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How CBO Adjusts for Underreporting of Means-Tested Transfers in Its Distributional Analyses

Presentation to the Bureau of Economic Analysis Advisory Committee

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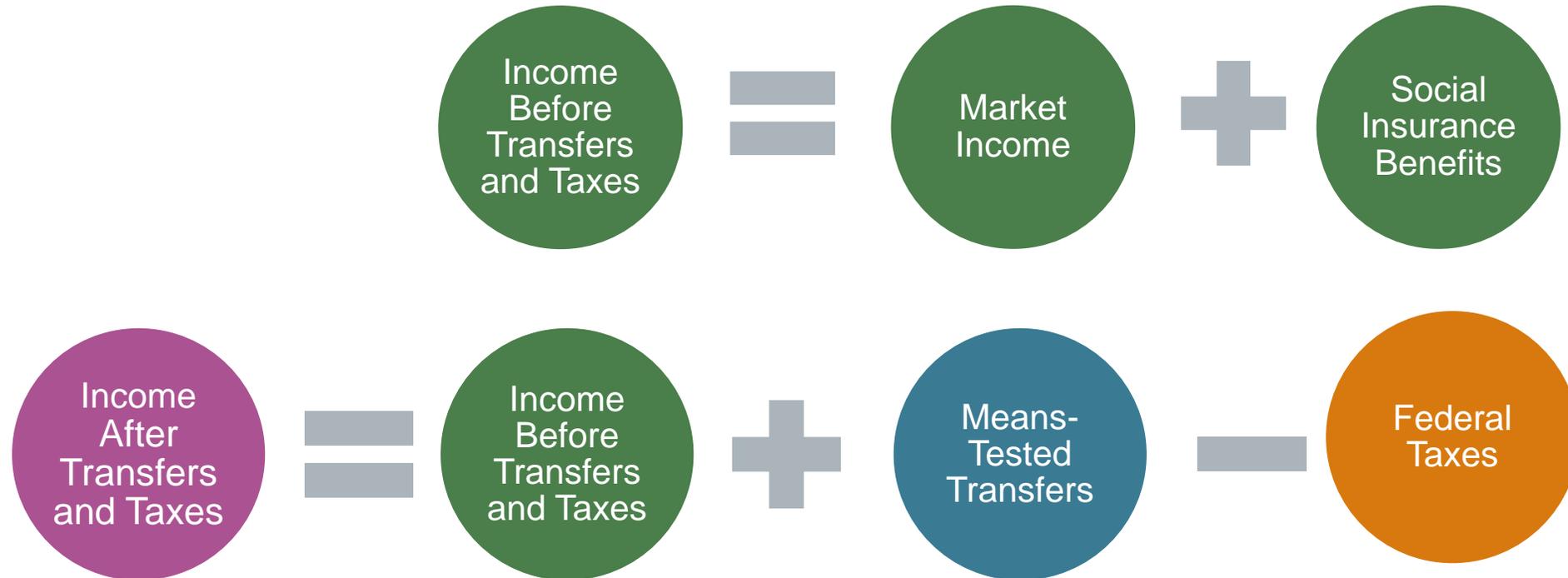
Tax Analysis Division

Background

CBO's Income Measures



CBO's Income Measures (Continued)



Market income consists of labor income, business income, capital income (including realized capital gains), income received in retirement for past services, and income from other nongovernmental sources. Social insurance benefits consist of benefits provided through Social Security, Medicare, unemployment insurance, and workers' compensation. Means-tested transfers are cash payments and in-kind services provided through federal, state, and local government assistance programs. Eligibility to receive such transfers is determined primarily on the basis on income, which must be below certain thresholds. Federal taxes consist of individual income taxes, payroll taxes, corporate income taxes, and excise taxes.

Data Sources

CBO's distributional analyses are based on annual, cross-sectional data, which are drawn from two sources.

Statistics of Income (SOI) give information about

- Market income and Social Security for tax filers and
- Federal taxes.

