The Supplemental Poverty Measure in the Survey of Income and Program Participation

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Abstract

Since the first release of the Supplemental Poverty Measure (SPM) by the Census Bureau in 2011, estimates have been derived from the Current Population Survey Annual Social and Economic Supplement (CPS ASEC). This paper proposes a methodology for estimating the SPM in the Survey of Income and Program Participation (SIPP) including the 2014 SIPP Panel and subsequent panels. Using this methodology, we provide SPM estimates for each year covered by the 2014 SIPP Panel from 2013-2016. The overall SIPP SPM rate was 16.7 percent in 2013, declined in both 2014 and 2015 to 15.0 and 13.3 percent, respectively, and remained at 13.3 percent in 2016. While trends between the official poverty measure (OPM) and SPM have many similarities across the surveys, the SIPP SPM had a lower average poverty rate across the four years with an average SPM rate of 14.6 percent relative to a 15.0 percent SPM rate in CPS ASEC. The SIPP SPM had lower average SPM rates than CPS ASEC over the four years for those under 18 (15.8 vs 16.7 percent), higher average SPM rates for those age 18-64 (15.0 vs 14.5 percent), and lower for those age 65 plus (11.0 vs 14.5 percent).

Keywords: Poverty, Supplemental Poverty Measure, Survey of Income and Program Participation

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[1] Contact Authors: *Lewis Warren*: lewis.h.warren@census.gov, 301-763-0216; *Liana Fox*: liana.e.fox@census.gov, 301-763-2676. This report is released to inform interested parties of ongoing research and to encourage discussion of work in progress. The views expressed on methodological or operational issues are those of the authors and are not necessarily those of the U.S. Census Bureau. Any error or omissions are the sole responsibility of the authors. All data are subject to error arising from a variety of sources, including sampling error, non-sampling error, model error, and any other sources of error. For further information on SIPP statistical standards and accuracy, see https://www.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements.html. This paper has undergone more limited review than official publications. The U.S. Census Bureau reviewed this data product for unauthorized disclosure of confidential information and approved the disclosure avoidance practices applied to this release. **CBDRB-FY21-POP001-0021**

1. Background

The U.S. Census Bureau currently releases two sets of poverty estimates each September using data from the Current Population Survey Annual Social and Economic Supplement (CPS ASEC)—the official poverty measure (OPM) and the Supplemental Poverty Measure (SPM). The OPM is a cash-income based measure of poverty with its origins dating back to the work done by Mollie Orshansky in the 1960s.[2] Efforts to expand on the concepts and methods used to construct this measure over the past 50 plus years have led to a number of proposed improvements in how the government might measure poverty.

These efforts culminated in 1995 with the release of findings from a panel convened by the National Academy of Sciences (NAS) to assess new approaches to measuring poverty in the United States.[3] Following the recommendations of the 1995 NAS Panel, as well as the work of a subsequent 2010 Interagency Technical Working Group (ITWG), SPM rates were first published by the U.S. Census Bureau in collaboration with the Bureau of Labor Statistics in September of 2011. The purpose of the SPM was to complement the OPM, by capturing noncash benefits, taxes, differences in cost of living, and necessary expenses including childcare, medical, and work-related expenses, which are not accounted for in the OPM.

Given its longitudinal nature and strong reputation for measuring income, program participation, and material well-being, the Survey of Income and Program Participation (SIPP) offers many advantages for estimating the SPM. To this point, the 1995 NAS report recommended that alternative poverty measures be estimated using SIPP data (albeit with an expanded and improved sample design).[4] The SIPP continues to offer many advantages for estimating national SPM rates, including more detailed income questions, more data on the receipt of noncash benefits, useful information on tax filing status and the ability to capture monthly changes in household composition

In the remainder of this section, we provide background on the SPM and SIPP and summarize past literature on estimating alternative poverty measures, including the SPM. Section 2 describes our methodology for estimating the SPM in the 2014 Panel of the SIPP. In Section 3 we discuss our findings from the SIPP in relation to the CPS ASEC, and we conclude in Section 4.

[2] For more information on the development of poverty thresholds, see Fisher (1992).
[3] For more information on the 1995 NAS Panel, see Citro & Michael (1995).
[4] The 2010 ITWG ultimately recommended deriving the SPM from the CPS ASEC and the Census Bureau added questions to the 2010 CPS ASEC in order to capture needed SPM data on childcare expenses, child support paid, and medical expenses.

1.A. The Supplemental Poverty Measure

The Office of Management and Budget (OMB) Statistical Policy Directive 14 tasks the U.S. Census Bureau with measuring poverty in the United States based on data collected in the CPS ASEC and establishes the standard by which poverty thresholds are assigned, income is measured, and thresholds are updated over time.[5] Poverty estimates derived from the CPS ASEC constitute the "official" poverty measure (OPM) and are used for statistical purposes.

The SPM is not intended to replace the OPM but rather to provide an additional poverty measure that incorporates a number of conceptual and methodological changes designed to improve the accounting of resources and measurement of economic hardship. The SPM builds on the methodology of the OPM by:

1. Expanding the definition of families (referred to in the SPM as "resource units") to include cohabiting partners and their relatives as well as unrelated children (including foster children).

2. Updating poverty thresholds to account for current spending on necessities (food, clothing, shelter, and utilities).

3. Adjusting thresholds for geographic differences in housing costs and housing tenure type (owners with a mortgage, owners who own their homes free and clear, and renters).

4. Expanding the resource measure to account for the value of noncash transfer benefits while subtracting necessary expenses such as taxes, childcare, and medical costs.

SPM rates derived from the CPS ASEC have been released annually since 2011, providing estimates going back to 2009. Since 2009, the overall SPM rate using the CPS ASEC has consistently been higher than the OPM rate within a given year—ranging from 0.6 to 1.6 percentage points (Fox 2020).[6] In 2019, the OPM rate using CPS ASEC was 10.5 percent, while the SPM rate was 1.3 percentage points higher, at 11.7 percent. By age group, the relationship across estimates varied, with children under age 18 experiencing lower poverty rates when measured using the SPM compared to OPM (12.5 vs 14.4 percent), while adults aged 18 to 64 or aged 65 and older had higher SPM rates than OPM rates (11.2 vs 9.4 percent) and (12.8 vs 8.9 percent), respectively (Fox 2020).

[5] For more information on Statistical Policy Directive 14, see <https://census.gov/topics/income-poverty/poverty/about/history-of-the-poverty-measure/omb-stat-policy-14.html>.

[6] These comparisons include unrelated individuals under the age of 15 in the universe for OPM estimates.

Like the OPM, the SPM is calculated annually from data collected in the CPS ASEC. While the OPM is calculated using similar methodology across Census Bureau household surveys, such as the American Community Survey (ACS) and SIPP, the development of the SPM in surveys outside of the CPS ASEC faces challenges unique to the amount of detailed data needed to produce the SPM. Researchers both inside and outside the Census Bureau have produced estimates of SPM measures derived from alternate household surveys, and while a number of limitations are present, the value of being able to produce small area SPM estimates from the ACS, or longitudinal estimates from the SIPP motivates continued work in these areas.

1.B. The 2014 Survey of Income and Program Participation Panel

The Survey of Income and Program Participation (SIPP) has long served as one of the leading surveys in the United States for measuring income, program participation, and material well-being. With a smaller sample size than other Census surveys used to measure poverty, such as the ACS or CPS ASEC, the SIPP's historical advantage has been its detailed questions pertaining to income, program participation, and material well-being and its ability to follow respondents over time, including movers, which allows for examining income and poverty dynamics, while providing some of the most comprehensive measures of material well-being across any national survey in the United States.

The first SIPP Panel was the 1984 Panel and fifteen subsequent panels have been released since then.[7] SIPP panels have typically interviewed respondents every four months, commonly referred to as a wave, over a period ranging from two and a half to five years.[8] SIPP surveys historically asked respondents a core set of questions every four months (which included items such as detailed earnings and weeks worked) and appended intermittent topical modules on subjects including household relationships, medical expenses and healthcare utilization, assets and liabilities, and taxes.

The 2014 SIPP Panel introduced the largest redesign in the SIPP's 30-year history. Most notably, SIPP interviews shifted from occurring every four months to an annual interview. In addition, as opposed to core questions and rotating topical modules, a condensed set of topical module questions are asked in each wave.

Moving from a four-month rotation group framework to an annual reference frame allows all respondents to report for a common calendar year, simplifying the measurement of annual poverty and reducing the opportunity for sample attrition within a given year.[9] Moreover, since

[7] The 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1996, 2001, 2004, 2008, 2014, and 2018 Panels.
[8] Most SIPP Panels have run three to four years, with the longest, the 2008 Panel, following respondents for up to five years.
[9] Attrition from SIPP was a challenge for annual poverty estimates in earlier panels as respondents needed up to four SIPP waves of interviews to cover a calendar year. While the Census Bureau produced annual weights to address

the 2014 Panel asks questions in every wave about family composition, assets and liabilities, and material well-being, this content no longer has to be assembled across different time periods throughout a panel.

Given these advantages, the 2014 SIPP Panel serves as a valuable data source for estimating the SPM. Calculating the SPM for the 2014 Panel will allow for the examination of SPM poverty dynamics across waves, the assessment of material well-being across the SPM and OPM methodology, and will further provide insight into SPM measures in the CPS ASEC.[10]

1.C. Past Research

Efforts to develop a SPM in the redesigned 2014 SIPP Panel build off previously mentioned research on developing NAS and SPM estimates in the CPS ASEC as well as in earlier SIPP Panels and the ACS. In the SIPP, this includes Short (2003, 2011), Iceland (2012), and Short & Giefer (2013). In the ACS, this includes Renwick et al. (2012), Renwick (2015), and Fox et al. (2020).

Table 1 and the Technical Appendix summarize these and other findings in an effort to provide a framework for interpreting our results.

2. Methodology

The process for implementing the SPM in the 2014 SIPP Panel can be categorized into three main steps:

1. Creating SPM Resource Units
2. Assigning SPM Poverty Thresholds
3. Calculating Resources

In this section, we outline our methods for implementing these three steps in the 2014 SIPP Panel to calculate SPM rates. Our goal in this section is to provide an overview of our methodology for calculating SPM poverty rates in the SIPP, while leaving more technical details

attrition in earlier SIPP waves, it is possible that differences in attrition rates impact poverty estimates in the 2014 Panel (see Warren & Edwards 2017).

[10] While it might be possible to implement the SPM in SIPP on a monthly basis, we instead first focus on estimating an annual SPM rate in SIPP as a monthly measure would face many challenges. These include deciding how to address SPM components such as Earned Income Tax Credit (EITC) payments which are paid at a different time from when they are earned and addressing variables that are only asked in SIPP on an annual basis even though they are typically not distributed evenly across months such as medical expenses when such costs are occurred. Additional research is necessary to inform the development of a monthly SPM in the SIPP.

to the Technical Appendix. In general, we try to remain consistent with the existing methodology applied in the CPS ASEC, while taking advantage of additional information in the SIPP.[11]

2.A. Creating SPM Resource Units

The first step in calculating the SPM using the SIPP is to assign new resource units that modify assumptions regarding resource sharing within the household. While the OPM groups families within a household based solely on relationships through birth, marriage, or adoption, the SPM expands these family units by including cohabitating partners and their relatives as well as any coresident unrelated children cared for by the family, such as foster children. This expanded definition is consistent with SPM methodology in the CPS ASEC. The largest difference when assigning SPM resource units in the SIPP compared to the CPS ASEC is that monthly data in the SIPP allows the composition of SPM resource units to vary throughout the year which is not possible in the CPS ASEC. More details on assigning resource units in the SIPP can be found in the Technical Appendix.

2.B. Thresholds

As recommended by the 2010 ITWG, SPM thresholds begin with base values calculated by the Bureau of Labor Statistics Division of Price and Index Number Research (BLS DPINR) from the Consumer Expenditure Survey (CE).[12] These base thresholds are calculated as an annual value derived from the preceding five-year CE estimation sample. Since base SPM thresholds are derived from an annual reference period and then adjusted to account for family size and composition, housing tenure, and geography—characteristics which may vary over the course of the year in the SIPP—assigning thresholds in the SIPP raises a number of questions on how to adjust thresholds to account for varying family, tenure, and geographic characteristics over the reference period. Details on this process can be found in the Technical Appendix.

While SPM thresholds are assigned based on household and resource unit composition in a given month, to account for person-level changes in residence or resource unit composition over the year these monthly thresholds are summed at the individual level to measure annual poverty status for respondents with 12 monthly observations during the reference year.[13]

[11] For a detailed discussion of the SPM methodology in the CPS ASEC, see Fox (2020).
[12] See Garner (2010) for a detailed discussion of the SPM threshold methodology.
[13] Similar to the SIPP OPM, respondents with fewer than 12 monthly observations are not assigned annual poverty rates since we do not have data for them over the entire course of the year. Similarly, children who do not reside with a guardian (aged 15 or older) in any given month during the reference year are excluded from receiving annual SIPP SPM and OPM values.

2.C. Calculating Family Resources

Table 2 outlines the components of SPM unit resources and how they are reported in the SIPP. Resources include: gross wage and non-wage income (consistent with the OPM), as well as the value of noncash benefits such as the Supplemental Nutrition Assistance Program (SNAP), Low Income Home Energy Assistance Program (LIHEAP), School Breakfast Program, National School Lunch Program, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), refundable tax credits, and housing subsidies.

Resource subtractions include: child support paid, federal and state taxes paid, Social Security and Medicare payroll taxes paid (FICA), medical out-of-pocket expenses (MOOP), childcare expenses, and work-related expenses. Unlike the CPS ASEC, the SIPP has the added advantage that it can provide monthly income and program receipt for many resources throughout a calendar year.[14] For income resources or subtractions reported annually, amounts are allocated across months and individuals depending on the source, described in detail in the section below.[15]

Monthly income is then summed to the SPM-unit level based on the SPM unit composition in a given month. To determine annual poverty status, income is then summed across the 12 months in a calendar year. It is important to emphasize that while summing a respondent's monthly income over a calendar year will provide the individual's contribution to their annual SPM-unit level income, members of families or resource units who do not live together for the entire year may have different annual poverty statuses.[16]

2.C.I. Cash Income

Both the SIPP and CPS ASEC capture eighteen major sources of gross before-tax wage and non-wage income. These sources are listed in detail in the Technical Appendix. As shown in Table 2, the reporting of cash income in the SIPP varies in frequency (weekly, monthly, or annual) by

[14] Wage income, which represents the largest share of aggregate income in the SIPP, is available on a weekly basis.

[15] The Wave 2-4 files include HHSTAT=2 and HHSTAT=5 respondents. HHSTAT=2 cases are respondents that were typically on a previous SIPP file in the 2014 Panel and moved away prior to the next interview while HHSTAT=5 cases were typically on a previous SIPP file and got incarcerated or died prior to the next interview. Since HHSTAT=2 and HHSTAT=5 respondents are included on SIPP monthly files for months they resided with respondents that continued in the survey, we include these respondents in SPM resource units to be consistent with the SIPP OPM that includes them in the family and household definition. However, for HHSTAT=2 and HHSTAT=5 respondents that left the survey before December of the reference year, variables with only annual variation such as components of MOOP are not calculated and we don't run these cases through TAXSIM. For these cases, we hotdeck monthly values of missing SPM components for months these respondents resided in resource units.

[16] For example, consider a couple that married and moved in together midway through the year. Their family income would be consistent in all subsequent months, but when calculating their annual poverty status, they may vary depending on their individual circumstances before moving in together.

source. For example, wage income is available on a weekly basis per person, while dividends are reported annually and may be jointly shared across multiple household members. Individual income reported annually is allocated evenly across the year, while shared annual income is first divided by the number of individuals covered by the payment, and then allocated to individuals evenly across months.

2.C.II. Noncash Benefits

The SPM aims to improve the measure of resources that a household has by also including the value of in-kind benefits that resource units receive. This includes the value of noncash, or in-kind, food assistance benefits, housing vouchers and subsidies, and home heating and cooling benefits. As shown in Table 2, the reporting of noncash benefits in the SIPP varies in frequency (monthly or annual) as does the reporting or imputation of associated cash value. We discuss our methodology for including these in-kind benefits below.

2.C.II.A. Food Programs

The 2014 SIPP Panel asks about receipt of four types of food assistance programs:

1. Supplemental Nutrition Assistance Program (SNAP)
2. Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
3. National School Lunch Program (NSLP)
4. School Breakfast Program (SBP)

This is similar to the CPS ASEC, which also includes the value of SNAP and the receipt of WIC and school lunch benefits. The SIPP additionally asks about the receipt of school breakfast benefits that is not asked about in the CPS ASEC.

For SNAP and WIC, the 2014 SIPP Panel uses an Event History Calendar (EHC) where respondents report which months they received the program benefits and which respondents in the household received these benefits.[17] The 2014 SIPP Panel asks who in the household was covered by SNAP benefits during each month of the previous calendar year and, if so, the face value of those benefits. WIC benefit receipt is similarly reported on a monthly basis and benefit amounts are assigned based on the number and ages of individuals covered while accounting for geographic differences in program benefits. The cash value of SNAP and WIC benefits are assigned to the respondent identified as the "program owner" during the months of reported receipt so as to avoid assumptions about the distribution of benefits across covered individuals.

[17] The SIPP instrument does not ask about the dollar value of WIC benefits. Instead, WIC benefit amounts are assigned based on the number and age of covered individuals, while adjusting for geographic variation.

As shown in Table 2, for the NSLP and SBP, the 2014 SIPP Panel asks respondents which children usually ate meals at school and whether these meals were free, reduced-price, or full-price. The value of participating in these programs is assigned per child, by multiplying USDA values associated with free or reduced lunch by the number of days in a school year (179).[18] The value of this benefit is then distributed evenly across typical school months where the participating children are present.[19] To value benefits, we obtain amounts on the cost per breakfast and lunch from the USDA Food and Nutrition Service, which administers the school lunch program.[20]

2.C.II.B. Housing Assistance

Households can receive housing assistance from a plethora of federal, state, and local programs. Federal housing assistance consists of a number of programs administered primarily by the U.S. Department of Housing and Urban Development (HUD). These programs traditionally take the form of rental subsidies and mortgage-interest subsidies and are either project-based (public housing) or tenant-based (vouchers).[21] Like in the CPS ASEC, the value of housing subsidies is estimated as the difference between the "market rent" for the housing unit and the total tenant payment. The "market rent" for the household is estimated using a statistical match with HUD administrative data from the Public and Indian Housing Information Center and the Tenant Rental Assistance Certification System. Details on this process can be found in the Technical Appendix.

While there is general agreement that the value of a housing subsidy can free up a family's income to purchase food and other basic items, it will do so only to the extent that it meets the need for shelter. Thus, as in the CPS ASEC, the value of housing subsidies are limited to the proportion of the threshold that is allocated to housing costs. The subsidy is capped at the housing portion of the appropriate threshold minus the total tenant payment. Subsidies are estimated at the household level and are then evenly distributed among household members each month.

[18] While more recent CPS ASEC files assume a school year of 179 days, CPS ASEC files prior to calendar year 2016 used 167 days. The value of this benefit may be overestimated if children do not receive school meals every school day of the year.

[19] For SIPP, we distribute the 179 days of NSLP and SBP benefits over 9 months and give zero dollar values for these programs over summer months (June-August).

[20] For more details, see <www.fns.usda.gov/school-meals/child-nutrition-programs>.

[21] HUD operates two major housing assistance programs: public housing and tenant-based or voucher programs. Previous research has found that households misreport whether they receive public housing or rental assistance in the CPS ASEC and that the value of public housing is not unambiguously worth less than the value of rental assistance (Renwick 2017).

2.C.II.C. Energy Assistance

Like previous panels, the 2014 Panel asks respondents whether the household participated in the Low Income Home Energy Assistance Program (LIHEAP) over the course of the year and whether subsidies were paid directly to the household or an energy company.[22] For households that report receiving LIHEAP benefits in the SIPP, we impute benefit amounts from the CPS ASEC using respondents that reported receiving LIHEAP benefits. The receipt of LIHEAP benefits is reported at the household level, and benefit amounts are distributed evenly among all household members throughout the year.

2.C.III. Resource Deductions

The SPM then subtracts necessary expenses that resource units face. These deductions include taxes, work-related commuting and childcare expenses, out-of-pocket medical expenses, and child support paid to another household. As shown in Table 2, some deductions are reported directly in the SIPP, while others (such as taxes paid) are modeled using SIPP data as an input. Further, in some cases, such as commuting costs, expenses are reported monthly and deducted from the monthly income of the SPM resource unit, while in others, such as MOOP, expenses are reported annually and allocated as a subtraction from resources across all months.

2.C.III.A. Commuting & Miscellaneous Work Expenses

Consistent with SPM estimates derived from the CPS ASEC, we account for work-related expenses incurred among those employed. The CPS ASEC accounts for commuting and work-related expenses by subtracting a flat weekly deduction from the income of all workers based on the number of weeks they reported working over the year.[23] The weekly deduction for the CPS ASEC is derived from the SIPP. In the SIPP, respondents report their incurred commuting and other work-related expenses, which may vary over the year with employment changes. For this paper we attempt to remain consistent with the CPS ASEC methodology and original NAS recommendations, as such, median weekly work-related expenses are calculated across all workers employed in a given month, regardless of variation in individual costs.[24] This flat weekly deduction is then multiplied by the number of weeks individuals reported working each month. Details on the calculation of work-related commuting and miscellaneous expenses can be found in the Technical Appendix.

[22] While the monetary value of benefits received from LIHEAP was asked in earlier SIPP panels, the 2014 Panel does not ask respondents that report receiving LIHEAP benefits about the amount of benefits they received.
[23] The deduction is based on weeks worked regardless of whether those weeks were full or part-time work.
[24] Future iterations of the SIPP SPM could explore allowing individual work-related expenses to vary instead of giving all workers the same fixed deduction.

2.C.III.B. Work-Related Childcare Expenses

Another important part of work-related expenses is paying someone to care for children while parents work. These expenses have become important for families with young children in which both parents (or a single parent) work. To account for childcare expenses, parents in the SIPP are asked whether or not they paid for childcare while parents worked and how much was paid for childcare during a typical week in December.[25] The amounts paid for any type of childcare while parents are at work are used to determine work-related childcare expenses throughout the year. Details on the calculation of work-related childcare expenses can be found in the Technical Appendix.

2.C.III.C. Medical Expenses

The ITWG recommended subtracting medical expenses from income, following the suggestion of the NAS panel. The NAS panel was aware that expenditures for healthcare are a substantial portion of a family budget and have become an increasingly larger budget item since the 1960s. These expenses include the payment of health insurance premiums plus other medically necessary items, such as prescription drugs and doctor copayments that are not paid for by insurance. Subtracting these "actual" expenses from income, like taxes and work expenses, provides the amount of remaining income that a family has available to purchase a basic bundle of goods.

While many individuals and families have health insurance that covers very large expenses, the typical family pays the costs of health insurance premiums and other medical fees out-of-pocket. In the SIPP, respondents report person level annual expenditures on health insurance premiums that do not include Medicare Part B, Part C, and Part D premiums. The SIPP instrument identifies when a respondent reported Social Security Retirement benefits net of Medicare Part B, Part C, and Part D premiums. For these respondents, Part B, Part C, and Part D premiums are generally set at a standard amount per month and added back to Social Security income. Given this, when calculating MOOP expenses, we include Part B, Part C, and Part D premiums paid.[26]

MOOP expenses outside of insurance premiums are reported annually at the person level. These expenses are allocated evenly across all months of the calendar year.

[25] If a respondent was not working in December, but worked within the reference year, they report average expenses for a typical week when working over the reference year across all related children.

[26] In Waves 1-4 of the 2014 SIPP Panel, processing errors generated incorrect universes for the Medicare deduction flags: ESSPARTBYN, ESSPARTCYN, and ESSPARTDYN. The processing of these deduction flags referenced the wrong indicators of Medicare receipt, so the Medicare deduction variables are in universe for some respondents that did not receive the corresponding Medicare benefits. These errors were corrected for in the 2018 SIPP Panel, but problems remain in the 2014 Panel. For respondents affected by this in the 2014 SIPP Panel, we edit their Part B, Part C, and Part D premiums to zero to be consistent with the intended universe.

2.C.III.D. Child Support Paid

The NAS panel recommended that, since child support received from other households is counted as income, child support paid should similarly be deducted from resources. Without this subtraction, all child support is double-counted in overall income statistics. Questions ascertaining the annual amount paid of child support are included in the SIPP, and these costs are distributed evenly across months.

2.C.IV. Taxes Paid and Tax Credits

The NAS panel and the ITWG recommended that the calculation of resources for poverty measurement should account for necessary expenses in the form of taxes, as well as the value of reimbursable tax credits. The SPM subtracts federal, state, and payroll (FICA) taxes and in cases where refundable tax credits exceed taxes owed, accounts for the value of the Earned Income Tax Credit (EITC) and Child Tax Credit.

In the CPS ASEC, respondents do not provide any information on tax filing status, so to produce the SPM, tax units are logically constructed based on household composition at the time of the interview and taxes are modeled using reported income. The SIPP reduces the number of assumptions needed to assign tax filing units, as it does collect some basic data on whether respondents have filed or plan to file taxes for the prior year, how they filed, whether they claimed a dependent, and if they received the EITC in the prior calendar year. An additional advantage of the SIPP is that it is possible to determine who lived together throughout the reference year for tax purposes, which in-turn allows us to capture a closer number of exemptions relative to Internal Revenue Service (IRS) Statistics of Income files than would be possible without this information.[27]

The SIPP does not collect information on taxes paid and for tax estimates we rely on the National Bureau of Economic Research's (NBER) TAXSIM model to estimate tax liability and credits. We use TAXSIM to calculate federal and state income taxes as well as all refundable tax credits. We then calculate FICA taxes independently of TAXSIM. The use of TAXSIM varies from tax calculations in the CPS ASEC, which uses an internal Census Bureau tax model to calculate federal and state taxes and refunds—although the mechanics of the two tax models tend to be similar.[28] Details on modeling taxes can be found in the Technical Appendix.

[27] It is worth noting that the 2017 Tax Cuts and Jobs Act eliminated personal and dependent exemptions from 2018 through 2025, while at the same time expanding the value of the standard deduction, among other things. To this point, the elimination of personal exemptions starting in 2018 means that it is no longer necessary to calculate exemptions to get an SPM rate as long as the elimination of exemptions in the tax code stays in place.

[28] For a discussion of differences across the Census Tax Model and TAXSIM, see Wheaton and Stevens (2016).

2.D. Determining SPM Poverty Status

After SPM resources have been aggregated across the resource unit each month, these are then summed across all 12 months of the calendar year for each respondent in the sample. Thresholds are also aggregated across the year. Annual SPM resource unit resources are then compared to the annual threshold for each respondent to determine SPM poverty status. Respondents with a lower dollar value of annual resources than their annual SPM threshold are then classified as in SPM poverty, while respondents with annual SPM unit resources in excess of their annual SPM threshold are considered not in poverty.

While SIPP does produce both monthly and annual OPM poverty status, for SIPP-SPM poverty rates we focus on annual rates. We choose to focus on annual SIPP-SPM poverty rates, since creating monthly rates would require one to know all SPM components on a monthly basis. While income components are often reported on a monthly basis in SIPP, things such as MOOP, taxes and tax credits, and child support paid are collected on an annual basis.

3. Findings

3.A. SIPP Poverty Rates

SIPP SPM and OPM poverty rates for 2013-2016 are displayed in Table 3.[29] To show trends across the four years and increase statistical power, Table 3 and Figure 1 display pooled SIPP SPM and OPM poverty rates over the 2013-2016 period. Pooling the data across the four years, the SIPP SPM rate averaged 14.6 percent, which was 0.5 percentage points higher than the SIPP OPM pooled rate of 14.1 percent over the 4-year period.

Over the 2013-2016 period, the pooled SPM rate for males (13.9 percent) was 1.1 percentage points higher than the pooled OPM rate for males (12.8 percent). The pooled SPM rate for females (15.2 percent) was not statistically different from the OPM rate (15.3 percent).

SPM rates for children under the age of 18 were lower than corresponding OPM rates, with a pooled SPM rate of 15.8 percent relative to the pooled OPM rate of 20.6 percent. In contrast, pooled SPM rates were higher each year than OPM rates for adults aged 18 to 64 and adults aged 65 and older with pooled SPM rates of 15.0 percent and 11.0 percent, respectively. These pooled SPM rates were higher than the corresponding pooled OPM rates by 1.4 percentage points for adults aged 18-64 and 4.4 percentage points for adults aged 65 and over.

[29] It is worth noting that the SIPP sample size decreased in each wave of the panel as is typical with longitudinal surveys. Given declines and sample size over time, estimates from later waves often have higher standard errors and because of this, differences that are statistically significant in wave 1 might not be statistically significant in later waves as standard errors become larger due to attrition.

White non-Hispanics had the lowest pooled SPM rates among the race/ethnicity groups displayed in Table 3, while Hispanics had the highest pooled SPM rate across the four years. Comparing differences by poverty measure, White non-Hispanics, Whites, and Asians all had higher pooled SPM rates than OPM rates (0.7, 0.8, and 5.2 percentage points higher, respectively). In contrast, Blacks had a pooled SPM rate that was 2.2 percentage points lower than their corresponding OPM rate. Pooled Hispanic SPM and OPM rates across the four years were not statistically different.

In terms of resource unit size, one, two, and three person resource units had higher pooled SPM rates than OPM rates across the four years, while four person resource units had pooled OPM and SPM rates that were not statistically different over the four-year period. Resource units with five to seven persons had lower pooled SPM than OPM rates over the four years. Resource units of eight or more persons had SPM and OPM rates that were not statistically different, which was likely due to a lack of statistical power.[30]

3.B. Comparisons to CPS ASEC Poverty Rates

To get a better sense of how poverty rates compare across the SIPP and CPS ASEC, Table 4 and Figure 2 provide CPS ASEC SPM and OPM rates for the same demographic groups displayed for SIPP in Table 3. Differences in SPM rates across surveys for the four-year period are displayed in Figure 3. There are several similarities and differences between the SIPP and CPS ASEC SPM rates.[31]

One noticeable difference between SIPP and CPS ASEC SPM rates is that annual SIPP SPM rates are not statistically different from SIPP OPM rates in 3 of the 4 years while annual CPS ASEC SPM rates have been higher than CPS ASEC OPM rates for every year that the measure has been released, since 2009 (Fox 2020).[32] However, like CPS ASEC, the pooled SIPP SPM rate was higher than the corresponding pooled SIPP OPM rate. Comparing the pooled SIPP SPM rate to CPS ASEC, the SIPP SPM rate was 14.6 percent, which was 0.4 percentage points lower than the CPS ASEC SPM rate of 15.0 percent.

Across demographic groups, the SIPP and CPS ASEC SPM share many similar trends. These include lower SPM poverty rates for children and higher SPM poverty rates for those age 18-64 and age 65 and older compared to the corresponding OPM rates from each survey. This is often

[30] Differences in poverty rates across resource sharing units of different sizes reflect assumptions made in thresholds equivalence adjustments. Details of these adjustments are found in the Technical Appendix.

[31] For CPS ASEC comparisons, estimates for 2013 are based on the portion of the 2014 CPS ASEC sample that received the redesigned income questions, while estimates for 2016 reflect the CPS ASEC legacy processing system. Given this, CPS ASEC estimates for reference year 2013 tend to have larger standard errors than the 2014-2016 reference year estimates, ceteris paribus.

[32] Some of this difference could be due to SIPP having a smaller sample size, which could lead to a lower level of statistical power relative to CPS ASEC.

attributed to in-kind programs which benefit families with children (such as school meals, TANF, WIC and refundable tax credits) and MOOP expenses for older adults that are captured by the SPM and are not accounted for in the OPM.

Pooled SPM rates over 2013-2016 for children under age 18 are 4.8 percentage points lower than OPM rates in the SIPP, a larger difference than the 3.4 percentage point difference in the CPS ASEC. The SIPP had a lower pooled SPM rate for children (15.8 percent) relative to the 16.7 percent pooled rate in CPS ASEC. This is partially driven by SIPP SPM including school breakfast, which is not accounted for in the CPS ASEC. The inclusion of school breakfast benefits reduced pooled SIPP SPM poverty rates for children by 0.5 percentage points, while reducing the overall SIPP SPM poverty rate by 0.2 percentage points. For adults between the ages of 18 and 64 and aged 65 and older, SPM rates were consistently higher than OPM rates across both surveys.

Comparing pooled samples, SPM rates for White non-Hispanics were higher in SIPP (11.1 percent) relative to CPS ASEC (10.6 percent). Among Blacks, the pooled SPM rate was 20.2 percent in SIPP, which was 2.8 percentage points lower than the pooled CPS ASEC rate of 23.0 percent. Both surveys showed significantly lower levels of pooled poverty rates for Blacks using the SPM compared to the OPM over the four years. Hispanics also had lower pooled SPM rates in the SIPP (22.4 percent) relative to CPS ASEC (24.3 percent). Whites and Asians had pooled SPM Poverty rates that were not statistically different across the two surveys.

By resource unit size, people living in one-person resource units had pooled SIPP SPM rates of 25.1 percent, which was 0.8 percentage points higher than in the CPS ASEC. Individuals in two and three person resource units had lower pooled SPM rates in the SIPP than in the CPS ASEC. Resource units with four to seven people did not have statistically different SPM rates across the SIPP and CPS ASEC. Those in resource units of eight or more people had lower pooled SPM rates in SIPP than in CPS ASEC.

3.C. SPM Resource Units and Thresholds

Population universes, resource sharing unit definitions, and threshold assignments vary across the OPM and SPM estimates produced in the SIPP, both in their methodology and impact on poverty estimates. By expanding the poverty universe to include unrelated children under the age of 15, the population for whom poverty status can be determined increases by approximately 300,000 individuals under the SPM for a given year from 2013 to 2016.[33] In addition, expanding the resource-sharing unit definition to include cohabiting partners and relatives, as well as

[33] Unrelated children under the age of 15 that lived with a guardian, in the SIPP universe, for all 12 months of the reference year are included in the OPM universe in this paper for comparability. In the SIPP, unrelated children are assigned the monthly income and poverty threshold of their household guardian. In the CPS ASEC, annual poverty status for unrelated individuals is based on the poverty status of the householder. See Fox (2020) for additional details.

unrelated children under age 15 and foster children up to age 22, 9.8 percent of individuals find themselves in a new resource unit for at least one month of the calendar year under the expanded SPM resource sharing definition.

Table 5 provides the isolated impact of expanding the definition of resource sharing units by calculating poverty using these new resource unit assignments while holding poverty thresholds and income constant as measured under the OPM.[34] As shown in Table 5, expanding the resource unit to match the SPM definition led poverty to decline 1.9 percentage points, from 14.1 percent under the OPM to 12.2 percent in the pooled 2013-2016 SIPP sample, larger than the impact in the pooled 2013-2016 CPS ASEC sample, where the decline was 1.3 percentage points. Applying the SPM methodology for assigning resource units and poverty thresholds while continuing to measure resources based on the OPM measure of cash income, poverty rates for an average year over the period are 13.3 percent in the SIPP, remaining lower than as measured using the OPM methodology (14.1 percent). The incremental 1.1 percentage point increase is not statistically different from the 0.8 percentage point impact seen in the CPS ASEC when incorporating SPM thresholds. When assigning SPM thresholds in the SIPP, on average, 65.4 percent of individuals have higher annual poverty thresholds under the SPM than the OPM, an average annual increase of $4,880.

3.D. SPM Resources

While pooled SIPP SPM rates were higher than corresponding OPM rates across 2013-2016, as shown in Table 3, SIPP SPM individual year poverty rates were only statistically different from OPM rates in 2016, higher by 1.0 percentage points. This finding differs from SPM estimates calculated in the CPS ASEC, where poverty has been consistently higher under the SPM rather than the OPM methodology for each year from 2011 to 2019 (Fox 2020).

To better understand the impact of SPM resource additions and subtractions across surveys, we compare the probability of receipt, conditional medians, aggregates, and aggregates for those in OPM poverty for SPM components across surveys. Table 6 and Figure 4 provide the percent of SPM units reporting a given resource or expense in a given month of the year. Table 7 and Figure 5 provide the conditional monthly median dollar value of the resource addition or subtraction. Given that resources and expenses may be reported (or distributed) monthly or annually in the SIPP while the CPS ASEC collects only annual data, these comparisons are made more challenging.[35]

[34] For individuals who find themselves in new resource units under the SPM, thresholds are reassigned based on the OPM methodology based on family size and composition.

[35] While we view these comparisons as valuable, caution should be used in making direct comparisons about how the SIPP and CPS ASEC capture SPM components since the SIPP is based on monthly and annual reporting while monthly CPS ASEC estimates are based on annual amounts divided by 12. While we could have used SIPP

Table 6 and Table 7 (Figure 4 and Figure 5) divide reported resource additions or subtractions by 12 when producing estimates for the CPS ASEC, where, receipt is assumed to be constant over all 12 months of the reference year. For resource components reported annually in the SIPP, this is the same methodology used to convert annual data to monthly values except in the case of taxes paid, work expenses, and school lunch. We assign monthly tax liability in the SIPP based on the ratio of monthly to annual income, cap monthly work expenses in the SIPP not to exceed the earnings of the lowest paid reference person or their spouse/partner, and assign school lunch (and school breakfast) over a nine-month period.

To address these comparability challenges, Table 8 and Figure 6 display aggregate SPM resource additions and subtractions for the SIPP and CPS ASEC while Table 9 and Figure 7 display pooled aggregate SPM components for the SIPP and CPS ASEC among those in poverty based on the OPM.

3.D.I. Resource Additions

As shown in Table 6 and Figure 4, over the 2013 to 2016 period, the SIPP captured a lower proportion of respondents in a given month that receive unemployment insurance, as well as a smaller proportion of respondents who receive the EITC or other refundable tax credits. The percentage receiving school lunch in a given month in SIPP was also lower (20.3 percent) relative to CPS ASEC (29.4 percent). However, this is largely a product of the way that data on school meals is constructed—in SIPP we have monthly data, so we distribute school lunch and breakfast to months that students are typically in school and exclude benefits in summer months (June-August); however, in the CPS ASEC we have annual data, so **to construct monthly estimates for this comparison,** participation is divided across 12 months instead of 9. As shown in Table 7 and Figure 5, SIPP respondents who received school lunch or unemployment insurance saw higher conditional monthly median resource values compared to recipients in the CPS ASEC.[36] In aggregate, the pooled SIPP captured 16.8 percent more in school lunch benefits, and 33.0 percent less in unemployment insurance, see Table 8 and Figure 6. There was no statistical difference across surveys in the conditional median monthly value of the EITC or refundable tax credits, although the SIPP captured fewer EITC benefits in aggregate than the CPS ASEC.

Over 2013 to 2016, the SIPP was more likely than the CPS ASEC to identify SPM units as having received LIHEAP, Social Security, SNAP, Supplemental Security Income (SSI), and WIC in a given month. Among individuals that lived in SPM units that received these benefits, median monthly benefit amounts were higher in the SIPP for those participating in LIHEAP and

annual values for the comparison to get around this, it would introduce a different problem for contrasting SIPP and CPS ASEC results since resource units can change throughout the year in SIPP.

[36] Note that differences in monthly receipt and conditional monthly medians for school lunch reflects the allocation of benefits across 9 months in the SIPP and 12 months in the CPS ASEC. Unemployment insurance follows a similar pattern, where most unemployment insurance recipients in SIPP only receive benefits for part of a year, leading to higher average monthly benefits in SIPP over fewer months.

SNAP, while benefits were lower in the SIPP than in the CPS ASEC among those receiving SSI.[37, 38] As a result, the SIPP had higher aggregate values of LIHEAP, SNAP, and SSI benefits overall, as well as among poor individuals in the pooled sample.

Average recipiency rates within SPM units for child support received, housing subsidies, TANF and General Assistance (GA), and workers' compensation were not statistically different across surveys. However, for each of these sources except housing subsidies and TANF and GA, conditional monthly median benefit amounts were higher in the SIPP than in the CPS ASEC across the four years. Aggregate amounts were higher as measured in the SIPP for child support received and Social Security, although differences in the value of Social Security across surveys were inverted among the population in poverty, with the CPS ASEC capturing 30.6 percent more in Social Security benefits than the SIPP among individuals in official poverty.

On average, the SIPP includes $6.2 billion in school breakfast benefits that are not reported in CPS ASEC in a given year.[39] Of this amount, $2.3 billion is distributed to individuals considered poor under the OPM definition, with 620,000 individuals per year in the SIPP being lifted out of SPM poverty due to the receipt of school breakfast per year over the four-year period.

3.D.II Resource Deductions

As shown in Table 6 and Figure 4, over the period from 2013 to 2016, the SIPP was more likely than the CPS ASEC to identify monthly expenses related to child support paid and MOOP, and resource units were less likely to experience expenses related to FICA, federal and state income taxes, and work-related expenses. The reduced reporting of work-related expenses in the SIPP may be due to allowing the cap based on the lowest earning SPM unit reference person (or their spouse or partner) to float month-to-month in the SIPP while a single cap based on the lowest earner in the CPS ASEC is assigned for the entire calendar year.

Table 7 and Figure 5 report resource unit conditional monthly medians among those with expenses, and while the SIPP was more likely to identify expenses related to child support paid and MOOP, median monthly expenses for child support paid were not statistically different across surveys on average over the four-year period. Expenses for MOOP however were higher in the SIPP, with a conditional monthly median of $317 in the SIPP compared to $298 in the

[37] The average conditional monthly median benefit value for WIC recipients across the four-year period was $45.20 in the SIPP and $43.30 in the CPS ASEC, but due to a lack of variation at the median, standard errors are not available to statistically compare these estimates.

[38] As noted in Section 2.C.II.C, the value of LIHEAP is imputed from the CPS ASEC on an annual basis, while SNAP benefit values are directly reported in SIPP.

[39] As noted in Section 3.E, the overall four-year average SIPP SPM rate would have been 0.2 percentage points higher if the value of school breakfast was excluded.

CPS ASEC. In aggregate, MOOP deductions were 5.1 percent higher and child support payments were 90.9 percent higher in the SIPP than in the CPS ASEC.

In addition to being less likely to experience FICA or federal tax deductions in the SIPP relative to the CPS ASEC, among those with expenses, median monthly deductions over the four-year period were lower in the SIPP relative to the CPS ASEC, $18 fewer a month for FICA taxes and $79 lower for the federal income tax. Conditional median monthly deductions over the four-year period were not statistically different across surveys for state income tax or work expenses. However, as shown in Table 8 and Figure 6, in aggregate, the SIPP captures more resource deductions than the CPS ASEC across every component, although among those in official poverty, as shown in Table 9 and Figure 7 the SIPP reported fewer deductions than the CPS ASEC for all components except child support paid (72.7 percent higher in the SIPP).

Aggregate differences in SIPP tax liability appear to be partially driven by higher internal topcode limits in the SIPP. On average over the four-year period, annual federal income taxes in the SIPP accounted for $2.0 trillion in deductions compared to $1.3 trillion in the CPS ASEC. FICA taxes were $607.9 billion in SIPP relative to $571.6 in CPS ASEC. FICA taxes in the CPS ASEC are also affected by topcode limits, although to a lesser degree given caps on the Social Security portion of the tax. Among those in OPM poverty, federal taxes before credits totaled $0.3 billion in SIPP relative to $17.1 billion in the CPS ASEC. The difference in federal taxes paid by this population is largely due to differences in tax models used. The Census Bureau's internal CPS ASEC tax model allows for fewer exemptions, particularly dependent exemptions, than the tax model used for the SIPP (NBER TAXSIM), which is more aggressive and allows for all exemptions allowable by the IRS to be claimed by filers. Details on modeling taxes can be found in the Technical Appendix.

3.E. Marginal Impacts

To get a better sense of how individuals SPM inputs affect poverty rates, Table 10 and Figure 8 display how SPM components affect SPM poverty rates across surveys for each year from 2013-2016 and for the moving average across the four years, respectively. On average over the four-year period, resource additions including the EITC, refundable tax credits, unemployment insurance, and workers' compensation had a bigger impact in reducing poverty in the CPS ASEC, while SSI and Social Security were measured to be more impactful in reducing poverty in the SIPP.

Among resource unit deductions, on average over the four-year period, accounting for child support paid and state income tax moved more people into poverty in the SIPP compared to the CPS ASEC. Alternatively, fewer people in the SIPP entered poverty compared to the CPS ASEC when accounting for federal and state income taxes and MOOP.

3.E.I. Resource Additions

As displayed in Table 10 and Figure 8, Social Security kept an average of 30.3 million individuals out of poverty each year in SIPP with the majority of these individuals being aged 65 and older. Compared to CPS ASEC, Social Security kept approximately 4.0 million more people out of poverty as measured in the SIPP.

Among those aged 18 to 64, Social Security kept, on average, 9.5 million individuals out of poverty over the years 2013 to 2016 in the SIPP, larger than the 8.0 million individuals of the same age kept out of poverty by Social Security on average in CPS ASEC. For those age 65 plus, Social Security income in the SIPP kept 18.9 million individuals out of SPM poverty on average across the four years, which is 2.2 million more than the 16.7 million individuals that Social Security kept out of SPM poverty in CPS ASEC on average across the four years. For those under the age of 18, Social Security kept 2.0 million individuals out of poverty in SIPP compared to 1.6 million estimated by CPS ASEC, see Figure 8.

Refundable tax credits including the EITC and Child Tax Credit also kept large numbers of individuals out of SPM poverty. Unlike Social Security, which tends to pull working-age and older respondents out of SPM poverty, refundable tax credits tend to keep younger and working-aged individuals out of SPM poverty. This is largely due to refundable tax credits often being tied to having children and earnings. Indeed, across both surveys, refundable tax credits (the EITC and refundable portion of the Child Tax Credit) kept the most children out of poverty among the social insurance programs in Figure 8. On average, refundable tax credits reduced the number of people in poverty by 7.5 million people across 2013-2016. The average impact of the refundable tax credits in the SIPP (7.5 million) was fewer than the 8.8 million estimated by the CPS ASEC for the same period.

The SIPP estimates suggest SSI kept an average of 4.6 million people out of SPM poverty, which was larger than the 3.7 million estimated by CPS ASEC—with SIPP capturing 1.2 million children kept out of poverty from SSI relative to 0.7 million in CPS ASEC.

Benefits from unemployment insurance kept 500,000 fewer individuals out of poverty in the SIPP compared to the CPS ASEC on average over the four-year period, with the largest impacts across both surveys in 2013, before extended and emergency unemployment benefits ceased at the start of 2014. Benefits from workers' compensation kept fewer individuals out of poverty relative to CPS ASEC on average across the four years.

Estimates for the number of individuals that SNAP kept out of SPM poverty ranged from 4.8 million to 5.5 million per year in the SIPP and 3.6 million to 5.8 million in the CPS ASEC over 2013 to 2016, with the average annual impact not statistically different across surveys. Housing subsidies kept an average of 3.1 million people out of poverty in the SIPP, not statistically

different from the four-year average in the CPS ASEC. School lunch kept an average of 1.3 million people out of poverty in the SIPP, not statistically different from the CPS ASEC although the capture of school breakfast in the SIPP kept an additional 620,000 individuals out of poverty on average over the period.

3.E.II. Resource Deductions

As shown in Table 10 and Figure 8, among resource subtractions accounted for in the SPM, in both the SIPP and the CPS ASEC, MOOP has the largest marginal impact on poverty status, followed by work expenses and FICA taxes. While MOOP deductions had the largest impact on poverty status in both surveys, these expenses pushed fewer people into poverty in the SIPP compared to the CPS ASEC, an average of 9.7 million individuals and 11.4 million, respectively. As discussed in Section 3.E.I., Social Security benefits kept a larger number of people out of poverty in the SIPP compared to the CPS ASEC. Since most MOOP expenses are for working-age and older respondents, the additional Social Security income captured by SIPP for this group is likely reducing the impact of MOOP on poverty.

On average, work expenses pushed 6.9 million individuals in the SIPP into poverty across the four years and 6.7 million for the CPS ASEC, not statistically different. FICA taxes pushed an average of 4.9 million Americans into SPM poverty across the four years in the SIPP and 5.1 million into poverty in the CPS ASEC, not statistically different across surveys. While less impactful than work expenses and FICA taxes due to the progressive nature of the tax code, federal income taxes pushed 1.2 million individuals into poverty on average in the SIPP, with a larger impact in the CPS ASEC, where an additional 400,000 Americans moved into poverty based on federal income taxes. Alternatively, the impact of state income taxes was larger in the SIPP, moving 150,000 more individuals into poverty on average as measured in the SIPP compared to the CPS ASEC. Child support paid pushed 0.8 million individuals into poverty as measured in the SIPP on average across the four-year period, compared to 0.3 million individuals in the CPS ASEC.

3.F. Monthly Data and Threshold Assignment

As discussed in Section 2.A., another notable difference between the SIPP and CPS ASEC involves the timing of when family (or resource unit) composition is determined. Collecting monthly data allows the SIPP SPM to tie many income sources, deductions, and the capped expenses to a specific month. While we do not attempt to produce monthly SPM poverty rates in this paper given that some SPM inputs such as the EITC and MOOP are not available on a monthly basis, accounting for the monthly variation in SIPP can have important effects on the overall poverty rate, especially for individuals that live in SPM resource units that change in size or composition throughout the year.

When assigning SPM thresholds, the SIPP accounts for monthly variation in both geographic location as well as family composition and changes in family relationship throughout the reference year, while the CPS ASEC uses home location and family composition at the time of the survey, typically February through April in the subsequent year. In the most extreme of cases, this would mean that a child born in January of 2014, before the CPS ASEC interview, would be assumed as present throughout all of 2013, even though the child was not born until 2014. Alternatively, if two individuals, who were single for all of 2013, marry and join households in January 2014, the CPS ASEC would treat the couple as married and living in their new household location for the entire year, while the SIPP would treat them each as single individuals in 2013 with their own respective geographic threshold adjustments.[40]

To see the effect of how differences in the reporting of housing location and family composition affect poverty rates, Figure 9 displays the SIPP SPM rate for 2013, the first year covered by the 2014 SIPP Panel, where household location and family composition can vary month to month (as used in this analysis) compared to fixing household location and family composition as reported in December 2013.[41] Note that while the calculation of personal income is unchanged in this analysis, SPM unit resources are recalculated in each month reflecting any changes due to the application of this condition. This leads to an expansion in the poverty universe through the inclusion for the entire year of infants with fewer than 12 monthly observations, who are not assigned annual poverty values during the reference year in either the SIPP SPM or OPM methodology.

The overall 2013 SPM rate using constant thresholds based on geographic location and family composition in December is 17.4 percent, 0.6 percentage points higher than the 16.7 percent rate used in this paper. This change is primarily driven by the poverty rate for people under age 18, whose 2013 SPM poverty rate would have been 1.1 percentage points higher (19.0 vs 17.9 percent) and those age 18-64 (17.9 vs 17.4 percent).[42] Those age 65 plus would have a 2013 SPM rate using constant thresholds based on geographic location and family composition in December of 12.4 percent relative to 12.1 percent used in this paper, which are not statistically different.

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[40] While housing tenure is also accounted for in the SPM, because housing tenure is only reported in December in the SIPP, this adjustment is similar to the CPS ASEC in that it is invariant over the calendar year.

[41] While possible to show this for other years covered by the 2014 SIPP Panel (2014 through 2016), we limit this to 2013 given that the inclusion of partial period household members would make the interpretation of these results more complicated.

[42] Most of the differences from these rates comes from 1) expanding the SIPP universe to include more children through including infants that were not observed for all reference months during the year, while assuming that they were present in all 12 months of the reference year rather than the months they were actually present and 2) the SPM equivalency scale increases for adults. With December constant thresholds, children that turned 18 during the reference year get a higher value in all 12 months rather than simply during months they were 18 as calculated in the SIPP SPM methodology. Moreover, since children who do not reside with a guardian (age 15+) in any given month during the reference year are excluded from receiving annual SIPP SPM and OPM values, the December constant threshold would bring most of these individuals into universe if they lived with a guardian (age 15+) in December.

3.G. Social Security Income

As discussed in Section 3, one of the most noticeable differences across the SIPP and CPS ASEC is the lower SPM poverty rates for those aged 65 plus in SIPP. SPM poverty rates for those age 65 and older averaged 3.6 percentage points lower in the SIPP than the CPS ASEC. On average, SPM rates for people age 65 and older in the SIPP were 4.4 percentage points higher than OPM rates, compared to an increase of 5.0 percentage points from the OPM to SPM as measured in the CPS ASEC, see Table 3 and Table 4. As noted in Section 3.D.I. and Section 3.E.I., much of this difference can be attributed to the collection of Social Security income across surveys, with respondents in the SIPP reporting conditional monthly median values $207 higher than those in the CPS ASEC over the four-year period, with an average of $127 billion more in Social Security benefits collected per year in the SIPP compared to the CPS ASEC, see Table 7 and Table 8.

As shown in Figure 8, comparing marginal impacts for the SPM across the SIPP and CPS ASEC for those age 65 plus, the largest differences for this group come from Social Security and MOOP. On average, Social Security kept 2.2 million more individuals aged 65 and older out of poverty in the SIPP compared to the CPS ASEC, while MOOP pulls 490,000 fewer of these individuals into poverty in the SIPP. The larger marginal impacts for Social Security in SIPP likely come from the higher amounts of Social Security captured by SIPP relative to CPS ASEC. Indeed, the pooled SIPP OPM poverty rate for those 65 plus averaged 6.6 percent across the years, which was significantly lower than the pooled CPS ASEC poverty rate of 9.5 percent for this group.

To get a better sense of differences in Social Security income across the two surveys, it should be noted that there has long been confusion between two programs administered by the Social Security Administration (SSA)—the Supplemental Security Income (SSI) program and Old-Age, Survivors and Disability Insurance (OASDI or Social Security). Given this confusion, the 2014 SIPP Panel took advantage of administrative records to compare reported and imputed values for SSI and Social Security and, in cases where respondents have a match to the administrative SSA record, swaps responses to reflect the correct program based on administrative values (see Giefer et al. 2015). The change is important as SSI had a federal maximum person monthly benefit of $733 ($1,100 for married couples) in 2016 while Social Security had a maximum benefit of $2,639 for workers retiring at the full retirement age in 2016.

To evaluate the measurement of Social Security income in the SIPP and CPS ASEC, Table 11 compares survey reported values to administrative totals available from the Bureau of Economic Analysis National Income and Product Accounts (NIPA) for 2013-2016. For these comparisons, similar to Roemer (2000), we adjust NIPA estimates to account for individuals outside of the SIPP survey frame including those that resided in institutionalized group quarters and decedents.

As displayed in Table 8 and Table 11, the SIPP captures an average of $127 billion more of Social Security payments than CPS ASEC over the 2013-2016 period, with differences across surveys increasing from $90 billion in 2013 to $149 billion in 2016. While CPS ASEC produces aggregate Social Security benefit amounts that were around 91 percent of our adjusted NIPA measure, SIPP estimates actually exceed adjusted NIPA Social Security estimates with differences increasing over the four-year period, from 103 percent of the NIPA value in 2013 to 109 percent in 2016.

Since aggregate Social Security dollars paid is the product of the number of Social Security payments and the average benefit amount, it is possible to decompose this further to determine if the number of payments or payment amounts were too high compared to administrative totals. Table 12 displays the number of recipients in SIPP compared to adjusted administrative totals from the SSA Master Beneficiary Record (MBR) for benefits based on retirement and disability claims.[43] Retirement benefits are the most common reason to receive Social Security for both males and females, while disability benefits represent the second most common reason to receive Social Security.

Table 12 illustrates large differences relative to administrative totals in Social Security retirement claims across males and females. From 2013 to 2016, the number of male retirement claims observed in the SIPP ranged from 83.4 percent of administrative totals in 2013 to 85.5 percent in 2015. Conversely, female Social Security retirement claims observed in SIPP as a percentage of adjusted SSA totals were significantly higher, ranging from 94.8 percent in 2013 to 99.5 percent in 2016. For Social Security disability claims, SIPP exceeds the corresponding adjusted SSA totals for each year from 2013 through 2016 for both males and females.

Given that aggregate SSA payments are too high yet retirement claims, which represent the bulk of claims, are undercounted for men in four years and for women in 2013-2014, we find that average benefit amounts across both sources of benefits and sexes are high compared to the MBR. SIPP mean Social Security disability benefits tended to be closer to mean SSA benefit levels relative to Social Security retirement benefits.

Future work should focus on linking internal respondents in SIPP to the MBR to determine which respondents have excessive benefits. This would be helpful in determining the extent that excess benefit amounts impact SIPP OPM and SPM values, as this currently remains unclear without knowing the distribution of income and other SPM components for those with excess Social Security payments.

[43] SSA claim totals were adjusted by removing payments made to individuals residing in U.S. territories or other countries and further adjusting to reflect the civilian non-institutionalized universe of the SIPP.

4. Conclusion

This paper proposes a methodology for estimating the SPM in the redesigned SIPP including the 2014 SIPP Panel and subsequent panels. While the SIPP sample size is smaller than other Census surveys where SPM estimates have been derived (CPS ASEC and ACS), the SIPP offers more detail, including monthly data on many SPM inputs. While we do not attempt to make monthly SPM estimates, given that some large SPM components such as MOOP are not collected monthly in the SIPP, the monthly data allow us to account for family dynamics over the reference period, which is not currently possible with other Census surveys used for poverty estimates. The SIPP also provides a large amount of material hardship content that is not available in most other household surveys that can be used in future research to provide new insight into OPM and SPM differences. Moreover, the longitudinal nature of the SIPP, will allow researchers to compare the dynamics of both OPM and SPM poverty transitions over time. While this is possible to some extent in the CPS ASEC by exploiting overlapping samples, the SIPP is the only Census Bureau survey explicitly designed to be used in measuring longitudinal poverty.

We provide SPM estimates for each year covered by the 2014 SIPP Panel from 2013 to 2016. The overall SPM rate was 16.7 percent in 2013, declined in both 2014 and 2015 to 15.0 and 13.3 percent, respectively, and remained at 13.3 percent in 2016. SIPP OPM and SPM poverty rates were only statistically different from one another in 2016, with the SPM rate of 13.3 percent 1.0 percentage points higher than the 2016 OPM rate of 12.3 percent. On average over the four-year period however, the overall SIPP SPM rate of 14.6 percent was 0.5 percentage points higher than the corresponding OPM rate of 14.1 percent.

We find consistent trends across surveys when moving from the OPM to SPM across age groups, with those under the age of 18 having lower SPM rates, and those aged 18 through 64 or aged 65 and older having higher SPM rates. While trends between the OPM and SPM are similar across surveys, the SIPP SPM did have a lower average rate across the four years with an average SPM rate of 14.6 percent across the four years relative to 15.0 percent in the CPS ASEC. The four-year average SIPP SPM rate was lower than the CPS ASEC for those under age 18 (15.8 percent compared to 16.7 percent), higher for those aged 18 to 64 (15.0 percent and 14.5 percent), and lower for those aged 65 and over (11.0 percent and 14.5 percent).

Large differences in both OPM and SPM poverty rates for those aged 65 and over across the SIPP and CPS ASEC appear due to the SIPP capturing more Social Security dollars than the CPS ASEC. However, Social Security benefits captured in the SIPP appear too high relative to administrative totals, so future research should link the SIPP and the MBR to evaluate the characteristics of individuals who misreport benefit receipt and amounts to better evaluate the effect on poverty. We also identify impacts on poverty due to methodological differences across surveys related to assumptions on household and family changes over the reference period. Comparisons across surveys indicate that the assumption of constant family composition over the reference year likely overstate poverty, particularly child poverty, in the CPS ASEC.

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6. Tables & Figures

Table 1. Prior Research on SPM and OPM rates in the SIPP and ACS

	Survey of Income and Program Participation												American Community Survey					
	Short (2003) 1996 (1996 SIPP Panel)			Iceland (2012) 2004 (2004 SIPP Panel)			Short & Giefer (2013) 2004 (2004 SIPP Panel)			Short (2014) 2009 (2008 SIPP Panel)			Renwick et al. (2012) 2010 (2010 ACS)			Renwick (2015) 2011 (2011 ACS)		
	Reporting Rate	Aggregate Value	Poverty Rate	Reporting Rate	Aggregate Value	Poverty Rate	Reporting Rate	Aggregate Value	Poverty Rate	Reporting Rate	Aggregate Value	Poverty Rate	Reporting Rate	Aggregate Value	Poverty Rate	Reporting Rate	Aggregate Value	Poverty Rate
	Percent	$2013 bil.	Percent	Percent	$2013 bil.	Percent	Percent	$2013 bil.	Percent	Percent	$2013 bil.	Percent	Percent	$2013 bil.	Percent	Percent	$2013 bil.	Percent
Official Poverty Rate	.....	.....	12.8	.....	.....	10.3	.....	.....	10.8	.....	.....	13.2	.....	.....	15.3	.....	.....	15.9
NAS/SPM Poverty Rate[1]	.....	.....	11.6	.....	.....	10.0	.....	.....	11.3	.....	.....	13.5	.....	.....	16.7	.....	.....	17.4
Non Cash Benefits																		
Lunch Subsidy	24.3	9.5	-0.4	42.4	11.3	-0.3	25.8	11.3	-0.6	23.1	12.7	-0.9	17.7	8.5	-0.3	18.5	11.5	-0.4
Breakfast Subsidy	9.1	2.7	-1.2	21.3	3.6	-0.1	12.6	3.2	--	13.7	5.0	--	--	--	--	--	--	--
Energy Subsidy	4.4	0.9	0.0	1.0	1.0	0.0	4.8	2.1	0.0	5.5	1.1	-0.1	3.4	1.7	-0.1	3.7	1.9	-0.1
Food Assistance	10.4	26.3	-1.0	12.8	26.3	-1.0	9.6	25.7	-1.4	12.9	46.0	-2.1	12.3	43.2	-1.6	13.7	50.4	-1.8
Housing Subsidy	5.0	22.3	-1.0	5.3	28.9	-1.0	5.9	27.9	-1.2	5.4	40.6	-1.5	3.3	19.3	-0.8	3.3	21.9	-0.7
WIC Benefits	5.1	3.1	--	8.7	3.6	-0.1	5.2	3.6	-0.1	5.8	4.3	-0.2	2.5	2.2	-0.1	2.9	3.2	-0.1
Expenses																		
Federal Tax	75.7	853.3	-0.1†	--	--	--	72.2	786.3	-0.4†	70.4	851.7	-0.7†	68.7	942.8	0.4†	70.1	901.9	0.4†
State Tax	--	--		--	--	--	--	--	-0.4†	--	--	-0.7†	--	--	0.4†	53.7	238.5	0.4†
FICA Tax	74.4	308.2	-0.1†	86.2	455.1	--	77.4	414.2	1.1	75.0	459.9	1.3	77.4	489.4	1.7	76.4	359.0	1.3
Medical Expenses	79.0	234.7	1.5	84.5	330.8	1.5	84.9	412.8	2.4	80.8	435.1	2.6	93.2	549.3	3.7	92.8	480.5	3.7
Child Support Paid	3.2	25.7	0.1	3.5	26.6	0.1	3.5	29.6	0.2	2.4	24.1	0.1	--	--	--	--	--	--
Work & Child-Care Expenses[2]	78.9	222.7	0.2	86.2	171.3	0.8	80.4	210.8	1.6	74.1	619.2	1.8	77.4	258.1	1.8	76.4	260.1	1.8
Refundable Tax Credits	14.0	29.7	-0.1†	34.1	62.2	-1.6	14.2	32.9	-1.2	16.5	53.4	-2.0	17.0	44.0	2.2	18.3	44.8	-2.1

[1] National Academy of Science (NAS) based measures predate the designation of a SPM. For 1996, we present NAS experimental poverty measures that subtract medical expenses from income, the NAS measure that is most consistent with subsequent SPM methods.

[2] In the ACS, the reporting of work-related and childcare expenses are done separately. In the tables above, aggregate amounts and changes to the poverty rate include both work-related and childcare expense.

