Poverty Dynamics in the 2014 Survey of Income and Program Participation

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Abstract

This paper examines trends in poverty using the redesigned Survey of Income and Program Participation (SIPP) 2014 Panel. Since the 2014 Panel conducts a more comprehensive interview with an expanded reference period—one year instead of the historical four months—this paper examines how SIPP poverty estimates from the 2014 Panel compare to earlier estimates from the 2008 Panel. We find that monthly and average monthly poverty rates are higher in the redesigned 2014 Panel than when measured in the 2008 Panel across the shared reference months of 2013. This appears to be driven primarily by the 2014 Panel capturing respondents in smaller families, especially among enrolled college students.

Annual poverty rates for 2013 are around three percentage points higher in the 2014 Panel than in the 2008 Panel. However, this difference fails to capture that there is essentially no attrition over a calendar year in the 2014 Panel given its annual reference frame. The 2008 Panel had significantly more attrition over the calendar year, given its four-month reference frame, especially among high poverty populations. Accounting for this difference in universes explains much of the difference in annual poverty rates. Finally, we document significantly fewer month-to-month transitions in poverty status in the 2014 Panel relative to the 2008 Panel. This is likely due to the annual interview frequency, which may capture fewer month-to-month variations in poverty status.

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[1] This paper 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, modeling error, and any other sources of error. For further information on SIPP statistical standards and accuracy, see <www.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements.html>.

I. BACKGROUND

This paper examines differences in the reporting of income and the measurement of poverty across consecutive panels of the longitudinal Survey of Income and Program Participation (SIPP). In this section, we offer a brief history of the survey, elaborate on the value and use of the estimates derived from the SIPP, and explain why and how the survey was redesigned from the 2008 to 2014 Panels.

1. The Survey of Income and Program Participation

Similar to other household surveys administered by the U.S. Census Bureau, the SIPP is designed to provide nationally representative estimates of the demographic and economic characteristics of the nation.[2] The SIPP is uniquely situated among these household surveys in a number of ways. Unlike the Current Population Survey (CPS), which is primarily focused on topics related to employment and the labor force or the American Community Survey (ACS) which asks only a limited series of income questions, the SIPP was designed to provide comprehensive data on the sources and amount of household income.

The SIPP grew out of a recognition in the 1970s that evaluating the increasing scope and size of government programs and their interaction with individuals' economic well-being and labor force status was limited by data availability. The SIPP was designed to specifically address some of the shortcomings of the CPS Annual Social and Economic Supplement (ASEC) by improving the collection of cash and in-kind income, assets and debts, tax liabilities, and participation in major government assistance programs (Ycas & Lininger 1981). Further, the SIPP is the only household survey conducted by the Census Bureau that follows respondents over time (including movers), allowing for longitudinal analysis of household composition, labor force participation, income receipt and program participation, as well as a number of other demographic, social, and economic characteristics over time.

While other nationally representative longitudinal surveys such as the Panel Study of Income Dynamics (PSID)[3] conducted by the University of Michigan also collect data on respondents over time, the SIPP is unique in its large sample size and ability to follow individuals over multiple consecutive years. For researchers and policymakers interested in addressing issues related to economic security, this makes the SIPP a valuable resource given that annual estimates of income and poverty are known to mask the prevalence of short-term poverty spells, underestimating the prevalence of economic hardship over the course of a year. Further, the use of a cross-sectional poverty measure, such as the annual poverty rate, does not capture the long-term nature of poverty among the poor at any given time (Bane & Ellwood 1986).

The SIPP has been fielded by the Census Bureau since the original 1984 Panel, and has gone through a number of methodological changes. Early panels of the SIPP, covering the 1984 to 1993 panels, interviewed respondents using a paper-based personal-interview survey every four months over a 32-month period (Marlay & Fields 2014). In 1999, the SIPP underwent its first major redesign, motivated by research conducted by the National Research Council Committee on National Statistics (CNSTAT). Changes implemented in the subsequent 1996 SIPP Panel reflected CNSTAT's recommendations to increase the sample size as well as oversample high poverty geographies, move to distinct 4-year panels as opposed to an overlapping 32-month design, and utilize a computer-assisted interview instrument. While continuous improvements have been incorporated to the SIPP survey methodology, data

[2] Estimates are representative of the Nation's non-institutionalized population. For more information on the SIPP, see <www.census.gov/sipp/>.
[3] For more information on the PSID, see <http://psidonline.isr.umich.edu/Guide/default.aspx>.

processing, and edit procedures since the 1996 Panel, the design and content of the SIPP remained largely consistent from the 1996 to 2008 Panels (U.S. Census Bureau 2016).

In the 2008 Panel, respondents continued to be surveyed every four months in interviews referred to as "waves." The 2008 Panel covered the period from May 2008 through November 2013, with 16 interviews, or "waves", conducted over the course of the panel. Questions that were consistently asked of respondents in every wave of the 2008 Panel were referred to as "core" content, which included questions on demographic characteristics, labor force participation, income, household and family composition, and program participation. Supplemental topical modules (TMs) were then appended to the end of most core interviews to capture additional detail on social and economic characteristics. TMs could be fielded multiple times over the course of a panel, but unlike the core content, were not asked in each wave. The 2008 Panel continued to be conducted using a computer-assisted personal interview which utilized dependent interviewing techniques. Questions followed a conventional sequential list programmed within the instrument to account for question universes and skip patterns (Edwards 2016).

2. The 2014 Panel Redesign

The fiscal year 2007 congressional funding allocation included a mandate for the Census Bureau to reengineer the SIPP to develop a "more accurate and timely survey" (U.S. House Report 110-240; New York Times 2007). The subsequent reengineering process was motivated by a desire to reduce burden on survey respondents, lower program costs, and improve accuracy, timeliness, and data accessibility (National Research Council 2009).

Ensuing research and field tests culminated with the development of the 2014 SIPP Panel. The redesigned 2014 Panel incorporates a number of significant methodological and content changes, such as 1) the move to annual interviewing with a calendar year reference period, 2) the adoption of Event-History Calendar (EHC) interview methods, 3) the expansion of the core survey content to replace the use of separate TMs, and 4) the discontinuation of the rotation group design (Edwards 2016, Marlay & Fields 2014).[4]

Data from wave 1 of the 2014 Panel referencing calendar year 2013 were released to the public in March of 2017. Interviews referencing calendar years 2014 through 2016 have already been conducted, and following data processing and review will be released to the public on a rolling basis. Below, major methodological and content changes related to the reporting and calculation of family income and poverty are compared across the 2008 and 2014 Panels in order to provide context for subsequent comparisons across panels.

2a. Interview Structure and Reference Periods

SIPP Panels began with a sample of households, with anyone residing in a sampled household at the time of the initial interview (wave 1) included in the SIPP sample. Following the initial interview, those initial respondents were historically interviewed in subsequent waves every four months, regardless of whether they remained living at the original sampled household or moved to a new location.[5] Additional survey members were included in the sample if they resided with an original survey member at the time of subsequent interviews. Respondents were interviewed each wave by a field representative via

[4] For more information on the redesign of the SIPP, see <www.census.gov/programs-surveys/sipp/about/re-engineered-sipp.html>.

[5] As long as that new location was within the United States and not a military barrack or institutionalized group quarters location (i.e. prisons and nursing homes).

a computer assisted personal interview (CAPI) answering a consistent series of core questions every interview, with supplemental topical modules fielded at various points over the panel to collect detailed data on select topics such as resident and employment history, tax filing and rebates, disability status, educational attainment, marital and fertility history, retirement assets, medical expenses, child well-being, and a host of other specific subject matter content.[6]

Under the redesigned 2014 Panel, household sample selection and the criteria for individuals included in the survey following wave 1 remains unchanged. However, interviews are now conducted using CAPI at approximately one-year intervals, typically over the period from February to April, with respondents reporting monthly data for the prior calendar year. To assist respondents with memory recall over this elongated reference period, the CAPI interview instrument incorporates EHC interviewing techniques to assist respondents in placing personal and family events within the year-long reference period. Respondents continue to be interviewed in successive waves, however instead of a four to five-year panel consisting of 12 to 16 waves of interviewing, the 2014 Panel interviews respondents annually over the course of four waves from 2014 through 2017.

