Technical Briefing

Technical Document Accompanying the Distribution of Personal Income by State: Prototype Statistics

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October 2023

Bureau of Economic Analysis
U.S. DEPARTMENT OF COMMERCE

Introduction

In response to growing interest in how income is distributed across households, the U.S. Bureau of Economic Analysis (BEA) has been researching methods to construct statistics on the distribution of income that adhere to national economic accounting principles. On October 24, 2023, BEA published prototype statistics on the distribution of personal income by state. These statistics provide information on income that accrues to individuals within certain income groups, as well as ratios and Gini coefficients that provide a fuller picture of state economies.

Personal income is a broad-based income measure that conforms to national economic accounting concepts. It is an important economic indicator that BEA publishes for the nation and for subnational areas including states, counties, and metropolitan areas. While other organizations publish statistics on the distribution of income, none of these statistics are based on the concept of personal income. The personal income concept encompasses not only most monetary income, but also sources of income that are linked to a household's ability to consume but are not necessarily accrued as cash payments. These include in-kind transfers and imputations. Because of this, personal income provides a measure that is thought to be more closely linked to welfare than do money-based income concepts. As such, developing distributional statistics on personal income is of great interest.

National prototype personal income distribution statistics have been published since 2020. The data that are discussed in this document represent a continuation of that work. For the last two years, researchers at BEA have developed methods to construct similar statistics for personal income by state. Van Duym and Awuku-Budu (2022) detail the method developed through this effort. This technical document provides a brief description of the method used to estimate the prototype distribution of personal income by state statistics, as well as a summary of adjustments to the method of van Duym and Awuku-Budu (2022) that are reflected in the prototype distribution of personal income by state statistics. These adjustments are based on further refinements as well as user and expert feedback. BEA welcomes additional feedback on these prototype statistics via email.

Distribution of personal income by state statistics are based largely on the Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS). (In the rest of this document, CPS should be interpreted as referring to the CPS ASEC.) All statistics are computed based on the CPS household sample. However, because CPS respondents are not asked to report income from all categories that are included in the concept of personal income, and because of misreporting and top coding, the estimation method introduces information from other data sources as well. These supplemental data are used to adjust households' CPS incomes for some components that are potentially top coded or misreported, and to estimate values for other components. Once each household is associated with a value for each of the components that comprise personal income, these values are re-scaled to ensure that in the aggregate, the income component total for all households within a state matches the personal income

component total for that state. The state aggregate income component statistics that BEA publishes are based on information other than from the CPS—usually administrative data (see U.S. Bureau of Economic Analysis, 2022 for details). Finally, from this collection of adjusted household-level income information, distributional statistics are computed for each state.

The rest of this document is organized as follows. The next section covers concepts and definitions relevant to state personal income. This is followed by an overview of the data sources. The next section provides an overview of the methods that are used in estimation. The final section covers the prototype data that are available on the BEA website.

Personal income: concepts and definitions

Personal income is the income received by, or on behalf of, all persons from all sources. It includes income from production (wages and salaries), income from owning a home or business, interest and dividend income from the ownership of financial assets, and transfer payments from governments and businesses. It excludes corporate income and capital gains. Personal income contrasts with the money income concept used for inequality statistics published by the U.S. Census Bureau. Census money income excludes several income components that personal income includes, such as in-kind government transfer programs and many tax credits.

Table 1 provides a summary of the components of state personal income, as well as data sources used in computing their value for CPS households. While this list of detailed components is similar to the one used by Gindelsky (2022), a few unique components are needed to construct distributional measures of state personal income. The reasons for this are the way in which certain transfers are accounted for in state-level economic accounts statistics, and different coverage definitions with respect to foreign residents or U.S. citizens living abroad. See the section "Personal Income in the NIPAs and State Personal Income" in the Regional Quarterly Report (Gholizadeh *et al.* 2021).

