State Personal Income and Employment: Concepts, Data Sources, and Statistical Methods

September 2019

Table of Contents

I. INTRODUCTION

This guide presents the conceptual framework, the data sources, and the statistical methods used by the Regional Income Division of the Bureau of Economic Analysis (BEA) to estimate personal income and employment for states.

Personal income is the income received by, or on behalf of, all persons from all sources: from participation as laborers in production, from owning a home or business, from the ownership of financial assets, and from government and business in the form of transfers. It includes income from domestic sources as well as from the rest of the world. It does not include realized or unrealized capital gains or losses.

Persons include individuals, nonprofit institutions that primarily serve individuals, private noninsured welfare funds, and private trust funds.

Personal income for a state is the income received by, or on behalf of all persons resident in a state, regardless of the duration of residence, except for foreign nationals employed by their home governments in the United States.

Alternatively, personal income can be defined as the sum of wages and salaries, supplements to wages and salaries, proprietors' income, dividends, interest, and rent, and personal current transfer receipts, less contributions for government social insurance.

Because state personal income represents the income that is received by, or on behalf of, all the persons who live in that state, and because the estimates of the earnings component of personal income are made on a place-of-work basis, state personal income includes an adjustment for residence. The residence adjustment represents the net flow of compensation (less contributions for government social insurance) of interstate commuters.

Disposable personal income is the income that is available to persons for consumption expenditures, interest payments, current transfer payments, or saving. It is calculated as personal income less personal current taxes paid to federal, state, and local governments.

The state estimates of personal income are conceptually and statistically consistent with the national estimates of personal income in the National Income and Product Accounts (NIPA). State estimates together with the estimate for the District of Columbia sum to a national total which equals the NIPA estimate except for some small differences in the treatment of U.S. residents working abroad, the income of foreign residents working in the U.S., and the use of more current source data.

A Brief History

In the mid-1930's, BEA began work on the estimation of regional income as part of the effort to explain the processes and structure of the nation's economy. As a result, it published annual state estimates of "income payments to individuals" in the April 1940 issue of the *Survey of Current Business (Survey)*. These income payments were calculated as the sum of (1) wages and salaries, (2) other labor income and relief, (3) entrepreneurial withdrawals, and (4) dividends, interest, net rents, and royalties.

During the 1940's and early 1950's, BEA developed an integrated set of national economic accounts, sought additional source data, and improved the methods used to prepare the estimates. One result of this work was the development of state personal income—a measure that is more comprehensive than state income payments. Estimates of state personal income were first published in the September 1955 *Survey*.

State personal income differs significantly from state income payments in five ways:

- State personal income consists of six major components (supplements to wages and salaries and personal current transfer receipts replaced other labor income and relief, and the component, contributions for government social insurance, was added as an explicit deduction);
- Personal income includes more component detail and a broader range of income-in-kind and imputed income items than state income payments;
- Personal income includes the income of nonprofit institutions that primarily serve individuals, private noninsured welfare funds, and private trust funds (collectively called quasi-individuals);
- Personal income includes employer contributions (both actual and imputed) to pension funds—as part of supplements to wages and salaries—instead of the benefits paid by the funds; and
- Personal income includes personal current transfer receipts from business.

In addition, in the mid-1950’s, BEA began work on preparing estimates for local areas. It prepared estimates for a few counties in the states in the Mideast and Plains regions.

In the late 1950’s, BEA developed estimates of state disposable personal income. This series was published occasionally in the *Survey* in the 1960’s and 1970’s and has been published annually beginning with 1982.

During the 1960’s, BEA developed quarterly estimates of state personal income. The first set of these estimates as a continuous time series was published in the December 1966 issue of the *Survey*. In addition, BEA prepared a personal income series for metropolitan areas and for nonmetropolitan counties for selected years 1929-1962.

In the early 1970’s, BEA developed estimates of personal income for counties in metropolitan areas. These estimates were published for the first time in the April 1975 *Survey*. Later in the 1970’s it developed estimates of employment for states, counties, and metropolitan areas.

In the 1980’s, BEA developed estimates of gross domestic product (GDP) by state and industry. These estimates were first published in the May 1988 *Survey*, as gross state product.

In the 2000’s, BEA began researching inter-area price levels. The research culminated in the release in 2013 of regional price parities and real personal income estimates by state and metropolitan area.

In 2014, BEA developed prototype estimates of quarterly GDP by state for 2005-2013, and prototype estimates of personal consumption expenditures (PCE) by state for 1997-2012.

Now, BEA prepares annual and quarterly estimates of state personal income and GDP, and annual estimates of state disposable personal income and employment. It also prepares annual estimates of personal income and employment for all metropolitan areas and counties and GDP for metropolitan areas.

Uses of the State Estimates

The state estimates of personal income and its components, per capita personal income, disposable personal income, employment, and GDP by state are widely used by both the public and the private sectors to measure and track economic well-being over time and to make comparisons across states in the level and composition of economic activity and the value added by a state's industries. These estimates provide a framework for the analysis of state economies, and they serve as a basis for decision making.

Federal agencies use these estimates in econometric models, such as those used to project energy and water use. They also use the estimates as a basis for allocating funds and for determining matching grants. For example, in fiscal year 2018, $499.8 billion in federal funds were distributed based on BEA's state and local personal income and GDP statistics.

In addition, the Census Bureau uses the estimates of state per capita personal income as the key predictor variable in the preparation of state estimates of the mean annual income of four-person families.

State governments use the state estimates of personal income and GDP to measure the economic base of planning areas. They also use the estimates in econometric models for various planning purposes and to project tax revenue and the need for public utilities and services. Currently, 19 states have set constitutional or statutory limits on state government revenue and spending that are tied to state personal income or to one of its components. These states account for more than one-half of the population of the United States.[1] Most of the states use the quarterly estimates of state personal income to project tax collections.

University schools of business and economics use the estimates for theoretical and applied economic research. Some of these schools distribute the estimates in abstracts or similar reports to various state and local government agencies, regional councils of governments, private research groups, businesses, and libraries.

Economic development associations use the estimates in their analytical studies to present economic growth opportunities in localities to businesses. Businesses use the estimates for planning activities, such as evaluating markets for new or established products and determining areas for the location, expansion, and contraction of their activities.

[1] National Conference of State Legislatures, *State Tax and Expenditure Limits 2012*. Note that the information for the state of Washington in this report is incorrect. Washington's expenditure limit is based on state personal income growth over the prior ten fiscal years (Revised Code of Washington 43.135).

Place of Residence and Place of Measurement

In regional economic accounts, income can be recorded by place of production (where earned) or by place of residence (where received). Since personal income is a measure of the income received by persons, the estimates of state and county personal income reflect the residence of the recipients. Income as recorded in the data sources used to estimate personal income, however, is not always recorded by place of residence. The concept of place used by the data sources varies by component of income. The methods used to adjust the source data to a place-of-residence basis, if that is necessary, are described in detail in the following chapters.[2]

The estimates of wages and salaries, employer contributions for employee pension and insurance funds, and contributions for government social insurance (by employers and employees) are mainly based on source data that are reported by place of work.[3] These data are reported by industry in the state and county in which the employing establishment is located. The residence adjustment of these data is discussed in chapter VIII.

The estimates of nonfarm proprietors' income and the estimates for contributions for government social insurance by the self-employed are based on source data that are reported by place of filing, that is, the tax-filing address of the recipient. This address is often that of the proprietor's residence; therefore, these data are treated as if they were reported by place of residence.

The estimates of farm proprietors' income are based on data that are reported by the principal place of production, which is usually the county in which the farm has most of its land and in which most of the work is performed. Because most farm proprietors live on, or near, their land, the place of production is treated as if it were the same as the place of residence.

The estimates of monetary dividend and interest income are based on federal income tax data sources that are compiled by the tax filing address of the recipient.

The source data for the dividend and interest income of pension plans imputed to participants in the plans do not adequately report the place of residence of the participants. The national controls are divided into portions for currently-employed and retired participants and then allocated to states using separate geographic indicators. The portion imputed to currently employed participants is allocated to states based on wages and salaries adjusted to a place of residence basis. The portion imputed to retirees and other beneficiaries is allocated to states based on indicators such as pension benefit payments by place of residence.

The estimates of rental income of persons are based on place of residence data from the American Community Survey.

The estimates of current transfer receipts of individuals from governments are based on source data that are generally reported by the place of residence of the income

[2] The concept of place of residence for nonprofit institutions serving households, private noninsured welfare funds, and private trust funds entails difficulties beyond those encountered for individuals. In some cases, a separate national control total for their income may not exist. In other cases, the place in which their income is recorded in the source data is not adequate for the purposes of state personal income. In general, their income is allocated along with similar types of income received by individuals.

[3] The estimates of personal contributions for supplementary medical insurance and for veterans' life insurance are based on source data that are reported by place of residence.

recipient. However, the source data for the estimates of state unemployment insurance compensation and workers' compensation from state-administered funds are based on source data reported by the state that pays the compensation. BEA adjusts these payments data to reflect the residence of the recipient.

Relation of Personal Income in the NIPA and in the State Personal Income Accounts

The level of U.S. personal income in the national income and product accounts (NIPAs) differs slightly from the national total in the state personal income accounts because of differences in coverage and in timing of the availability of source data (table A).

The differences in coverage stem from different concepts of residence. For state personal income, residents include all persons who reside in a state, regardless of the duration of residence, except for foreign nationals employed by their home governments in the United States. For NIPA personal income, a U.S. resident has a center of economic interest in the United States and resides, or expects to reside, in the United States for a year or more. In addition, U.S. residents include all U.S. citizens who reside outside the United States for less than 1 year and U.S. citizens residing abroad for 1 year or more who meet one of the following criteria: Owners or employees of U.S. business enterprises who reside abroad to further the enterprises' business and who intend to return within a reasonable period; U.S. Government civilian and military employees and members of their immediate families; and students who attend foreign educational institutions. Foreign residents are those persons residing and pursuing economic interests outside the United States and foreign nationals employed by their home governments in the United States.

In general, the NIPA measure of personal income is broader than state personal income.

- NIPA personal income includes the earnings of federal civilian and military personnel stationed abroad and the property income received by the federal pension plans of these workers. The regional measure of personal income does not include this income.
- NIPA personal income includes all income earned by U.S. citizens living abroad for less than a year. State personal income excludes the portion earned while individuals live abroad.
- NIPA personal income includes the income of foreign nationals only if they live and work in the United States for a year or more. State personal income includes the income of resident foreign nationals working in the United States—including migrant workers—regardless of length of residency.

Both NIPA and state personal income:

- Include the wages and salaries of U.S. citizens employed by international organizations and foreign embassies and consulates located within the geographic borders of the United States.
- Include the wages and salaries of foreign nationals residing in the United States for a year or more and working at international organizations located in the United States.

- Exclude the income of foreign nationals employed by their home governments in the United States.
- Exclude the income of private U.S. citizens living outside the country for a year or more.

The annual estimates of personal income in the NIPAs also diverge from the national totals of state personal income because of differences in the timing of the availability of source data. Some data that were not available when the NIPA estimates were prepared may become available afterwards when state personal income is estimated.

Industrial Classification

Up through 2000, the Standard Industrial Classification (SIC) was used (with some slight modifications) for the industrial classification of private industry wages and salaries, compensation, earnings, and employment. The *Standard Industrial Classification Manual, 1967* was used for the years 1969-1974, the 1972 *Manual* was used for the years 1975-1987, and the 1987 *Manual* was used for 1988-2000 for states and 1988-2000 for counties.[4]

Since 2001, the North American Industry Classification System (NAICS), with some slight modifications, has been used for the private sector.[5] The 2002 edition of NAICS was used for the years 2001-2006, the 2007 edition was used for the years 2007-2010, the 2012 edition is used for the years 2012-2016, and the 2017 edition is used for subsequent years. In addition, BEA converted state earnings and employment estimates that were originally compiled on a SIC basis to a NAICS basis for 1998-2000 to provide users with a longer time series on the current industrial classification system.

The introduction of a new edition of the classification system can potentially break the consistency of the time series estimates for an industry. Fortunately, for the industries for which BEA publishes regional income and employment statistics, only a few industries, listed below, are potentially affected by the revisions to NAICS.

For the public sector, the income and employment are classified by level of government—federal, state, and local. The estimates for the federal government are sub classified into civilian and military.

The different treatment of the private and public sectors means that BEA's state and local government industry includes public education, public hospitals, and other types of government services while BEA reports only private schools in its educational services industry corresponding to the 3-digit NAICS industry 611 and only private hospitals in its hospitals industry corresponding to industry 622.

Concordances between the line codes and industry names used by BEA and those in the NAICS and SIC manuals are presented in an appendix.

---

[4] Executive Office of the President, Office of Management and Budget, Statistical Policy Division, *Standard Industrial Classification Manual, 1967* (Washington, DC: U.S. Government Printing Office (GPO), 1967); *Manual, 1972* (GPO, 1972); *Manual, 1987* (GPO, 1987).

[5] Office of Management and Budget: *North American Industry Classification System, United States, 2002* (Lanham, MD: Bernan Press, 2002), Office of Management and Budget: *North American Industry Classification System, United States, 2007* (Lanham, MD: Bernan Press, 2007) and Office of Management and Budget: *North American Industry Classification System, United States, 2012* (Lanham, MD: Bernan Press, 2012).

Revisions to NAICS

Of the industries BEA publishes in its regional personal income and employment statistics, the following are potentially affected by revisions to the North American Industry Classification System (NAICS).

Descriptions changed from NAICS 2002 to NAICS 2007:

321,327-339 Durable goods manufacturing
333 Machinery manufacturing
3364-3369 Other transportation equipment manufacturing
337 Furniture and related product manufacturing
339 Miscellaneous manufacturing
311-316,322-326 Nondurable goods manufacturing
314 Textile product mills
315 Apparel manufacturing
326 Plastics and rubber products manufacturing
516 Internet publishing and broadcasts
517 Telecommunications
518 ISPs, search portals, and data processing
519 Other information services
52 Finance and insurance
525 Funds, trusts, and other financial vehicles
53 Real estate and rental and leasing
531 Real estate
54 Professional and technical services
56 Administrative and waste services

Descriptions changed from NAICS 2007 to NAICS 2012:

321 Wood product manufacturing
337 Furniture and related product manufacturing
443 Electronics and appliance stores
451 Sporting goods, hobby, book and music stores

There were no changes in descriptions from NAICS 2012 to NAICS 2017.

Per Capita Personal Income

Per capita personal income is calculated as the personal income of the residents of a given area divided by the resident population of that area. In computing annual per capita personal income for states and counties, BEA uses the Census Bureau's annual midyear (July 1) population estimates. For quarterly estimates of per capita income for states BEA uses mid-quarter population estimates based on unpublished Census Bureau data.

Farm Proprietors' Income

Farm proprietors' income as measured for personal income reflects returns from current production; it does not measure current cash flows. Sales out of inventories are included in current gross farm income, but they are excluded from net farm income because they represent income from a previous year's production. Additions to inventories are included in net farm income at current market prices; therefore, farmers' attempts to regulate their cash flows by adjusting inventories are not reflected in BEA's farm proprietors' income estimates. However, this regulation of cash flows by farmers extends their earnings cycles, so it helps them to survive losses or lowered income for 2 or 3 years. In addition, the per capita personal income of sparsely populated areas that are dependent on farming will react more sharply to the vagaries of weather, world market demand, and changing government policies related to agriculture than that of areas where the sources of income are more diversified.

Personal Income, Adjusted Gross Income, and Money Income

Personal income as defined by BEA differs substantially from adjusted gross income (AGI), the principal income measure used by the Internal Revenue Service. Personal income also differs from money income, a concept developed by the Census Bureau.

Personal income consists of the income of individuals, nonprofit institutions serving individuals, private noninsured welfare funds, and private trust funds, whereas AGI consists only of the income of individuals who file individual income tax returns. Personal income also includes transfer receipts, several types of imputed incomes, employer contributions to health and pension plans, and all the interest received by individuals, whereas AGI excludes all employer contributions, imputed incomes, most transfer receipts, and the nontaxable interest received by individuals. Personal income, unlike AGI, excludes personal contributions for government social insurance, realized capital gains and losses, and pension and annuity benefits from private and government employee pension plans.

Personal income differs from money income mainly because money income consists only of the income received by individuals in cash and cash equivalents. Personal income, unlike money income, includes imputed income, lump-sum payments not received as part of earnings, certain in-kind personal current transfer receipts—such as Medicaid, Medicare—and employer contributions to health and pension plans. Personal income excludes personal contributions for government social insurance, pension and annuity benefits from private and government employee pension plans, and income from interpersonal transfers, such as child support, but money income does not,

Personal income for a given area and year consists of the income received by individuals living in that area during that year. In contrast, money income for a given area and year counts only the income received during the year by individuals living in the area on April 1 of the following year, regardless of where they were living when they received the income. The income received by individuals who died or moved abroad before April 1 of the following year is not included in the money income of any area.

Personal income is prepared quarterly for states and annually for counties, whereas money income is prepared in greatest detail annually for the nation based on responses to the Current Population Survey and for states on the basis of responses to the American Community Survey.

Employment

BEA gives equal weight to full-time and part time jobs in its estimates of employment. Wage and salary jobs and proprietors' jobs are counted, but unpaid family workers and volunteers are not. Proprietors' employment consists of the number of sole proprietorships and the number of general partners. Wage and salary employment is on a place-of-work basis. Proprietors' employment, however, is more nearly by place of residence because, for nonfarm sole proprietorships, the estimates are based on IRS tax data that reflect the addresses from which the proprietors' individual tax returns are filed, which are usually the proprietors' residences. Nonfarm partnership employment reflects the tax-filing address of the partnership, which may be either the residence of one of the partners or the business address of the partnership. Farm proprietors' employment is a count of operators running sole proprietorship and partnership farms estimated from U.S. Department of Agriculture data. The residence and place of work of farm proprietors' employment is assumed to be the same—the county in which most of farmland is located.

The employment estimates are designed to be consistent with the estimates of wages and salaries, proprietors' income, and earnings. The employment estimates are based on the same sets of source data as the corresponding earnings estimates and are prepared with parallel methodologies. However, two components of proprietors' income—the income of limited partnerships and the income of tax-exempt cooperatives—have no corresponding employment estimates.

Sources of the Data

The state personal income and employment estimates are based primarily on administrative-records data. In addition, some survey and census data are used.

The administrative records data are a byproduct of the administration of various federal and state government social insurance programs and tax codes. They may originate either from the recipients of the income or from the payer of the income. Some of the more important of these programs and taxes (and the agencies compiling the data) are:

- State unemployment insurance programs (Bureau of Labor Statistics, U.S. Department of Labor)
- State Medicaid programs and the federal Medicare program (Centers for Medicare and Medicaid Services, U.S. Department of Health and Human Services)
- Social Security (Social Security Administration)
- Federal veterans' programs (U.S. Department of Veterans Affairs)
- State and federal income tax codes (Internal Revenue Service, U.S. Department of the Treasury and Bureau of the Census, U.S. Department of Commerce)

The census data are mainly collected from the recipients of the income. The most important sources of census data for the personal income and employment estimates are the Census of Population and Housing, conducted by the Bureau of the Census every ten years and the Census of Agriculture, conducted by the U.S. Department of Agriculture (USDA) every five years.

The survey data are collected from both the payers and the recipients of the income. The more important surveys include the Annual Survey of Public Pensions and the American Community Survey conducted by the Census Bureau and the monthly Current Employment Statistics survey conducted by the Bureau of Labor Statistics.

The estimates of farm proprietors' income rely principally on the USDA's estimates of the income of all farms. The USDA uses sample surveys along with census data and administrative-records data to develop its estimates. The estimates of military compensation and employment rely principally on tabulations of data provided by the U.S. Department of Defense.

Using administrative records data and census data to measure state personal income has both advantages and disadvantages. By using these data, BEA can prepare detailed annual and quarterly estimates at a relatively low cost and without increasing the reporting burden on businesses and households. However, because the source data often do not precisely match the concept being estimated, they must be adjusted to compensate for differences in definitions, coverage, timing, and geographic detail.

Preparation and Revision Schedule

The state personal income estimates are released and then revised on a regular schedule to incorporate source data that are more complete, more detailed, or otherwise more appropriate than the data which were available when the estimates were initially prepared. They are also revised to keep them consistent with revisions to personal income estimates in the National Income and Product Accounts (NIPA), to which they are controlled. The quarterly estimates are also revised to incorporate updated seasonal factors.

Personal income estimates are first prepared for the nation and then for states. Lastly, they are prepared for counties, metropolitan statistical areas (MSAs), and other local areas that are combinations of counties.

Quarterly estimates of state personal income are prepared about three months after the end of the quarter. The preliminary annual state estimates are prepared about three months after the end of the year, and the revised state estimates are prepared about nine months after the end of the year. The annual estimates of local area personal income are prepared about 11 months after the end of the year.

In March, the state estimates for the fourth quarter of the previous year are prepared, and the estimates for the first three quarters are revised; the preliminary annual state estimates for the previous year are prepared by averaging these quarterly estimates.[6]

In June, the state estimates for the first quarter of the current year are prepared, and the estimates for the four quarters of the previous year are revised.

In September, the annual state estimates for the previous year are revised using the annual, rather than the quarterly, methodology, and the annual estimates for the four

[6] Revisions to the quarterly state personal income estimates in general reflect only revisions to NIPA controls and updated seasonal factors.

years before that are revised. The annual estimates are based on administrative and survey data and replace previously reported estimates of total taxes, total transfers, and total farm proprietors' income that relied on extrapolations of past trends. Annual estimates by industry are prepared in greater detail—for 3-digit NAICS industries—than the quarterly estimates, which are prepared for 2-digit industries. Estimates of transfer receipts by major program, tax payments by level of government, employment by industry, and detailed farm income and expenses for the previous year are prepared. With the same release, the state estimates for the second quarter of the current year are prepared, and the estimates for the first quarter are revised. Furthermore, the estimates for the quarters of the previous five years are revised for consistency with the revised annual estimates.

In November, the estimates of local area personal income for the previous year are prepared, and the estimates for the four years before that are revised.

In December, the estimates of state personal income for the third quarter of the current year are prepared, and the estimates of the first and second quarters are revised.

Aside from this schedule, the state and local area estimates are normally revised again only after a comprehensive, or benchmark, revision of the NIPA. Comprehensive revisions of the NIPA are made approximately every four or five years.[7]

In a comprehensive NIPA revision, the national estimates of personal income are affected by statistical changes that result from the introduction of new source data and the use of improved estimating methods. The national estimates may also be affected by changes in definitions and classifications that are made so that the NIPA will reflect the evolving economy of the United States.[8] For example, as part of the 2017 NIPA comprehensive update, measures of normal cost for state and local government defined benefit pension plans are now based on the projected benefit obligation (PBO) method rather than on the accumulated benefit obligation (ABO) method. The state estimates of employers' normal cost for 2000 to the present are prepared in the same manner and with the same source data as the NIPA estimate.[9]

Release and Publication Schedule

The quarterly and annual estimates of state personal income and related news releases that provide brief commentary and summary data tables on the statistics are first released on BEA's Web site at www.bea.gov. By visiting the site, data users can also subscribe to receive free e-mail alerts of BEA releases and announcements. The release dates are announced in advance and are listed on the Web site.

Further commentary on the personal income estimates, including discussions of special factors and revisions that affect the statistics, is published in the "Regional Quarterly Report" in the January, April, July, and October issues of the *Survey of Current Business*, which is only available in an electronic format on BEA's Web site. Detailed

[7] For the results of the latest comprehensive revision of the NIPA, see Robert Kornfeld, "Initial Results of the 2013 Comprehensive Revision of the National Income and Product Accounts," *Survey of Current Business* 93 (August 2013): 6-17.

[8] See "Preview of the 2018 Comprehensive Update of the National Income and Product Accounts: Changes in Definitions and Presentations," *Survey of Current Business* 98 (April 2018).

[9] See "Preview of the 2018 Comprehensive Update of the Regional Economic Accounts," *Survey of Current Business* 98 (August 2018).

data tables are no longer published by BEA in the *Survey*. Go to https://apps.bea.gov/iTable/index_regional.cfm to access interactively the complete set of personal income and employment estimates for states. In addition, an archive of previously published news releases and historical data that have since been revised by BEA is available.

For more information, call BEA at 301-278-9321, or e-mail reis@bea.gov.

Tables

The state personal income data are organized in two sets of tables and are available online. One set consists of quarterly estimates and the other set consists of annual estimates (table B). The tables contain data for states, the District of Columbia, the eight BEA regions, and the United States.[10]

The state personal income statistics incorporate the results of the annual revision to the National Income and Product Accounts (NIPA) released in July 2019.

Resources on BEA's website

A wide range of resources are available on BEA's website to assist people in using and understanding its regional statistics. These resources include:

- Glossary—Glossary terms related to state personal income and employment statistics are available on BEA's website. Go to https://apps.bea.gov/regional/definitions to access the definitions of these terms.
- Mapping of regional statistics—This interactive tool allows users to create maps using regional personal income and employment statistics. Go to https://apps.bea.gov/iTable/index_regional.cfm and click on "Begin mapping the data…" to access this interactive tool.
- Previously published estimates—This archive contains the Regional Accounts data that were published at the time of the previous Regional Accounts data news releases. They are for research only. Go to https://apps.bea.gov/regional/histdata to access this archive data.
- Statistical area delineations—Descriptions of the counties included in metropolitan and micropolitan statistical areas are available on BEA's website. Go to https://apps.bea.gov/regional/docs/msalist.cfm to access these geographies.

[10] See the list of BEA regions with their constituent states in Chapter XIV Appendix.

Table A. Relation of Personal Income in the NIPA and the State Personal Income Accounts

[Billions of dollars]

	2016	2017	2018
Personal income, NIPA's	**16,121.2**	**16,878.8**	**17,819.2**
Plus adjustments for:			
Coverage differences...	**-12.1**	**-12.3**	**-13.0**
Federal workers abroad...	-27.6	-28.0	-29.1
Wage and salary disbursements…	-18.8	-19.3	-20.0
Supplements to wages and salaries/1/	-6.0	-6.0	-6.5
Dividends, interest, and rent /2/	-4.7	-4.7	-4.7
Less: Personal contributions for social insurance…	-1.9	-2.0	-2.1
Rest-of-the-world difference.	15.5	15.7	16.1
Wages of private foreign nationals in U.S.	16.8	17.0	17.5
Wages of private U.S. residents abroad	-1.3	-1.3	-1.4
Use of more current source data...	**3.6**	**5.3**	**9.9**
Wage and salary disbursements...	0.0	0.0	0.0
Farm proprietors' income...	3.6	5.3	9.9
Personal current transfer receipts	<0.1	<0.1	<0.1
Statistical discrepancy /3/	-1.1	-1.7	-3.1
Equals: State personal income...	**16,111.6**	**16,870.1**	**17,813.0**

1. Employer contributions for government social insurance and for employee pension and insurance funds for Federal workers stationed abroad.

2. Investment income received by Federal retirement plans that is attributed to Federal workers stationed abroad.

3. Includes revisions made in the NIPAs that are not yet reflected in State Personal Income concerning wages of border workers and foreign nationals working for international organizations.

4. State personal income was released September 24, 2019.

Table B.--Regional Income and Employment Data Tables Available from the Bureau of Economic Analysis

Table		Time series	Time lag
Quarterly Series			
(*Available for United States, Regions, and States*)			
Personal Income (SQINC1)		1948:Q1-2019:Q2	3 months
Peronal Income by Major Component (SQINC4)		1948:Q1-2019:Q2	3 months
Personal Income by Major Component and …..	Earnings by NAICS Industry (SQINC5N)	1998:Q1-2019:Q2	3 months
	Earnings by SIC Industry (SQINC5S)	1958:Q1-2001:Q4	*
	Earnings by Industry (Historical) (SQINC5H)	1948:Q1-1957:Q4	*
Compensation of Employees…..	by NAICS Industry (SQINC6N)	1998:Q1-2019:Q2	3 months
	by SIC Industry (SQINC6S)	1958:Q1-2001:Q4	*
Wages and Salaries…..	by NAICS Industry (SQINC7N)	1998:Q1-2019:Q2	3 months
	by SIC Industry (SQINC7S)	1958:Q1-2001:Q4	*
	by Industry (Historical) (SQINC7H)	1948:Q1-1957:Q4	*
Personal Current Transfer Receipts (SQINC35)		1948:Q1-2019:Q2	3 months
State Annual Series			
(*Available for United States, Regions, and States*)			
Personal Income Summary (SAINC1): Personal Income, Population, Per Capita Personal Income		1929-2018	3 months (Preliminary) 9 months (Revised)
Personal Income and Employment by Major Component (SAINC4)		1929-2018	3 months (Preliminary) 9 months (Revised)
Personal Income by Major Component and …..	Earnings by NAICS Industry (SAINC5N)	1998-2018	3 months (Preliminary) 9 months (Revised)
	Earnings by SIC Industry (SAINC5S)	1958-2001	*
	Earnings by Industry (Historical) (SAINC5H)	1929-1957	*
Compensation of Employees…..	by NAICS Industry (SAINC6N)	1998-2018	3 months (Preliminary) 9 months (Revised)
	by SIC Industry (SAINC6S)	1958-2001	*
Wages and Salaries…..	by NAICS Industry (SAINC7N)	1998-2018	3 months (Preliminary) 9 months (Revised)
	by SIC Industry (SAINC7S)	1958-2001	*
	by Industry (Historical) (SAINC7H)	1929-1957	*
Total Full-Time and Part-Time Employment…..	by NAICS Industry (SAEMP25N)	1998-2018	9 months
	by SIC Industry (SAEMP25S)	1969-2001	*
Full-Time and Part-Time Wage and Salary	by NAICS Industry (SAEMP27N)	1998-2018	9 months
Employment …..	by SIC Industry (SAEMP27S)	1969-2001	*
Economic Profile (SAINC30)		1958-2018	9 months
Personal Current Transfer Receipts (SAINC35)		1929-2018	9 months
Property Income (SAINC40)		1958-2018	9 months
Farm Income and Expenses (SAINC45)		1969-2018	9 months
Personal Current Taxes (SAINC50)		1948-2018	9 months
Disposable Personal Income Summary (SAINC51): Disposable Personal Income, Population and Disposable Per Capita Personal Income		1948-2018	3 months (Preliminary) 9 months (Revised)
BEA Regional Fact Sheets (BEARFACTS)		2018	3 months (Preliminary) 9 months (Revised)

* Data revisions in these tables are incorporated during flexible annual and comprehensive revisions only.
NAICS North American Industry Classification System
SIC Standard Industrial Classification

II. WAGES AND SALARIES

Wages and salaries are broadly defined to include commissions, tips, and bonuses; voluntary employee contributions to deferred compensation plans, such as 401(k) plans; employee gains from exercising stock options; and receipts-in-kind that represent income.

Wages and salaries are measured before deductions, such as social security contributions, union dues, and voluntary employee contributions to defined contribution pension plans. They represent the amount of wages and salaries accrued during the year. The estimates are prepared, with a few exceptions, at the North American Industry Classification System (NAICS) three-digit industry level.[1]

Wages and salaries accounted for 49.8 percent of total personal income at the national level in 2018 (table C). Table C shows the relative size of wages paid by individual industries.

Both the national and the state estimates of wages and salaries are based primarily on the Quarterly Census of Employment and Wages (QCEW), data that originate from the state unemployment insurance (UI) system, and from the UI program for federal civilian employees. These data are assembled by the Bureau of Labor Statistics (BLS) of the Department of Labor. The data (reported quarterly on Form ES-202, the state UI contribution reports filed by employers in the industries covered by, and subject to, each state's UI laws and by federal agencies) are tabulated by county and by NAICS six-digit industry. The QCEW data account for 94.2 percent of wages and salaries as estimated by BEA (table D).

Under most state UI laws, wages and salaries include bonuses, tips, and the cash value of meals and lodging provided by the employer—that is, pay-in-kind.

The estimates of wages and salaries for a few industries are prepared largely or entirely with data other than the QCEW data. These industries are either not covered by state UI or are only partly covered. For three of these industries—support activities for agriculture and forestry; private education; and religious, grantmaking, civic, professional and similar organizations—the estimates are prepared as the sum of (1) an estimate for the fully covered portion of the industry, based on the QCEW data, and (2) an estimate for the not fully covered portion of the industry, based largely or entirely on other source data, as discussed below.

Wages and Salaries in Industries Fully Covered by the UI Programs

The national and state estimates of wages and salaries in industries that are fully covered by state UI programs are based on quarterly QCEW data for wages and salaries, or payrolls. The national estimates of the wages and salaries of federal civilian employees, covered by the federal UI program, are also based predominately on QCEW.

[1] NAICS has been used since 2001. Previously the Standard Industrial Classification (SIC) was used. To provide users with a longer time series of data on a NAICS basis, BEA converted its earnings and employment data, originally compiled on a SIC basis, to a NAICS basis from 1990 to 2000. See "NAICS Earnings and Employment by Industry, 1990-2000" in Chapter XII Technical Notes. See also "Industrial Classification" in Chapter I Introduction.

Because the QCEW data do not precisely meet BEA's statistical and conceptual requirements, the data must be adjusted to provide complete coverage of all components of wages and salaries and the wages of all employees (including, for example, the wages of students and elected officials) and the proper industrial and geographic classifications.

Adjustment for congressional staff wages

In the QCEW data for federal civilian employees, all the wages and salaries for congressional staff are assigned to Washington, DC. However, some of these wages are earned by congressional staff who work in the state offices of the members of Congress. BEA assumes that 25 percent of the total congressional payrolls are earned by congressional staff in state offices, so this percentage of these payrolls is allocated to states in proportion to their congressional representation.

Adjustment for tax misreporting

Approximately $105.7 billion of wages and salaries not reported by employers is added to the QCEW data (table D). Because state-level data are unavailable, the national estimate for each industry is allocated to states in proportion to the QCEW payroll data for the industry.

The national estimate for each industry is prepared in two parts: One part is prepared for the payrolls that were underreported by employers, and one part is prepared for the payrolls that were not reported, because employers failed to file a report.[2]

In addition, tips are assumed to be understated in the UI contribution reports from the following industries: health and personal care stores; general merchandise stores; air transportation; railroad transportation; taxicabs (a part of transit and ground passenger transportation); scenic and sightseeing transportation; couriers and messengers; administrative and support services; waste management and remediation services; amusement, gambling, and recreation industries; accommodation services; food services and drinking places; personal and laundry services; and religious, grantmaking, civic, professional and similar organizations. For each of these industries, the national estimate of the unreported tips, which is derived in the preparation of BEA's input/output accounts for benchmark years and interpolated and extrapolated for other years, is allocated to states in proportion to the QCEW payroll data for the industry (or in proportion to Railroad Retirement Board data for the railroad transportation industry).

Adjustments for wages and salaries that are excluded from the QCEW data

The QCEW payroll data for some states exclude some of the voluntary employee contributions to certain deferred compensation plans, such as 401(k) plans. The payroll data for Washington State exclude the salaries paid to corporate officers. In addition, the QCEW data for specific industries exclude certain, usually small, amounts of wages and salaries that are not covered by state UI programs.

For years prior to 1998, the voluntary contributions made by employees to deferred compensation plans were not fully reported for all states in the QCEW payroll

[2] Robert P. Parker, "Improved Adjustments for Misreporting of Tax Return Information Used to Estimate the National Income and Product Accounts, 1977," *Survey of Current Business* 64 (June 1984): 17-25.

data. An adjustment to include these contributions was made to each industry at both the national and state levels. The national adjustment was based on data from the Internal Revenue Service Form 5500 (*Annual Return/Report of Employee Benefit Plan*) and was distributed to the 19 states that informed the Bureau of Labor Statistics that they had not issued explicit reporting requirements for the contributions. The national adjustment for each industry was allocated to those states in proportion to the amount of reported wages and salaries for the industry in those states.

From 1998 forward, the extent of the underreporting of voluntary contributions made by employees to deferred compensation plans has declined to zero for all states except for Alaska. An adjustment for the contributions made by Alaska state, local, and private sector employees since 1996 is made to payroll data.[3]. The adjustment is based on information from Alaska's state and local government retirement systems' financial reports, Census Bureau's Current Population Survey and The Employee Benefit Research Institute.

Employee contributions to Internal Revenue Code Section 125 plans, "cafeteria plans," are excluded from QCEW payroll data for private industries and state and local governments in 28 states. Cafeteria plans allow participating employees to use a portion of their salaries on a pre-tax basis to pay for health insurance and for "flexible spending arrangements" which reimburse employees for medical care and for dependent care.[4] Reported wages in the QCEW do not include employee contributions to cafeteria plans in cases where the state laws do not count such contributions as wages for unemployment insurance purposes. BEA estimates contributions for health insurance and contributions to flexible spending arrangements for the 28 affected states using data from the Agency for Healthcare Research and Quality, *Medical Expenditure Panel Survey* and the Mercer *National Survey of Employer Sponsored Health Care Plans*. The state estimates are allocated to industries in proportion to QCEW employment.[5]

The salaries of corporate officers in Washington State, who are exempt by state law from UI coverage, are excluded from the QCEW payroll data for private industries. Therefore, an adjustment is made to include these salaries based on estimates that are provided quarterly by the Washington State Employment Security Department.[6]

The payrolls of railroad carrier affiliates are not included in the QCEW data for transportation services, and the payrolls of railway labor organizations are not included in the QCEW data for religious, grantmaking, civic, professional and similar organizations. These industry segments are covered by the Railroad Unemployment Insurance system rather than by the state UI system. The employers in these segments file reports that include payroll data with the Railroad Retirement Board, which provides these data to BEA. The data for each employer is then added to the QCEW data for the appropriate industry for the nation and for each state.

The payrolls of some nonprofit organizations are excluded from mandatory UI coverage in most states. Estimates of the payrolls of these small organizations are

---

[3] Beginning with 1996, employers in Alaska are no longer required to include the employee contributions in the reported wages and salaries.

[4] Under such plans contributions from an employee's salary are not subject to federal income taxes, federal unemployment taxes, Social Security taxes, or Medicare taxes.

[5] Clinton P. McCully and Steven Payson, "Preview of the 2009 Comprehensive Revision of the NIPAs: Statistical Changes," *Survey of Current Business* 89 (May 2009):6-16.

[6] These data are provided by county.

prepared for various industries. A national estimate of the employment for each industry is received from the Bureau of Labor Statistics.[7] The national estimate of the wages and salaries for each industry is derived as the product of the employment estimate and the annual average wages and salaries of the UI-covered employees in the industry. The national estimate for the organizations in each industry is allocated to states in proportion to the QCEW payroll data for the industry.

The wages and salaries of <u>students and spouses of students</u> who are employed by the institutions of higher education in which the students are enrolled are excluded from the QCEW payroll data for private, state government, and local government educational institutions. However, employment data that include the student employees of private institutions are published annually in *County Business Patterns*, and employment data that include the student employees of government institutions are available from the Census Bureau's *Annual Survey of Public Employment and Payroll*. The national and state estimates of the wages of student and spousal employees, therefore, are estimated as the product of the number employed in private and government institutions and an average wage of part-time government employees, also obtained from the *Annual Survey of Public Employment and Payroll*.

The pay-in-kind of <u>members of religious orders</u> who teach at private colleges and universities is excluded from the QCEW payroll data for private education. The national estimate of pay-in-kind is distributed to states in proportion to the number of full-time teachers who are members of religious orders, as reported in the "General Summary" of the *Official Catholic Directory*.[8]

The imputed wages and pay-in-kind of <u>workers in private hospitals who do not receive cash wages</u> are excluded from the QCEW data for private hospitals; these workers are mainly interns, student nurses, and members of religious orders. The national estimate of pay-in-kind of these workers is allocated to states in proportion to QCEW employment for private hospitals. A national imputation of their wages is derived as the product of an employment estimate from the Bureau of Labor Statistics (BLS) and the annual average wage of UI-covered employees in the hospital industry. This imputed wage estimate is allocated to states in proportion to QCEW wages for private hospitals.

The salaries of certain employees of state and local governments—primarily <u>elected officials, members of the judiciary, and interns</u> employed by government-operated hospitals—are excluded from the QCEW payroll data for state and local government employees. The national and state estimates are based on employment data from the BLS Current Employment Statistics program.

Since 1998, BEA wages and salaries for <u>civilian federal workers</u> include as pay-in-kind the transportation subsidies paid to employees who use mass transit to commute to and from work. The national estimate is based on unpublished data from the

---

[7] The presumed non-covered employment estimate is derived from the Current Employment Statistics (CES) survey which is provided by the National Benchmark Branch Division of CES, Office of Industry Employment Statistics, Bureau of Labor Statistics.

[8] "General Summary," *Official Catholic Directory* (New York: P.J. Kenedy and Sons). The *Directory* is published annually. The "General Summary" is a tabulation of the number of members of religious orders who are employed in Catholic institutions in each diocese and in each state. The data are classified by clerical title and by religious assignment. The data for the Archdiocese of Washington, DC, which includes the nearby suburban counties in Maryland, are apportioned between the District of Columbia and Maryland on the basis of the detailed information in the *Directory*.

Department of Transportation and is extrapolated forward by employment changes in the Washington-Arlington-Alexandria, DC-VA-MD-WV MSA.

Federal employees who work in certain U.S. intelligence agencies are not included in the Unemployment Compensation for Federal Employees (UCFE) data, thus adjustments are made in specific geographies to provide complete coverage of all federal civilian wages and salaries.

The commissions received by certain employees, primarily insurance solicitors, are excluded from the QCEW data. A national estimate of the commissions of these employees is derived as the product of an employment estimate from the BLS and the annual average wage of UI-covered employees in the insurance industry.[9] The national estimate is allocated to states in proportion to the QCEW payroll data for the insurance industry.

The national estimates of the fees paid to jurors and witnesses are based on data from the Census Bureau's annual *State Government Finances*. The estimates are allocated to states using BEA's estimates of wages paid to state government employees, excluding education.

The national estimate of the compensation of prisoners is allocated to states on the basis of QCEW wages paid to prison employees. Compensation paid to federal prisoners is allocated only to those states that have a federal prison.

In the absence of source data, marriage fees paid to justices of the peace are assumed to be a constant $10 million. The national estimate is allocated to states based on BEA estimates of wages paid to local government employees, excluding education.

Wages and Salaries in Industries Not Fully Covered by the State UI Programs

The estimates of wages and salaries for seven industries are primarily based on data other than QCEW data. For five industries—farms, farm labor contractors, private elementary and secondary schools, religious membership organizations, and private households—there is full UI coverage in only a few states. The other two industries—railroads and military—are not covered by any state UI program. In addition, because these estimates are primarily based on data that do not include wages paid in kind, an estimate of pay-in-kind is prepared for these industries (except farm labor contractors and railroads). The national estimate of pay-in-kind for each industry is identical to the imputed value of the goods and services furnished without charge by employers to their employees, as estimated for inclusion in personal consumption expenditures.[10]

[9] The presumed non-covered employment estimate is derived from the Current Employment Statistics Survey (CES) which is provided by the National Benchmark Branch Division of CES, Office of Industry Employment Statistics, Bureau of Labor Statistics.

[10] See (1) food furnished to employees (including military), (2) standard clothing issued to military personnel, and (3) employees' lodging, lines 171-173 in NIPA Table 7.12, "Imputations in the National Income and Product Accounts," available on the BEA Web site, www.bea.gov.

Farms

The estimates of wages and salaries for farms consist of the cash wages, including the salaries received by the owner-operators of farm sole proprietorships, partnerships, and family-held corporations,[11] and the pay-in-kind of hired farm labor.[12] The national and state estimates of the cash wages and pay-in-kind of hired farm labor are based on farm labor expenses from the Farm Income and Wealth Statistics prepared by the U.S. Department of Agriculture (USDA).

Farm labor contractors

Farm labor contractors are classified in support activities for agriculture and forestry. Farm labor contractors and their employees are only partially covered by UI laws in most states. However, in Arizona and California, all the employees are covered. The national estimates are based on data for contract farm labor expenses from the Census of Agriculture. For Arizona and California, the QCEW reported wages are used as the estimates. The estimates for the other states are based on the data for contract farm labor expenses from the Census of Agriculture. The years between censuses are based on straight-line interpolations.

Private elementary and secondary schools

The private elementary and secondary school industry is partially covered by state UI programs, but it is treated as if it were not covered, because religiously affiliated schools, which are exempt from state UI coverage, account for most of the wages and salaries for this industry. Nevertheless, the QCEW reported wages are comprehensive for elementary and secondary schools in several states and are used as the BEA estimates. The annual payroll data reported in *County Business Patterns* are used otherwise.[13] Both the national and state estimates of cash wages are based on these two sources. The national estimate of the pay-in-kind for these schools is distributed to states on the basis of the number of full-time teachers in religious orders.[14]

Religious membership organizations

The national and state estimates of cash wages for religious membership organizations are based on payroll data reported for these organizations in *County Business Patterns*. The estimate of pay-in-kind for religious membership organizations reflects the value of the food, laundering, lodging, and miscellaneous items received by members. The national estimate for religious pay-in-kind is allocated to the states based on employment levels for religious membership organizations found in *County Business Patterns.*

---

[11] Family-held corporations are those qualified under the Internal Revenue Code subchapter S.

[12] The USDA state estimates of farm labor expenses exclude the salaries received by the owner-operators; these salaries are treated as part of the return to capital. The BEA treatment of the salaries received by owner-operators of farms is different from the treatment of salaries received by sole proprietors and partners of nonfarm enterprises. Their salaries are included in nonfarm proprietors' income.

[13] The *County Business Patterns* data are tabulated from the administrative records of the Social Security benefits (Old-age, Survivors, and Disability Insurance) program. This program exempts nonprofit religious organizations, such as these schools, from mandatory coverage, but its provisions for elective coverage have resulted in the participation of most of these schools.

[14] *Official Catholic Directory*. See footnote 7.

Private households

The national estimates of the cash wages paid to the employees of private households are based on data from the Current Population Survey. The state estimates of cash wages are based on the 2011-2013 American Community Survey (ACS) 3-year estimates of private household wages. The ACS wage data are extrapolated to the present by the annual change in household population. The extrapolated series for each year is adjusted proportionately to sum to the national estimate of cash wages.

The national estimates of pay-in-kind received by private household employees are distributed to the states using ACS private household employment data. The employment data are extrapolated to the present by the annual change in household population.

State estimates of private household cash wages and pay-in-kind for prior years are based on special tabulations of journey-to-work data from the decennial Census of Population.

Railroads

The national and state estimates of the wages and salaries paid by railroad companies, which are not covered by the state UI system, are based on wage and salary data from the Railroad Retirement Board (RRB). The RRB data that are used for the state estimates represent the wages and salaries subject to the payroll tax that supports the railroad retirement system; these data are tabulated according to the state of residence of the employee. The data are adjusted (1) to reflect the portion of the wages and salaries not subject to the tax and (2) to convert them to a place-of-work basis. The former adjustment is based on the RRB-reported number of employees living in each state whose wages or salaries exceed the limit for retirement taxation. The latter adjustment is based on data for railroad employees from the 2011-2015 American Community Survey five-year estimates.

Military

Wages and salaries for the military services consist of cash wages (including allowances) of full-time personnel of the armed services (including the Coast Guard), cash wages of the members of the Reserves including the National Guard and pay-in-kind received by the full-time and enlisted personnel of the armed services.[15]

The national estimates of the cash wages of the military services are based on data from the appendix of the *Budget of the United States Government*.

The state estimates of cash wages of the full-time personnel of the Army, the Navy, the Air Force, and the Marine Corps are prepared in three steps. First, approximations of quarterly cash wages are calculated for subgroups of personnel—for officers and for enlisted personnel in the Navy and Marine Corps and for each pay grade of the Army and the Air Force. The approximations are derived from quarterly averages of monthly data on the number of military personnel at each installation and from national annual data on average pay for each subgroup from the Department of

[15] The estimates of pay-in-kind reflect the value of the food and standard-issue clothing received by enlisted personnel.

Defense.[16] The quarterly average number of personnel are summed over all installations in each county to obtain the quarterly average number of personnel for each subgroup, and then multiplied by the national annual average pay (for example, the number of Navy officers in each county is multiplied by the national average pay of Navy officers).

Second, the approximations of the quarterly cash wages for each subgroup in each county are summed to obtain county approximations, and the county approximations for each service are summed to obtain state approximations for each service. Third, the quarterly state approximations for each service are averaged to yield calendar year approximations, which are then adjusted proportionately to sum to the national estimates.

The national estimate of cash wages for the full-time personnel of the Coast Guard is allocated to states in proportion to an unpublished annual summation of monthly Coast Guard payroll from the Department of Homeland Security.

The national estimate of wages for the Reserves is from the appendix of the *Budget of the United States Government*. It is allocated to states in proportion to reserve wages by state provided by the Department of Defense, Office of Reserve Affairs.

The national estimate of the pay-in-kind of full-time personnel in the Coast Guard is allocated to the states in proportion to the number of enlisted personnel in the Coast Guard reported by the Department of Homeland Security, and the national estimate for each of the other services is allocated by the number of enlisted personnel in each service reported by the Department of Defense.

Alternative Measure of Wages

Another measure of wages by place of work is the payroll data published in the Census Bureau's *County Business Patterns* (CBP). It differs in source data and coverage from BEA's wages and salaries and QCEW wages.[17]

The CBP data are derived from Census Bureau business establishment surveys and federal administrative records.

The coverage of the CBP data differs from that of the QCEW data primarily because the CBP data exclude most government employees, while the QCEW data cover civilian government employees.[18] CBP data also exclude several private industries covered at least in part by the QCEW: crop and animal production; rail transportation; insurance and employee benefit funds; trusts, estates, and agency accounts; and private households. However, the CBP data cover the employees of educational institutions, membership organizations, and small nonprofit organizations in other industries more completely than the QCEW data.[19]

---

[16] The Army and the Air Force provide average base pay; the Navy and Marine Corps provide average base pay and allowances.

[17] See table C.

[18] The CBP data cover only those government employees who work in government hospitals, federally chartered savings institutions and credit unions, retail liquor stores, wholesale liquor establishments and university publishers. QCEW data in most states exclude state and local elected officials, members of the judiciary, state national and air national guardsmen, temporary emergency employees, and those in policy and advisory positions.

[19] Some religious elementary and secondary schools are not covered by QCEW because of a 1981 Supreme Court decision stating "schools operated and supported by churches and not separately incorporated [are] held exempt from unemployment compensation taxes." College students (and their spouses) employed by

Beginning in 2001, QCEW classifies employees of Indian tribal governments and enterprises in local government. These employees were previously classified in the relevant private industries.[20] In the CBP data, these employees are still classified in private industries.

the school in which they are enrolled and student nurses and interns employed by hospitals as part of their training are also excluded from QCEW. While QCEW coverage varies, half of the states only include nonprofit organizations with four or more employees during twenty weeks in a calendar year.

[20] For example, employees of casinos owned by tribal councils were included in the North American Industry Classification System 3-digit industry “Amusement, Gambling, and Recreation Industries.”

Table C.--Wages and Salaries, by Industry, United States, 2018

	Millions of dollars	Percent of personal income
Personal income /1/	17,813,035	100.0
Wages and salaries by place of work /2/	8,879,507	49.8
Farm wages and salaries	24,305	0.1
Forestry, fishing, and related activities	21,159	0.1
Forestry and logging	2,734	<0.1
Fishing, hunting and trapping	771	<0.1
Support activities for agriculture and forestry	17,654	0.1
Mining, quarrying, and oil and gas extraction	70,551	0.4
Oil and gas extraction	24,414	0.1
Mining (except oil and gas)	15,229	0.1
Support activities for mining	30,908	0.2
Utilities	62,109	0.3
Construction	470,445	2.6
Construction of buildings	114,235	0.6
Heavy and civil engineering construction	80,499	0.5
Specialty trade contractors	275,711	1.5
Manufacturing	883,224	5.0
Durable goods manufacturing	589,534	3.3
Wood product manufacturing	19,142	0.1
Nonmetallic mineral product manufacturing	25,205	0.1
Primary metal manufacturing	27,297	0.2
Fabricated metal product manufacturing	86,337	0.5
Machinery manufacturing	81,103	0.5
Computer and electronic product manufacturing	132,724	0.7
Electrical equipment, appliance, and component manufacturing	27,441	0.2
Motor vehicles, bodies and trailers, and parts manufacturing	65,020	0.4
Other transportation equipment manufacturing	65,864	0.4
Furniture and related product manufacturing	18,568	0.1
Miscellaneous manufacturing	40,833	0.2
Nondurable goods manufacturing	293,690	1.6
Food manufacturing	80,129	0.4
Beverage and tobacco product manufacturing	14,694	0.1
Textile mills	5,409	<0.1
Textile product mills	4,964	<0.1
Apparel manufacturing	5,025	<0.1
Leather and allied product manufacturing	1,245	<0.1
Paper manufacturing	25,251	0.1
Printing and related support activities	22,124	0.1
Petroleum and coal products manufacturing	13,389	0.1
Chemical manufacturing	81,023	0.5
Plastics and rubber products manufacturing	40,437	0.2
Wholesale trade	465,602	2.6
Retail trade	527,480	3.0
Motor vehicle and parts dealers	104,153	0.6
Furniture and home furnishings stores	18,669	0.1
Electronics and appliance stores	24,316	0.1
Building material and garden equipment and supplies dealers	45,705	0.3
Food and beverage stores	79,989	0.4
Health and personal care stores	42,855	0.2
Gasoline stations	21,932	0.1
Clothing and clothing accessories stores	32,240	0.2

Sporting goods, hobby, musical instrument, and book stores	13,115	0.1
General merchandise stores	79,514	0.4
Miscellaneous store retailers	23,625	0.1
Nonstore retailers	41,367	0.2
Transportation and warehousing	305,823	1.7
Air transportation	46,273	0.3
Rail transportation	17,438	0.1
Water transportation	5,875	<0.1
Truck transportation	82,452	0.5
Transit and ground passenger transportation	19,932	0.1
Pipeline transportation	6,428	<0.1
Scenic and sightseeing transportation	1,293	<0.1
Support activities for transportation	41,503	0.2
Couriers and messengers	34,506	0.2
Warehousing and storage	50,123	0.3
Information	325,108	1.8
Publishing industries (except Internet)	93,721	0.5
Motion picture and sound recording industries	31,287	0.2
Broadcasting (except Internet)	25,593	0.1
Telecommunications	67,828	0.4
Data processing, hosting, and related services	42,060	0.2
Other information services 2/	64,619	0.4
Finance and insurance	693,160	3.9
Monetary Authorities-central bank	2,471	<0.1
Credit intermediation and related activities	229,986	1.3
Securities, commodity contracts, and other financial investments and related activities	217,118	1.2
Insurance carriers and related activities	241,452	1.4
Funds, trusts, and other financial vehicles	2,133	<0.1
Real estate and rental and leasing	137,739	0.8
Real estate	104,262	0.6
Rental and leasing services	30,973	0.2
Lessors of nonfinancial intangible assets (except copyrighted works)	2,504	<0.1
Professional, scientific, and technical services	918,011	5.2
Management of companies and enterprises	293,551	1.6
Administrative and support and waste management and remediation services	389,850	2.2
Administrative and support services	362,886	2.0
Waste management and remediation services	26,964	0.2
Educational services	160,890	0.9
Health care and social assistance	1,023,014	5.7
Ambulatory health care services	475,980	2.7
Hospitals	334,232	1.9
Nursing and residential care facilities	112,401	0.6
Social assistance	100,401	0.6
Arts, entertainment, and recreation	101,777	0.6
Performing arts, spectator sports, and related industries	48,362	0.3
Museums, historical sites, and similar institutions	6,111	<0.1
Amusement, gambling, and recreation industries	47,304	0.3
Accommodation and food services	345,041	1.9
Accommodation	75,729	0.4
Food services and drinking places	269,312	1.5
Other services (except government and government enterprises)	278,034	1.6
Repair and maintenance	63,159	0.4
Personal and laundry services	53,604	0.3
Religious, grantmaking, civic, professional, and similar organizations	139,970	0.8
Private households	21,301	0.1

Government and government enterprises	1,382,634	7.8
Federal civilian	240,077	1.3
Military	97,392	0.5
State and local	1,045,165	5.9
State government	295,640	1.7
Local government	749,525	4.2

Footnotes

1. Includes the adjustment for residence which is the net inflow of the earnings of interarea commuters. For the United States, it consists of adjustments for border workers: Wage and salary disbursements to U.S. residents commuting to Canada less wage and salary disbursements to Canadian and Mexican residents commuting into the United States.

2. Includes wages received by border workers employed in the United States

NOTE.—Detail may not add to totals due to rounding.

Table D.--Relation of BEA Wage and Salary to Wages as Published by the Bureau of Labor Statistics, United States, 2018

[Millions of dollars]

	2018
Total wages, BLS[1]...	8,368,407
Plus: Adjustments made by BEA:	
For unreported wages and unreported tips on employment tax returns...	105,666
For wages and salaries not covered or not fully covered by unemployment insurance:	
Private…	267,437
Government…	137,783
Other adjustments[2]…	214
Equals: Wage and salary, BEA ...	8,879,507

1. BLS.gov data of 09/17/19

2. Consists of adjustments to the wage and salary estimates to remove employees of U.S. companies stationed overseas, and reflect updates to published BLS Quarterly Census of Employment and Wages (QCEW) data.

III. SUPPLEMENTS TO WAGES AND SALARIES

Supplements to wages and salaries consist of employer contributions for employee pension and insurance funds (previously called other labor income) and employer contributions for government social insurance. Supplements accounted for 18.6 percent of compensation at the national level in 2018 (table E).

Employer Contributions for Employee Pension and Insurance Funds

Employer contributions for employee pension and insurance funds accounted for approximately 12.9 percent of compensation at the national level in 2018 (table E).[1] For pension plans, separate estimates are prepared for employer contributions to defined benefit plans and to defined contribution plans. For insurance funds, separate estimates are prepared for group health insurance plans, group life insurance plans, supplemental unemployment benefit plans, and privately administered workers compensation plans.

Pension plans

Contributions by employers to pension plans accounted for 4.9 percent of compensation in 2018. For the measurement of personal income, employer contributions to pension plans are counted as part of supplements to wages and salaries. Employee contributions to the plans, capital gains of the plans, and payments of benefits by the plans are not counted as part of personal income. The property income of pension plans is counted as part of personal dividends, interest and rent.

Employer-sponsored pension plans are generally organized into two types: (1) defined contribution plans, which provide benefits during retirement based on the amount of money that has accumulated in an employee’s account, and (2) defined benefit plans, which provide benefits during retirement based on a formula that typically depends on an employee’s length of service and average pay, among other factors.

Defined benefit plans.—Contributions by employers to defined benefit (DB) pension plans accounted for 2.8 percent of compensation in 2018.

An employer who offers a defined benefit pension plan promises that an employee will receive a specified amount of future benefits that usually increases with each year of service. Claims to benefits accrued through service (also referred to as normal cost by pension actuaries) represent the present value of the additional benefits that plan participants earn from employment during the accounting period. Normal cost provides a more accurate measure of the compensation of employees than the employers’ cash contributions to the pension plans, which may have little relationship year by year with the benefits that employees are accruing. To measure pension entitlements when they are accrued, BEA uses an accrual accounting approach, relying on actuarial

[1] Generally, government-administered funds that provide benefits to individuals (such as social security) are classified as social insurance funds; however, government employee retirement plans are treated similarly to private pension plans. For the difference in the treatment of government employee retirement plans and social security, see footnote 10 in Brent R. Moulton, Robert P. Parker, and Eugene P. Seskin, “A Preview of the 1999 Comprehensive Revision of the National Income and Product Accounts,” *Survey of Current Business* 79 (August 1999): 11.

estimates of pension costs.[2] Accrual accounting is the preferred method for compiling economic accounts because it matches incomes earned from production with the corresponding productive activity and records both in the same period.

Under the accrual approach, employer contributions for employee defined benefit pension plans consist of the value of the pension promises made by the employer (normal costs) plus the administrative expenses of the pension plans.

National estimates.—For privately sponsored plans, BEA uses an accumulated benefit obligation (ABO) method for estimating normal costs. The ABO method aligns with the source data that BEA uses and with legal standards for private pension plan funding. For federal civilian, military, and state and local plans, BEA uses a projected benefit obligation (PBO) method in order to maintain consistency with the main sets of published actuarial estimates

For privately sponsored plans, estimates of normal costs for 2000 forward are based on ABO measures reported in actuarial schedules of the Internal Revenue Service (IRS) Form 5500 (*Annual Return/Report of Employee Benefit Plan*). The discount rate assumption is based on the AAA corporate bond rate published by the Federal Reserve Board. Prior to 2000, IRS-reported tabulations of normal costs are not available. For those years BEA calculates current-period normal cost by applying a normal cost rate to covered payrolls for each period. The normal cost rate is extrapolated using future benefits paid as an indicator.

For plans sponsored by the federal government, estimates of normal costs are based on data published in the annual actuarial reports of the major civilian and military employee retirement plans. For years when actuarial data are not available (before the mid-1980s), BEA derives normal costs from payrolls by applying normal cost rates that are extrapolated back to 1929, taking into account historical changes in benefit rules and prevailing interest and inflation rates. The normal costs for the civilian and military plans are boosted slightly to account for smaller retirement plans such as those for employees of the Foreign Service and the Coast Guard.

Estimates of normal costs for state and local government sponsored plans are drawn from a sample (representing 85 percent of the assets of the universe) of comprehensive annual financial reports for plans back to 2000. BEA adjusts these data to reflect the same discount rate series used for private plans. Before 2000, BEA's estimates of normal cost per employee are extrapolated using estimates of covered employees from Census Bureau surveys, other agency surveys, and periodic surveys that describe the pension plans' characteristics.

State estimates.—For private sector employees, the national estimates of employer contributions to defined benefit pension plans are allocated to states by industry in proportion to BEA estimates of wages and salaries. The national estimates for federal civilian plans are allocated to the states in proportion to BEA estimates of federal civilian wages and salaries. The national estimates for military plans are allocated to the states in proportion to BEA estimates of military wages and salaries, excluding pay-in-kind. For state and local government sponsored plans, the national estimate of employer contributions to defined benefit pension plans is distributed to states on the basis of state-level estimates of employer contributions prepared in the same manner as the national

[2] See "Preview of the 2013 Comprehensive Revision of the National Income and Product Accounts: Changes in Definitions and Presentations," *Survey of Current Business* 93 (March 2013): 13-39.

estimates. Specifically, the estimates of employers' normal costs are based on the service costs and employee contribution data reported in state and local government pension plan financial reports. BEA adjusts the estimates to reflect the same discount rate that is used for measures of privately sponsored defined benefit plans. Separate measures of administrative expenses are based on Census Bureau *Survey of Public Pensions* data. In addition, the estimates for Maryland, Virginia, and the District of Columbia reflect the DB pension plans of the Washington Metropolitan Area Transportation Authority. BEA distributes employer contributions by the Authority to the three jurisdictions in proportion to Quarterly Census of Employment and Wages data for local government establishments classified in NAICS industry 485111—Mixed Mode Transit Systems. In addition, the estimate for the District of Columbia reflects employer contributions by the District to the Civil Service Retirement System (CSRS), a DB pension plan administered by the federal government. CSRS was closed to employees of the District of Columbia hired after September 30, 1987.

Defined contribution plans.—Contributions by employers to defined contribution (DC) pension plans accounted for 2.1 percent of compensation in 2018.

National estimates.—The national estimates of private sector employer contributions to DC pension plans are based on data tabulated from the IRS Form 5500. For federal government sponsored plans, estimates are based on data published in the annual reports on the major civilian and military employee retirement plans. Some defined contribution pension plans for state and local government employees are administered by private carriers, others are administered by government agencies. The estimates for these contributions are based on data from the Teachers Insurance and Annuity Association/College Retirement Equities Fund (TIAA/CREF) and the Employer Costs of Employee Compensation (ECEC) report of the Bureau of Labor Statistics (BLS).

State estimates.—The national estimates of employer contributions to DC pension plans for private sector employees are allocated to states by industry in proportion to BEA estimates of wages and salaries. The national estimates for federal civilian plans are allocated to the states in proportion to BEA estimates of federal civilian wages and salaries. The national estimates for military plans are allocated to the states in proportion to BEA estimates of military wages and salaries, excluding pay-in-kind. The national estimates for state and local government plans are distributed to the states according to state-level TIAA/CREF data and data from the Comprehensive Annual Financial Reports of the largest plans; the remainder is allocated in proportion to BEA estimates of state and local government wages and salaries.

Insurance funds

Employer contributions to employee insurance funds consist of employer contributions to (1) group health insurance plans, (2) group life insurance plans, (3) supplemental unemployment benefit plans, and (4) privately administered workers' compensation plans. Employer contributions to employee insurance funds accounted for approximately 8.0 percent of compensation at the national level in 2018 (table E).

Group health insurance plans.—Employer contributions to group health insurance plans accounted for 7.2 percent of compensation in 2018.

National estimates.—For private sector employees and for state and local government employees, the national estimates of employer contributions for group health insurance plans for years after 1996 are based mainly on data collected by the Medical Expenditure Panel Survey (MEPS). This survey covers both health insurance purchased by employers for their active and retired employees and health insurance provided by employers on a self-insured basis. Self-insurance by employers accounts for about half of all health insurance provided to employees.[3] The estimates for 1986-1996 are based mainly on extrapolations of the 1996-2001 MEPS data by the relative change in employers' health insurance costs from the Employer Costs for Employee Compensation (ECEC) data of the BLS. The estimates are disaggregated to the SIC three-digit industry level based on the ECEC data and on the distribution of wages and salaries. The estimates prior to 1986 are based mainly on total private expenditures on health insurance (including the cost of self-administered plans) from the 1986 National Health Account of the Centers for Medicare and Medicaid Services (CMS), formerly the Health Care Financing Administration. Premiums paid by employees are subtracted using consumer expenditures for health insurance (excluding Medicare premiums) from the BLS Consumer Expenditure Survey.

For active and retired federal civilian employees, the national estimate of employer contributions for group health insurance plans is based mainly on data from Office of Personnel Management (OPM) internal accounting reports for the Federal Employee Health Benefits Program.

There is no group health insurance for military employees.

State estimates.—For the private sector, employer contributions to employee group health insurance plans are distributed to states in a dual allocation. In this procedure, the national estimates for each industry are used for the primary control totals (in the columns), and state-level estimates based on data from the Medical Expenditure Panel Survey (MEPS) are used for the secondary control totals (in the rows). For the initial iteration, the national estimates for each industry were allocated to the states in proportion to BEA estimates of state wage and salary employment. For the federal civilian sector, the national estimates of employer contributions are allocated to states in proportion to BEA estimates of federal civilian wages and salaries. For the state and local government sector, the national estimates of employer contributions are allocated to states using MEPS data.

Group life insurance plans.—Employer contributions to group life insurance plans accounted for 0.1 percent of compensation in 2018.

National estimates.—For private sector employees and for state and local government employees, the national estimate of employer contributions for group life insurance plans is based on premiums paid data from the A. M. Best Company's *Aggregate and Averages Life/Health*; for federal civilian employees, the national estimate is based mainly on data from OPM internal accounting reports for the Federal Employee Group Life Insurance Program; and for military employees, the national estimate is based on premiums paid data for Servicemen's Group Life Insurance from the Department of Veterans Affairs.

[3] See the section "Changes in Methodology" in "Annual Revision of the National Income and Product Accounts: Annual Estimates, 1997-99, and Quarterly Estimates, 1997:I-2000:I," *Survey* 80 (August 2000): 27-29.

State estimates.—National estimates of private and government employer contributions to group life insurance plans by industry are allocated to states in proportion to BEA estimates of wage and salary employment. Contributions are allocated by employment rather than wages because life insurance premiums typically are a fixed amount per employee rather than a percentage of wages.

Supplemental unemployment benefit plans.—Employer contributions to supplemental unemployment benefit plans accounted for less than 0.1 percent of compensation in 2018. There are no supplemental unemployment benefit plans for government employees.

National estimates.—The national estimates of employer contributions for supplemental unemployment benefit plans for private sector employees are based on tabulations of data from IRS Form 5500 and are prepared at the North American Industrial Classification (NAICS) three-digit industry level.

State estimates.—National estimates of private sector employer contributions to supplemental unemployment benefit plans by industry are allocated to states in proportion to BEA estimates of unemployment insurance (UI) contributions..

Privately administered workers' compensation plans.—Contributions by employers to privately administered workers' compensation plans consist of (1) net premiums paid by employers to private insurance companies for workers' compensation insurance, (2) benefit payments by self-insured employers and by employers with large deductible policies, and (3) court-awarded payments by the railroad industry and the water transportation industry for work-related injuries.[4] Employer contributions to these funds accounted for 0.7 percent of compensation in 2018 (table E). There are no privately administered workers' compensation plans for federal civilian or military employees.

National estimates.—The national estimates for net premiums paid by employers to private insurance companies for private, state, and local sector employees are based on data from A.M. Best Company's *Aggregate and Averages Life/Health*, supplemented by data from the National Council on Compensation Insurance (NCCI), the National Association of Insurance Commissioners (NAIC), and the American Association of State Compensation Insurance Funds (AASCIF).[5] The national estimate of benefit payments by self-insured employers is based on state-level data compiled by the Social Security Administration (SSA) and by the National Academy of Social Insurance (NASI).[6] The allocation of the all-industry national estimate to NAICS three-digit industries is based on BEA estimates of employment and on BLS data on occupational injury incidence rates.

---

[4] Programs for workers' compensation insurance are authorized by law in all states and in the District of Columbia. All but five states authorize programs for private workers' compensation insurance. Federal laws authorize court-awarded payments by the railroad industry and the water transportation industry. Laws in many states authorize self-insurance. Workers' compensation insurance provided by government-administered funds is classified as social insurance, and the premiums paid to these funds are classified as employer contributions for government social insurance. Benefits paid by government administered funds are classified as transfer payments to persons and are therefore part of personal income. Benefits paid by privately administered funds, however, are accounted for in personal consumption expenditure.

[5] Some state-chartered workers' compensation insurance funds have mixed public and private characteristics and are not included in the A.M. Best data for private insurance carriers or in the Census Bureau data for social insurance funds. BEA treats these privatized funds as private and obtains data for them from the other sources.

[6] The SSA series of employer costs for self-insurance was discontinued after 1995 and succeeded by the NASI series.

__State estimates__.—The national estimate for the railroad industry is allocated to states in proportion to the number of workers killed or injured in railroad accidents, as reported in the *Annual Accident/Incident Bulletin* by the Federal Railroad Administration.[7] The national estimates for all other industries are allocated to states in proportion to a combination of NAIC data, NASI data, and BEA estimates of wages and salaries.

Employer Contributions for Government Social Insurance

Employer contributions for government social insurance consists of employer payments under the following government social insurance programs: (1) Old-age, Survivors', and Disability Insurance (OASDI) and Hospital Insurance (HI); (2) unemployment insurance; (3) railroad retirement; (4) pension benefit guaranty; (5) military medical insurance; (5) veterans' life insurance; (6) federal workers' compensation; (7) state-administered workers' compensation; and (8) state-administered temporary disability insurance. These contributions accounted for 5.7 percent of compensation at the national level in 2018 (table E). The estimates of employer contributions for government social insurance are developed for each program by industry.

Contributions for OASDI and HI

Contributions by employers for OASDI (also known as Social Security) and HI (also known as Medicare) are made on behalf of employees who are covered by the OASDI and HI programs and accounted for 5.0 percent of compensation in 2018 (table E). Most employers contribute to both the OASDI and HI programs on behalf of their employees. However, employees of the railroad industry, federal employees in the Civil Service Retirement System, and some state and local government employees are covered by the HI program but not by the OASDI program.

National estimates of employer contributions to OASDI and HI are prepared separately for the private sector, for federal civilian employees, for military personnel, for state government employees, and for local government employees, based on data from the Social Security Administration.

National estimates of contributions by federal civilian employers are allocated to states in proportion to BEA wages and salaries of federal civilian employees. National estimates of contributions by the military are allocated to states in proportion to BEA's military wages and salaries excluding pay-in-kind.

National estimates of contributions by state and local government employers are allocated to states using the BEA estimates of employee contributions for social insurance (see Chapter VII).

Under the OASDI program employers pay taxes at a rate of 6.2 percent on employee wages up to an annual limit set by law, which in 2018 was $128,400.[8] Wages above this limit are not taxed. There is no limit to taxable wages under the HI program. The HI tax rate is 1.45 percent. Aggregate employer contributions to HI in the private

---

[7] Prior to 2006 West Virginia, the state estimate is allocated to industries in proportion to data provided by the West Virginia Workers Compensation Commission.
[8] Social Security Administration, *Contribution and Benefit Base*.

sector are allocated to industries by BEA wages and salaries at both the national and state levels. Aggregate employer contributions to OASDI in the private sector are allocated to industries in the following manner which takes into account the limit on taxable wages. Contributions are estimated at the state level and summed to obtain national estimates.[9]

Taxable wages for each industry are calculated as the sum of total wages for employees in that industry whose wages are within the OASDI limit plus taxable wages for employees whose wages exceed the OASDI limit. Taxable wages for the latter group equal the number of employees above the limit times the OASDI limit. These estimates of taxable wages are then used to allocate aggregate employer contributions to OASDI to each industry in each state.

The data used for these estimates are BEA wage and salary employment by state and industry, data on the distribution of employment by hourly wage rate intervals by state and industry from the BLS *Occupational Employment Survey* (OES), and data on the distribution of employment by hours worked per week by industry from the *Current Population Survey* (CPS), which is conducted by the Census Bureau for BLS. OES data on a NAICS basis are available, beginning with 2002. Taxable wages for 1998 through 2001 are estimated by applying the 2002 OES factors.

Contributions for unemployment insurance

Employer contributions for unemployment insurance consist of: state unemployment insurance (UI) taxes on employers; federal unemployment taxes; railroad unemployment insurance taxes; and an imputation for federal contributions for the Unemployment Compensation for Federal Employees (UCFE) and Unemployment Compensation for Ex-Service Members (UCX) programs. Employer contributions for unemployment insurance account for 0.4 percent of compensation in 2018 (table E).

State unemployment insurance and federal unemployment tax funds.—State unemployment insurance taxes and federal unemployment taxes provide for payments of unemployment compensation to workers who have lost their jobs. Private sector employers covered by the unemployment insurance program and state and local governments pay both a federal and a state unemployment tax.

National estimates of state unemployment insurance taxes on employers and federal unemployment taxes are based on data from the Employment and Training Administration. State estimates are based on unpublished employer contributions data by state and industry provided by BLS.

Railroad employees' unemployment insurance.—The Railroad Unemployment Insurance Act of 1938, established a system of benefits for unemployed railroad workers that is financed by railroad employers and administered by the Railroad Retirement Board (RRB). National estimates of employer contributions for this program are based on data from the *Monthly Treasury Statement of Receipts and Outlays of the United States Government* and are allocated to states using BEA estimates of railroad wages and salaries.

Federal employees' unemployment insurance.—The UCFE program and the UCX program provide unemployment compensation to former federal civilian employees and to unemployed, newly discharged servicemen. Estimates of employer contributions

[9] This procedure is used for estimates beginning with 1998. Employer contributions for OASDI by industry for earlier years were estimated in the same manner as contributions for HI.

for these two programs are imputations based on unemployment compensation paid to former federal employees.

Employer contributions for the UCFE and UCX programs are estimated separately. National estimates are based on data from both the Office of Management and Budget and the Employment and Training Administration. The national estimates are allocated to states on the basis of BEA wages and salaries for federal civilian workers and wages and salaries excluding pay in kind for active duty military personnel.

Contributions for railroad retirement

Railroad retirement is treated in the NIPAs as a social insurance fund. Railroad employers contribute a percentage of wages that matches the rate of OASDI and HI. In addition, employers contribute a supplemental tax that is calculated to yield benefits comparable to private pensions.

National estimates of employer contributions for this federally-administered program are based on taxable wages and tax rate data from the RRB. The national estimates are allocated to states in proportion to BEA estimates of railroad wages and salaries.

Contributions for the Pension Benefit Guaranty Corporation

The Pension Benefit Guaranty Corporation (PBGC) is a federal government corporation established by Title IV of the Employee Retirement Income Security Act of 1974 to encourage the continuation and maintenance of defined benefit pension plans, and to provide timely and uninterrupted payment of pension benefits to participants and beneficiaries in plans covered by the PBGC. The PBGC collects insurance premiums from employers that sponsor insured pension plans. Coverage in this program is not universal. National estimates of employer contributions to PBGC are based on data from the appendix of the *Budget of the United States Government*. National estimates by industry are allocated to states on the basis of BEA wage and salary employment statistics.

Contributions for military medical insurance

Military medical insurance (TRICARE) is a health care program that covers health care at nonmilitary facilities for active duty and retired members of the uniformed services, their families, and their survivors. Benefits to dependents of active duty personnel of this program are treated as paid by a social insurance fund in order to make the compensation of military personnel comparable to the compensation of other government and private sector employees. A contribution to the fund—equal to the benefits paid—is imputed to the military employer. National estimates of employer contributions for military medical insurance are based on data from the Department of Defense. The national estimate is allocated to states using BEA estimates of military wages and salaries excluding pay-in-kind.

Contributions for veterans’ life insurance

Contributions for veterans’ life insurance are premiums paid by the federal government under five life insurance programs administered by the Department of

Veterans Affairs (DVA). The national estimate of these contributions is based on unpublished data provided by DVA. The national estimate is allocated to states using BEA's estimates of military wages and salaries excluding pay-in-kind.

Contributions for federal workers' compensation

The federal government pays workers' compensation benefits to federal employees injured on the job. All estimates of workers' compensation contributions are imputations based on estimates of benefits paid. National estimates of employer contributions for federal workers' compensation are based on data from the Employment Standards Administration of the Department of Labor. The national estimate is allocated to states in proportion to BEA's estimates of federal civilian and military wages and salaries excluding military pay-in-kind.

Contributions for state-administered workers' compensation

Many states have established state-administered workers' compensation funds to provide benefits to individuals with employment-related injuries and illnesses and to survivors of individuals who died from employment-related causes. These funds and state-administered second injury funds are treated in the NIPA as social insurance funds. National estimates of employer contributions for state-administered workers' compensation are based on government finance data provided by the Census Bureau. The national estimate is allocated to states on the basis of workers' compensation data from the Census Bureau's annual *State Government Finances*.

Contributions for state-administered temporary disability insurance

State-administered temporary disability insurance programs provide workers with partial compensation for loss of wages caused by temporary non-occupational disability. Only three states have programs: California, New Jersey, and Rhode Island. Of these states, only New Jersey has a program that requires employers to contribute.[10] Therefore, the national estimate equals the estimate for the state of New Jersey and is based on government finance data provided by the Census Bureau. This estimate is distributed to industries by BEA estimates of New Jersey wages and salaries.

[10] All three states require employee contributions. These are recorded under employee and self-employed contributions for government social insurance. See Chapter VII Contributions for Government Social Insurance.

Table E. -- Components of Supplements to Wages and Salaries, United States, 2018

	Millions of Dollars	Percent of Compensation
Compensation	10,911,961	100.0
Supplements to wages and salaries	2,032,454	18.6
Employer contributions for employee pension and insurance funds	1,410,694	12.9
Employer contributions for employee pension plans	535,782	4.9
Defined benefit plans	307,097	2.8
Defined contribution plans	228,685	2.1
Employer contributions for employee insurance plans	874,912	8.0
Group health insurance plans	786,445	7.2
Group life insurance plans	12,540	0.1
Supplemental unemployment benefit plans	476	<0.1
Privately-administered workers' compensation plans	75,451	0.7
Employer contributions for government social insurance	621,760	5.7
Old-age, survivors, and disability Insurance, and health insurance	548,895	5.0
Unemployment insurance	40,951	0.4
Railroad retirement	3,490	<0.1
Pension Benefit Guaranty Corporation	5,615	0.1
Military medical insurance, Veterans' life insurance, and Federal workers' compensation	8,643	0.1
State-administered workers' compensation	14,117	0.1
State-administered temporary disability insurance	49	<0.1

Note. -- Detail may not add to totals due to rounding.

IV. PROPRIETORS' INCOME

Proprietors' income with inventory valuation and capital consumption adjustments is the current-production income of sole proprietorships, partnerships, and of tax-exempt cooperatives. A sole proprietorship is an unincorporated business required to file Schedule C of IRS Form 1040 (*Profit or Loss from Business*) or Schedule F (*Profit or Loss from Farming*). A partnership is an unincorporated business association required to file Form 1065 (*U.S. Return of Partnership Income*). A tax-exempt cooperative is a nonprofit business organization that is collectively owned by its customer-members. Proprietors' income includes corporate directors' fees, but it excludes the dividends and the monetary interest that are received by nonfinancial sole proprietorships and partnerships, and the rental income received by persons not primarily engaged in the real estate business.[1]

Proprietors' income accounted for 9.0 percent of total personal income at the national level in 2018 (table F). The estimates of nonfarm proprietors' income are prepared using different data sources than farm proprietors' income and are discussed first in this chapter. Nonfarm proprietors' income accounted for 97.7 percent of proprietors' income and farm proprietors' income accounted for the remaining 2.3 percent.

Nonfarm Proprietors' Income

Income of nonfarm proprietorships and partnerships

National estimates of the income of nonfarm sole proprietorships and partnerships are based on tabulations of Internal Revenue Service (IRS) tax returns: (1) "net profit or (loss)" reported on Schedule C of Form 1040 for sole proprietorships; (2) "ordinary business income (loss)" from Form 1065 for partnerships; and (3) "net rental real estate income (loss)" plus "other net rental income (loss)" from Schedule K of Form 1065.[2] Collectively, these amounts are referred to as net profits. Because these data do not always reflect the income earned from current production and because they are incomplete, the estimates also include three major adjustments—the inventory valuation adjustment (IVA), the capital consumption adjustment (CCAdj), and the misreporting adjustment.[3]

The IVA removes the effects of gains and losses that result from changes in the prices of products withdrawn from inventories.

The capital consumption adjustment represents the difference between capital consumption allowances (depreciation on the historical-cost basis used in the source data)

---

[1] The dividends are included in personal dividend income, the monetary interest is included in personal interest income, and the rental income is included in rental income of persons. See Chapter V Dividends, Interest, and Rent.

[2] The net profit or (loss) reported on Schedule C of Form 1040 includes corporate directors' fees.

[3] Estimates of the IVA and CCAdj are in NIPA table 1.13 and an estimate of the misreporting adjustment is in NIPA table 7.14

and the consumption of fixed capital (depreciation valued on a replacement-cost basis and the effects of the accidental destruction of depreciable plant and equipment).[4]

The misreporting adjustment is an estimate of the net income of sole proprietors and partnerships that is not reported on tax returns. This adjustment accounted for 44% percent of nonfarm proprietors' income in 2018.[5]

Like the national estimates, the state estimates are based on data tabulated from Schedule C of Form 1040 and from Form 1065. The geographic coding of the data is by tax-filing address. This address is assumed to be the same as the address of the place of residence.

National estimates of nonfarm proprietors' income—including the IVA, the CCAdj and the misreporting adjustment—for 2001 forward by North American Industry Classification System (NAICS) subsectors are allocated to the states using a 3-year moving average of state level tabulations of net profits.[6] NAICS subsector estimates of nonfarm proprietors' income for 2001 are then interpolated backwards to create NAICS based estimates for 1998-2000.[7]

Income of nonfarm tax-exempt cooperatives

Estimates of the income of tax-exempt cooperatives—including the net income received by agricultural cooperatives, rural electric cooperatives, and rural telephone cooperatives—are created separately. The national estimate of the net income received by agricultural cooperatives is distributed to states using the net income of agricultural cooperatives by state, provided by the Rural Development program of the US Department of Agriculture. The national estimate of the net income received by rural electric cooperatives is distributed to states using annual data for the net margin, or profit, of the cooperatives that have outstanding loans from the Rural Utilities Service (RUS) of the US Department of Agriculture. The national estimate of the net income received by rural telephone cooperatives is distributed to states by historical estimates of proprietorship and partnership income in broadcasting and telecommunications.

---

[4] The capital consumption adjustment also includes the differences between the service lives and the depreciation patterns used for tax accounting and the empirically based depreciation schedules that are used for national economic accounting. See Arnold J. Katz and Shelby W. Herman, "Improved Estimates of Fixed Reproducible Tangible Wealth, 1929-95," *Survey of Current Business* 77 (May 1997): 69-92.

[5] See Pamela A. Kelly, Stephanie H. McCulla, and David B. Wasshausen, "Improved Estimates of the National Income and Product Accounts", *Survey of Current Business* 98 (September 2018)..

[6] The allocator for year t is an average of the IRS profit data for years t, t-1, and t-2.

[7] National estimates of nonfarm proprietorship and partnership income, excluding the misreporting adjustment, for 1992-2001 for most of the SIC two-digit industries were allocated to states in proportion to state level tabulations of net profits. For coal mining, the national estimate, excluding the misreporting adjustment, was allocated to states in proportion to the number of Schedules C plus the number of partners in general partnerships. For the other industries, the national estimates, excluding the misreporting adjustment, were allocated to states in proportion to net receipts ("gross receipts or sales" less "returns and allowances" as reported on Form 1040 Schedule C and Form 1065) for each industry. National estimates of the misreporting adjustment for 1992-2001 for all SIC industries except coal mining were allocated to states in proportion to net receipts for each industry. For coal mining, the national estimate of the misreporting adjustment was allocated to states in proportion to the same series that was used to allocate the estimate excluding the misreporting adjustment.

Farm Proprietors' Income

Farm proprietors' income is the income received by the sole proprietorships and partnerships that operate farms. The national and state estimates of this income are based largely on the national and state estimates of the net income of all farms prepared by the Economic Research Service (ERS) of the U.S. Department of Agriculture (USDA).[8] For a variety of reasons discussed below, the BEA estimates of the income of all farms differ somewhat from those prepared by USDA.[9] In addition, BEA estimates corporate farm income. This is subtracted from the income of all farms in order to derive farm proprietors' income.[10]

The net income of all farms is defined as gross output less production expenses. For most of the components of gross output and for many components of production expenses, estimates are prepared at the state level and summed to yield national estimates.

Gross farm output

Gross farm output consists of cash receipts from the sale of agricultural products, federal government payments to farm operators, imputed and miscellaneous income received, and the value of the change in farm inventories.

Cash receipts from sale of agricultural products.—Cash receipts from sales accounted for about 90 percent of gross farm output at the national level in 2018. Cash receipts consist of the gross revenue received by farmers from the sale of crops, livestock, and livestock products and of the value of defaulted loans made by the Commodity Credit Corporation (CCC) and secured by crops. The estimates of cash receipts are based on USDA state estimates of cash receipts adjusted to reflect differences in the treatment of CCC loans and intrastate interfarm sales.

For years prior to 2008, the USDA estimates of cash receipts from crop sales include the net value of CCC loans (loans less redemptions); the loans are treated as crop sales, and any subsequent defaults on the loans do not affect the USDA estimates of the net income of all farms. BEA classifies the CCC loans as financial transactions: Crops held under CCC loan remain in measured farm inventories unless the loan is defaulted. The default of a loan is considered to be a sale of the crops and a reduction in farm inventories. To reflect this difference, BEA adjusts the USDA estimates of cash receipts from sales and the value of inventory change for each type of crop.[11] The national

---

[8] The state estimates of farm proprietors' income are not controlled to the NIPA estimates. The NIPA methodology, using national aggregates of the components of farm proprietors' income and constrained to be consistent with other farm sector estimates appearing in the national accounts, yields different estimates than the independently applied state methodology, using state-level data. It is felt that the gap between the NIPA estimate and the sum of the state estimates is tolerable because of the much greater importance of farm proprietors' income to some states and because the gap is a very small percentage of total personal income, when summed over all states.

[9] For information about the source data and methods used to derive the USDA estimates, see Economic Research Service, *Farm Income and Wealth Statistics: General Documentation*.

[10] For the differences between the USDA and the NIPA estimates of net farm income, see NIPA table 7.15 "Relation of Net Farm Income in the National Income and Product Accounts to Net Farm Income as Published by the U.S. Department of Agriculture."

[11] The adjustments to the USDA estimates of the value of inventory change largely offset the adjustments to the estimates of cash receipts. The adjustments also reflect the differences in valuation that result from

estimates of the adjustments for each crop are allocated to states in proportion to data on net CCC loan activity for the crop from the Farm Service Agency. For 2008 and subsequent years, the USDA treatment of CCC loans in the estimation of cash receipts from crop sales and crop inventories is conceptually consistent with the BEA treatment and is not adjusted.

Intrastate interfarm sales of livestock are not included in the USDA estimates of cash receipts for livestock sales or in the USDA estimates of the expenses of livestock purchases but those sales are included in the BEA estimates. However, the receipts for these sales offset the expenses for these purchases in the state estimates of farm income. To reflect this difference, BEA adjusts the USDA state estimates of cash receipts from the sale of livestock and the expenses of livestock purchased. The value of intrastate interfarm sales of livestock is estimated by subtracting USDA state-level data on livestock purchased from Census of Agriculture data on livestock purchased (the Census of Agriculture data include intrastate interfarm sales).

Federal government payments to farm operators.—Federal government payments to farm operators consist of deficiency payments under price support programs for specific commodities, disaster payments, conservation payments, and direct payments to farmers under federal appropriations legislation. The estimates of government payments are based on USDA national and state estimates of direct government payments.

Imputed and miscellaneous income received.—Imputed and miscellaneous income received consists of the imputed income from home consumption, and the gross income from farm-related activities other than crop and livestock production.

Home consumption is an imputed estimate of the market value of food that is produced and consumed on farms. The estimates of home consumption are based on USDA national and state estimates of home consumption.

Gross income from farm-related activities includes the use of farms for recreational activities—such as hunting or fishing—the sale of forest products, custom work performed for other farm operators—such as clearing land and harvesting crops. It also includes indemnity payments (benefits) from crop insurance. The estimates are based on USDA estimates of revenue from services and forestry adjusted to remove the imputed gross rental value of farm housing and patronage dividends received by farm operators as measured by USDA. BEA classifies the production of services of farm housing owned by farm operators in the real estate industry rather than in the farm industry and records the net rents in the rental income of persons. Patronage dividends received by farm operators are from agricultural cooperatives, which are mainly farm-marketing and farm-supply cooperatives. BEA classifies the income of these cooperatives as nonfarm proprietors' income.[12]

---

the differences in the timing of the sales and of the changes in inventories. For more information, see Robert P. Parker, "A Preview of the Comprehensive Revision of the National Income and Product Accounts: Definitional and Classificational Changes," *Survey of Current Business* 71 (September 1991): 30.

[12] The income of agricultural cooperatives that BEA measures as part of nonfarm proprietors' income is the profits of the cooperatives. The income from the agricultural cooperatives that BEA excludes from the USDA measure of farm income is the patronage dividends that are paid to farm operators out of the current and accumulated profits of the cooperatives.

In 2013, gross income from farm-related activities also includes settlement payments for a class action lawsuit that alleged racial discrimination by the U.S. Department of Agriculture in its evaluation of farm loan applicants between 1981 and 1996. The settlement was a one-time payment of $1.122 billion, 75 percent of which was apportioned to farm proprietorships and 25 percent to corporate farms. The national settlement was allocated to the states using the number of successful claimants by state from the claims administrator.

Value of the change in farm inventories.—The value of the change in farm inventories is an estimate of the value, at market prices, of the change in the quantity of inventories of harvested crops, livestock, materials, and supplies owned by farmers. For crops, for example, the estimate of the value of the change in the inventories of each type of crop is calculated as the difference between the value of the crops that are produced and the value of the crops that are sold or used as feed. This calculation accounts for all inventories, regardless of the location of their storage, that are owned by farmers. The estimates of the value of the change plus the estimates of cash receipts from the sales of crops during the year yields a measure of the gross output of crops during the year.

The estimates of value of the change in crop and livestock inventories are based on USDA state estimates of the value of change in crop and livestock inventories. The USDA estimates for crops, for years prior to 2008, are adjusted to include the changes in the inventories of crops that are held as collateral for CCC loans, as discussed above.

BEA defines farm inventories to include materials and supplies—such as feed, seed, and fertilizer—starting in 1991. The USDA estimates of the net income of all farms exclude such inventories. For 1991-2002, the national estimate of the value of the change in these inventories is allocated to states in proportion to the USDA data on the year-to-year change in purchased inputs. For 2003 forward, state data for purchased inputs from the Agricultural Resource Management Survey (15 states) and USDA data for real estate debt ratios for purchased inputs (35 states) were used to allocate U.S. totals.

Production expenses

Farm production expenses consist of purchases of feed, livestock and poultry, seed, fertilizer, agricultural chemicals and lime, and petroleum products; labor expenses; machinery rental and custom work; animal health costs; and all other expenses including depreciation.[13] BEA adjusts the USDA state estimates of production expenses to account for methodological differences in the treatment of depreciation and to conform to BEA definitions and classifications.

Depreciation.—Both the USDA and the BEA estimates of depreciation expenses are on current replacement-cost basis. However, the BEA estimates reflect a geometric depreciation schedule, whereas USDA estimates reflect a declining-balance schedule. The amount of the difference between the BEA and the USDA national estimates of depreciation is allocated to states in proportion to the USDA estimates. These amounts are added to the USDA state estimates of depreciation of machinery, equipment, and buildings to yield the BEA estimates.

[13] Labor expenses consist of the payments to farm labor contractors and the cash wages, pay-in-kind, and supplements to the wages of hired labor. All other expenses consist mainly of the estimates of overhead, such as depreciation, mortgage interest, taxes, and the costs of electricity and telephone service.

Wages and salaries.—The USDA classifies the wages and salaries received by the owner-operators of sole proprietorship farms, partnership farms, and family-held corporate farms as part of the return to capital and therefore does not include them in its estimates of production expenses. BEA classifies these wages and salaries as an expense item and adds them to the USDA estimates of other production expenses. The BEA national and state estimates of these wages and salaries are based on data provided by the USDA.

Fines.—The USDA estimate of production expenses also excludes an estimate of the payment of fines by farm operators to the federal government. BEA classifies these fines as a production expense and adds these fines to the USDA estimates of production expenses. The national estimate of these fines is allocated to states in proportion to the USDA estimates of cash receipts from the sale of crops and livestock.

Farm housing.—The USDA estimates of farm production expenses include expenses—such as property taxes and mortgage insurance—associated with the production of services of farm housing owned by farm operators. Since BEA classifies the production of farm housing in the real estate industry rather than in the farm industry, the expenses associated with the operation farm housing are removed from the USDA estimates. The national estimates of farm housing expenses are allocated to the states in proportion to data on operator dwelling expenses provided by USDA.

Livestock purchased.—The USDA production expense estimates are further adjusted to include intrastate interfarm purchases of livestock as discussed above.

Corporate farm income

The USDA estimates of the total net income of all farms, reflecting the coverage of the underlying source data, include the income of corporate farms. BEA makes an adjustment to exclude the income of these farms. A national estimate of the net income of corporate farms was calculated as the difference between gross corporate farm output and corporate production expenses, both of which were estimated using data from the Census of Agriculture and the Agricultural Resource Management Survey. The national estimate was allocated to states on the basis of corporate cash receipts from the sale of crops and livestock estimated from unpublished data from the Census of Agriculture.

Table F.-- Proprietors' Income, by Industry, United States, 2018

	Millions of dollars	Percent of personal income
Personal income	17,813,035	100.0
Proprietors' Income/1/	1,598,694	9.0
Farm	37,143	0.2
Forestry, fishing, and related activities	10,939	0.1
Mining, quarrying, and oil and gas extraction	74,129	0.4
Utilities	15,252	0.1
Construction	217,298	1.2
Manufacturing	50,707	0.3
Wholesale and retail trade	120,165	0.7
Transportation and warehousing	114,802	0.6
Information	61,205	0.3
Finance and insurance	78,052	0.4
Real estate and rental and leasing	148,411	0.8
Professional, scientific, and technical services	248,647	1.4
Management of companies and enterprises	-4,571	<0.1
Administrative and support and waste management and remediation services	72,011	0.4
Educational services	12,269	0.1
Health care and social assistance	135,476	0.8
Arts, entertainment, and recreation	41,994	0.2
Accommodation and food services	34,450	0.2
Other services (except government and government enterprises)	130,315	0.7

Footnotes

1. Shown with inventory valuation and capital consumption adjustments.

NOTE.—Detail may not add to totals due to rounding .

V. DIVIDENDS, INTEREST, AND RENT

The state estimates of personal dividend income, personal interest income, and rental income of persons are collectively known as property income. These three components accounted for 20.7 percent of total personal income at the national level in 2018 (table G). Persons comprise individuals and nonprofit institutions that primarily serve individuals, private noninsured welfare funds, and private trust funds. The national estimates of dividends, interest, and monetary rent are based on data that are not available for states. The state allocations of the national estimates of the property income received by individuals are based mainly on individual income tax data.

Personal Dividend Income

Personal dividend income is the cash and other assets, excluding the corporations' own stock, that persons who are U.S. residents receive from U.S. and foreign corporations. Personal dividend income accounted for 6.9 percent of total personal income at the national level in 2018 (table G). The national estimate of personal dividend income is obtained by subtracting dividend payments made to government (federal plus state and local governments) from total net corporate dividend payments. The state estimates of personal dividend income are prepared in three parts: (1) imputed receipt of dividend income from pension plans, (2) dividend income received from S corporations, and (3) all other dividend income.

Imputed receipt of dividend income from pension plans

The imputed receipt of dividend income from pension plans consists of the dividends received by noninsured pension plans and passed through to persons[1]. Separate estimates are prepared for imputed receipts from private pension plans, state and local government employee pension plans, and from the Thrift Savings Plan (TSP) in which federal civilian and military employees may participate. For each of these categories, a portion of the dividends is assumed to be received on behalf of current employees, and a portion on behalf of retirees and their survivors.

For private pension plans, the division of dividends into the currently-employed and the retired portions is based on participation rates in the Social Security retirement system, as published in the *Social Security Bulletin Annual Statistical Supplement*. The division corresponds to the relative numbers of participants—those making contributions and those receiving benefits. For the TSP, the division is based on the number of active employees and annuitants from the Office of Personnel Management. For the state and

[1] For a detailed discussion of the treatment of pension plans in personal income see Jason W. Chute, Stephanie H. McCulla, and Shelly Smith, "Preview of the 2018 Comprehensive Update of the National Income and Product Accounts: Changes in Methods, Definitions, and Presentations" Survey of Current Business 98 (April 2018) and "Preview of the 2013 Comprehensive Revision of the National Income and Product Accounts; Changes in Definitions and Presentations," Survey of Current Business 93 (March 2013).

local government plans, the division is based on membership data from the Census Bureau's annual *Survey of Public Employee Retirement Systems*.

The currently-employed portion of the dividends received by private pension plans is allocated to states using state-of-residence estimates of private-sector wages and salaries[2]. State estimates of the retired portion reflect the geographic distribution of BEA estimates of Social Security benefits.

For the dividends received by the TSP, the state estimates of the currently employed portion are based on residence-adjusted state estimates of federal civilian wages and salaries. State estimates of the retired portion are based on state estimates of federal civilian retirement benefits by state.[3]

For the dividends received by state and local government employee pension plans, the state estimates of both the currently employed and the retired portions are allocated to states using residence-adjusted state estimates of state and local government wages and salaries.

Dividend income received from S corporations

Income received by individuals from S-corporations is the sum of passive and nonpassive income less the sum of passive and nonpassive losses and section 179 expenses.[4] These amounts are reported on Schedule E "*Supplemental Income and Loss*" of Internal Revenue Service (IRS) Form 1040 *(U.S. Individual Income Tax Return)*. Beginning with tax year 1994, the Statistics of Income Division of the IRS has provided BEA with unpublished Schedule E sample data of S-Corporation dividends by state. A centered, 3-year moving average of these dividends is used to allocate the national estimate to states.

Other dividend income

The national estimate of other dividend income is allocated to states based on tabulations of the ordinary dividends reported by individuals on Form 1040.[5]

---

[2] Prior to the conversion from SIC to NAICS, the state estimates of the currently-employed portion of dividend income received by private pension funds were prepared using residence-adjusted employer contributions to these funds as the geographical allocator. The state-of-residence estimates of employer contributions to private pension plans were based on year 2000 benchmark estimates: The 2000 national estimate of the contributions for each Standard Industrial Classification two-digit industry was allocated to states in proportion to the earnings of wage and salary workers employed in that industry as reported in the 2000 Census of Population. The 2000 estimate for each industry was then extrapolated back to the 1990 benchmark and forward to the latest year by the relative change in the BEA estimates of wages and salaries for the industry. The estimates by industry were then summed to the all-industry level.

[3] Federal civilian employee retirement and disability payments are benefits (including lump-sum withdrawals) received by retired federal government employees and their survivors from the following retirement plans: The Civil Service Retirement System; the Basic Benefit Plan of the Federal Employees Retirement System; and special contributory and noncontributory retirement plans, such as those of the Foreign Service, the Federal Reserve Board, and the Tennessee Valley Authority. Benefits data for September of each year, 2001-2005, are from the Consolidated Federal Funds Report (CFFR) published by the Census Bureau. For 2006-forward, the *Employee & Survivor Annuitants by Geographic Distribution* data sets of the Office of Personnel Management (OPM) are used.

[4] S refers to a subchapter of the Internal Revenue code.

[5] These tabulations are published in Historical Table 2 in the *SOI Bulletin* about 18 months after the end of the reference year; therefore, the state estimates for years in which the tabulations are not available are extrapolations using past trends in the data, as determined from a regression of the growth rate in the data

Personal Interest Income

Personal interest income is the interest received (monetary and imputed) by persons, including individuals and nonprofit institutions serving households, from all sources. Personal interest income accounted for 9.5 percent of total personal income at the national level in 2018 (table G). The state estimates of personal interest income are prepared in three parts: (1) monetary interest receipts, (2) imputed interest receipts from employee pension plans, and (3) imputed interest receipts from financial institutions and insurance companies.

Monetary interest receipts

The national estimate of monetary interest receipts is allocated to states based on tabulations of the taxable interest reported by individuals on IRS Form 1040.[6] [7] These data are supplemented by an estimate of the interest received by individuals from regulated investment companies, such as money market mutual funds. The supplementation is necessary because the interest received by individuals from regulated investment companies is reported as dividend income on Form 1040 but is treated as interest income in BEA's state personal income accounts. State estimates of the interest received from regulated investment companies are based on a national ratio of such interest to SOI Bulletin dividends and state-level estimates of SOI Bulletin dividends.

Imputed interest receipts from employee pension plans

The imputed receipt of interest income from pension plans consists of the monetary and imputed interest received by noninsured pension plans and passed through to persons.[8] Separate estimates are prepared for imputed receipts from employee pension plans in the private-sector, the federal civilian employee pension plans (including the Thrift Savings Plan), the military retirement plan, and by state and local government employee pension plans. For each plan, the interest is divided into a portion received on behalf of current employees, and a portion received on behalf of retirees and their survivors in the manner described above for the imputed receipt of dividend income from pension plans.[9]

---

for each state on its national counterpart. Occasionally unpublished SOI sample data are used instead of the *SOI Bulletin* tabulations.

[6] Interest received by nonfinancial sole proprietorships and partnerships is considered to be interest received by persons and is included in the national estimate of monetary interest receipts of persons.

[7] The tabulations are published in Historical Table 2 in the *SOI Bulletin* and are extrapolated to the present in the manner described above for personal dividend income.

[8] For a detailed discussion of the treatment of pension plans in personal income see Jason W. Chute, Stephanie H. McCulla, and Shelly Smith, "Preview of the 2018 Comprehensive Update of the National Income and Product Accounts: Changes in Methods, Definitions, and Presentations" Survey of Current Business 98 (April 2018) and "Preview of the 2013 Comprehensive Revision of the National Income and Product Accounts; Changes in Definitions and Presentations," Survey of Current Business 93 (March 2013).

[9] The interest received by the military retirement plan is divided into that attributed to current annuitants and that attributed to active duty personnel and reservists based on the present value of future benefits of each group from the *Valuation of the Military Retirement System.*

The currently-employed portion of the interest received by private pension plans is allocated to states using state-of-residence estimates of wages and salaries. State estimates of the retired portion reflect the geographic distribution of BEA estimates of Social Security benefits.

For the interest received by the federal civilian pension plans, the national estimate of the currently-employed portion is allocated to states on the basis of federal civilian wages and salaries, and national estimate of the retired portion is allocated to states on the basis of state estimates of federal civilian retirement benefits by state.

The interest attributed to active duty personnel and reservists is allocated to states based on residence-adjusted state estimates of the base pay of active-duty military personnel, and the interest attributed to current annuitants is allocated on the basis of state estimates of military retirement benefits.[10]

For the interest received by the state and local government employee pension plans, the state estimates of both the currently-employed and the retired portions are allocated to states using residence-adjusted state estimates of state and local government wages and salaries.

Imputed interest receipts from financial institutions and insurance companies[11]

These imputed interest receipts consist of (a) the value of depositor services (such as checking and record keeping) furnished without payment by financial intermediaries (commercial banks, savings institutions, and credit unions) to persons, (b) the value of the investor services that are furnished without payment by regulated investment companies (mutual funds) to their shareholders, (c) premium supplements for property and casualty insurance, and (d) the interest received from life insurance carriers.[12]

The imputed value of depositor services is based on average deposit balances and on a “user-cost price” that is calculated as the difference between the reference rate (measured as the average rate earned by banks on U.S. government and agency securities) and the interest rate paid on deposits. The estimates of deposits for commercial banks and savings institutions are based on data from the Federal Financial Institutions Examination Council’s (FFIEC) Call Reports. For credit unions, the measures are based on data from the National Credit Union Administration’s (NCUA) Call Report Form 5300. State-level estimates are used to allocate the corresponding national imputed interest receipts. The estimates are then refined using household survey data to reflect the state of residence of the household.

The national estimate of the imputed value of investor services is distributed to states using personal wealth statistics from the Internal Revenue Service (IRS).

Premium supplements for property and casualty insurance is the property income that property and casualty insurance carriers earn on reserves held to pay claims. This

---

[10] National estimates of military retirement benefits, including benefits of Coast Guard personnel and their survivors are allocated to states in proportion to payments data for September from the *Statistical Report on the Military Retirement System* of the Department of Defense.

[11] For a detailed description of the treatment of imputed interest in the National Income and Product Accounts see “Chapter 5: Personal Consumption Expenditures” *NIPA Handbook: Concepts and Methods of the U.S. National Income and Product Accounts*, May 2019.

[12] See “Imputation” in Chapter XII Technical Notes.

income is deemed to be paid out to policyholders and then paid back to insurance carriers as premium supplements even though, in actuality, the insurance companies retain the property income. The national estimate of premium supplements is allocated to states in proportion to the BEA estimate of monetary interest.

The imputed interest received from life insurance carriers consists of the property income life insurance carriers earn on life insurance and annuity reserves. This income is deemed to be paid out to policyholders and then paid back as premium supplements even though, in actuality, the insurance companies retain the property income. The national estimate of imputed interest received from life insurance carriers is allocated to states in proportion to the BEA estimate of monetary interest.

Rental Income of Persons

The rental income of persons with capital consumption adjustment is the net current-production income of persons (except those primarily engaged in the real estate business) from the rental of real property, [13] the imputed net rental income of owner-occupants of farm and nonfarm dwellings, and the royalties received by persons from patents, copyrights, and rights to natural resources.

The national estimate of the rental income of persons accounted for 4.2 percent of total personal income in 2018 (table G). Monetary rental income accounted for 1.3 percent of total personal income, and imputed rental income accounted for 3.0 percent.

Monetary rental income

The state estimates of monetary rental income are prepared in three parts: (1) monetary rental income from farms owned by nonoperator landlords, (2) royalties, and (3) other monetary rental income.

Monetary rental income from farms owned by nonoperator landlords.—The national estimate of net monetary rental income from farms owned by nonoperator landlords is allocated to the states in proportion to estimates of the gross imputed rental value of farm dwellings from the USDA Economic Research Service.

Royalties.—The national estimate of royalties is allocated to states in proportion to unpublished Schedule E sample data of net royalty income reported on Schedule E of Form 1040.

Other monetary rental income.—The national estimate of all other monetary rental income of persons is allocated to states in proportion to unpublished IRS Individual Master File (IMF) tabulations of the gross rent and royalties reported on Schedule E of Form 1040.[14]

[13] The net rental income received by persons who are primarily engaged in the real estate business is included in nonfarm proprietors' income.

[14] Beginning with the estimates for 2009, the tabulations of gross rent and royalties are based on tabulations of a 52-week IMF data file. For prior years, the tabulations were based on returns processed in the first 39 weeks of the year.

Imputed rental income

Imputed rent is an imputation for the net rental income of owner-occupied housing. It assumes that owner-occupants are in the rental business and that they are renting the houses in which they live to themselves: As tenants, they pay rent to the landlords (that is, to themselves); as landlords, they collect rent from their tenants (that is, from themselves), they incur expenses, and they may have a profit or a loss from the rental business. The state estimates of imputed net rental income are prepared in three parts: (1) imputed net rent received by the owner-occupants of mobile homes, (2) imputed net rent received by the owner-occupants permanent-site nonfarm dwellings and (3) imputed net rent received by the owner-occupants of permanent-site farm dwellings.

Mobile homes.—National estimates of imputed net rent from mobile homes for census years through 1990 were allocated to the states in proportion to the number of mobile homes from the Census of Housing. In 2000 it was allocated in proportion to the value of mobile homes from the Census of Housing. Intercensal estimates of imputed net rent were straight line interpolations of the census benchmarks. The 2000 estimates are extrapolated forward using the aggregate value of mobile homes from the American Community Survey.

Permanent-site nonfarm dwellings.—National estimates of imputed net rent from permanent-site nonfarm dwellings for census years through 1990 were allocated to states using estimates of the rental value of owner-occupied dwellings from the Census of Housing. In 2000 it was allocated in proportion to the aggregate value of all permanent-site owner-occupied dwellings from the Census of Housing. Intercensal estimates of imputed net rent were straight-line interpolations of the census benchmarks. The 2000 imputed net rent estimates are extrapolated forward using the aggregate value of all permanent-site owner-occupied dwellings from the American Community Survey.

Permanent-site farm dwellings.—National estimates of imputed rent from permanent-site farm dwellings are allocated to the states in proportion to estimates of the gross imputed rental value of farm dwellings from the USDA Economic Research Service.

Table G. -- Components of Property Income, United States, 2018

	Millions of dollars	Percent of personal income
Personal income	17,813,035	100.0
Dividends, interest, and rent	3,682,134	20.7
Personal dividend income	1,227,389	6.9
Personal interest income	1,697,963	9.5
Imputed interest receipts 1/	1,021,953	5.7
Monetary interest receipts	676,010	3.8
Rental income of persons 2/	756,782	4.2
Imputed rent	531,824	3.0
Monetary rent	224,958	1.3

Footnotes

1. Consists of imputed interest received from (1) finance and insurance companies and (2) employee pension plans.
2. Rental income of persons includes the capital consumption adjustment.

NOTE. -- Detail may not add to totals due to rounding.

VI. PERSONAL CURRENT TRANSFER RECEIPTS

Personal current transfer receipts are benefits received by persons for which no current services are performed. They are payments by governments and businesses to individuals and nonprofit institutions serving individuals (which are classified as persons in the state personal income accounts).[1] Transfer receipts accounted for 16.7 percent of total personal income at the national level in 2018 (table H).

Estimates are prepared for approximately 50 subcomponents of transfer receipts. The subcomponents are classified by source—government or business—and may also be classified by recipient—individuals or nonprofit institutions serving individuals. In this chapter, transfer receipts are presented in three major groups—receipts of individuals from governments, receipts of nonprofit institutions serving individuals, and receipts of individuals from businesses.

At the state level, approximately 95 percent of the estimates of transfer receipts are derived from direct measures of the receipts. The proportion is lower for current estimates and rises as more complete source data become available. Source data are typically from the federal agency providing the benefits or administering the fund. For some programs, data may be drawn from Census Bureau and other federal websites, including the Department of Treasury's *USASpending.gov* website, and the Census Bureau's *State Government Finances*, *State and Local Government Finances*. The remaining 5 percent are allocations of national estimates in proportion either to data that are related to the components or to the most relevant population series, e.g. household population, which is total population minus those living in group quarters.

Most of the state estimates of transfer receipts are based on data for a calendar year, but some of the estimates are based on data for fiscal years. When data for fiscal years are used, the data for the two fiscal years that overlap the calendar year are averaged with the appropriate weights to yield the data for the calendar year.

This chapter is organized according to the order of the presentation of the components and subcomponents in table H. Each estimated item is briefly defined and the preparation of the state estimates is described.

Current Transfer Receipts of Individuals from Governments

Current transfer receipts of individuals from governments accounted for 97.4 percent of total transfer receipts at the national level in 2018. The national estimates of current transfer receipts of individuals from governments are generally based on source data on government payments to the individual beneficiaries or to the vendors that provide specified goods or services to the beneficiaries. Expenditures for administrative costs are excluded. For federal programs, the data are typically drawn from the Treasury Department's *Monthly Treasury Statement* or from administrative reports of the federal agencies that administer the programs. For programs partially funded by the federal government but administered by state or local governments, the source data are typically

[1] Transfer receipts from the rest of the world are netted against similar payments to the rest of the world, and the net payments, called "personal transfer payments to rest of the world (net)," are recorded in the National Income and Products Accounts as part of personal outlays.

drawn from reports by the responsible federal agencies, based on data reported by the state or local government agencies. For programs administered and funded exclusively by state and local governments, the source data are typically drawn from Census Bureau publications, including *State Government Finances*.[2]

Retirement and disability insurance benefits

Retirement and disability insurance benefits accounted for 33.9 percent of total transfer receipts at the national level in 2018.

Social Security benefits.— These are mainly monthly benefits received by retired workers and their dependents, disabled workers and their dependents, and survivors; and lump-sum benefits received by certain survivors. The state estimates are based on Social Security Administration (SSA) calendar year tabulations of for each category of monthly benefits.

Railroad retirement and disability benefits.— These benefits are received by retired and disabled railroad employees and their survivors under the federal program of retirement insurance for railroad employees, who are not covered by Social Security. The state estimates of the benefits, beginning with 2011, are based on fiscal year data from the Department of Treasury's USASpending.gov website. For earlier years, estimates are based on the Census Bureau's discontinued *Consolidated Federal Funds Report (CFFR)*.

Workers' compensation.—This compensation is received by individuals with employment-related injuries and illnesses and by the survivors of individuals who died of employment-related causes. The compensation is from both federal and state government administered funds.[3]

The state estimates of compensation received from the federal fund, which covers only federal civilian employees, are based on fiscal year data from the Census Bureau's discontinued *Consolidated Federal Funds Report (CFFR)*.

Compensation received by both public and private employees from state-administered workers' compensation funds consists of compensation received under exclusively state-administered workers' compensation insurance programs, compensation received under state-administered insurance programs that compete with private insurance programs, and compensation received under the state-administered programs for second-injury funds.

The state estimates of workers' compensation are derived from fiscal year data from state workers' compensation funds by the state of work from the Census Bureau's annual State Government Finances. These data are adjusted to a place-of-residence basis by BEA using state-level employment outflow ratios from BEA's residence adjustment statistics (Chapter VIII).

Other government retirement and disability insurance benefits.—These benefits consist of temporary disability benefits, black lung benefits, and benefits from the Pension Benefit Guaranty Corporation.

---

[2] For detailed information on the methodology used to prepare the national estimates, see *MP-5: Government Transactions* (September 2005). This publication is available on BEA's Web site: Go to https://www.bea.gov/sites/default/files/methodologies/mp5.pdf.

[3] Privately administered workers' compensation funds are treated differently. Employer contributions to such funds are counted as a supplement to wages and salaries. Compensation received from the funds does not appear anywhere in personal income.

Temporary disability benefits.—These are the benefits received by workers who are unemployed because of non-occupational illnesses or injuries. These benefits are from state-administered programs, which exist only in California, New Jersey, and Rhode Island. The estimate for California is based on calendar year data provided by the California Development Department. The estimates for New Jersey and Rhode Island are based on fiscal year data from the Census Bureau's annual *State Government Finances*.

Black lung benefits.— These are the benefits received by coal miners who are totally disabled by black lung disease (pneumoconiosis) and by the eligible survivors of miners whose deaths were caused by the disease. Individuals whose eligibility was established before July 1973 receive benefits under Part B of the Black Lung Benefits Act; those whose eligibility was established since June 1973 receive benefits under Part C of the Black Lung Benefits Act. The state estimates of Part B benefits are based on payment data from SSA's *Annual Statistical Supplement* through 2016; state estimates of Part C benefits are based on the Census Bureau's discontinued *Consolidated Federal Funds Report* (CFFR) through 2010. Part C benefits, beginning with 2011, and Part B benefits, beginning with 2017, are based on fiscal year data from DOL's Division of Coal Mine Workers' Compensation.

Pension Benefit Guaranty benefits.—These benefits are paid by the revolving fund of the Pension Benefit Guaranty Corporation (PBGC) to individuals whose PBGC-insured pensions cannot be paid by the private pension plans that are liable for the benefits.[4] The state estimates of the benefits are based on calendar year data from the Pension Benefit Guaranty Corporation's *Pension Insurance Data Book.*

Medical benefits

Medical benefits accounted for 45.6 percent of total transfer receipts at the national level in 2018.

Medicare benefits.—These benefits are federal government payments made directly or through intermediaries to vendors for care provided to individuals under the Medicare program. The state estimates of the benefits received under the Medicare provisions for Hospital Insurance and Supplementary Medical Insurance (HSMI), are based on estimates of payments by state of residence as reported by the Centers for Medicare and Medicaid Services (CMS). Due to the lag in availability of those data, estimates for 2015 forward are extrapolated from the estimates for 2014 by changes in Medicare enrollment (as of July of each year) from CMS. Estimates beginning with 2006 also include Medicare Prescription Drug Plan (Part D). The national estimate for Part D was allocated to states by the counts from CMS of the number of enrollees in Part D.

Medicaid benefits.—These medical benefits are received by low-income individuals. The benefits consist mainly of the payments made directly or through intermediaries to vendors for care provided to individuals under the federally assisted, state-administered Medicaid program, and the Title XIX Medicaid expansion portion of

[4] The NIPA views the PBGC as consisting of two parts: an employee pension fund and a social insurance fund. The former, also known as the trust fund, pays benefits out of the assets and liabilities of terminated pension plans. These benefits are treated like all other pension benefits and hence are not counted as part of transfer receipts or any other component of personal income. The latter part, also known as the revolving fund, deals with the unfunded portion of terminated plans and is financed primarily with premiums paid by employers. It is classified as a social insurance fund and hence the benefits it pays to retirees are treated as a transfer receipt in personal income as discussed in the text.

the Children's Health Insurance Program (CHIP).[5] The state estimates of the payments are based on data from CMS.

Other medical care benefits.—These benefits are received by low-income individuals. The benefits consist mainly of the payments made directly or through intermediaries to vendors for care provided to individuals under the Title XXI of the federally assisted, state-administered Children's Health Insurance Program (CHIP), and under the general assistance medical programs of state and local governments. The state estimates of the payments made under the CHIP are based on data from CMS. The state estimates of payments made under the general assistance medical programs are based on data that are obtained from state departments of social services by CMS.

Military medical insurance benefits.—These benefits are vendor payments made under the TRICARE Management Program, formerly called the Civilian Health and Medical Plan of the Uniformed Services (CHAMPUS), for the medical care of dependents of active duty military personnel and of retired military personnel and their dependents at nonmilitary medical facilities. The state estimates are based on data from the Department of Defense.

Income maintenance benefits

Income maintenance benefits accounted for 8.7 percent of total transfer receipts at the national level in 2018.

Supplemental Security Income (SSI) benefits.—These benefits are received by low-income persons who are aged, blind, or disabled from both the federal government and state governments. The state estimates are based on Social Security Administration tabulations of annual disbursements for two categories of SSI benefits: Basic federal payments and supplemental state payments. Both estimates are based on data that are published in the "Annual Statistical Supplement" to the *Social Security Bulletin*.

Earned Income Tax Credit (EITC).—This is a refundable federal income tax credit for low-income workers, mainly those who have minor children. Eligibility for the tax credit is determined by the size of adjusted gross income, or earned income, and by certain household characteristics. The state estimates are based on data from the Internal Revenue Service's Historical Table 2 published in the *SOI Bulletin*.

Supplemental Nutritional Assistance.—These benefits, under the Supplemental Nutritional Assistance Program (SNAP) (formerly called food stamps), are issued to qualifying low-income households in order to supplement their ability to purchase food. Eligibility is determined by each state's interpretation of federal regulations; the Food and Nutrition Service of the U.S. Department of Agriculture pays the cost of the benefits. The state estimates are based on tabulations of the value of the distributed benefits from the Department of Agriculture.

Other income maintenance benefits.—These benefits consist of family assistance, general assistance benefits, foster care adoption assistance, child tax credit, energy assistance, and the value of vouchers issued under the Special Supplemental Nutrition for Women, Infants, and Children (WIC) program.

Family assistance.—These benefits consist mainly of cash and work-based assistance received by low-income families under the Temporary Assistance to Needy

[5] On the treatment of Medicaid as a personal current transfer receipt see the *Survey of Current Business*, October 1985, pp.22-23 (Vol.65, No.10).

Families (TANF) program. In 1997, this program superseded the state-administered Aid to Families with Dependent Children (AFDC) and emergency assistance programs that received federal matching funds. State estimates of TANF benefits beginning with 1997 are based on fiscal year direct data from the web site of the Administration for Children and Families (ACF) of the Department of Health and Human Services.

State estimates through 1996 are based on unpublished quarterly data from ACF. State estimates for AFDC and emergency assistance for 1997 are based on unpublished ACF data for the federal grants to the states for fiscal year 1997. These data were adjusted to reflect (1) the number of months during calendar year 1997 that the AFDC and emergency assistance programs were in operation in each state, and (2) the fund matching percentage that was required of each state.

General assistance benefits.—These are the benefits received from state and local governments by low-income individuals and families who do not qualify for help under federally supported programs[6] and disaster assistance received from the federal-state Other Needs Assistance Program. The state estimates are based on data from the Census Bureau's annual *State and Local Government Finances* except for the disaster assistance portion which is based on direct data from the Federal Emergency Management Agency (FEMA).

Foster care and adoption assistance.—This assistance is received from state and local governments by families that care for foster children or that adopt children under federally aided programs. In some cases, payments made to nonprofit organizations that supervise the programs are included. The state estimates are based on data from ACF on the federal grants that are made to the states. The data are adjusted to reflect the fund matching percentage that is required of each state.

Additional Child Tax Credit.—This is a federal individual income tax credit for certain people with dependent children under the age of 17. People who qualify for the non-refundable child tax credit, and for whom that credit exceeds their total tax liability, may qualify to receive a portion of the excess as a refund. The amount refunded is the additional child tax credit.

The state estimates are based on data from the Internal Revenue Service's Historical Table 2 published in the *SOI Bulletin*.

Energy assistance.—This assistance consists of the cash benefits received by needy households and the vendor payments to suppliers to help defray the cost of home heating, cooling, and weatherization under the federally funded and state-administered energy assistance programs. The state estimates are based on data from the Administration for Children and Families.

Special Supplemental Nutrition for Women, Infants, and Children (WIC) benefits. This program is fully funded by the Food and Nutrition Service of the U.S. Department of Agriculture and administered mainly through state agencies. The transfers under the program take the form of vouchers issued to low-income women who are pregnant or who have young children; the vouchers are used to purchase supplemental nutritious foods. The state estimates are based on direct data provided by the Food and Nutrition Service.

[6] The federal government neither funds nor regulates these programs.

Unemployment insurance compensation

Unemployment insurance compensation accounted for 0.9 percent of transfer receipts at the national level in 2018.

State unemployment insurance compensation.—These benefits consist mainly of the compensation received by individuals under state-administered unemployment insurance (UI) programs, but they also include the special benefits authorized by federal legislation for periods of high unemployment. The provisions that govern the eligibility, timing, and amount of the benefits vary among the states, but the provisions that govern coverage and financing are uniform nationally.

Under the federal-state UI system, an unemployed individual who lives in one state may be eligible for UI benefits from another state.[7] Therefore, the estimate for each state is calculated as the total compensation paid by a state minus the payments made by that state to the residents of other states plus the compensation received from other states by the residents of that state. The state estimates are based on the data from the Labor Department's Employment and Training Administration (ETA).

Unemployment Compensation of Federal Employees (UCFE).—These benefits are received by former federal civilian employees under a federal program administered by the state employment security agencies. The state estimates are based on data from the ETA.

Unemployment compensation for railroad employees.— These benefits are received by workers who are unemployed because of sickness or because work is unavailable in the railroad industry and in related industries, such as carrier affiliates. This UI program is administered by the Railroad Retirement Board under a federal program that is applicable throughout the nation. The state estimates of the benefits, beginning with 2013, are based on Railroad Retirement Board statistical tables. For 2011 and 2012, state estimates are based on data from the Department of Treasury's USASpending.gov website. For earlier years, estimates are based on the Census Bureau's discontinued Federal *Assistance Award Data System (FAADS)*.

Unemployment Compensation for Veterans (UCX).—These benefits are received by unemployed veterans who have recently separated from military service and who are not eligible for military retirement benefits; the compensation is paid under a federal program that is administered by the state employment security agencies. The state estimates are based on data from the Employment and Training Administration.

Other unemployment compensation.—This compensation consists of Trade Adjustment Assistance and the benefits received from three defunct programs for the jobless: the Redwood Employee Protection program, the Public Service Employment program, and the Transitional Benefits program.

Trade adjustment assistance.—This assistance is received by workers who are unemployed because of the adverse economic effects of international trade arrangements. The state estimates are based on data from the Department of Labor, which administers the program.

Redwood Park benefits.—These benefits were provided to workers made jobless by the expansion of the Redwood National Park in California during the period from May 31, 1977 to September 30, 1980. The benefits—which included weekly lay-off benefits,

[7] The State of the resident handles the claim and then sends it to the State that is responsible for paying the benefits.

severance payments, and vacation replacement payments, as well as the continuation of health and welfare coverage, accrual of pension rights and credits, and retraining—generally extended to September 30, 1984 (although for any given beneficiary the benefits may have terminated earlier).

Public service employment benefits.—These benefits were provided to unemployed public service workers who were ineligible for extended unemployment compensation under any other federal or state UI program. The program was authorized through 1979, but then extended into 1980. State employment security agencies made the payments and were reimbursed by the federal government. State estimates are based on data from the Employment and Training Administration.

Transitional benefits.—These benefits were provided to jobless workers, newly eligible under the state UI program (agricultural workers, private household workers, and state and local government employees), during the first six months after the extended coverage became effective (January 1, 1978). State employment security agencies made the payments to the jobless workers and were reimbursed by the federal government. State estimates are based on data from the Employment and Training Administration.

Veterans' benefits

Veterans' benefits accounted for 3.7 percent of total transfer receipts at the national level in 2018.

Veterans' pension and disability benefits.—These benefits are received primarily by veterans with service-connected disabilities and by the survivors of military personnel who died of service-connected causes. In addition, these benefits are received by war veterans who are 65 years old or older, who have nonservice-connected disabilities, who are permanently and totally disabled, and who meet specified income requirements. The state estimates are based on the data from the Department of Veterans Affairs (DVA).

Veterans' readjustment benefits.—These benefits are the allowances for tuition and other educational costs that are received by veterans and by the spouses and the children of disabled and deceased veterans and for automobiles and conveyances, and specially adapted housing for disabled veterans. The state estimates are based on data from the DVA.

Veterans' life insurance benefits.—These benefits are the claims received by beneficiaries of veterans' life insurance policies and the dividends received by policyholders from the five veterans' life insurance programs administered by the DVA. The state estimates are based on data for these benefits from the DVA.

Other assistance to veterans.—Other assistance to veterans consists of assistance received by indigent veterans from state and local governments and bonuses received by veterans from state and local governments. The state estimates of the state and local government assistance and bonuses are based on adjusted fiscal year data from the Census Bureau's annual *State Government Finances*.

Education and training assistance

Education and training assistance accounted for 2.3 percent of total transfer receipts at the national level in 2018.

Federal fellowship benefits.—These benefits consist of National Science Foundation (NSF) grants to outstanding science students, subsistence assistance provided to cadets at the six state maritime academies, and all other federal fellowship benefits. The state estimates of the NSF grants are based on annual NSF tabulations of the number of students receiving fellowships at each institution. The state estimates of the subsistence assistance to the cadets are based on data from the Maritime Administration of the Department of Transportation. The amount of assistance is assigned to the state in which each academy is located. The national estimates of the assistance provided to the recipients of all other federal fellowships are allocated to states in proportion to household population.

Federal educational exchange benefits.—These benefits are received by students who participate in the Fulbright scholarship program and in other international educational exchange programs. The national estimates are allocated to states in proportion to household population.

Interest on guaranteed student loans.—These interest payments are made by the Department of Education to commercial lending institutions on behalf of the individuals who receive low-interest, deferred-payment loans from these institutions in order to pay the expenses of higher education. The national estimate is allocated to states in proportion to the number of individuals enrolled in institutions of higher education located in those states from the Department of Education.

Higher education student assistance.—This federal assistance consists of Pell Grants (formerly called Basic Educational Opportunity Grants) to students with low incomes for an undergraduate education and, beginning in 2006, Academic Competitiveness Grants and National SMART Grants to students eligible for Pell Grants. The state estimates are based on award data from the Department of Education (tabulated by the location of the institution).

Job Corps benefits.—These benefits are primarily the allowances for living expenses received by economically disadvantaged individuals who are between the ages of 16 and 21 and who are enrolled in designated vocational and educational training programs. These benefits also include the adjustment allowances received by trainees upon the successful completion of their training. National estimates are distributed to states in proportion to a tabulation from the Employment and Training Administration of the amount of allowances and allotments disbursed to enrollees in 1984, the last year for which such data are available.

State educational assistance.—These benefits consist of educational assistance provided by states to individuals for tuition and other educational expenses not including loans. The national and state estimates are based on data for state government expenditures for "other education assistance and subsidies" from the Census Bureau's annual *State Government Finances*.

Other transfer receipts of individuals from governments

Other transfer receipts of individuals from governments accounted for 2.2 percent of total transfer receipts at the national level in 2018.

Compensation of survivors of public safety officers.— These are payments to the survivors of state and local government employees, such as police officers and fire fighters, who were killed in the line of duty; the payments are made under a federal program. The state estimates are based on fiscal year data from the Census Bureau's discontinued *Consolidated Federal Funds Report (CFFR).*

Compensation of victims of crime.—This compensation is received by crime victims and vendors on behalf of crime victims. The national estimate of total compensation is allocated to states in proportion to data provided by the Office of Victims of Crime of the Department of Justice.

Alaska Permanent Fund benefits.—These benefits are the disbursements of property income to the residents of Alaska from the Alaska Permanent Fund. The fund, which is derived from oil revenue, pays a portion of its net property income to every resident. The state estimate is the amount that is paid and that is reported by the Alaska Department of Revenue.

Disaster relief benefits.—These benefits are transient accommodations reimbursements to the victims of disasters, such as hurricanes and earthquakes, from the Federal Emergency Management Agency (FEMA). The national estimates are allocated to states in proportion to household population.[8]

Radiation exposure compensation.—This compensation for individuals exposed to radiation released during above-ground nuclear weapons tests and uranium mining is made under the Radiation Exposure Compensation Act. The state estimates are based on direct data from the Department of Justice.

Japanese interns redress benefits.—These are benefits made from 1990 to 1997 to American citizens of Japanese descent who were interned during World War II. The state estimates are based on the tabulations of these payments by ZIP Code area from the Department of Justice. These tabulations are summed to states by BEA.

Anti-terrorism judgment receipts.—These are payments from the U.S. Treasury to satisfy certain court judgments against countries found to have sponsored terrorism. The national estimates are allocated to states in proportion to household population.

Compensation of victims of September 11.—These payments are from a voluntary, federally funded program that provides compensation to eligible individuals or relatives of individuals who were killed or physically injured as a result of the terrorist-related aircraft crashes of September 11, 2001. National estimates are allocated to states in proportion to an Associated Press list of confirmed dead.

Bureau of Indian Affairs benefits.—These benefits are the payments to American Indians for educational and social services that are not available to them from state or local agencies. The state estimates are based on data from the Bureau of Indian Affairs.

TV Converter Box coupons.—These $40 coupons are used toward the purchase of up to two digital-to-analog converter boxes per household. State estimates are based on a National Telecommunications and Information Administration report of number of coupons requested.

American Recovery and Reinvestment Act of 2009 (ARRA) Federal Additional Compensation for unemployment.—These receipts are an additional $25 weekly for beneficiaries of state and federal unemployment compensation. National

[8] The unusually high estimate for 2005 reflects billions of dollars distributed by FEMA directly to the victims of Hurricanes Katrina, Rita, and Wilma. The assistance is largely attributed to Katrina victims and a portion of that estimate was distributed to all states based on the *Current Location Report* from FEMA.

estimates are allocated to states based on payment data reported by the Labor Department's Employment and Training Administration.

ARRA COBRA premium reduction.—This benefit for certain unemployed individuals is a 65 percent subsidy of the premium for health care insurance provided under the Consolidated Omnibus Budget Reconciliation Act (COBRA). National estimates are allocated to states in proportion to the number of unemployed persons covered by unemployment insurance programs as reported by Employment and Training Administration.

ARRA Economic Recovery lump sum.—This benefit consists of a $250 lump sum provided to recipients of Social Security, Supplemental Security Income, Veterans' Pensions, and Railroad Retirement benefits. National estimates for each type of beneficiary are allocated to states in proportion to the number of beneficiaries as reported by the administering agencies.

ARRA Making Work Pay tax credit.—This is a refundable federal income tax credit of up to $400 for working individuals and $800 for married taxpayers filing joint returns. The state estimates are based on data from the Internal Revenue Service's Historical Table 2 published in the *SOI Bulletin*.

ARRA Government Retiree tax credit.—This is a refundable one-time federal income tax credit of $250 available in 2009 for certain government retirees who receive a pension from work and are not covered by Social Security. This one-time credit is taken on the 2009 income tax return filed in 2010 and is a reduction to any Making Work Pay tax credit. The state estimates are based on data from the Internal Revenue Service's Historical Table 2 published in the *SOI Bulletin*.

American Opportunity tax credit.—This refundable tax credit, initially authorized under American Recovery and Reinvestment Act of 2009 (ARRA), is a temporary modification of the Hope Credit beginning with tax year 2009. The state estimates are based on data from the Internal Revenue Service's Historical Table 2 published in the *SOI Bulletin*.

Home Affordable Mortgage principle reduction.—This federal program, a response to the subprime mortgage crisis, helps eligible home owners with loan modifications on their home mortgage debt. In lieu of direct data on benefits, the national estimates are allocated to states based on Federal Reserve data on the number of mortgage debtees, per debtee mortgage debt balance, and percent of mortgage debt in delinquency.

Temporary High-Risk Health Insurance premium reduction.—This benefit provides temporary coverage -- until broader coverage is provided under the Affordable Care Act -- to certain uninsured people with pre-existing medical conditions and without health insurance. It is provided as funding to cover the costs that exceed premiums collected for the high-risk pool. In lieu of direct data on expenditures, the national estimates are allocated to states in proportion to household population.

World Trade Center Health benefits.—This benefit provides, under The James Zadroga 9/11 Health and Compensation act of 2010, monitoring and treatment to eligible responders and survivors of the 9/11 attacks. In lieu of direct data on expenditures, the national estimates are allocated to states in proportion to the enrollees by state data from the World Trade Center Health Registry.

Economic Stimulus Act of 2008 rebates.—These tax rebates for certain taxpayers and other individuals are provided for by the Economic Stimulus Act of 2008 income. The state estimates are based on data from the Internal Revenue Service's IRS Data Book 2008.

Alternative Minimum Tax (AMT) credit.—This federal income tax credit, for certain taxpayers with old unused AMT credit, is counted as a transfer receipt in tax years 2007-2012 when it was refundable. The state estimates are based on data, for the amount of AMT paid, from the Internal Revenue Service's Historical Table 2 published in the *SOI Bulletin*.

Adoption tax credit.—This tax credit is for qualified expenses paid to adopt an eligible child. It was made refundable by a temporary modification for tax years 2010 and 2011. The national estimates are allocated to states in proportion to household population.

Health Coverage Tax Credit.—This tax credit offsets a portion of qualified health insurance premiums for certain displaced workers. The national estimates are allocated to states in proportion to household population.

Health Insurance Premium Assistance Tax Credit.—This tax credit limits the percentage of income that households pay on health insurance purchased through Affordable Care Act Exchanges, based on the cost of purchased health insurance, income, and family size. National Estimates are allocated to states based on Centers for Medicare and Medicaid Services (CMS) data on the number of recipients and average amount of the advanced tax credit received as a premium reduction.

Cost-Sharing Reduction Subsidy.—This subsidy, available to some recipients of Health Insurance Premium Assistance Tax Credits, reduces deductibles, copayments and other out-of-pocket charges incurred while using the health plan. National estimates are allocated to states based on CMS data on the number of enrollees in cost-sharing reduction.

Current Transfer Receipts of Nonprofit Institutions

Current transfer receipts of nonprofit institutions serving individuals from federal, state, and local governments and from business accounted for 1.4 percent of total transfer receipts at the national level in 2018.

Receipts from the federal government

These are mainly receipts of private educational institutions on behalf of the recipients of federal fellowships, Pell grants, and other education and training programs.[9] They also include receipts of private institutions under National Institutes of Health research initiatives and other programs of the Department of Health and Human Services and under programs of the National Science Foundation, the Corporation for Public Broadcasting, and the Legal Services Corporation.

The national estimate is based on data from the *Monthly Treasury Statement*. The national estimate is allocated to the states in proportion to household population.

[9] These receipts exclude payments to private educational institutions for research and development under federal contracts, which are treated as government purchases.

Receipts from state and local governments

These receipts consist largely of *Workforce Investment Act benefits* received by private nonprofit institutions that provide job training under a work-study program funded by the federal government (formerly authorized by the Job Training Partnership Act). The national estimate is based on data from the *Monthly Treasury Statement*. Because state-level data are unavailable, the national estimate is allocated to the states in proportion to household population.

Receipts from businesses

These transfer receipts are donations by corporate business to nonprofit institutions serving households. The national estimates are allocated to states in proportion to household population.

Current Transfer Receipts of Individuals from Businesses

Current transfer receipts of individuals from businesses accounted for 1.2 percent of total transfer receipts at the national level in 2018.

BP oil spill settlement receipts

These are receipts of individuals from BP (either directly or from a $20 billion escrow account) for losses from the oil spill in the Gulf of Mexico that began in April 2010. State estimates are based on claims data from the Gulf Coast Claims Facility.

Other transfer receipts of individuals from businesses

These mostly consist of receipts from insurance companies (commercial automobile liability, medical malpractice, and net insurance settlements), corporate cash prizes, business losses due to fraud and unrecovered thefts, and receipts from personal injury trust funds. Net insurance settlements are actual insured losses (or claims payable) less a normal level of losses[10]. The national estimates are allocated to states in proportion to household population.

[10] See Brent R. Moulton and Eugene P. Seskin, "Preview of the 2003 Comprehensive Revision of the National Income and Product Accounts: Changes in Definitions and Classifications," Survey of Current Business 83 (June 2003):17-34

Table H.--Components of Personal Current Transfer Receipts, United States, 2018

	Millions of dollars	Percent of personal income
Personal income	17,813,035	100.0
Personal current transfer receipts (thousands of dollars)	2,971,451	16.7
Current transfer receipts of individuals from governments	2,894,854	16.3
Retirement and disability insurance benefits	1,007,322	5.7
Social Security benefits	972,412	5.5
Excluding Social Security benefits	34,910	0.2
Railroad retirement and disability benefits	12,731	0.1
Workers' compensation	13,199	0.1
Other government retirement and disability insurance benefits 1/	8,980	0.1
Medical benefits	1,355,734	7.6
Medicare benefits	730,858	4.1
Public assistance medical care benefits 2/	610,068	3.4
Medicaid 3/	597,664	3.4
Other medical care benefits 4/	12,404	0.1
Military medical insurance benefits 5/	14,808	0.1
Income maintenance benefits	259,860	1.5
Supplemental Security Income (SSI) benefits	56,857	0.3
Earned Income Tax Credit (EITC)	68,439	0.4
Supplemental Nutrition Assistance Program (SNAP)	57,139	0.3
Other income maintenance benefits	77,425	0.4
Family assistance 6/	20,430	0.1
Excluding family assistance 7/	56,995	0.3
Unemployment insurance compensation	27,569	0.2
State unemployment insurance compensation	26,696	0.1
Excluding state unemployment insurance compensation	873	<0.1
Unemployment compensation for Federal civilian employees (UCFE)	162	<0.1
Unemployment compensation for railroad employees	89	<0.1
Unemployment compensation for veterans (UCX)	160	<0.1
Other unemployment compensation 8/	462	<0.1
Veterans' benefits	109,886	0.6
Veterans' pension and disability benefits	97,387	0.5
Veterans' readjustment benefits 9/	11,424	0.1
Veterans' life insurance benefits	989	<0.1
Other assistance to veterans 10/	86	<0.1
Education and training assistance 11/	69,053	0.4
Other transfer receipts of individuals from governments 12/	65,430	0.4
Current transfer receipts of nonprofit institutions	41,504	0.2
Receipts from the Federal government	13,989	0.1
Receipts from state and local governments	9,425	0.1
Receipts from businesses	18,090	0.1
Current transfer receipts of individuals from businesses 13/	35,093	0.2
Addenda:		

Refundable tax credits 14/	148,542	0.8
Earned Income Tax Credit (EITC) 15/	68,439	0.4
Additional Child Tax Credit 16/	19,965	0.1
Other refundable tax credits 17/	60,138	0.3

Footnotes

1/ Consists largely of temporary disability payments, pension benefit guaranty payments, black lung payments, and Panama Canal construction annuity payments.
2/ Consists of Medicaid, beginning in 1966, and other medical vendor payments.
3/ Consists of Medicaid and the Children's Health Insurance Program (CHIP) expansion under title XIX of the Social Security Act.
4/ Consists of the Children's Health Insurance Program (CHIP) under title XXI of the Social Security Act and general medical assistance.
5/ Consists of payments made under the TRICARE Program (formerly called CHAMPUS) for the medical care of dependents of active duty military personnel and of retired military personnel and their dependents at nonmilitary medical facilities.
6/ Through 1995, consists of emergency assistance and Aid to Families with Dependent Children (ADFC). Beginning with 1998, consists of benefits-- generally known as Temporary Assistance for Needy Families (TANF)-- provided under the Personal Responsibility and Work Opportunity Reconciliation Act of 1996. For 1996-97, consists of payments under all three of these programs.

7/ Consists largely of general assistance; expenditures for food under the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); Other Needs Assistance; refugee assistance; foster home care and adoption assistance; Additional Child Tax Credits; and energy assistance.
8/ Consists of Trade Adjustment Assistance, Redwood Park benefit payments, public service employment benefit payments, and transitional benefit payments.
9/ Consists largely of veterans' readjustment benefit payments, educational assistance to spouses and children of disabled or deceased veterans, payments to paraplegics, and payments for autos and conveyances for disabled veterans.
10/ Consists largely of state and local government payments to veterans.
11/ Consists largely of federal fellowship payments (National Science Foundation fellowships and traineeships, subsistence payments to state maritime academy cadets, and other federal fellowships), interest subsidy on higher education loans, Pell Grants, Job Corps payments, education exchange payments, and state education assistance payments.
12/ Consists largely of other refundable tax credits (see footnote 18 for list of other refundable tax credits); Bureau of Indian Affairs payments; Alaska Permanent Fund dividend payments; compensation of survivors of public safety officers; compensation of victims of crime; disaster relief payments; compensation for Japanese internment; the American Recovery and Reinvestment Act of 2009 funded Federal Additional Compensation for unemployment, COBRA premium reduction; Economic Recovery
13/ Consists of personal injury payments to individuals other than employees and other business transfer payments.
14/ Includes the amounts by which federal refundable tax credits reduce personal current tax liabilities and liabilities to pay contributions for government social insurance as well as the outlays that are distributed when the amount of federal refundable tax credits exceeds an individual's federal tax liabilities.

15/ Same as SAINC35 line 2320.
16/ Included in SAINC35 line 2342.

17/ Included in SAINC35 line 2700. Other refundable tax credits consist of American Opportunity Tax Credit (2010-2018), Economic Stimulus Act Rebate (2008-2010), Making Work Pay Tax Credit (2009-2013), Government Retiree Tax Credit (2010), Adoption Tax Credit (2011-2015), Health Coverage Tax Credit (2003-2018), Health Insurance Premium Assistance Tax Credit (2014-2018), and Alternative Minimum Tax Credit (2008-2018). Values shown in parenthesis following the credit name indicate years in which the refundable tax credit contributes to series total.
Note-- All dollar estimates are in thousands of current dollars (not adjusted for inflation). Statistics presented in thousands of dollars do not indicate more precision than statistics presented in millions of dollars.

VII. CONTRIBUTIONS FOR GOVERNMENT SOCIAL INSURANCE

Contributions for government social insurance consist of *employer* contributions as well as *employee and self-employed* contributions. These contributions are deducted from earnings by place of work in the calculation of personal income.

Contributions for government social insurance accounted for 10.8 percent of earnings by place of work at the national level in 2018 (table I). Employer contributions for government social insurance were 45.9 percent of the total in 2018, while employee and self-employed contributions for government social insurance made up the other 54.1 percent.

Employer Contributions for Government Social Insurance

Employer contributions for government social insurance account for 5.0 percent of earnings by place of work in 2018 (table I). These contributions are also a component of supplements to wages and salaries. A complete description of these contributions and the methodology used to estimate them are presented in Chapter III Supplements to Wages and Salaries.

Employee and Self-employed Contributions for Government Social Insurance

Employee and self-employed contributions for government social insurance consists of payments by employees, by the self-employed, and by other individuals who participate in the following programs: Old-age, Survivors, and Disability Insurance (OASDI, or Social Security); Hospital Insurance (HI, or Medicare Part A); Supplementary Medical Insurance (Medicare Parts B and D); railroad retirement; state unemployment insurance; temporary disability insurance; and veterans' life insurance. These contributions accounted for 5.9 percent of earnings by place of work at the national level in 2018 (table I).

Employee contributions are withheld from their paychecks by their employers. The self-employed, on the other hand, pay their contributions with their quarterly payments of estimated federal individual income taxes or annually with their federal income tax returns.

Contributions for OASDI and HI

Contributions for OASDI and HI consist of payments by employees and by the self-employed.

Contributions by employees.—These contributions are made by employees in the private sector and by the employees of federal, state, and local governments who are covered by the OASDI and HI programs.

Most employees are covered by both the OASDI and HI programs. However, federal employees who are covered by the Civil Service Retirement System and employees of the railroad industry are covered by the HI program but not by the OASDI program. All state and local government employees are covered by the HI program, but many are not covered by the OASDI program.

National estimates of employee contributions are based on data from the Social Security Administration. The state estimates are prepared separately for private sector employees, civilian federal employees, state and local government employees, and military personnel.

The combined national estimate of employee contributions to OASDI and HI for the private sector is allocated to states in proportion to *employer* contributions. The combined national estimate of employee contributions to OASDI and HI for the civilian federal sector is allocated to states in proportion to civilian federal wages and salaries. Military wages and salaries excluding pay-in-kind are used to allocate the national estimate for the military.[1]

State estimates of contributions to OASDI and HI by state and local government employees are based on Social Security taxable wages and Medicare taxable wages by state from the Social Security 1-percent Continuous Work History Sample (derived from W-2 wage reports). Most state and local government employees in Massachusetts, Ohio, and Nevada, and many state and local government employees in other states do not contribute to OASDI, but all contribute to HI. Using separate taxable wage estimates for the two programs and the statutory contribution rates for the two programs, an effective contribution rate is calculated and multiplied by the BEA estimate of state and local government wages and salaries to estimate contributions by state.[2]

Beginning in 2013, the Additional HI Tax has been applied at a rate of 0.9 percent to wages, other compensation and self-employment income exceeding $250,000 for married couples and $200,000 for individuals.[3] An estimate of the Additional Medicare Tax paid by private sector employees is removed from the national estimate of private sector OASDI and HI contributions and allocated separately by state estimates of private sector earnings in excess of the OASDI maximum. The estimate of earnings in excess of the OASDI maximum is based on *Earnings and Employment Data for Workers Covered Under Social Security and Medicare, by State and County* from the Social Security Administration.

Contributions by the self-employed.—All self-employed persons whose annual self-employment income exceeds $400 are covered by, and are required to contribute to, the OASDI and HI programs. State estimates of these contributions are based on a 1-percent sample published in the Social Security Administration's *Earnings and Employment Data for Workers Covered Under Social Security and Medicare, by State and County*.[4] An estimate of the Additional Medicare Tax was removed from the

[1] Before the 1996 comprehensive revisions, these estimates were based on direct sample data provided by the Social Security Administration (SSA). However, SSA discontinued this series because it had become unreliable.

[2] Because of the lag in the availability of state level SSA data, SSA taxable wages are extrapolated by the change in BEA's estimates of state and local government wages and salaries.

[3] See http://www.irs.gov/Businesses/Small-Businesses-&-Self-Employed/Questions-and-Answers-for-the-Additional-Medicare-Tax

[4] Because of the lag in the availability of state level SSA data, the estimates are extrapolated by the change in BEA's estimates of nonfarm proprietors' income.

national estimate of self-employed OASDI and HI contributions and allocated separately by state estimates of self-employed earnings in excess of the OASDI maximum.

Contributions by employees for other government social insurance programs

Contributions for railroad employee retirement insurance. — The national estimate of employee contributions for this federally administered program is distributed to states on the basis of BEA's state estimates of railroad wages and salaries.

Contributions for state unemployment insurance and for temporary disability insurance.—Contributions for state unemployment insurance consist of payments by employees in Alabama (1969-1970 and 1975-1985), Alaska and New Jersey (1969-2018), and Pennsylvania (1984-1988 and 1992-1996, and 2003-2018). National and state estimates of these contributions are based on unpublished data from the states.

Contributions for temporary disability insurance are the payments by employees to the state-administered programs in California, New Jersey, and Rhode Island. National and state estimates of these contributions are based on data from the Census Bureau's annual *State Government Finances* and from the *California Disability Insurance Fund Report*.

Contributions for Supplementary Medical Insurance and for veterans' life insurance

Contributions for Supplementary Medical Insurance.—These contributions are the premiums that are paid by individuals who are enrolled in Part B of Medicare's voluntary Supplementary Medical Insurance program and, beginning in 2006, in Part D. The national estimate of these contributions is based on data from the *Monthly Treasury Statement*. The national estimate is allocated to states in proportion to the number of individuals who are enrolled in the programs and whose premiums are not paid by state governments. The enrollment data are provided by the Centers for Medicare and Medicaid Services (CMS).

Contributions for veterans' life insurance.—These contributions are the premiums that are paid by veterans for life insurance under the five life insurance programs administered by the Department of Veterans Affairs (DVA). The national estimate of these contributions is based on unpublished data provided by DVA. Premium data by state from DVA's *Government Life Insurance Programs for Veterans and Members of the Services*, *Annual Report* are used to allocate the national estimate.

Table I.--Components of Contributions for Government Social Insurance, United States, 2018

	Millions of dollars	Percent of earnings
Earnings by Place of Work	12,510,655	100.0
Contributions for government social insurance	1,354,390	10.8
Employee and Self-employed Contributions for Government Social Insurance	732,630	5.9
Contributions to old age, survivors, disability, and hospital insurance	623,966	5.0
Civilian employee contributions	553,849	4.4
Military employee contributions	4,559	<0.1
Self-employed contributions	65,558	0.5
Railroad employee retirement contributions	1,870	<0.1
State unemployment insurance and temporary disability contributions	8,658	0.1
Supplementary medical insurance contributions	97,998	0.8
Veterans life insurance contributions	138	<0.1
Employer contributions for government social insurance	621,760	5.0
Old age, survivors, and disability insurance, and hospital insurance	548,895	4.4
Unemployment programs (state UI, Federal unemployment tax, RR UI, Federal UI)	40,951	0.3
Railroad retirement	3,490	<0.1
Pension Benefit Guaranty	5,615	<0.1
Workers' compensation (private)	11,292	0.1
Temporary disability	49	<0.1
Federal employee programs (veterans' life insurance, Fed. civilian workers' compensation, military medical	11,632	0.1

Footnotes

NOTE.--Contributions for government social insurance are a deduction in the calculation of personal income. The dollar amount and the percentages in this table are shown as absolute values to give an indication of the size of the personal income components being estimated.

NOTE.--Detail may not add to totals due to rounding.

VIII. RESIDENCE ADJUSTMENT

Personal income is a measure of income by place of residence. When the source data used to estimate components of personal income are not recorded by place of residence, BEA must first adjust them to a place-of-residence basis. For some components of personal income, the residence adjustment is discussed along with the source data and the estimation methodology. The methods used to adjust source data reported by place of work, however, are applied to multiple components of personal income—wages and salaries, supplements to wages and salaries, and contributions for government social insurance—and so are discussed here in a separate chapter.

In addition to publishing net earnings on a place of residence basis, BEA publishes earnings and its components on a place of work basis. The difference is also published as a separate component of state personal income called the adjustment for residence. For the nation, the residence adjustment has little impact on personal income. It is the net of income flows associated with U.S. residents working in Canada or Mexico less the flows of Canadian and Mexican residents working in the United States, plus income received by U.S. residents who work for International Organizations and foreign governments. For some states, the residence adjustment is considerably larger. Correctly assigning the place of residence of the recipient of income is especially important when metropolitan areas extend across state boundaries (for example, the Washington-Baltimore-Arlington, DC-MD-VA-WV-PA Combined Statistical Area). In 2018, the adjustment for residence as a percentage of earnings by place of work was -51.4 percent for the District of Columbia, 10.1 percent for Maryland, 6.1 percent for Virginia, but less than 0.1 percentage point for the nation.

BEA's concept of residence as it relates to state and county personal income refers to the location where the income to be measured is received, rather than to "usual," "permanent," or "legal" residence. This definition of residence differs from that used by the Census Bureau, mainly in the treatment of migrant, seasonal, and short-term workers. For example, the residence of seasonal migrant workers is sometimes reported to the Census Bureau as their usual place of residence rather than the state in which they are living and working on April 1 when the decennial Census of Population is taken.

Accordingly, for state and county personal income, the residence of military personnel is the state and county in which they live while they are on military assignment, not their permanent or legal state of residence. The income of military personnel on foreign assignment is excluded from the state and local area personal income estimates because their residence is outside of the territorial limits of the United States.

The adjustment for residence is prepared by first calculating a net residence adjustment for inter-county commuting flows and then adding the compensation inflows and subtracting the compensation outflows associated with international border workers. The state estimates of residence adjustment are summations of the residence adjustments for all the counties within the state.

Net Residence Adjustment for Intercounty Commuting Flows

The starting point for the net residence adjustment for intercounty commuting flows are journey-to-work (JTW) data from the Census Bureau.[1] The JTW data are a tabulation of the wages and salaries of the employees in a given place-of-work county by their place of residence. The data are cross tabulated by industry.[2] For a set of benchmark years, county-to-county wage outflow ratios by industry were calculated using the journey-to-work data.[3] The wage outflow ratio is defined as the wages of workers who are employed in a given industry in a given county and live in a different county divided by the wages of all persons employed (resident and nonresident) in the given industry and county.

Earnings outflows are calculated by multiplying place-of-work income subject to adjustment by the wage outflow ratio. Income subject to adjustment is defined as wages and salaries plus employer contributions for employee pension and insurance funds less employee contributions for the following social insurance programs: Old-age, Survivors, and Disability Insurance, Hospital Insurance, Railroad Employee Retirement Insurance, state unemployment insurance and temporary disability insurance and is calculated by county by industry from BEA annual estimates of those components of personal income. The outflows from a given workplace county, summed over all industries and all residence counties is the gross earnings outflow of that county.

Since the earnings outflow from one county is the earnings inflow of another county, the gross earnings inflows to a particular place of residence county are obtained by summing the earnings outflows of all industries to that county from all workplaces other than that county.

A provisional estimate of the net residence adjustment for inter-county commuting flows is the difference between the gross earnings inflows into that county and the gross earnings outflows from that county.

Modifying the provisional estimates

The provisional estimates for more than 1,800 counties which have high rates of inter-county commuting (mostly multicounty metropolitan areas) were modified for two reasons: (1) in numerous cases, the geographic coding by place of work of the American Community Survey data and that of the source data for BEA's wages and salaries were inconsistent[4]; (2) to account for changes in commuting patterns since the benchmark

[1] Originally, the JTW data were collected on the long form of the decennial Census of Population questionnaire and the Standard Industrial Classification (SIC) was used to classify industries. However, the JTW data from the 2000 Census, were classified on a North American Industry Classification System (NAICS) basis. More recently, the JTW data are based on special tabulations of the American Community Survey (ACS) 5-year estimates prepared by the Census Bureau for BEA.

[2] JTW data from the ACS are available for 2-digit NAICS industries.

[3] The JTW data from the 2006-10 ACS were used to establish a benchmark for 2008, and the JTW data from the 2011-15 ACS were used to establish a benchmark for 2013.

[4] For example, the source data may attribute too much of the wages of a multi-establishment firm to the county in which a firm's main office is located; the source data for the wages of the personnel employed on a military base that extends across county boundaries may attribute the wages to one county, but the JTW data may attribute these wages to the other county.

year. Both adjustments were made in order to better align BEA's place-of-residence estimates with those from other sources such as the Internal Revenue Service.

The cluster adjustment first groups counties into clusters which were determined as follows: (1) counties that are part of a Combined Statistical Area; (2) counties that are part of a Metropolitan Statistical Area; (3) counties with flows from or to another county that are more than 25 percent of total wages. Second, for each county in a cluster the provisional estimate of the net residence adjustment was added to the place-of-work income subject to adjustment (ISA) to obtain a provisional estimate of place-of-residence ISA. Third, the provisional estimates of residence adjusted ISA for the counties in each cluster were summed to a total estimate for the cluster. Fourth, the total estimate for each cluster was redistributed to the counties of the cluster in proportion to the distribution of wages reported on Internal Revenue Service (IRS) Form 1040 *(U.S. Individual Income Tax Return)*[5] to produce the modified estimates of residence adjusted ISA by county. The difference between the modified residence adjusted ISA and the place-of-work ISA is the net residence adjustment for intercounty commuting flows for cluster counties. For all other counties the net residence adjustment for intercounty commuting flows is the same as the provisional estimate.

Intercounty commuting flows for the years between the benchmark years of 2000, 2008, and 2013, were computed by interpolating the benchmark ratios of county-to-county wage outflows from the JTW, then multiplying the interpolated ratios by ISA so that the estimates of net residence adjustment were consistent across all years.

For 2013 and subsequent years, a provisional estimate of the net residence adjustment for inter-county commuting flows was calculated in the manner described above except that the wage outflow ratios for 2013 were used for all years. The provisional estimate was also modified using current year IRS wage data in the manner described above. Since IRS wage data for 2018 were unavailable, data for 2017 were used in its place.

International Border Workers

The residence adjustment for the income earned by international border workers consists of two sets of estimates. The first set of estimates account for the inflows of the compensation earned by U.S. residents who commute to work in Canada and the outflows of the compensation earned by Canadian and Mexican residents who commute to work in the United States.[6] The second set of estimates account for the inflows of compensation earned by U.S. residents employed by certain foreign organizations.

---

[5] County tabulations are from the 52-week Individual Master File.

[6] Foreign workers can be classified in three groups: border workers, migrants, and resident aliens. Border workers live in one country and work in another country. They commute to work on a daily or weekly basis. Migrant workers live and work for part of a year in a foreign country but return to their home country for the rest of the year. Resident aliens live and work in a foreign country permanently (that is, for a period longer than a year). No distinction is made in the state personal income accounts between legal and illegal presence. The estimates of state and county personal income count the income of migrants in the state and county in which they work. This treatment differs from how the balance of payments accounts treat their income—it is treated as an export of compensation. The estimates of state and county income and the balance of payments accounts agree in the treatment of the income of border workers and resident aliens. The income of resident aliens is counted in the income of the state and county in which they work. The

The national estimates of the inflows and outflows of the compensation of border workers are prepared in the context of the U.S. international transactions accounts.[7] The county estimates of the inflows and the outflows of the compensation of border workers are allocations of the national control totals. The allocated inflows are added to, and the allocated outflows are subtracted from, the estimates of the net residence adjustment for intercounty commuting flows to obtain the final residence adjustment estimates for counties.

Inflows from and outflows to Canada and Mexico

The national estimates of the inflows of the compensation earned by U.S. residents who commute to work in Canada or Mexico are allocated to U.S counties based on journey-to-work (JTW) employment data from the Census Bureau.[8] The JTW employment data are a tabulation of the workers residing in a given county by their place of work. The subset of workers with a job in Canada or Mexico are used for the residence adjustment of border workers. The number of county residents with a job in Canada (or Mexico) is multiplied by the ratio of the BEA estimate of private place-of-work wages and salaries to the BEA estimate of private place-of-work wage and salary employment (the average private-sector annual wage) for that county. The result is used to allocate the national estimate of the inflows of compensation from Canada (or Mexico) to U.S. counties.

Since there is no information on the commuting flows of Canadian and Mexican residents to the United States, the national estimates of the outflows of the compensation earned by residents of Mexico and Canada who commute to work in the United States are allocated to counties in the same proportion as compensation inflows from Canada and Mexico.

U.S. residents employed by certain foreign organizations

A national estimate of compensation earned by US residents employed by international organizations such as the United Nations, the International Monetary Fund, and the World Bank, and by foreign embassies and consulates located within the geographic borders of the United States are prepared by BEA as part of the international transactions accounts.

---

income of border workers who reside in Canada or Mexico and work in the U.S. is excluded—through the residence adjustment in the state and county personal income estimates and by classification as an export in the case of the balance of payment accounts.

[7] See U.S. International Transactions Table 1.3, Lines 29 and 57. This table is available on the BEA Web site.

[8] The JTW employment data are based on special tabulations of the American Community Survey (ACS) 5-year estimates prepared by the Census Bureau for BEA. These data are used for inflows from and outflows to Canada and Mexico for 2001 onwards. For earlier years, the national estimate of the inflows of the compensation earned by U.S. residents who commute to work in Canada was assigned to Michigan, New York and the New England region based on fragmentary information from the Immigration and Naturalization Service of the Department of Justice. The New England portion was allocated to the border counties of Maine, New Hampshire, and Vermont in proportion to data for employment in the forest product industries. For years prior to 2001 the national estimates of the outflows of the compensation earned by residents of Mexico and Canada who commute to work in the United States was allocated to counties in proportion to data from the Immigration and Naturalization Service.

Foreign embassies and consulates in the United States are considered to be part of the territory of the countries they represent. U.S. residents working for foreign embassies and consulates in the United States are therefore international border workers, that is, persons who live in one country and work in another. The offices of international organizations are treated in a similar fashion, that is, they are treated as if they were located on foreign territory. Therefore, the compensation paid to US residents by these embassies, consulates, and international organizations represent inflows to the US.

The national estimate of wage inflows from these foreign organizations is first allocated to twelve very large counties and the District of Columbia in proportion to estimates (from 1968) of the administrative expenditures of these organizations.[9] The administrative expenses series was prepared by BEA. This yields a set of place-of-work estimates. Next, the place-of-work estimates are adjusted for the place of residence of the workers. The place-of-work estimates are multiplied by county to county wage outflow ratios (discussed above in the Intercounty Commuting Flows section) to estimate gross wage outflows (and inflows). County estimates of wage inflows from foreign organizations by place of residence are the sum of the place of work estimates and the estimates of the gross wage inflows less the gross wage outflows.

[9] The counties are Los Angeles and San Francisco (in California); Miami-Dade (Florida); Cook (Illinois); Orleans (Louisiana); Bronx, Kings, New York, Queens, and Richmond (New York); Philadelphia (Pennsylvania); and Harris (Texas).

IX. PERSONAL CURRENT TAXES

Personal current taxes are tax payments, net of refunds, made by persons that are not chargeable to business expense. Personal current taxes consist of taxes on income, including realized net capital gains, taxes on personal property, payments for motor vehicle licenses, and several miscellaneous taxes, licenses, and fees. Social security and Medicare taxes are not personal current taxes. They are treated as contributions for government social insurance.[1] Personal current taxes also exclude taxes on real property, sales taxes, and certain penalty taxes. Taxes on real property paid by persons, except those primarily engaged in the real estate business, are treated as a business expense that is deducted from both gross monetary rental income and gross imputed rental income in the derivation of net rental income. Real property taxes paid by persons primarily engaged in the real estate business are also treated as a business expense and are deducted in the derivation of proprietors' income. Sales taxes are included in personal consumption expenditures. Penalty taxes, such as the penalty tax on early IRA withdrawals, are treated as a personal current transfer payment to government.

Personal current taxes are measured on a payments basis (that is, when paid) except for withheld taxes (largely taxes on wages and salaries) which are measured on an accrual basis.

The state estimates of personal current taxes are described in four sections: (1) personal current taxes paid to the federal government, (2) personal current taxes except personal property taxes paid to state governments, (3) personal current taxes except personal property taxes paid to local governments, and (4) personal property taxes paid to state and local governments.

Personal Current Taxes Paid to the Federal Government

The only personal current taxes paid to the federal government are income taxes; there are no personal motor vehicle license or other personal taxes. Income taxes consist of individual income taxes and current taxes on the income retained by fiduciaries on behalf of individuals.[2] These taxes accounted for 78.0 percent of total personal current taxes at the national level in 2018 (table J).

In the national income and product accounts, the income taxes component of personal current taxes is the sum of the income taxes that are withheld (usually by employers) from wages and salaries, declarations (quarterly payments of estimated taxes on income that is usually not subject to withholding), and final settlements (additional tax payments that are made when the tax returns for a year are filed or as a result of audits). National estimates are based primarily on data published in the *Monthly Treasury Statement*.

For states, gross income taxes are estimated as the sum of individual income taxes (net of refunds), refunds of income taxes, and current taxes on income retained by fiduciaries.

---

[1] See Chapter VII.

[2] Fiduciaries (personal trust funds) are classified as persons in the state personal income accounts.

Individual income taxes (net of refunds)

The national control for individual income taxes (net of refunds) is the estimate of income taxes from the national income and product accounts (NIPA) less the NIPA estimate of current taxes on income retained by fiduciaries, adjusted to exclude overseas taxes. The overseas adjustment is proportional to the wages and salaries of federal and military personnel stationed overseas.

From 1990 to 1995, the national control is allocated to states on the basis of total tax liability less Social Security taxes on self-employed income. From 1996 onwards, the national control is distributed to states on the basis of the income tax reported on Form 1040 (and corresponding amounts reported on Forms 1040A and 1040EZ) as tabulated by the Internal Revenue Service (IRS) and published in the spring edition of the *Statistics of Income Bulletin*.[3]

Because of lags in the availability of tabulations of income tax returns, the state allocators are extrapolated forward using the relative change in BEA wages and salaries.

Income tax refunds

The national control for income tax refunds is the NIPA estimate of income tax refunds, adjusted to exclude overseas refunds. The overseas adjustment is proportional to the wages and salaries of federal and military personnel stationed overseas.

The state allocator of the national control for calendar year *t* is overpayments refunded as reported on Form 1040 (and corresponding amounts reported on Forms 1040A and 1040EZ) for tax year *t-1* as tabulated by the Internal Revenue Service (IRS) and published in the spring edition of the *Statistics of Income Bulletin*.[4]

Because of lags in the availability of tabulations of income tax returns, the state allocators are extrapolated forward using the relative change in BEA wages and salaries.

Current taxes on income retained by fiduciaries

Federal fiduciary income taxes are taxes that are paid on the income that is received and retained by fiduciaries on behalf of individuals. They are reported on IRS Form 1041 *U.S. Income Tax Return for Estates and Trusts*. National estimates are allocated to states in proportion to the sum of the taxable interest, ordinary dividends, and net capital gains received by individuals as tabulated by the Internal Revenue Service (IRS) and published in the spring edition of the *Statistics of Income Bulletin*.

Personal Current Taxes except Personal Property Taxes Paid to State Governments

Personal current taxes (other than personal property taxes) paid by individuals to state governments consist of payments of individual income taxes, motor vehicle and operator license taxes, and other license taxes. These payments accounted for 19.7 percent of personal current taxes at the national level in 2018 (table J). The national estimates as well as the state and local estimates are based mainly on data from the

---

[3] Income tax is line 56 on Form 1040 for tax year 2014.
[4] Overpayments refunded is line 75 on Form 1040 for tax year 2014.

Census Bureau's *Quarterly Summary of State and Local Government Tax Revenue*. Quarterly tax estimates are annualized and controlled to Census Bureau's *State Government Finances* fiscal year estimates.

Individual income taxes

State estimates of individual income taxes net of refunds are based on the data from the Census Bureau's *Quarterly Summary of State and Local Government Tax Revenue*, *State Government Finances*, and *State Government Tax Collections (SGTC)*. Current year estimates are based mainly on quarterly data for the net individual income tax collections of each state government. These data are supplemented by data from individual states.[5]

Motor vehicle and operator license taxes

The national estimate of personal current taxes for motor vehicle and operator licenses is distributed by state mainly by data from Census Bureau's *SGTC* supplemented by Federal Highway Administration data. The motor vehicle license fees paid by business are excluded from the *SGTC* data with state-specific ratios determined from Federal Highway Administration data for 1996.

Other license taxes

Personal current taxes for other license taxes consist of estimates of the fees paid to state government agencies for hunting and fishing licenses for personal, rather than commercial, use and estimates of the fees paid for other noncommercial licenses, such as those for the registration of pleasure boats and aircraft. State estimates of these license taxes are based on data for both the noncommercial and the commercial taxes from *SGTC*.[6]

Personal Current Taxes except Personal Property Taxes Paid to Local Governments

Personal current taxes (other than personal property taxes) paid by persons to local governments consist of individual income taxes, payments for motor vehicle registration and licenses, and payments of miscellaneous taxes. These payments accounted for 1.9 percent of personal current taxes at the national level in 2018 (table J). National estimates of these payments are based mainly on data from *State and Local Government Finances*.

[5] The *Quarterly Summary of State and Local Tax Revenues* contains preliminary estimates of quarterly taxes for local property taxes and state taxes by type of tax. For some states, these quarterly estimates prove to be inconsistent with the fiscal year estimates reported in SGTC.
[6] These data consist of the payments by both individuals and businesses, and the payments by individuals cannot be distinguished from those by businesses. Thus, the state estimates reflect the assumption that the geographic distribution of the payments by businesses and by individuals is the same as the national split.

Individual income taxes

Currently, individual income taxes paid to local governments consist of the tax payments to the District of Columbia and to local governments in 14 states.[7] State estimates of these taxes are based on data from the quinquennial *Census of Governments*. Data from the annual *State and Local Government Finances* are used to interpolate between census years and extrapolate from the last census. The annual estimates for the District of Columbia are based on the Census Bureau's quarterly data. State sources were used to estimate local income taxes for New York. Estimates for the remaining localities with local income tax were estimated using *State and Local Government Finances*, state and local financial reports, and judgmental trends.

Motor vehicle and operator license taxes

State estimates of taxes levied by local governments on owners or operators of motor vehicles—including the registration and inspection of the vehicles but excluding personal property taxes—are based on data from *State and Local Government Finances*.[8]

Miscellaneous taxes

Miscellaneous taxes consist largely of fees for marriage licenses, the registration of pleasure boats, and licenses for pets. Estimates of these fees and taxes are based on "other taxes" data for local government from *State and Local Government Finances*.

Personal Property Taxes Paid to State and Local Governments

These payments consist of taxes on the tangible and intangible personal property of individuals. These payments accounted for 0.5 percent of personal current taxes at the national level in 2018 (table J). The national estimates of these payments are based on data from *State and Local Government Finances*.

The state estimates of personal property taxes paid to state and local governments are combined because the data to allocate these payments to each level of government are not available. The national estimate for state and local personal property taxes was distributed to the states using unpublished IRS Schedule A sample data for personal property taxes, claimed by individuals who itemize deductions on their federal individual income tax returns and selected state sources.

---

[7] Multnomah County, Oregon levied a temporary income tax for tax years 2003-2005, but the county continued to collect delinquent taxes until 2010. In Kansas, a local income tax appeared for the first time in the 2007 *Census of Governments* due to the Census Bureau's reclassification of the Kansas "local intangible tax" (a county by county tax on dividends and interest) from a personal property tax to an income tax.

[8] These data consist of the payments by both individuals and businesses, and the payments by individuals cannot be distinguished from those by businesses. Thus, the state estimates reflect the assumption that the geographic distribution of the payments by businesses and by individuals is the same as the national split.

Table J.--Personal Income, Disposable Personal Income, and Personal Current Taxes, by Component, United States, 2018

	Millions of dollars	Percent of personal current taxes
Personal income	17,813,035	…
Less: Personal current taxes	2,075,864	…
Equals: Disposable personal income	15,737,171	…
Personal current taxes	2,075,864	100.0
Personal current taxes to the Federal government	1,618,458	78.0
Income taxes (net of refunds)	1,618,458	78.0
Income taxes (gross)	1,887,292	90.9
Less: Refunds	268,834	13.0
Personal current taxes to State governments	408,930	19.7
Income taxes	387,288	18.7
Motor vehicle licenses	19,895	1.0
Other taxes /1/	1,747	0.1
Personal current taxes to local governments	38,431	1.9
Income taxes	33,637	1.6
Motor vehicle licenses	1,053	<0.1
Other taxes	3,741	0.2
State and local personal property taxes	10,045	0.5

Footnotes

1. Consists largely of hunting and fishing taxes and other license taxes.

NOTE.—Detail may not add to totals due to rounding.

X. QUARTERLY ESTIMATES OF STATE PERSONAL INCOME

Quarterly estimates of state personal income are seasonally adjusted and published at annual rates. After seasonal adjustment, cyclical and other short-term changes in state economies stand out more clearly. Annual rates show the amount that would be registered if the seasonally adjusted rate of activity measured for a quarter were maintained for a full year. Quarterly estimates are presented at annual rates so that the quarterly and the annual estimates may be compared easily.

Revision Schedule for the Quarterly Estimates

Quarterly personal income estimates are revised on a regular schedule to incorporate source data that are more complete, more detailed, or otherwise more appropriate than the data that were available when the estimates were initially prepared and to incorporate updated seasonal factors. They are also revised to keep them consistent with revisions to personal income estimates in the National Income and Product Accounts (NIPA), to which they are controlled, and to annual state estimates, which incorporate more detailed and more reliable source data than the quarterly estimates.[1]

The first, or ‘preliminary,’ estimates for a quarter are prepared 3 months after the end of the quarter. The ‘second’ estimates for that quarter are prepared 3 months later. The estimates for that quarter continue to be revised every September in conjunction with the regularly scheduled revisions of the annual estimates (table K).[2]

The estimates for the quarters of years for which annual estimates have been prepared are distributed from the annual estimates; the estimates for quarters after the last annual estimate are extrapolated from that estimate.

The quarterly estimates are prepared in three steps. First, quarterly indicator series are prepared for the components for which state-level quarterly or monthly source data are available. Second, initial approximations of the quarterly estimates are prepared by distributing and extrapolating the annual estimates with the indicator series or according to the trend in the annual estimates. Third, the initial approximations are used to allocate proportionately national control totals to states. Dual allocation is used to distribute annual estimates to quarters.[3] [4]

---

[1] The quarterly state estimates of wages and salaries are controlled to—that is they are made to sum to—the NIPA estimates of wages and salaries after adjusting for coverage differences, such as the exclusion of wages and salaries of U.S. citizens stationed abroad. See “Relation of personal income in the NIPA and in the State Personal Income Accounts” in Chapter I Introduction.

[2] For an evaluation of the accuracy of the different estimate vintages, see Matthew A. von Kerczek and B. Enrique Lopez, “An Examination of Revisions to the Quarterly Estimates of State Personal Income”, *Survey of Current Business* 92 (August 2012): 243-266.

[3] Two ***distribution*** techniques are used: One uses seasonally adjusted monthly or quarterly source data as the indicator series, and the other uses an indicator series generated from the relationships between the annual estimates for each state and the nation. For the latter technique, the indicator series is a weighted average of the “fitted values” from bivariate regressions of the annual state estimates on the corresponding national estimate and a simple proportionate share of the national estimate. Weights are based on the coefficient of determination (R^2) from the regression:

After the second quarterly estimates are prepared, little new state-level quarterly source data become available. Therefore, the initial approximations of the revised quarterly estimates incorporate quarterly source data that are generally the same as the data used for the second quarterly estimates. The revised estimates differ from the second estimates mainly in their adjustment for consistency with revised national quarterly estimates and state annual estimates and in their adjustment for revised seasonal factors.

Control Totals for the Quarterly Estimates

Quarterly national control totals for most components of state personal income are mainly derived from estimates of the corresponding component in the National Income and Product Accounts (NIPA).[5] Two methods are used to prepare the national controls:

For years in which detailed annual state estimates have been made, the quarterly national control totals for a component are derived from the distribution of annual sum-of-the-states estimates. Quarterly NIPA estimates are used as the indicator series for the distribution. For quarters after the last annual state estimate, national control totals for most components of personal income are extrapolated using the percent change in the quarterly NIPA estimates.

Exceptions to these general procedures are made in the case of wages and salaries and farm proprietors' income:

Control totals for the quarterly estimates of wages and salaries

In March, source data for wages and salaries that were not available when the NIPA estimates were prepared are sometimes used in the preparation of the control totals

---

$$X_S^q = R^2(\hat{X}_S^q) + (1-R^2)\left(\frac{Y_S^t}{Y_N^t} Y_N^q\right)$$

where X_S^q is the state indicator series, $\hat{X}_S^q$ is the "fitted value" for state S in quarter q of year t, Y_N^q is the national estimate for quarter q of year t, Y_S^t is the state estimate for year t, and Y_N^t is the national estimate for year t. $\hat{X}_S^q$ comes from solving, with quarterly-frequency data, a set of annual-frequency regressions estimated using rolling 7-year sample periods:

$$\hat{X}_S^q = \hat{a}^t + \hat{b}^t Y_N^q$$

where $\hat{a}^t, \hat{b}^t$ are the estimated slope and intercept from the regression with the sample period centered on year t (for the latest three years, the seven most recent observations are used).

Two ***extrapolation*** techniques are used: One uses the seasonally adjusted monthly or quarterly source data as the indicator series, and the other uses a slightly modified version of the weighted average formula:

$$X_S^q = R^2(\hat{X}_S^q) + (1-R^2)\left(\frac{Y_S^{t-1}}{Y_N^{t-1}} Y_N^q\right)$$

Notice that the ratio used in the second term refers to the previous year (t-1) whereas q refers to the current year (t) and that the "fitted value," $\hat{X}_S^q$, uses estimates $\hat{a}^{t-1}, \hat{b}^{t-1}$.

[4] See "Dual allocation" in Chapter XII Technical Notes.

[5] There is no national control total for the residence adjustment.

for the state estimates of wages and salaries.[6] The annual NIPA estimates of wages and salaries for the most recent year are compared to an alternative annual estimate. The alternative is based primarily on Quarterly Census of Employment and Wages (QCEW) data for the first three quarters and Current Employment Statistics (CES) data for the fourth quarter as described below.[7] If the two series for the sum of all industries do not differ substantially, the NIPA estimates of wages and salaries are used to prepare the control totals for the state quarterly estimates. Otherwise, the national control totals are derived for each industry using the alternative annual estimates.

Control totals for the quarterly estimates of farm proprietors' income

For the preliminary and second state quarterly estimates, an annual estimate of farm proprietors' income for the current year is forecast using U.S. farm income forecasts from the U.S. Department of Agriculture (USDA). This annual control is then distributed among the quarters using the available quarterly NIPA estimates, and assuming that income is constant for any quarters that are not yet available.

Sources and Methods for Quarterly Personal Income by Component

Quarterly state-level source data are available to prepare preliminary and second estimates of four personal income components: nonfarm wages and salaries, farm proprietors' income, Medicaid benefits, and state unemployment insurance (UI) compensation. The estimates of wages and salaries are then used to estimate four other components of personal income: supplements to wages and salaries, construction proprietors' income, employee and self-employed contributions for government social insurance, and the residence adjustment. Quarterly estimates of the remaining components of personal income: dividends, interest, and rent; Social Security Benefits, Medicare benefits, and all other personal current transfer receipts; farm wages; pay of military reserves; and nonfarm proprietors' income excluding the construction industry are extrapolations of annual trends in state shares of the nation.[8]

Wages and salaries[9]

The preliminary quarterly estimates of wages and salaries for most NAICS sectors are extrapolated from estimates for the previous quarter by the percent change in employment using CES data multiplied by a scaling factor. The CES monthly

[6] The difference in the availability of the data for the estimates of wages and salaries is especially important because the revision to the national control totals of wages and salaries that are used in the preparation of the state estimates of wages and salaries in March sometimes foreshadows the direction and size of the revision to the NIPA estimates in June.

[7] The QCEW, from the Bureau of Labor Statistics is a tabulation of wages and salaries of employees covered by unemployment insurance.

[8] These components account for approximately 38 percent of personal income for the nation.

[9] Wages and salaries to private employees are estimated for all NAICS sectors. In addition, separate estimates are made for durable and nondurable manufacturing and for rail transportation and all other transportation and warehousing. Wages and salaries to public employees are estimated for civilian employees of the federal government, active duty military, military reserves, and state and local government. These categories will be referred to as industries or NAICS sectors.

employment data by NAICS sector are averaged to quarters and seasonally adjusted by BEA.[10]

The scaling factors are the estimated coefficients from a set of regressions (one for each state) of state-specific wage growth computed from the most recent or latest set of BEA estimates on a set of preliminary state-specific wage growth rates defined as the unscaled state-specific percent change in CES employment. State-specific percent change in employment equals total percent change less the national percent change.[11]

The second quarterly estimates of wages and salaries for these industries incorporate QCEW payroll data that are compiled in the administration of the state unemployment insurance system. The QCEW is a nearly complete census of wages and includes exercised stock options and other lump-sum payments. The wage data are summed by NAICS sector and seasonally adjusted by BEA.

Both the preliminary and second estimates of quarterly wages and salaries for the farm sector are based on trend extrapolation of annual estimates. The preliminary estimate for the forestry, fishing, and related activities industry is also based on trend extrapolation, but the second estimate is based on QCEW data.

Quarterly national payrolls from the Department of Transportation and annual state employment from the Railroad Retirement Board are used to prepare both the preliminary and second estimates of wages and salaries in the railroad industry.

The number of personnel and average pay by service from the Department of Defense and payroll data from the Coast Guard are used to prepare both the preliminary and second estimates of wages and salaries of active duty military personnel. The wages and salaries of military reserves are estimated by trend extrapolation.

Wages and salaries of civilian employees of the federal government, for both the preliminary and the second quarterly estimates, are based on CES employment data.

Supplements to wages and salaries

Separate estimates are prepared of the two components of supplements to wages and salaries: (1) employer contributions for employee pension and insurance funds and (2) employer contributions for government social insurance. A national estimate of each of these components is available from the NIPA to prepare national quarterly control totals as described above. The annual state estimates are distributed and extrapolated using the quarterly state estimates of wages and salaries. The quarterly state estimates of the two components of supplements to wages and salaries are prepared for all NAICS sectors.[12]

---

[10] The CES survey collects monthly data (on form BLS 790) on employment. This survey of about 400,000 nonagricultural establishments across the United States is conducted by the state employment security agencies and coordinated by the Bureau of Labor Statistics. The data are released about 3 weeks after the end of the month. The CES Survey is conducted for the pay period that includes the 12th of each month and is benchmarked annually to the Quarterly Census of Employment and Wages (QCEW), also from BLS.

[11] The regressions are estimated at the all-industry level. The same scaling factor is used for each industry within a state. See Jeremy J. Nalewaik, "Using efficiency tests to reduce revisions in panel data: The case of wage and salary estimates for U.S. states," BEA Working Paper WP2004-09, April 2005. This paper is available on the BEA Web site www.bea.gov

[12] There are no NIPA estimates of these components by industry.

Farm proprietors' income

Quarterly estimates of five components of farm proprietors' income are prepared separately: livestock output; crop output; government payments; other income; and production expenses plus corporate farm income. For each state and component, excluding livestock and crop output, an annual estimate is forecast using annual trends. The state-level forecasts are used to allocate a national forecast for the components of farm proprietors' income based on a USDA forecast of farm income. Annual livestock and crop output is forecast using available national, annual forecast data on cash receipts from the sale of farm products and inventory change from the U.S. Department of Agriculture (USDA). The national forecasts from USDA for thirteen categories of cash receipts and two categories of inventory change are distributed to the states using the state annual estimates from USDA for the prior year. Adjustments to the annual, state-level forecasts are made, as needed, to account for conceptual differences between the BEA and USDA accounts.[13]These state annual estimates for five components of farm proprietors' income are then distributed across the quarters using the quarterly national controls.

Nonfarm proprietors' income

Annual estimates of construction proprietors' income is distributed to quarters and extrapolated using construction wages and salaries as the quarterly indicator. National estimates of the rest of nonfarm proprietors' income is allocated by industry to states using shares of the nation from the annual state estimates. The most recent annual state shares are used to extrapolate to quarters for which there is no annual estimate.

Personal current transfer receipts

Annual estimates of state (UI) benefits are distributed to quarters and extrapolated using the monthly state unemployment rate from the Department of Labor as the quarterly indicator after the data have been summed to quarters and seasonally adjusted by BEA. The annual estimates of Medicaid benefits are distributed to the quarters and extrapolated using quarterly information from the Center for Medicare and Medicaid Services (CMS), CMS-64 Quarterly Expense Report. Quarterly estimates for all other personal current transfer receipts components (Social Security, Medicare, and other personal current transfer receipts) are based on trend distribution and extrapolation of the annual estimates.

Employee and self-employed contributions for government social insurance

Annual estimates of employee and self-employed contributions for government social insurance are distributed to quarters and extrapolated using quarterly state estimates of wages and salaries summed to all industry totals.

[13] The conceptual differences between the BEA and USDA farm accounts is discussed in Chapter IV, under "Farm Proprietors' Income."

Dividends, interest, and rent

Both the preliminary and the second quarterly estimates of property income—personal dividend income, personal interest income, and rental income of persons—are derived from the trends in the annual state estimates.

Residence adjustment

Three components of personal income—wages and salaries, employer contributions for employee pension and insurance funds, and employee and self-employed contributions for government social insurance—are subject to adjustment for residence. After preparing estimates of these components, as described above, they are combined into an aggregate called income subject to adjustment (employer contributions are added to wages and employee and self-employed contributions are subtracted). The income subject to adjustment of each state is multiplied by a set of gross outflow ratios representing the proportion of the income subject adjustment in state i that is earned by residents of state j.[14] The outflows from state i to all other states are summed to yield gross outflows from i. The inflows to state i from all other states are summed to yield gross inflows to state i. Lastly, the residence adjustment for state i is computed as gross inflows to state i less gross outflows from that state.

Population and per capita personal income

Midquarter population by state, for the first quarter of 2010 forward, is estimated from unpublished Census Bureau beginning-of-month population data. To be consistent with procedures used in the national income and product accounts (NIPAs), midmonth population estimates are derived by taking the average of the beginning-of-month estimate with the estimate for the following month. Midquarter population estimates are equal to the average of the three midmonth estimates for each quarter.

The state estimates are summed to a total, which when combined with armed forces stationed overseas, equal the midperiod U.S. population estimates currently published in table 2.1 in the NIPAs. Quarterly per capita personal income, personal income divided by the midquarter population, is also published.

[14] See Chapter VIII Residence Adjustment.

Table K.--Preparation and Revision Schedule for Quarterly State Personal Income

(Estimates prepared in Year n+1)

	Preliminary	Second	Revised
December	3rd Quarter year n	2nd Quarter year n	
March	4th Quarter year n	3rd Quarter year n	
June	1st Quarter year n+1	4th Quarter year n	
September	2nd Quarter year n+1	1st Quarter year n+1	All Quarters years n-2 through n

XI. EMPLOYMENT

Introduction

BEA's estimates of state employment consist of the number of wage and salary jobs, sole proprietorships, and general partners. The estimates are available annually beginning with 1969.

The state employment estimates are a complement to the place-of-work earnings estimates. Earnings are estimated on both a place-of-work basis by industry, and on a place-of-residence basis for the sum of all industries. The employment estimates are designed to conform conceptually and statistically with the place-of-work earnings estimates; the same source data—generally from administrative records—are used for both the earnings and employment estimates whenever possible. The place-of-work earnings estimates reflect the scale and industrial structure of a state's economy rather than the income of the state's residents. The employment estimates measure the number of jobs in a state, regardless of where the workers live, rather than the number of residents who hold jobs. The characteristics of the state employment estimates follow from this concept and from the characteristics and limitations of the available source data.

The state employment estimates are not fully consistent with the National Income and Product Accounts (NIPA) employment estimates.[1] The state estimates are prepared only on a full-time and part-time basis, while the NIPA estimates are prepared on both a full-time and part-time basis and on a full-time equivalent basis. The state estimates exclude overseas jobs—mainly federal civilian and military employment of U.S. citizens abroad—and border worker adjustments—the addition of U.S. persons commuting to work abroad and subtraction of foreign commuters and seasonal workers in the United States—that are included in the NIPA estimates. Finally, the state estimates include all sole proprietorships and general partners—approximating a full-time and part-time basis, whereas the NIPA estimates of the number of proprietors count only persons whose principal occupation is their self-employment—approximating a full-time equivalent basis of measurement.

Employment estimates measure the number of jobs

Employment can be measured either as a count of workers or as a count of jobs. In the former case, an employed worker is counted only once; in the latter case, all jobs held by the worker are counted. The state employment estimates are a count of jobs, so that, as with the earnings estimates, a worker's activity in each industry and location of employment is reflected in the measure.

Treatment of part-time jobs

State employment is estimated on a full-time and part-time basis because of the limitations of the available source data. State level data that separate part-time jobs and wages from full-time jobs and wages, which are needed to prepare full-time equivalent

[1] The NIPA employment estimates are published in tables 6.4, 6.5, 6.7, and 6.8, which are available on the BEA Web site.

measures, are not available. An average earnings measure can be calculated from the BEA state employment and earnings estimates. Average earnings reflect the extent of part-time employment in the given state and industry, as well as more basic factors such as hourly wage rates.

Geography

State employment estimates, like wage and salary estimates, are measured by place-of-work—the job location—instead of by place of residence—where the worker lives. Thus, the estimates are more representative of the state's industrial base than of the activities of the residents of the state. For nonfarm sole proprietors' employment, the only available annual data are classified by tax filing address, which is usually the filer's residence. BEA assumes that place-of-work and place-of-residence are identical for nonfarm sole proprietors. Since most farm operators live on or near their land, place of work and place of residence are also identical for farm proprietors.

Temporal dimension

The estimates of wage and salary employment are annual averages of twelve monthly observations for the year. This gives a job which lasts only part of the year a lesser weight that a year-round job. In contrast, the estimates of nonfarm proprietors' employment are counts of the number of proprietors active during any portion of the year. This is because the available source data do not indicate the portion of the year that the businesses are in operation.

Wage and Salary Employment

Wage and salary employment is a measure of the average annual number of full-time and part-time jobs in each state by place of work. All jobs for which wages and salaries are paid are counted. Although compensation paid to jurors, expert legal witnesses, prisoners, and justices of the peace (for marriage fees), is counted in wages and salaries, these activities are not counted as jobs in wage and salary employment.

The following description of the sources and methods used in estimating wage and salary employment is divided into two sections: Employment in industries covered by unemployment insurance (UI) programs, and employment in industries not covered by UI programs.[2]

Employment in industries covered by UI programs

The estimates of 94.7 percent of wage and salary employment are derived from tabulations of 2018 quarterly unemployment insurance (UI) contribution reports (Form ES-202) filed with state employment security agencies (table L). Employers subject to UI laws usually submit reports for each operating establishment, classified by county and

[2] The relevant UI programs are state UI, which covers most private sector and state and local government employment, and Unemployment Compensation for Federal Employees. The agency administering the UI program for railroad employees compiles data differently from the state UI program, and there is no employment reporting under the UI program for persons leaving the military services; accordingly, railroads and the military services are treated as noncovered industries in the estimation of state employment.

industry. However, in some cases, an employer may group very small establishments into a single "statewide" report without county designation. Each quarter, the state employment security agencies submit the tabulations to the Bureau of Labor Statistics (BLS), which provides the data to BEA. The tabulated data (called the Quarterly Census of Employment and Wages, QCEW) consist of monthly employment and quarterly wages by county by NAICS six-digit detail (beginning in 2001) or by SIC four-digit detail (through 2001).[3]

BEA adds several million administrative records received from the states and the District of Columbia to its database annually. The records are checked for major errors by several computerized edit routines. One edit routine analyzes the current quarter county data for invalid industry codes, duplicate records, and records that contain no data. Another edit routine calculates expected county-level average employment and average wages on a quarterly basis, based on percentage changes for that quarter in the previous two years. If the difference between the actual numbers and the estimated numbers exceeds established limits, the record is identified for further review. Anomalies that remain unreconciled after reviewing comments and other supporting data are referred back to BLS for further investigation.

The basic procedure for preparing the state estimates of wage and salary employment for each UI-covered industry is to average the 12 monthly QCEW employment observations and to allocate the national total in proportion to the averaged series. However, QCEW employment does not precisely meet the statistical and conceptual requirements for BEA's employment estimates. Consequently, the data must be adjusted to meet the requirements more closely. The necessary adjustments affect both the industrial and geographic patterns of state employment.

Adjustment for industry nonclassification.—The industry detail of the QCEW tabulations regularly shows minor amounts of employment that have not been assigned to an industry. The industrial classification scheme used by BEA for its estimates does not allow for a not-elsewhere-classified category. Therefore, for each state, the amount of QCEW employment in this category is distributed among the covered industries in proportion to the industry-classified employment. The amounts involved in this adjustment are quite small—about 0.2 percent of total employment nationally in 2018. No error is introduced into the total employment estimate for a state because the adjustment involves only an apportionment within a state of the amount reported for that state.

Misreporting adjustment.—An adjustment is made to the QCEW data for misreporting of private sector employment. In 2018, misreported employment accounted for 0.6 percent of BEA wage and salary employment (table L). The national estimate of misreported employment for each industry is made in two parts: One for the underreporting of employment on UI contribution returns filed by employers and one for the employment of employers that fail to file UI contribution returns. The data necessary to replicate this methodology below the national level are not available. Instead, the

---

[3] The monthly employment observations represent the number of employees receiving wages for the pay periods that include the 12th day of the month. The QCEW tabulations reflect the 1972 SIC for years up to 1987, the 1987 SIC for 1988 through 2000, the 2002 NAICS for 2001 through 2006, and the 2007 NAICS for 2007-2010. Beginning in 2011, QCEW tabulations reflect the 2012 NAICS. State employment originally reported on a SIC basis have been converted to a NAICS basis. See "NAICS Earnings and Employment by Industry, 1998-2000" in Chapter XII Technical Notes.

national adjustment for each industry is allocated to the states in proportion to QCEW employment.

Geographic adjustments for government employment.—In several cases, BEA has determined that the QCEW reports attribute government employment to the wrong states; the best available information is used to remedy these deficiencies. For example,

- The QCEW tabulations of federal civilian employment assign all the employment of the U.S. Congress and its staff to the District of Columbia, although members of Congress employ some of their staff in home district offices. BEA assumes that this home district employment accounts for 25 percent of total congressional employment and reassigns that portion of the total to the states in proportion to their congressional representation.

Employment in industries not covered by UI programs

Farms.—This industry is only partially covered. Farm employees have mandatory UI coverage or almost complete voluntary coverage in a limited number of states. However, to produce a set of consistent farm wage and salary employment estimates across all states, QCEW data is not used. The state estimates are based on the regional distribution of the number of all hired farm workers from the Farm Labor Survey conducted by the National Agricultural Statistics Service, supplemented by state estimates of hired farm labor expenses produced by the Economic Research Service of the U.S. Department of Agriculture.

Farm labor contractors.—This industry is classified in support activities for agriculture and forestry rather than in farms. The UI coverage in Arizona and California is complete enough to permit the use of the QCEW data for state estimates, but most state UI programs only partially cover this industry. For these states, the state estimates of farm labor contractor employment are based on the geographic distribution of expenditures for contract labor reported in the Census of Agriculture.

Railroads.—The railroad industry is covered by its own unemployment insurance program, which is administered by the Railroad Retirement Board (RRB), rather than by the state UI system. Data suitable for estimating state employment of railroads are available from the RRB only on a place-of-residence basis.[4] Because BEA's employment estimates are designed to conform conceptually and statistically to the place-of-work earnings estimates, the RRB data are adjusted to a place-of-work basis by using journey-to-work data from the Census of Population (the American Community Survey does not have data for the railroad industry by itself). The national totals for all railroad companies combined are allocated to states in proportion to the adjusted RRB series.

Private elementary and secondary schools.—Private elementary and secondary schools are treated as a noncovered industry because religiously affiliated elementary and secondary schools, which account for most of the employment in this industry, remain largely outside the scope of the UI program. The state estimates of private elementary and secondary school employment are primarily based on the employment reported annually by the Census Bureau's *County Business Patterns* (CBP). The CBP data are tabulated from the administrative records of the social security program—Old-Age, Survivors, Disability, and Hospital Insurance—and are more complete for elementary and

[4] RRB provides these data to BEA summed to ZIP-code area totals; BEA assigns these data to counties.

secondary schools than the data prepared under the UI program. The social security program, although exempting nonprofit religious organizations—including schools—from mandatory coverage, has elective coverage provisions that have resulted in broad participation among religiously affiliated elementary and secondary schools.

In about half of the states, the UI coverage of elementary and secondary schools is complete enough to permit the use of QCEW data as the basis for the state employment estimates. For the other states, CBP data are used.

Religious organizations.—The Federal Unemployment Tax Act permits states to exclude religious organizations from mandatory UI coverage. Although most state UI laws do have some provisions for elective coverage, less than 10 percent of the national total employment of religious organizations is covered. Therefore, the state estimates of the employment of religious organizations are based on CBP data. The CBP data are adjusted proportionately to sum to the BEA national employment totals for this industry.

Private households.—For this largely noncovered industry—mainly domestic servants—the national employment estimates are allocated to states in proportion to the "3-year estimates" of place-of-work private household employment from the American Community Survey. Estimates for 2000 and earlier years are based on the Census of Population journey-to-work data.

Military.—State military employment is measured as the number of active duty military personnel that are stationed in the state plus the number of military reserve unit members. The estimates of active duty employment for the Army, Air Force, Navy, Marine Corps, and Coast Guard are based on the annual averages of 12 monthly observations, for a given year, from reports received from each branch of service. Navy personnel assigned to ships and other mobile units and Marines assigned to Fleet Marine Force units are measured according to the units' home ports rather than their actual locations as of the reporting date.

The measure of employment of the military Reserves—including the National Guard—is confined to members of reserve units that meet regularly for training. The state estimates are based on fiscal year—ending September 30—tabulations of military reserve strength provided by the Department of Defense.[5]

Adjustments for noncovered segments of UI-covered industries.—BEA makes adjustments to add the employment of several noncovered segments of UI covered industries. If relevant source data are not available, the national adjustments are allocated to states in proportion to the QCEW employment of the affected industry or industries. Examples of BEA adjustments for noncovered segments of UI-covered industries are as follows:

- Some insurance solicitors and real estate agents are omitted from UI coverage because they are paid solely by commissions. The national estimates for these two segments are allocated to states in proportion to QCEW employment in each industry.
- Establishments of railroad carrier affiliates and railway labor organizations are covered by the Railroad Unemployment Insurance system rather than by state UI.

[5] The payroll tabulations include only regularly scheduled training duty; National Guard service during natural disasters, riots, and the like is not included.

The state adjustments are based on data provided by the Railroad Retirement Board.

- Corporate officers in Washington State are omitted from UI coverage. The Washington Employment Security Department provides BEA with estimates of the number of corporate officers by six-digit NAICS by county.
- Some nonprofit organizations are exempt from UI coverage because they have fewer than four employees. The national estimates are allocated to states in proportion to the QCEW employment of each industry.
- Students and the spouses of students who are employed by the institutions of higher education in which the students are enrolled are generally omitted from UI coverage. State estimates of the noncovered student employment of private, state government, and local government institutions are based on the differences between the relevant QCEW employment data and alternative employment data that include student employment. The alternative data are reported annually by the Census Bureau in *County Business Patterns* for the private institutions and on the Census Bureau's *Annual Survey of Public Employment and Payroll*.
- UI coverage of local government employees excludes elected officials and members of the judiciary. The national estimates are allocated to states in proportion to QCEW state and local government employment.
- Coverage of federal employees under the Unemployment Compensation of Federal Employees (UCFE) program excludes federal employees who work for certain U.S. intelligence agencies. So adjustments are made in specific geographies to provide complete coverage of all federal civilian employment.

Alternative measures of wage and salary employment

Current Employment Statistics.--The Bureau of Labor Statistics (BLS)—in cooperation with state employment security agencies—prepares the Current Employment Statistics (CES)—a set of state and local area wage and salary employment estimates—that is like the BEA estimates. Both are job-count measures of full-time and part-time employment on a place-of-work basis. The CES estimates are based on a monthly sample survey—using Form BLS-790—of nonagricultural establishments with employees. The sample for UI-covered industries is drawn from all establishments reported in employers' UI contributions returns, and the monthly sample-based series for covered industries is benchmarked annually to QCEW employment; thus, both the BEA and the CES series are grounded on the same set of administrative records data. A detailed description of the sampling and estimating methodologies for the CES estimates is presented in the "Explanatory Notes" of BLS's monthly *Employment and Earnings*.

The CES estimates are timelier than the BEA estimates; preliminary BLS estimates are released with a one-month lag. By contrast, the BEA estimates are prepared only as annual averages and are released at the state level nine months after the reference year.

The BEA series is somewhat broader in its coverage than the CES series. The BEA series includes industries—agriculture, forestry, fishing, and hunting; private households; and the military—that CES excludes.[6] A misreporting adjustment is unique to the BEA series. However, the CES series includes, within the scope of its coverage, all the noncovered segments of UI-covered industries for which BEA makes explicit adjustments.

The BEA estimates of wage and salary employment are accompanied by a self-employment series that is consistent with the wage and salary employment series as much as the available source data allow. No self-employment series is available in conjunction with the CES employment estimates.

At the national and state levels, the BEA estimates of wage and salary employment are available at the NAICS three-digit subsector beginning with 1998 and by SIC two-digit level for 1969-2001. By contrast, the CES estimates for the nation (in *Employment and Earnings*) are available in more detail: At the state level the CES estimates are presented only at the NAICS sector or SIC division ("one-digit") level; however, more detailed estimates are available from some of the state employment security agencies.

County Business Patterns.-- Another measure of state employment by place of work is the employment data published in the Census Bureau's *County Business Patterns* (CBP). It differs in source data and coverage from BEA's employment and QCEW employment.

The CBP data are derived from Census Bureau business establishment surveys and federal administrative records.

The coverage of the CBP data differs from that of the QCEW data primarily because the CBP data exclude most government employees, while the QCEW data cover civilian government employees.[7] CBP data also exclude several private industries covered at least in part by the QCEW: crop and animal production; rail transportation; insurance and employee benefit funds; trusts, estates, and agency accounts; and private households. However, the CBP data cover the employees of educational institutions, membership organizations, and small nonprofit organizations in other industries more completely than the QCEW data.[8] In addition, the CBP data reports employment for the month of March only; the QCEW employment data are quarterly and annual averages of monthly data.

Beginning in 2001, QCEW classifies employees of Indian tribal governments and enterprises in local government. These employees were previously classified in the

[6] More precisely, the CES excludes all of NAICS sector 11 (agriculture, forestry, fishing, and hunting) except logging (1133).

[7] The CBP data cover only those government employees who work in government hospitals, federally chartered savings institutions and credit unions, retail liquor stores, wholesale liquor establishments and university publishers. QCEW data in most states exclude state and local elected officials, members of the judiciary, state national and air national guardsmen, temporary emergency employees, and those in policy and advisory positions.

[8] Some religious elementary and secondary schools are not covered by QCEW because of a 1981 Supreme Court decision stating "schools operated and supported by churches and not separately incorporated [are] held exempt from unemployment compensation taxes." College students (and their spouses) employed by the school in which they are enrolled, and student nurses and interns employed by hospitals as part of their training are also excluded from QCEW. While QCEW coverage varies, half of the states only include nonprofit organizations with four or more employees during twenty weeks in a calendar year.

relevant private industries.[9] In the CBP data, these employees are still classified in private industries.

Nonfarm Self-Employment

The BEA state estimates of nonfarm self-employment consist of the number of sole proprietorships and the number of individual general partners.[10] The nonfarm self-employment estimates resemble the wage and salary employment estimates in that both measure jobs—as opposed to workers—on a full-time and part-time basis. However, because of limitations in source data, two important measurement differences exist between the two sets of estimates. First, the self-employment estimates are largely on a place-of-residence basis rather than on the preferred place-of-work basis. Second, the self-employment estimates reflect the total number of sole proprietorships or partners active at any time during the year—as opposed to the annual average measure used for wage and salary employment.

National totals

For each NAICS three-digit subsector (or SIC two-digit industry in years prior to 2001), the national total of nonfarm self-employment equals the sum of the number of sole proprietorships and the number of individual general partners.

Sole proprietorships.—Income from a nonfarm sole proprietorship is reported on Schedule C—*Profit, or Loss, from Business or Profession*—of Internal Revenue Service (IRS) Form 1040—*U.S. Individual Income Tax Return.* A schedule is filed for each business operated by the filer and the industry of the proprietorship reported. In addition, corporate directors—who are not officers in the corporation—use Schedule C to report their director's fees. BEA uses the number of Schedule Cs filed (including those filed by corporate directors) as its measure of the number of sole proprietorships. The national estimate of the number of nonfarm sole proprietorships in each NAICS three-digit subsector is based on a sample of these schedules.[11] In the absence of IRS data for the most recent years, the number of proprietorships is extrapolated forward using prior years' growth rates.

Partners.—A preliminary national estimate of the number of nonfarm partners by NAICS three-digit subsector is based on a sample of returns of IRS Form 1065—*U.S. Partnership Return of Income*. One Form 1065 is filed by each business partnership. The number of partners (which can include corporations and other legal entities as well as individuals) and the industry of the business are indicated on the form.

The preliminary estimate of the number of partners by industry is adjusted by using relationships from two special tabulations of partnership tax data provided by the IRS. The first tabulation, available annually, is of the number of limited partners—generally at the NAICS sector level. The second tabulation, available for 1986 only, is

[9] For example, employees of casinos owned by tribal councils were included in the North American Industry Classification System (NAICS) subsector "Amusement, Gambling, and Recreation Industries."

[10] Partners can be individuals, corporations, partnerships, estates, trusts, limited liability companies, tax-exempt organizations, or individual retirement arrangements. They can be either general or limited.

[11] When a husband and wife jointly operate a nonfarm sole proprietorship (e.g. a restaurant) and file a joint income tax return, only one will be counted as a proprietor.

the number of partners by SIC division by type (e.g. individuals, corporations, other partnerships acting as partners, and fiduciaries) in partnerships with 10 or fewer partners.

The adjustment of the preliminary estimate is at the NAICS sector level. The preliminary estimates of the number of partners are summed to the appropriate industry totals. The number of limited partners from the first IRS special tabulation is subtracted from the preliminary estimate to obtain the number of general partners. Next, the ratio of the number of individual partners to the total number of partners is calculated for each industry from the second IRS special tabulation. This ratio is multiplied by the number of general partners in the industry in each year to yield the number of individual general partners. Finally, the NAICS sector totals of the number of individual general partners are allocated to the three-digit subsectors in proportion to the number of partnerships to yield the final estimate of partners.

In the absence of IRS data for the most recent years, the number of partners is extrapolated forward using prior years' growth rates.

State estimates

Preliminary state estimates of self-employment are also based on tabulations of the number of nonfarm sole proprietorships filing IRS Schedule C, Form 1040 and on the number of nonfarm general partners as reported on IRS Schedule B, Form 1065. However, the entire population of returns is used (rather than just the sample used for the national estimates) and slightly different data from the forms are available for states. Specifically, data are available on the number of partners in each partnership and the type of partnership. Up to four partners in each partnership are counted except limited partnerships which are assumed to have a single general partner.[12] Tabulations are prepared by NAICS three-digit subsector. The national estimates of sole proprietorships and partners are combined and allocated to states by industry in proportion to the preliminary state estimates of the number of sole proprietorships and partners. In the absence of IRS data for the most recent years, the state allocators for prior years are used.

Farm Self-Employment

Farm self-employment is defined as the number of non-corporate farm operators, consisting of sole proprietors and partners. A farm is defined as an establishment that produces, or normally would be expected to produce, at least $1,000 worth of farm products—crops and livestock—in a typical year. Because of the low cutoff point for this definition, the farm self-employment estimates are effectively on a full-time and part-time basis. The estimates are consistent with the job-count basis of the estimates of wage and salary employment because farm proprietors are counted without regard to any other employment. The distinction between place-of-work and place-of-residence is not significant because most operators live on or near their land. Similarly, because of the annual production cycle of most farming, the distinctions between the point-in-time, the average annual, and the any-activity temporal concepts of employment measurement are not significant.

[12] Up to 500 partners are counted in law and accounting firms.

National and State Estimates (1969-2001)

Both the national and state estimates of farm self-employment are prepared by the application of a series of ratios to the annual estimates of the number of all farms prepared by the National Agricultural Statistics Service (NASS), U.S. Department of Agriculture (USDA). For the BEA national estimates, the ratios are drawn from the USDA's annual *Agricultural Resource Management Study* (ARMS), previously the *Farm Costs and Returns Survey* (FCRS); for the state estimates, the ratios are drawn from the quinquennial *Census of Agriculture*. The census ratios are interpolated between census years, and the ratios from the last census are used for each subsequent year.[13] The sequence of estimating steps for the national totals and the preliminary state estimates is as follows:

1. The number of non-corporate farms is derived as the product of the NASS number of all farms and the ratio of the number of non-corporate farms to all farms.
2. The number of sole-proprietor farms is derived as the product of the number of non-corporate farms (step 1) and the ratio of the number of sole-proprietor farms to non-corporate farms.
3. The number of partnership farms is derived as the product of the number of non-corporate farms (step 1) and the ratio of the number of partnership farms to non-corporate farms.
4. The number of farm partners is derived as the product of the number of partnership farms (step 3) and the ratio of the number of farm partners to partnership farms.
5. Total farm self-employment (final for the nation; provisional for the states) is derived as the sum of the number of sole-proprietor farms (step 2) and the number of farm partners (step 4).

Finally, the national totals are allocated to states in proportion to the provisional state estimates (the allocators developed in step 5).

National and State Estimates (2002 forward)

Beginning in 2002, the *Census of Agriculture* started publishing the number of farm operators by legal form of organization for all states. The methodology for estimating farm self employment from 2002 onward therefore includes additional steps in which the ratio of the number of farm operators to the number of farms are applied. In addition, BEA now adjusts the production threshold an operation must meet to qualify as a farm for inflation using the prices received index for all items for all farms from NASS.[14] The new sequence of steps for estimating farm self employment are as follows:

1. The number of non-corporate farms is derived as the product of the NASS number of all farms and the ARMS ratio of the number of non-corporate farms to all farms.

[13] The most recent *Census of Agriculture* in use for the BEA employment estimates is that for 2012.
[14] The USDA $1,000 threshold was set in 1974.

2. The number of sole-proprietor farms is derived as the product of the number of non-corporate farms (step 1) and the ARMS ratio of the number of sole-proprietor farms to non-corporate farms.
3. The adjusted number of sole-proprietor farms is derived as the product of the number of sole-proprietor farms (step 2) and the ratio of the number of sole-proprietor farms over the inflation-adjusted threshold to all sole-proprietor farms.
4. The number of sole-proprietor farms is further adjusted to remove farms with hired managers. It is derived as the product of the adjusted number of sole-proprietors farms (step 3) and the ratio of sole-proprietor farms without hired managers to total sole-proprietor farms.
5. The number of sole-proprietors is derived as the product of the adjusted number of sole-proprietor farms (step 4) and the ratio of the number of operators to sole-proprietor farms.[15]
6. The number of partnership farms is derived as the product of the number of non-corporate farms (step 1) and the ARMS ratio of the number of partnership farms to non-corporate farms.
7. The adjusted number of partnership farms is derived as the product of the number of partnership farms (step 6) and the ARMS ratio of the number of the number of partnership farms over the inflation-adjusted threshold to all partnership farms.
8. The number of partnership farms is further adjusted to remove farms with hired managers. It is derived as the product of the adjusted number of partnership farms (step 7) and the ratio of partnership farms without hired managers to total partnership farms.
9. The number of farm partners is derived as the product of the adjusted number of partnership farms (step 8) and the ratio of the number of farm partners to partnership farms.
10. Total farm self-employment (final for the nation; provisional for the states) is derived as the sum of the number of sole-proprietors (step 5) and the number of farm partners (step 9).
11. Finally, the national totals are allocated to states in proportion to the provisional state estimates (step 10).

[15] Formerly, BEA assumed that sole proprietorship farms had a single operator, the owner. Data from 2002 *Census of Agriculture* revealed that many sole proprietorship farms had more than one operator.

Table L. Relation of BEA Wage and Salary Employment and BLS Total Employment

	2016	2017	2018
Total Employment, BLS[1]	141,870,000	143,860,000	146,132,000
Plus:			
Adjustment for misreporting of employment on tax returns	850,000	865,000	896,000
Private employment exempt from UI coverage[2]	4,252,000	4,182,000	4,384,000
Government employment exempt from UI coverage[3]	2,940,000	2,953,000	2,963,000
Equals: Wage and Salary Employment, BEA	149,912,000	151,860,000	154,375,000

[1]BLS.gov data as of 09/19/2019

[2]Consists mostly of employment in the religious organizations industry (NAICS 8131), private education (6111), and private households (814). Also consists of employment in the agriculture, forestry, and fishing, rail transportation, hospitals, and social assistance industries; employment of some nonprofit organizations having fewer than four employees (in any industry); insurance solicitors and real estate agents classified as statutory employees; and corporates officers in the state of Washington.

[3] Consists mostly of military employees (active duty and reserve officers and enlisted personnel). Also consists of state and local elected officials, members of the judiciary, students and their spouses employed by public colleges and universities, and employees of public railroads.

XII. TECHNICAL NOTES

Allocation Procedures

Allocation procedures impart to the state (or county) estimates the characteristics of the national (or state) estimates that are not reflected in the available state-level (or county-level) source data; for most components of personal income, the state and county source data are less comprehensive and less reliable than the data that are available for the national estimates. In addition, these procedures allow the use of state and county data that are related to, but that do not precisely match, the component being estimated. For example, state control totals of unemployment compensation are allocated to counties of some states in proportion to direct payments data provided their employment security agencies. For the states not providing such data, the control totals are allocated in proportion to the number of unemployed persons estimated by the Bureau of Labor Statistics (BLS).

In the allocation procedures, the national or state control total for a component is allocated to states or counties in proportion to each state's or county's share of related data. In many cases the related data are modified or augmented before the allocation by preliminary estimation—for example, by the summation of wages, tips, and pay-in-kind, by the multiplication of average wages and the number of employees, or by interpolation or extrapolation.

Because the allocation procedures use the national control totals for the state estimates, and state control totals for county estimates, their use yields an additive system in which the county estimates sum to the state estimates which in turn sum to the national estimate.

The allocation procedure used to estimate a component of state personal income is

$$Y_s = (Y_n)\left(\frac{X_s}{X_n}\right)$$

where Y_s is the estimator (that is, the statistical procedure used to derive an estimate) of the component of personal income for state s, Y_n is the national estimate of the component (which is used as the control total for the state estimates of the component), X_s is the value for state s from the data related to the component, and X_n is the sum over all states of the related data ($X_n = \sum_s X_s$).

In cases in which the national estimate is calculated as the sum of the state data plus an amount A_n for which state data are unavailable, the allocation procedure may be represented by two equations:

$$A_s = (A_n)\left(\frac{X_s}{X_n}\right)$$

$$Y_s = X_s + A_s$$

where A_s is the state estimator of the portion of Y for which state data are unavailable. In effect, Y_s is the composite estimator consisting of X_s, the best possible direct estimator (100 percent sample) of the portion of Y for which state data are available, plus A_s, the indirect estimator of the portion of Y for which state data are unavailable.

For example, the national estimates of wages and salaries for many industries consist of the sum of state data plus a few small adjustments, which taken together (A_n) are allocated to the states in proportion to the state data. The small allocated amount for each state (A_s) is added to the state datum (X_s) to yield the state estimate (Y_s).

Dual Allocation

Dual allocation is a statistical procedure that forces the elements of a matrix to sum to column and row control totals. It is used to adjust, for instance, a preliminary estimate of income by state and industry so that sum of income in an industry across all states equals a national control total for that industry and simultaneously the sum of income in a state across all industries equals a control total for that state. It is also used to adjust a preliminary estimate of quarterly state personal income so that it is consistent with both national control totals by quarter and annual state control totals.

Specifically, dual allocation subtracts the sum of the algebraic values in a row from the row control total. It divides this difference by the sum of the absolute values in the row and then multiplies the resulting ratio by the absolute value of each element in the row and adds the result to the algebraic value of that element. This procedure is repeated for each row and then a parallel procedure is repeated for each column. The whole process is repeated five times.

After the fifth repetition, any differences between the row and column control totals and the output matrix row and column sums are eliminated by a process called feathering. This is accomplished by selecting the first column with a non-zero difference and the first non-zero row difference with the same sign. The smaller of the two differences is subtracted from the element in that row and column and from the final row and column sums. This procedure forces the difference between either the final row sum and its corresponding control total or the final column sum and its corresponding control total to zero.

Before performing any subtraction, the element in the row and column selected is checked for a zero value and to see if the subtraction would cause a change in the element’s sign. If either of these tests is true, the next non-zero row difference with like sign is selected.

The entire feathering process is repeated until all differences between final column sums and column control totals have been forced to zero. At this point the row sums and row control totals will also be equal.

Disclosure-Avoidance Procedures

Like other statistical agencies, the Bureau of Economic Analysis (BEA) is legally required to safeguard the confidentiality of the information that it receives. In addition, like other agencies, it must balance its responsibility to avoid disclosing confidential information with its responsibility to release as much information as possible. It balances these responsibilities by presenting the estimates for regions, states, and local areas only at the North American Industry Classification System (NAICS) subsector level or Standard Industrial Classification (SIC) two-digit level, even though it receives source data at the NAICS four- and five-digit industry levels or SIC three- and four-digit levels.

Most of the data that BEA receives from other agencies are not confidential. The agencies summarize their data by program, ZIP code, county, or state, so that each record, or data cell, contains data for enough individuals or establishments to preclude the identification of data for a specific individual or establishment and, therefore, to preclude disclosure of confidential information.

However, the Quarterly Census of Employment and Wages (QCEW) tabulations that BEA receives from the BLS include records that would disclose confidential information. The confidential information on wages and salaries for some business firms is identifiable from the state and county estimates of wages and salaries that are derived from the QCEW data.

To prevent either the direct or the indirect disclosure of the confidential information, BEA uses the BLS state, county, and metropolitan statistical area nondisclosure file. BEA uses as many BLS nondisclosure cells as possible but cannot use some of them for various reasons. The most important reasons are that the industry structure published by BEA does not exactly match the NAICS subsector or SIC two-digit detail provided by BLS and that BEA does not use QCEW data for the farm sector. When BEA drops BLS nondisclosure cells, other cells must be selected to prevent the disclosure of confidential information. To determine which estimates should be suppressed, the total wages and salaries file and the wages-and-salaries-nondisclosure file are used to prepare a multidimensional matrix. This matrix is tested, and the estimates that should be suppressed are selected.[1]

BEA's estimates for micropolitan and metropolitan statistical areas, metropolitan divisions, combined statistical areas, and the metropolitan and nonmetropolitan portions of states are aggregations of its county estimates. It often happens that an area consists of two or more counties with a relatively small amount of suppressed income or employment in a particular industry relative to the aggregate for all counties in the area. When the suppressed amount is below a certain percentage threshold, BEA publishes the portion of the aggregate which is disclosable and flags it with a code (E) indicating that the published amount constitutes the major portion of the aggregate for the area. For a given area, the number of counties that are aggregated in an (E) estimate can vary from industry to industry and from year to year.

Geocoding

Some of the data BEA uses to estimate personal income is available only by ZIP Code, which BEA then tabulates by county and state. For instance, BEA tabulates extracts from certain IRS tax returns by county and state based on the nine-digit ZIP code reported on the return (nine-digit ZIP codes do not cross county borders). About 95 percent of the Form 1065 returns and 35 percent of the Schedule C returns can be geocoded using their nine-digit ZIP codes. The remaining returns are geocoded using their five-digit ZIP codes. Since some five-digit ZIP codes comprise addresses in

[1] In this test, computer programs impose a set of rules and priorities on this matrix so that the estimates that should be suppressed are selected until indirect disclosure is impossible.

multiple counties, the amounts reported on the returns are allocated to those counties in proportion to the number residential delivery addresses. Less than 1 percent of the returns cannot be geocoded by this method. An important feature of this method is the use of ZIP Code to county look-up files (the ZIP+4 product and the Delivery Stats File) that are updated annually by United States Postal Service.

Imputation

One of the principles of the national income and product accounts (NIPA) is that they reflect market transactions. In a few instances, a comprehensive account of total income and production requires BEA to impute a value or a transaction. This keeps the NIPA invariant to how certain activities are carried out. For instance, some transactions, such as the provision of food, lodging, and clothing to employees have an element of barter—food is bartered for labor (at least in part). In this case, imputation involves placing a market value on the food employees received so that the estimate of their total compensation is comprehensive and invariant to changes in the proportions received in cash and in kind. In other transactions, such as the rental of housing to an owner-occupant, no transaction appears in the records of the economy. In this case, imputation involves constructing a transaction between a producer and a consumer (who happen to be the same person) and placing a market value on the housing services exchanged. If the imputation were not made, then housing output and consumption would fall if a household purchased the house it had been renting. A third type of imputation is the attribution of the income of one sector or legal form of organization to another. For instance, the NIPA attributes the property income life insurance carriers earn on annuity reserves to the persons who own the annuities.

The imputations that are treated explicitly in state personal income include the following:

Imputed pay-in-kind is added to the estimates of wages and salaries so that all the earnings of employees who receive part of their wages in pay-in-kind will be included in personal income. This imputation is an estimate of the value of the food, lodging, clothing, and other goods and services that are received by employees from their employers as partial or full payment for their services.

Imputations for employer contributions for (a) federal employees' unemployment insurance, (b) military medical insurance, and (c) federal workers' compensation—equal to the benefits paid—are included in employer contributions for government social insurance funds.

The *imputation for employer-paid health and life insurance premiums* is included in employer contributions for employee pension and insurance funds, a component of supplements to wages and salaries.

The *imputed value of food and fuel produced and consumed on farms* is included in farm proprietors' income so that that measure reflects the income from all of the production of noncorporate farms.

The *imputed net rental income of owner-occupied housing* is included in the rental income of persons with capital consumption adjustment (CCAdj).

Imputed interest receipts from financial and insurance companies are included in personal interest income.

The *imputed receipt of dividend and interest income from pension plans* is included in personal dividend income and personal interest income.

Interpolation and Extrapolation

Interpolation and extrapolation are used to prepare the first approximations of some components of personal income for the years in which direct source data are unavailable. Both procedures use the data for these components for benchmark years—the years for which the best data are available—and both frequently use other data that are related to the benchmark-year data for the components.

Interpolation is used to derive the first approximation of estimates for years that are between benchmark years. For example, if data for wages and salaries for an industry were available only from the decennial Census of Population but employment data were available annually from another source, the first approximations of wages and salaries for 1981-1989 could be interpolated from the wages and salaries data for 1980 and 1990, the two census benchmark years, and from the annual employment data for 1980-1990.

Extrapolation is used to derive first approximations for years that are beyond the most recent benchmark year. For example, the first approximations of wages for 1991-1999 might be extrapolated from the census benchmark data for 1990 and from the employment data for 1990-1999. The estimates based on extrapolation are usually superseded by revised estimates when benchmark data become available for a more current year. For the preceding example, the estimates for 1991-1999 would be superseded by estimates based on interpolation when census benchmark data became available for 2000.

Both interpolation and extrapolation are illustrated in the following examples. In the first two examples, interpolation is used to derive the first approximations of wages and salaries for an industry in areas A, B, and C for the years 2 and 3 that are between the benchmark years 1 and 4. In the third example, extrapolation is used to derive the approximations for year 5.

In the first example, “straight-line interpolation” is used to derive the first approximations for years 2 and 3 from the data for benchmark years 1 and 4.[2] The first approximations for year 2 equals the amount for year 1 plus one-third of the increase from year 1 to year 4; the preliminary estimate for year 3 equals the amount for year 1 plus two-thirds of the increase.

[2] Straight-line interpolation assumes that the magnitude of the annual change is the same in each year in the interpolated time series, subject to modification by the adjustment to the national control totals. Straight-line interpolation is used as the default option, when no annual source data related to the income series are available.

Table M. Wages and salaries in thousands of dollars

	Year 1 (benchmark)	Year 2 (interpolation)	Year 3 (interpolation)	Year 4 (benchmark)
Area A	28	34	40	46
Area B	34	43	53	62
Area C	74	81	87	94

In the second example, interpolation with a related series of data, the indicator series, is used to derive the first approximations for years 2 and 3 from the benchmark data for years 1 and 4 and from the indicator series for all four years. The data for wages and salaries are the benchmark data, the employment data are the indicator series, and the average wages (computed as wages and salaries divided by employment) are the interpolation ratios.[3] This method of interpolation is illustrated in three steps.

First, average wages for years 1 and 4 are calculated from the wage and employment data for those years. Wages for each year are divided by the number of employees for the year to yield the average wages of the employees.

Table N. Employment and average wages

	Year 1		Year 4	
	Employment	Average Wages in dollars	Employment	Average wages in dollars
Area A	4	7,000	4	11,500
Area B	6	5,667	10	6,200
Area C	11	6,727	10	9,400

Second, straight-line interpolation is used to derive average wages for years 2 and 3 from average wages for years 1 and 4.

Table O. Average wages in dollars

	Year 1 (benchmark)	Year 2 (interpolation)	Year 3 (interpolation)	Year 4 (benchmark)
Area A	7,000	8,500	10,000	11,500
Area B	5,667	5,845	6,022	6,200
Area C	6,727	7,618	8,509	9,400

[3] Using an indicator series for interpolation between two benchmark years assumes that any change in the relationship between the data for the income component for the benchmark years and the data from the indicator series for the benchmark years occurs uniformly over time. This relationship is embodied in the interpolation ratios, which in this example are the average wages. For this procedure, straight-line interpolation of the benchmark-year interpolation ratios is used to calculate the ratios for the intervening years. A benchmark-year interpolation ratio is the ratio of the datum for an income component for the benchmark year to the datum for the same year from the annual indicator series. The interpolation ratios for the intervening years are multiplied by the data for those years from the indicator series to yield the interpolated series for those years.

Third, the interpolated average wages for each year are multiplied by the employment data for each year to yield the first approximations.

Table P. Employment and wage approximations

	Year 2		Year 3	
	Employment	Wages in thousands of dollars	Employment	Wages in thousands of dollars
Area A	5	43	4	40
Area B	7	41	9	54
Area C.................	10	76	9	77

In the third example, extrapolation with an indicator series is used to derive the first approximations of wages for year 5 from average wages for year 4—used here as the extrapolation ratios—and employment data for year 5.[4] The average wages are multiplied by employment to yield the first approximations of wages for year 5.

Table Q. First approximations of wages for year 5

	Year 4	Year 5	
	Average Wages in dollars	Employment	Wages in thousands of dollars
Area A................	11,500	5	58
Area B................	6,200	12	74
Area C................	9,400	9	85

After interpolation or extrapolation is used to calculate the first approximations of a component of personal income, the approximations are adjusted proportionately to sum to the component's control total.

NAICS Earnings and Employment by Industry, 1998-2000

The QCEW data that BEA uses to estimate earnings and employment by industry have been compiled based on the 2002 and later editions of the North American Industry Classification System (NAICS) since 2001. Prior to then the Standard Industrial Classification System (SIC) was used. The income tax return data BEA uses to estimate earnings and employment have been compiled on a NAICS basis since 1998 and on an SIC basis in earlier years.

BEA developed state estimates of earnings and employment by industry 1998-2000 on a NAICS basis in the following fashion using the reconstructed NAICS-based data prepared by the Bureau of Labor Statistics (BLS), *County Business Patterns* data

[4] Using an indicator series for extrapolation assumes that the relationship between the data for the income component for the latest benchmark year and the data from the indicator series for that year remains unchanged in the subsequent years.

from the Census Bureau, and BEA's earnings and employment estimates published on an SIC basis. The conversion of wages and salaries (and wage and salary employment) will be discussed in substantial detail first. Then a briefer account of the conversion of wage supplements and earnings and employment by place of work follows.

Since BEA does not publish industry detail for government employment and earnings, the switch from SIC to NAICS did not affect the government sector estimates. The following discussion applies only to private sector employment and earnings.

Reconstructed BLS data

BEA obtained reconstructed BLS data for states at both a 2-digit and a 4-digit level of aggregation.[5] BEA edited this data when it discovered data missing at irregular intervals or large inconsistencies with other data sets. In addition, because the reconstructed BLS data classified Native American establishments in the private sector, BEA removed their employment and wages to be consistent with the current classification of such establishments in the local government sector. This was done based on a file BLS previously provided BEA of Native American Establishments 1998-2000.

The 2-digit reconstructed BLS data were then adjusted proportionately so that the sum of all industries for a given state equaled BEA's total for that state. The reconstructed BLS data, adjusted in this fashion, summed over all states by industry were then designated the 2-digit national controls by industry. The 2-digit reconstructed BLS data adjusted in this fashion were used to control the estimation of missing values at the 4-digit level of aggregation.

There were many suppressions in the 4-digit reconstructed BLS state data. When BLS suppressed an industry, it gave no indication of whether employment and wages for the industry were zero or whether they were positive but not disclosable. To determine whether employment and wages were zero and to estimate employment and wages when it was determined that they were positive, BEA used *County Business Patterns* data.

County Business Patterns data

County Business Patterns data is on a NAICS basis 1998-2000.[6] Missing values in the *County Business Patterns* data had to be estimated before the data could be used. Although *County Business Patterns* suppresses many industries, it provides an employment range for these industries. If no employment range is given, employment is zero. Working at the 4-digit NAICS level, BEA estimated missing employment values as either zero or the midpoint of the employment range. Missing wage values were estimated as the product of the midpoint employment and the average wage for that industry from an adjacent year, if available. If wages for an industry in a particular state were suppressed for all years, then the average wage for that industry from the state's

---

[5] There were only a few suppressions in the 2-digit data. These few missing values were estimated using simple methods such as replacing the missing value for state *i* in year *t* with the average of that state's industry in years *t-1* and *t+1*.

[6] Since *County Business Patterns* used the 1997 edition of NAICS for the 1998-2000 data it had to be converted to the 2002 edition of NAICS. This affected only the construction, wholesale trade, and information industries. The *County Business Patterns* estimates for these industries for 1998-2000 were replaced with 2003 estimates. This did not have much of an effect on the final results of the conversion because no construction and wholesale trade industries were missing in the reconstructed BLS data and relatively few information industries were missing.

region was substituted. If wages for that industry were suppressed in all states in the region for a particular year, the average wage for that industry for the closest region was substituted. An estimate of Native American employment and wages was removed from the data using the BLS file mentioned above.

Balancing the 4-digit BLS reconstructed data

Industries at the 4-digit level for a given state were summed and compared to the 2-digit control for that state. Values of 4-digit industries with preliminary estimates based on the *County Business Patterns* data were then adjusted proportionately in order to balance the sum of the 4-digit industries with the 2-digit control. Values for 4-digit industries based on the BLS reconstructed data were not changed.

Since the 2-digit BLS reconstructed data had already been controlled to BEA's existing state totals, the sum of all 4-digit BLS reconstructed data with missing values replaced in this fashion also equal BEA's existing state data. The sum of each 4-digit industry across all states was deemed to be the national estimate.

Employment and wages are not published in industries with less than $10 million in earnings, but these amounts are included in aggregates. The 4-digit estimates were summed to 3-digit for publication purposes.

Wage supplements

State control totals of wage supplements by program (e.g. employer contributions to pension and profit-sharing funds, employer contributions for Old Age, Survivors, and Disability Insurance, etc.) were distributed to NAICS industries in proportion to their wages and salaries, except in a few instances in which there was a very high correspondence between the NAICS and SIC definitions of an industry (e.g. railroads). In those cases, the estimate for the SIC industry was used for the NAICS industry and the balance of the other industries was distributed in proportion to wages and salaries.

Earnings and employment by place of work

Because the quality of the conversion of the individual components of earnings varied widely, they were not published separately. Rather, earnings by place of work, defined as wages and salaries plus wage supplements plus proprietors' income, was published as an aggregate and for 3-digit NAICS industries. In addition, total employment consisting of wage and salary employment plus proprietors' employment was published as an aggregate and for 3-digit industries.

XIII. APPENDIX

Concordance between BEA line codes and NAICS industry codes

Line	BEA Industry Description	NAICS Code
0000	Total	…
0081*	Farm	111-112
0082*	Nonfarm	…
0090	Private	113-814
0100	Forestry, fishing, related activities	113-115
0101	Forestry and logging	113
0102	Fishing, hunting, and trapping	114
0103	Agriculture and forestry support activities	115
0200	Mining	21
0201	Oil and gas extraction	211
0202	Mining (except oil and gas)	212
0203	Support activities for mining	213
0300	Utilities	22
0400	Construction	23
0401	Construction of buildings	236
0402	Heavy and civil engineering construction	237
0403	Specialty trade contractors	238
0500	Manufacturing	31-33
0510	Durable goods manufacturing	321,327-339
0511	Wood product manufacturing	321
0512	Nonmetallic mineral product manufacturing	327
0513	Primary metal manufacturing	331
0514	Fabricated metal product manufacturing	332
0515	Machinery manufacturing	333
0516	Computer and electronic product manufacturing	334
0517	Electrical equipment and appliance manufacturing	335
0518	Motor vehicles, bodies & trailers, and parts manufacturing	3361-3363
0519	Other transportation equipment manufacturing	3364-3369
0521	Furniture and related product manufacturing	337
0522	Miscellaneous manufacturing	339
0530	Nondurable goods manufacturing	311-316,322-326
0531	Food manufacturing	311
0532	Beverage and tobacco product manufacturing	312
0533	Textile mills	313
0534	Textile product mills	314
0535	Apparel manufacturing	315
0536	Leather and allied product manufacturing	316
0537	Paper manufacturing	322
0538	Printing and related support activities	323
0539	Petroleum and coal products manufacturing	324

Line	BEA Industry Description	NAICS Code
0541	Chemical manufacturing	325
0542	Plastics and rubber products manufacturing	326
0600	Wholesale trade	42
0700	Retail Trade	44-45
0701	Motor vehicle and parts dealers	441
0702	Furniture and home furnishings stores	442
0703	Electronics and appliance stores	443
0704	Building material and garden supply stores	444
0705	Food and beverage stores	445
0706	Health and personal care stores	446
0707	Gasoline stations	447
0708	Clothing and clothing accessories stores	448
0709	Sporting goods, hobby, book and music stores	451
0711	General merchandise stores	452
0712	Miscellaneous store retailers	453
0713	Nonstore retailers	454
0800	Transportation and warehousing	48-49
0801	Air transportation	481
0802	Rail transportation	482
0803	Water transportation	483
0804	Truck transportation	484
0805	Transit and ground passenger transportation	485
0806	Pipeline transportation	486
0807	Scenic and sightseeing transportation	487
0808	Support activities for transportation	488
0809	Couriers and messengers	492
0811	Warehousing and storage	493
0900	Information	51
0901	Publishing industries, except Internet	511
0902	Motion picture and sound recording industries	512
0903	Broadcasting, except Internet	515
0904	Internet publishing and broadcasting	516
0905	Telecommunications	517
0906	Data processing, hosting, and related services	518
0907	Other information services	519
1000	Finance and insurance	52
1001	Monetary authorities - central bank	521
1002	Credit intermediation and related activities	522
1003	Securities, commodity contracts, investments	523
1004	Insurance carriers and related activities	524
1005	Funds, trusts, and other financial vehicles	525
1100	Real estate and rental and leasing	53
1101	Real estate	531
1102	Rental and leasing services	532
1103	Lessors of nonfinancial intangible assets	533

Line	BEA Industry Description	NAICS Code
1200	Professional, scientific and technical services	54
1300	Management of companies and enterprises	55
1400	Administrative and waste management services	56
1401	Administrative and support services	561
1402	Waste management and remediation services	562
1500	Educational services	61
1600	Health care and social assistance	62
1601	Ambulatory health care services	621
1602	Hospitals	622
1603	Nursing and residential care facilities	623
1604	Social assistance	624
1700	Arts, entertainment, and recreation	71
1701	Performing arts and spectator sports	711
1702	Museums, historical sites, zoos, and parks	712
1703	Amusement, gambling, and recreation	713
1800	Accommodation and food services	72
1801	Accommodation	721
1802	Food services and drinking places	722
1900	Other services, except public administration	81
1901	Repair and maintenance	811
1902	Personal and laundry services	812
1903	Membership associations and organizations	813
1904	Private households	814
2000	Government and government enterprises	…
2001	Federal, civilian	…
2002	Military	…
2010	State and local	…
2011	State government	…
2012	Local government	…

* In Tables CA5N and CA6N farm has a line code of 0081 and nonfarm has a line code of 0082. In Table CA25N farm has a line code of 0070 and nonfarm has a line code of 0080.

Concordance between BEA line codes and SIC industry codes

Line	BEA Industry Description	SIC Code
0000	Total	…
0081*	Farm	01-02
0082*	Nonfarm	…
0090	Private	…
0100	Agricultural services, forestry, fishing	…
0110	Agricultural services	07
0120	Forestry and fishing	…
0121	Forestry	08
0122	Fishing	…
0200	Mining	B
0210	Metal mining	10
0220	Coal mining	12
0230	Oil and gas extraction	13
0240	Nonmetallic minerals, except fuels	14
0300	Construction	C
0310	General building contractors	15
0320	Heavy construction contractors	16
0330	Special trade contractors	17
0400	Manufacturing	D
0410	Durable goods	…
0413	Lumber and wood products	24
0417	Furniture and fixtures	25
0420	Stone, clay, and glass products	32
0423	Primary metal industries	33
0426	Fabricated metal products	34
0429	Industrial machinery and equipment	35
0432	Electronic and other electric equipment	36
0435	Motor vehicles and equipment	371
0438	Other transportation equipment	372-379
0441	Instruments and related products	38
0444	Miscellaneous manufacturing industries	39
0447	Ordnance	…
0450	Nondurable goods	…
0453	Food and kindred products	20
0456	Tobacco products	21
0459	Textile mill products	22
0462	Apparel and other textile products	23
0465	Paper and allied products	26
0468	Printing and publishing	27
0471	Chemicals and allied products	28
0474	Petroleum and coal products	29

Line	BEA Industry Description	SIC Code
0477	Rubber and miscellaneous plastics products	30
0480	Leather and leather products	31
0500	Transportation and public utilities	E
0510	Railroad transportation	40
0520	Trucking and warehousing	42
0530	Water transportation	44
0540	Other transportation	41, 45-47
0541	Local and interurban passenger transit	41
0542	Transportation by air	45
0543	Pipelines, except natural gas	46
0544	Transportation services	47
0560	Communications	48
0570	Electric, gas, and sanitary services	49
0610	Wholesale trade	F
0620	Retail trade	G
0621	Building materials and garden equipment	52
0622	General merchandise stores	53
0623	Food stores	54
0624	Automotive dealers and service stations	55
0625	Apparel and accessory stores	56
0626	Home furniture and furnishings stores	57
0627	Eating and drinking places	58
0628	Miscellaneous retail	59
0700	Finance, insurance, and real estate	H
0710	Depository and nondepository institutions	60, 61
0730	Other finance, insurance, and real estate	62-65, 67
0731	Security and commodity brokers	62
0732	Insurance carriers	63
0733	Insurance agents, brokers, and services	64
0734	Real estate	65
0735	Combined real estate, insurance, etc.	…
0736	Holding and other investment offices	67
0800	Services	I
0805	Hotels and other lodging places	70
0810	Personal services	72
0815	Private households	88
0820	Business services	73
0825	Automotive repair, services, and parking	75
0830	Miscellaneous repair services	76
0835	Amusement and recreation services	79
0840	Motion pictures	78
0845	Health services	80
0850	Legal services	81
0855	Educational services	82
0860	Social services	83

Line	BEA Industry Description	SIC Code
0865	Museums, botanical, zoological gardens	84
0870	Membership organizations	86
0875	Engineering and management services	87
0880	Miscellaneous services	89
0900	Government and government enterprises	…
0910	Federal, civilian	…
0920	Military	…
0930	State and local	…
0931	State government	…
0932	Local government	…

* In Tables CA5 and CA6 farm has a line code of 0081 and nonfarm has a line code of 0082. In Table CA25 farm has a line code of 0070 and nonfarm has a line code of 0080.

BEA Regions

State FIPS code	State or Region name	Abbreviation	Region code
	New England Region	**NENG**	**1**
09	Connecticut	CT	1
23	Maine	ME	1
25	Massachusetts	MA	1
33	New Hampshire	NH	1
44	Rhode Island	RI	1
50	Vermont	VT	1
	Mideast Region	**MEST**	**2**
10	Delaware	DE	2
11	District of Columbia	DC	2
24	Maryland	MD	2
34	New Jersey	NJ	2
36	New York	NY	2
42	Pennsylvania	PA	2
	Great Lakes Region	**GLAK**	**3**
17	Illinois	IL	3
18	Indiana	IN	3
26	Michigan	MI	3
39	Ohio	OH	3
55	Wisconsin	WI	3
	Plains Region	**PLNS**	**4**
19	Iowa	IA	4
20	Kansas	KS	4
27	Minnesota	MN	4
29	Missouri	MO	4
31	Nebraska	NE	4
38	North Dakota	ND	4
46	South Dakota	SD	4
	Southeast Region	**SEST**	**5**
01	Alabama	AL	5
05	Arkansas	AR	5
12	Florida	FL	5
13	Georgia	GA	5
21	Kentucky	KY	5
22	Louisiana	LA	5
28	Mississippi	MS	5
37	North Carolina	NC	5
45	South Carolina	SC	5
47	Tennessee	TN	5
51	Virginia	VA	5
54	West Virginia	WV	5

State FIPS code	State or Region name	Abbreviation	Region code
	Southwest Region	**SWST**	**6**
04	Arizona	AZ	6
35	New Mexico	NM	6
40	Oklahoma	OK	6
48	Texas	TX	6
	Rocky Mountain Region	**RKMT**	**7**
08	Colorado	CO	7
16	Idaho	ID	7
30	Montana	MT	7
49	Utah	UT	7
56	Wyoming	WY	7
	Far West Region	**FWST**	**8**
02	Alaska	AK	8
06	California	CA	8
15	Hawaii	HI	8
32	Nevada	NV	8
41	Oregon	OR	8
53	Washington	WA	8