While sampling rules in the 2014 Panel are logically consistent with the 2008 Panel, there are practical differences in who is included in the sample given that the opportunity to absorb new sample members (individuals living with an originally sampled household member who is not themselves an original household member) is now limited to once a year as opposed to three times a year. Prior to the redesign, respondents were not asked about individuals they may have lived with during the four-month reference period if they were no longer present in the household at the time of interview. This is no longer the case as of the 2014 Panel. Given the extended reference period and the likelihood of failing to capture individuals who would have been in sample under the prior interview schedule, the 2014 Panel asks respondents to report basic demographic and income data for anyone they lived with over the course of the calendar year and who is not present at the time of interview. These individuals are referred to as Type 2 (T2) individuals. Estimates of family income and poverty may be calculated by including or excluding these individuals. For this analysis, we exclude the T2 population.[7]

The known SIPP survey design effects described as the "wave 1 effect" and "seam effect" have both been well documented in prior SIPP Panels and are expected to persist in the 2014 Panel. The "wave 1 effect" refers to the fact that since the 1996 SIPP redesign, poverty estimates from wave 1 of a SIPP Panel have consistently been at least two percentage points higher than poverty estimates derived from the final wave of the preceding SIPP Panel. Subsequently, within a SIPP Panel, poverty rates in wave 2 indicate sharp declines in poverty from wave 1. This across and within panel effect has been studied in the 2004 Panel (Czajka, Mabli, & Cody 2008) and 2008 Panel (Edwards 2014) with evidence indicating that within-person changes in reported family income, rather than attrition or sample composition changes drives 86 to 92 percent of the change in poverty rates across waves 1 and 2. The so called "seam effect" follows from the above findings, referring to the fact that transitions reported by survey respondents, whether related by relationships, income, or program receipt, are more likely to be reported across interviews rather than within the reference period of a given interview (Moore 2007). This propensity for

[6] For more information on the 2008 Panel topical modules, see https://www.census.gov/programs-surveys/sipp/tech-documentation/topical-modules/topical-modules-2008.html.

[7] Income for T2 individuals is reported by a proxy as an annual amount, and prior research has indicated that the characteristics of T2 individuals in the 2014 Panel vary from sample members who enter and exit the 2008 Panel within a calendar year (Monte & Edwards 2013). Income among T2 individuals requires a high level of imputation, and the impacts of these individuals on poverty rates necessitates further analysis.

transitions in poverty to cluster in four-month intervals has been shown by Edwards (2015) to affect the timing and duration of poverty spells in the 2008 Panel. To this point, if poverty transitions erroneously occur at an above average level on seam months in prior panels, having fewer seams might be advantageous for the 2014 Panel. However, if it was only the timing, not the occurrence, of poverty transitions that was misreported in the 2008 Panel, a failure in the 2014 Panel to capture transitions on non-seam months would lead the panel to understate month-to-month transitions observed in past panels. The existence and magnitude of these sample design effects in the 2008 and prior SIPP Panels suggest that moving to a single year interview may capture fewer transitions given the lack of seams within the calendar year reference period, as well as an expectation that the first interview, in this case covering a full year, may very well reflect an inflated poverty rate that appears as an outlier when compared to prior panels and subsequent waves.

2b. Income Reporting

In keeping with the original purpose of the SIPP, the redesigned 2014 Panel continues to collect data from over 80 cash income sources as well as in-kind benefits, assets, debts, tax liabilities, and participation in major government assistance programs. While the structure and order of the questionnaire content has changed, there were limited changes in the components of income or reporting methods that may have measurable impacts on the calculation of total family income.

Whereas respondents in the 2008 Panel reported a maximum of two jobs or businesses over the four-month reference period, respondents in the 2014 Panel are able to report a maximum of seven separate jobs or businesses over the twelve-month reference period. Further, the 2014 Panel reflects increased flexibility when reporting wage income. In the 2008 Panel, respondents were explicitly encouraged to report incomes in monthly amounts, and in some cases, when encouraged to refer to previous paychecks, likely reported income in the month *received* rather than the month *earned*. In the 2014 Panel, respondents were invited to report their wage and salary income in one of eight ways—hourly, weekly, biweekly, monthly, bimonthly, a monthly average, annual salary, and net annual pay. Respondents could report up to two changes in income and work schedules over the course of a given job or business spell, and monthly earnings are tied to the month in which they are *earned*, which are derived from respondents' pay schedules, pay amounts, and month duration for those paid hourly, weekly, or biweekly.

There are no sources of income collected in the 2008 Panel that are no longer collected in the 2014 Panel. However, there are some additional questions on asset sources, such as annuities, trusts, businesses owned solely as an investment, and educational savings accounts—although monthly family total income when calculating poverty status is based solely on pre-tax cash income (Smith, Chenevert, & Eggleston 2017).

2c. Family Assignment

Given that poverty status is impacted by family assignment via two dimensions, in both the assignment of the poverty threshold as well as the calculation of resources, changes in the assignment of families based on the reporting of household relationships have a direct impact on measuring poverty status. Hence, it is important to compare family assignment among SIPP Panels.

In the 2008 Panel, detailed data on household relationships among all members of the household were collected in the Household Relationship TM fielded in wave 2. For all other 2008 Panel interviews, relationship status was reported in relation to the household reference person,[8] with distinct or related subfamilies identified by the use of household spouse and child pointers. These relationships were based on the month of interview, and did not vary over the four-month reference period.

For the 2014 Panel, data is reported at the time of interview on how each household member is related to one another, as opposed to organizing relationships around a central "householder." Additionally, relationships may change over the course of the year among household members as marriages form/dissolve or members enter or exit the household. Further, the 2014 SIPP Panel implemented new relationship categories to capture and explicitly define relationships among "opposite-sex spouses" and "same-sex spouses" as well as parallel classifications for unmarried partners.

The addition of these same-sex relationship classifications in the 2014 Panel is relevant for poverty measurement as prior SIPP Panels did not allow for the reporting of same-sex marriages, and reassigned same-sex married respondents as unmarried partners. Given that poverty status is determined at the family level, prior research from the CPS ASEC found that treating same-sex married couples as unrelated partners led to higher poverty rates for these individuals as well as any related household members (Edwards & Lindstrom 2017). In wave 1 of the 2014 Panel, approximately 0.2 percent of individuals lived with a same-sex spouse in 2013 (Schondelmyer 2017).

II. METHODS

In comparing income and poverty dynamics across the 2008 and 2014 SIPP Panels, we first create a harmonized dataset combining waves 1 through 16 of the 2008 Panel with wave 1 of the 2014 Panel. This harmonization process mapped variables across panels that may have experienced variable name changes or changes in response categories.

The 2008 Panel collected data from May 2008 through November of 2013 using a rotation group interviewing schedule in an effort to manage both the interviewing workload as well as mitigate the aforementioned seam effects observed across interviews (Moore 2007). Given staggered interviewing across rotation groups, the full SIPP sample was not interviewed in select months at the beginning and end of the 2008 Panel. See Table 1 in the Appendix for the detailed 2008 Panel reference period.

While the 2014 SIPP Panel collected data referencing January 2013 through December of 2016, at this time only wave 1 data referencing January through December 2013 is available for evaluation. Given the move away from a rotation group design, all SIPP 2014 wave 1 respondents were asked to report income and demographic data for each of the calendar months in 2013. See Table 2 in the Appendix for the detailed 2014 Panel reference period.

Comparisons of poverty rates across SIPP Panels may be made at a monthly or annual level. To produce monthly poverty estimates from the 2008 Panel in months where the full sample was not interviewed, monthly person weights are inflated to account for missing rotation groups. Respondents in both SIPP Panels are included in monthly estimates if they have a valid interview in that month, have a positive monthly person weight, and are in the poverty universe that month.[9]

[8] The concept of a household reference person is present in a number of Census Bureau household surveys. Household reference persons are defined as the person, or one of the persons, who owns or rents the home.

[9] Respondents under the age of 15 who are not residing with a related family member are not in universe for poverty measures.

