Poverty Dynamics: An Overview of Longitudinal Poverty Estimates Produced by the United States Census Bureau

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Abstract

Longitudinal measures of income and poverty based on following the same people over time provide insights into the dynamic nature of economic well-being and mobility. These longitudinal estimates allow policy makers, academic researchers, and the general public to paint a more detailed portrait of poverty than the one provided by more conventional measures that capture a snapshot of well-being at a single time period. This paper describes poverty using measures with different time horizons and studies the frequency of transitions into and out of poverty in the United States. It further examines how poverty dynamics vary across demographic groups. The longitudinal poverty measures discussed include annual, episodic, and chronic poverty rates, as well as poverty entry and exit rates. These estimates are produced using data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP). The SIPP is a longitudinal survey which provides monthly data on family composition and economic well-being. The estimates in the paper cover the period of January 2013 to December 2014 from the 2014 Panel of the SIPP and the period of January 2011 to December 2012 from the 2008 Panel of the SIPP.

[1] 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, go to <www.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements.html>.
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-FY20-POP001-0025

Traditional measures of poverty quantify the number of individuals in poverty within a given time period, traditionally one year, but do not provide information on the dynamics of poverty over the course of that time period—such as the length and frequency of poverty spells or the probability of individuals' exiting or entering a poverty spell. These measures of longitudinal poverty are useful in painting a comprehensive picture of economic well-being over a period of time. Longitudinal poverty measures can only be produced using data sources that track individuals' poverty status over time. One such source is the U.S. Census Bureau's Survey of Income and Program Participation (SIPP).

What is the SIPP?

The SIPP is a nationally representative panel survey administered by the U.S. Census Bureau since 1984, collecting information on the short-term dynamics of employment, income, household composition, and eligibility and participation in government assistance programs. It is a leading source of information on specific topics related to economic well-being, family dynamics, education, wealth and assets, health insurance, child care, and food security. Each SIPP panel follows individuals for several years. SIPP respondents are surveyed over time in successive interviews referred to as "waves," providing monthly data that measure changes in household and family composition and economic circumstance.

The SIPP was developed to address some of the shortcomings of the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) "by improving the collection of cash and in-kind income, assets and debts, tax liabilities, and participation in major government assistance programs." Additionally, it is the only household survey administered by the U.S.

Census Bureau that allows longitudinal analysis of individuals' labor force dynamics, family dynamics, and income receipt and program participation over time (Warren and Edwards 2017).

When compared to other nationally representative longitudinal surveys, such as the University of Michigan's Panel Survey of Income Dynamics (PSID), SIPP is unique in its large sample size and ability to follow individuals over multiple consecutive years. Unlike the PSID, a respondent's monthly poverty status can be tracked over several years using the SIPP; which allows for the calculation multi-year chronic and episodic poverty rates and poverty exit and entry rates. The SIPP's structure makes it an ideal survey for calculating United States employment, income, and family dynamics over a 3 to 4 year time-period.

How poverty status is determined

In 1964, Mollie Orshansky, an economist at the United States Social Security Administration, developed poverty thresholds based on the cost of the Department of Agriculture's "economy food plan" inflated by a multiplier of 3 to account for other costs. In 1969, the U.S. Census Bureau was directed to use this methodology to calculate a set of income thresholds that varied by family size and composition for the purpose of calculating the official federal statistical definition of poverty (Fisher 1992). This approach was set forth formally in the Office of Management and Budget (OMB) Statistical Policy Directive 14. The U.S. Census Bureau continues to use these thresholds, adjusted for cost-of-living, to produce the official poverty measure of the United States.[2] If a family's total pretax cash income is less than that family's poverty threshold, then that family and every individual in it are considered to be in

[2] Poverty thresholds can be found at: <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>.

poverty. The poverty thresholds are updated annually to allow for changes in the cost of living using the Consumer Price Index (CPI-U). They do not vary geographically.

Family income is the sum total of each family member's income. Reported income can vary between surveys depending on which income sources are collected by the survey. Cash-income captured in the SIPP includes: earnings, investment and property income, means-tested cash assistance, social insurance program income, and several additional income sources such as retirement payments, child support payments, and life insurance payments. In total, SIPP collects data from over 80 cash income sources (Edwards and Warren 2017).

The longitudinal structure of SIPP allows the capture of family dynamics and income that can fluctuate throughout the year. Monthly family size and family members' ages are used to assign the relevant annual poverty threshold, which is then divided by 12 and adjusted to account for monthly changes in price levels to assign a monthly poverty threshold. As a result, the designated monthly poverty threshold for an individual can change from month to month. An individual's varying monthly thresholds are summed to create their annual threshold. This is different from CPS ASEC and American Community Survey (ACS) which assign annual poverty thresholds based on family structure at time of interview.

Longitudinal measures of poverty using SIPP

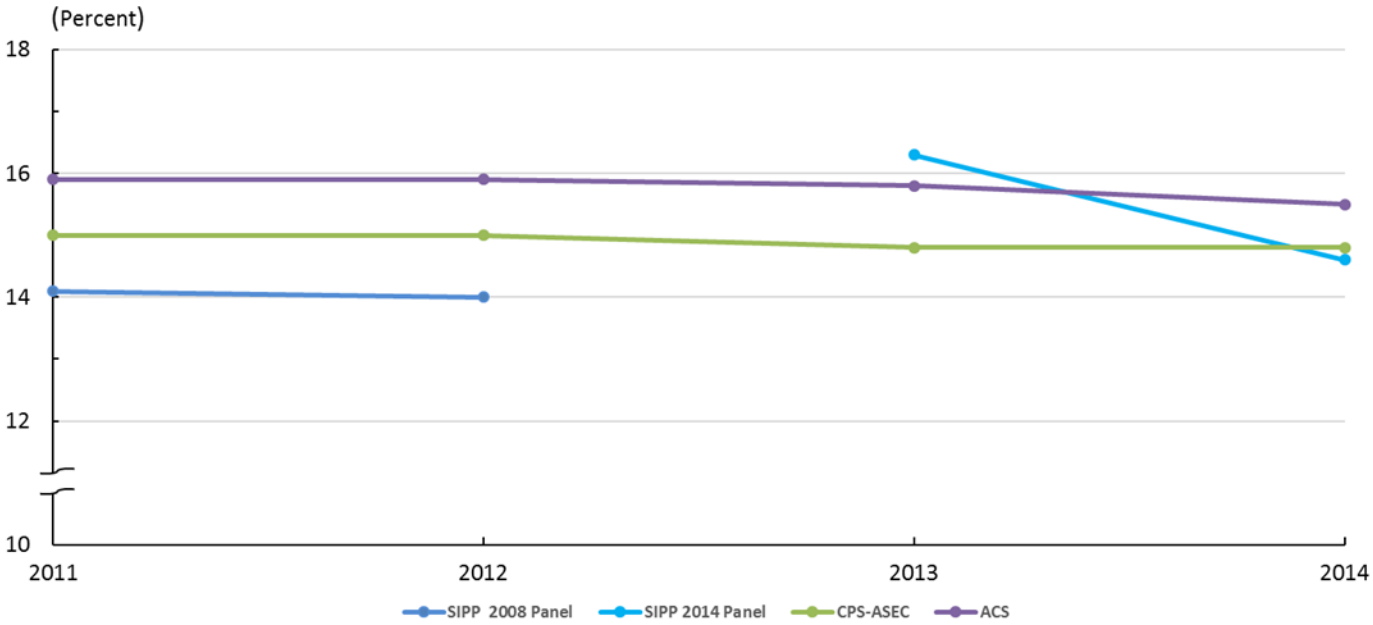
Compared to other U.S. Census Bureau surveys such as the CPS ASEC and ACS which provide cross-sectional annual measures of poverty, the SIPP's longitudinal design allows for the examination of poverty over alternate timelines, such as on a monthly basis or over the course of multiple years. This facilitates the analysis of changes in poverty rates over time, as well as the duration of poverty spells. This section will briefly describe annual, episodic, and chronic

poverty measures that examine poverty using different time horizons; and it will go over poverty entrance and exit rates that measure the frequency of transitions into and out of poverty. While this paper does not present poverty spell duration statistics, a brief description of these methods are covered in this section.