The annual March supplement of the **Current Population Survey (CPS)** gives information about

- Means-tested transfers,
- Medicare, and
- Market income and Social Security for nonfilers.

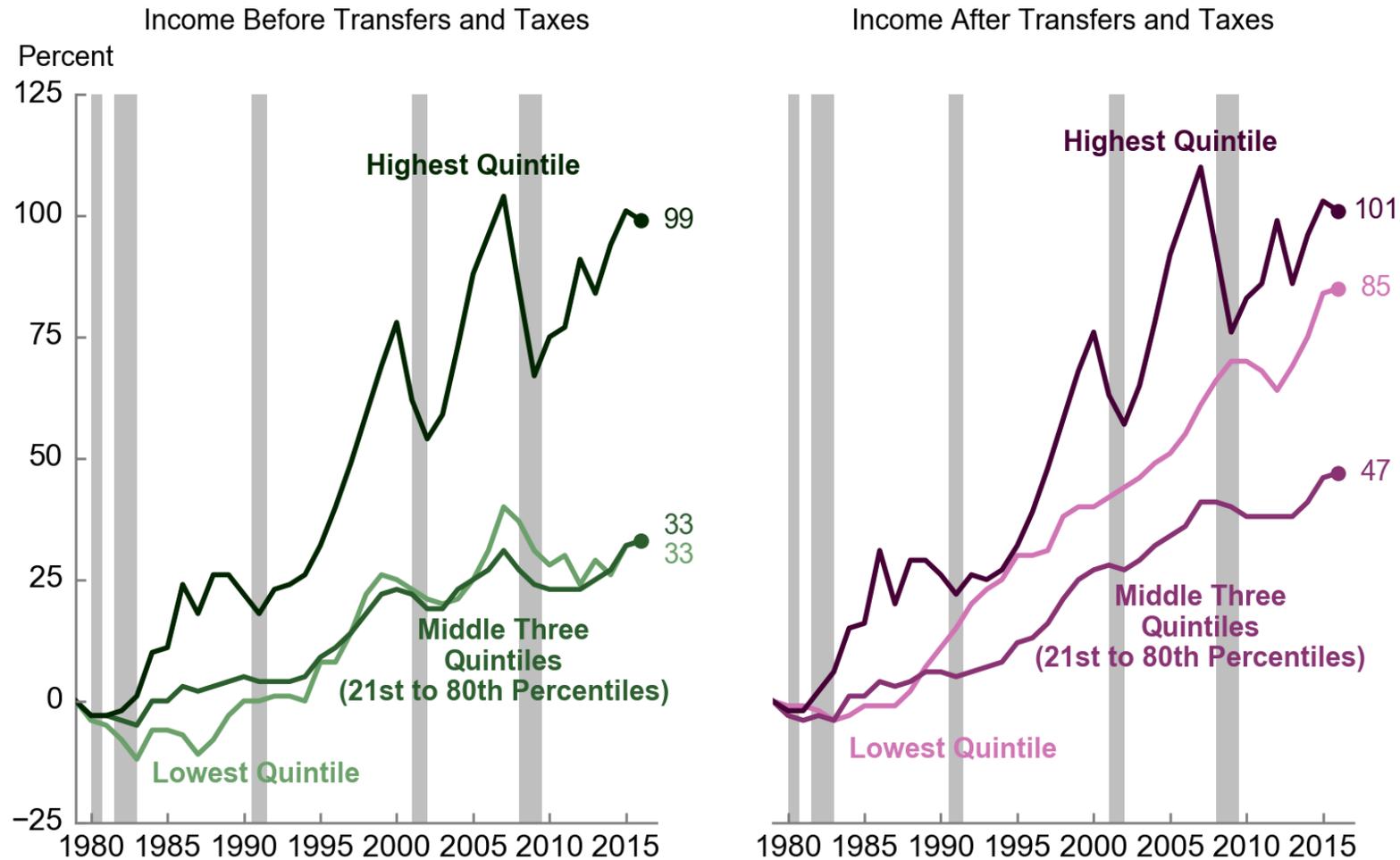
Recent Changes to CBO's Method

In 2018, CBO made two key changes to its distributional method.