When producing annual estimates or measuring intra-year poverty transitions, respondents in the 2008 Panel are included in the sample if they were in universe for monthly poverty estimates for the entire calendar year and assigned a positive annual weight. Annual estimates for calendar year 2008 are not produced from the 2008 Panel given that interviewing did not begin until May of 2008. Estimates for calendar year 2013 derived from the 2008 Panel are impacted both by the closeout of the panel, which ended in November of 2013 as well as by the government shutdown of October 2013, which prohibited the interviewing of rotation group 2 in wave 16 (see U.S. Government Accountability Office 2014).[10] To produce annual estimates from the 2008 Panel for calendar year 2013, analysis is limited to rotation groups three and four and carry-forward imputation is applied for the months of November (rotation group three) and December (rotation groups three and four). As implied by its name, carry-forward imputation involves using the last observed observation for an individual and carrying through the same value for subsequent unobserved months. Annual person level weights are then multiplied by a factor of two to account for the dropped rotation groups. See Table 1 in the Appendix for the detailed 2008 Panel reference period and Table 3 for estimates of 2013 annual poverty rates across alternate calculation methods.[11]

The universe for calendar year 2013 estimates in the 2014 Panel varied slightly from the 2008 Panel. While the 2014 Panel similarly requires respondents to have a valid interview and be in the poverty universe all 12 months of the calendar year, respondents in the 2014 Panel are not required to have a valid weight for each month of the year. In months where a respondent lived overseas, was non-civilian military, or resided in an institutionalized residence (correctional facilities, nursing homes, hospitals, etc.) the respondent is excluded from monthly poverty estimates. However as long as a respondent was a non-institutionalized U.S. resident in December of 2013, the respondent was included in annual estimates for wave 1.

In order to evaluate differences in poverty dynamics across SIPP Panels, this research is primarily focused on the period of 2013, the only shared reference period across panels. However, it is important to note that annual poverty rates in the 2008 Panel showed a marked decline from 2012 to 2013. As shown in Table 6, annual poverty rates in the 2008 Panel dropped 0.9 percentage points in 2013, from a rate of 14.0 percent in 2012, to 13.0 percent in 2013—the only significant decline in annual poverty rates observed over the 2008 Panel. This compared to a 0.5 percentage point decline in the CPS ASEC, from 15.0 in 2012 to 14.5 in 2013, while the difference across these two years in the ACS was not statistically significant.

All income estimates are reported in constant 2013 dollars, and survey weights are used to produce nationally representative estimates. Standard errors are produced using the balanced repeated replication (BRR) method, the recommended method to be used with SIPP replicate weights. Given that the number of replicate weights changed across panels, from 160 in the 2008 Panel to 240 in the 2014 Panel, differences across estimates presented in this research are not calculated using replicate weights, but are evaluated using t-statistics derived from the standard errors associated with the original estimates. Statistical differences are noted at the 90 percent confidence level unless otherwise stated.

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[10] For user note details see <www.census.gov/programs-surveys/sipp/tech-documentation/user-notes/Wave-16-Rotation-2-User-Note.html>.

[11] Annual poverty estimates over the 2013 calendar year period in the 2008 Panel vary from the method described above when using all rotation groups as well as individual rotation groups one and two. However, annual estimates based on rotation groups three and four are not statistically different based on the application of carry-forward imputation methods. These findings are consistent with past literature indicating that respondents are more likely to experience episodic poverty, and less likely to experience chronic poverty, over extended reference periods (Edwards 2014).

III. FINDINGS

Below we discuss differences in income and poverty estimates across SIPP Panels. We consider a number of different factors, including the characteristics of the sample, the prevalence and value of reported income, as well as both cross-sectional and longitudinal poverty estimates.

1. Income

Table 4 displays the average percentage of respondents over the age of 18 with wage and business income, personal property income, means-tested transfer income, "other" income including Social Security, and total income for an average month over the course of 2013. The 2014 Panel observes more respondents with "other" income sources including Social Security with 32.7 percent of respondents reporting this type of income relative to 29.2 percent in the 2008 Panel for 2013. However, fewer respondents reported personal property and means-tested transfer income in the 2014 Panel over the same reference period. The percentage of respondents with wage and business income or any income reported for an average month in 2013 was not statistically different across the two panels. However, there is more wage and business income captured in the 2014 Panel—with median monthly wage and business income (conditional on receiving) of $2,989 relative to $2,765 in the 2008 Panel for 2013. The higher conditional wage and business income in the 2014 Panel primarily drives the higher total conditional income, $2,438 relative to $2,201 for the 2008 Panel for 2013.[12]

2. Demographics

One noticeable difference between the 2014 Panel and the 2008 Panel for 2013 is the large increase in the number of unrelated individuals (individuals living alone or with no additional family members) and two-person families. As can be seen in Table 4, in the 2014 Panel, 20.2 percent of respondents were unrelated individuals in an average month over the course of 2013 relative to 17.2 percent in the 2008 Panel. Moreover, 25.7 percent of respondents in the 2014 Panel lived in two-person families in 2013, compared to 22.8 percent in the 2008 Panel. The large increase in the number of respondents living with no additional family members or in two-person families in the 2014 Panel, means there are also fewer four, five, six, eight, and nine plus person families relative to the 2008 Panel for 2013.[13] It is important to remember that poverty status is calculated by aggregating all family members' incomes and then comparing this to the poverty thresholds for the corresponding family size. Previous estimates from the 2008 Panel have shown poverty rates for unrelated individuals to be among the highest across family sizes, with an average monthly rate of 23.9 percent in 2012, although poverty rates for those in two-person families were the lowest, with an average monthly rate in 2012 of 10.3 percent.[14]

In regards to respondents with no related family members, we also observe approximately twice as many college students living with no family members (2.1 percent of all respondents) in the 2014 Panel compared to 1.0 percent of respondents in the 2008 Panel for 2013. This occurs even as the percentage of respondents that are college students in the 2014 Panel (6.2 percent) is smaller than the percentage of college students in the 2008 Panel (7.5 percent) for 2013. While some of the difference

[12] Note that conditional median total income is lower than conditional median wage and business income due to the approximately 29 percent of individuals with income outside of wages or businesses, who on average have lower total median income values.

[13] Differences in the proportion of families containing seven members was not statistically different across SIPP Panels.

[14] Average monthly poverty rates for unrelated individuals in 2012 were not statistically different from poverty rates among those in families with 6 or more individuals. See previously released table packages from the 2008 Panel available at <https://census.gov/data/tables/time-series/demo/income-poverty/poverty-dynamics-09-12.html>.

might be due to attrition or family size changes throughout the course of the 2008 Panel, these compositional differences will affect comparisons for 2013 given that a larger percentage of college students with no family members are in poverty, as shown in Table 5.

As noted previously in section I.2c and shown in Table 4, there are smaller families in the 2014 Panel than in the 2008 Panel for 2013. Moreover, there are about twice as many college students in the 2014 Panel that are unrelated individuals relative to the 2008 Panel for 2013. As displayed in Table 5, the average monthly poverty rate for all college students was 27.4 percent in the 2014 Panel relative to 17.2 percent for college students in the 2008 Panel for 2013. These differences are largely driven by having about twice as many college students living as unrelated individuals (residing alone or with no relatives as shown in Table 4) with average monthly poverty rates among this group 56.1 percent in the 2014 Panel relative to 40.3 percent in the 2008 Panel for 2013 (Table 5). To make the estimates from the 2014 Panel and 2008 Panel more comparable for 2013, we estimate average monthly poverty rates for 2013 excluding non-family (unrelated individual) college students. We also calculate an average monthly poverty rate excluding all unrelated individuals. The average monthly poverty results are displayed in Table 5. When excluding unrelated individuals in college, as well as when excluding all unrelated individuals, average monthly poverty estimates across panels for 2013 are not statistically different. However, average monthly poverty rates for 2013 are higher for two-person families in the 2014 Panel (11.0 percent) relative to 10.1 percent in the 2008 Panel, while all other family sizes differences across the two panels for families of three or more persons are not statistically significant.

3. Annual Poverty

As shown in Table 6, the 2013 annual poverty rate is 16.3 percent in the 2014 Panel. This represents a 3.2 percentage point increase in poverty over the same period in the 2008 Panel. Further, while annual poverty estimates in the 2008 Panel were consistently at least 1.0 percentage point lower than rates derived from the CPS ASEC and ACS, the 2013 poverty rate of 16.3 percent in the 2014 Panel is 1.5 percentage points *higher* than the 2013 rate in the CPS ASEC, and 0.5 percentage points *higher* than the 2013 ACS poverty rate.

While neither the CPS ASEC nor ACS showed a statistical change in annual poverty rates from 2012 to 2013, year-to-year interpretations diverge depending on the SIPP Panel used to derive 2013 estimates. Using estimates solely derived from the 2008 SIPP Panel, annual poverty declines 0.9 percentage points—from 14.0 percent in 2012 to 13.0 percent in 2013. Alternatively, estimates from the redesigned SIPP Panel indicate a 2.3 percentage point *increase* in poverty from 2012 to 2013, relative to the 2012 rate from the 2008 Panel of 14.0 percent.

Table 7 breaks out differences in annual poverty estimates across SIPP Panels at various points of the income-to-poverty distribution. As shown in Table 7, increases in the proportion of individuals living below 50 percent of their annual poverty threshold primarily account for differences in annual poverty rates across panels, with the proportion living in poverty-but above 50 percent of their threshold-not statistically different across panels. Estimates of those living below 50 percent of their poverty threshold in 2013 increases from 4.6 percent of individuals interviewed in the 2008 Panel, to 8.2 percent of individuals in the 2014 Panel. The proportion living above 200 percent of poverty is not statistically different across panels, with shifts in the income-to-poverty ratio distribution across panels being driven by a hollowing out of those at ratios from 100 to 125 percent, and 125 to 200 percent of the poverty line, a difference of 0.9 and 2.9 percentage points respectively.

One potential concern is how the annual poverty universe is affecting these estimates. Since the reference period for the 2014 Panel is the previous year, essentially all respondents are in the annual universe. However, in the 2008 Panel, many respondents are excluded from the annual sample due to attrition across the three or four interviews that cover a calendar year. If attrition is non-random, direct comparisons of these estimates could be biased. To test this, we examine the monthly poverty rate in January 2013 of the 2008 Panel among respondents in the annual universe relative to those that are not included in the annual poverty universe, but are in the sample for the month January 2013. There are 59 million people not in the 2013 annual poverty universe that are in the 2008 Panel in January of 2013 while 251 million are present the entire calendar year and included in the annual universe.[15] The 59 million individuals not in the annual universe have a poverty rate in January of 24.6 percent relative to 14.9 percent among the 251 million people in the annual universe. Assuming a proportional effect on the annual rate relative to the January rate, if the annual rate had included these 2008 Panel respondents who exited the survey over the course of the year, 2013 annual poverty rates would increase by 1.9 percentage points as measured in the 2008 Panel (not displayed in table).

4. Trends Across Months

Over the course of 2013, monthly poverty rates as measured in the redesigned 2014 SIPP Panel declined from 17.5 percent in January to 16.4 percent in December. As shown in Table 8 and Figure 1, monthly poverty estimates in the 2014 Panel range from a high of 18.7 percent in February 2013, to a low of 16.2 percent in October 2013.[16] Consistent with annual comparisons across SIPP Panels, in every month from January to November 2013, monthly poverty as measured in the 2014 Panel was at least 0.8 percentage points higher than estimates from the 2008 Panel.[17] However, both the 2008 and 2014 Panels showed consistent trends over the course of the year, with monthly poverty declining over the course of 2013 in both panels.

When applying regression models to evaluate monthly poverty across SIPP Panels when controlling for month effects, we find significant overall month effects accounting for higher poverty rates from January to March regardless of survey, with no significant monthly interaction effects by panel over the course of the year. However, when controlling for these month effects, the model still identifies an overall panel effect that accounts for a 1.1 percentage point increase in poverty rates among respondents from the 2014 Panel for any given month in 2013.

As previously discussed, the phenomenon of higher monthly poverty rates across successive panels of the SIPP has been well documented since the 1996 Panel redesign (Czajka, Mabli, & Cody 2008). Until wave 2 of the 2014 Panel is released, it remains difficult to assess whether a "wave 1 effect" may be contributing to the divergence in monthly poverty rates across panels, and if so whether that effect is more or less pronounced compared to prior panels. While the 2008 Panel did not share any overlapping reference months with the reference period of the 2004 Panel, there were 3 shared reference months across the 2001 and 2004 SIPP Panels, October to December of 2003. Further, while there was no significant survey redesign across the 2001 and 2004 Panels, comparisons of monthly poverty rates across panels provide a reasonable baseline for comparison.

As shown in Figure 1, wave 1 of the 2004 Panel produced estimates of monthly poverty in October of 2003 that were 2.5 percentage points higher than estimates for the same month based on data

[15] For these estimates, we use the January 2013 weight.
[16] The monthly poverty rate derived from the 2014 Panel of 16.2 percent in October 2013 was not statistically different from the monthly rates in November or December 2013, 16.5 and 16.4 percent, respectively.
[17] Estimates for December 2013 are not available in the 2008 Panel.

from the 2001 Panel, while November rates were 0.8 percentage points higher. However, by December of 2003 there was no significant difference in poverty rates across panels. No reference month in 2013 has a larger difference across the 2008 and 2014 Panels than observed for October and November across the 2001 and 2004 Panels.

5. Poverty Dynamics

Differences across monthly and annual poverty rates were narrower in the 2014 Panel compared to the prior SIPP Panel. In the 2008 Panel, the 2013 annual poverty rate (13.0 percent) was lower than all monthly poverty rates, and a full 1.9 percentage points lower than the lowest monthly poverty rate (October—15.0 percent).[18] In contrast, the 2013 annual poverty rate as measured in the 2014 Panel (16.3 percent) was not statistically different from the monthly rates in October, November, and December. This raises concerns related to the capture of poverty transitions, as historic SIPP estimates have shown individuals are more likely to experience poverty in a given month than over the entire reference period, as income shortfalls have historically reflected short-term experiences over the course of a year (Edwards 2014).

As the only nationally representative household survey to collect data on monthly income and poverty status, the SIPP serves as the sole source of government statistics on intra-year poverty spells and transitions. The Census Bureau defines a poverty spell as a period of 2 or more consecutive months spent in poverty, with multiple poverty spells separated by at least two consecutive months above the poverty threshold (Edwards 2014). While poverty dynamics have typically been measured over a multi-year period, below we evaluate differences in intra-year poverty spell transitions across the 2008 and 2014 SIPP Panels. By definition, the maximum number of poverty spells experienced by any individual over the course of a single year is limited to 3.

As measured in the 2014 Panel, 20.6 percent of individuals in 2013 experienced at least one poverty spell lasting 2 or more months, which unlike monthly or annual estimates, reflects a 1.3 percentage point decline in the incidence of poverty compared to estimates for the same period generated from the 2008 Panel. Episodic poverty rates which capture the prevalence of poverty spells lasting 2 or more months are displayed in Table 9. However, we also find that individuals interviewed in the 2014 Panel are much more likely to experience chronic poverty, defined as being in poverty all 12 months of the calendar year. While 8.6 percent of individuals interviewed in the 2008 Panel were in poverty every month of 2013, that proportion rises 4.0 percentage points when using data from the 2014 Panel, to a rate of 12.6 percent.

Given that the episodic poverty rate as measured in the 2014 Panel is lower than any calendar year covered by the 2008 Panel, while the chronic poverty rate is about 50 percent higher, concerns arise regarding the capture of poverty transitions, both into, and out of poverty, as reported in the 2014 Panel. Table 10 presents both person and spell level data across the panels, allowing for comparisons in both the prevalence, and characteristics of observed poverty spells. While the observation of multiple poverty spells within a calendar year has been relatively low across all years of the 2008 Panel, we nonetheless see significant declines in the percent of individuals in the 2014 Panel who experience multiple poverty spells. This likely reflects a number of implications related to observation and opportunity, if transitions in poverty status do not occur they cannot be observed, and individuals are unable to experience multiple spells if they remain in poverty for the entire reference period.

[18] The monthly poverty rate of 15.0 percent for October 2013 as measured in the 2008 Panel was not statistically different from the poverty rates in August, September, and November.

When evaluating the characteristics of poverty spells observed within the calendar year, as shown in Table 10, we see stark differences in the characteristics of poverty spells over the course of 2013 by SIPP Panel. Particularly striking is the proportion of poverty spells lasting the entire calendar year—which increases a full 24.6 percentage points across panels, from 37.8 percent of 2013 poverty spells in the 2008 Panel, to 62.3 percent of spells in the 2014 Panel. While 13.7 percent of poverty spells observed in 2013 among respondents to the 2008 Panel began and ended within the calendar year reference period, that proportion drops by nearly half among respondents in the 2014 Panel, to 6.5 percent.

Previous research (Edwards 2015) has discussed the limitations of measuring poverty spell durations within a single calendar year. However, we nonetheless accept these limitations with the caveat that estimates are not expected to provide a comprehensive assessment of poverty dynamics over the period, but rather to evaluate differences in observed spell durations across SIPP Panels. To do so, we produce life table survival curves and hazard functions when including (as well as excluding) left-censored poverty spells[19] to evaluate differences in the conditional probability of spell duration and exit probabilities over the course of the poverty spell. The lifetable survival curves shown in Figure 2 and Figure 3 plot the conditional probability of exiting a poverty spell in a given month over the course of the calendar year. Therefore, the survival rate in a given month (t) can be interpreted as the dependent probability of a poverty spell lasting to month (t) or beyond. Given that poverty spells are defined as a period of 2 or more consecutive months in poverty, 100 percent of spells are predicted to last until month 2 or beyond.

As shown in Figure 2, if all poverty spells are included, the probability of a spell lasting 6 or more months over the course of a year in the 2008 SIPP Panel fluctuates from approximately 66.4 to 70.0 percent. In comparison, for those experiencing a poverty spell in the 2014 Panel, the likelihood of that spell lasting 6 or more months increases to 83.5 percent. Figure 2 also graphs the hazard ratio, the conditional likelihood of exiting poverty in a given months, across panels. When evaluating the likelihood of a poverty spell ending after any given month, we see strong evidence of the seam effect in the 2008 Panel, with spikes in the likelihood of exiting poverty from month 4 to 5, although this seam effect on poverty spell exits from months 4 to 5 is not present among spells observed in 2013. For poverty spells observed in the 2014 Panel, the likelihood of exiting poverty in a given month never increases to more than 5 percent. To determine if seams are driving all of the variation across the panels, we also estimate a Cox model controlling for poverty exits occurring on a seam month in the 2008 Panel for 2013 and we continue to observe fewer transitions out of poverty in the 2014 Panel relative to the 2008 Panel, indicating that the 2014 Panel is capturing fewer transitions throughout a year.

As the presence of left censored spells (poverty spells with no observed start date within the reference period) are known to introduce bias when estimating duration models, those cases are typically dropped when predicting the likelihood of spell exits. As discussed previously, 81.6 percent of all spells observed in wave 1 of the 2014 Panel had no observed start within the reference period, compared to 62.8 percent of 2013 poverty spells observed in the 2008 Panel. While this reflects a separate concern, once left censored spells are removed from the sample we find considerable improvement in the consistency of spell durations and exit probabilities across SIPP Panels. As shown in Figure 3 the probability of a poverty spell lasting 6 or more months in the 2008 Panel fluctuates from approximately 50.6 to 61.4 percent, with spells beginning in 2013 more likely to extend to 6 or more months (61.5 percent) compared to other years of the 2008 Panel. For individuals entering poverty in the 2014 Panel, 61.4 percent of individuals experienced spells lasting 6 months or longer, not statistically different from the probability

[19] Spells are considered left-censored if there is no observed start to the poverty spell within the calendar year reference period.

observed in 2013 of the 2008 Panel. Further, the conditional probability of exiting a poverty spell from month 3 to 4, 5 to 6, and 9 to 10 is higher for respondents in the 2014 Panel than among those in the 2008 Panel. However, the likelihood of a poverty spell ending from month 4 to 5 (across interviews in the 2008 Panel) is higher among spells observed in the 2008 Panel in 2013.

IV. IMPLICATIONS AND CONCLUSIONS

The 2014 Panel arguably marked the most major redesign in the SIPP's history. For 2013, higher monthly and average monthly poverty rates are observed in the 2014 Panel relative to the 2008 Panel. Average monthly reporting of income receipt is not statistically different across SIPP Panels for 2013, and median monthly income is slightly higher in the 2014 Panel relative to the 2008 Panel. However, average monthly poverty rates are higher as more unrelated individuals are observed in the 2014 Panel, who are associated with higher poverty rates. For researchers studying poverty and income estimates across the two panels, it is important to consider these differences as average monthly poverty rates excluding unrelated college students, or all unrelated individuals, are not statistically different across the two panels.

Researchers should also consider universes when making annual comparisons between the 2014 SIPP Panel and earlier panels. Given that the 2014 Panel reference period is the prior year relative to the preceding four-month period in earlier panels, respondents are significantly more likely to be observed the full calendar year than in previous panels due to higher attrition across waves in earlier panels. While annual poverty estimates are around three percentage points larger in the 2014 Panel than in the 2008 Panel for 2013, much of this difference is driven by the attrition of high poverty respondents in the 2008 Panel.

Lastly, we find fewer transitions out of poverty in the 2014 Panel relative to the 2008 Panel, which is likely due to income being reported at an annual frequency rather than every four months. Our findings suggest that around twice as many people stay in poverty every month of the calendar year in the 2014 Panel relative to the 2008 Panel, with fewer transitions even after accounting for seam effects in earlier panels. Hence, the new annual interview frequency in the 2014 Panel captures a more complete and representative annual universe, although at a cost of capturing fewer month-to-month transitions in poverty status.

Although discussed, this research is limited in evaluating how survey phenomenon such as the wave 1 and seam effect may be impacting this first data release from the 2014 Panel. With the future release of data from wave 2 of the 2014 Panel, we expect to be able to answer remaining questions as to whether poverty rates will sharply decline in wave 2 and whether transitions in poverty status are more prevalent across years rather than within years. We also plan to further explore income differences across SIPP Panels, as comparisons at the median fail to capture the changes we observe at the lower end of the income-to-poverty distribution.

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Appendix

Table 1. 2008 SIPP Panel Reference Months

Recession

Rotation Group				Interview Month	Wave
1	2	3	4		
May-08 [1]	Jun-08 [1]	Jul-08 [1]	Aug-08	Sep-08	Wave 1
Jun-08 [1]	Jul-08 [1]	Aug-08	Sep-08	Oct-08	
Jul-08 [1]	Aug-08	Sep-08	Oct-08	Nov-08	
Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	
Sep-08	Oct-08	Nov-08	Dec-08	Jan-09	Wave 2
Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	
Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	
Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	
Jan-09	Feb-09	Mar-09	Apr-09	May-09	Wave 3
Feb-09	Mar-09	Apr-09	May-09	Jun-09	
Mar-09	Apr-09	May-09	Jun-09	Jul-09	
Apr-09	May-09	Jun-09	Jul-09	Aug-09	
May-09	Jun-09	Jul-09	Aug-09	Sep-09	Wave 4
Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	
Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	
Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	
Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Wave 5
Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	
Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	
Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	
Jan-10	Feb-10	Mar-10	Apr-10	May-10	Wave 6
Feb-10	Mar-10	Apr-10	May-10	Jun-10	
Mar-10	Apr-10	May-10	Jun-10	Jul-10	
Apr-10	May-10	Jun-10	Jul-10	Aug-10	
May-10	Jun-10	Jul-10	Aug-10	Sep-10	Wave 7
Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	
Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	
Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	
Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Wave 8
Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	
Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	
Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	