Annual Poverty Description

The annual poverty rate provides the percent of people in poverty over the course of a calendar year. In the SIPP, each individual's annual poverty status is calculated by comparing the sum of their monthly family income over the year to the sum of their monthly poverty thresholds for the year. This poverty rate is comparable to annual poverty rates produced using the CPS ASEC and ACS, however, there are differences in how annual poverty status is determined for respondents. Since the CPS ASEC and ACS are cross-sectional surveys, each ask respondents to report annual income, while SIPP, in contrast, asks respondents to report income both monthly and annually depending on the source. Monthly income sources, such as monthly earnings, are then summed to calculate annual income. In the CPS ASEC and ACS a respondent's poverty status is determined based on annual family income and family composition at the time of interview. As a result, a respondent's annual poverty status in CPS ASEC and ACS assume a constant family structure throughout a year. In contrast, family income and family structure can vary from month to month in SIPP, so a respondent's monthly poverty thresholds can vary throughout the year. This difference means that annual poverty status in SIPP captures changes in family and income dynamics throughout the year. Figure 1 compares annual poverty rates from 2011 to 2014 across the SIPP, CPS ASEC, and ACS.

Figure 1. 2011-2014 Annual Poverty Rates Across Surveys



Notes: Poverty rates often differ slightly among the surveys in part due to differences in the structure of the surveys themselves. Additional information on the differences between surveys can be found at: <https://census.gov/topics/income-poverty/poverty/guidance/survey-data-collection.html>.
The Wave 1 effect may be influencing the 2013 SIPP poverty rate. Futher information on the Wave 1 effect can be found in the "Limitations" section of this paper.
Sources:
U.S. Census Bureau, Survey of Income and Program Participation, 2014 and 2008 Panels.
U.S. Census Bureau, Current Population Survey, 2012 to 2015 Annual Social and Economic Supplement.
U.S. Census Bureau, 2011 to 2014 American Community Surveys.

Episodic Poverty Description

The episodic poverty rate provides the percent of respondents in poverty for two or more consecutive months within a reference period. Once an individual has two consecutive months in poverty they are episodically poor, even if they have a family income above their monthly poverty threshold in later months. Episodic poverty has been found to be a useful statistic in examining poverty because researchers have found that estimates capturing people in poverty at any given time tend to capture individuals in chronic poverty, thus under-representing individuals that have short spells of poverty and over-representing individuals in chronic poverty (Bane 1983).

Chronic Poverty Description

The chronic poverty rate provides the percent in poverty every month of a given reference period. Individuals experiencing chronic poverty are a subset of those experiencing episodic poverty, as episodic poverty includes all individuals that have poverty spells lasting 2 or more months. Noting this, it can be useful to compare chronic and episodic poverty rates, as the percentage that are chronically poor within the episodically poor can provide insight on a group's ability to exit poverty.

Poverty Entry and Exit Descriptions

SIPP's longitudinal design allows for the calculation of poverty entry and exit rates. The poverty entry rate provides the percentage of individuals that are not in poverty at the start of a reference period but are in poverty at the end of a reference period. The poverty exit rate provides the percentage of individuals that are in poverty at the start of a reference period but are not in poverty at the end of a reference period. The reference period analyzed in this paper spans two complete years. So, the poverty entry rate covers individuals that are not in annual poverty the first year but are in annual poverty the second year; and the poverty exit rate covers individuals that are in annual poverty the first year but are not in annual poverty the second year.[3]

Spell Duration Statistics

Poverty spell duration statistics take advantage of the longitudinal design of SIPP. A poverty spell starts when an individual has two consecutive months in poverty and ends when an individual has two consecutive months out of poverty.[4] Individuals can have multiple poverty

[3] Poverty entry and exit rates can be produced using CPS ASEC as well. Approximately, half of the CPS sample is in two consecutive CPS ASEC interviews. Additional information on poverty exit and entry rates using CPS ASEC can be found at: < https://census.gov/content/dam/Census/library/working-papers/2014/demo/SEHSD-WP2014-05.pdf>.

[4] In this definition, poverty spells cannot begin with only a single month in poverty, nor can they end with only one month out of poverty.

spells over a given reference period. Survival analysis can be used to analyze spell duration data to produce statistics such as median poverty spell length and poverty spell hazard rates. Issues such as left censoring, poverty spells that may have begun before the panel started, and right censoring, poverty spells that do not end before the end of the panel, can pose a challenge to the interpretation of spell duration statistics.[5] Spell duration statistics are not presented in this paper. Duration analysis with less than four years of data is difficult because many spells are right-censored.

Years Reviewed and Estimates Covered

The most recent data from the SIPP comes from the 2014 Panel, which covered the period from January 2013 to December 2016, with 4 interviews, or "waves", conducted at roughly 12-month intervals over the course of the panel. The 2014 SIPP Panel reflects a major redesign from prior panels; the preceding 2008 SIPP Panel, which covered the period from May 2008 to November 2013, was collected through 16 interviews, or "waves", conducted at 4-month intervals over the course of the panel. Additionally, there are differences in survey question content and interview methods across the 2014 and prior SIPP Panels. These differences, and their effect on survey responses, should, and will, be considered when comparing statistics between the 2008 and 2014 Panels.[6]

[5] A discussion of issues related to spell capture and censoring within single year estimates can be found at: <https://census.gov/content/dam/Census/library/working-papers/2015/demo/SEHSD-WP2015-19.pdf>