- It updated the base income measure from “before-tax income” to “income before transfers and taxes.” (CBO uses base income to rank households and as the denominator in average tax rate calculations.)
- It adjusted CPS data for underreporting in four means-tested transfer programs.

Program	Total Benefits in 2018 (Billions of dollars)
Medicaid and the Children's Health Insurance Program (CHIP)	528
Supplemental Nutrition Assistance Program (SNAP)	58
Supplemental Security Income (SSI)	55
Housing Assistance (Including rental assistance and public housing)	41

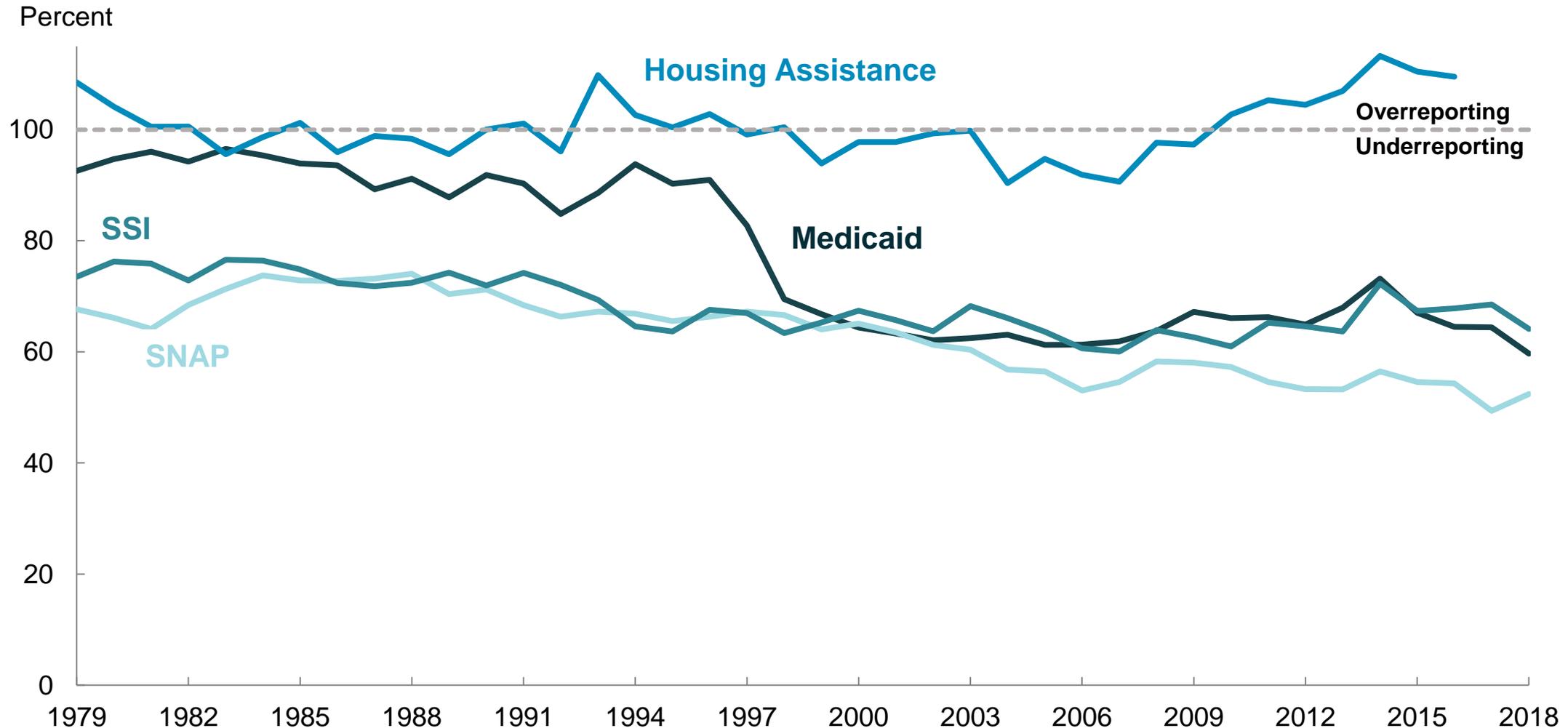
Cumulative Growth in Average Income, by Income Group, 1979 to 2016