BEA's state personal income tables include an "adjustment for residence" to account for income earned by employees who live and work in different states. This aggregate state-level residency adjustment is allocated proportionally to the detailed income components for which data are collected on a place-of-work basis.

Personal income total

Personal income by state, published in BEA table SAINC4, is the total of all personal income components. It is the sum of net earnings by place of residence, dividends and interest income, rental income, and personal current transfer receipts. Below we discuss the major components of personal income that are reported in these prototype statistics.

Net earnings by place of residence

Net earnings by place of residence is published in BEA table SAINC4. Conceptually, it is the income that individuals receive for working either as employees or business owners and excludes transfer income and property income from interest, dividends and rent. It is expressed here as the sum of two components: net compensation and proprietors' income. Each of these is discussed below.

Net compensation
Conceptually, net compensation is employee compensation less contributions for government social insurance, each adjusted to a place-of-residence basis. Specifically, it is the sum of wages and salaries (which include employee contributions to government social insurance such as Social Security), supplements to wages and salaries (which include fringe benefits and employer contributions to government social insurance), a residence adjustment, and a subtraction for contributions of government social insurance (from both employers and employees). To arrive at net compensation by state, the residence adjustment in BEA table SAINC4 is split proportionally between those components reported on a place-of-work basis: wages and salaries, supplements to wages and salaries, and contributions for government social insurance.

Proprietors' income
Proprietors' income is published in BEA table SAINC4. It consists of nonfarm proprietors' income and farm proprietors' income.

Dividends and interest income

Dividend and interest income by state is published in BEA table SAINC40. It includes monetary dividend and interest income received by households, as well as interest and dividend income received by pension plans on behalf of households and imputed interest income from deposits and insurance policies.

Rental income

Rental income includes monetary rental income (royalties and non-corporate income from tenant-occupied housing) and imputed rental income (from owner-occupied housing). In BEA table SAINC40, rental income is split into these two components.

Personal current transfer receipts

Personal current transfer receipts represent transactions that are not directly associated with production. These are made up mostly of transfers from governments to individuals, but also include transfers from other sectors. BEA table SAINC35 breaks out personal current transfer receipts.

Data and methods

The principal data source for constructing distribution of personal income by state statistics is the CPS, and the CPS household serves as the unit of observation over which distributional statistics are computed. It is also the main data source used by Gindelsky (2022) to construct estimates of the national personal income distribution and in many other studies of the distribution of income and of inequality in the United States. The CPS has broad coverage of multiple income sources, it collects information on income sources within households—including for those who don't file income taxes—and in it, respondents report income on a calendar year basis. It is also the source for official statistics on poverty and health insurance in the United States. The Census Bureau usually recommends the American Community Survey (ACS) for use at the state level, due to its larger sample size. However, the ACS does not contain the same amount of income detail that the CPS does, a necessary part of distributing each component of personal income. For that reason, as well as to align with the national distributional personal income statistics, the CPS is chosen as the main source data.

Two important adjustments to CPS microdata must be made when constructing state income inequality measures. One is to account for top coding and for the underreporting of income by survey respondents. The second is to bring in information on types of income that are included in the more expansive personal income concept, but CPS respondents are not asked about. Table 2 shows the source data that are used to make these adjustments.

Much of the method described here matches the method of Gindelsky (2022), who updated the method described by Fixler *et al.* (2020). Van Duym and Awuku-Budu (2022) detail a method based largely on the work of Fixler *et al.* (2020) to produce statistics on the distribution of personal income by state. Since then, BEA has been working to improve its distributional statistics, and so there are several differences between the method used to produce the statistics shown by van Duym and Awuku-Budu (2022) and the prototype statistics described in this document. These changes represent an attempt to harmonize the method for producing distribution of personal income by state statistics with the method described by Gindelsky (2022). Specific improvements that update van Duym and Awuku-Budu's (2022) method will be discussed below, and include modifications to how unemployment insurance income is handled (the changes address underreporting by using a CPS crosswalk developed by Larrimore *et al.* (2022)), updates to how ACS data are used to assign imputed rental income of owner-occupied housing to homeowners, changes to income of nursing home residents (allocating social benefit programs to individuals that are out of the CPS scope), and a new method of allocating other benefit payments to households (according to all other income rather than equally).