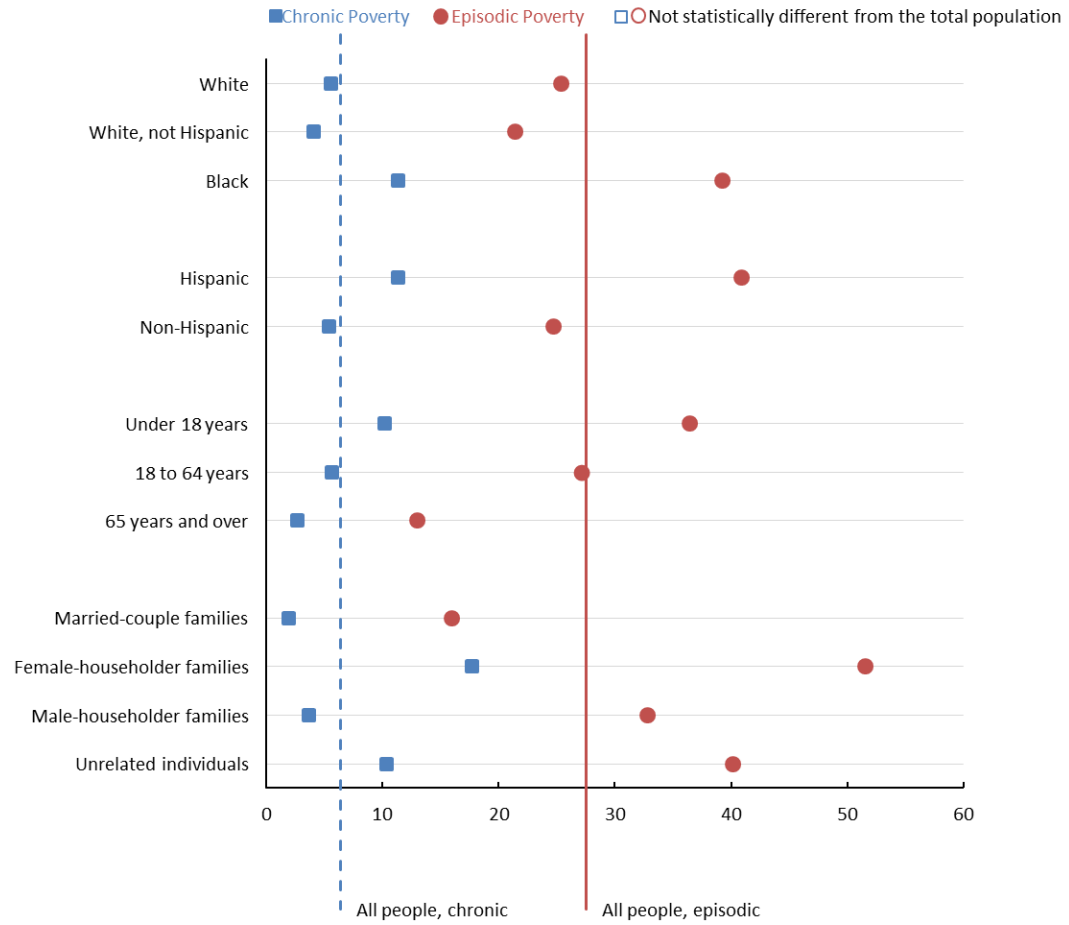
[6] The biggest methodological changes (between 2008 and 2014 SIPP) include: 1) the move to annual interviewing with a 12-month calendar year reference period, 2) the adoption of Event-History Calendar (EHC) interview methods, 3) the expansion of the core survey content to replace the use of separate topical modules, and 4) the discontinuation of the rotation group design (Edwards 2016). For more information on the redesign of the 2014 SIPP, see <www.census.gov/programs-surveys/sipp/about/re-engineered-sipp.html>.

Data used in this paper comes from the 2014 SIPP Panel corresponding to the period of January 2013 to December 2014 and, where appropriate, comparisons are made to data from the 2008 SIPP Panel corresponding to the period of January 2011 to December 2012.

The poverty estimates presented in this paper include annual, episodic, and chronic poverty rates, as well as poverty entry and poverty exit rates. The poverty statistics in this paper adhere to the standards specified by the Office of Management and Budget's Statistical Policy Directive 14.

Results

Figure 2. Chronic and Episodic Poverty Across 2 Years (2013-2014)
(Percent)



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

Episodic Poverty

Episodic poverty rates by demographic characteristics are shown in Table 1 and Figure 2. Over the 24-month period from January 2013 to December 2014, 27.5 percent of individuals experienced episodic poverty, defined as a poverty spell lasting two or more consecutive months.

Non-Hispanic Whites had a lower episodic poverty rate (21.4 percent) than Blacks and Hispanics, while the episodic poverty rate for Blacks (39.2 percent) was not significantly different from the Hispanic episodic poverty rate (40.9 percent).[7] The episodic poverty rate for children under 18 years old (36.5 percent) was higher than the episodic poverty rates for adults aged 18 to 64 years (27.1 percent). Adults aged 65 years and over had the lowest episodic poverty rate (13.0 percent) among these age groups.

The episodic poverty rate for people in female-householder families[8] (51.5 percent) exceeded the episodic poverty rates for people in other family types. People in married-couple families had the lowest episodic poverty rate (16.0 percent) across all family types. The episodic poverty rate for people living without relatives in the household (referred to as unrelated individuals) was higher than the episodic poverty rate for people in male-householder families (40.1 percent and 32.8 percent, respectively).

Table 1 also compares episodic poverty rates over the 2013-2014 period to estimates from 2011-2012. The overall episodic poverty rate for the 2013-2014 period (27.5 percent) was not significantly different from the preceding two-year period. For most demographic groups

[7] United States Census Bureau surveys, including the SIPP 2014 and 2008 Panels, give respondents the option of reporting more than one race. These data can be shown in two ways: (1) as mutually exclusive from other race groups, which may be denoted by "alone" or (2) not mutually exclusive with other race groups, denoted by "alone or in combination with other race groups." The figures, tables, and text in this paper show race using the first method. Because Hispanics may be of any race, data for Hispanics are not mutually exclusive with race. Data users should exercise caution when interpreting aggregate results for these groups because they consist of many distinct subgroups that differ in socioeconomic characteristics, culture, and recency of immigration.

[8] Female householders refer to female householders, no spouse present; male householders refer to male householders, no spouse present.

shown in Table 1, episodic poverty rates across the 2013-2014 period and the 2011-2012 period were not statistically different. Exceptions include episodic poverty rates for persons in married-couple families, people in families with a female householder, and unrelated individuals. The 2013-2014 episodic poverty rate for persons in married-couple families (16.0 percent) was 3.7 percentage points lower than the 2011-2012 rate of 19.8 percent. In contrast, the 2013-2014 episodic poverty rate for unrelated individuals (40.1 percent) was 6.1 percentage points higher than the 2011-2012 rate of 34.1 percent. The 2013-2014 episodic poverty persons in families with a female householder (51.5 percent) was 2.6 percentage points higher than the 2011-2012 rate of 48.9 percent.

Chronic Poverty

Chronic poverty rates from January 2013 to December 2014 are shown in Figure 1 and Table 2. Over the 24-month period spanning 2013 and 2014, 6.4 percent of individuals were in poverty every month, considered chronically poor.

Non-Hispanic Whites had a lower chronic poverty rate (4.1 percent) than Hispanics and Blacks (11.4 percent and 11.3 percent, respectively).[9] As with episodic poverty rates, children had the highest chronic poverty rate among age groups (10.2 percent). Additionally, the chronic poverty rate for adults aged 18 to 64 (5.7 percent) was higher than the rate for adults 65 years and over (2.7 percent).

