

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

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# Background

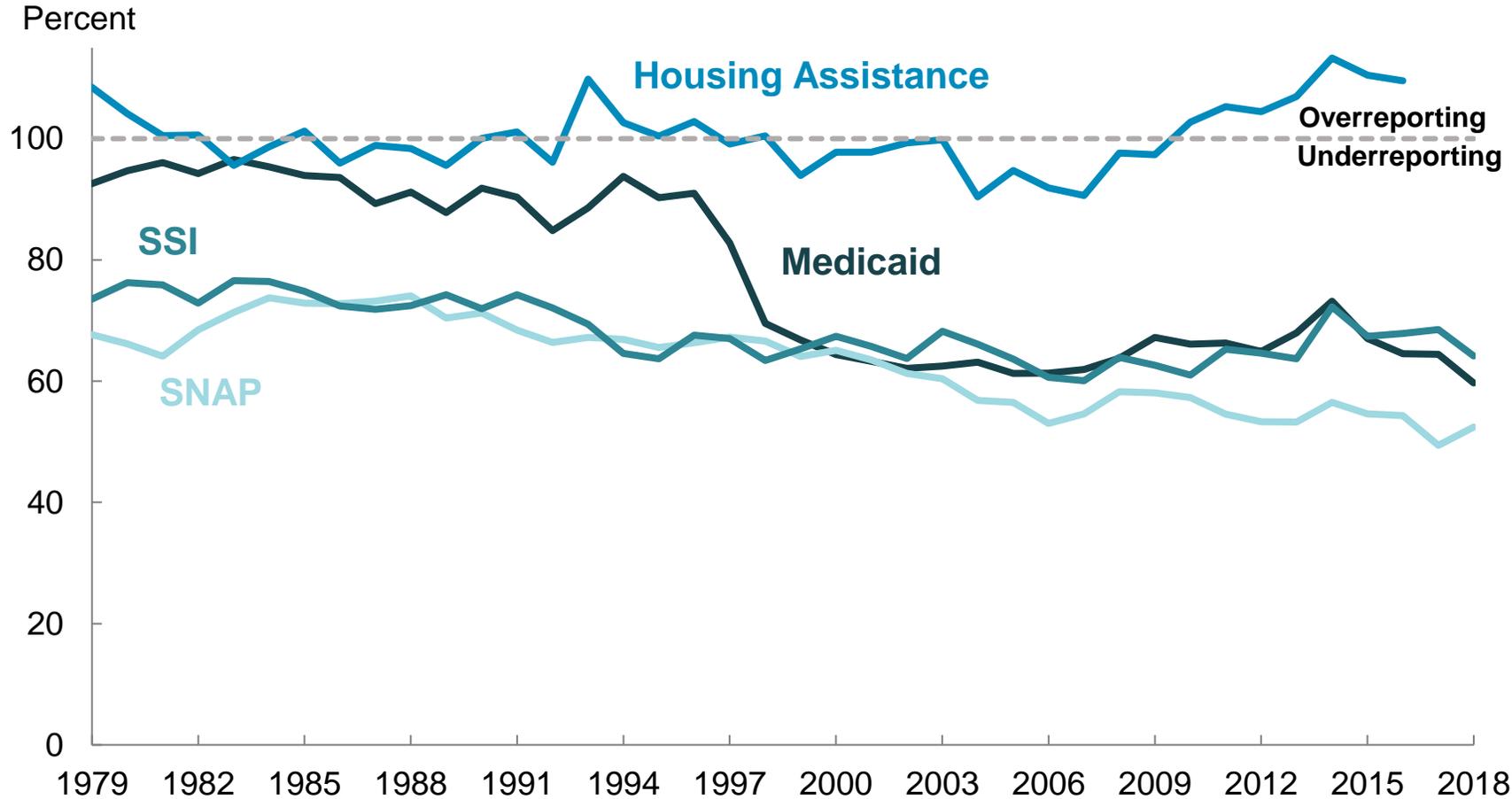
## Why Does CBO Adjust for Underreporting?

The Congressional Budget Office regularly produces a report on the distribution of household income, means-tested transfers, and federal taxes.