-- Estimates not published.

† Estimates of federal, state, and payroll tax liability and tax credits received are modeled to produce the SPM but in some cases the impact on poverty rates may be reported as an aggregate "after tax" adjusted rate.

Note: Estimates for 1996 (Short 2003) and 2004 (Iceland 2012) reported the marginal impact of SPM resource additions and subtractions in reference to the official poverty measure, while all other publications compared marginal impacts based on the Supplemental Poverty Measure.

Table 2. Source of Additions and Subtractions for SPM Income Measure

Resources	Description	Variation	
Wage Income	SIPP allows respondents to report earnings monthly	Monthly	
Non-Wage Income	SIPP allows respondents to report detailed income from non-wage sources	Varies by Type	
SNAP Value	Reported value of monthly SNAP program benefits	Monthly	Also accounted for in OPM
LIHEAP Value	Receipt is reported; annual value is imputed using the CPS ASEC	Annual	
School Breakfast Value	Receipt is reported; value is calculated using USDA data on cost of a breakfast for (free, reduced, and paid) x 179 school days	Annual	
School Lunch Value	Receipt is reported; value is calculated using USDA data on cost of a lunch (for free, reduced, and paid) x 179 school days	Annual	
WIC Value	Receipt is reported; value is calculated based on the number and ages of individuals covered, allowing for geographic variation	Monthly	
Tax Credits Received	The federal and state refundable portion of the Earned Income Tax Credit and Child Tax Credit is modeled by TAXSIM using SIPP inputs and imputed property taxes paid from ACS	Annual	
Housing Subsidy Value	Receipt reported; value is calculated using Housing and Urban Development rules	Some monthly variation based on residency changes	

Subtractions		
Child Support Paid	Reported annual amount paid for all non-resident children	Annual
Federal and State Taxes Paid	Modeled with TAXSIM using SIPP gross wage and non-wage income variables; uses imputed property taxes paid from the ACS	Annual
FICA Taxes Paid	Calculated using FICA rules and SIPP wage income (described above); assumes individual FICA rates of 7.65% non-self-employment wage income. Assume a 15.3% rate for self-employment income	Monthly
Medical Out of Pocket Expenses (MOOP)	Reported annual amount paid for out-of-pocket healthcare costs	Annual
Childcare Expenses	Reported in SIPP for typical week in December; the monthly sum of childcare and commuting expenses are capped so as not to exceed the monthly earnings of the lowest earning reference person or spouse/partner of reference person	Varies by month based on employment, presence of child, and deduction cap
Commuting Expenses	Flat weekly deduction derived from SIPP; the monthly sum of childcare and commuting expenses are capped so as not to exceed the monthly earnings of the lowest earning reference person or spouse/partner of reference person	Varies by month based on employment and deduction cap

Table 3. SPM and OPM Rates in the SIPP, 2013 to 2016

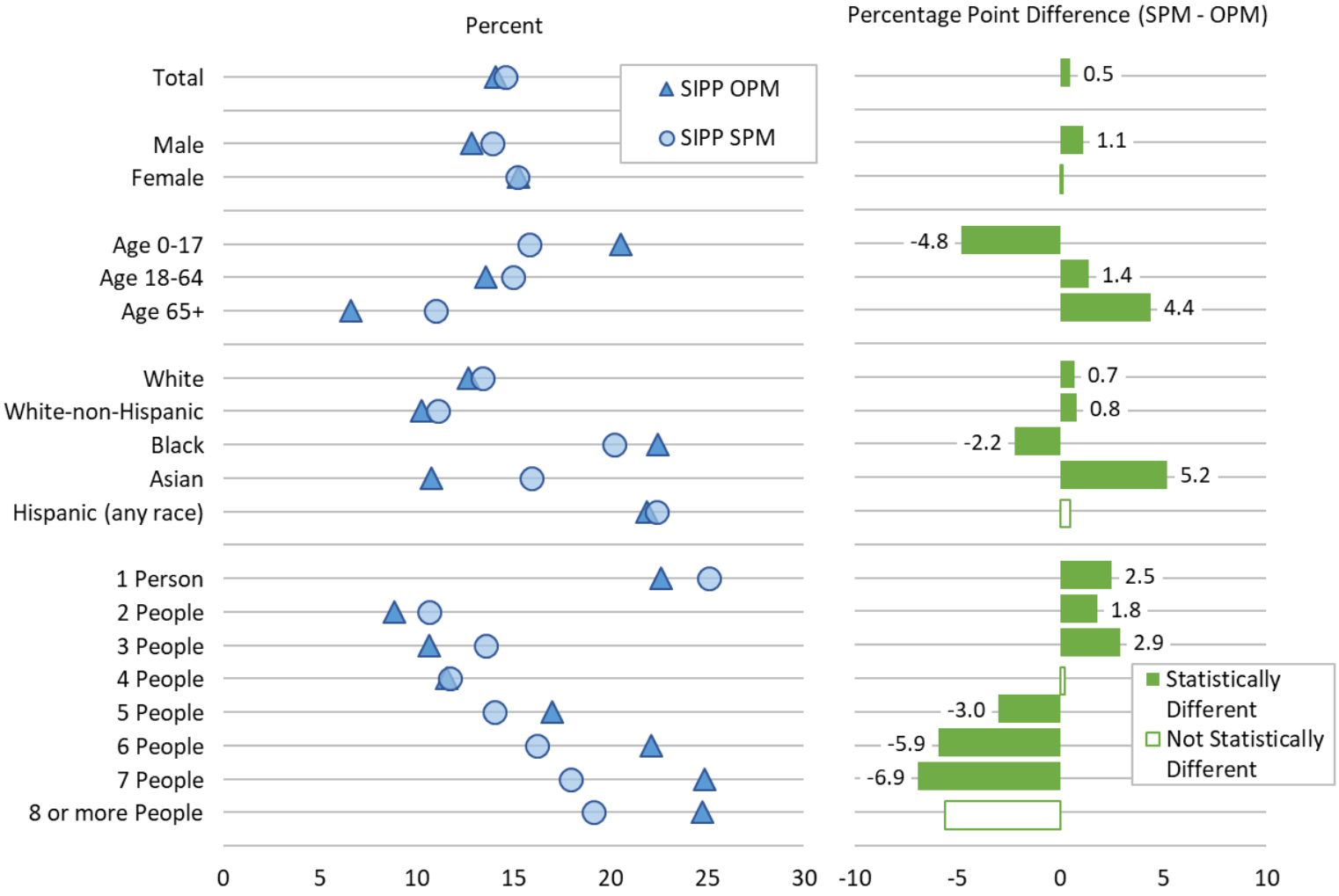
SIPP	2013-2016					2013					2014					2015					2016				
	OPM[1]		SPM			OPM[1]		SPM			OPM[1]		SPM			OPM[1]		SPM			OPM[1]		SPM		
	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.
Total	14.1	0.2	14.6	0.2	*0.5	16.3	0.2	16.7	0.2	0.4	14.6	0.2	15.0	0.3	0.4	13.2	0.3	13.3	0.3	0.1	12.3	0.3	13.3	0.3	*1.0
Sex																									
Male	12.8	0.2	13.9	0.2	*1.1	15.1	0.2	16.3	0.3	*1.2	13.3	0.3	14.1	0.3	*0.8	11.9	0.3	12.5	0.4	0.7	11.1	0.4	12.7	0.4	*1.6
Female	15.3	0.2	15.2	0.2	-0.1	17.4	0.3	17.1	0.3	-0.3	15.8	0.3	15.8	0.3	-0.1	14.5	0.4	14.1	0.4	-0.4	13.4	0.4	13.9	0.3	0.5
Age																									
Age 0-17	20.6	0.5	15.8	0.4	*-4.8	22.9	0.5	17.9	0.4	*-5.0	21.5	0.6	16.5	0.5	*-5.0	19.7	0.8	14.5	0.7	*-5.3	18.1	0.7	14.4	0.7	*-3.7
Age 18-64	13.6	0.2	15.0	0.2	*1.4	15.9	0.2	17.4	0.2	*1.4	14.0	0.2	15.4	0.3	*1.3	12.6	0.3	13.7	0.3	*1.1	11.8	0.3	13.6	0.3	*1.8
Age 65+	6.6	0.2	11.0	0.3	*4.4	7.5	0.3	12.1	0.4	*4.7	6.7	0.3	11.1	0.4	*4.4	6.3	0.3	10.2	0.5	*3.9	6.0	0.3	10.5	0.5	*4.5
Race																									
White	12.7	0.2	13.4	0.2	*0.7	14.6	0.2	15.2	0.2	*0.6	13.3	0.3	14.0	0.3	0.7	12.1	0.4	12.3	0.3	0.2	10.7	0.4	12.2	0.3	*1.5
White-non-Hispanic	10.3	0.2	11.1	0.2	*0.8	11.5	0.2	12.5	0.2	*1.0	10.6	0.3	11.2	0.3	0.6	9.8	0.3	10.3	0.3	0.4	9.1	0.3	10.3	0.4	*1.2
Black	22.5	0.7	20.2	0.7	*-2.2	25.7	0.8	23.2	0.8	*-2.5	23.3	0.9	20.3	1.0	*-2.9	20.6	1.0	18.4	1.1	-2.2	20.4	1.0	19.0	1.2	-1.4
Asian	10.8	0.7	16.0	0.9	*5.2	13.7	1.2	20.3	1.6	*6.6	10.6	0.9	16.6	1.3	*6.0	8.3	1.3	13.5	1.6	*5.2	10.7	2.1	13.8	2.4	3.1
Hispanic (any race)	21.9	0.7	22.4	0.7	0.5	26.7	0.7	25.8	0.7	-0.9	23.5	0.8	24.3	1.0	0.8	20.5	1.1	20.0	1.3	-0.6	17.2	1.1	19.8	0.9	*2.6
Resource Unit Size																									
1 Person	22.6	0.4	25.1	0.4	*2.5	26.1	0.6	29.3	0.6	*3.1	22.6	0.5	24.6	0.6	*2.0	21.7	0.6	23.7	0.6	*2.0	20.4	0.6	23.2	0.7	*2.8
2 People	8.9	0.2	10.7	0.2	*1.8	10.5	0.3	12.3	0.3	*1.7	9.0	0.3	10.7	0.4	*1.7	8.1	0.3	10.0	0.5	*1.9	7.8	0.4	9.6	0.4	*1.8
3 People	10.6	0.4	13.6	0.4	*2.9	12.9	0.5	15.9	0.5	*3.0	12.0	0.6	14.8	0.6	*2.9	9.3	0.6	12.3	0.6	*3.0	8.4	0.6	11.3	0.6	*2.9
4 People	11.6	0.4	11.7	0.4	0.2	13.7	0.5	13.8	0.5	0.1	12.6	0.7	12.6	0.6	0.1	10.5	0.7	10.2	0.6	-0.2	9.6	0.7	10.3	0.7	0.7
5 People	17.0	0.7	14.0	0.7	*-3.0	19.7	0.9	16.8	1.0	*-3.0	18.7	1.0	14.9	1.1	*-3.8	15.5	1.2	12.5	1.1	*-3.0	14.1	1.1	12.0	1.3	-2.1
6 People	22.1	1.3	16.2	1.1	*-5.9	23.6	1.8	15.9	1.7	*-7.7	21.6	1.7	17.5	1.7	*-4.2	22.6	2.0	14.2	1.9	*-8.4	20.8	2.2	17.3	1.9	-3.5
7 People	24.8	2.2	18.0	2.0	*-6.9	28.9	2.5	20.7	2.5	*-8.2	22.9	3.1	18.6	3.2	-4.3	26.8	3.7	17.4	3.7	*-9.3	20.9	3.6	15.4	3.5	-5.5
8 or more People	24.7	2.7	19.1	2.4	-5.6	26.9	3.2	18.0	2.5	*-8.9	24.9	4.0	16.1	3.3	*-8.8	21.2	4.7	15.3	4.4	-5.9	25.9	4.6	28.2	6.3	2.2

[1] Estimates of the Official Poverty Measure (OPM) shown here reflect an expanded resource unit definition that includes unrelated individuals under the age of 15 that lived with a guardian, in the SIPP poverty universe, for all 12 months of the reference year and assigns their poverty status based on the poverty status of their guardian.

Z: Represents or rounds to zero.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel.

Figure 1. SPM and OPM Rates in the SIPP, Annual Average Over 2013-2016



Note: Estimates of the Official Poverty Measure (OPM) shown here reflect an expanded resource unit definition that includes unrelated individuals under the age of 15 that lived with a guardian, in the SIPP poverty universe, for all 12 months of the reference year and assigns their poverty status based on the poverty status of their guardian. Number of people is in reference to the resource unit size.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel.

Table 4. SPM and OPM Rates in the CPS ASEC, 2013 to 2016

CPS ASEC	2013-2016[1]					2013[2]					2014					2015					2016				
	OPM[2]		SPM			OPM[1]		SPM			OPM[1]		SPM			OPM[1]		SPM			OPM[1]		SPM		
	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.
Total	14.0	0.1	15.0	0.1	*1.0	14.8	0.3	15.9	0.3	*1.1	14.8	0.2	15.6	0.2	*0.8	13.5	0.2	14.5	0.2	*1.0	12.7	0.1	14.0	0.2	*1.3
Sex																									
Male	12.5	0.1	14.3	0.1	*1.7	13.2	0.3	15.2	0.3	*1.9	13.4	0.2	14.8	0.2	*1.4	12.2	0.2	13.9	0.2	*1.7	11.3	0.2	13.2	0.2	*1.9
Female	15.3	0.1	15.7	0.1	*0.4	16.3	0.3	16.6	0.3	0.3	16.1	0.2	16.3	0.2	0.2	14.8	0.2	15.1	0.2	0.3	14.1	0.2	14.7	0.2	*0.7
Age																									
Age 0-17	20.1	0.2	16.7	0.2	*-3.4	21.6	0.6	18.1	0.5	*-3.5	21.1	0.3	17.1	0.3	*-4.0	19.7	0.4	16.2	0.3	*-3.4	18.0	0.3	15.2	0.3	*-2.8
Age 18-64	12.7	0.1	14.5	0.1	*1.8	13.3	0.3	15.1	0.3	*1.8	13.5	0.2	15.3	0.2	*1.8	12.4	0.2	14.1	0.2	*1.7	11.6	0.1	13.3	0.2	*1.8
Age 65+	9.5	0.1	14.5	0.2	*5.0	10.2	0.4	15.6	0.5	*5.4	10.0	0.2	14.4	0.3	*4.4	8.8	0.3	13.7	0.3	*4.8	9.3	0.2	14.5	0.3	*5.3
Race																									
White	12.1	0.1	13.4	0.1	*1.3	12.9	0.3	14.3	0.3	*1.5	12.7	0.2	13.9	0.2	*1.2	11.6	0.2	12.8	0.2	*1.2	11.0	0.1	12.5	0.2	*1.4
White-non-Hispanic	9.5	0.1	10.6	0.1	*1.1	10.0	0.3	11.1	0.3	*1.1	10.1	0.2	10.9	0.2	*0.8	9.1	0.2	10.3	0.2	*1.2	8.9	0.2	9.9	0.2	*1.1
Black	24.3	0.3	23.0	0.3	*-1.3	25.3	1.0	24.0	1.0	-1.3	26.1	0.5	23.6	0.5	*-2.5	24.1	0.6	22.8	0.6	-1.2	22.0	0.6	21.6	0.6	-0.4
Asian	11.6	0.4	16.0	0.4	*4.3	13.1	1.2	15.9	1.2	*2.8	12.0	0.7	17.3	0.8	*5.3	11.4	0.6	16.1	0.7	*4.6	10.1	0.6	14.7	0.7	*4.5
Hispanic (any race)	22.2	0.3	24.3	0.3	*2.1	24.8	0.9	27.0	1.0	*2.2	23.6	0.5	25.9	0.5	*2.4	21.4	0.5	22.6	0.5	*1.3	19.4	0.4	22.0	0.5	*2.6
Resource Unit Size																									
1 Person	21.5	0.2	24.3	0.3	*2.8	21.9	0.7	25.1	0.7	*3.1	22.4	0.4	24.9	0.4	*2.4	21.0	0.4	23.7	0.4	*2.7	20.8	0.3	23.6	0.4	*2.8
2 People	9.5	0.1	11.8	0.2	*2.2	9.9	0.4	12.5	0.4	*2.6	10.4	0.2	12.2	0.3	*1.8	9.1	0.2	11.3	0.2	*2.2	8.8	0.2	11.1	0.3	*2.3
3 People	11.7	0.2	14.5	0.2	*2.9	13.5	0.6	16.5	0.7	*3.1	12.0	0.3	14.8	0.4	*2.9	11.0	0.3	13.6	0.3	*2.6	10.3	0.3	13.2	0.4	*2.9
4 People	11.4	0.2	11.7	0.2	0.3	12.2	0.6	11.9	0.6	-0.3	11.9	0.3	12.7	0.4	*0.8	11.2	0.4	11.5	0.3	0.3	10.3	0.3	10.9	0.3	0.5
5 People	15.5	0.4	14.0	0.3	*-1.6	14.9	1.0	14.3	0.8	-0.7	17.3	0.6	14.7	0.6	*-2.6	16.4	0.6	14.6	0.5	*-1.8	13.5	0.5	12.3	0.5	-1.2
6 People	21.1	0.7	17.4	0.6	*-3.7	24.5	2.0	20.5	2.0	-4.0	22.0	0.9	17.4	1.0	*-4.5	19.3	1.0	16.6	1.0	*-2.7	18.5	0.9	15.1	0.9	*-3.4
7 People	25.0	1.1	21.1	1.2	*-3.9	27.9	3.2	24.0	3.2	-3.9	25.0	1.9	22.1	1.9	-2.9	23.5	1.8	18.2	1.7	*-5.3	23.7	1.7	20.0	1.8	-3.6
8 or more People	28.7	1.4	24.7	1.5	*-4.0	34.3	4.6	24.8	4.6	-9.5	30.3	2.3	26.0	2.3	-4.2	27.4	2.6	23.6	2.5	-3.8	23.8	2.6	24.4	2.6	0.6

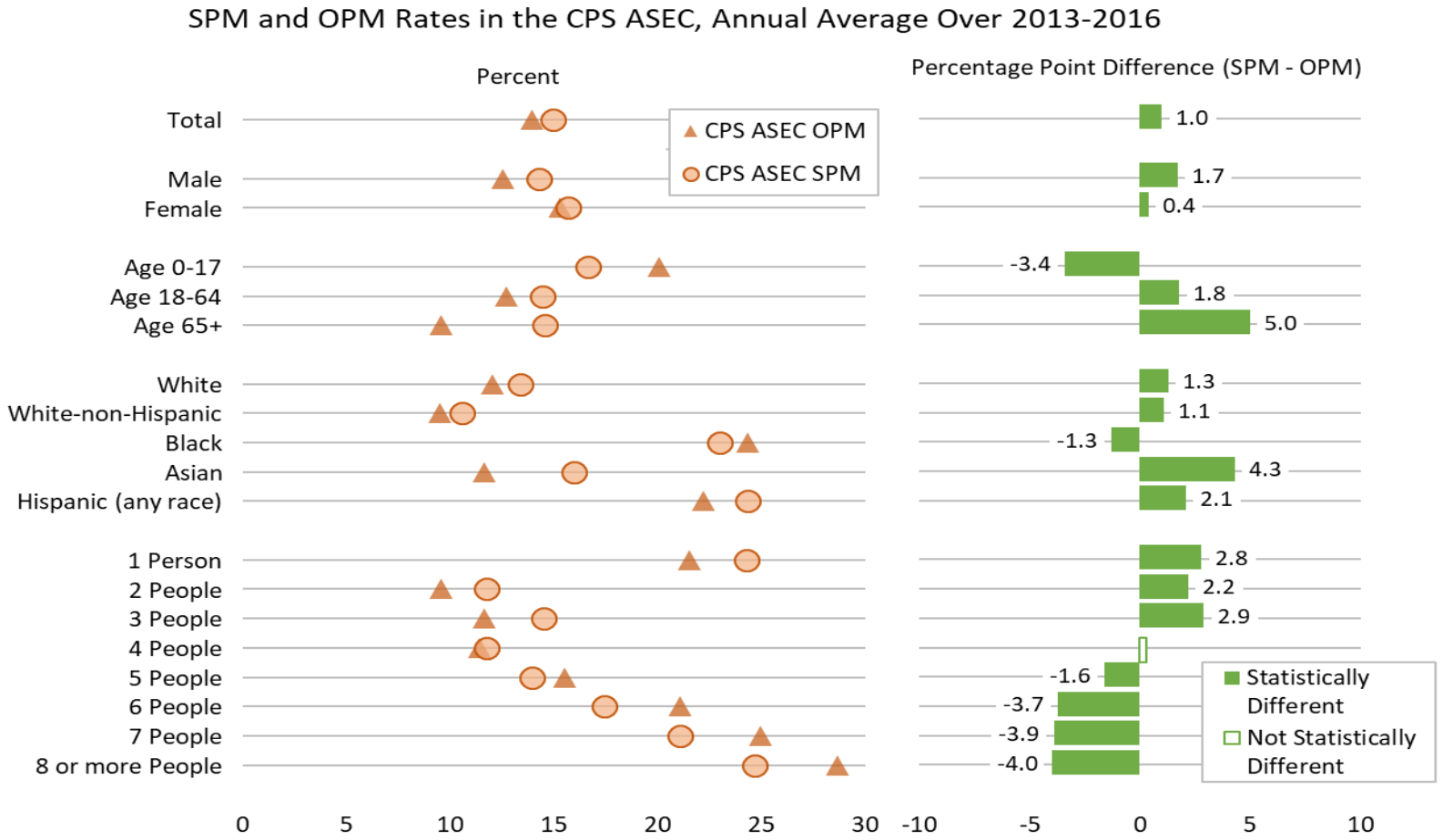
[1] The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system.

[2] Estimates of the Official Poverty Measure (OPM) shown here reflect an expanded resource unit definition that includes unrelated individuals under the age of 15 and assigns their poverty status based on the poverty status of their guardian.

Z: Represents or rounds to zero.

Source: U.S. Census Bureau, Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

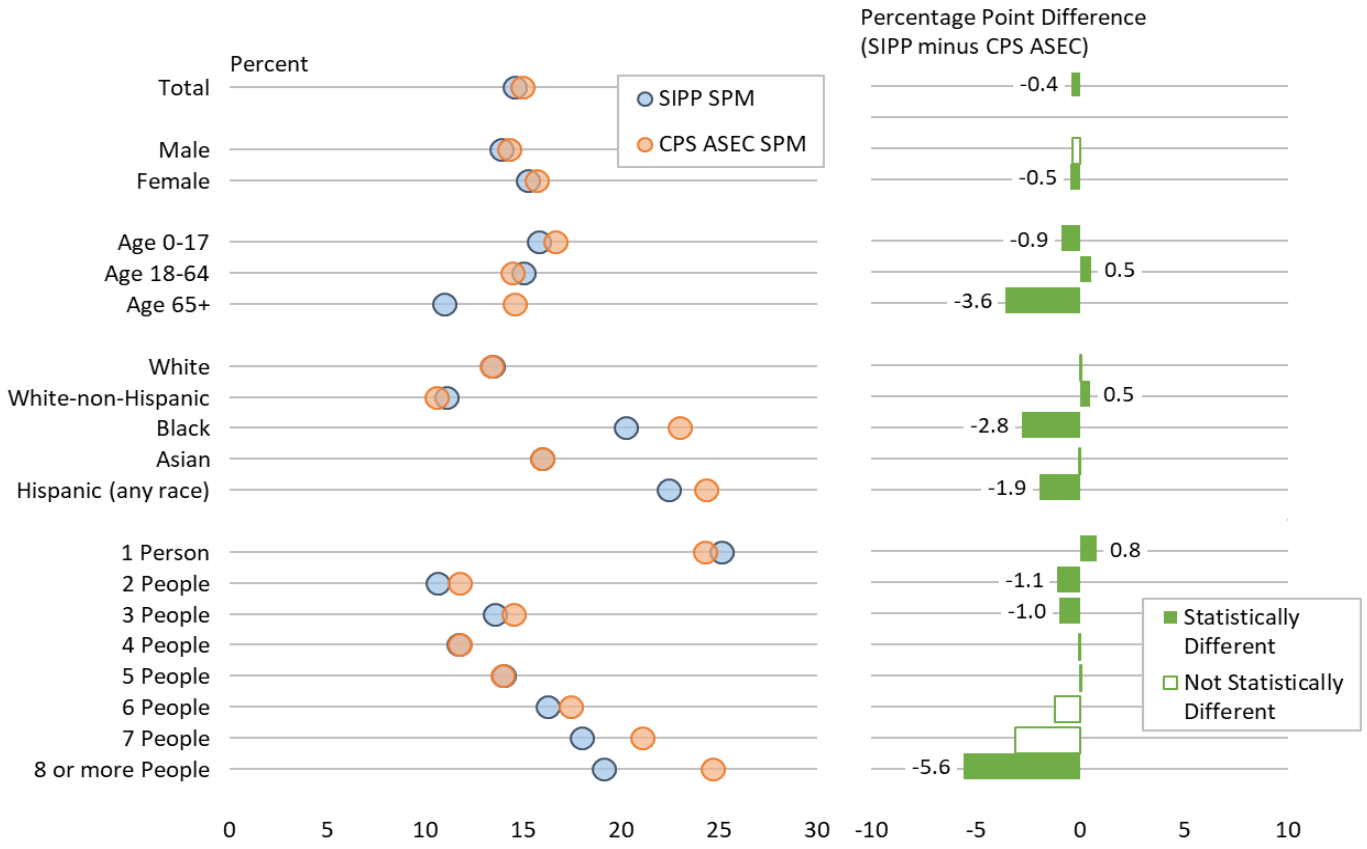
Figure 2. SPM and OPM Rates in the CPS ASEC, Annual Average Over 2013-2016



Note: The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system. Estimates of the Official Poverty Measure (OPM) shown here reflect an expanded resource unit definition that includes unrelated individuals under the age of 15 and assigns their poverty status based on the poverty status of their guardian.

Source: U.S. Census Bureau, Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Figure 3. SPM Rates in the SIPP and CPS ASEC, Annual Average Over 2013-2016



Note: The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system. Estimates of the Official Poverty Measure (OPM) shown here reflect an expanded resource unit definition that includes unrelated individuals under the age of 15. For SIPP, the expanded definition includes these individuals that lived with a guardian, in the SIPP poverty universe, for all 12 months of the reference year and assigns their poverty status based on the poverty status of their guardian.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Table 5. Impact of Resource Unit and Threshold Definitions Across the OPM and SPM in the SIPP and CPS ASEC, 2013 to 2016

	2013-2016		2013		2014		2015		2016	
	Est	Std. Error	Est	Std. Error	Est	Std. Error	Est	Std. Error	Est	Std. Error
SIPP										
OPM[1] poverty rate	14.1	0.2	16.3	0.2	14.6	0.2	13.2	0.3	12.3	0.3
SPM resource units	12.2	0.2	14.6	0.2	13.1	0.3	11.7	0.3	9.4	0.3
SPM resource units & SPM thresholds	13.3	0.2	15.5	0.2	13.8	0.3	12.6	0.3	11.4	0.3
SPM poverty rates	14.6	0.2	16.7	0.2	15.0	0.3	13.3	0.3	13.3	0.3
CPS ASEC										
OPM[1] poverty rate	14.0	0.1	14.8	0.3	14.8	0.2	13.5	0.2	12.7	0.1
SPM resource units	12.6	0.1	13.5	0.3	13.4	0.2	12.2	0.2	11.4	0.1
SPM resource units & SPM thresholds	13.4	0.1	14.2	0.3	14.1	0.2	12.9	0.2	12.5	0.2
SPM poverty rates	15.0	0.1	15.9	0.3	15.6	0.2	14.5	0.2	14.0	0.2

Note: The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system.

[1] Estimates of the Official Poverty Measure (OPM) shown here reflect an expanded resource unit definition that includes unrelated individuals under the age of 15 and assigns them the official poverty status of their household guardian.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Table 6. Percent of Individuals Living in an SPM Unit with Monthly Income Additions or Subtractions by Source Across SIPP and CPS ASEC, 2013 to 2016

Resource Additions and Subtractions	2013-2016[1]					2013					2014					2015					2016				
	SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC		
	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.	Pct.	Std. Error	Pct.	Std. Error	Diff.
Resource Additions																									
Child Support Received	5.0	0.2	5.0	0.1	0.0	5.2	0.2	5.2	0.2	0.1	4.6	0.2	4.7	0.1	-0.1	5.1	0.2	5.3	0.1	-0.2	5.0	0.2	4.8	0.1	0.2
EITC	20.2	0.3	22.4	0.1	*-2.1	21.5	0.3	22.6	0.3	*-1.1	21.6	0.4	22.2	0.2	-0.6	19.7	0.4	23.0	0.2	*-3.4	18.1	0.5	21.7	0.2	*-3.5
Housing Subsidy	3.2	0.1	3.2	0.1	0.0	3.4	0.1	3.3	0.2	0.1	3.2	0.1	3.3	0.1	-0.1	3.2	0.1	3.0	0.1	0.2	2.8	0.1	3.0	0.1	-0.2
LIHEAP	4.6	0.1	3.1	0.1	*1.5	4.8	0.2	3.2	0.1	*1.6	4.6	0.2	3.2	0.1	*1.4	4.6	0.2	3.1	0.1	*1.5	4.5	0.2	3.0	0.1	*1.6
Refundable Tax Credit	22.2	0.3	23.8	0.1	*-1.6	23.8	0.3	24.3	0.3	-0.5	23.8	0.4	24.0	0.2	-0.2	21.5	0.4	24.2	0.2	*-2.7	19.7	0.5	22.8	0.2	*-3.1
SNAP	14.9	0.3	13.1	0.1	*1.8	14.1	0.3	14.5	0.3	-0.4	15.3	0.3	13.4	0.2	*1.9	15.4	0.3	12.7	0.2	*2.8	14.7	0.3	11.9	0.2	*2.8
SSI	6.5	0.2	4.5	0.1	*2.0	5.6	0.2	4.8	0.2	*0.8	6.3	0.2	4.6	0.1	*1.7	6.8	0.2	4.3	0.1	*2.5	7.2	0.3	4.4	0.1	*2.9
School Breakfast	12.6	0.2	N/A	N/A	N/A	12.0	0.2	N/A	N/A	N/A	12.5	0.2	N/A	N/A	N/A	13.1	0.3	N/A	N/A	N/A	12.8	0.3	N/A	N/A	N/A
School Lunch	20.3	0.2	29.4	0.1	*-9.0	20.7	0.2	30.0	0.3	*-9.3	20.6	0.3	29.9	0.2	*-9.3	19.9	0.3	28.9	0.2	*-9.0	20.2	0.3	28.8	0.2	*-8.6
Social Security	25.7	0.2	24.0	0.1	*1.6	24.3	0.2	23.8	0.3	0.6	25.5	0.3	24.0	0.1	*1.5	26.0	0.3	24.2	0.2	*1.8	26.9	0.3	24.2	0.2	*2.7
TANF & GA	1.9	0.1	1.9	Z	-0.1	1.7	0.1	2.3	0.1	*-0.6	2.1	0.1	2.0	0.1	0.2	1.9	0.1	1.7	0.1	0.1	1.8	0.1	1.8	0.1	0.0
Unemployment Insurance	1.2	Z	4.1	0.1	*-2.9	2.0	0.1	5.6	0.2	*-3.6	1.1	0.1	3.9	0.1	*-2.9	0.9	0.1	3.6	0.1	*-2.7	0.9	0.1	3.4	0.1	*-2.5
WIC	6.0	0.1	5.3	0.1	*0.7	5.3	0.2	5.7	0.2	-0.3	6.4	0.2	5.6	0.1	*0.8	6.2	0.3	5.0	0.1	*1.2	5.9	0.2	4.9	0.1	*1.0
Workers' Comp	0.8	0.1	0.9	Z	-0.1	0.5	0.1	0.9	0.1	*-0.3	0.8	0.1	0.8	Z	Z	1.0	0.1	0.9	Z	0.1	1.0	0.1	0.9	Z	0.1
Resource Subtractions																									
Child Support Paid	4.1	0.1	1.8	Z	*2.3	4.6	0.1	2.0	0.1	*2.6	4.4	0.2	1.7	0.1	*2.7	3.6	0.2	1.6	0.1	*2.0	3.6	0.2	1.7	0.1	*2.0
FICA Payments	78.7	0.2	84.0	0.1	*-5.3	77.6	0.2	84.0	0.2	*-6.3	79.2	0.2	83.8	0.1	*-4.6	78.8	0.3	84.2	0.1	*-5.4	79.3	0.2	84.2	0.2	*-5.0
Federal Income Tax	66.4	0.3	67.7	0.1	*-1.3	63.3	0.3	67.1	0.4	*-3.9	65.9	0.3	67.1	0.2	*-1.2	67.4	0.4	67.5	0.2	-0.2	69.2	0.5	69.2	0.2	0.0
MOOP	96.2	0.1	95.8	0.1	*0.3	96.0	0.1	96.1	0.2	-0.1	96.1	0.1	95.4	0.1	*0.7	95.9	0.2	95.8	0.1	0.1	96.9	0.2	96.0	0.1	*0.9
State Income Tax	55.7	0.2	58.3	0.1	*-2.6	53.9	0.3	57.4	0.3	*-3.5	55.4	0.3	57.0	0.2	*-1.6	56.1	0.3	59.4	0.2	*-3.4	57.3	0.4	59.3	0.2	*-2.0
Work Expenses	77.3	0.2	84.1	0.1	*-6.7	76.1	0.2	84.0	0.2	*-7.9	77.8	0.2	83.8	0.1	*-6.0	77.5	0.3	84.2	0.1	*-6.7	78.0	0.3	84.2	0.2	*-6.3

[1] The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system.

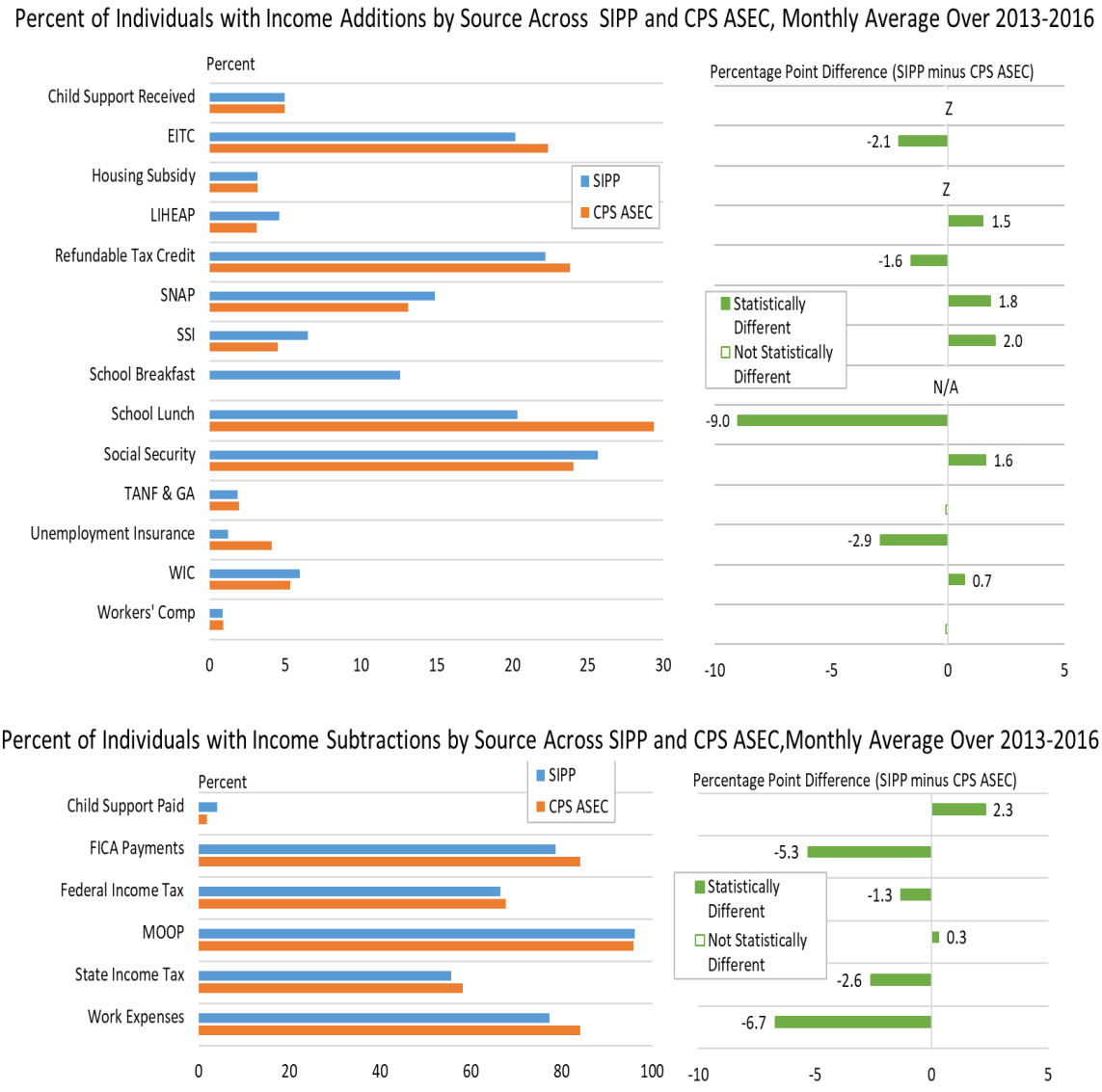
N/A: Estimates not applicable or not available.

Z: Represents or rounds to zero.

Note: While we view these comparisons as valuable, caution should be used in making direct comparisons about how the SIPP and CPS ASEC capture SPM components since the SIPP is based on monthly data while CPS ASEC estimates are based on annual receipt. School Lunch difference is mainly due to only assigning benefits over 9 months through excluding summer months, while distributing these evenly across 12 months in CPS ASEC.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Figure 4. Percent of Individuals Living in an SPM Unit with Monthly Income Additions or Subtractions by Source Across SIPP and CPS ASEC, Monthly Average Over 2013-2016



Note: The source of the 2013 CPS ASEC is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates are derived from the legacy processing system.
N/A: Estimates not applicable or not available.
Note: While we view these comparisons as valuable, caution should be used in making direct comparisons about how the SIPP and ASEC capture SPM components since the SIPP is based on monthly and annual data while CPS ASEC estimates are based on annual receipt. School Lunch difference is mainly due to only assigning benefits over 9 months through excluding summer months, while distributing these evenly across 12 months in CPS ASEC.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Table 7. Conditional Monthly Median Value by Source Across SIPP and CPS ASEC, 2013 to 2016

Resource Additions and Subtractions	2013-2016[1]					2013					2014					2015					2016				
	SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC		
	Med.	Std. Error	Med.	Std. Error	Diff.	Med.	Std. Error	Med.	Std. Error	Diff.	Med.	Std. Error	Med.	Std. Error	Diff.	Med.	Std. Error	Med.	Std. Error	Diff.	Med.	Std. Error	Med.	Std. Error	Diff.
Resource Additions																									
Child Support Received	380.0	19.7	300.0	2.8	*80.0	399.0	19.2	300.0	7.1	*99.0	399.0	27.3	300.0	3.1	*99.0	360.0	21.8	307.7	15.5	*52.3	381.0	22.4	312.0	12.9	*69.0
EITC	221.8	5.3	216.5	2.1	5.3	226.9	6.2	212.8	5.0	*14.1	228.2	7.7	224.3	3.5	3.9	223.6	13.7	214.8	3.9	8.8	205.5	6.2	209.2	6.1	-3.6
Housing Subsidy	482.8	9.3	489.8	7.4	-7.0	518.9	13.4	506.2	21.1	12.7	484.0	15.6	488.9	11.3	-4.9	475.4	20.3	471.4	10.6	4.0	471.3	30.0	497.8	10.1	-26.5
LIHEAP	34.4	0.6	25.0	0.5	*9.4	36.8	0.6	27.8	2.5	*9.0	35.6	0.8	25.0	Z	*10.6	34.0	0.7	25.0	1.2	*9.0	32.3	0.8	26.8	1.4	*5.5
Refundable Tax Credits	268.8	6.7	265.0	3.0	3.8	275.5	6.7	255.0	8.6	*20.5	275.4	9.7	270.0	5.8	5.4	269.8	16.0	271.5	5.3	-1.7	246.3	12.4	265.3	5.5	-18.9
SNAP	250.0	4.6	201.0	5.4	*49.0	300.0	Z	216.0	9.6	*84.0	255.0	8.4	217.5	6.3	*37.5	228.0	8.8	200.0	7.6	*28.0	220.0	0.5	200.0	0.7	*20.0
SSI	700.0	5.2	720.0	4.1	*-20.0	700.0	1.6	700.0	6.4	Z	700.0	4.3	720.0	0.9	*-20.0	700.0	11.2	731.0	2.1	*-31.0	720.0	15.4	733.0	1.2	-13.0
School Breakfast	60.3	4.4	N/A	N/A	N/A	40.8	23.6	N/A	N/A	N/A	60.3	24.4	N/A	N/A	N/A	74.0	19.2	N/A	N/A	N/A	64.2	11.6	N/A	N/A	N/A
School Lunch	65.8	Z	37.8	0.8	*27.9	62.3	Z	37.8	0.5	*24.4	63.7	Z	38.8	Z	N/A	65.1	Z	40.2	5.6	*25.6	66.7	Z	43.9	Z	N/A
Social Security	1,673	13.3	1,466	9.9	*207.0	1,621	14.4	1,410	13.0	*211.1	1,655	14.5	1,422	15.9	*233.0	1,700	21.2	1,485	15.3	*215.1	1,714	17.1	1,513	14.8	*201.0
TANF & GA	288.0	16.2	256.0	12.2	32.0	317.0	20.9	250.0	19.0	*67.0	250.0	17.1	255.5	14.6	-5.5	264.0	28.1	230.0	19.3	34.0	289.0	26.3	282.0	19.5	7.0
Unemployment Insurance	812.0	40.1	316.0	10.3	*496.0	800.0	14.4	390.0	14.9	*410.0	800.0	54.2	275.0	10.2	*525.0	800.0	57.5	283.3	15.3	*516.7	988.0	60.5	300.0	6.8	*688.0
WIC	45.2	Z	43.3	Z	N/A	78.0	3.1	43.3	6.8	*34.7	45.2	Z	43.3	Z	N/A	45.2	Z	43.3	Z	N/A	45.2	Z	43.3	Z	N/A
Workers' Comp	620.0	26.6	500.0	33.2	*120.0	700.0	80.1	500.0	65.9	*200.0	672.0	94.1	459.0	29.6	*213.0	525.0	100.6	550.0	100.5	-25.0	620.0	69.1	590.0	64.7	30.0
Resource Subtractions																									
Child Support Paid	375.0	21.1	400.0	20.1	-25.0	400.0	28.0	400.0	30.3	Z	320.0	32.0	416.7	18.0	*-96.7	390.3	44.5	400.0	14.9	-9.7	400.0	22.2	400.0	19.1	Z
FICA Payments	409.4	3.1	427.2	2.9	*-17.8	385.7	3.5	401.7	6.7	*-16.0	397.9	4.1	420.8	5.3	*-22.9	421.5	4.4	439.9	4.6	*-18.4	430.2	5.8	455.9	5.1	*-25.8
Federal Income Tax	533.0	5.5	612.4	4.2	*-79.4	494.5	6.1	563.2	7.8	*-68.6	508.2	7.5	581.3	5.4	*-73.1	547.6	10.9	661.5	6.1	*-113.9	581.8	11.6	647.1	4.9	*-65.2
MOOP	316.7	2.6	297.5	2.4	*19.2	291.7	4.3	288.3	5.0	3.3	305.1	4.3	289.6	2.8	*15.5	325.8	5.3	292.6	2.7	*33.2	342.3	4.0	318.0	2.9	*24.3
State Income Tax	200.8	2.0	200.3	1.4	0.4	193.8	2.2	185.7	3.3	*8.1	195.4	2.5	187.3	1.8	*8.0	203.4	2.7	207.7	1.8	-4.3	209.9	4.3	221.4	1.9	*-11.5
Work Expenses	293.8	Z	294.9	1.2	-1.2	285.9	28.0	275.8	7.0	10.1	304.6	Z	294.4	4.0	*10.2	312.8	Z	307.4	1.6	*5.4	293.8	Z	294.9	Z	N/A