Similar to episodic poverty, the chronic poverty rate for people in female-householder families (17.7 percent) was higher than rates for people in other family types. Among family types, married-couple families had the lowest chronic poverty rate (2.0 percent). Unrelated

[9] There was not a statistically significant difference between Hispanic and Black chronic poverty rates over the 2013-2014 period.

individuals had a chronic poverty rate of 10.3 percent and individuals in male-householder families had a chronic poverty rate of 3.7 percent.

Table 2 also compares 2013-2014 chronic poverty rates to estimates from the 2011-2012 period. The overall chronic poverty rate over the 2013-2014 period (6.4 percent) was 1.4 percentage points higher than the rate over the 2011-2012 period (5.0 percent). Across most demographic groups shown in Table 2, chronic poverty rates over the 2013-2014 period were higher than the 2011-2012 period. People in families with a female householder had largest percentage point increase in chronic poverty rates, chronic poverty increased 5.2 percentage points, going from 12.5 percent to 17.7 percent. Declines in chronic poverty in the 2013-2014 period were observed for persons in two groups, those living in married-couple families (from 2.5 percent to 2.0 percent) and those aged 65 years and older (from 3.8 percent to 2.7 percent). Additionally, chronic poverty rates for persons in male-householder families and Blacks were not significantly different between the two time periods.

Proportion of Episodically Poor that is Chronically Poor

Persons in chronic poverty are a subset of those in episodic poverty, as persons in episodic poverty have a poverty spell lasting two or more consecutive months, while persons in chronic poverty are poor all months of the reference period. Table 3 shows episodic and chronic poverty over the 2013-2014 period across demographic groups and reveals the proportion of the episodically poor that are also captured in the chronic poverty rate, an indication of the persistence of poverty spells.

The demographic group with the highest proportion of episodically poor that were also chronically poor were individuals in female-householder families, in which 34.3 percent of the approximately 27 million individuals that were episodically poor were also chronically poor. The

demographic groups with the smallest proportion of episodically poor that were also chronically poor, were individuals in families with a male householder (11.3 percent) and married-couple families (12.4 percent).[10]

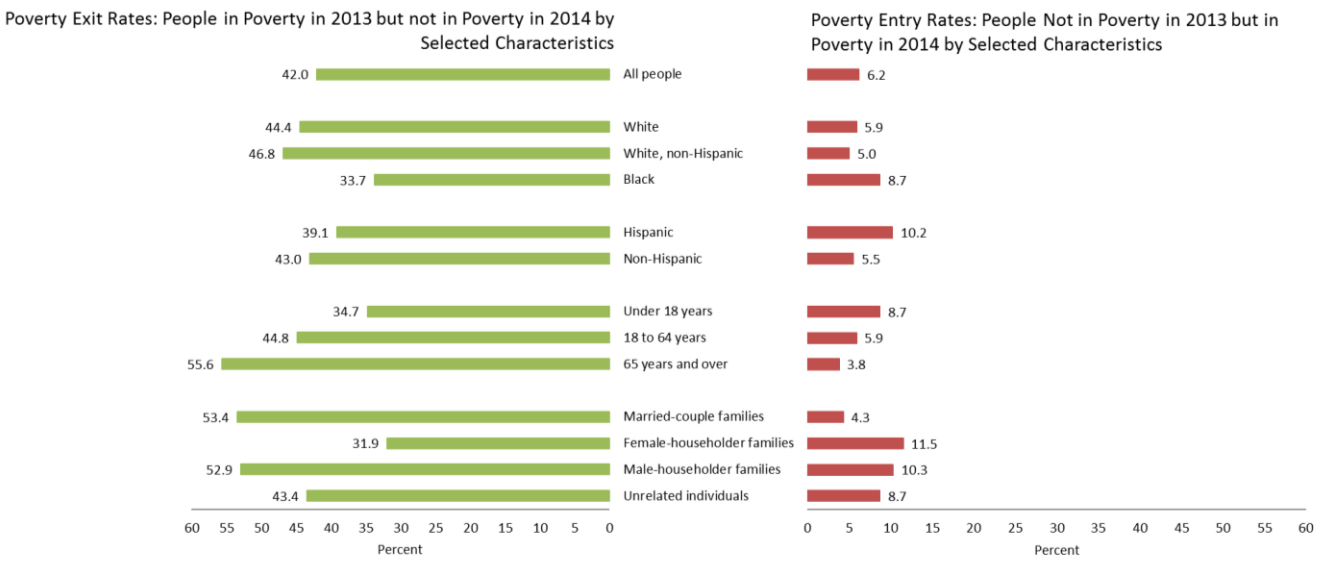
Calendar Year Annual Poverty Rates

Table 4 and Figure 1 provide annual poverty rates between 2011 and 2014. Year-to-year differences in annual poverty are indicated by asterisks in Table 4. The overall 2014 poverty rate of 14.6 percent was not significantly different from the 2011 poverty rate. The annual poverty rate for non-Hispanic Whites in 2014 (10.6 percent) was 1.3 percentage points higher than the 2011 rate. In contrast, annual poverty rates for Blacks in 2014 (23.3 percent) was lower than the 2011 rate of 26.4 percent. For Hispanics, the annual poverty rate in 2014 (23.5 percent) was not significantly different than the 2011 rate. For individuals 18 to 64 years old, the annual poverty rate in 2014 (13.8 percent) was 1.1 percentage points higher than 2011 rate of 12.7 percent. The 2014 annual poverty rates for children under the age of 18 and individuals 65 years and older were not significantly different from their 2011 rates (21.3 percent and 6.6 percent in 2014, respectively).

The annual poverty rate for individuals in married-couple families in 2014 (6.8 percent) was 1.1 percentage points lower than the 2011 rate of 7.9 percent. In contrast, the 2014 annual poverty rate of 22.4 percent for individuals not living with other family members (unrelated individuals) was higher than the 2011 rate of 19.7 percent. The 2014 annual poverty rate for individuals in families with an unmarried male or female householder (15.7 percent and 33.3 percent, respectively) were not significantly different from 2011 rates.

[10] There was not a statistically significant difference between married-couple families and families with a male householder in the proportion of episodically poor were are also chronically poor.

Figure 3. 2013-2014 Poverty Entrance and Exit Rates



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

Poverty Entries

Table 5 contains poverty entry rates by demographic group across the 2013-2014 time period.[11] The poverty entry rate represents the percent of individuals who were not in annual poverty at the start of a reference period (2013) but were in annual poverty at the end of a reference period (2014). From 2013 to 2014, the overall poverty entry rate was 6.2 percent.

Non-Hispanic Whites had a lower poverty entry rate (5.0 percent) between 2013 and 2014 than Blacks and Hispanics (8.7 percent and 10.2 percent, respectively).[12] Children under the age of 18 had a higher poverty entry rate (8.7 percent) than adults; while adults aged 18 to 64 had a higher entry rate (5.9 percent) than those aged 65 and over (3.8 percent). People in female-householder families and male-householder families did not have significantly different poverty entry rates (11.5 percent and 10.3 percent, respectively). People in married-couple families had

[11] For reference, Table 6 contains poverty entry rates for the 2011-2012 time period.
[12] The 2013-2014 poverty entry rates for Blacks and Hispanics are not significantly different.

the lowest poverty entry rate (4.3 percent) among family types. Unrelated individuals had a poverty entry rate of 8.7 percent from 2013 to 2014.