Rotation Group				Interview Month	Wave
1	2	3	4		
Jan-11	Feb-11	Mar-11	Apr-11	May-11	Wave 9
Feb-11	Mar-11	Apr-11	May-11	Jun-11	
Mar-11	Apr-11	May-11	Jun-11	Jul-11	
Apr-11	May-11	Jun-11	Jul-11	Aug-11	
May-11	Jun-11	Jul-11	Aug-11	Sep-11	Wave 10
Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	
Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	
Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	
Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Wave 11
Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	
Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	
Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	
Jan-12	Feb-12	Mar-12	Apr-12	May-12	Wave 12
Feb-12	Mar-12	Apr-12	May-12	Jun-12	
Mar-12	Apr-12	May-12	Jun-12	Jul-12	
Apr-12	May-12	Jun-12	Jul-12	Aug-12	
May-12	Jun-12	Jul-12	Aug-12	Sep-12	Wave 13
Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	
Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	
Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	
Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Wave 14
Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	
Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	
Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	
Jan-13	Feb-13	Mar-13	Apr-13	May-13	Wave 15
Feb-13	Mar-13	Apr-13	May-13	Jun-13 [1]	
Mar-13	Apr-13	May-13	Jun-13 [1]	Jul-13 [1]	
Apr-13	May-13	Jun-13 [1]	Jul-13 [1]	Aug-13	
May-13	Jun-13 [1]	Jul-13 [1]	Aug-13 [1]	Sep-13	Wave 16
Jun-13 [1]	Jul-13 [1]	Aug-13 [1]	Sep-13 [1]	Oct-13	
Jul-13 [1]	Aug-13 [1]	Sep-13 [1]	Oct-13 [1]	Nov-13	
Aug-13 [1]	Sep-13 [1]	Oct-13 [1]	Nov-13 [1]	Dec-13	

[1] Monthly estimates are missing select rotation groups. Estimates in these months reflect weight adjustments to account for missing rotation groups.

Note: Due to the lapse in data collection due to the federal government shutdown in October of 2013, there is no data for rotation group two in wave 16.

For more information on the 2008 SIPP Panel, see <https://www.census.gov/sipp/>.

Table 2. 2014 SIPP Panel Reference Months

Reference Month	Interview Month	Wave
Jan-13	February through May 2014	Wave 1
Feb-13		
Mar-13		
Apr-13		
May-13		
Jun-13		
Jul-13		
Aug-13		
Sep-13		
Oct-13		
Nov-13		
Dec-13		
Jan-14	February through May 2015	Wave 2
Feb-14		
Mar-14		
Apr-14		
May-14		
Jun-14		
Jul-14		
Aug-14		
Sep-14		
Oct-14		
Nov-14		
Dec-14		
Jan-15	April through July 2016	Wave 3
Feb-15		
Mar-15		
Apr-15		
May-15		
Jun-15		
Jul-15		
Aug-15		
Sep-15		
Oct-15		
Nov-15		
Dec-15		
Jan-16	February through June 2017	Wave 4
Feb-16		
Mar-16		
Apr-16		
May-16		
Jun-16		
Jul-16		
Aug-16		
Sep-16		
Oct-16		
Nov-16		
Dec-16		

For more information on the 2014 SIPP Panel, see <https://www.census.gov/sipp/>.

Table 3. 2013 Annual Poverty Rates from the 2008 SIPP Panel

	Months with reported data	Months with imputed data	Weight inflation factor	Unweighted n	Weighted n (1,000s)	Annual poverty rates	Poor all months	Poor 2 or more months
All Rotation Groups								
With Carry Forward Imputation	Varries	Varries	none	64,159	307,593	14.2 (0.3)	10.2	20.8 (0.4)
Without Imputation	Varries	0				14.2 (0.3)	(0.2)	20.3 (0.4)
Rotation Group 1								
With Carry Forward Imputation	8	4	x4	16,420	307,999	14.9 (0.5)	11.2	21.4 (0.6)
Without Imputation	8	0				14.8 (0.6)	(0.5)	20.7 (0.6)
Rotation Group 2								
With Carry Forward Imputation	5	6	x4	17,440	308,210	15.9 (0.5)	12.4	18.0 (0.6)
Without Imputation	5	0				15.8 (0.5)	(0.5)	17.3 (0.6)
Rotation Group 3								
With Carry Forward Imputation	10	2	x4	15,359	307,080	12.3 (0.5)	8.0	21.5 (0.6)
Without Imputation	10	0				12.6 (0.5)	(0.4)	21.2 (0.6)
Rotation Group 4								
With Carry Forward Imputation	11	1	x4	14,940	307,085	13.8 (0.6)	9.2	22.3 (0.7)
Without Imputation	11	0				13.7 (0.6)	(0.5)	22.0 (0.7)
Rotation Groups 3 & 4								
With Carry Forward Imputation	Varries	Varries	x2	30,299	307,083	13.0 (0.4)	8.6	21.9 (0.5)
Without Imputation	Varries	0				13.2 (0.4)	(0.3)	21.6 (0.5)

Source: U.S. Census Bureau, 2008 SIPP Panel.
Note: Annual poverty rates are based on the observed reference period, which may not include all 12 months of the calendar year. Estimates of the population in poverty the entire reference period are consistent across imputation methods.

Table 4. Income and Sample Characteristics across 2008 and 2014 SIPP Panels

	2014 Panel		2008 Panel		Difference	
	Estimate	SE	Estimate	SE		
Reported Income						
Wage & Business	% 58.6	0.2	% 58.2	0.3	0.5	
Property	% 38.8	0.3	% 42.0	0.4	-3.2	*
Transfer	% 3.7	0.1	% 4.2	0.1	-0.5	*
Other & Social Security	% 32.7	0.2	% 29.2	0.2	3.5	*
Any Income	% 87.3	0.1	% 87.0	0.2	0.3	
Conditional Median Monthly Income						
Wage & Business	$ 2989	46.2	$ 2765	39.1	$ 224	*
Property	$ 11	24.3	$ 3	17.1	$ 8	
Transfer	$ 580	9.6	$ 637	8.8	-$ 57	*
Other & Social Security	$ 1259	15.6	$ 1266	21.4	-$ 7	
Total Income	$ 2438	25.8	$ 2201	29.1	$ 237	*
Sample Characteristics						
Unrelated Individual (UI)	% 20.2	0.2	% 17.2	0.1	3.0	*
Family size =2	% 25.7	0.2	% 22.8	0.2	2.8	*
Family size =3	% 17.7	0.3	% 17.9	0.3	-0.2	
Family size =4	% 18.6	0.3	% 20.5	0.3	-1.8	*
Family size =5	% 10.3	0.3	% 12.1	0.3	-1.8	*
Family size =6	% 4.4	0.2	% 5.4	0.2	-0.9	*
Family size =7	% 1.8	0.1	% 2.1	0.2	-0.3	
Family size =8	% 0.7	0.1	% 1.1	0.1	-0.3	*
Family size =9 or more	% 0.6	0.1	% 1.0	0.1	-0.3	*
Enrolled in college	% 6.2	0.1	% 7.5	0.1	-1.3	*
Enrolled & UI	% 2.1	0.1	% 1.0	0.1	1.1	*

Source: U.S. Census Bureau, 2008 and 2014 SIPP Panels.
Note: Estimates calculated as an average across months in calendar year 2013.
*Differences significant at the 90 percent confidence level.

Table 5. Average Monthly Poverty Rates by Family Status and College Enrollment across Panels

	2014 Panel			2008 Panel			Difference
	Estimate		SE	Estimate		SE	
All People	%	17.1	0.21	%	16.1	0.44	1.0 *
Unrelated Individual	%	27.3	0.42	%	23.2	0.50	4.0 *
Unrelated Individual, Not Enrolled in College	%	24.0	0.42	%	22.2	0.50	1.8 *
Unrelated Individual, Enrolled in College	%	56.1	1.47	%	40.3	2.30	15.8 *
Enrolled in College	%	27.4	0.79	%	17.2	0.65	10.2 *
Excluding Unrelated Individuals and Students	%	16.3	0.21	%	15.9	0.43	0.4
In Families	%	14.5	0.24	%	14.7	0.49	-0.2
Family size = 2	%	11.0	0.33	%	10.1	0.35	0.9 *
Family size = 3	%	13.7	0.52	%	14.0	0.83	-0.3
Family size = 4	%	14.3	0.47	%	13.5	0.71	0.8
Family size = 5	%	18.9	0.90	%	20.1	0.98	-1.2
Family size = 6	%	21.9	1.71	%	22.6	1.68	-0.7
Family size = 7	%	24.7	2.58	%	23.8	3.24	0.9
Family size = 8	%	30.1	5.08	%	22.8	3.55	7.3
Family size = 9 or more	%	20.1	5.59	%	20.7	4.63	-0.6

Source: U.S. Census Bureau, 2008 and 2014 SIPP Panels.
Note: Estimates calculated as an average across months in calendar year 2013.
*Differences significant at the 90 percent confidence level.

Table 6. Annual Poverty Rates across Nationally Representative Household Surveys

	Annual Poverty				
	2009	2010	2011	2012	2013
CPS ASEC	14.3	15.1	15.0	15.0	14.8
	(0.2)	(0.2)	(0.1)	(0.2)	(0.2)
ACS	14.3	15.3	15.9	15.9	15.8
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
2008 SIPP	13.2	13.6	14.1	14.0	13.0
	(0.2)	(0.3)	(0.3)	(0.3)	(0.4)
2014 SIPP					16.3
					(0.2)

Source: U.S. Census Bureau, Current Population Survey Annual Social and Economic Supplement (CPS ASEC), American Community Survey (ACS), Survey of Income and Program Participation (SIPP).
Note: The 2014 CPS ASEC included redesigned questions for income and health insurance coverage. All of the approximately 98,000 addresses were eligible to receive the redesigned set of health insurance coverage questions. The redesigned income questions were implemented to a subsample of these 98,000 addresses using a probability split panel design. Approximately 68,000 addresses were eligible to receive a set of income questions similar to those used in the 2013 CPS ASEC and the remaining 30,000 addresses were eligible to receive the redesigned income questions. The source of the 2013 data for this table is the portion of the CPS ASEC sample which received the redesigned income questions, approximately 30,000 addresses.
Note: Estimates from the 2008 SIPP Panel for calendrer year 2013 are limited to rotation groups 3 and 4, weights are adjusted to account for missing rotation groups.

Table 7. Annual Income to Poverty Ratios across SIPP Panels

Income-to-Poverty Ratio	2008 SIPP Panel 2009	2010	2011	2012	2013	2014 SIPP Panel 2013	2013 Difference
Under .50	5.0	5.1	5.0	4.9	4.6	8.2	3.7*
	(0.1)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)
.50 to < 1.0	8.2	8.5	9.1	9.1	8.5	8.1	-0.4
	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.2)	(0.4)
1.0 to < 1.25	4.9	5.2	5.3	5.2	5.4	4.5	-0.9*
	(0.1)	(0.2)	(0.2)	(0.2)	(0.3)	(0.1)	(0.3)
1.25 to < 2.0	15.1	15.6	15.9	15.7	16.7	13.8	-2.9*
	(0.2)	(0.2)	(0.3)	(0.3)	(0.4)	(0.2)	(0.5)
2.0 and higher	66.8	65.6	64.7	65.1	64.9	65.5	0.6
	(0.3)	(0.4)	(0.4)	(0.4)	(0.5)	(0.3)	(0.6)
Unweighted n	73,695	67,452	64,692	60,894	30,299	71,859	
Weighted n (1,000s)	294,345	297,531	301,434	304,691	307,083	311,936	

Source: U.S. Census Bureau, 2008 and 2014 SIPP Panels.
Note: Standard errors shown in parentheses.
*Differences significant at the 90 percent confidence level.

Table 8. 2013 Monthly Poverty Rates across SIPP Panels

Month	2008 SIPP	2014 SIPP	Difference
Jan-13	16.6	17.5	1.0*
	(0.3)	(0.2)	
Feb-13	16.8	18.7	1.8*
	(0.3)	(0.2)	
Mar-13	16.7	17.5	0.8*
	(0.3)	(0.2)	
Apr-13	16.3	17.5	1.1*
	(0.3)	(0.2)	
May-13	15.9	17.1	1.1*
	(0.3)	(0.2)	
Jun-13	16.4	17.2	0.8*
	(0.3)	(0.2)	
Jul-13	16.0	17.1	1.1*
	(0.3)	(0.2)	
Aug-13	15.5	16.8	1.3*
	(0.4)	(0.2)	
Sep-13	15.2	16.8	1.6*
	(0.5)	(0.2)	
Oct-13	15.0	16.2	1.2*
	(0.4)	(0.2)	
Nov-13	15.4	16.5	1.1*
	(0.6)	(0.2)	
Dec-13	(N/A)	16.4	(N/A)
		(0.3)	

Source: U.S. Census Bureau, 2008 and 2014 SIPP Panels.
Note: Weights are inflated when producing estimates for June to November 2013 in the 2008 Panel to reflect missing rotation groups. Estimates for December 2013 are not available in the 2008 Panel. Standard errors shown in parentheses.
*Differences significant at the 90 percent confidence level.

Table 9. Annual, Episodic, and Chronic Poverty

	2008 SIPP Panel					2014 SIPP Panel	2013
	2009	2010	2011	2012	2013	2013	Difference
Annual poverty rate	13.2	13.6	14.1	14.0	13.0	16.3	3.2*
	(0.2)	(0.3)	(0.3)	(0.3)	(0.4)	(0.2)	(0.5)
Episodic poverty rate	23.0	23.2	23.8	23.1	21.9	20.6	-1.3*
	(0.3)	(0.3)	(0.3)	(0.3)	(0.5)	(0.2)	(0.5)
Chronic poverty rate	7.3	8.1	8.3	8.4	8.6	12.6	4.0*
	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.2)	(0.4)
Unweighted n	73,695	67,452	64,692	60,894	30,299	71,859	
Weighted n (1,000s)	294,345	297,531	301,434	304,691	307,083	311,936	

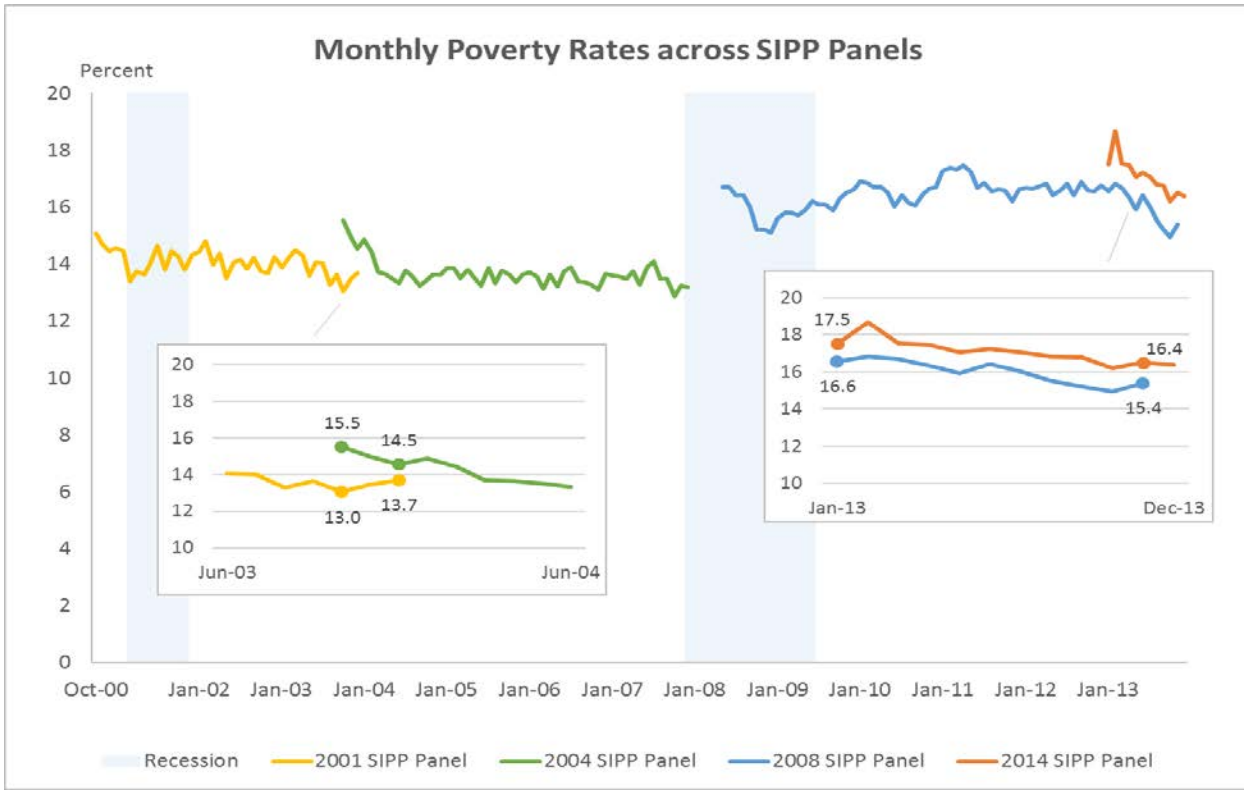
Source: U.S. Census Bureau, 2008, and 2014 SIPP Panels.
Note: Episodic poverty is defined when experiencing 2 or more consecutive months in poverty. Chronic poverty is defined when experiencing poverty in every month over the calendar year. Estimates from the 2008 SIPP Panel for reference year 2013 are limited to rotation groups 3 and 4, weights are adjusted to account for missing rotation groups.
*Differences significant at the 90 percent confidence level.

Table 10. Presence and Characteristics of Poverty Spells across SIPP Panels

	2008 SIPP Panel					2014 SIPP Panel	2013
	2009	2010	2011	2012	2013	2013	Difference
Never poor	77.0	76.8	76.2	76.9	78.1	79.4	1.3*
	(0.3)	(0.3)	(0.3)	(0.3)	(0.5)	(0.2)	(0.5)
1 Spell	21.0	20.6	21.7	21.3	20.2	19.9	-0.3
	(0.3)	(0.3)	(0.3)	(0.3)	(0.5)	(0.2)	(0.5)
2 Spells	2.0	2.2	2.0	1.7	1.6	0.7	0.9*
	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)	-	(0.2)
3 Spells	-	0.1	0.1	0.1	0.1	-	-0.1*
	-	-	-	-	-	-	(0)
Unweighted n	73,695	67,452	64,692	60,894	30,299	71,859	
Left censored only	23.9	24.6	25.1	76.9	25.0	19.3	-5.7*
	(0.4)	(0.4)	(0.5)	(0.5)	(0.8)	(0.4)	(0.9)
Right censored only	25.6	22.5	22.1	23.7	23.5	11.8	-11.7*
	(0.5)	(0.4)	(0.5)	(0.5)	(0.8)	(0.3)	(0.8)
Both Left & Right Censored	31.5	34.3	34.6	35.6	37.8	62.3	24.6*
	(0.5)	(0.6)	(0.6)	(0.6)	(1)	(0.5)	(1.1)
Not censored	18.9	18.6	18.2	17.6	13.7	6.5	-7.2*
	(0.4)	(0.5)	(0.5)	(0.5)	(0.8)	(0.3)	(0.8)
Unweighted n	18,016	16,996	16,261	14,738	6,714	17,237	

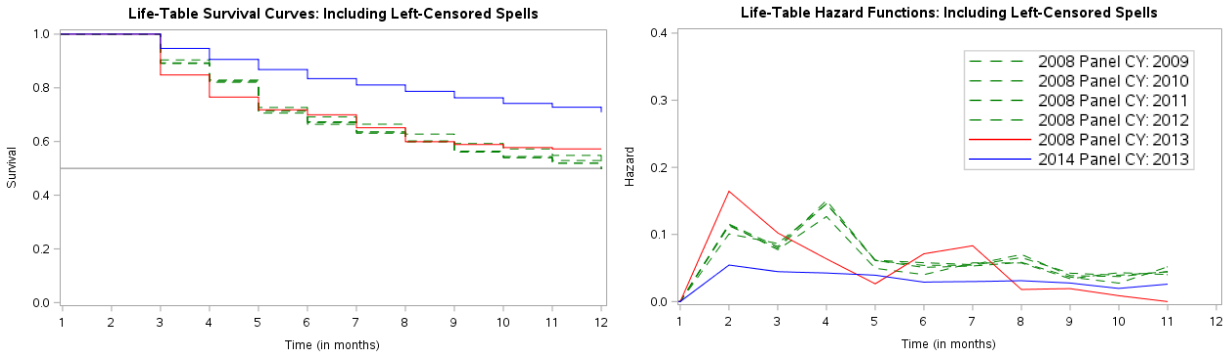
Source: U.S. Census Bureau, 2008 and 2014 SIPP Panels.
Note: Spells are considered left-censored if there is no observed start to the poverty spell within the calendar year reference period. Spells are considered right-censored if there is no observed end to the poverty spell within the calendar year reference period. Estimates from the 2008 SIPP Panel for reference year 2013 are limited to rotation groups 3 and 4, weights are adjusted to account for missing rotation groups.
- Represents or rounds to zero.
*Differences significant at the 90 percent confidence level.

Figure 1. Monthly Poverty Rates across SIPP Panels



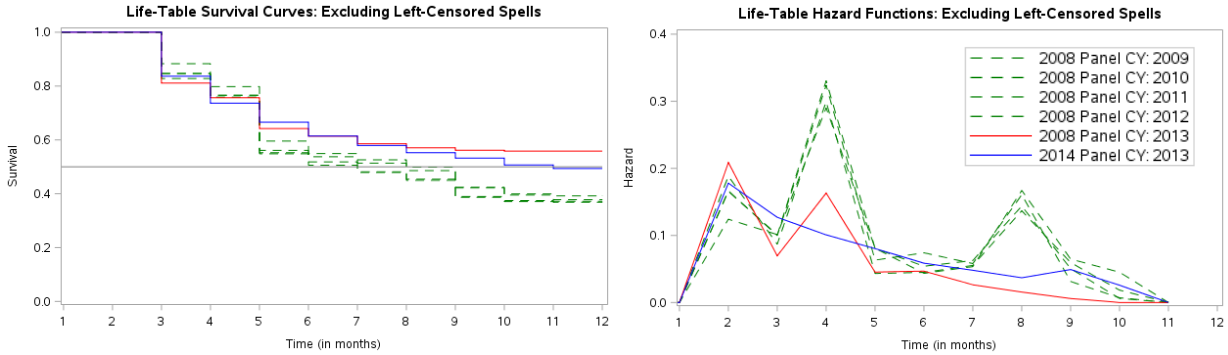
Source: U.S. Census Bureau, 2001, 2004, 2008, and 2014 SIPP Panels.
Note: Weights are inflated when producing estimates for October to December 2000 and October to December 2003 in the 2001 Panel to reflect missing rotation groups. Weights are inflated when producing estimates for October to December 2003 and October to December 2007 in the 2004 Panel to reflect missing rotation groups. Weights are inflated when producing estimates for May to July 2008 and June to November 2013 in the 2008 Panel to reflect missing rotation groups. Estimates for December 2013 are not available in the 2008 Panel.

Figure 2. Life-Table Survival Curves and Hazard Functions: All Spells



Source: U.S. Census Bureau, 2008 and 2014 SIPP Panels.
Note: Spells are considered left-censored if there is no observed start to the poverty spell within the calendar year reference period. Spells are considered right-censored if there is no observed end to the poverty spell within the calendar year reference period. Estimates from the 2008 SIPP Panel for reference year 2013 are limited to rotation groups 3 and 4, weights are adjusted to account for missing rotation groups.
Spells are considered left-censored if there is no observed start to the poverty spell within the calendar year reference period.

Figure 3. Life-Table Survival Curves and Hazard Functions: Excluding Left-Censored Spells



Source: U.S. Census Bureau, 2008 and 2014 SIPP Panels.
Note: Spells are considered left-censored if there is no observed start to the poverty spell within the calendar year reference period. Spells are considered right-censored if there is no observed end to the poverty spell within the calendar year reference period. Estimates from the 2008 SIPP Panel for reference year 2013 are limited to rotation groups 3 and 4, weights are adjusted to account for missing rotation groups.
Spells are considered left-censored if there is no observed start to the poverty spell within the calendar year reference period.