After making specific adjustments for underreporting, top coding, and missing income components, the final step before computing distribution statistics is to benchmark total incomes associated with each component for each state computed from the adjusted CPS data to these components of personal

income by state reported by BEA. BEA income component detail relies on a combination of survey and administrative data and is benchmarked to national income component totals. The CPS microdata components are each adjusted so that within each state, the totals for each CPS income component match the BEA state income component totals (at the finest level of component detail available, even if this is not published). It should be noted that because the method described by Gindelsky (2022) benchmarks only to national component totals, this represents a source of a small divergence between the two sets of statistics.

The next section details the method for allocating income components that are reported by CPS respondents. It then goes over income components that are allocated using supplementary sources. Next, it discusses differences between this method and the one discussed by Gindelsky (2022). It goes over the method for pooling multiple years of CPS samples together to produce more stable estimates, and how that was modified for 2020–2021 data, years impacted by the COVID–19 pandemic. Finally, it discusses how inequality statistics were computed from the microdata, how price adjustments were done to compute price-adjusted statistics, and some reporting changes that were done for values for 2020 and 2021 when the CPS samples used were smaller.

Income components allocated using CPS reporting

In general, if there are CPS data about a component of personal income, they are used (at least in part, or with an adjustment). Components where no adjustments are made to CPS data (other than benchmarking to the state personal income total) include Social Security benefits, the Earned Income Tax Credit, and many other types of transfer programs. These choices match the approach in Gindelsky (2022).

Several important income components are allocated to households with a combination of responses to the CPS questionnaire and an adjustment for top coding and underreporting based on IRS Statistics of Income (SOI) data. These components are proprietors' income, wages and salaries, monetary dividends to individuals, and monetary interest.

For proprietors' income, the relevant CPS data is the sum of reported self-employment income and reported farm income. These CPS data are adjusted for underreporting using state-level IRS SOI data on income from sole proprietorships and partnerships in the following manner. Following Gindelsky (2022), SOI data are first adjusted for misreporting of income to the IRS based on DeBacker *et al.* (2020), and then aggregated into three bins: tax units with AGI less than $200,000, tax units with AGI between $200,000 and $500,000, and tax units with AGI greater than $500,000. Then, the gap between the published BEA state proprietors' income number and the total amount in the CPS is allocated proportionally based on the share going to each of the three bins in the SOI data. The result is then added to the CPS-reported value, resulting in microdata on proprietors' income that is benchmarked to the proprietors' income total in the state personal income accounts.

Wages and salaries are also allocated to households using CPS-reported wages with an SOI-based adjustment. This adjustment parallels the one described above for proprietors' income, except that wages from tax returns, rather than sole proprietor and partnership income from tax returns, are used to adjust CPS wage and salary responses.

Employee and employer contributions for government social insurance are allocated by wages and salaries. Dividends to individuals excluding S-corporations are allocated using CPS-reported dividend income, with the SOI adjustment for dividend income. Monetary interest income is allocated using CPS-reported interest income, again with the SOI adjustment using interest income on tax returns. For monetary rental income, CPS-reported rental income is used to allocate rental income to households.

There are several personal current transfer programs, like unemployment insurance, where previous academic work (including Larrimore *et al.*, 2022) show that underreporting is concentrated in certain parts of the income distribution. This means that benchmarking to the state personal income component total is insufficient, as that assumes underreporting is equally likely in all parts of the income distribution. Here, a CPS crosswalk based on administrative data from Larrimore *et al.* (2022) is used. This method addresses both underreporting and non-reporting of benefits. A random forest algorithm described by Gindelsky (2022) is used to address both underreporting and non-reporting for unemployment insurance, Medicaid, Supplemental Nutrition Assistance Program (SNAP), and Supplemental Security Income (SSI).