The shaded vertical bars indicate periods of recession.

Adjustments to Means-Tested Transfers

Recipients Reporting Means-Tested Transfers in the CPS as a Share of Recipients in the Administrative Data, 1979 to 2018



CBO makes adjustments to administrative totals to make them compatible with how data are reported in the CPS. For details on how those adjustments are made, see Bilal Habib, *How CBO Adjusts for Survey Underreporting of Transfer Income in Its Distributional Analyses*, Working Paper 2018-07 (Congressional Budget Office, July 2018), www.cbo.gov/publication/54234.

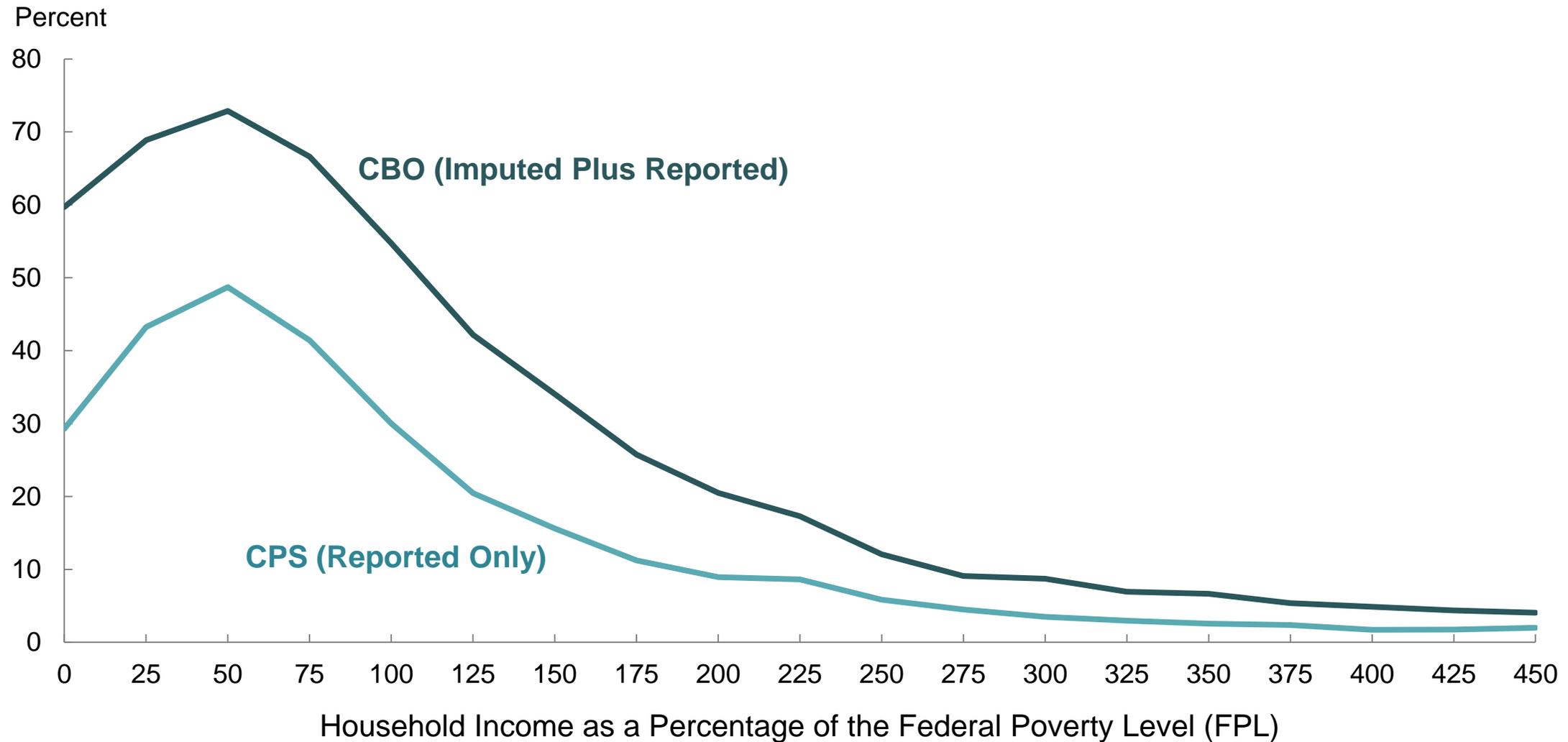
CBO's Regression-Based Imputation Method

1. Use administrative data to set targets that reflect the CPS sampling frame.
 - Subtract program participants who are institutionalized.
 - Convert average monthly or point-in-time receipt to “ever-on” receipt.
 - Convert fiscal-year spending levels to calendar-year targets.

2. Use CPS data on reporting units to estimate the probability of receipt for all units.
 - Run probit regressions for each year and population subgroup.
 - Independent variables include income level and composition, labor force participation, demographics, and household characteristics.

3. Impute transfer receipt on the basis of estimated probabilities until the target is reached.
 - An algorithm assigns receipt to units in proportion to their predicted probability of receipt.

Share of Households Receiving SNAP Benefits, by Income, 2018

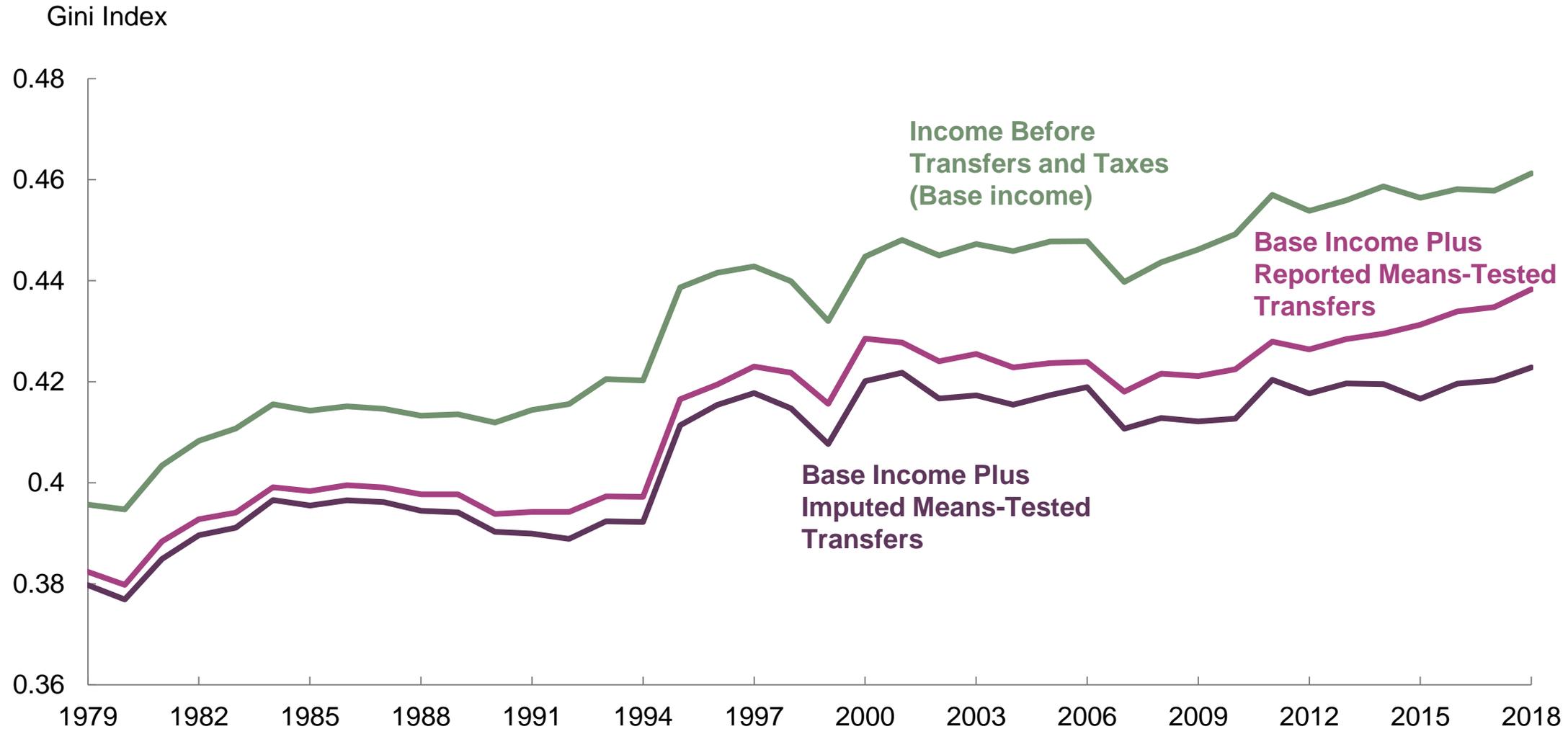


Assigning Benefit Amounts

After recipients match the administrative targets, each unit is assigned a benefit amount.

- **SNAP and SSI:** CBO derives the average benefit per recipient on the basis of income and demographic groups and assigns those averages to new recipients.
- **Medicaid:** CBO derives the average cost to the government per recipient from administrative data (by eligibility category) and assigns those averages to all recipients.
- **Housing assistance:** CBO estimates benefits for each reporting unit on the basis of location, household size and structure, and fair-market rents determined by the Department of Housing and Urban Development. (No additional households are imputed to be recipients.)

Income Inequality, 1979 to 2018