Poverty Exits

Table 5 and Figure 3 report poverty exit rates by select demographic characteristics.[13] The poverty exit rate represents the percent of individual who were in annual poverty at the start of a reference period (2013) but were not in annual poverty at the end of a reference period (2014). From 2013 to 2014, the overall poverty exit rate was 42.0 percent.

Consistent with their *lower* poverty entry rate, non-Hispanic Whites had a *higher* poverty exit rate (46.8 percent) than Blacks (33.7 percent) and Hispanics (39.1 percent) from 2013 to 2014. However, unlike entry rates where there was no statistical difference between the groups, Hispanics had a higher poverty exit rate than Blacks (39.1 percent and 33.7 percent respectively). Children had a lower poverty exit rate (34.7 percent) than adults aged 18 to 64 (44.8 percent) and adults aged 65 and over (55.6 percent). Female-householder families had the lowest exit rate among family types (31.9 percent). The exit rate for people in male-householder families (52.9 percent) was not significantly different from the rate for people in married-couple families (53.4 percent). Unrelated individuals had a poverty exit rate of 43.4 percent.

Limitations

Demographics

This paper makes certain assumptions about the stability of demographic characteristics within a SIPP Panel. Estimates in this paper hold demographic characteristics constant to the

[13] For reference, Table 6 contains poverty exit rates for the 2011-2012 time period.

value reported at the beginning of the reference period, even though subsequent characteristics may vary from initial reports.

Wave 1 Effect

The wave 1 effect references a pattern found in SIPP in which Wave 1 poverty rates in a Panel are notably higher than succeeding waves' poverty rates. In Table 4, a possible Wave 1 Effect can be seen in the 2013 poverty rate which is substantially higher than the 2014 poverty rate. Many factors may play into the presence of the Wave 1 effect. For example, respondents may be underreporting income in the first wave of a panel, due to lack of exposure to income related questions in the interview.[14]

Differences in Reference Periods between 2014 and 2008 Panel

The 12 month interview reference period in the 2014 SIPP Panel is substantially longer than the 4 month reference period in the 2008 SIPP Panel. The longer reference period in the 2014 Panel may have contributed to the observed decline in poverty transitions within years. The National Academies of Science, Engineering, and Medicine found that, "the 2014 panel's estimates of transitions into and out of employment and poverty are about half as high as those obtained from the 2008 panel" (National Academies of Science, Engineering, and Medicine, 2018). The longitudinal statistics covered in this paper are based on poverty transitions, so differences in the capture of transitions between the 2014 and 2008 SIPP Panels should be noted.

Difference in Composition between the 2014 and 2008 Panels

There is a notable increase in the number of unrelated individuals and individuals in female-householder families between the 2014 SIPP Panel and 2008 SIPP Panel. The 2008 SIPP's 2011-2012 chronic/episodic poverty universe has approximately 48 million unrelated

[14] Additional discussion of the SIPP Wave 1 effect can be found at: <https://www.census.gov/library/working-papers/2014/demo/SIPP-WP-269.html>.

individuals while the 2014 SIPP's 2013-2014 chronic/episodic poverty universe has approximately 61.6 million unrelated individuals.[15] Similarly, the 2008 SIPP's 2011-2012 chronic/episodic poverty universe has 42.5 million individuals in female-householder families while the 2014 SIPP's 2013-2014 chronic/episodic poverty universe has 52.2 million individuals in female-householder families. Additionally, the differences between CPS ASEC and SIPP in 2011 and 2012 estimates of the percentage of the total population which were either individuals in female-householder families or unrelated individuals were lower than 2013 and 2014 estimates. In 2011 and 2012 this estimate was 32.2 percent and 32.1 percent in SIPP and 32.9 percent and 33.3 percent in CPS ASEC. However, the divergence between the surveys was larger for 2013 and 2014 estimates, where SIPP estimates were 37.5 percent and 36.2 percent while CPS ASEC estimates were 33.2 percent and 33.1 percent, respectively. This compositional difference between the panels should be noted because individuals in female-householder families and unrelated individuals have historically had higher poverty rates than other family types.

Altering the composition of the 2011-2012 chronic/episodic poverty universe to reflect the 2013-2014 chronic/episodic poverty universe, it is estimated that 42 percent of the observed difference in chronic poverty rates between the two time periods was due to compositional differences in the population. Additionally, when individuals in female-householder families and unrelated individuals are completely removed, there is a significant difference in the overall chronic poverty rate between the two time periods (2.6 percent in 2011-2012 and 2.1 percent in 2013-2014). However, the relationship is reversed, with the 2013-2014 rate below the 2011-2012

[15] Further information on the impact of unrelated individuals on 2014 SIPP Wave 1 poverty rates can be found at: <https://www.census.gov/content/dam/Census/library/working-papers/2017/demo/SEHSD-WP2017-52.pdf>

rate, indicating, once more, that composition is a substantial driver of the differences between the two time periods.

Appendix

References

Table 1. Episodic Poverty by Selected Characteristics

Table 2. Chronic Poverty by Selected Characteristics

Table3. Chronic and Episodic Poverty and the Proportion of Episodically Poor that are also Chronically Poor

Table 4. Annual Poverty by Selected Characteristics: 2011-2014

Table 5. Poverty Entries and Exits from 2013 to 2014

Table 5. Poverty Entries and Exits from 2011 to 2013

References

Bane, Mary Jo & David T. Ellwood. (1986). "Slipping into and out of Poverty: The Dynamics of Spells." Journal of Human Resources, Vol. 21, No.1, Winter.

Edwards, Ashley (2014). "Investigating Wave 1 Effects on Poverty Calculations in the 2008 SIPP Panel." Presented at August 2014 Joint Statistical Meetings. Available at https://www.census.gov/library/working-papers/2014/demo/SIPP-WP-269.html

Edwards, Ashley (2016). "Measuring Work-Related Expenses in the Redesigned 2014 SIPP Panel: Methods and Implications." Presented at the February 2016 Eastern Economic Association Meetings. Available at https://www.census.gov/content/dam/Census /library/working-papers/2015/demo/SIPP-WP- 273.pdf

Fisher, Gordon M. (1992). "The Development and History of the Poverty Thresholds." *Social Security Bulletin*. Vol. 55, No. 4. pp. 3-14.

Hokayem, Charles & Misty L. Heggeness. (2014). "Factors Influencing Transitions Into and Out of Near Poverty: 2004-2012." Presented at 2014 American Economic Association Meetings. Available at https://census.gov/content/dam/Census/library/working-papers/2014/demo/SEHSD-WP2014-05.pdf

National Academies of Sciences, Engineering, and Medicine. (2018). The 2014 Redesign of the Survey of Income and Program Participation: An Assessment. Washington, DC: The National Academies Press. Available at https://doi.org/10.17226/24864.

Warren, Lewis H. & Ashley Edwards (2017). "Poverty Dynamics in the 2014 Survey of Income and Program Participation." Presented at the November 2017 Meeting of the Southern Economic Association. Available at https://www.census.gov/content/dam/Census /library/workingpapers/2017/demo/SEHSD-WP2017-52.pdf

Ycas, M. & Lininger, C. (1981). "The Income Survey Development Program: Design Features and Initial Findings." *Social Security Bulletin,* Vol. 44, No. 11, 13-19.