Additional income components

Other data sources are required to estimate the components of personal income that are not asked about in the CPS. These components include some components of compensation, some components of personal current transfers like Medicare benefits and health premium tax credits, imputed rental income from owner-occupied housing, and imputed interest and dividends. These components and data sources are detailed in table 1.

As outlined above, net compensation includes wages and salaries and supplements to wages and salaries. Supplements to wages and salaries include components that are not reported by CPS respondents. Workers' compensation is allocated with the distribution for wages and salaries. Employer contributions for pension funds are allocated to CPS individuals who report participation in a pension plan at work, according to their share of total wages. Employer contributions for health insurance are allocated using Medical Expenditure Panel Survey (MEPS) data on cost of coverage by state, size of employer, and type of coverage (single or family). Employees who report they are covered are assigned the average cost based on the characteristics they report. Employer contributions for life insurance are allocated to employees who have health insurance coverage, according to their share of total wages.

Imputed interest from bank accounts and insurance are allocated using data from the Survey of Consumer Finances (SCF). Households in the SCF report account balances and the cash value of life insurance policies. Shares by income bin are created in the SCF and analogous income bins are created in the CPS, with CPS households being given the share from the SCF. Imputed interest and dividends from pensions are split into four groups in underlying BEA totals: retirees with defined benefit pensions, employees with defined benefit pensions, retirees with defined contribution pensions, and employees with defined contribution pensions. The interest and dividends flowing to each group are allocated to individuals based on their reported pension type (if available) and similar assumptions as described by Gindelsky (2022).

Dividends to individuals from S-corporations (reflecting passthrough business income) are allocated by the calculated distribution of proprietors' income.

BEA computes imputed rent at the household level from American Community Survey microdata as part of the estimation process for personal income. Based on these imputed rents, the ratio of imputed rental income to total money income is calculated for each household. Then the median of these ratios is computed for each decile of money income in each state. That median ratio is then applied to money income for each decile in the CPS to allocate imputed rental income to CPS households.

For Medicare, MEPS microdata is used to calculate the average expenditure for Medicare patients based on several characteristics: disability status, age, and state. CPS respondents who report being on Medicare are then allocated a portion of total Medicare spending based on the average expenditures given their characteristics.

As described by Gindelsky (2022) an adjustment is made for the income to nursing home residents, since the CPS does not survey residents in group quarters. Before allocating to households, Social Security, Medicare, and Medicaid totals are decreased slightly to account for the share going to nursing home residents (using data from the Centers for Medicare & Medicaid Services). The residual is then equally distributed to all CPS households.

There are also some income components for which survey or administrative microdata are not available for states. For these, various assumptions allow distribution of these components to households. These income components include economic stimulus payments, the Alaska permanent fund dividends, and various other targeted tax credits. Survey responses from CPS households are used to determine whether these households qualify for various benefits and to what extent. For these income components, state totals are allocated to households that qualify for these benefits, proportionally to the benefit amount where appropriate.

For a number of other small transfer programs where source data are unavailable (including current transfers to individuals from businesses), transfers are allocated to CPS households using the calculated

distribution of all other income, in order to not change inequality metrics based on an arbitrary assumption.

Summary of the differences from the method used to produce national distribution of personal income statistics

As noted above, Gindelsky (2022) describes some updates to the method of Fixler *et al.* (2020) for computing national personal income distribution statistics. While the statistics discussed in this technical document are constructed in a way that mostly matches the method described by Gindelsky (2022), there are still some differences between the two methods.

State data are not available to adjust monetary rental income for misreporting as described by Gindelsky (2022). Medicare benefits microdata that Gindelsky (2022) uses to adjust Medicare claims are too noisy to group by state and disability status for individuals under the age of 65, and so more broad groupings are used. There are small differences in how pension income is allocated to households based on detailed totals by state. Finally, for some tax credits like the alternative minimum tax credit, the TAXSIM35 model (Feenberg, 1993) from the National Bureau of Economic Research is used. TAXSIM is a model that delivers tax liability from survey data, which in this case is benchmarked to BEA state personal income components.