These results differ from those published in CBO's *Distribution of Household Income* reports because they use CPS data only, whereas those reports use a combination of CPS and SOI data.

Public Release of CBO's Means-Tested Transfer Imputations

CBO released a working paper in 2018 describing its method for imputing means-tested transfers. It included CPS extracts and Stata code to allow researchers to replicate CBO's results for 1979 through 2016.

In May 2020, CBO released a new version of the data and code with the following updates:

- Imputations added for 2017 and 2018,
- Imputed values added for housing assistance benefits,
- Estimates of Medicaid and CHIP benefits improved by accounting for variations in the amount of time enrolled in the program,
- Recipient and benefit target values updated for 1979 through 2016, and
- GitHub used as the repository.

Related Publications

Congressional Budget Office, *Projected Changes in the Distribution of Household Income, 2016 to 2021* (December 2019), www.cbo.gov/publication/55941.

Congressional Budget Office, *The Distribution of Household Income, 2016* (July 2019), www.cbo.gov/publication/55413.

Bilal Habib, *How CBO Adjusts for Survey Underreporting of Transfer Income in Its Distributional Analyses*, Working Paper 2018-07 (Congressional Budget Office, July 2018), www.cbo.gov/publication/54234.

Kevin Perese, *CBO's New Framework for Analyzing the Effects of Means-Tested Transfers and Federal Taxes on the Distribution of Income*, Working Paper 2017-09 (Congressional Budget Office, December 2017), www.cbo.gov/publication/53345.