Table 1
Episodic Poverty by Selected Characteristics
(Numbers in thousands)

Characteristic	2011-2012[1]					2013-2014[1]					Difference (2011-2012) - (2013-2014)		
		People In poverty two or more months					People In poverty two or more months						
	Total	Number	90 percent C.I.[2] (+/-)	Percent	percent C.I.[2] (+/-)	Total	Number	90 percent C.I.[2] (+/-)	Percent	percent C.I.[2] (+/-)	Percent	90 percent C.I.[2] (+/-)	Significance[5]
All People	285,100	77,300	2,000	27.1	0.7	305,100	83,900	1,700	27.5	0.5	0.4	0.9	
Race and Hispanic Origin													
White[3]	228,500	57,000	1,800	24.9	0.8	237,300	60,200	1,500	25.4	0.6	0.5	1.0	
White, non-Hispanic[4]	187,800	39,500	1,500	21.0	0.8	189,200	40,500	1,200	21.4	0.6	0.4	1.1	
Black[3]	35,400	14,800	800	41.7	2.2	39,500	15,500	700	39.2	1.8	-2.5	2.8	
Hispanic[4]	44,000	19,000	900	43.2	2.1	52,400	21,400	800	40.9	1.5	-2.4	2.6	
Non-Hispanic	241,100	58,300	1,700	24.2	0.7	252,700	62,500	1,500	24.7	0.6	0.5	1.0	
Age													
Under 18 years	64,100	23,400	900	36.4	1.4	73,200	26,700	800	36.5	1.1	0.0	1.7	
18 to 64 years	183,100	48,700	1,400	26.6	0.8	191,900	52,000	1,100	27.1	0.6	0.5	1.0	
65 years and over	37,900	5,300	300	14.0	0.8	40,000	5,200	300	13.0	0.7	-1.0	1.0	
Family Status													
In married-couple families	182,100	36,000	1,500	19.8	0.8	181,600	29,100	1,500	16.0	0.8	-3.7	1.1	*
In families with a male householder, no spouse present	12,500	4,200	500	33.7	3.0	9,600	3,200	300	32.8	3.1	-0.9	4.5	
In families with a female householder, no spouse present	42,500	20,800	1,000	48.9	1.9	52,200	26,900	1,100	51.5	1.6	2.6	2.5	*
Unrelated individuals	48,000	16,400	700	34.1	1.2	61,600	24,700	700	40.1	0.8	6.1	1.4	*

[1] The 2011-2012 and 2013-2014 estimates are based on different samples. Each require respondents to be in sample all 24 months. There were 41,900 respondents in 2011-2012 sample and 51,400 respondents in the 2013-2014 sample. The 2011-2012 data comes from Waves 8 through 13 of the 2008 SIPP Panel and 2013-2014 data comes from Wave 1 and 2 of the 2014 SIPP Panel.

[2] A 90 percent confidence interval (C.I.) is a measure of an estimate's variability. The larger the confidence interval in relation to the size of the estimate, the less reliable the estimate.

[3] Federal surveys, including the SIPP 2008 and 2014 Panels, give respondents the option of reporting more than one race. These data can be shown in two ways: (1) as mutually exclusive from other race groups, which may be denoted by "alone" or (2) not mutually exclusive with other race groups, denoted by "alone or in combination with other race groups." The figures, tables, and text in this report show race using the first method.

[4] Hispanics may be any race, data in this report for Hispanics overlap data for racial groups. Data users should exercise caution when interpreting aggregate results for these groups because they consist of many distinct subgroups that differ in socioeconomic characteristics, culture, and recency of immigration.

[5] Asterisk indicates signifcant difference at the 90 percent confidence level.

Note: Numbers are rounded to the nearest hundred, in order to comply with disclosure requirements.

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel and 2014 Panel.

Table 2
Chronic Poverty by Selected Characteristics
(Numbers in thousands)

Characteristic	2011-2012[1]					2013-2014[1]					Difference (2011-2012) - (2013-2014)		
		People In poverty all 24 months					People In poverty all 24 months						
	Total	Number	90 percent C.I.[2] (+/-)	Percent	percent C.I.[2] (+/-)	Total	Number	90 percent C.I.[2] (+/-)	Percent	percent C.I.[2] (+/-)	Percent	90 percent C.I.[2] (+/-)	Significance[5]
All People	285,100	14,300	1,000	5.0	0.3	305,100	19,600	800	6.4	0.3	1.4	0.4	*
Race and Hispanic Origin													
White[3]	228,500	9,700	800	4.2	0.4	237,300	13,300	700	5.6	0.3	1.4	0.5	*
White, non-Hispanic[4]	187,800	5,700	600	3.0	0.3	189,200	7,800	500	4.1	0.3	1.1	0.4	*
Black[3]	35,400	3,600	500	10.3	1.3	39,500	4,500	400	11.3	0.9	1.1	1.6	
Hispanic[4]	44,000	4,300	500	9.7	1.2	52,400	6,000	500	11.4	0.9	1.7	1.4	*
Non-Hispanic	241,100	10,000	800	4.2	0.3	252,700	13,600	700	5.4	0.3	1.2	0.4	*
Age													
Under 18 years	64,100	5,300	500	8.2	0.8	73,200	7,500	500	10.2	0.7	2.0	1.1	*
18 to 64 years	183,100	7,600	600	4.2	0.3	191,900	11,000	500	5.7	0.3	1.6	0.4	*
65 years and over	37,900	1,400	200	3.8	0.5	40,000	1,100	100	2.7	0.3	-1.1	0.6	*
Family Status													
In married-couple families	182,100	4,500	600	2.5	0.3	181,600	3,600	500	2.0	0.3	-0.5	0.4	*
In families with a male householder, no spouse present	12,500	600	200	4.7	1.6	9,600	400	100	3.7	1.2	-1.0	1.8	
In families with a female householder, no spouse present	42,500	5,300	600	12.5	1.4	52,200	9,200	700	17.7	1.3	5.2	1.9	*
Unrelated individuals	48,000	4,000	300	8.2	0.6	61,600	6,400	400	10.3	0.6	2.1	0.9	*

[1] The 2011-2012 and 2013-2014 estimates are based on different samples. Each require respondents to be in sample all 24 months. There were 41,900 respondents in 2011-2012 sample and 51,400 respondents in the 2013-2014 sample. The 2011-2012 data comes from Waves 8 through 13 of the 2008 SIPP Panel and 2013-2014 data comes from Wave 1 and 2 of the 2014 SIPP Panel.

[2] A 90 percent confidence interval (C.I.) is a measure of an estimate's variability. The larger the confidence interval in relation to the size of the estimate, the less reliable the estimate.

[3] Federal surveys, including the SIPP 2008 and 2014 Panels, give respondents the option of reporting more than one race. These data can be shown in two ways: (1) as mutually exclusive from other race groups, which may be denoted by "alone" or (2) not mutually exclusive with other race groups, denoted by "alone or in combination with other race groups." The figures, tables, and text in this report show race using the first method.