Pooled samples

The CPS is not necessarily designed to be used to construct accurate distributional statistics for all income components in small states, in particular with respect to the number of households that are sampled. Thus, in most years, the estimation method pools individual CPS units in 3-year spans (see discussion by van Duym and Awuku-Budu, 2022). However, for the years 2020 and 2021, the assumptions needed to ensure the validity of this pooling strategy are unrealistic, as the COVID–19 pandemic and associated policy responses substantially affected households' receipts of certain categories of income from year to year. Thus, a hybrid approach is used: For estimates covering the years 2012–2019, statistics are constructed with the same 3-year pooling approach. For 2020 and 2021, statistics are constructed from only a single year of CPS data. Because of small sample sizes, some individual statistics for 2020 and 2021 are unavailable.

Computing inequality statistics

Allocating each state's personal income components to households results in an adjusted set of CPS household-level microdata that is consistent with BEA's published state personal income. The adjusted microdata is then used to generate various inequality measures by state and the District of Columbia—quintile shares, medians, and Gini coefficients. Unfortunately, other metrics that have drawn interest such as top 5 or top 1 percent shares are not computed due to small sample sizes in source data.

Most inequality statistics in the results are based on equivalized income. Equivalized income is a measure of household income that accounts for differences in household's size and composition and is calculated by dividing household income by the square root of household size.

Quintile shares for each state and the District of Columbia are specific to that area. The top quintile share in a particular state is the share of that state's personal income that goes to households that are in the top 20 percent of that state's households in terms of equivalized income. This means that a household used to compute income accruing to the top quintile of one state may not have been used had it been located in a different state, as in that state the household may not have been situated in the top income quintile. This type of quintile share is not the same as the share of income of top 20 percent income earners in the United States that live in that particular state.

Inflation and regional price adjustments

Most of the results reported are in current (nominal) dollars. However, data users may also be interested in statistics that account for inflation or differences in regional prices. Reported mean and median state personal income are shown both in nominal dollars and in constant 2012 dollars. The latter is calculated using BEA's published implicit regional price deflators (IRPDs). The IRPDs account both for U.S. inflation (using the personal consumption expenditures deflator) and price differences across states (using BEA's regional price parities). Trends over time and across states are therefore better assessed using these adjusted data. Note that quintile and decile shares of state personal income, as well as the Gini coefficient and ratios of different percentiles, are unaffected by inflation and regional price differences.

Changes to reporting for 2020–2021

For the years 2020 and 2021, some statistics will not be reported. For 2021, because IRS SOI data have not yet been published, BEA will not publish distribution statistics for income components.

For 2020 and 2021, due to concerns about sample size associated with the use of only a single year of CPS data rather than a 3-year pooled sample, some inequality statistics will be suppressed for some states. These statistics will be replaced by ranges of plausible values that account for CPS sampling error.

The method for computing these ranges is a survey bootstrap. In this method, the inequality statistic is computed 2,000 times, once for each of a set of adjusted sampling weights that mimic bootstrap resampling. The reported range is a +/- one standard deviation interval over these replications. Note that the range is not symmetric around a point estimate, and so the point estimate cannot be recovered from the range that is reported.

Data available: description of the results files and variables

In the drop-down menu on the income distribution landing page, data users can select a state and then download the statistics for that state on distribution of state personal income by quintile, for 2012–2021. A portion of the 2012 Alabama table is shown below. The first row shows the equivalized personal income ranges for each quintile. The second row shows the share of personal income going to each quintile, and the remaining rows detail different components of income. In the rows below, quintile thresholds and household membership in each quintile are based on equivalized personal income.

Distribution of Major Components of State Personal Income by Quintile, 2012

GeoName	LineCode	Description	Total (millions of nominal dollars)	0-20% share	…
Alabama	1	Quintile range of per-household equivalized income[1] (nominal dollars)		< $27,020	
Alabama	2	Personal income (millions of nominal dollars)	172,101	5.7%	
Alabama	3	Net earnings by place of residence	102,513	3.3%	
Alabama	4	Proprietors' income [2]	11,749	0.4%	
Alabama	5	Net compensation [3]	90,765	3.7%	
Alabama	6	Dividends and interest income	24,562	1.6%	
Alabama	7	Rental income [4]	6,164	5.9%	
Alabama	8	Personal current transfer receipts	38,862	14.8%	

In addition to the tables described above, data users can download a single file of inequality metrics, which includes all states and all years. For each state, the first four rows show ratios between different percentiles of that state's equivalized personal income distribution. The Gini coefficient (also calculated with equivalized income), is a commonly used summary inequality measure that ranges from 0 to 1, with a higher value reflecting more inequality. The top and bottom decile share of personal income are shown as well, along with mean and median incomes. Mean income per household reported here differs from mean (per capita) personal income that is published in BEA regional table SAINC1, which reports mean income per person. The statistics reported in constant 2012 dollars are adjusted for inflation and for state price differences using the implicit regional price deflators from BEA's regional price parities program. A snapshot for Alabama is included below. Data for 2020 and 2021 is bolded to reflect smaller sample sizes and the use of some extrapolated source data.

Personal Income Inequality Metrics by State							
GeoName	LineCode	Description	2012	…	2019	**2020***	**2021***
Alabama	1	Eq. 90/10 ratio	5.3		5.2	**5.7**	**4.8**
Alabama	2	Eq. 80/20 ratio	2.8		2.8	**2.8**	**2.5**
Alabama	3	Eq. 90/50 ratio	2.4		2.4	**2.5**	**2.1**
Alabama	4	Eq. 50/10 ratio	2.2		2.2	**2.3**	**2.3**
Alabama	5	Gini coefficient	0.41		0.41	**0.42**	**0.40**
Alabama	6	Top 10% share	33.4%		33.7%	**34.0%**	**33.7%**
Alabama	7	Bottom 10% share	1.9%		1.7%	**1.7%**	**1.7%**
Alabama	8	Median (nominal dollars)	64,022		76,259	**81,243**	**87,704**
Alabama	9	Median (constant 2012 dollars)	70,234		78,572	**83,586**	**86,063**
Alabama	10	Mean (nominal dollars)	91,706		107,142	**113,969**	**121,765**
Alabama	11	Mean (constant 2012 dollars)	100,603		110,390	**117,255**	**119,487**

Finally, data users can download a third file, which shows mean and median state personal income both in nominal dollars and 2012 constant dollars (the same data as in rows 8–11 in the second table described above). States are ranked for each of those four statistics over the 2012–2021 period, to illustrate the effect of state price differences. A snapshot for Alabama is included below.

State Personal Income Means and Medians							
GeoName	LineCode	Description	2012	…	2019	**2020***	**2021***
Alabama	1	Median (nominal dollars)	64,022		76,259	**81,243**	**87,704**
Alabama	2	Median (constant 2012 dollars)	70,234		78,572	**83,586**	**86,063**
Alabama	3	Mean (nominal dollars)	91,706		107,142	**113,969**	**121,765**
Alabama	4	Mean (constant 2012 dollars)	100,603		110,390	**117,255**	**119,487**
Alabama	5	State rank, median (nominal dollars)	47		48	**47**	**47**
Alabama	6	State rank, median (constant 2012 dollars)	45		44	**39**	**45**
Alabama	7	State rank, mean (nominal dollars)	45		48	**46**	**48**
Alabama	8	State rank, mean (constant 2012 dollars)	41		46	**41**	**48**

Feedback

Prototype statistics such as these are a means to introduce the public (data users, subject-matter experts and others who may be interested) to the outcomes of research efforts directed at developing methods to construct novel statistics. While BEA makes every effort to ensure that the prototype methods deliver statistics that conform to the relevant concepts and that are accurate and reliable, it is expected that these methods may be further improved or refined. Thus, and as noted above, BEA welcomes feedback on these prototype statistics on the distribution of personal income by state. Please send comments by email to stateincomedistribution@bea.gov.

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Table 1. Data Sources Used To Distribute Income Components to Households

Aggregate state personal income component	Source data
Wages and salaries	Current Population Survey and IRS Statistics of Income
Supplements to wages and salaries	
Employer contributions to pension plans	Current Population Survey
Employer contributions for workers' compensation	Calculated distribution of wages and salaries
Employer contributions for life insurance	Current Population Survey
Employer contributions to health insurance plans	Current Population Survey and Medical Expenditure Panel Survey
Employee contributions for government social insurance (subtraction)	Calculated distribution of wages and salaries
Proprietors' income	Current Population Survey and IRS Statistics of Income
Dividend income	Current Population Survey, IRS Statistics of Income, and Survey of Consumer Finances
Interest income	
Monetary interest	Current Population Survey and IRS Statistics of Income
Imputed interest from employee pension plans	Current Population Survey and Survey of Consumer Finances
Imputed interest from financial institutions and insurance companies	Current Population Survey and Survey of Consumer Finances
Rental income	
Monetary rental income	Current Population Survey
Imputed rental income from owner-occupied housing	Current Population Survey and American Community Survey
Personal current transfer receipts	
Social security	Current Population Survey
Railroad retirement and disability benefits	Current Population Survey
Workers' compensation	Current Population Survey
Black lung benefits	Current Population Survey
Pension Benefit Guaranty Corporation (PBGC) benefits	Current Population Survey
Temporary disability benefits	Current Population Survey
Medicare	Current Population Survey and Centers for Medicare & Medicaid Services
Medicaid	Current Population Survey
Children's Health Insurance Program (CHIP) (non-Medicaid)	Current Population Survey
Military medical insurance benefits (TRICARE)	Current Population Survey
Supplemental Security Income	Current Population Survey
Earned Income Tax Credit	Current Population Survey
Additional child tax credit	Current Population Survey
Temporary Aid for Needy Families	Current Population Survey
Alternative minimum tax credit	Current Population Survey, TAXSIM
American opportunity tax credit	Current Population Survey, TAXSIM
Making Work Pay tax credit	Current Population Survey, TAXSIM
Home Affordable Modification Program (HAMP)	Current Population Survey
Economic impact payments	Current Population Survey
Payments for foster care and adoption assistance	Current Population Survey
Special Supplemental Nutrition for Women, Infants, and Children (WIC)	Current Population Survey
Energy assistance	Current Population Survey
Supplemental Nutrition Assistance Program (SNAP)	Current Population Survey

Aggregate state personal income component	Source data
Unemployment insurance	Current Population Survey, (Larrimore, Mortenson, Splinter, 2022)
Veterans' benefits	Current Population Survey
Education and training assistance payments	Current Population Survey
Health insurance premium assistance tax credit	Current Population Survey
Cost-sharing reduction subsidies	Current Population Survey
Business payments to individuals	Calculated distribution of all other income
Payments to nonprofits from federal government	Calculated distribution of all other income
Payments to nonprofits from state and local governments	Calculated distribution of all other income
Payments to nonprofits from business	Calculated distribution of all other income
Other	Calculated distribution of all other income

Table 2. Supplementary Data Sources to the CPS

	Data source	Usage
Correction for underreporting	IRS Statistics of Income	Correction for income underreporting at the top
	Larrimore, Mortenson, Splinter (2022)	Underreporting correction for unemployment insurance
Additional income components	Medical Expenditure Panel Survey	Group health insurance
	American Community Survey	Imputed rental income from owner-occupied housing
	Centers for Medicare & Medicaid Services	Medicare
	Survey of Consumer Finances	Imputed interest