For each report, the agency draws data on transfers from the Annual Social and Economic Supplement of the Current Population Survey (CPS).

To analyze the distribution of means-tested transfers, CBO must have a complete accounting of those transfers, with enough precision for quintile-level distributional analysis.

# Underreporting of Means-Tested Transfers in the CPS



Underreporting of transfers in the CPS has increased over time.

Without adjustment, CPS-based analyses would understate income growth at the bottom of the distribution and the role of transfers in reducing income inequality.



# Size of Major Means-Tested Transfer Programs

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

# Common Approaches to Adjusting for Underreporting

- **Administrative matching:** Offers near-perfect accounting, but administrative microdata are not widely available.
- **Rules-based simulation:** Offers precise estimates at the micro level but requires a significant research investment.
- **Regression-based estimation (CBO's approach):** Offers tractability for multiple programs over a long time series but is less precise at the micro level.



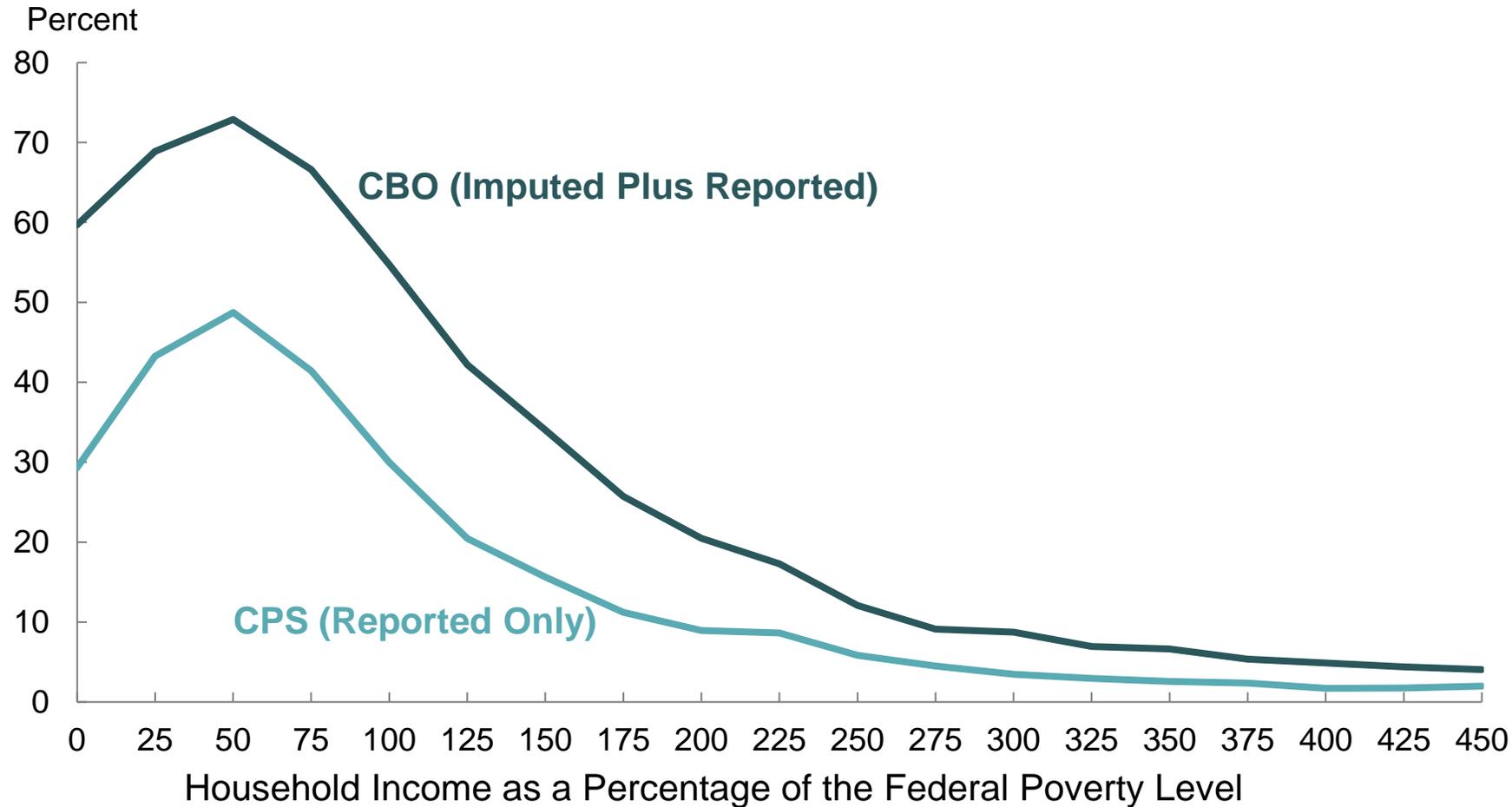
# **CBO's Approach**

# CBO's Regression-Based Imputation Method

- 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.
  
- 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.
  
- 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



Most imputed recipients of SNAP benefits are at lower FPL ratios.

# Assigning Benefit Amounts

After the total number of recipients matches the administrative targets for all subgroups and programs, each unit is assigned a benefit amount.

- **Supplemental Nutrition Assistance Program (SNAP) and Supplemental Security Income (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.

# Strengths of CBO's Adjustment Method

- The method is straightforward to implement. For example, it doesn't require a team of researchers to code specific program rules as they evolve.
- It is easily scalable across multiple programs over a 40-year time series, and it can be extended to other transfer programs, such as the National School Lunch Program.
- The distributional results of CBO's method are broadly similar at the quintile level to those of the Urban Institute's Transfer Income Model (which uses a rules-based method) and of Davern and others (which relies on administrative matching).

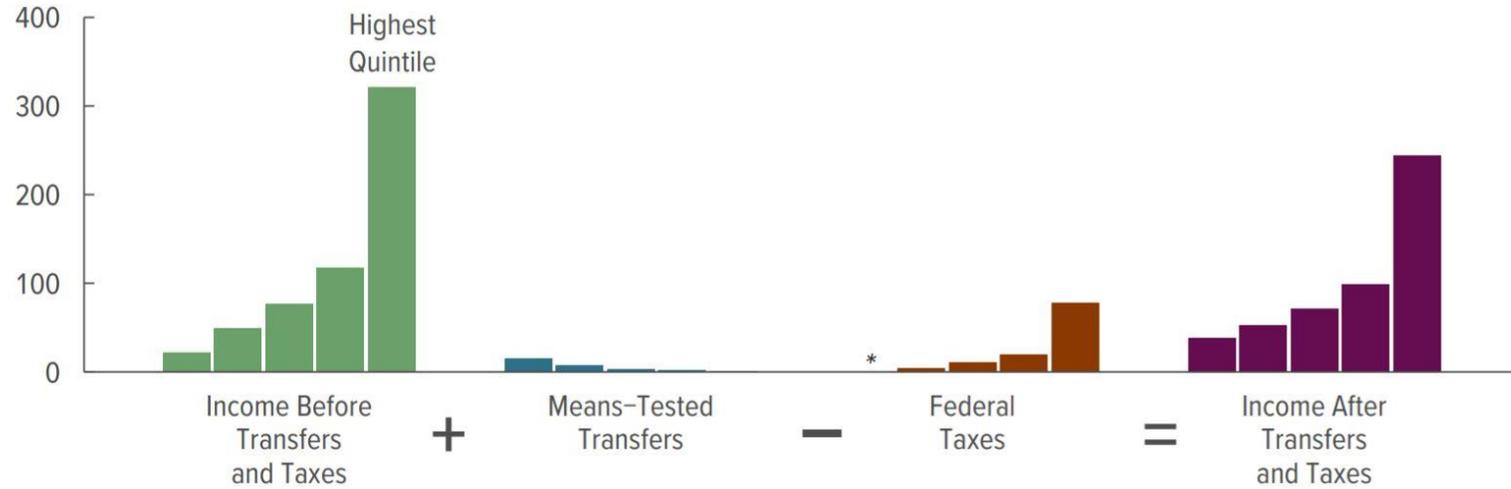
## Limitations of CBO's Adjustment Method

- As a regression-based method, CBO's approach assumes that nonreporters have the same characteristics as reporters.
- It does not account for false positives.
- Its ability to simulate complex policy scenarios is limited. However, it can be augmented by inputs from other CBO models to estimate the effects of some proposed rule changes to transfer programs.

# **Effects on Aggregate Distributional Outcomes**

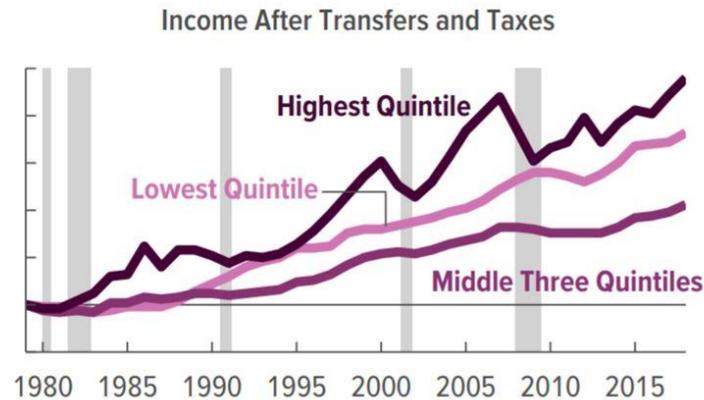
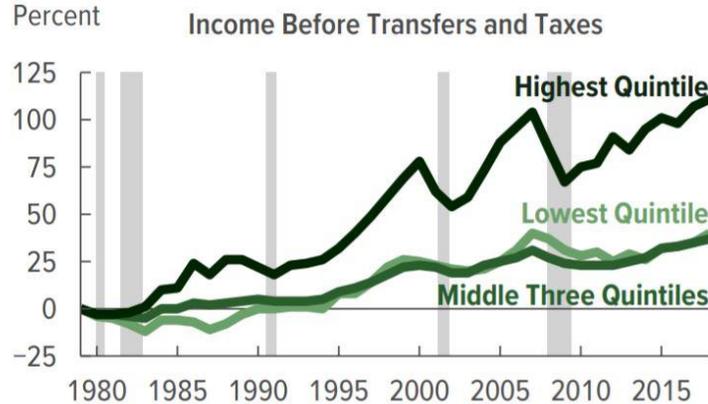
# Average Income, Means-Tested Transfers, and Federal Taxes, 2018, and Cumulative Growth in Average Income, 1979 to 2018

Thousands of Dollars



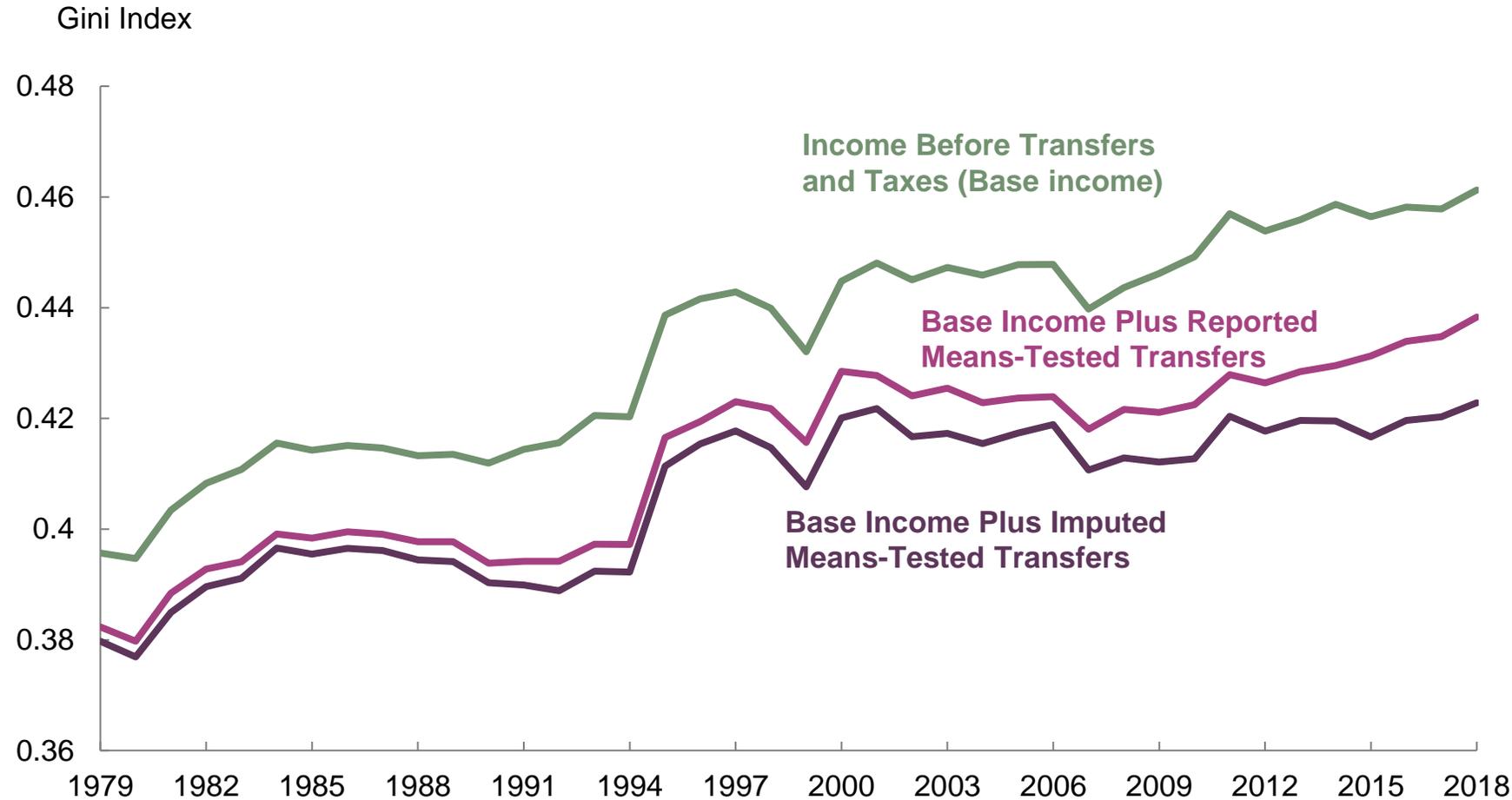
Means-tested transfers and federal taxes significantly increase the cumulative growth of income after transfers and taxes among households in the lowest quintile.

Percent



All dollar amounts are in 2018 dollars. To calculate growth rates, CBO first converted all dollar amounts to 2018 dollars using the Bureau of Economic Analysis's price index for personal consumption expenditures. Shaded vertical bars indicate the duration of recessions. \* = between zero and \$500.

# Income Inequality, 1979 to 2018



Adding imputed transfers reduces income inequality in CBO's distributional analyses.

The effects on inequality of imputing transfers have increased over time as underreporting has increased.

These results differ from those published in CBO's *Distribution of Household Income* reports because they use data from the Current Population Survey (CPS) only, whereas those reports use a combination of CPS data and data from the Internal Revenue Service's Statistics of Income.

# 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:

- It added imputations for 2017 and 2018,
- It added imputed values for housing assistance benefits,
- It improved estimates of Medicaid and CHIP benefits by accounting for variations in the amount of time enrolled in the program,
- It updated recipient and benefit target values for 1979 through 2016, and
- It used GitHub as the repository.

In the coming months, CBO plans to release an update to that GitHub repository, including imputations for 2019.

## Related Publications

Congressional Budget Office, *The Distribution of Household Income, 2018* (August 2021), [www.cbo.gov/publication/57061](https://www.cbo.gov/publication/57061).

Congressional Budget Office, “Means-Tested Transfer Imputations” (last updated May 2020), [https://github.com/US-CBO/means\\_tested\\_transfer\\_imputations](https://github.com/US-CBO/means_tested_transfer_imputations).

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

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](https://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](https://www.cbo.gov/publication/53345).