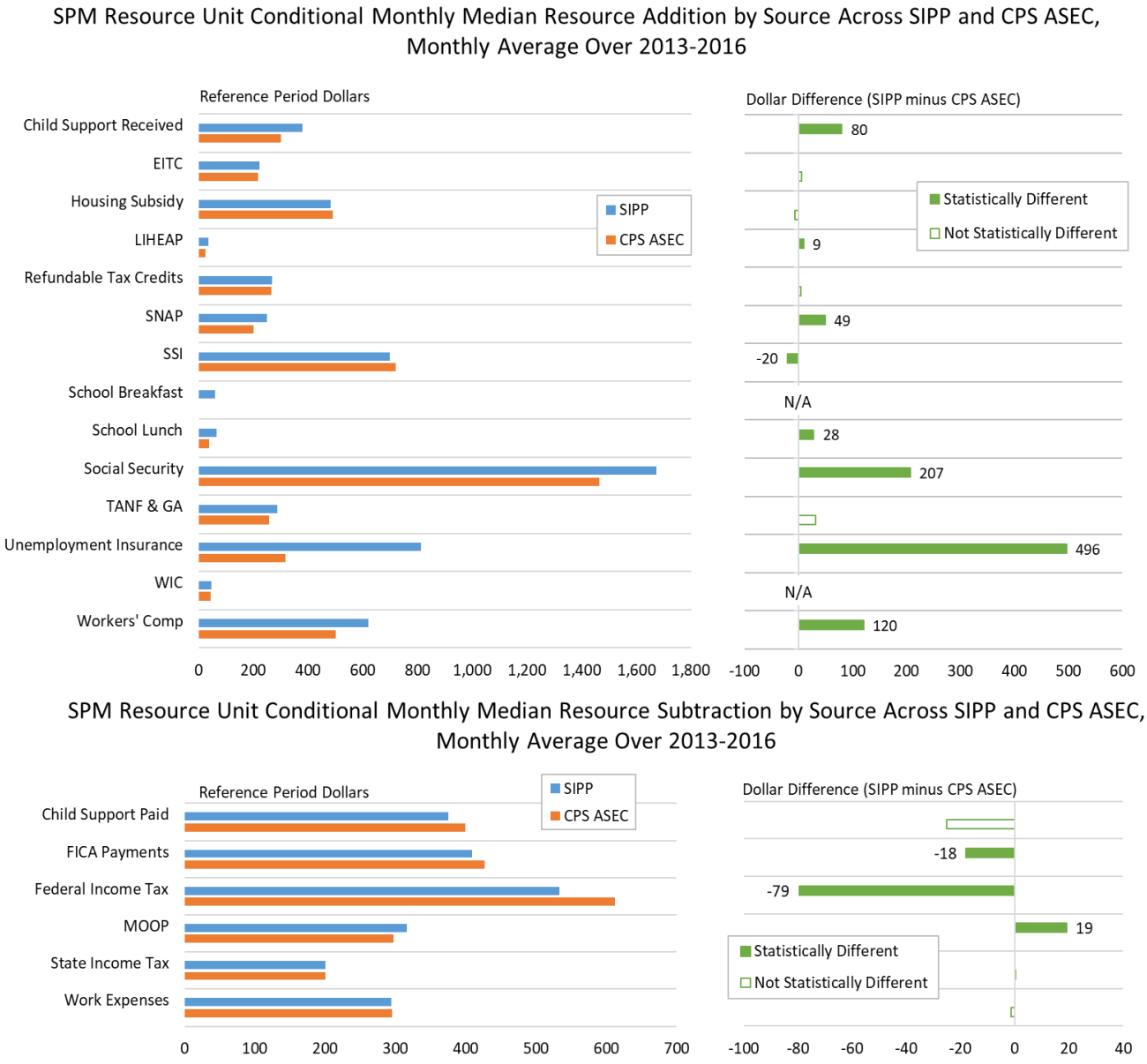
[1] The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system.

Note: Values in reference period dollars, summed up to SPM unit level. Analysis done at the individual level. While we view these comparisons as valuable, caution should be used in making direct comparisons about how the SIPP and CPS ASEC capture SPM components since the SIPP is based on monthly and annual data while CPS ASEC estimates are based on annual amounts divided by 12. School Lunch difference is mainly due to only assigning benefits over 9 months through excluding summer months, while distributing these evenly across 12 months in CPS ASEC.

N/A: Estimates not applicable or not available.

Z: Represents or rounds to zero. Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Figure 5. Conditional Monthly Median Additions/Subtractions by Source Across SIPP and CPS ASEC, Monthly Average Over 2013-2016



Note: Values in reference period dollars, summed up to SPM unit level. Analysis done at the individual level. Reported annual values for school lunch in the CPS ASEC are allocated across all 12 months, while they are allocated across 9 months in the SIPP. The source of the 2013 CPS ASEC is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates are derived from the legacy processing system. While we view these comparisons as valuable, caution should be used in making direct comparisons about how the SIPP and CPS ASEC capture SPM components since the SIPP is based on monthly data while CPS ASEC estimates are based on annual amounts divided by 12.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Table 8. Aggregate Annual Income Additions or Subtractions by Source Across SIPP and CPS ASEC, 2013 to 2016 (In Billions)

Resource Additions and Subtractions	2013-2016[1]					2013					2014					2015					2016				
	SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC		
	Total	Std. Error	Total	Std. Error	Pct. Diff.	Total	Std. Error	Total	Std. Error	Pct. Diff.	Total	Std. Error	Total	Std. Error	Pct. Diff.	Total	Std. Error	Total	Std. Error	Pct. Diff.	Total	Std. Error	Total	Std. Error	Pct. Diff.
Resource Additions																									
Child Support Received	27.7	1.4	22.8	0.4	*21.2	30.1	1.7	21.5	1.1	*40.1	25.6	1.7	20.3	0.5	*26.2	26.4	1.8	25.2	0.8	4.6	28.7	2.7	23.9	0.8	*20.1
EITC	43.0	0.8	45.2	0.3	*-4.9	46.6	0.8	43.6	0.8	*7.1	45.9	1.0	45.5	0.4	0.9	41.7	1.3	47.3	0.5	*-11.7	37.7	1.2	44.1	0.6	*-14.5
Housing Subsidy	23.5	0.7	24.9	0.5	-5.6	25.8	0.9	24.9	1.3	3.4	23.5	0.9	25.7	0.9	*-8.5	22.9	1.0	23.5	0.7	-2.6	21.7	0.9	25.0	0.9	*-13.2
LIHEAP	2.5	0.1	1.8	Z	*37.8	2.6	0.1	1.8	0.1	*41.2	2.5	0.1	1.8	0.1	*37.1	2.4	0.1	1.7	0.1	*35.7	2.4	0.1	1.7	0.1	*39.1
Refundable Tax Credit	59.4	1.1	61.3	0.4	-3.1	65.4	1.1	59.1	1.0	*10.7	63.5	1.4	61.9	0.6	2.6	57.3	1.8	63.9	0.7	*-10.3	51.2	1.6	59.7	0.8	*-14.2
SNAP	49.5	1.0	39.0	0.4	*27.1	50.7	1.0	42.5	1.2	*19.4	49.8	1.1	40.1	0.6	*24.3	50.0	1.2	37.4	0.6	*33.6	47.5	1.3	34.9	0.6	*36.0
SSI	58.6	1.6	51.9	0.8	*12.9	49.1	1.3	50.5	1.9	-2.8	56.8	2.0	54.0	1.4	5.2	61.7	2.2	50.3	1.3	*22.9	66.8	2.6	51.3	1.3	*30.3
School Breakfast	6.2	0.1	N/A	N/A	N/A	5.7	0.1	N/A	N/A	N/A	5.9	0.1	N/A	N/A	N/A	6.5	0.1	N/A	N/A	N/A	6.6	0.2	N/A	N/A	N/A
School Lunch	14.6	0.2	12.5	0.1	*16.8	13.9	0.2	11.8	0.2	*17.8	14.4	0.2	12.1	0.1	*19.1	14.8	0.3	12.8	0.1	*15.7	15.2	0.3	13.1	0.1	*16.5
Social Security	864.3	5.7	737.5	3.1	*17.2	786.7	5.2	697.2	7.8	*12.8	848.6	6.9	720.2	4.2	*17.8	893.6	7.7	753.0	4.6	*18.7	928.4	8.3	778.5	4.8	*19.3
TANF & GA	6.9	0.4	6.7	0.2	3.0	7.1	0.5	7.2	0.5	-1.7	7.3	0.5	6.9	0.3	6.3	6.9	0.6	5.7	0.3	19.6	6.4	0.7	7.1	0.4	-9.6
Unemployment Insurance	16.6	0.6	24.8	0.6	*-33.0	26.2	1.3	37.5	1.8	*-30.2	13.9	0.9	22.4	1.0	*-38.0	12.6	1.0	20.8	0.8	*-39.3	13.9	1.4	18.9	0.7	*-26.6
WIC	3.5	0.1	3.2	0.1	*6.9	3.4	0.1	3.5	0.1	-0.9	3.5	0.1	3.5	0.1	1.5	3.5	0.2	3.1	0.1	*13.5	3.4	0.2	2.9	0.1	*16.3
Workers' Comp	8.7	0.6	11.0	0.5	*-20.5	6.5	0.6	9.8	1.1	*-33.3	8.1	0.8	9.8	0.8	-17.4	9.8	1.1	12.0	1.1	-18.2	10.4	0.9	12.0	0.8	-12.9
Resource Subtractions																									
Child Support Paid	31.7	1.7	16.6	0.5	*90.9	35.2	1.6	18.4	1.4	*90.6	30.9	2.4	15.8	0.7	*95.2	29.7	2.5	15.8	0.9	*87.7	31.1	2.7	15.8	0.8	*96.2
FICA Payments	607.9	14.9	571.6	1.7	*6.3	601.7	30.3	533.8	4.0	*12.7	582.2	22.9	552.3	2.8	5.4	602.4	21.8	590.2	2.8	2.1	645.2	41.3	608.6	2.6	6.0
Federal Income Tax	1,954	126.9	1,302	9.2	*50.1	2,107	294.7	1,227	22.2	*71.7	1,809	256.0	1,231	14.1	*47.0	1,957	259.4	1,374	14.5	*42.4	1,942	306.1	1,371	15.9	*41.7
MOOP	626.4	4.3	595.8	2.3	*5.1	597.8	6.2	570.6	5.8	*4.8	603.3	5.3	568.2	3.6	*6.2	632.9	6.1	598.9	4.1	*5.7	671.5	7.8	644.4	4.0	*4.2
State Income Tax	391.9	26.1	267.5	1.8	*46.5	417.8	62.4	245.9	4.4	*69.9	364.8	44.7	235.3	2.6	*55.0	397.0	56.0	278.5	3.0	*42.6	388.2	58.9	308.5	3.4	25.8
Work Expenses	348.4	2.9	336.1	0.9	*3.7	345.5	3.1	325.9	2.3	*6.0	337.7	4.2	329.5	1.3	*2.5	357.5	4.7	347.9	1.4	*2.7	353.2	5.6	340.5	1.5	*3.7

[1] The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system.

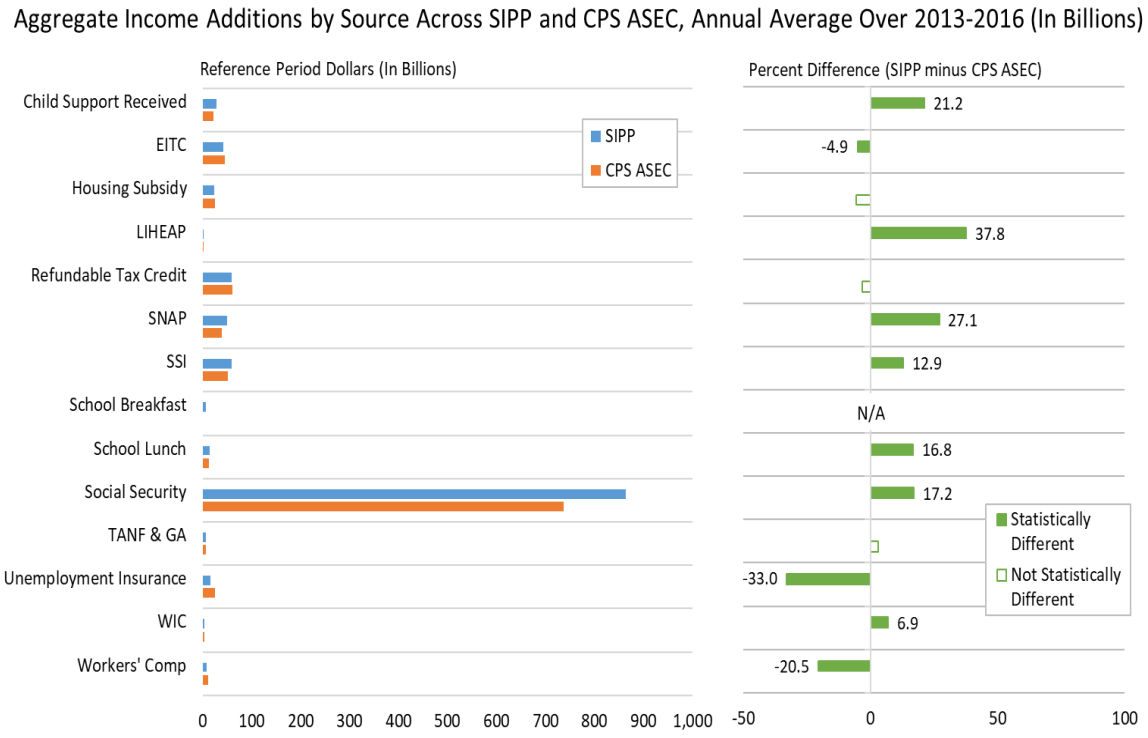
Note: Values in reference period dollars. SIPP estimates for aggregates are based on person level values and weights of SPM reference unit members, while CPS ASEC estimates are based on SPM unit level aggregated values using the weight of the SPM unit reference person.

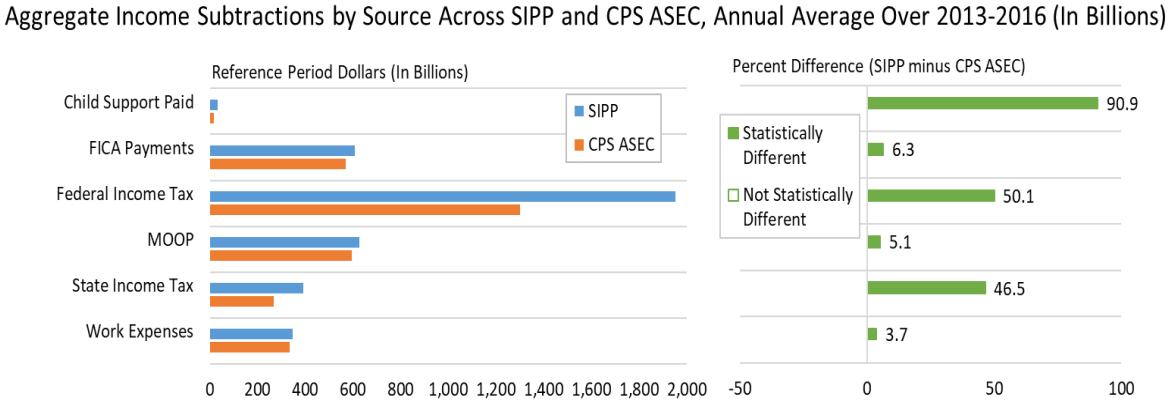
N/A: Estimates not applicable or not available.

Z: Represents or rounds to zero.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Figure 6. Aggregate Annual Income Additions and Subtractions by Source SIPP and CPS ASEC, Annual Average Over 2013-2016 (In Billions)





Note: Values in reference period dollars. The source of the 2013 CPS ASEC is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates are derived from the legacy processing system. Values in reference period dollars. SIPP estimates for aggregates are based on person level values and weights of SPM reference unit members, while CPS ASEC estimates are based on SPM unit level aggregated values using the weight of the SPM unit reference person.
N/A: Estimates not applicable or not available.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Table 9. Aggregate Annual Income Additions or Subtractions Among Those in Official Poverty by Source Across SIPP and CPS ASEC, 2013 to 2016 (In Billions)

Resource Additions and Subtractions	2013-2016[1]					2013					2014					2015					2016				
	SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC		
	Total	Std. Error	Total	Std. Error	Pct. Diff.	Total	Std. Error	Total	Std. Error	Pct. Diff.	Total	Std. Error	Total	Std. Error	Pct. Diff.	Total	Std. Error	Total	Std. Error	Pct. Diff.	Total	Std. Error	Total	Std. Error	Pct. Diff.
Resource Additions																									
Child Support Received	3.9	0.3	3.8	0.1	3.9	4.1	0.3	4.1	0.4	-0.3	4.4	0.5	3.6	0.2	23.2	3.7	0.4	4.2	0.2	-10.7	3.4	0.5	3.2	0.2	6.0
EITC	15.5	0.5	18.1	0.2	*-14.8	17.3	0.6	18.4	0.7	-6.3	17.6	0.7	19.2	0.3	*-8.1	13.9	0.9	18.3	0.4	*-23.8	13.0	0.8	16.5	0.4	*-21.4
Housing Subsidy	17.4	0.6	18.7	0.4	*-7.2	20.2	0.8	18.2	1.2	10.7	17.7	0.9	19.7	0.7	*-9.9	16.3	0.8	18.2	0.6	*-10.3	15.4	0.8	18.5	0.7	*-16.9
LIHEAP	1.1	Z	0.9	Z	*12.1	1.2	0.1	1.0	0.1	*17.5	1.1	0.1	0.9	Z	*16.5	1.0	0.1	0.8	Z	*20.3	0.9	0.1	1.0	Z	-7.1
Refundable Tax Credit	20.1	0.7	23.7	0.3	*-15.4	22.4	0.8	23.9	0.9	-6.4	22.9	0.9	25.3	0.4	*-9.5	18.1	1.2	23.9	0.6	*-24.1	16.9	1.1	21.5	0.5	*-21.7
SNAP	27.9	0.6	25.3	0.3	*10.5	31.0	0.7	28.0	1.0	*10.7	28.3	0.8	26.6	0.6	*6.4	27.4	1.0	24.1	0.5	*13.9	25.0	0.9	22.3	0.5	*12.4
SSI	22.2	0.8	19.2	0.5	*15.3	21.6	0.9	18.4	1.1	*16.9	22.3	1.1	20.4	0.7	9.5	22.5	1.1	19.0	0.8	*18.9	22.3	1.2	18.9	0.8	*18.0
School Breakfast	2.3	0.1	N/A	N/A	N/A	2.5	0.1	N/A	N/A	N/A	2.4	0.1	N/A	N/A	N/A	2.3	0.1	N/A	N/A	N/A	2.2	0.1	N/A	N/A	N/A
School Lunch	5.0	0.1	5.0	0.1	0.7	5.4	0.1	5.0	0.2	8.1	5.1	0.2	4.9	0.1	4.5	4.8	0.2	5.1	0.1	-5.4	4.6	0.2	4.8	0.1	-4.8
Social Security	32.2	1.0	46.4	0.7	*-30.6	34.2	1.3	47.2	2.2	*-27.5	33.1	1.5	49.0	1.2	*-32.5	31.7	1.6	45.5	1.1	*-30.3	29.7	1.5	43.8	1.1	*-32.2
TANF & GA	3.2	0.2	3.5	0.1	-9.1	3.5	0.3	4.3	0.4	*-19.0	3.5	0.3	3.5	0.2	-2.0	3.1	0.3	3.0	0.2	4.7	2.8	0.4	3.4	0.2	-15.9
Unemployment Insurance	1.4	0.1	2.7	0.2	*-47.1	2.8	0.3	4.1	0.4	*-32.2	1.1	0.2	2.6	0.3	*-57.2	0.7	0.2	2.0	0.2	*-67.6	1.2	0.3	1.8	0.2	*-34.8
WIC	1.5	0.1	1.5	Z	-0.8	1.8	0.1	1.7	0.1	2.8	1.5	0.1	1.7	0.1	*-11.3	1.5	0.1	1.4	0.1	10.7	1.3	0.1	1.3	0.1	-0.6
Workers' Comp	0.6	0.1	0.7	0.1	-14.1	0.6	0.1	0.8	0.3	-28.7	0.8	0.2	0.5	0.1	*82.2	0.6	0.1	0.9	0.2	-37.2	0.6	0.2	0.7	0.2	-13.6
Resource Subtractions																									
Child Support Paid	2.2	0.2	1.3	0.1	*72.7	2.8	0.3	1.1	0.2	*145.0	2.4	0.3	1.2	0.1	*106.5	1.9	0.3	1.4	0.2	35.0	1.8	0.5	1.4	0.2	27.4
FICA Payments	8.7	0.3	17.0	0.3	*-49.1	9.5	0.4	16.5	0.7	*-42.4	9.2	0.5	17.9	0.4	*-48.8	7.3	0.4	17.2	0.5	*-57.4	8.7	0.6	16.3	0.5	*-47.0
Federal Income Tax	0.3	Z	17.1	1.5	*-98.0	0.4	Z	17.8	4.8	*-97.9	0.2	0.1	16.6	1.7	*-98.6	0.3	Z	17.5	2.2	*-98.3	0.4	0.1	15.7	1.6	*-97.2
MOOP	30.9	1.1	39.1	0.6	*-21.0	38.0	3.4	40.2	1.5	-5.5	29.5	1.7	38.0	0.8	*-22.2	26.1	1.3	38.2	0.9	*-31.5	30.1	1.7	39.8	1.1	*-24.4
State Income Tax	0.3	Z	4.0	0.2	*-92.9	0.3	Z	3.5	0.3	*-91.2	0.3	Z	3.9	0.3	*-93.4	0.2	Z	4.5	0.6	*-94.6	0.3	Z	4.1	0.3	*-91.9
Work Expenses	15.8	0.4	20.9	0.2	*-24.5	18.1	0.5	21.1	0.6	*-14.1	16.8	0.6	22.2	0.4	*-24.4	13.9	0.6	21.3	0.4	*-34.7	14.4	1.1	19.1	0.4	*-24.7

[1] The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system. Estimates of the Official Poverty Measure (OPM) shown here reflect an expanded resource unit definition that includes unrelated individuals under the age of 15. For SIPP, the expanded definition includes these individuals that lived with a guardian, in the SIPP poverty universe, for all 12 months of the reference year and assigns their poverty status based on the poverty status of their guardian. Values in reference period dollars. SIPP estimates for aggregates are based on person level values and weights of SPM reference unit members, while CPS ASEC estimates are based on SPM unit level aggregated values using the weight of the SPM unit reference person.

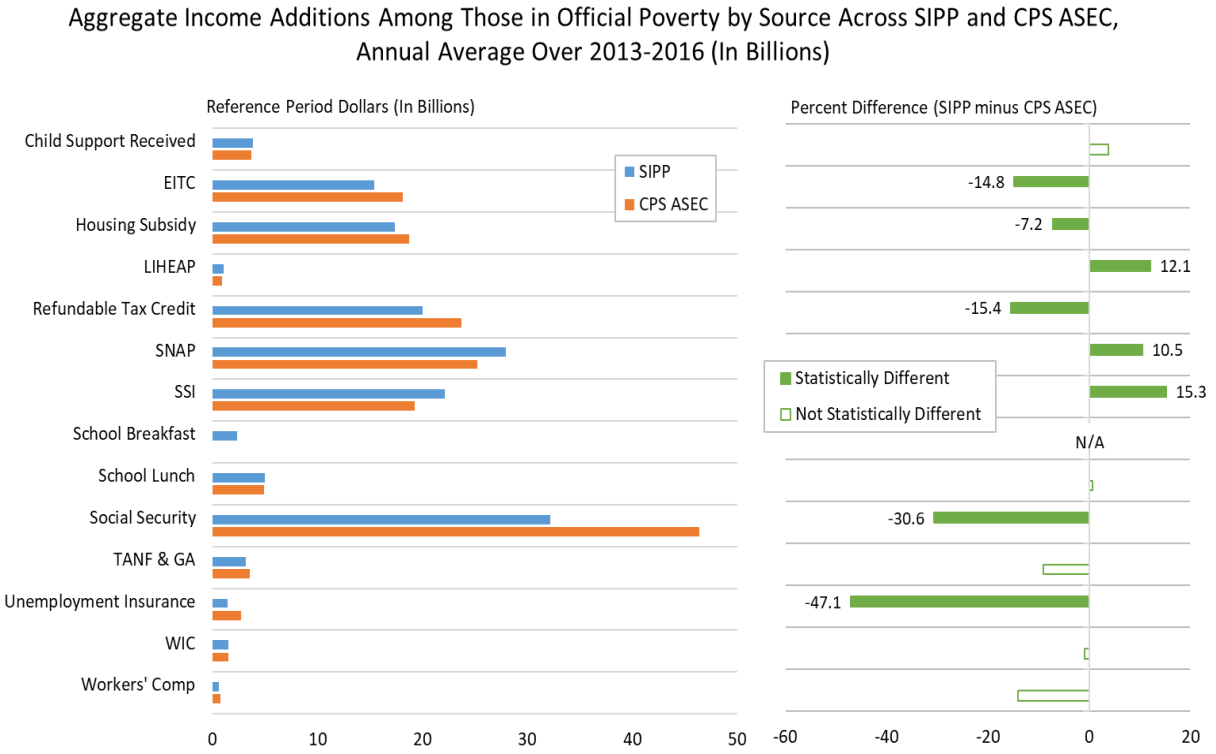
Note: Values in reference period dollars.

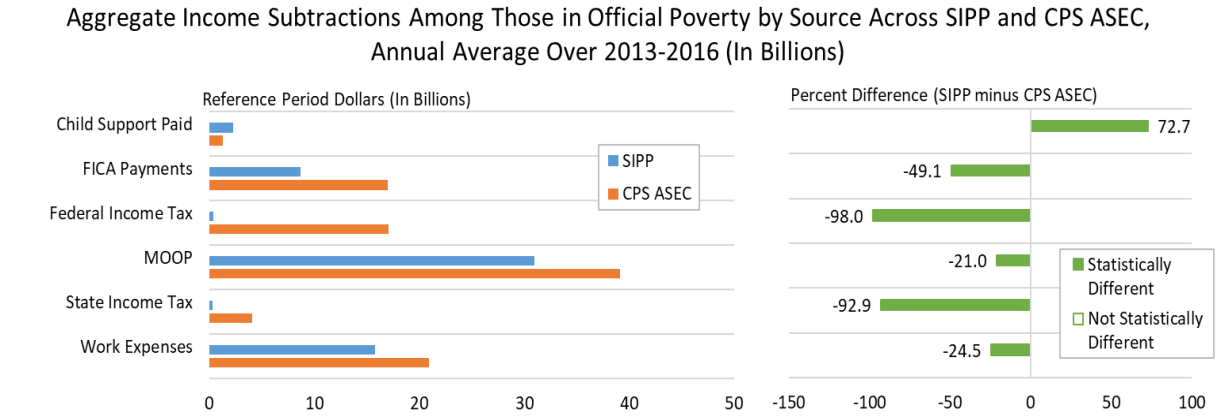
N/A: Estimates not applicable or not available.

Z: Represents or rounds to zero.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Figure 7. Aggregate Annual Income Additions or Subtractions Among Those in Official Poverty by Source Across SIPP and CPS ASEC, Annual Average Over 2013-2016 (In Billions)





Note: Values in reference period dollars. The source of the 2013 CPS ASEC is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates are derived from the legacy processing system. Estimates of the Official Poverty Measure (OPM) shown here reflect an expanded resource unit definition that includes unrelated individuals under the age of 15. For SIPP, the expanded definition includes these individuals that lived with a guardian, in the SIPP poverty universe, for all 12 months of the reference year and assigns their poverty status based on the poverty status of their guardian. N/A: Estimates not applicable or not available.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Table 10. Change in SPM Poverty Population Given Incremental Income Additions or Subtractions by Source Across SIPP and CPS ASEC, Annual Average Over 2013-2016 (In Millions)

Resource Additions and Subtractions	2013-20161					2013					2014					2015					2016				
	SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC			SIPP		CPS ASEC		
	Num.	Std. Error	Num.	Std. Error	Diff.	Num.	Std. Error	Num.	Std. Error	Diff.	Num.	Std. Error	Num.	Std. Error	Diff.	Num.	Std. Error	Num.	Std. Error	Diff.	Num.	Std. Error	Num.	Std. Error	Diff.
Resource Additions																									
Child Support Recieved	-1.2	0.1	-1.0	0.1	-0.1	-1.2	0.1	-1.0	0.2	-0.2	-1.2	0.2	-0.9	0.1	-0.2	-1.1	0.2	-1.3	0.1	0.2	-1.1	0.2	-0.8	0.1	-0.4
EITC	-5.3	0.3	-6.3	0.1	*0.9	-6.2	0.3	-6.0	0.4	-0.2	-5.6	0.3	-6.7	0.2	*1.1	-5.1	0.4	-6.5	0.2	*1.4	-4.4	0.5	-5.8	0.2	*1.4
Housing Subsidy	-3.1	0.2	-3.2	0.1	Z	-3.3	0.2	-3.3	0.3	0.0	-3.1	0.2	-3.2	0.1	0.1	-3.1	0.3	-3.0	0.1	-0.2	-3.0	0.3	-3.1	0.1	0.1
LIHEAP	-0.3	Z	-0.2	Z	*-0.1	-0.3	0.1	-0.2	0.1	-0.1	-0.2	0.1	-0.2	Z	Z	-0.4	0.1	-0.2	Z	-0.2	-0.2	0.1	-0.2	Z	Z
Refundable Tax Credit	-7.5	0.3	-8.8	0.2	*1.3	-9.1	0.4	-8.7	0.5	-0.4	-8.0	0.4	-9.5	0.3	*1.6	-7.1	0.5	-9.0	0.3	*1.9	-6.0	0.5	-8.1	0.3	*2.2
SNAP	-5.0	0.2	-4.7	0.1	-0.4	-4.8	0.2	-5.8	0.4	*1.0	-5.0	0.3	-4.7	0.2	-0.3	-5.5	0.4	-4.6	0.2	*-0.9	-4.8	0.4	-3.6	0.2	*-1.3
SSI	-4.6	0.2	-3.7	0.1	*-0.9	-4.2	0.2	-4.1	0.3	-0.1	-4.5	0.3	-3.9	0.2	*-0.6	-4.7	0.3	-3.4	0.2	*-1.3	-4.9	0.3	-3.4	0.2	*-1.6
School Breakfast	-0.6	0.1	N/A	N/A	N/A	-0.8	0.1	N/A	N/A	N/A	-0.7	0.1	N/A	N/A	N/A	-0.7	0.2	N/A	N/A	N/A	-0.3	0.1	N/A	N/A	N/A
School Lunch	-1.3	0.1	-1.3	0.1	Z	-1.6	0.2	-1.4	0.2	-0.2	-1.2	0.2	-1.2	0.1	Z	-1.3	0.2	-1.3	0.1	-0.1	-1.2	0.2	-1.3	0.1	0.1
Social Security	-30.3	0.4	-26.3	0.2	*-4.0	-28.2	0.5	-26.2	0.6	*-2.0	-30.4	0.6	-26.1	0.4	*-4.3	-31.4	0.6	-26.7	0.4	*-4.7	-31.3	0.7	-26.1	0.3	*-5.2
TANF & GA	-0.6	0.1	-0.7	Z	0.1	-0.6	0.1	-0.7	0.1	0.1	-0.4	0.1	-0.7	0.1	*0.3	-0.8	0.1	-0.7	0.1	-0.1	-0.6	0.2	-0.6	0.1	Z
Unemployment insurance	-0.5	0.1	-1.0	0.1	*0.5	-1.1	0.1	-1.9	0.2	*0.8	-0.3	0.1	-0.8	0.1	*0.4	-0.4	0.1	-0.7	0.1	*0.3	-0.3	0.1	-0.7	0.1	*0.4
WIC	-0.4	0.1	-0.4	Z	-0.1	-0.4	0.1	-0.4	0.1	Z	-0.3	0.1	-0.4	0.1	Z	-0.4	0.1	-0.3	0.1	-0.1	-0.4	0.1	-0.3	0.1	-0.1
Workers' comp	-0.2	Z	-0.3	Z	*0.1	-0.2	Z	-0.3	0.1	0.2	-0.2	0.1	-0.2	Z	Z	-0.3	0.1	-0.4	0.1	0.1	-0.1	Z	-0.2	Z	*0.1
Resource Subtractions																									
Child Support Paid	0.8	0.1	0.3	Z	*0.4	0.9	0.1	0.4	0.1	*0.6	0.9	0.1	0.3	Z	*0.6	0.5	0.1	0.3	Z	*0.2	0.8	0.2	0.4	Z	*0.4
FICA Payments	4.9	0.2	5.1	0.1	-0.2	4.8	0.3	5.0	0.3	-0.2	5.4	0.4	5.6	0.2	-0.2	4.1	0.4	5.0	0.2	*-0.8	5.3	0.5	4.7	0.2	0.5
Federal Income Tax	1.2	0.1	1.6	0.1	*-0.4	0.8	0.1	1.7	0.2	*-0.9	1.5	0.2	1.7	0.1	-0.3	1.1	0.2	1.5	0.1	*-0.4	1.4	0.2	1.5	0.1	Z
MOOP	9.7	0.3	11.4	0.2	*-1.7	10.6	0.4	12.2	0.5	*-1.7	9.4	0.4	11.3	0.3	*-1.9	8.9	0.5	11.4	0.3	*-2.5	9.8	0.6	10.5	0.3	-0.7
State Income Tax	0.7	0.1	0.5	0.1	*0.1	0.6	0.1	0.5	0.2	0.1	0.6	0.1	0.6	0.1	Z	0.5	0.1	0.5	0.1	0.0	0.9	0.2	0.4	0.1	*0.4
Work Expenses	6.9	0.2	6.7	0.1	0.2	7.0	0.4	6.7	0.3	0.3	7.6	0.5	7.4	0.3	0.2	5.9	0.5	6.6	0.2	-0.7	7.0	0.6	6.0	0.2	1.0

[1] The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system.

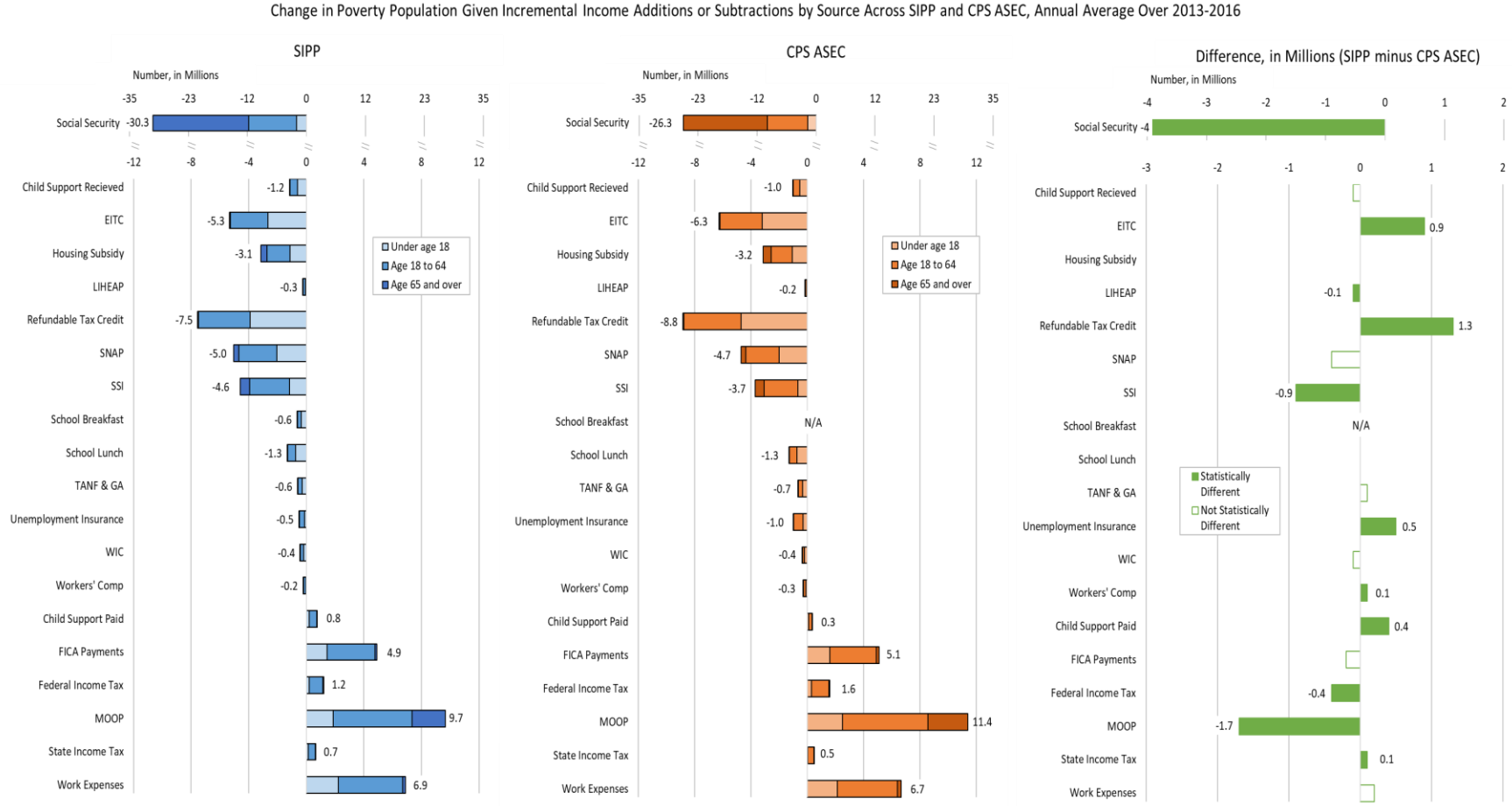
Note: The source of the 2013 CPS ASEC is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates are derived from the legacy processing system.

N/A: Estimates not applicable or not available.

Z: Represents or rounds to zero.

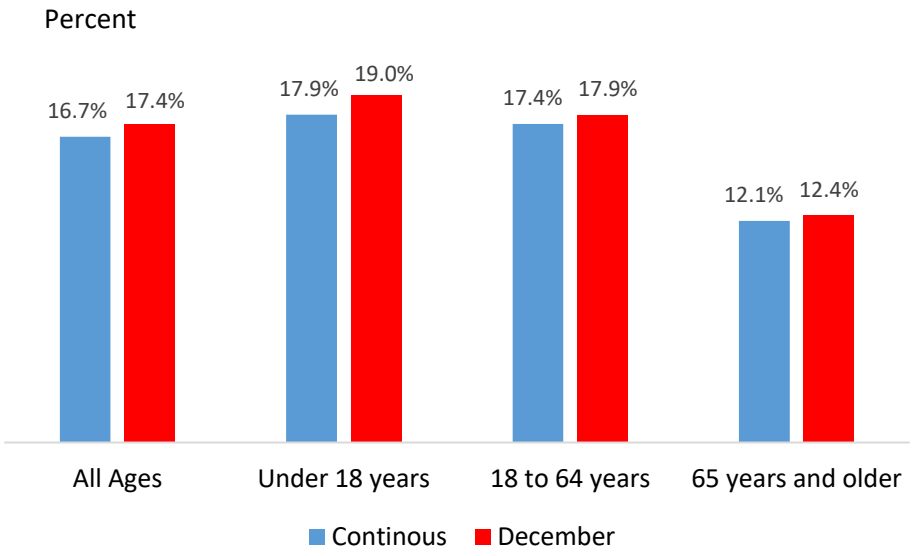
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Figure 8. Change in SPM Poverty Population Given Incremental Income Additions or Subtractions by Source Across SIPP and CPS ASEC, Annual Average Over 2013-2016



Note: Values in reference period dollars. The source of the 2013 CPS ASEC is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates are derived from the legacy processing system.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements.

Figure 9. Annual SPM Rates When Holding Family Composition Constant as of December of the reference Year.



Source: Census Bureau, Survey of Income and Program Participation, 2014 Panel.

Table 11. Comparisons of the Value of Social Security Income across SIPP, CPS ASEC, and NIPA (In billions)

Year	SIPP		CPS ASEC[1]		Adjusted NIPA[2]	SIPP Coverage	CPS ASEC Coverage
	Amount (B)	Std. Error	Amount (B)	Std. Error	Amount (B)	Percent	Percent
2013	787	5.2	697	7.8	762	103.2*	91.4*
2014	849	6.9	720	4.2	793	107.0*	90.8*
2015	894	7.7	753	4.6	828	107.9*	90.9*
2016	928	8.3	779	4.8	852	109.0*	91.5*

[1] The source of the 2013 CPS ASEC estimates shown in this table is the portion of the sample that received the redesigned income questions. The 2016 CPS ASEC estimates shown in this table are derived from the legacy processing system.
[2] NIPA estimates are adjusted to account for individuals outside of the SIPP survey frame including those that resided in institutionalized group quarters and decedents.
Note: Values in reference period dollars.
Source: Census Bureau, Survey of Income and Program Participation, 2014 Panel and Current Population Survey, 2014 to 2017 Annual Social and Economic Supplements. Bureau of Economic Analysis National Income and Product Accounts.

Table 12. SIPP and SSA Millions of Claims and Average Monthly Benefit Amount by Gender and Type: 2013 to 2016

Year	Benefit Type	Estimate	Male				Female			
			SIPP	SIPP SE	SSA-Adjusted	SIPP Coverage	SIPP	SIPP SE	SSA-Adjusted	SIPP Coverage
2013	Retirement	Claims (in millions)	17.8	0.1	21.3	83.4*	19.4	0.2	20.5	94.8*
		Avg. Monthly Amount	1,577	9.2	1,451	108.7*	1,253	7	1,134	110.5*
	Disability	Claims (in millions)	4.4	0.2	5.1	87.5*	4.3	0.1	4.9	88.1*
		Avg. Monthly Amount	1,319	18.9	1,271	103.8*	1,101	15	1,011	108.9*
2014	Retirement	Claims (in millions)	18.1	0.2	21.7	83.5*	20.7	0.2	21.1	97.9*
		Avg. Monthly Amount	1,645	11.8	1,488	110.5*	1,295	10	1,167	110.9*
	Disability	Claims (in millions)	5.3	0.2	5.2	102.7	4.7	0.2	4.6	102.0
		Avg. Monthly Amount	1,337	18.2	1,290	103.7*	1,115	16	1,032	108.1*
2015	Retirement	Claims (in millions)	19.0	0.2	22.2	85.5*	21.6	0.2	21.7	99.4
		Avg. Monthly Amount	1,688	13.1	1,500	112.5*	1,342	11	1,182	113.5*
	Disability	Claims (in millions)	5.2	0.2	4.9	104.7	4.8	0.2	4.7	103.2
		Avg. Monthly Amount	1,350	22.8	1,289	104.8*	1,080	19	1,036	104.2*
2016	Retirement	Claims (in millions)	19.0	0.2	22.6	83.9*	22.1	0.3	22.2	99.5
		Avg. Monthly Amount	1,717	12.8	1,519	113.0*	1,349	10	1,202	112.2*
	Disability	Claims (in millions)	5.5	0.2	5.0	108.4*	5.1	0.2	4.7	109.0*
		Avg. Monthly Amount	1,351	21.2	1,293	104.5*	1,145	21	1,043	109.8*

Note: Values in reference period dollars.
Source: Census Bureau, Survey of Income and Program Participation, 2014 Panel. Social Security Administration Master Beneficiary Record.

7. Technical Appendix

The technical discussions below correspond to their associated content in the Methodology section.

7.A. Past Research

Given that the original 1995 NAS Panel recommended utilizing the SIPP, early efforts to develop poverty estimates based on the NAS recommendations focused on the SIPP as well as the CPS ASEC. Short (2003) constructed a number of alternative NAS-based poverty measures using the 1996 SIPP Panel, with the resulting "MSI" (medical subtracted from income) measure most closely approximating the later methodology of the SPM. In 1996, the MSI poverty rate was 1.2 percentage points lower than the official rate as calculated in the SIPP, however, the MSI measure was not statistically different from the official measure in the CPS ASEC. When attempting to explain differences in income additions and subtractions among the poor across surveys, Short (2003) found that additions to income were not statistically different across the two surveys, with the primary difference being that the CPS ASEC subtracted more work-related expenses while the SIPP found higher tax liability among the poor.

Research into alternative poverty estimates using the SIPP continued after the first SPM report using the CPS ASEC was released in 2011 (Short 2011). Using the 2004 SIPP Panel, Iceland (2012) estimated a 2004 SPM rate lower than the official measure in the SIPP (0.3 percentage points), while SPM rates were higher than the official measure in the CPS ASEC.[44] Iceland's findings indicated the largest difference across the SIPP and CPS ASEC related to the impact of medical expenses, which were more impactful in raising SPM poverty rates in the CPS ASEC than SIPP.

Similarly using the 2004 SIPP Panel, while applying different methods than Iceland (2012), Short & Giefer (2013) found SPM rates were higher than OPM rates (0.5 percentage points) when calculating the SPM in the SIPP, consistent with trends observed in the CPS ASEC when using the MSI measure (a 0.7 percentage point increase over the OPM).[45] Similar to the findings of Short (2003), they find that the SIPP estimated higher taxes, while the CPS ASEC subtracted more work-related expenses. As shown in Table 1, the higher reporting rate and aggregate amount of medical deductions Short & Giefer (2013) found in 2004 relative to 1996 contributes to this shift in relationship between the SPM and OPM in the SIPP. These findings varied in subsequent work from Short (2014) using the 2008 SIPP Panel, where poverty estimates for 2009 were not statistically different across the OPM and SPM.

[44] Iceland (2012) compared estimates for 2004 from the SIPP to 2010 estimates from the CPS ASEC.

[45] Notable differences across Short & Giefer (2013) and Iceland (2012) include the tax calculator used, the subtraction of work-related expenses, and the subtraction of Medicare Part B premiums.

A subset of the SPM components in these papers are summarized in Table 1. The table presents the aggregate 2013 dollar value of the SPM components. This allows for comparisons of how each input affected the SPM rate found in each study, given the different years covered in these studies. However, it is important to emphasize that many of these SPM components can vary greatly across years or might have year-to-year variations that are not accounted for by the Consumer Price Index (CPI). These include federal and state taxes that are dependent on the tax schedule in place during the given year, employment and wages during the year, and other investment income. Moreover, other SPM components displayed in Table 1 such as medical expenses have historically grown at rates faster than overall CPI. Given this, Table 1 should not be inferred as providing an indicator of each survey's quality for capturing that component.

Across the four SIPP papers shown in Table 1, both OPM and SPM poverty rates in SIPP were found to be consistently lower than those calculated in the CPS ASEC in respective years, a finding generally attributed to the sub-annual reporting of income and program receipt in the SIPP. Warren & Edwards (2017) found that following the redesign and move to annual interviewing in the 2014 SIPP Panel, OPM rates for 2013 were 3.2 percentage points higher than estimates from the 2008 SIPP Panel. In contrast to previous SIPP research, using the 2014 SIPP Panel, the SIPP OPM rate was 0.5 percentage points higher than the CPS ASEC OPM rate for 2013.[46]

Other researchers have worked on implementing the SPM in the ACS to take advantage of its sample size, which allows for more detailed geographic estimates. As shown in Table 1, SPM rates calculated in the 2010 and 2011 ACS were higher than official rates by approximately 1.5 percentage points in both years (Renwick et al. 2012 and Renwick 2015). Recent research within the Census Bureau has also expanded the ACS estimates to more recent years (see Fox et al. 2020). Researchers outside the Census Bureau have also conducted research using the ACS to create state or city SPM-like measures (Betson et al. 2011; Bohn et al. 2013; Chatterjee et al. 2019; Smeeding & Thornton 2019; Zedlewski et al. 2010).

Outside the Census Bureau, there has been work to get the SPM in other surveys. Kimberlin et al. (2016) extend the SPM to the Panel Study of Income Dynamics (PSID) for 1998 to 2010.[47] The PSID is unique as it provides an extended panel, which allows for the examination of poverty dynamics, although this comes at a cost of reduced sample sizes relative to other surveys used to calculate the SPM. Kimberlin et al. find that the PSID SPM and OPM rates are lower

[46] Since the SIPP does not ask income questions for individuals under the age of 15, all unrelated individuals under the age of 15 are generally excluded from the SIPP OPM poverty universe. However, these individuals are included in the OPM universe for this report if they lived with a household guardian that participated in SIPP for all 12 months of the reference year and are assigned the official poverty status of their household guardian.

[47] For historical SPM estimates from 1967 to 2012, see Fox et al. (2015).

than the CPS ASEC SPM rate for all years in their sample (1998 to 2010).[48] Examining their results by age, they found lower poverty rates using the SPM relative to OPM for those under age 18 and for those aged 18 to 64, and higher SPM rates for those aged 65 and older.

7.B. Creating SPM Resource Units

The SIPP collects monthly data on household composition and relationships, collecting data on primary families (families that include the householder) and subfamilies (which do not include a householder). When adding unrelated children to families, foster children who are under the age of 22 are assigned to families with their designated foster parents, while poverty status for unrelated children less than age 15 is based on the poverty status of the child's guardian. Family level estimates are weighted using the person level weight of the family reference person. When families are combined under the SPM resource unit definition, the primary family reference person remains unchanged regardless of the addition of new family members. For higher order families within the household, the individual with the lowest original family number retains their position as the family reference person in the new SPM resource unit.

7.C. Thresholds

7.C.I. Base Thresholds

OPM thresholds are updated annually using the annual average value of CPI-U. OPM in the SIPP similarly adjust thresholds to account for monthly variation in family size and composition when calculating poverty in the SIPP, using the equation below:

$$T_m = \frac{T_{1982}}{12} * \frac{CPI_m}{CPI_{1982}} \qquad \text{(Equation 1)}$$

to calculate T_m as a family's monthly OPM poverty threshold. When creating monthly OPM thresholds, the annual base threshold T_{1982} is divided by 12 and adjusted to reflect monthly CPI-U variation over the reference year.

The same does not hold with the SPM thresholds, since they are based on a rolling five-year average of quarterly expenditure data. To construct the five-year average, BLS DPINR merges 20 quarters of expenditure data to generate the SPM thresholds. These quarters are first adjusted from nominal to real dollars across years, but no such adjustments are made within a given year (e.g., expenditures for 2012 are adjusted to 2017 dollars for the 2017 threshold, but data from Q2

[48] However, this is partially explained by differences in the definition of a family in the PSID relative to the one used by the Census Bureau which defines a family as a group of individuals related by birth, marriage, or adoption. For a further discussion of differences in family composition in the PSID and the Census definition, see Grieger et al. (2009).

2017 is not adjusted differently than Q4 2017). As such, there is no within-year price variation built into the SPM thresholds. As all quarters of expenditures in a given calendar year are treated nominally, the most logical extension is to simply divide annual thresholds by 12 to obtain monthly thresholds. Future research between BLS DPINR and the Census Bureau will examine alternative ways to implement a monthly threshold.

7.C.II. Housing Tenure

Three sets of SPM thresholds are produced to account for differences in housing costs based on housing tenure type. When applying SPM thresholds in the SIPP, we create monthly indicators for households that own their home with a mortgage, own their home outright, or rent their home. Housing tenure is reported in the 2014 Panel for each residency spell, providing monthly variation over the calendar year. Data on mortgage status is reported by homeowners based on their residency in December of the reference period. When assigning SPM thresholds, we hold mortgage status constant throughout the reference period. In 2013, 94.7 percent of homeowners resided in the same household the entire reference year. Household members who report occupying their residence without payment are treated as homeowners without a mortgage for the purpose of assigning SPM thresholds.

7.C.III. Geographic Adjustment

The housing portion of SPM thresholds are then adjusted to account for geographic differences in housing costs across the United States. Consistent with geographic adjustments made to annual SPM thresholds in the CPS ASEC, we utilize ACS 5-year data to calculate median gross rent for a two-bedroom unit with complete kitchen and plumbing facilities. Separate medians were estimated for each metropolitan statistical area as well as state nonmetropolitan areas.[49] For a more in-depth discussion of these, see Renwick (2011).[50]

7.C.IV. Family Composition

In addition to adjustments based on geographic difference in costs of living and housing tenure, monthly SPM thresholds in the SIPP, consistent with the OPM threshold, account for varying needs based on family composition. In the SPM, a three-parameter equivalence scale is used and economy of scale factors are consistent with methodology applied to the CPS ASEC. This same three parameter scale is applied to monthly SIPP estimates. As previously noted, unlike the OPM

[49] Currently, the SIPP samples approximately 50,000 addresses annually, compared to 95,000 addresses in the CPS ASEC, and 3.5 million addresses in the ACS. Because of its limited sample size, metropolitan statistical area identifiers are not currently included in public use SIPP files, which creates a unique challenge when considering the creation of a public use SPM file using SIPP data.

[50] For months that any respondent resides outside the U.S., we use the adjustment factor for the most frequent place of residence over the reference year.

and SPM derived from the CPS ASEC, OPM and SPM thresholds in the SIPP allow for variation in family composition over the year.

7.D. Cash Income

Consistent with the OPM, the SPM resource measure includes cash income from the following sources:

Earnings	Pension, retirement, or annuity income
Unemployment insurance	Interest
Workers' compensation	Dividends
Social security	Rents, royalties, and estates and trusts
Supplemental security income	Alimony
Public assistance	Child support
Veterans' payments	Financial assistance from outside of the household
Survivor benefits	Other cash income
Disability benefits	

Each of these sources of cash income are collected in both the SIPP as well as the CPS ASEC. In the SIPP, the receipt of some income sources may be reported as individual or jointly shared income across an annual or sub annual time frame as illustrated below.

Individual	Weekly	Earnings
	Monthly	Unemployment insurance Workers' compensation Social security Supplemental security income Veterans' payments Survivor benefits Disability benefits Pension income Alimony, child support, and childcare payments
	Annual	Lump sum payments from a pension or retirement plan Annuity income Trust/Managed investment account income Financial assistance from outside of the household Miscellaneous income
Individual or Joint	Monthly	TANF payments General assistance payments

	Annual	Interest income Dividends Rental income

7.E. Housing Assistance

For each SIPP household that reports receiving help with rent or living in public housing, an attempt was made to create a statistical match on state, Core-Based Statistical Area, and household size to HUD administrative data to estimate the value of the housing subsidy received. The total tenant payment is estimated using the total income reported by the household in the SIPP as well as HUD program rules. Generally, participants in either public housing or tenant-based subsidy programs administered by HUD are expected to contribute the greater of one-third of their "adjusted" income or 10 percent of their gross income towards housing costs.[51] This is the same methodology that is used in the creation of the CPS ASEC SPM. See Johnson et al. (2010) for more details.

7.F. Commuting & Miscellaneous Work-Related Expenses

We consciously choose to continue using a national median and not reported expenses in calculating the SPM in the SIPP. This is based on the original recommendations of the 1995 NAS Panel, which suggested as individuals often face tradeoffs in costs associated with housing and transportation, variation associated with commuting expenses is partly accounted for in the housing cost adjustment on the threshold side of the SPM (Citro & Michael 1995). Future research on the comparative benefits of using reported expenses rather than a flat deduction may lead to changes in this methodology. Unlike in the CPS ASEC, median weekly expenses are allowed to vary by month. There is limited variation in median costs over the calendar year period. For example, in 2013, median weekly work-related costs declined over the course of the year—from $47.46 a week in January to $46.25 a week in December. For details on the capping procedure applied to this deduction, see the section below on the Capping of Work-Related Expenses.

7.G. Work-Related Childcare Expenses

Work-related childcare expenses are reported across all related children, to represent an average week when the parent worked in the month of December. If a respondent wasn't working in December, but worked within the reference year, they report average expenses for a typical week when working over the reference year across all related children. This reported average weekly

[51] HUD regulations define "adjusted household income" as cash income, excluding income from certain sources minus numerous deductions. Deductions that can be modeled from the SIPP include $480 for each dependent, $400 for any disabled family member or household adult aged 62 or older, childcare, and medical expenses.

expense is assigned to the reporting parent in all weeks where the parent was working and related children were present. For details on the capping procedure applied to this deduction, see the section below on the Capping of Work-Related Expenses.

7.H. Capping of Work-Related Expenses

The ITWG, following the recommendations of the NAS report, suggested capping the amount of childcare expenses subtracted from income, when combined with other work-related expenses, so to not exceed the lowest reported earnings of either the reference person or their spouse/partner in the SPM resource unit. In the SIPP, this capping procedure is applied on a monthly basis before determining poverty status. First, individual commuting expenses are capped so as not to exceed individual earnings. Then combined commuting plus childcare expenses are capped at the earnings of the lower earning reference person or spouse/partner. Because expenses are allocated across months, we allow the deduction cap associated with the lowest earner to vary by month, while in the CPS ASEC the deduction cap is based on the annual income of the lowest earner.

7.I. Taxes Paid and Tax Credits

The SIPP asks each respondent aged 15 and older whether they filed taxes and, for respondents who reported not filing, whether they plan to file. For respondents who report filing or indicate they plan to file, the SIPP then asks about filing status: single, married filing jointly, married filing separately, or head of household.

The SIPP asks about filing status for each respondent over the age of 15, so that each spouse in a two-person tax unit would be asked about if they have filed taxes (or plan to file) and their filing status. Some respondents report a filing status that does not correspond to their reported marital status. For this analysis, we primarily rely on reported or imputed filing status and adjust filing status for cases that do not align with marital status—we make this adjustment as we view marital status to be more accurate for these cases.[52]

[52] Since respondents can report their filing status independently of their spouse, cases where one married partner reports a valid filing status while the other does not, are assigned the valid reported filing status (either married filing jointly or married filing separately). For cases where neither spouse's reporting corresponds to a valid filing status, tax units are assigned as married filing jointly, which is significantly more prevalent than filing married separate returns and generally advantageous in minimizing tax liability. For single, never-married, and divorced filers, we require that they file as either single or head of household. For head of household, we require that a qualifying child or dependent be present in the household. For single, never-married and divorced filers not living with a qualifying dependent, we assign them a filing status of single. For widowed filers, we require that they file either single, head of household (with a qualifying dependent living with them), or for those who reported as married filing jointly we retain their married filing status as IRS rules allow this reporting as a Qualifying Widow (or Qualifying Widower). For the IRS rules relating to filing status for 2013, see <https://www.irs.gov/pub/irs-prior/p501--2013.pdf>.

7.I.I. Tax Liability

While the SIPP collects tax data on fact of filing, filing status, whether respondents between the ages of 15 and 25 were claimed as dependents, and Earned Income Tax Credit (EITC) receipt, the SIPP does not ask questions regarding total tax liability. Given this, we calculate tax liability using an internal version of the NBER TAXSIM27 model that is similar to the online version of TAXSIM27.[53]

To estimate tax liability, we use SIPP's extensive income variables. Filing status for TAXSIM27 is determined by the edited filing status as discussed above. To determine deductions and exemptions, we start with the edited filing status. We then use reported data on whether respondents aged 15 through 25 with earned income were claimed as dependents on their parents' tax return, since this would exclude any of these individuals from claiming their own dependents on their tax return.[54]

We then allocate other household members to tax units based on whether they could have been claimed by another household member.[55] Children can generally be claimed as dependents unless the child provides more than half of their own financial support. Since the SIPP only asks income questions for children aged 15 and over, we assume that children under the age of 15 are eligible to be claimed as dependents. Filers with income between the ages of 15 and 25 are asked about whether they were claimed on their parents' return, as discussed above. For other dependents, we require that they live in the household for the entire year and have total annual income (less Social Security payments) of $3,900 or less for 2013 (and adjust accordingly for later years based on IRS rules). For these cases, we assign the dependent to the highest earning tax unit in the household.

As noted above, we run all SIPP tax units through an internal version of TAXSIM27. While property taxes paid are not asked in the 2014 SIPP Panel, we assign them using out of sample prediction based on SIPP questions on home value along with ACS data on home values and property taxes paid.[56] TAXSIM27 is then used to generate federal and state tax liability as well as tax credits. We run all tax units that reported filing through TAXSIM27 as well as presumed tax units (that did not report filing) with annual gross income satisfying the inequality for a given

[53] This differs from SPM methods in the CPS ASEC, which use the internal Census Bureau Tax Model. However, Wheaton & Stevens (2016) find little difference in the overall CPS ASEC SPM rate across the two tax models.

[54] In these cases, if a respondent aged 15 through 25 was claimed on a parent's return then any children they might have would similarly be claimed.

[55] For someone to be claimed as a dependent, they must be a U.S. Citizen, U.S. Resident Alien, U.S. National, or resident of Canada or Mexico. While the SIPP asks citizenship status, there are no additional questions regarding residency status. Hence, we ignore this condition when determining dependent status.

[56] The value of property taxes paid is only used when calculating federal and state taxes. Property taxes paid are not subtracted from income.

tax unit (i) based on marital status (m) and the number of children under the age of 18 (k). This takes the form:

$$(Gross\ Total\ Income_i - 0.5 \times Social\ Security\ Income_i) \geq (Single\_Standard\_Deduction \text{ x } (m_i + 1) + Personal\_Exemption\_Amt \text{ x } (k_i + m_i + 1)) \quad \text{(Equation 2)}$$

where m takes on the value of 1 if the respondent is married.[57] For respondents that report not filing but have income above these dollar amounts, we set their state tax to zero if there were no federal taxes owed using TAXSIM27.

We then calculate FICA tax liability independently of TAXSIM27. This allows for capturing FICA taxes for non-filers and addresses self-employment income. For non-filers, we assume a FICA rate of 7.65 percent of wage income and 15.30 percent for self-employed income.

FICA taxes are subtracted from income across the months worked in the reference year. Federal and state taxes are distributed based on the distribution of income throughout the year, while refundable tax credits are distributed evenly throughout the year.

[57] These thresholds were set based on being approximately equal to the standard deduction and personal exemption for a single and married couple without children, respectively. Moreover, the formula assumes that 50 percent of Social Security income is taxable. The standard deduction for most tax filers was $6,100, $6,200, $6,300, and $6,300 for the years 2013-2016, respectively. The married standard deduction for most taxpayers filing jointly was double this amount. The personal exemption amount was $3,900, $3,950, $4,000, and $4,050 for the years 2013-2016, respectively.