[4] Hispanics may be any race, data in this report for Hispanics overlap data for racial groups. Data users should exercise caution when interpreting aggregate results for these groups because they consist of many distinct subgroups that differ in socioeconomic characteristics, culture, and recency of immigration.

[5] Asterisk indicates signifcant difference at the 90 percent confidence level

Note: Numbers are rounded to the nearest hundred, in order to comply with disclosure requirements.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel and 2014 Panel.

Table 3

Chronic and Episodic Poverty and the Proportion of Episodically Poor that are also Chronically Poor

(Numbers in thousands)

Characteristic	2013 to 2014[1]										
		People In poverty two or more months (Episodic)				People In poverty all 24 months (Chronic)[5]				Proportion of Episodically Poor that are also Chronically Poor	
	Total	Number	90 percent C.I.[2] (+/-)	Percent	90 percent C.I.[2] (+/-)	Number	90 percent C.I.[2] (+/-)	Percent	90 percent C.I.[2] (+/-)	Percent	90 percent C.I.[2] (+/-)
All People	305,100	83,900	1,700	27.5	0.5	19,600	800	6.4	0.3	23.3	1.0
Race and Hispanic Origin											
White[3]	237,300	60,200	1,500	25.4	0.6	13,300	700	5.6	0.3	22.1	1.1
White, non-Hispanic[4]	189,200	40,500	1,200	21.4	0.6	7,800	500	4.1	0.3	19.2	1.2
Black[3]	39,500	15,500	700	39.2	1.8	4,500	400	11.3	0.9	28.9	2.2
Hispanic[4]	52,400	21,400	800	40.9	1.5	6,000	500	11.4	0.9	27.9	2.2
Non-Hispanic	252,700	62,500	1,500	24.7	0.6	13,600	700	5.4	0.3	21.8	1.0
Age											
Under 18 years	73,200	26,700	800	36.5	1.1	7,500	500	10.2	0.7	28.1	1.7
18 to 64 years	191,900	52,000	1,100	27.1	0.6	11,000	500	5.7	0.3	21.1	1.0
65 years and over	40,000	5,200	300	13.0	0.7	1,100	100	2.7	0.3	20.9	2.2
Family Status											
In married-couple families	181,600	29,100	1,500	16.0	0.8	3,600	500	2.0	0.3	12.4	1.6
In families with a male householder, no spouse present	9,600	3,200	300	32.8	3.1	400	100	3.7	1.2	11.3	3.5
In families with a female householder, no spouse present	52,200	26,900	1,100	51.5	1.6	9,200	700	17.7	1.3	34.3	2.2
Unrelated individuals	61,600	24,700	700	40.1	0.8	6,400	400	10.3	0.6	25.7	1.3

[1] There were 51,400 respondents in the 2013-2014 sample. The 2013-2014 data comes from Wave 1 and 2 of the 2014 SIPP Panel.

[2] A 90 percent confidence interval (C.I.) is a measure of an estimate's variability. The larger the confidence interval in relation to the size of the estimate, the less reliable the estimate.

[3] Federal surveys, including the SIPP 2008 and 2014 Panels, give respondents the option of reporting more than one race. These data can be shown in two ways: (1) as mutually exclusive from other race groups, which may be denoted by "alone" or (2) not mutually exclusive with other race groups, denoted by "alone or in combination with other race groups." The figures, tables, and text in this report show

[4] Hispanics may be any race, data in this report for Hispanics overlap data for racial groups. Data users should exercise caution when interpreting aggregate results for these groups because they consist of many distinct subgroups that differ in socioeconomic characteristics, culture, and recency of immigration.

[5] Across all people and all listed demographic groups, chronic poverty rates are significantly lower than episodic poverty rates at the 90 percent confidence level.

Note: Numbers are rounded to the nearest hundred, in order to comply with disclosure requirements.

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

Table 4
Annual Poverty by Selected Characteristics: 2011-2014
(Numbers in thousands)

Characteristic	2011[1]					2012[1]					2013[1]					2014[1]				
		In poverty using annual income and threshold					In poverty using annual income and threshold					In poverty using annual income and threshold					In poverty using annual income and threshold				
	Total	Number	90 percent C.I.[2] (+/-)	Percent[5]	90 percent C.I.[2] (+/-)	Total	Number	90 percent C.I.[2] (+/-)	Percent[5]	90 percent C.I.[2] (+/-)	Total	Number	90 percent C.I.[2] (+/-)	Percent[5]	90 percent C.I.[2] (+/-)	Total	Number	90 percent C.I.[2] (+/-)	Percent[5,6]	90 percent C.I.[2] (+/-)
All People	301,400	42,400	1,400	14.1	0.5	304,700	42,600	1,400	14.0	0.5	307,700	50,100	1,100	16.3*	0.4	309,600	45,200	1,300	14.6*	0.4
Race and Hispanic Origin																				
White[3]	239,600	28,600	1,200	11.9	0.5	238,400	28,900	1,200	12.1	0.5	239,300	34,900	900	14.6*	0.4	240,100	31,900	1,200	13.3*^	0.5
White, non-Hispanic[4]	195,200	18,200	900	9.3	0.4	191,800	17,700	800	9.2	0.4	191,100	22,100	700	11.5*	0.4	190,500	20,200	900	10.6*^	0.5
Black[3]	38,400	10,200	600	26.4	1.6	39,200	9,800	600	25.0	1.6	39,800	10,200	500	25.7	1.3	40,200	9,400	600	23.3*^	1.5
Hispanic[4]	48,900	11,900	800	24.3	1.6	51,500	12,600	800	24.5	1.6	52,900	14,100	600	26.7*	1.1	53,900	12,600	700	23.5*	1.3
Non-Hispanic	252,500	30,500	1,100	12.1	0.4	253,200	30,000	1,100	11.9	0.4	254,800	36,000	900	14.1*	0.4	255,700	32,600	1,100	12.7*^	0.4
Age																				
Under 18 years	73,600	15,600	700	21.2	0.9	73,100	15,600	700	21.3	1.0	73,200	17,100	600	23.4*	0.9	72,900	15,500	700	21.3*	0.9
18 to 64 years	189,400	24,100	900	12.7	0.5	191,400	24,300	800	12.7	0.4	193,300	29,900	700	15.5*	0.4	194,100	26,900	800	13.8*^	0.4
65 years and over	38,400	2,700	200	7.0	0.5	40,200	2,700	200	6.7	0.5	41,200	3,100	200	7.4	0.5	42,600	2,800	200	6.6*	0.5
Family Status																				
In married-couple families	189,900	15,000	900	7.9	0.5	192,300	15,900	1,000	8.2	0.5	182,300	13,800	800	7.6	0.4	187,400	12,800	900	6.8*^	0.5
In families with a male householder, no spouse present	14,400	2,300	300	16.2	2.0	14,700	2,400	300	16.2	2.0	9,900	1,600	200	16.0	2.1	10,000	1,600	200	15.7	2.5
In families with a female householder, no spouse present	45,900	14,900	800	32.5	1.5	46,400	14,300	800	30.7*	1.6	51,900	18,300	700	35.2*	1.3	53,100	17,700	800	33.3*	1.5
Unrelated individuals	51,200	10,100	400	19.7	0.8	51,300	10,100	400	19.8	0.8	63,600	16,500	500	25.9*	0.8	59,100	13,300	500	22.4*^	0.8

[1] Yearly estimates are based on different samples. The numbers of respondents in each sample are as follows: 64,700 in 2011, 60,900 in 2012, 71,900 in 2013, and 55,000 in 2014.

