3.3 | 2.2 | -. 8 | 6.3 | 2.6 | 3.5 | 2.0 | 2. | 10.7 |

Table 45.-Disposition of Personal Income, Seasonally Adjusted Quarterly Totals at Annual Rates, 1939-44


Table 45.-Disposition of Personal Income, Seasonally Adjusted Quarterly Totals at Annual Rates, 1945-50
[Billions of dollars]



Table 46.-Relation of Gross National Product, National Income, and Personal Income, Quarterly, 1945-50
[Billions of dollars]

|  | 1945 |  |  |  |  | 1946 |  |  |  |  | 1947 |  |  |  |  | 1948 |  |  |  |  | 1949 |  |  |  |  | 1950 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | II | III | IV | Year | I | II | III | IV | Year | I | II | III | IV | Year | 1 | II | III | IV | Year | 1 | II | III | IV | Year | I | II | III | IV | Year |
| Gross national product. | 54.8 | 55.4 | . 0 | 52.0 | 2 | 48.3 | 50.4 | 54.3 | 58.2 | 1.1 | 54.1 | 56. | 57.8 | 65.2233 .3 |  | . 1 | 62.4 | 65.7 | 70.9 | 259.0 | 62.6 | 62.5 | 64.4 | 67.8 257.3 |  | 63.8 | 66.6 | 72.4 | 79.8 |  |
| Less: Capital consumption allowances-1.--- | 54 3 3 | 3.2 | 3.3 | 2.7 | 12.45 | 2.8 | 3.0 4.2 | 3.1 4.5 | 3.2 | 12.2 | 3.4 | 3.6 4.5 | 3.8 | 4.0 | 14.8 | 4.2 4.8 | 4.4 5.0 | 4.5 | 4.6 | 17.6 20.4 | 4.6 5.1 | 4.7 5.3 | 4.8 5.6 | 4.9 5.7 | 19.1 21.7 | 5.0 | 5.2 5.8 | 5.4 | $\begin{array}{r} \mathbf{5 . 5} \\ \mathbf{6 . 2} \\ \hline .2 \end{array}$ | 21.223.8.8 |
| Business iransfer payments <br> Statistical discrepancy_ | $\begin{array}{r}\text { 3 } \\ .8 \\ .8 \\ \hline\end{array}$ | 3.8 .1 .4 | 1.1 1.0 | 4.1. 3.0 | 13.0. | - $\begin{array}{r}\text {. } \\ -.1 \\ -.1\end{array}$ | - $\begin{array}{r}\text {. } \\ -.7 \\ \hline\end{array}$ | 4.5 .0 .5 | 2.0 | 1.6 1.7 | $\begin{array}{r}\text { a } \\ \hline 1.4 \\ -1.3 \\ \hline\end{array}$ | - 4 | $\begin{array}{r}\text { 4. } \\ -1.0 \\ \hline\end{array}$ | 5.1 3.4 3.4 | ${ }^{18.7}$ | - 4 | -2.7 | - 2.4 | 2. 2.8 | - 7 | - ${ }^{2}$. | $\begin{array}{r}5.8 \\ -1.9 \\ \hline\end{array}$ | - 2 | . 3.2 | - 8.8 | - 2.5 | -2. 2 | -1.6 | 2.2 |  |
| Plus: Subsidies less current surplus of government enterprises | . 2 | 1 | . 2 | 4 | 8 | 5 |  |  |  |  |  | 1 | - 1 |  |  | -. 1 | . 0 | . 0 | . 0 |  | . 0 |  | -. 1 | . 0 |  | . 1 | . 2 | . 0 |  | . 3 |
| Equals: Natlonal income.. | 47.5 | 47.9 | 44.8 | 42.5 | 182.7 | 41.9 | 44.3 | 46.0 | 48.0 | 180.3 | 47.5 | 48.8 | 50.0 | 52.4 | 198.7 | 52.8 | 55.6 | 57.2 | 57.9 | 223.5 | 54.2 | 54.2 | 54.5 | 53.8 | 216.7 | 53.8 | 57.6 | 62.0 | 65.6 | 239.0 |
| Less: Corporate profits and inventory valuation adjustment. | 5.8 | 5.9 | 4.1 | 3.3 | 19.2 | 3.7 | 4.7 | 4.5 | 5.4 | 18.3 | 5.4 | 6.4 | 6.4 | 6.6 | 24.7 | 7.1 | 8.0 | 8.1 | 8.5 | 31.7 | 7.6 | 7.7 | 8.2 | 7.0 1.3 | 30.5 5.7 | 7.1 | 8.8 1.8 | 9.7 1.8 | 10.6 | 36.2 7.0 |
| Contributions for social insurane - ${ }^{\text {Excess of wage accruals over }}$ disburse- | 1.5 | 1.6 | 1.5 |  |  | 1.6 | 1.6 | 1.5 | 1.4 | 6.0 | 1.6 | 1.6 | 1.3 | 1.2 |  | 1.3 | 1.3 | 1.3 | 1.2 | 5.2 | 1.5 | 1.5 | 1.4 | 1.3 | 5.7 | 1.8 | 1.8 | 1.8 | 1.6 | 7.0 |
|  | . 0 | . 0 | . 0 |  |  | . 2 | - 2 | . 0 |  |  | ${ }^{0}$ | . 0 | . 0 | . 0 |  | 8.0 | . 0 | . 0 | . 0 | 10.5 | ${ }^{.0}$ | - 2.1 | 2.9 | . 0.0 | $1{ }^{.0} 6$ | 5.0 | . 3.6 | 2.7 | 2.8 | 14.3 |
| Plus: Government transier payments. | . 8 | 1.0 | 1.9 | 1.0 | 3.7 | 1.0 | 1.3 | 1.0 | 1.1 | 4.4 | 1.0 | 1.2 | 1.0 | 1.1 | 4.4 | 1.0 | 1.3 | 1.0 | 1.2 | 4.5 | 1.0 | 1.4 | 1.0 | 1.2 | 4.6 | 1.1 | 1. | 1.0 | 1.2 | 4.7 |
| Dividends-..-....... | 1.0 | 1.1 | 1.1 | 1.5 | 4.7 | 1.2 | 1.3 | 1.4 | 2.0 | 5.8 | 1.4 | 1.5 | 1.5 | 2.1 | ${ }^{6.0}$ | 1.6 | 1.6 | 1.2 | 2. 2 | 7.7 | 1.2 | 1.2 | . 2 | 2. | . 7 | . 2 | 1.2 | . 2 | . 2 | . 8 |
| Equals: Personal incarne...............-. --....- | 43.0 | 43.6 | 42.5 |  | 171.9 | 41.8 | 43.8 | 45.2 | 47.0 | 177.7 | 45.7 | 46.3 | 48.3 | 50.7 | 191.0 | 49.9 | 52.0 | 53.1 | 54.4 | 209.5 | 50.9 | 51.2 | 50.6 | 52.3 | 205.1 | 53.3 | 54.1 | 56.5 | 60.8 | 224.7 |

Table 47.-Relation of Gross National Product, National Income, and Personal Income, Seasonally Adjusted Quarterly Totals at Annual Rates, 1939-44
[Billions of dollars]


Table 47.-Relation of Gross National Product, National Income, and Personal Income, Sensonally Adjusted Quarterly Totals at Aninual Rates, 1945-50 [Billions of dollars]


Table 10.-Personal Income, Scasonally Adjusted Monthly Totals at Annual Rates, 1929-50
[Billions of dollars]

| Year and month | Personal income | Wage and salary receipts |  |  |  |  |  |  | Other labor income ${ }^{8}$ | Proprietors' and rental income | Dividends and personal interest income ${ }^{5}$ | Transfer payments ${ }^{6}$ | Nonagricultural income ${ }^{7}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total | Wage and salary disbursements |  |  |  |  | Less employee contributions for social insurance ${ }^{2}$ |  |  |  |  |  |
|  |  |  | $\begin{aligned} & \text { Total } \\ & \text { disburse- } \\ & \text { ments } \end{aligned}$ | Commodity producing industrics ${ }^{1}$ | Distrimutive industrics ${ }^{3}$ | Service industries ${ }^{1}$ | Government ${ }^{1}$ |  |  |  |  |  |  |
| 1929 |  |  |  |  |  | . |  |  |  |  |  |  |  |
| January........... | 85.1 | 19.2 | 49.4 | 21.3 | 15.2 | 8.1 | 4.8 | . 2 | . 5 | 20.3 | 13.5 | 1.6 | 76.3 |
| february-.........- | 84.6 | 40.3 | 49.4 | 21.3 | 15.2 | 8.1 | 4.8 | . 1 | . 5 | 19.7 | 13.5 | 1.6 | 76.2 |
| March.........-.-- | 85.2 | 49.6 | 49.7 | ${ }_{2} 1.3$ | 15.4 | 8.1 | 4.9 | .1 | . 5 | 20.1 | 13.5 | 1.5 | 76.7 |
| April.-........--- | 85.2 | 49.6 | 49.7 | 21.4 | 15.3 | 8.1 | 4.9 | .1 | . 5 | 20.1 19.2 | 13.5 | 1.5 1.5 | 76.5 |
| May-.......-...--------- | 84.5 <br> 8.5 <br> 8.1 | 49.9 50.4 | 50.0 50.5 | 21.5 21.9 | 15.5 | 8.1 | 4.9 | .1 | . 5 | 19.2 19.3 | 13.4 13.4 | 1.5 | 76.8 77.2 |
| July.-.------.-. | 86.3 | 50.3 | 50.5 | 21.6 | 15.7 | 8.2 | 5.0 | . 2 | . 5 | 20.6 | 13.4 | 1.5 | 77.4 |
| August-...-...-.-- | 86.9 | 81.1 | 81.2 | 22.1 | 15.8 | 8.2 | 5.1 | . 1 | . 5 | 20.4 | 13.4 | 1.5 | 78.0 |
| September------ | 86.4 | 51.0 | 51.1 | 22.1 | 15.7 | 8.2 | 5.1 | 1 | . 5 | 20.1 | 13.4 | 1.4 | 78.2 |
| November. | 83.6 | 49.8 | 49.9 | 21.1 | 15.6 | 8.2 | 5.0 | . 1 | . 5 | 18.4 | 13.4 | 1.5 | 76.1 |
| December-.-.-.-- | 82.8 | 49.0 | 49.1 | 20.4 | 15.6 | 8.1 | 5.0 | . 1 | . 5 | 18.5 | 13.3 | 1.5 | 75.2 |
| Total.....- | 85.1 | 50.0 | 50.2 | 21.5 | 15.5 | 8.2 | 5.0 | . 1 | . 5 | 19.7 | 13.3 | 1.5 | 76.8 |
| January----.---. | 81.7 | 48.3 | 48.5 | 20.2 | 15.3 | 8.0 | 5.0 | . 2 | . 5 | 18.1 | 13.2 | 1.6 | 74.3 |
| February----.-.-. | 80.9 | 48.0 | 48.1 | 19.9 | 15.1 | 8.0 | 5.1 | . 1 | . 5 | 17.7 | 13.1 | 1.6 | ${ }_{73.6}^{73.6}$ |
| April...........-- | 80.0 | 47.3 | 47.4 | 19.4 | 15.0 | 8.9 | 5.1 | . 1 | . 5 | 16.9 | 13.1 13.0 | 1.5 | 72.7 |
| May-...----.-.-- | 78.9 | 47.0 | 47.1 | 19.2 | 14.9 | 7.9 | 5.1 | . 1 | . 5 | 17.0 | 12.9 | 1.5 | 71.8 |
| June-...........--- | 77.0 | 46.7 | 46.8 | 19.1 | 14.7 | 7.8 | 5.2 | . 1 | . 5 | 16.1 | 12.8 | 1.4 | 71.1 |
| July--.-.-----... | 75.3 | 45.6 | 45.8 | 18.4 | 14.4 | 7.8 | 5.2 | . 2 | . 5 | 14.9 | 12.8 | 1.5 | 69.8 |
| August-...-.-...- | 74.3 73 | 44.7 | 44.9 | 18.0 | 14.0 | 7.7 | 5.2 | .2 | . 5 | 15.0 | 12.6 | 1.5 | 68.5 |
| October.....-.-.--- | 73.7 72.4 | 4.6 +3.7 | 44.7 43.9 | 17.9 17.3 | 14.0 13.8 | 7.6 | 5.2 | 1 | . 5 | 14.7 | 12.4 | 1.5 | 67.9 |
| November.-...-... | 70.6 | 43.0 | 43.1 | 16.9 | 13.6 | 7.4 | 5.2 | :1 | . 5 | 14.4 | 12.2 | 1.6 | 65.5 |
| December-.-.---- | 69.5 | 42.4 | 42.5 | 10.4 | 13.5 | 7.4 | 5.2 | .1 | . 5 | 13.1 | 11.8 | 1.7 | 64.5 |
| Total....-- | 76.2 | 45.7 | 45.9 | 18.5 | 14.4 | 7.7 | 5.2 | . 1 | . 5 | 15.7 | 12.6 | 1.5 | 70.0 |
| January | 68.5 | 41.4 | 41.6 | 16.0 | 13.2 | 7.2 | 5.2 | . 2 |  | 13.1 | 11.6 | 1.9 | 63.6 |
| Febriary-..-...... | 08.1 | 41.2 | 41.4 | 15.8 | 13.2 | 7.2 | 5.2 | . 2 | . 5 | 13.1 | 11.5 | 1.8 | 63.4 |
| March----------- | 72.0 | 41.5 407 | +11.6 | 15.8 | 13.3 | 7.2 | 5.3 | . 1 | . 5 | 13.2 | 11.5 | 5.3 | ${ }_{66.6}^{68}$ |
| April-------.-...- | ${ }_{67} 7.7$ | 40.7 40.2 | 40.8 40.3 | $\stackrel{15.4}{15.1}$ | 13.0 12.9 | 7.1 | 5.3 5.3 | ${ }^{1}$ | . 5 | 13.8 | 11.5 | 5.9 | 67.0 |
| June-..------.-.-. | 6\%. $\%$ | 30.5 | 39.7 | 14.7 | 12.8 | 6.9 | 5.3 | .2 | . 5 | 12.0 | 11.3 | 2.1 | 60.8 |
| July...-...-....... | 64.4 | 38.8 | 39.0 | 14.3 | 12.6 | 6.8 | 5.3 |  |  |  | 11.2 | 2.1 | 59.6 |
| August--------- | 62.2 | 38.0 | 38.1 | 13.8 | 12.3 | 6.7 | 5.3 | . 1 | . 5 | 10.7 | 11.0 | 2.0 | 57.9 |
| September.-....-- | ${ }_{6}^{61.0}$ | 37.1 | 37.2 | 13.2 | 12.1 | 6.6 | 5.3 | . 1 | . 5 | 10.5 | 10.9 | 2.0 | 56.7 |
| Oetober-........- | 59.9 | 36.0 | 36.2 | 12.6 | 11.8 | 6.5 | 5.3 | . 2 | . 5 | 10.7 | 10.7 | 2.0 | 55.6 |
| November-.....------- | 59.2 57.8 | 35.9 35.0 | 36.0 35.2 | 12.3 12.3 | 11.7 11.3 | 6.4 6.3 | 5.3 5.3 | . 2 | . 5 | 10.4 10.0 | 10.5 10.2 | 2.0 | ${ }_{53.8}^{54.6}$ |
| Total....... | 64.8 | 38.7 | 38.9 | 14.3 | 12.5 | 6.8 | 5.3 | . 2 | . 5 | 11.8 | 11.1 | 2.7 | 60.1 |
| 1932 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| January---...... | 56.6 | 34.3 | 34.5 | 12.0 | 11.1 | 6.2 | 5.2 |  |  | 9.8 | 9.9 | 2.1 | 52.4 |
| February--........ | 55.5 | 33.6 <br> 32.8 | 33.8 32.9 | 11.7 | 10.8 | 6.1 | 5.2 | .2 | . 4 | 9.5 | 9.9 | 2.1 | 51.3 |
| April.-.........---- | 52.4 | 31.8 | 32.0 | 10.6 | 10.8 | 6.0 5.9 | 5.2 | ${ }^{2}$ | . 4 | 8.6 | 9.8 | 2.1 | 49.9 |
| May-..............- | 50.7 | 30.8 | 30.9 | 9.9 | 10.1 | 5.8 | 5.1 | . 1 | . 4 | 8.4 | 9.7 | 2.1 | 47.4 |
| Junc-.....---...-- | 48.3 | 29.7 | 29.9 | 9.4 | 9.7 | 5.7 | 5.1 | .2 | .4 | 6.8 | 9.4 | 2.0 | 45.7 |
| July..............- | 46.9 | 28.4 | 28.6 | 9.0 | 9.3 | 5.5 | 4.8 |  |  |  |  | 2.3 | 44.3 |
| August---.-....-- | 46.4 46.2 | 28.1 28.3 | 28.3 | 8.9 | 9.1 | 5.5 | 4.8 | .2 | .4 | 6.6 | 8.2 | 2.3 | 43.9 |
| October...-....--- |  | 28.3 | 28.4 28.6 | 9.1 | 9.1 | 5.4 5.4 | 4.8 | $\cdot 1$ | - 4 | 6.8 | 8.6 | 2.1 | ${ }_{43.1}^{43.5}$ |
| November---.----- | 4.3 | $\stackrel{28.3}{28}$ | $\stackrel{28.4}{ }$ | 9.3 | 9.0 | 5.3 | 4.8 | . 2 | ${ }^{.} 4$ | 6.3 | 88.3 | 2.1 | 42.8 |
| December..--.--- | 44.6 | 27.7 | 27.8 | 9.0 | 8.8 | 5.2 | 4.8 | . 1 | . 4 | 5.8 | 8.5 | 2.2 | 42.1 |
| Total. --.-- | 49.3 | 30.1 | 30.3 | 9.9 | 9.8 | 5.7 | 5.0 | . 2 | . 4 | 7.4 | 9.1 | 2.2 | 46.2 |
| 1933 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| January-.-.---.-. | 44.9 | 27.5 | 27.7 | 8.9 | 8.8 |  |  |  |  |  |  |  | 42.0 |
| February-.......-- | 43.8 | 27.1 | 27.2 | 88.7 | 8.6 | 5.0 | 4.9 | . 2 | . 4 | 6.1 5.5 | 8.6 8.5 | $\stackrel{2.3}{2.3}$ | 41.3 |
| April.-.---......-- | 43.6 | 26.2 | 26.4 | 8.0 | 88.3 | 4.9 4.9 | 5.0 4.9 | ${ }^{1}$ | . 4 | 5.2 | 8.5 | 2.4 | 40.0 |
| May ..-.-............ | 45.7 | 26.8 | 27.0 | 8.7 | 8.4 | 4.9 | 4.9 5.0 | . 2 | ${ }_{4}^{4}$ | 6.3 | 8.4 | ${ }_{2}^{2.3}$ | 41.5 |
| June...-.-........- | 47.6 | 28.0 | 28.1 | 9.5 | 8.5 | 5.0 | 5.1 | . 1 | . 4 | 8.0 8.6 | 8.3 | 2.2 | 42.9 |
| July-..--........- | 48.5 | 28.6 | 28.8 | 10.2 | 8.6 |  |  |  |  |  |  |  | 43.3 |
| August-.-.-..... | 48.2 | 30.0 30.4 | 30.2 <br> 30.5 <br> 8.5 | 11.0 .11 .2 | 9.0 9.2 | 5.2 | 4.9 5.0 4.0 | . 2 | . 4 | 9.5 7.8 | 8.1 | 1.9 1.9 | 44.3 44.4 44.6 |
| October...---.--- | 48.1 | 30.4 30.4 | 30.5 | 11.0 | 9.2 | 5.2 | 4.9 | . 1 | . 4 | 7.5 | 8.0 | 1.9 | 44.6 4.6 |
| November----.-.--- | 48.4 | 30.6 | 30.8 | 10.9 | 9.3 | 5.2 | 5.0 5.4 | .2 | 4 | 7.4 | 8.0 | 1.9 20 | 44.7 |
| December...-....- | 50.0 | 31.0 | 32.0 | 10.7 | 0.1 | 5.2 | 7.0 | . 1 | . 4 | 7.3 | 88.1 | 2.0 | 46.4 |
| Total....--- | 46.6 | 28.7 | 28.8 | 9.8 | 8.8 | 5.1 | 5.2 | . 2 | 4 | 7.2 | 8.2 | 2.1 | 43.0 |

Table 48.-Personal Income, Seasonally Adjusted Monthly Totals at Annual Rates, l929-50—Continued
[Bilions of dollars]


Table 18. -Permonal Incone, Sensonally Adjusted Monthly Totals at Annual Rates, 1929-50-Continued
[Billions of dollars]


Table 48.-Personal Income, Seasonally Adjusted Monthly 'otals at Ananal Rates. 1929-50-Camtinuad
[Billions of dollars]

| Year and month | Personal income | Wage and salary receipts |  |  |  |  |  |  | Onher latror income | Proprietora and rental income | Divi. dends and pernonal interestineomes itheome | $\begin{gathered} \text { Transfor } \\ \text { may- } \\ \text { mortis. } \end{gathered}$ | Nothagricultural incoms" |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total | Wage and salary disbursements |  |  |  |  | Less employee contributions for social insurance ${ }^{2}$ |  |  |  |  |  |
|  |  |  | Total disbursements | Commodity producing industries | Distributive industries: | $\underset{\text { Service }}{\text { industries }}$ | Government 1 |  |  |  |  |  |  |
| 1944 |  |  |  |  |  |  |  |  |  |  |  | + |  |
| January-... | 160.1 | 111.5 | 113.6 | 51.3 | 21.6 | 10.0 | 30.7 | 2.1 | 1.1 | 34.5 | 9.9 | 3.1 | 14.4 |
| February | 163.2 | 113.3 | 115.5 | 51.0 | 23.5 | 10.1 | 30.9 | 2.2 | 1.2 | 36.3 | 10.0 | 3.4 | 1478 |
| March.-.-.-.-.-.- | 163.9 163.8 | 113.1 | 115.3 114.8 | 50.7 50.1 | 22.5 | 10.3 10.3 | 31.8 32.4 | 2.2 | 1.2 | 35 | 10.2 10.3 | 3.9 | 148.0 |
| May...... | 164.7 | 113.4 | 115.6 | 49.9 | 22.2 | 10.5 | 33.0 | 2.2 | 1.3 | 35.9 | 110.5 | 3.4 | 148.8 |
| June--------...- | 165.9 | 114.4 | 116.7 | 50.2 | 22.5 | 10.6 | 33.4 | 2.3 | 1.3 | 36.1 | 10.6 | 3.5 | 1:00.1 |
| July- | 166.1 | 115.6 | 117.9 | 50.1 | 22.8 | 10.8 | 34.2 | 2.3 | 1.3 | 35.0 | 10.7 | 3.5 | 151.8 |
| August | 166.4 | 115.9 | 118.2 | 50.0 | 23.0 | 10.7 | 34.5 | 2.3 | 1.4 | 3.4 .8 | 10.8 | 3.5 | 112.1 |
| September----.-. | 166.4 | 115.8 | 118.1 | 49.9 | 22.8 | 10.6 | 34.8 | 2.3 | 1.4 | 34.8 | 10.8 | 3.0 | 102.3 |
| October--- | 168.5 170.1 | 116.9 117.5 | 119.2 | 50.2 | 23.0 | 10.6 10.9 | 35.4 35.4 | 2.3 2.3 | 1.4 | 35.7 30.7 | 10.9 11.0 | 3.6 | $\lim _{\text {inf. }}$ |
| December- | 170.6 | 118.5 | 119.8 120.8 | 50.3 50.9 | 23.5 | 10.8 | 35.6 | 2.3 | 1.4 | 35.8 | 11.1 | 3.8 | 1:56.7 |
| Total. | 165.9 | 114.9 | 117.1 | 50.4 | 22.7 | 10.5 | 33.5 | 2.2 | 1.3 | 35.5 | 10.6 | 3.6 | 150.5 |
| January... | 174.3 | 119.8 | 122.2 |  | 23.7 | 11.0 | 36.0 | 2.4 | 1.3 | 38.0 | 11.0 | 4.0 | 1:7.3 |
| February-------- | 174.5 | 120.0 | 122.4 | 81.5 | 23.9 | 11.1 | 35.9 | 2.4 | 1.5 | 38.1 | 11.0 | 3.3 4.0 | 187.4 |
| March-- | 174.4 | 120.6 | 122.9 | 51.4 | 24.0 | 11.0 | 36.5 | 2.3 | 1.5 | 37.2 | 11.1 | 4.0 | 1.8 .7 |
| Apriy--- | 173.7 | 119.6 | 122.0 121.2 | 50.5 49.3 | 24.1 | 11.1 | 36.7 | 2.4 | 5 | 38.0 | 11.2 | 4.2 | 157.3 |
| June.-- | 176.0 | 119.2 | 121.6 | 48.9 | 24.4 | 11.2 | 37.1 | 2.4 | 1.6 | 38.0 | 11.4 | S.8 | 159.7 |
| July-- | 175.9 | 119.6 | 122.0 | 47.3 | 25.0 | 11.6 | 38.1 | 2.4 | 1.6 | 37.9 | 11.8 | 8.3 | 110.8 |
| August ${ }^{\text {Sep }}$ | 172.0 | 115.8 | 118.1 | 44.1 | 24.8 | 111.6 | - $\begin{array}{r}37.6 \\ 36.3\end{array}$ | 2.3 | 1.6 | 37.8 | 11.6 | 8.2 | 15.38 |
| September | 164.3 167.4 | 109.7 | 112.1 | 39.2 | 24.8 25.1 | 111.8 | 36.3 <br> $\mathbf{3 5 . 0}$ | 2.4 | 1.6 1.6 | 33.13 | 11.7 | 8.7 | 1.51 .8 |
| November | -169.9 | 107.3 | 110.4 | 38.5 39.2 | 26.0 | 12.3 | 32.1 | 2.3 | 1.6 | 38.4 | 11.2 | 10.7 | 152.4 |
| December-- | 168.4 | 105.3 | 107.4 | 39.5 | 26.5 | 12.4 | 29.0 | 2.1 | 1.6 | 37.4 | 12.0 | 12.1 | 152.2 |
| Total. | 171.9 | 115.3 | 117.7 | 45.9 | 24.7 | 11.5 | 35.6 | 2.3 | 1.5 | 37.5 | 11.4 | 6.2 | 165.7 |
| 1946 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| January .- | 171.5 | 104.3 |  |  | 27.4 | 12.5 | 27.2 | 2.1 | 1.8 | 40.2 | 12.2 | 13.0 | 1.33 .4 |
| February | 168.6 | 101.9 | 103.4 | 38.7 | 27.9 | 12.8 | 24.5 | 2.0 | 1.8 | 40.2 | 12.5 | 12.2 | ${ }^{150.50 .8}$ |
| March_- | 171.1 | 105.5 | 107.5 | 42.7 | 28.6 | 13.2 | 23.0 | 2.0 | 1.8 | 38.6 39.7 | 12.7 | 12.0 | 10.9 .4 |
| April | 172.6 175.0 | 106.2 | 108.3 | 43.8 | 30.1 31.3 | 13.4 | 21.1 20.2 | 2.1 | 1.8 | 41.1 | 13.0 | 11.8 | 157.7 |
| June-.-- | 177.5 | 108.6 | 109.4 110.6 | 44.5 46.4 | 31.8 <br> 0.6 | 13.7 | 19.9 | 2.0 | 1.9 | 42.6 | 13.1 | 11.3 | 1.58 .4 |
| July ... | 182.0 | 109.1 |  | 46.7 | 31.3 | 13.9 | 19.2 | 2.0 | 1.9 | 46.8 | 13.2 | 11.0 | 158.8 |
| August. | 182.2 | 111.5 | 113.5 | 48.7 | 31.9 | 14.0 | 18.0 | 2.0 | 1.9 | 44.6 | 13.3 | 110.9 | 161.1 |
| September. | 179.5 | 112.6 | 114.5 | 49.7 | 32.1 | 14.2 | 18.5 | 1.9 | 1.9 | 40.0 | 13.5 | 11.5 | 162.4 162.4 |
| October--- | 183.2 | 113.0 | 114.9 | 40.7 | 32.4 | 14.3 | 18.5 | 1.9 2.0 | 2.0 | 43.4 | 13.9 | 10.1 | 163.0 |
| November- | 183.6 185.6 | 114.2 116.3 | 110.2 | 50.5 | 32.9 33.5 | 14.5 14.6 | 18.7 | 2.0 | 2.1 | 42.8 | 1.1 .1 | 10.3 | 165.4 |
| Total. | 177.7 | 109.2 | 1113 | 46.1 | 30.9 | 13.7 | 20.6 | 2.0 | 1.9 | 42.0 | 13.2 | 11.4 | 158.8 |
| 1947 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| January | 187.6 |  |  |  | 33.2 | 14.7 | 18.1 | 2.1 | 2.1 | 43.6 | 14.5 | 10.9 | 165.9 |
| February | 186.0 | 116.5 | 118.6 | 52.6 | 33.6 | 14.7 | 17.6 | 2.2 | 2.1 | 42.4 | 14.4 | 10.6 | 165.4 |
| March.-- | 185.9 | 117.1 | 110.3 | 53.0 | 33.9 | 14.8 | 17.6 | 2.2 | 2.2 | 40.5 | 14.2 | 10.8 | 165.8 |
| April..---.-.....- | 183.6 | 115.9 | 118.2 | 52.5 | 33.3 | 15.0 | 17.4 | 2.3 | 2.2 | 40.4 | 14.2 | 10.4 | 106.2 |
| June--.-------- | 184.7 | 117.4 | 119.5 | 53,1 | 34.1 | 15.5 | 17.2 | 2.1 | 2.3 | 41.3 | 14.2 | 10.6 | 168.4 |
|  | 187.8 | 119.4 | 121.5 | 53.6 | 35.2 |  |  |  |  |  |  |  |  |
| July- | 188.7 | 118.7 |  |  | 35.1 | 15.6 | 16.8 | 2.1 | 2.4 | 42.1 | 14.2 | 11.3 | 168.8 169.1 |
| August... | 188.2 | 119.8 | 121.9 | 54.2 | 35.4 | 15.5 | 16.8 | 2.1 | 2.4 | 41.0 42.2 | 14.4 | 21.3 | 182.9 189.8 |
| September | 202.7 | 122.1 | 124.1 | 55.6 | 36.2 | 15.5 15.7 | 10.8 17.1 | 2.0 | 2.5 | 43.6 | 14.7 | 12.1 | 175.4 |
| October-- | 106.1 | 123.2 | 125.3 | 56.0 | 36.5 | 15.7 | 17.3 | 1.9 | 2.6 | 43.8 | 14.9 | 11.0 | 176.7 |
| November- | 197.5 | 125.2 | 127.1 | 56.9 | 37.3 37.6 | 15.6 15.8 | 17.3 17.4 | $\underline{1.1}$ | 2.6 | 46.6 | 15.0 | 11.1 | 179.2 |
| December- | 202.2 | 120.9 | 129.0 | 58.2 |  |  |  |  | 2.4 | 42.4 | 14.5 | 11.8 | 170.8 |
| Total.......- | 191.0 | 119.9 | 122.0 | 54.3 | 35.1 | 15.3 | 17.2 | 2.1 | 2.4 | 42.4 | 14.3 |  |  |
| 1948 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| January | 205.3 |  |  |  | 37.9 | 15.9 | 17.6 | 2.2 | 2.7 | 48.4 | 15.1 | 11.4 | 180.8 |
| February | 201.0 | 128.0 | 130.0 | 58.5 | 38.4 | 16.1 | 17.8 | 2.0 | $\stackrel{9}{2.7}$ | 43.7 | 15.2 | 12.4 | 182.7 |
| March... | 202.8 | 127.6 | 129.7 | 57.8 | 38.0 | 16.1 | 17.8 | 2.1 | 2.7 | 44.7 | 15.4 | 12.0 | 183.4 |
| April_-..---.-... | 206.1 | 128.0 | 130.1 | 58.0 | 37.8 38.4 | 16.4 16.6 | 17.9 18.1 | 2.1 | 2.7 | 47.6 | 15.8 | 11.3 | 184.7 |
| May | 207.5 212.0 | 130.1 | 132.2 | 59.1 | 38.4 38.6 | 16.7 | 18.4 | 2.2 | 2.8 | 50.3 | 15.9 | 11.3 | 186.8 |
|  |  |  | 133.9 |  |  |  |  | 2.2 |  |  | 16.1 | 11.3 | 188.9 |
| July---.......... | 212.8 | 133.5 | 135.7 | 60.7 | 30.2 | 16.9 | 18.9 | 2.2 | 2.8 | 47.7 | 16.3 | 11.3 | 190.8 |
| August.-...-.-. | 213.3 | 135.2 | 137.4 | 61.7 | 39.5 39.6 | 17.0 16.8 | 19.2 | 2.3 | 2.8 | 47.0 | 16.6 | 10.9 | 191.6 |
| September-...--- | 213.4 213.9 | 136.1 136.2 | 138.4 | 62.5 62.3 | 39.3 | 17.0 | 19.8 | 2.2 | 2.8 | 47.4 | 16.9 | 10.6 10.6 | 191.3 191.0 |
| November. | 213.0 | 136.0 | 138.2 | 62.2 | 39.1 | 17.0 | 19.9 | 2.2 | 2.8 | 46.7 46.7 | 16.9 16.8 | 11.0 | 190.9 |
| December-..-....- | 212.1 | 134.7 | 137.0 | 61.6 | 39.2 | 16.4 | 19.8 | 2.3 | 2.9 |  |  |  | 187.1 |
| Total... | 209.5 | 132.1 | 134.3 | 60.2 | 38.8 | 16.6 | 18.7 | 2.2 | 2.8 | 47.3 | 16.0 | 11.3 | 187.1 |

Table 48.-I'ersonal Ineome, Seasonally Adjusted Monthly Totals at Annual Rates, 1929-50-Continued
[Billions of dollars]

| Year and month | Pursomal income | Wuge and salary receipts |  |  |  |  |  |  | Other labor incomes | Proprietors andrental income ${ }^{4}$ | Dividends and personal interest income ${ }^{5}$ | Transfer payments | Nonagricultural income? |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Ware and salary disbursements |  |  |  |  | Less employee contributions for social insurance ${ }^{2}$ |  |  |  |  |  |
|  |  | Total | Total dishurst- menta | Commod- <br> ity pros ducint industrices | Distributivein* dustrics! | Service industries' | Government ${ }^{1}$ |  |  |  |  |  |  |
| 1949 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| January. | 210.1 | 133.8 | 130.1 | 60.0 | 30.2 | 17.1 | 19.8 | 2.3 | 2.9 | 45.4 | 16.7 | 11.3 | 189.3 |
| Febriary | 900.7 | 133.1 | 134.4 | 58.9 | 38.8 | 16.9 | 19.8 | 2.3 | 2.9 | 42.4 | 16.7 | 11.6 | 188.0 |
| March.. | 408.9 | 130.8 | 133.1 | 57.2 | 38.8 | 17.2 | 19.9 | 2.3 | 2.9 | 42.6 | 16.8 | 12.8 | 187.8 |
| April | 205.8 205.6 20.6 | 131.9 131.9 | 13.4 134.1 13.1 | 58.4 56.9 5 | 39.4 <br> 30.7 | 17.2 17.4 17 | 20.1 20.1 | 2.2 2.2 | 2.9 2.9 2.9 | 41.5 41.6 | 17.0 16.9 | 12.5 12.3 12. | 188.5 188.0 |
| June--- | 20.4 | 1:30.9 | 133.2 | 56.3 | 39.2 | 17.3 | 20.4 | 2.3 | 2.9 | 41.8 | 16.8 | 12.4 | 186.9 |
| July-...--------- | 203.0 | 130.7 | 132.8 | 55.9 | 39.0 | 17.2 | 20.7 | 2.1 | 3.0 | 40.0 | 16.8 | 12.5 | 186.4 |
| August.........-- | 204.0 | 130.6 | 133.8 | 506.2 | 39.0 | 17.1 | 20.5 | 2.2 | 3.0 | 40.8 | 16.9 | 12.7 | 186.9 |
| September-.-.-.-. | 203.8 | 130.9 | 133.1 | 50.4 | 39.0 | 17.1 | 20.6 | 2.2 | 3.0 | 40.1 | 17.1 | 12.7 | 187.4 |
| Octoler-.-.-.---- | 202.1 | 129.7 | 131.9 | 51.9 | 38.6 | 17.5 | 20.9 | 2.2 | 3.0 | 40.1 | 17.2 | 12.1 | 185.6 |
| November.-....... | -03.0 | 130.3 132.3 | 134.5 | 55.5 | 38.5 38.9 | 17.5 17.5 | 21.0 21.0 | 2.2 | 3.0 3.0 | 40.1 40.9 | 17.1 18.6 | 12.5 13.0 | 186.9 190.4 |
| Total.......- | 205.1 | 131.2 | 133.5 | 56.9 | 39.0 | 17.2 | 20.4 | 2.2 | 3.0 | 41.4 | 17.1 | 12.4 | 187.6 |
| Jnnuary....-..... | 213.7 | 133.0 | 134.8 | 37.0 | 39.3 | 17.7 | 20.8 | 2.8 | 3.1 | 42.9 | 17.2 | 18.5 |  |
| Feblumry--........ | $\underline{215.5}$ | 131.5 133.7 | 13.4 .2 136.6 | 56.3 | 30.1 | 17.9 | 20.9 | 2.7 | 3.1 | 40.9 | 17.6 | 22.4 | 199.2 |
| April...-.-......... | 215.0 | 133.7 | 136.6 | 80.5 | 39.5 30.7 | 18.0 18.1 | $\stackrel{21.0}{21.1}$ | 2.9 | 3.3 3.3 | 40.4 40.6 | 18.0 | 24.3 | 204.1 199.4 |
| M1ay-...............-- | 216.9 | 138.3 | 141.2 | 61.3 | 40.4 | 18.5 | 21.0 | 2.9 | 3.5 | 42.4 | 18.4 | - 14.3 | 199.9 |
| June......-....---- | 219.0 | 1-11.1 | 14.1 | 62.8 | 41.3 | 18.7 | 21.3 | 3.0 | 3.5 | 42.5 | 18.4 | 13.5 | 202.6 |
| July........-.---- | 222.7 | 143.2 | 3.46 .1 | 63.9 | 41.9 | 18.8 | 21.5 | 2.9 | 3.6 | 45.3 | 18.4 | 12.2 | 204.0 |
| Aukust-..--....-. | 227.7 | 147.2 | 150.3 | 60.2 | 42.8 | - 18.9 | 22.4 | 3.1 | 3.6 | 46.1 | 18.9 | 11.9 |  |
| September-..--.--- | 231.5 234.1 | 149.7 | ${ }_{155}^{15.6}$ | 67.1 | 42.8 | - 19.1 | 23.6 | 2.9 | 3.6 | 45.3 | 21.6 | 11.3 | 212.9 |
| October-..---....- | 234.1 236.4 | 102.4 | ${ }_{157}^{155.6}$ | 69.3 69.9 | 43.1 43.2 | 19.3 | 23.9 | 3.2 | 3.6 | 46.3 | 19.7 | 12.1 | 214.3 |
| Decenber-*------- | 24.4 | 155.9 | 158.9 | 70.8 | 43.6 | 19.5 | 24.7 24.9 | 3.1 3.0 | 3.7 3.7 | 47.2 48.1 | 19.5 25.0 | 11.8 11.7 | 2153.4 223.4 |
| Total........ | 224.7 | 142.9 | 145.8 | 63.5 | 41.4 | 18.7 | 22.3 | 2.9 | 3.5 | 44.0 | $19.3{ }^{\text { }}$ | 15.1 | 206.6 |

1 This grouping of industries is a condensation of the classiffeation shown in the table on indetstrial chassification in the Introduction to Part III. See tahle It for detafled annual data, tiffering from dita shown in this tathe onty, to the extent that disbursements differ from Mining, Contract construction, ind Mantulacturing. "Distributive industries" consists of Wholesale and retail trade, Transportation, and communications and public utilities. "Serviee industrjes" comprises Fitance, insurance, and real estate and Serviees "Govern. ment" comprises Government and government enterprises and lest of the work.

[^37]
[^0]:    of The meaning of "resident individuals" is largely self-explanatory. The usage formulaterm in United States national income statistics may be more precisely residence, however, by reference to the following three attributes: permanent counted, place of performing work, and location of employer. A worker is contined as a resident individual if at least two of these attributes refer to the civilian counted personnel whose usual residence is in the continental United States are workers as residents, even though they are stationed abroad. Also. foreign border residents employed in this country by domestic employers, as well as permanent or intern of the United States employed in this country by foreign governments or international government organizations, are counted as resident individuals.

[^1]:    2In the definitions edopted in this report, international cash gifts, which are also current account items, are included with goods and services.

[^2]:    ${ }^{3}$ For a more detailed discussion of these concepts see Milton Gilbert, George Jaszi, Edward $F$. Denison, Charles F. Schwartz, "Objectives of National Income Measurement," Review of Economics and Statistics, August, 1948.

[^3]:    *Corporate Earnings represent Corporate Profits (before taxes) ond Inventory Valuation Adjustment.

[^4]:    4 The following discussion is concerned with the treatment of nonfarm inventories. The estimates of farm inventory change are computed directly from data on physical stocks and current prices. No problem of adjusting book value data is
    involved; that is, an "inventory valuation adjustment" is not necessary.

[^5]:    5 Wages paid to foreign residents employed abroad by the United States Government are counted as "purchases from abroad" in the government account and are correspondingly netted against purchases from government in table $V$. Alternatively, they could have been counted as wages in the government account and netted against wages in table $V$. The latter procedure, which would increase at the expense of the rest of the world sector, was rejected chiefly because it leads to a less useful set of tables on payrolls, employment, and average earnings of to a less

[^6]:    ${ }^{1}$ This section covers also, at the end, "wage and salary receipts", which is a component of personal income.

[^7]:    2 The available tabulations of total taxable payrolls under the old-age and
    survivors insurance program were not used in obtaining an industry distribution survivors insurance program were not used in obtaining an industry distribution
    because in the past they were based in large part on a clasification of firms, rather because in the past they were based in large part on a classification of firms, rather
    than establishments, and therefore were not comparable to the entimates of wages: than establis

[^8]:    ${ }^{8}$ Data are given in this source for an extremely detailed industrial classification The time and labor in combining and converting them to the National Income -Contributions under prohibited the compilation of separate data for each yearin this period, were not included in the $1929-38$ estimates for lack of data.

[^9]:    ${ }^{6}$ Where it appeared important to improve comparability with the noncorporate data, net corporate monetary interest or compensation of corporate offcers, or For retail trade as to corporate profits before calculation of corporate profit ratios. rolls, has been employed to calculate another variant, involving the use of pay-

[^10]:    ${ }^{6}$ In the case of contract construction, the adjustment was broader in scope than for the other industries. Labor-force data in the 1940 population census were used to establish the total of employees and proprietors in contract construction. Subtraction of the National Income Division estimate of employees in contract construction yielded the total number of proprietors, whether in establishments or own-account workers (such as carpenters and painters) operating from their own homes. The estimate of average receipts (and of average net income) assigned to the non-establishment group, which was not covered in the Census of Construction, was based on fragmentary information. The total net income of this group was about two-fifths of the Division's published total for contract construction in 1939.

[^11]:    ${ }^{5}$ This knowledge derives from a special Bureau of Internal Revenue tabulation showing for 1946 the number of corporations, by industry, which had been sole proprietorships or partnerships in the prior year and, for all industries combined, their distribution by asset-size classes; some over-all annual data for the period 1045-48 from the Bureau of Old-Age, and Survivors Insurance on the number of covered firms undergoing reorganization (believed to comprise mainly legal-form 1947 with the direct comparisons of aggregate and corporate data for 1945 and and income for those years. and income for those years.

[^12]:    ${ }^{\circ}$ Unlike later tabulations, where sampling was used only for the smaller-sized firms, the 1936 tabulation was based on a 20 percent nonstratified sample of all firms, the

[^13]:    ${ }^{10}$ The results of the 1948 Census of Business and the 1950 Census of Population and Housing have not yet been incorporated into the estimates.

[^14]:    ${ }^{\text {interegt }}{ }^{4}$ In and tring the detail of the imputed flows, it will be noticed that imputed tent and service charge transactions between commercial banks and govern: bank are not recognized and are instead treated as occurring between commercial

[^15]:    ${ }^{12}$ It may be noted that, as a consequence, net interest originating in banking (excluding Federal Reserve Banks) differs from dividends received by banking. to which by definition it should be numerically equal.

[^16]:    I See footnote to Exhibit 15.

[^17]:    ${ }^{4}$ In general, monetary interest received by owners of unincorporated enterrecei is not deducted in interest received interest because it is assumed to be ingly, it by them in a personal rather than business capacity; and, correspondingly, it is excluded in estimating incomes of unincorporated enterprises.

[^18]:    3 The commodity flow procedure was also used in the estimation of producers' purchases of durable equipment for this period. This is covered more particularly in the section on Producers' durable equipment.

[^19]:    ${ }^{15}$ The formulation under (a) covers the bulk of the consumer items. A more precise definition of a finished consumer commodity would add to the phrase "without further processing" the qualification in manufacturing or the services. This qualification is needed to take account of marginal cases in the application of the commodity flow method. If a commodity is further processed outside manufacturing and the services, it is counted as finished in the present context. For instance, cloth bought by custom tailoring establishments is classified as finished because the output of such establishments is not listed in the Census of Manufactures, and hence would be missed if purchases of materials by eustom tailors were not classified as finished. However, if a commodity is purchased by a service establishment and covered in its service receipts it is treated as unfinished in the commodity fow methed to avoid duplication, as it is accounted for in personal consumption expenditures for services. For instance, spark plugs purchased and installed by automobile repair service establishments and covered by their service receipts, rather than sold separately to consumers, are classified as unfinished as they are reflected in consumer purchases of services.
    ${ }^{16}$ One complicating element, which is explained in the section relating to producers' durables and need only be mentioned here, is that for statistical reasons government purchases of durable equipment were not eliminated as unfinished

[^20]:    17 Wholesaling in this analysis is defined to cover service and limited function wholesalers, manufacturers' gales branches and offices, assemblers, and, in 1929 and 1033, chain store warehouses (classified in retail trade by the 1935 and 1939 censuses). Agents and brokers, included in the census definition of wholesale trade, are kenerally excluded; their operations are covered by sales distribution and other data reported by their principals, manufacturers and wholesalers. Also to avoid duplication, the sales distributions were adjusted to eliminate ales to other wholesalers from the total sales and sales distributions of the trade making them. For most trades, wholesalers reporting of sales distribution drade making to the census was substantial but not complete; in each such trade the data reported by each type of wholesaling (service and limited function wholesalers, manufac turers' sales branches, etc.) were blown up to total sales reported by that type and added to give the sales distribution of the trade.

[^21]:    ${ }^{u}$ Failure to taike account of the differential movement of inventories in the anall noncorporate sector, for which data for the movement of inventories in the was probably only a very for whinor source of error.

[^22]:    1* The derivation of the export series is discussed in step 15, deduction of wholesalers' exports.

[^23]:    ${ }^{20}$ In deriving inventories, inventory-cost of goods ratios should be applied to costs of goods sold, not purchases. Application to the latter yields only first approximations of inventories, which could have been adjusted. This was not done because the quality of the data did not warrant the labor involved.

[^24]:    Funeral and burial service
    Consumer expenditures for funeral and burial service were obtained for 1935 and 1939 from census receipts data covering tuneral directors' and embalmers' services and coffins, plus an

[^25]:    21 The results of the pestwar Censuses of Momufactures and Business have not yet been incorporated into the censuses of Marufacturen and Gusiness har ate 1940 art now in preparation.

[^26]:    ${ }^{22}$ With an adjustment for geographical coverage, since United States territories and possessions are considered part of the United States for balance-of-payments purposes but are included with the rest of the world for national income purposes. (Statistically, the adjustment was confined to 1941-46 when its quantitntive importance called for a rough order-of-magnitude calculation in spite of the amportance of solid data.) it should be noted also that in the official balance-of payments statement account is taken of unilateral transfers in kind, which are ignored in table 11, Part $V$ of this report. Exclusion of these transfers affects debits and credits equally, and does not alter the net balance of transactions. Other differences between table 11 and the balance-of-payments statement are matters of classification and will come to note as the derivation of the entries in table 11 is described.

[^27]:    Merchandise
    United States business receipts from merchandise exports are estimated as follows.
    (1) The chief data sources are the official tabulations of United

[^28]:    ${ }^{\text {I }}$ The constant-dollar gross national product series was first published in the January 1951 Survey of Current Business. The present report provides revised annual estimates for the $1948-50$ period.

[^29]:    ${ }^{1}$ Data for other years in table 7 .

[^30]:    ${ }^{1} D_{\text {ata }}$ for other years in table 5 except as noted.

[^31]:    I Includes transactions of social insurance funds, which can be separated by use of the data furnished in table 10 . For an explanation of the tratment of pevernment enterprises, see Part II. For a list of these enterprises, see ${ }^{2}$ Federal grants-in-ald to State and local povernments are reflected in Federal expenditures and in State and local receipts and expenditures. Total Government receipts and expenditures have been adjusted to eliminate his duplication.
    Consists of individual income tax and victory tax
    ${ }^{5}$ Consists mainly of charyes for Government products and services not accounted for under Government enterprises; of fines and penalties; and of donations. Includes also the excess of receipts over expenditures derived $\underset{6}{\text { are monsists mated. }}$ Maly of charges for Government products and services not accounted for under Government enter ${ }^{6}$ Consists mainly of charges for Government products and services not accounted for under Government enter-
    prises, including rents and royaltics; and of fines and penalties. Receipts from the sale of surplus property are
    not incluje. not All local taxes, other than property tax and District of Columbia corporate profts tax, are included in "other ${ }^{\text {taxes." }}$ Includes also drivers' licenses

[^32]:    ${ }^{1}$ Includes pay of United States citizens but not of toreigners employed abroad by the
    ${ }_{\text {z }}$ The pay of personnel stationed abroad is included, hut that of personnel recruited from

[^33]:    ${ }^{1}$ Data ahowing supplements to wages and salaries by type are presented in table 34. Forestry, and the Rest of the World are omitted from table 15 because supplements are estimated at less than $\$ 500,000$ in all years.

[^34]:    ${ }^{1}$ A complete reconciliation of the all-industry totals for these facome serios with Bureau of Internal Revenue figures for "compiled net profit" is presented in tahle 38 . The definition With respect to depletion charges has an important effect on the data for the mining industrios. profits before tax are estimated at less than $\$ 500,000$ in all years, are omittod from this table.

[^35]:    ${ }^{3}$ This serles differs from profits in the Rest of the World shown in table 12, and the sum of branch profits and net divi lends shown in table 11 , because profits received by domestic corporations from foreion branches are excluded from this line and included in the industry
    of the reciplent corporation. Data for their elimination are not available by industry. corporations from foreien branches are excluded from this line and included in the industry
    of the reciplent corporation. Data for their elimination are not available by industry.

[^36]:    

[^37]:    2 For composition and annual detail see table 35.
    For composition and annual detail see table 34.
    For major components on an annual basis see table 1.
    ${ }^{5}$ Dividends and personal interest income are shown separately on an annual basis in table 3.
    ${ }^{-}$For composition and annual detail see table 36.
    Equads personal income exclusive of net income of unincorporated farm enterprises, farm wages, agricultural net rents, agricultural net interest, and net dividends paid by agricultural corporations.