[2] A 90 percent confidence interval (C.I.) is a measure of an estimate's variability. The larger the confidence interval in relation to the size of the estimate, the less reliable the estimate.

[3] Federal surveys, including the SIPP 2008 and 2014 Panels, give respondents the option of reporting more than one race. These data can be shown in two ways: (1) as mutually exclusive from other race groups, which may be denoted by "alone" or (2) not mutually exclusive with other race groups, denoted by "alone or in combination with other race groups." The figures, tables, and text in this report show race using the first method.

[4] Hispanics may be any race, data in this report for Hispanics overlap data for racial groups. Data users should exercise caution when interpreting aggregate results for these groups because they consist of many distinct subgroups that differ in socioeconomic characteristics, culture, and recency of immigration.

[5] Asterisk indicates a significant difference in percent in poverty from previous year

[6] Caret (^) indicates a significant difference in percent in poverty between 2011 and 2014

Note: Numbers are rounded to the nearest hundred, in order to comply with disclosure requirements.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel and 2014 Panel.

Table 5

Annual Poverty Entries and Exits from 2013 to 2014

(Numbers in thousands)

Characteristic	2013	In poverty in 2014 (Entrance)[1]					2013	Not in poverty in 2014 (Exit)[1]				
	Not in Poverty	Number	90 percent C.I.[2] (+/-)	Percent	90 percent C.I.[2] (+/-)	Significance Grouping[5]	In Poverty	Number	90 percent C.I.[2] (+/-)	Percent	90 percent C.I.[2] (+/-)	Significance Grouping[5]
All People	255,500	15,800	900	6.2	0.4	NA	48,400	20,300	1,000	42.0	1.5	NA
Race and Hispanic Origin												
White[3]	202,700	12,000	700	5.9	0.4	C	34,000	15,100	800	44.4	1.6	D
White, non-Hispanic[4]	167,400	8,300	700	5.0	0.4	A	21,500	10,100	600	46.8	1.9	E
Black[3]	29,300	2,500	400	8.7	1.3	D, E	10,000	3,400	400	33.7	3.1	A
Hispanic[4]	38,700	4,000	400	10.2	1.1	E	13,400	5,300	500	39.1	3.2	B
Non-Hispanic	216,700	11,900	800	5.5	0.4	B, C	34,900	15,000	800	43.0	1.7	C, D
Age												
Under 18 years	56,300	4,900	500	8.7	0.8	C	16,500	5,700	500	34.7	2.4	C
18 to 64 years	162,000	9,600	500	5.9	0.3	B	29,000	13,000	600	44.8	1.5	B
65 years and over	37,200	1,400	200	3.8	0.5	A	2,900	1,600	200	55.6	3.6	A
Family Status												
In married-couple families	168,000	7,200	700	4.3	0.4	A	13,200	7,000	700	53.4	3.6	D
In families with a male householder, no spouse present	8,200	800	200	10.3	2.3	C, D	1,400	800	200	52.9	8.9	C, D
In families with a female householder, no spouse present	33,300	3,800	400	11.5	1.2	D	18,600	5,900	600	31.9	3.0	A
Unrelated individuals	46,000	4,000	300	8.7	0.5	B, C	15,100	6,600	400	43.4	1.9	B

[1] Respondents had to be in sample in 2013 and 2014 in order to be included. There were 51,200 respondents in sample.

[2] A 90 percent confidence interval (C.I.) is a measure of an estimate's variability. The larger the confidence interval in relation to the size of the estimate, the less reliable the estimate.

[3] Federal surveys, including the SIPP 2014 Panel, give respondents the option of reporting more than one race. These data can be shown in two ways: (1) as mutually exclusive from other race groups, which may be denoted by "alone" or (2) not mutually exclusive with other race groups, denoted by "alone or in combination with other race groups." The figures, tables, and text in this report show race using the first method.

[4] Hispanics may be any race, data in this report for Hispanics overlap data for racial groups. Data users should exercise caution when interpreting aggregate results for these groups because they consist of many distinct subgroups that differ in socioeconomic characteristics, culture, and recency of immigration.

[5] Within each demographic category, response rates identified with the same letter are not signifcantly difference at the 90 percent confidence level. A indicates the lowest rate, B indicates the next lowest rates, etc.

Note: Numbers are rounded to the nearest hundred, in order to comply with disclosure requirements.

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

Table 6

Annual Poverty Entries and Exits from 2011 to 2012

(Numbers in thousands)

Characteristic	2011	In poverty in 2012 (Entrance)[1]				2011	Not in poverty in 2012 (Exit)[1]			
	Not in Poverty	Number	90 percent C.I.[2] (+/-)	Percent	90 percent C.I.[2] (+/-)	Not in Poverty	Number[6]	90 percent C.I.[2] (+/-)	Percent	90 percent C.I.[2] (+/-)
All People	248,700	10,100	900	4.0	0.4	36,400	10,100	900	27.7	2.1
Race and Hispanic Origin										
White[3]	203,500	7,700	800	3.8	0.4	25,000	6,900	700	27.6	2.2
White, non-Hispanic[4]	172,100	5,200	600	3.0	0.3	15,700	5,000	600	31.4	3.0
Black[3]	26,700	1,600	300	6.0	1.2	8,600	2,200	500	25.5	4.6
Hispanic[4]	33,800	2,800	500	8.2	1.3	10,200	2,100	400	20.8	3.3
Non-Hispanic	214,900	7,300	700	3.4	0.3	26,200	7,900	800	30.3	2.6
Age										
Under 18 years	51,500	3,000	400	5.7	0.8	12,600	3,100	400	24.4	3.0
18 to 64 years	161,900	6,400	600	4.0	0.3	21,200	6,300	600	29.9	2.2
65 years and over	35,300	700	100	2.0	0.3	2,600	700	100	25.2	4.1
Family Status										
In married-couple families	168,800	5,200	700	3.1	0.4	13,300	4,100	600	30.5	3.7
In families with a male householder, no spouse present	10,600	500	200	4.9	1.6	1,900	500	200	28.5	8.9
In families with a female householder, no spouse present	29,800	2,300	400	7.8	1.3	12,700	3,300	500	25.7	3.6
Unrelated individuals	39,500	2,000	200	5.1	0.5	8,600	2,200	300	26.1	2.7

[1] Respondents had to be in sample in 2011 and 2012 in order to be included. There were 41,900 respondents in sample.

[2] A 90 percent confidence interval (C.I.) is a measure of an estimate's variability. The larger the confidence interval in relation to the size of the estimate, the less reliable the estimate.

[3] Federal surveys, including the SIPP 2008 Panel, give respondents the option of reporting more than one race. These data can be shown in two ways: (1) as mutually exclusive from other race groups, which may be denoted by "alone" or (2) not mutually exclusive with other race groups, denoted by "alone or in combination with other race groups." The figures, tables, and text in this

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Note: Numbers are rounded to the nearest hundred, in order to comply with disclosure requirements.
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel.