

**THE SURVEY OF INCOME AND  
PROGRAM PARTICIPATION**

**Investigating Wave 1 Effects on  
Poverty Calculations in the 2008  
SIPP Panel**

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## Investigating Wave 1 Effects on Poverty Calculations in the 2008 SIPP Panel

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### Abstract

Discontinuity in estimates of monthly poverty rates across successive panels of the Survey of Income and Program Participation (SIPP) has been a consistent feature of SIPP Panels since the 1996 redesign. As investigated by Czajka, Mabli, and Cody (2008), each SIPP Panel since 1996 has reported Wave 1 poverty rates that were at least two percentage points higher than the final wave of the preceding panel. Additionally, within SIPP Panels, monthly poverty rates experience sharp declines between Waves 1 and 2. This across and within panel phenomenon is generally referred to as the “Wave 1 effect.”

Building off of prior research on the Wave 1 effect in earlier SIPP Panels (Czajka, Mabli, and Cody 2008; Anderson and Fields 2010), this analysis examines the Wave 1 effect in the 2008 SIPP Panel, with comparisons to the preceding 2004 SIPP Panel. Discrepancies in monthly poverty rates across panels and waves are investigated with a focus on sample composition changes and within-person poverty transitions across successive waves of the 2008 Panel.

The research suggest that the magnitude of the Wave 1 effect in the 2008 SIPP Panel was consistent with the effect observed in the 2004 Panel. However, the impact of within-person poverty transitions from Wave 1 to Wave 2 was larger in the 2008 Panel than the 2004 Panel.

**Key Words:** Survey of Income and Program Participation, SIPP, Poverty, Transitions

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<sup>1</sup> Any views expressed on statistical, methodological, or technical issues are those of the author and not necessarily those of the U.S. Census Bureau.

## Background

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As discussed by Huggins and Winters (1995), some of the most important measures from the Survey of Income and Program Participation (SIPP) are time series estimates of income and poverty statistics.

However, discontinuity in estimates of monthly poverty rates across successive panels of the SIPP, as well as sharp declines in poverty from Waves 1 to 2 within panels, have been a consistent feature of the survey. See Huggins and Winters (1995); Czajka, Mabli, and Cody (2008); and Anderson and Fields (2010). This across and within panel phenomenon is often referred to as the “Wave 1 effect.”

As with any longitudinal survey, differential attrition may be driving this phenomenon. Huggins and Winters (1995) examined the impact of differential attrition on poverty rates, finding that poverty rates changed sharply both across and within panels, while reports of median income were not significantly different. Similar research from Zabel (1998) and Vaughan and Scheuren (2002) concluded that sample leavers (attriters) had lower median earnings than those who remained in sample.

However, results from Czajka, Mabli, and Cody (2008) offered alternative explanations for discrepancies in monthly poverty rates across SIPP waves. Investigating the 2004 SIPP Panel, they concluded that changes in poverty status among individuals present in both Waves 1 and 2, (“within-person changes”), rather than differential attrition among the Wave 1 poor, accounted for 87 percent of the reduction in poverty across waves. Changes in sample composition accounted for the balance.

One potential cause for the disproportionate number of transitions out of poverty from Wave 1 to 2 within a panel may be “time-in-sample” bias, a phenomenon also observed among respondents in the Current Population Survey (CPS). Time-in-sample bias is exhibited by respondents who are successively interviewed, and refers to evidence of learned behavior in subsequent interviews. By remembering the income sources they will be expected to report in later interviews, respondents may provide more complete reports in subsequent interviews. (Czajka, Mabli, and Cody 2008).

Anderson and Fields (2010) investigated monthly poverty rates in the 2001 and 2004 SIPP Panels using both cross-sectional and panel samples to control for potential weighting effects.<sup>2</sup> They found that distributions of demographic characteristics varied across panel and cross-sectional samples suggesting that discrepancies in poverty rates across estimates may be explained by differences in how each sample was defined and how weights were calculated. They also found that monthly poverty rates estimated from the cross-sectional and panel samples varied in Wave 1 of the panel, and these differences grew over the course of the 2004 Panel. However, regardless of sample composition or weighting, both cross-sectional and panel samples exhibited Wave 1 effects. Investigating the source for this trend in the 2004 SIPP Panel, they found that there were greater increases in reported earnings from jobs and businesses as well as transfer income across Wave 1 to 2 compared to Waves 2 to 3.

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<sup>2</sup> Cross-sectional and panel estimates are weighted differently and use different rules for sample inclusion.

## Data and Methods

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This research uses data from the 2008 and 2004 Survey of Income and Program Participation (SIPP) to compare poverty estimates across and within panels. The SIPP is a nationally representative longitudinal household survey conducted by the U.S. Census Bureau. Since the first panel in 1984, there have been fourteen panels. SIPP Panels typically cover a span of three to four years, with data collected at regular intervals every four months within a panel. Survey samples are redrawn at the beginning of each panel. Interviews within a SIPP panel are referred to as “waves.” Additionally, sample households within a given panel are divided into four random subsamples of nearly equal size, referred to as rotation groups. For each wave, the interview month and reference period vary based on rotation group.<sup>3</sup> The reference period for each SIPP wave spans seven reference months across four rotation groups. The data used in this research comes from the 2008 SIPP Panel, consisting of 16 interview waves covering the period of May 2008 to November 2013.<sup>4</sup>

This paper compares estimates from the 2008 SIPP to the preceding 2004 SIPP Panel, which covered 12 waves over the period from October 2003 to December 2007. There was a four-month period between panels from January to April 2008 with no data coverage.

I duplicate the earlier methods of Czajka, Mabli, and Cody (2008) and Anderson and Fields (2010) to identify the proportion of change that can be attributed to within-person changes in poverty status from Wave 1 to Wave 2 in both the 2004 and 2008 SIPP Panels. I further build on the existing research by providing descriptive analysis of the characteristics of individuals who exit and enter the SIPP sample across waves, as well as the characteristics of individuals who are present in both waves based on their poverty transition status. In order to identify whether income reporting may be driving within-person changes in poverty status across waves, I investigate the probability that respondents will report new or increased income amounts across waves, as well as the probability that that increased income reports will cause individuals to exit poverty.

This analysis evaluates changes in monthly poverty rates across the 2004 and 2008 SIPP Panels, as well as examines within panel changes in poverty rates across successive waves from Waves 1 to 3. When comparing poverty rates across waves within a given panel, this analysis evaluates how individuals enter and exit poverty for those who were present in both waves, and how poverty rates differ for individuals who were only present in a previous or successive wave.

When evaluating changes in poverty across waves within a SIPP panel, differences are calculated consistently with previous methods reported in Czajka, Mabli, and Cody (2008) and Anderson and Fields (2010), using the cross-sectional monthly poverty rate for the single month in each wave that is

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<sup>3</sup> For more information on the design of the 2008 SIPP Panel see the Source and Accuracy statement at <https://www.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements/source-accuracy-statements-2008.html>.

<sup>4</sup> The last wave (Wave 16) of the SIPP covers the period of May to November 2013, and is still being processed. The data presented here is limited to Waves 1 to 15 of the 2008 SIPP Panel.

referenced by all rotation groups. The poverty rate in this month will be referred to as the ‘same-month’ poverty rate. As shown in Table 1, in the first wave of the 2008 Panel, rotation group one reported their income and family composition in the months of May to August of 2008. Rotation group two reported for June to September of 2008, while rotation group three reported for July to October, and rotation group four reported for August to November, with the same-month of August 2008 being common to all four rotation groups.

When evaluating poverty across successive SIPP panels, I report monthly poverty rates by calendar month (longitudinal estimates) and by wave. I calculate monthly poverty rates by wave from individual SIPP waves, which span seven reference months across four rotation groups. As shown in Table 1 and Table 2, within a single SIPP wave, the first three and last three reference months are not covered by all rotation groups. When calculating estimates of poverty for a specific wave in those months, the cross-sectional weights are multiplied to adjust for missing rotation groups.<sup>5</sup> Longitudinal estimates of monthly poverty are calculated by merging all of the waves covered in a SIPP Panel based on the shared reference months across rotation groups.

For example, in the last month of Wave 1, November 2008, the poverty estimate in Wave 1 is calculated based on responses from households in rotation group 4, with weights multiplied by a factor of 4 to adjust for missing rotation groups one, two and three. November 2008 is also referenced in Wave 2, where Wave 2 poverty rates are calculated based on responses from households in rotation groups one, two and three, with weights multiplied by a factor of 1.33 to adjust for missing rotation group four. When calculating longitudinal poverty rates, estimates are derived from respondents in rotation group four of Wave 1 and rotation groups one, two and three of Wave 2. Since “same-months” are identified as months where all reference groups are present in a single wave, same-month poverty rates require no weight adjustments and are consistent across wave and longitudinal measures. (See Table 3 and Table 4 in Appendix.)

### **Identifying the Presence of a Wave 1 Effect**

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Monthly poverty rates in the 2008 Panel are consistent with evidence of a Wave 1 effect as seen in previous SIPP panels. Monthly poverty increased by 3.5 percentage points from the last month of the 2004 Panel to the first month of the 2008 Panel, from a rate of 13.2 percent in December 2007 to 16.7 percent in May 2008. (See Table 3 and Table 4 in Appendix and Figure 1 below)

Same-month poverty rates are highlighted in Figure 1 below and reported in Table 3 and Table 4 in the Appendix as the non-shaded month within a wave. The same-month poverty rate in Wave 1 of the 2008 SIPP Panel (August 2008) was 16.4 percent. This reflects a 2.9 percentage point increase over the same-month poverty rate in the last wave of the 2004 SIPP Panel (September 2007), again consistent with a

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<sup>5</sup> For more information on the design of the 2008 SIPP Panel see the Source and Accuracy statement at <https://www.census.gov/programs-surveys/sipp/tech-documentation/source-accuracy-statements/source-accuracy-statements-2008.html>.

Wave 1 effect. Further, the same-month poverty rate declined 1.3 percentage points between Wave 1 and Wave 2 of the 2008 Panel (December 2008).

Although an increase in poverty rates from the end of the 2004 Panel to the beginning of the 2008 Panel may be expected given the economic recession spanning December 2007 to June of 2009, the magnitude of the difference, as well as the fact that the same-month poverty rate declines by 1.3 percentage points from Wave 1 to Wave 2 of the 2008 SIPP Panel indicates that increases in poverty rates across panels may be attributed to survey design effects as well as changes in economic conditions.

The magnitude of the decline in same-month poverty rates from Wave 1 to 2 in the 2008 Panel is not statistically different from the decline seen in the 2004 Panel, where same-month poverty rates declined from 14.9 percent in January 2004 to 13.5 percent in the same-month of the subsequent wave, May 2004. Linear trend lines are fitted in Figure 1 to illustrate the trajectory of the first and second wave same-month poverty rate in both the 2004 and 2008 SIPP Panel. Annual poverty rates from the Current Population Survey (CPS) provide an alternative survey measure of poverty for the period.

**Figure 1. 2004 and 2008 SIPP Panel Monthly Poverty Rates, Same Month Rates Highlighted**

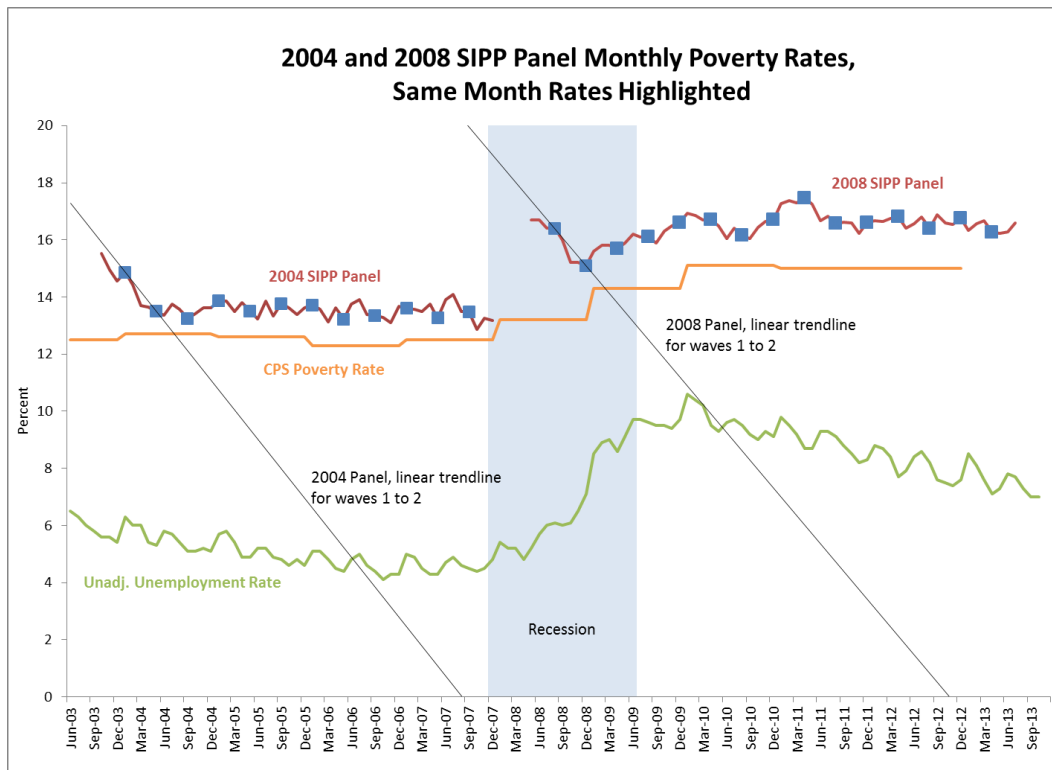
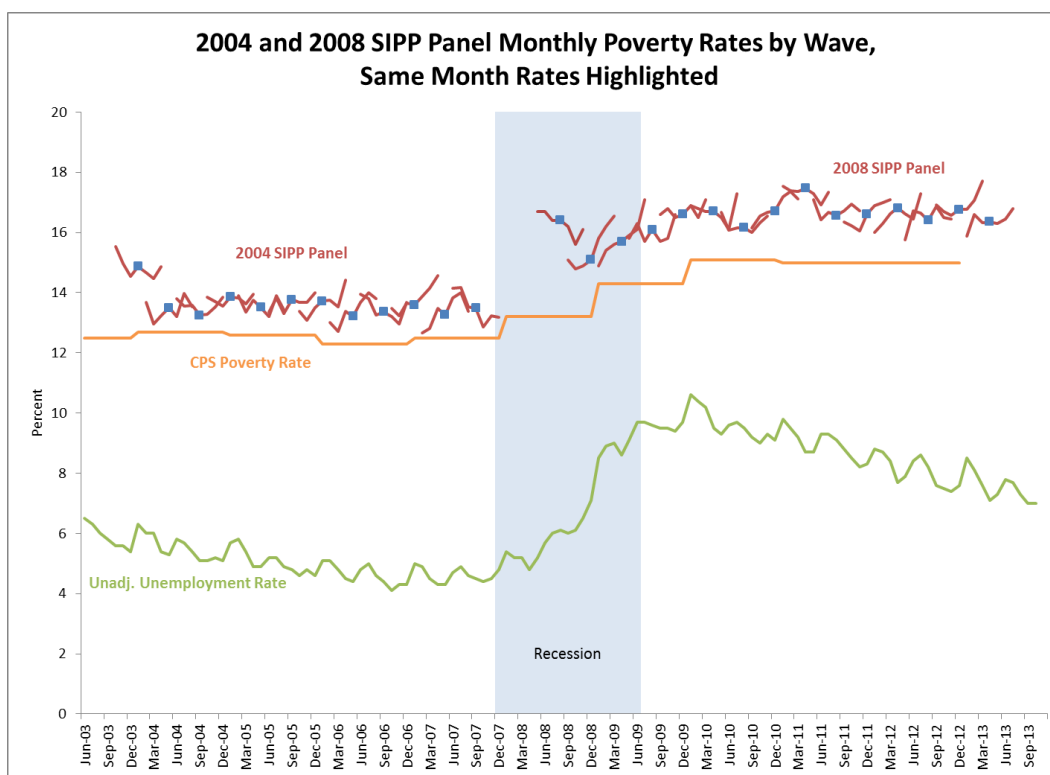


Figure 2 below illustrates monthly poverty rates for each wave, with waves overlapping across shared reference months. Over the course of Wave 1, monthly poverty rates declined from 16.7 percent in the first month (May 2008) to 16.1 percent in the last month (November 2008). This trend is again

consistent with the 2004 Panel, where monthly poverty rates declined from 15.5 percent in the first month of Wave 1 (October 2004) to 14.9 percent in the last month of Wave 1 (April 2004). Given that unemployment rates failed to show any improvement over the period from May to November 2008, it seems more likely that the observed decline in poverty rates over Wave 1 in the 2008 Panel results from the incorporation of additional rotation groups into the sample as the 2008 Panel progressed over the course of the wave.

As shown in Figure 2 below and Table 3 in the Appendix, for the 2008 SIPP Panel, the reference period for Waves 1 and 2 included the overlapping months of September, October, and November of 2008. In comparing monthly poverty estimates by wave for these shared months, Wave 1 poverty estimates average 1.0 percentage points higher than estimates in Wave 2.<sup>6</sup> The average wave-to-wave difference in monthly poverty rates for shared reference months across Waves 1 and 2 was not statistically different from those observed across the shared reference months in Wave 1 and Wave 2 of the 2004 Panel. (See Figure 2 below and Table 3 and Table 4 in Appendix)

**Figure 2. 2008 Panel Monthly Poverty Rates by Wave**



<sup>6</sup> The fact that wave to wave monthly poverty rates vary across shared reference months of successive waves is not unique to Wave 1 and 2 comparisons. While Wave 1 to 2 comparisons are particularly relevant to a discussion of the Wave 1 effect, differences across poverty estimates for shared reference months are to be expected given that each wave's last reference month includes only one rotation group, and generally has larger standard errors than the same month referenced in a subsequent wave where three rotation groups are present.

Table 5 in the Appendix investigates how same-month poverty rates vary across panels and waves by select characteristics. As reported in Table 5, from Wave 12 of the 2004 Panel to Wave 1 of the 2008 Panel, same-month poverty rates increased for individuals regardless of race, ethnicity, family type, or education level. While the same-month poverty rate for the overall population increased 2.9 percentage points from Wave 12 of the 2004 Panel to Wave 1 of the 2008 Panel, Hispanics and individuals with less than a high school diploma experienced larger increases over this period. Changes from Wave 12 to Wave 1 for all other demographic groups shown in Table 5 were not statistically different from the total population.

Subsequently, from Wave 1 to Wave 2 of the 2008 Panel, same-month poverty rates declined for all individuals listed in Table 5 except for those in single male householder families.<sup>7</sup> While the overall population experienced a decline of 1.3 percentage points in the same-month poverty rate from Wave 1 to 2 of the 2008 Panel, Blacks and individuals in single female householder families or with less than a high school diploma experienced larger declines.<sup>8</sup>

### **Decomposing Within-Person and Sample Composition Changes**

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Prior analysis of the 2004 SIPP Panel conducted by Czajka, Mabli, and Cody (2008) and replicated by Anderson and Fields (2010) found that approximately 87 percent of the net decline in same-month poverty rates from Wave 1 to 2 was attributed to within-person transitions, that is individuals who were present in both Wave 1 and Wave 2, but exited poverty across waves.<sup>9</sup> Table 6 presents a replication of this analysis for the 2008 Panel.

As shown in Table 6, the same-month poverty rate was 16.4 percent in Wave 1 of the 2008 Panel, with 49.1 million individuals in poverty. In Wave 2 of the 2008 Panel, the poverty rate declined 1.3 percentage points, with 3.8 million fewer individuals in poverty.

To calculate the percent of change attributable to within-person transitions out of poverty, Table 6 examines the number of individuals who were present in both waves, and calculates the number of individuals who transitioned into and out of poverty using the previous wave's weights for consistency. From Wave 1 to Wave 2, 15.5 million individuals exited poverty, while 12.0 million entered poverty, leading to a net within-person reduction of 3.5 million individuals in poverty. Using consistent Wave 1 weights and limiting the analysis to only the population present in both waves, the poverty rate declined 1.3 percentage points from Wave 1 to 2.

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<sup>7</sup> There was no statistically significant change in the same-month poverty rate for individuals in single male householder families from Wave 1 to Wave 2 of the 2008 Panel.

<sup>8</sup> Declines in same-month poverty rates from Wave 1 to Wave 2 of the 2008 SIPP Panel were not statistically different across Blacks, individuals in single female householder families, or those with less than a high school diploma.

<sup>9</sup> Results vary slightly between the Czajka, Mabli, and Cody (2008) and Anderson and Fields (2010) analyses due to the release of updated 2004 Panel Wave 1 files correcting for previously omitted sources of family income.



Without adjusting for differences in weights across waves, 5.7 million individuals who were in poverty in Wave 1 were not present in Wave 2. However, 1.3 million individuals who were not present in Wave 1 entered the survey in Wave 2 and were in poverty. This reflects an unadjusted decline of approximately 4.5 million people in poverty due to churning within the SIPP sample. In order to be consistent with within-person calculations, change in sample composition must be adjusted for the change in weighting across waves.

The cross-sectional person weights used in this analysis are designed to account for attrition across waves. Weights are adjusted using a non-interview adjustment factor that is applied to account for households that were eligible for the sample, but could not be located or interviewed by Census field representatives. This adjustment was made in Wave 1 for any households that were unable to be interviewed, as well as in all subsequent waves. In Wave 1, 19.2 percent of households not interviewed because they either refused to be interviewed, could not be found at home, were temporarily absent, or were otherwise unavailable.<sup>10</sup> In Wave 2, this weighted sample loss increased by 6.9 percentage points to 26.1 percent, while in Wave 3 it increased 2.8 percentage points to 28.9 percent.

Given that the cross-sectional weights in Wave 2 account for attrition from Wave 1 to 2, we subtract this weighting adjustment from the count of individuals who were poor and only present in Wave 1 so as not to double count these individuals.<sup>11</sup> After adjusting for weight inflation from Wave 1 to 2, the sample composition impact from Wave 1 to 2 of the 2008 SIPP Panel was a removal of 294,000 people from poverty. (See Table 6 in appendix)

The total change in the number of individuals in poverty from Waves 1 to 2 of the 2008 Panel (3.8 million) can therefore be decomposed into 3.5 million individuals who were present in both waves and exited poverty (92.2 percent), and a net loss of 294 thousand people in poverty due to changes in the sample population across waves (7.8 percent).

Although the observed Wave 1 effect in the 2008 Panel was not statistically different from the 2004 Panel in terms of the percentage point change in poverty across waves (1.3 percentage point decline in the 2008 Panel and 1.4 percentage point decline in 2004 Panel) the proportion of change attributable to within-person changes in poverty status is higher in the 2008 Panel than the 2004 Panel, 92.2 percent and 86.2 percent respectively. (See Table 6 in Appendix)

Notably, the role of within-person changes is smaller from Wave 2 to Wave 3 of the 2008 Panel, as the percentage of change attributable to within-person transitions in poverty status declined from 92.2 percent from Waves 1 to 2 to 54.1 percent from Waves 2 to 3.

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<sup>10</sup> See <http://www.census.gov/content/dam/Census/programs-surveys/sipp/tech-documentation/source-accuracy-statements/2008/SIPP%202008%20Panel%20Wave%2005%20%20Core%20Source%20and%20Accuracy%20Statements.pdf>.

<sup>11</sup> Weighting adjustments are larger from Wave 1 to Wave 2 than from Wave 2 to Wave 3 as the sample loss from Wave 1 to Wave 2 is greater than the loss from Wave 2 to Wave 3.

## **Characteristics of Individuals by Presence, and Poverty Status Across Waves**

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Table 7 describes individual characteristics based on presence in sample and poverty status in a given wave of the 2008 SIPP Panel. Although 36 percent of individuals in poverty in Wave 1 of the 2008 SIPP Panel exited poverty in Wave 2, only 28 percent of individuals in poverty in Wave 2 exited in Wave 3. This analysis is designed to illustrate how the characteristics of individuals who exited, entered, or remained static in their poverty status varied by waves, as well as to provide some insight to the characteristics of individuals who exited or entered the SIPP sample from wave to wave. This analysis will also identify the potential implications sample composition changes may have on poverty rates across waves.

Differences in frequencies and means across comparisons from Wave 1 to 2 and Wave 2 to 3 are noted at the 90 percent confidence level, and there are a number of differences in composition across sample populations in the 2008 SIPP. (See Table 7 in Appendix)

The demographic characteristics of the population that exited poverty from Wave 1 to Wave 2 in the 2008 SIPP Panel were fairly consistent when compared to the population that exited poverty from Wave 2 to 3. There were no statistical differences in the average age of those who exited from Wave 1 to 2 compared with those who exited from Wave 2 to 3. Similarly, the distribution of individuals by Hispanic origin, race, and family relationship to the head of household were largely consistent across wave to wave comparisons in the 2008 Panel. Characteristics of individuals exiting poverty between Waves 1 to 2 vary somewhat from those exiting from Wave 2 to 3 based on family composition and education. For example, individuals exiting from Wave 1 to 2 were more likely to be in families headed by a husband and wife, and less likely to be in families headed by a single male. Individuals exiting poverty in Wave 2 were also more likely to report having a bachelor's degree or higher, and less likely to report having some college. (See Table 7 in Appendix)

Although the characteristics of individuals exiting poverty in Wave 2 are largely consistent with those who exited in Wave 3, we do find that the characteristics of individuals who exited poverty in Wave 2 vary from the overall population present in both Wave 1 and 2. Comparing population distributions for the population in both waves to distributions for individuals who exited in Wave 2, there were significant differences based on individual's age, relationship to the householder, family type, race, Hispanic origin, and education.

Although individuals present in both Wave 1 and Wave 2 of the 2008 Panel had an average age of 37, the population exiting poverty from Wave 1 to Wave 2 was younger, with an average age of 33. Additionally, compared with the population in both waves, those who exited poverty in Wave 2 were more likely to be reference persons without relatives in the house, children, "other" relatives, the unmarried partner of a reference person, or unrelated individuals such as housemates or "other" nonrelatives.

Compared to the population present in Waves 1 and 2, the population exiting poverty in Wave 2 was comprised of greater percent of individuals who were traditionally more likely to experience poverty. The distribution of individuals exiting poverty in Wave 2 was comprised of a greater percentage of individuals who were Black, Asian, Hispanic, or non-married, as well as individuals with a high school diploma or less.

Although Table 6 illustrates that sample composition changes did not play a large role in the decline in poverty observed from Wave 1 to Wave 2, there are compositional trends evident in Table 7 and Table 8. In both the 2004 and 2008 SIPP survey, individuals who exited the survey from Wave 1 to Wave 2 had higher poverty rates than those who remained in the sample, consistent with prior research on differential attrition. However, those who entered the SIPP survey in Wave 2 but were not present in Wave 1 also reported higher poverty rates than those who were present in both waves.<sup>12</sup> Although, there were fewer individuals entering the survey in Wave 2 than in Wave 3, both in weighted and unweighted numbers.

In the 2008 Panel, poverty rates for individuals entering the survey in Wave 2 were lower than poverty rates for individuals entering the survey in Wave 3.<sup>13</sup> However, individuals who entered the 2008 SIPP Panel in Wave 2 made up only 2 percent of the sample across Waves 1 and 2, while individuals who entered in Wave 3 made up 6 percent of the sample across Waves 2 and 3. There are also significant differences in the characteristics of individuals who entered the SIPP sample in Wave 2 compared to Wave 3. Individuals who entered the 2008 SIPP Panel in Wave 2 were younger than those who entered in Wave 3 and more likely to be children of a household reference person. In Wave 3, new survey members were more likely to be reference persons.

Both the increase in capture of new sample persons in Wave 3, as well as their varying economic and demographic characteristics may be one reason why sample composition effects played such a limited role from Wave 1 to 2 and had an increased impact from Wave 2 to 3.

### **Change in Reported Income Across Waves**

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Table 9 investigates changes in reported personal income, by source, for individuals present in consecutive SIPP waves in order to evaluate whether improved income reporting may have caused individuals to exit poverty from Wave 1 to Wave 2.

The probability of reporting new income is calculated from the number of individuals who reported personal income in a later wave from an income source that was not reported in the preceding wave.<sup>14</sup>

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<sup>12</sup> The poverty rate for individuals who exited the 2004 or 2008 SIPP Panel from Wave 1 to Wave 2 was not statistically different from the poverty rate for those individuals who entered the survey in Wave 2.

<sup>13</sup> In the 2004 Panel poverty rates were not statistically different across individuals entering the survey in Wave 2 compared to those entering in Wave 3.

<sup>14</sup> Table 9 investigates changes in individual income in the same-months across waves, since personal income is only collected for individuals aged 15 and over in the SIPP, Table 9 excludes individuals who were under the age of 15 as of the second wave in a comparison group.

The probability of increased income reporting is calculated from the number of individuals who reported income from a given source in both waves, with the value reported in the later wave higher than the preceding wave.

This analysis focuses on the impact that new or increased income reporting had on poverty exits, as analysis of mean increases across waves are difficult to evaluate in the context of poverty transitions as large increases in income reporting may not be relevant if those increases are being reported by individuals who do not go on to exit poverty in Wave 2.

In the SIPP, total income is calculated as the sum of four primary income sources; income earned from employment or businesses; income from interest, dividends, or property; means-tested cash transfer income such as Supplemental Security Income, Temporary Assistance to Needy Families, or General Assistance; and “other” income such as Social Security, pensions, unemployment benefits, child support, or other unclassified income sources.

From Wave 1 to 2 of the 2008 SIPP Panel, 32 percent of individuals who reported no income in Wave 1 went on to report income in Wave 2, while 39 percent of individuals who reported income in both Waves 1 and 2 reported increased income amounts in Wave 2. For total income as well as the components of total income, the probability of individuals reporting an increase in income across Wave 1 to 2 was greater than the probability of individuals reporting new income.

Table 9 also reports the impact that these reporting changes had on individuals’ poverty status across waves. From Wave 1 to Wave 2, 28 percent of individuals who reported new income in Wave 2 moved out of poverty while 8 percent of those who reported increased income in Wave 2 exited poverty. However, the impact on poverty varied by income source, with individuals who reported increased means-tested transfer income from Wave 1 to Wave 2 about as likely to exit poverty as individuals who had not previously reported the receipt of transfer income. For other income sources, the probability of exiting poverty was greatest when individuals reported new sources of income.

Table 9 also compares changes in the reporting of income sources and amounts from Wave 1 to 2 to those over the course of Wave 2 to Wave 3. The probability of reporting new income from Wave 2 to 3 was 6.3 percentage points lower than the probability from Wave 1 to 2; the probability of reporting an increase in income was 1.3 percentage points lower. However, these trends vary somewhat by income source, with individuals more likely to report increases in “other” income from Wave 2 to 3 than Wave 1 to 2.

More importantly, from Wave 2 to Wave 3 the impact of increased income reporting and new reports of income on poverty exits diminished, with the probability of exiting poverty given the reporting of new income declining 3.2 percentage points, and the probability of exiting poverty given the reporting of increased income amounts declining 2.0 percentage points.

Table 10 provides a more detailed analysis of changes in income reporting and poverty exit probabilities based on individual characteristics. From Wave 1 to Wave 2, White individuals were more likely than Blacks to report new income, although there was no difference between Whites and Blacks in the probability of reporting increased income.

Hispanics were less likely than non-Hispanics to report new or increased sources of income from Wave 1 to Wave 2. There were also differences in the likelihood of reporting new income or increased amounts by family type, with single male householder families more likely to report new sources of income from Wave 1 to 2 and single female householder families more likely to report increased income from Wave 1 to Wave 2. Individuals with a bachelor's degree or higher were more likely to report new income from Wave 1 to Wave 2, and individuals with less than a high school diploma were least likely to report new income.

More importantly, the impact of this new or increased income on poverty exits varied by demographic groups as well. From Wave 1 to Wave 2, there were no statistical differences by race in the probability that reporting new income in Wave 2 would lead to an exit from poverty. However, Black individuals who reported increased income in Wave 2 were more likely to exit poverty than Whites or Asians who similarly reported increased income amounts. Although Hispanics were less likely than Non-Hispanics to report new or increased income over the period from Wave 1 to Wave 2, Hispanics who did report new or increased income were more likely to exit poverty in Wave 2 than Non-Hispanics who also experienced income increases. Individuals in single parent male or female families were more likely to exit poverty following the reporting of new or increased incomes in Wave 2 than those in married families. Somewhat surprisingly, individuals with less than a high school diploma who reported new income sources in Wave 2 were less likely to exit poverty than individuals with a bachelor's degree who similarly reported new income. However, the impact of increased income reporting was larger in moving individuals with less than a high school diploma out of poverty than individuals with other educational backgrounds.

In order to put the change in income reporting from Wave 1 to 2 in context with changes across subsequent waves, comparisons are made by demographic groups to subsequent income changes from Waves 2 to 3. As shown, when comparing the probability of reporting new income from Wave 1 to 2 to rates for Wave 2 to 3, the probability of reporting new income declined for all of the demographic groups shown in Table 10. Additionally, from Wave 1 to 2 and Wave 2 to 3 the impact of new income reports on poverty exits declined for individuals who were White, Non-Hispanic, in married-couple families, or who had a high school education or less. For all other demographic groups shown in Table 10, the probability of exiting poverty in Wave 3 given the reporting of new income was not statistically different from probabilities from Wave 2.

The probability of reporting increased incomes across waves declined for the total population from 39.0 percent from Wave 1 to 2 to 37.7 percent from Wave 2 to 3. However, for Hispanics, individuals in single male householder families, or those with less than a high school diploma, the probability of reporting increased income from Wave 2 to 3 was statistically unchanged from rates from Wave 1 to 2. For all

demographic groups except individuals in single male householder families, the probability of exiting poverty given increases in reported income declined from Wave 1 to 2 to Wave 2 to 3. (See Table 10 in Appendix)

## Conclusions

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Monthly poverty rates in the 2008 SIPP Panel were consistent with previous panels in exhibiting patterns indicative of a Wave 1 effect. Additionally, the magnitude of poverty rate declines from Wave 1 to Wave 2 of the 2008 Panel were consistent with those seen in the earlier 2004 Panel.

Replicating the methodology of Czajka, Mabli, and Cody (2008), within-person transitions in poverty status, rather than changes in sample composition, continued to account for the majority of the declines in poverty observed from Wave 1 to Wave 2 in the 2008 SIPP Panel. These within-person transitions out of poverty also accounted for a larger share of the total change in poverty from Wave 1 to Wave 2 in the 2008 Panel than from Wave 1 to Wave 2 in the 2004 Panel. Additionally, as the 2008 SIPP panel progressed, the impact of within-person transitions diminished from Wave 2 to 3 compared with Wave 1 to 2.

Changes in same-month poverty rates across panels indicate that from Wave 12 of the 2004 Panel to Wave 1 of the 2008 Panel, increases in poverty rates across panels were higher for Hispanics and those with less than a high school diploma than for the overall population. Within the 2008 Panel, Wave 1 to Wave 2 poverty rates declined more sharply for individuals who were Black, in single female householder families, or who had less than a high school diploma.

The characteristics of individuals who exited poverty from Wave 1 to Wave 2 of the 2008 SIPP Panel were largely consistent with those who exited from Wave 2 to Wave 3 based on age, race, and Hispanic origin; although, there were some significant differences in population distributions based on family-type and education. Although differential attrition was not the primary driver of changes in poverty rates across waves, poverty rates for individuals who exited and entered the SIPP survey following Wave 1 were higher than for those who remained in sample for both waves. Additionally, fewer individuals were added to the sample in Wave 2 than in Wave 3, and there were significant differences in the characteristics of individuals who entered the survey in Wave 2 compared to those who entered in Wave 3. Further investigation into these differences in sample composition could help explain the increased effect of sample changes on changes in poverty rates from Wave 2 to 3 compared to Wave 1 to 2.

Investigating changes in income reporting provides some insight as to what drove within-person changes in poverty status across Waves 1 to 2. Of individuals who reported no income in Wave 1, 32 percent reported income in Wave 2, and 28 percent of those individuals exited poverty in the subsequent wave. Of individuals who reported income in both Wave 1 and 2, 39 percent reported an increase in earnings in Wave 2, with 8 percent of those individuals exiting poverty due to this increased

income. This evidence does support that individuals reported both new and increased sources of income from Wave 1 to Wave 2. Further, this reporting of new income sources and increased income amounts did lead to poverty exits in Wave 2. However, this research is unable to determine whether these changes across waves reflect improved income reporting due to time-in-sample or some other survey design bias or actual changes in individual's economic circumstances across waves. However, if the increases in reported income from Wave 1 to Wave 2 were driven by time-in-sample learned behavior, the effect is not cumulative; my results suggest that the probability of reporting new or increased income declined from Wave 2 to Wave 3. Further, regardless of the cause of changes in reported income across waves, the probability of these income changes to lift individuals out of poverty was greater across Wave 1 to 2 than across Wave 2 to 3.

### **Limitations & Future Research**

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This paper identifies the continued presence of Wave 1 effects in the 2008 Panel, consistent with trends in previous SIPP Panels. While the magnitude of the Wave 1 effect has been measured in relationship to prior panels using same-month poverty rates, the cause and impact of this phenomenon is still largely unexamined. This paper has duplicated earlier methodology and is consistent with previous research in identifying within-person changes as the primary driver of changes in poverty between Waves 1 and 2. However, this analysis can not definitively determine what drives within-person changes in poverty status between waves or whether Wave 1 or Wave 2 poverty rates better reflect individuals' true economic circumstances.

This research has shown that both the probability of reporting new and increased income as well as the likelihood that that income reports will lead to exits from poverty were higher from Wave 1 to Wave 2 than from Wave 2 to Wave 3 in the 2008 SIPP Panel. However, in the absence of administrative record matching, it is difficult to determine whether increased income reporting in Wave 2 reflected actual changes in individual's economic circumstances or was a consequence of survey design effects or changes in respondent behavior as the panel progressed.

Additionally, changes in same-month poverty rates across panels indicated that from Wave 12 of the 2004 Panel to Wave 1 of the 2008 Panel, poverty rates had the highest discrepancies among Hispanics and those with less than a high school diploma, while within the 2008 Panel, Wave 2 poverty rates declined the most for individuals who were Black, in a single female householder family, or who had less than a high school diploma. However, this research cannot assess whether these groups were more likely to misreport income in Wave 1, or whether these individuals simply had more extreme economic experiences during the most recent recession. Future research into the characteristics of individuals who exited poverty in Wave 2 should control for the probability of individuals to be in poverty in Wave 1.

Future research in this area should take advantage of administrative reports to help inform whether the transitions observed from Wave 1 to Wave 2 were due to true changes in economic status, misreporting in Wave 1, or misreporting in Wave 2. Using administrative records would also allow researchers to investigate why there were so many within-person transitions from Waves 1 to 2 compared to

subsequent waves. However, opportunities to use administrative records are severely limited, as records typically used to evaluate survey income reporting, such as IRS W2 statements, are reported annually rather than monthly.

Investigation into data collection and imputation rates may also provide some insight as to whether interviewers are more successful in navigating the survey instrument and collecting more complete survey responses in subsequent waves. Investigating reporting patterns would be greatly informative, as one possibility for improved reporting in Wave 2 may be due to the capture of more self-interviews as opposed to proxy reports.

Improved understanding of the Wave 1 effect in the 2008 SIPP Panel gains increased importance as the re-engineered SIPP interviews respondents every year rather than every four months. As discussed by the National Research Council when providing guidance on the SIPP redesign, understanding how Wave 1 data may vary from subsequent collection periods becomes more important as the Wave 1 effect will gain increased prominence if there are only three or four annual interviews as opposed to the current design. National Research Council (2009)



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## Appendix

**Table 1.** 2008 SIPP Panel: Rotation Groups, Waves, and Reference Months

Reference Month	Rotation Group			
	1	2	3	4
May 08	W1 1			
June 08	W1 2	W1 1		
July 08	W1 3	W1 2	W1 1	
Aug. 08	W1 4	W1 3	W1 2	W1 1
Sept. 08	W2 1	W1 4	W1 3	W1 2
Oct. 08	W2 2	W2 1	W1 4	W1 3
Nov. 08	W2 3	W2 2	W2 1	W1 4
Dec. 08	W2 4	W2 3	W2 2	W2 1
Jan. 09	W3 1	W2 4	W2 3	W2 2
Feb. 09	W3 2	W3 1	W2 4	W2 3
Mar. 09	W3 3	W3 2	W3 1	W2 4
April 09	W3 4	W3 3	W3 2	W3 1
May 09	W4 1	W3 4	W3 3	W3 2
June 09	W4 2	W4 1	W3 4	W3 3
July 09	W4 3	W4 2	W4 1	W3 4
Aug. 09	W4 4	W4 3	W4 2	W4 1
Sept. 09	W5 1	W4 4	W4 3	W4 2
Oct. 09	W5 2	W5 1	W4 4	W4 3
Nov. 09	W5 3	W5 2	W5 1	W4 4
Dec. 09	W5 4	W5 3	W5 2	W5 1
Jan. 10	W6 1	W5 4	W5 3	W5 2
Feb. 10	W6 2	W6 1	W5 4	W5 3
Mar. 10	W6 3	W6 2	W6 1	W5 4
April 10	W6 4	W6 3	W6 2	W6 1
May 10	W7 1	W6 4	W6 3	W6 2
June 10	W7 2	W7 1	W6 4	W6 3
July 10	W7 3	W7 2	W7 1	W6 4
Aug. 10	W7 4	W7 3	W7 2	W7 1
Sept. 10		W7 4	W7 3	W7 2
Oct. 10			W7 4	W7 3
Nov. 10				W7 4

Reference Month	Rotation Group			
	1	2	3	4
Sept. 10	W8 1	<i>See Wave 7 data in bottom</i>		
Oct. 10	W8 2	W8 1	<i>of first column</i>	
Nov. 10	W8 3	W8 2	W8 1	
Dec. 10	W8 4	W8 3	W8 2	W8 1
Jan. 11	W9 1	W8 4	W8 3	W8 2
Feb. 11	W9 2	W9 1	W8 4	W8 3
Mar. 11	W9 3	W9 2	W9 1	W8 4
April 11	W9 4	W9 3	W9 2	W9 1
May 11	W10 1	W9 4	W9 3	W9 2
June 11	W10 2	W10 1	W9 4	W9 3
July 11	W10 3	W10 2	W10 1	W9 4
Aug. 11	W10 4	W10 3	W10 2	W10 1
Sept. 11	W11 1	W10 4	W10 3	W10 2
Oct. 11	W11 2	W11 1	W10 4	W10 3
Nov. 11	W11 3	W11 2	W11 1	W10 4
Dec. 11	W11 4	W11 3	W11 2	W11 1
Jan. 12	W12 1	W11 4	W11 3	W11 2
Feb. 12	W12 2	W12 1	W11 4	W11 3
Mar. 12	W12 3	W12 2	W12 1	W11 4
April 12	W12 4	W12 3	W12 2	W12 1
May 12	W13 1	W12 4	W12 3	W12 2
June 12	W13 2	W13 1	W12 4	W12 3
July 12	W13 3	W13 2	W13 1	W12 4
Aug. 12	W13 4	W13 3	W13 2	W13 1
Sept. 12		W13 4	W13 3	W13 2
Oct. 12			W13 4	W13 3
Nov. 12				W13 4

Note: The cell entry W1 1 represents Wave 1, reference month 1. The last reference month of each wave is in boldface type. The reference months for Wave 1 were May 2008 through November 2008, with all rotation groups in Wave 1 reporting for the month of August 2008.

Source: SIPP Users' Guide Sample Design and Interview Procedures. Chapter 2: SIPP Sample Design and Interview Procedures. <https://www.census.gov/programs-surveys/sipp/methodology/users-guide.html>.

**Table 2.** 2004 SIPP Panel: Rotation Groups, Waves, and Reference Months

Reference Months	Rotation Group			
	1	2	3	4
Oct. 03	W1 1			
Nov. 03	W1 2	W1 1		
Dec. 03	W1 3	W1 2	W1 1	
Jan. 04	<b>W1 4</b>	W1 3	W1 2	W1 1
Feb. 04	W2 1	<b>W1 4</b>	W1 3	W1 2
Mar. 04	W2 2	W2 1	<b>W1 4</b>	W1 3
April 04	W2 3	W2 2	W2 1	<b>W1 4</b>
May 04	<b>W2 4</b>	W2 3	W2 2	W2 1
June 04	W3 1	<b>W2 4</b>	W2 3	W2 2
July 04	W3 2	W3 1	<b>W2 4</b>	W2 3
Aug. 04	W3 3	W3 2	W3 1	<b>W2 4</b>
Sept. 04	<b>W3 4</b>	W3 3	W3 2	W3 1
Oct. 04	W4 1	<b>W3 4</b>	W3 3	W3 2
Nov. 04	W4 2	W4 1	<b>W3 4</b>	W3 3
Dec. 04	W4 3	W4 2	W4 1	<b>W3 4</b>
Jan. 05	<b>W4 4</b>	W4 3	W4 2	W4 1
Feb. 05	W5 1	<b>W4 4</b>	W4 3	W4 2
Mar. 05	W5 2	W5 1	<b>W4 4</b>	W4 3
April 05	W5 3	W5 2	W5 1	<b>W4 4</b>
May 05	<b>W5 4</b>	W5 3	W5 2	W5 1
June 05	W6 1	<b>W5 4</b>	W5 3	W5 2
July 05	W6 2	W6 1	<b>W5 4</b>	W5 3
Aug. 05	W6 3	W6 2	W6 1	<b>W5 4</b>
Sept. 05	<b>W6 4</b>	W6 3	W6 2	W6 1
Oct. 05		<b>W6 4</b>	W6 3	W6 3
Nov. 05			<b>W6 4</b>	W6 3
Dec. 05				<b>W6 4</b>

Reference Months	Rotation Group			
	1	2	3	4
Oct. 05	W7 1	<i>See Wave 6 data in bottom of first column</i>		
Nov. 05	W7 2	W7 1		
Dec. 05	W7 3	W7 2	W7 1	
Jan. 06	<b>W7 4</b>	W7 3	W7 2	W7 1
Feb. 06	W8 1	<b>W7 4</b>	W7 3	W7 2
Mar. 06	W8 2	W8 1	<b>W7 4</b>	W7 3
April 06	W8 3	W8 2	W8 1	<b>W7 4</b>
May 06	<b>W8 4</b>	W8 3	W8 2	W8 1
June 06	W9 1	<b>W8 4</b>	W8 3	W8 2
July 06	W9 2	W9 1	<b>W8 4</b>	W8 3
Aug. 06	W9 3	W9 2	W9 1	<b>W8 4</b>
Sept. 06	<b>W9 4</b>	W9 3	W9 2	W9 1
Oct. 06	W10 1	<b>W9 4</b>	W9 3	W9 2
Nov. 06	W10 2	W10 1	<b>W9 4</b>	W9 3
Dec. 06	W10 3	W10 2	W10 1	<b>W9 4</b>
Jan. 07	<b>W10 4</b>	W10 3	W10 2	W10 1
Feb. 07	W11 1	<b>W10 4</b>	W10 3	W10 2
Mar. 07	W11 2	W11 1	<b>W10 4</b>	W10 3
April 07	W11 3	W11 2	W11 1	<b>W10 4</b>
May 07	<b>W11 4</b>	W11 3	W11 2	W11 1
June 07	W12 1	<b>W11 4</b>	W11 3	W11 2
July 07	W12 2	W12 1	<b>W11 4</b>	W11 3
Aug. 07	W12 3	W12 2	W12 1	<b>W11 4</b>
Sept 07	<b>W12 4</b>	W12 3	W12 2	W12 1
Oct. 07		<b>W12 4</b>	W12 3	W12 2
Nov. 07			<b>W12 4</b>	W12 3
Dec. 07				<b>W12 4</b>

Note: The cell entry W1 1 represents Wave 1, reference month 1. The last reference month of each wave is in boldface type. The reference months for Wave 1 were October 2003 through April 2004, with all rotation groups in Wave 1 reporting for the month of January 2004.

Source: SIPP Users' Guide Sample Design and Interview Procedures. Chapter 2: SIPP Sample Design and Interview Procedures. <https://www.census.gov/programs-surveys/sipp/methodology/users-guide.html>.

**Table 3. 2008 SIPP Panel: Wave and Longitudinal Poverty Rates**

Month	2008 Panel															
	Longitudinal	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
May-08	16.7	16.7														
Jun-08	16.7	16.7														
Jul-08	16.4	16.4														
Aug-08	16.4	16.4														
Sep-08	16.0	16.2	15.1													
Oct-08	15.2	15.6	14.8													
Nov-08	15.2	16.1	14.9													
Dec-08	15.1		15.1													
Jan-09	15.6		15.8	14.9												
Feb-09	15.8		16.2	15.4												
Mar-09	15.8		16.6	15.6												
Apr-09	15.7			15.7												
May-09	15.9			15.9	15.8											
Jun-09	16.2			16.1	16.3											
Jul-09	16.1			17.1	15.7											
Aug-09	16.1				16.1											
Sep-09	15.9				15.7	16.6										
Oct-09	16.3				15.8	16.8										
Nov-09	16.5				16.6	16.5										
Dec-09	16.6					16.6										
Jan-10	16.9					16.9	16.9									
Feb-10	16.9					16.5	16.8									
Mar-10	16.7					17.1	16.7									
Apr-10	16.7						16.7									
May-10	16.5						16.5	16.7								
Jun-10	16.0						16.1	16.1								
Jul-10	16.4						17.3	16.1								
Aug-10	16.2							16.2								
Sep-10	16.1							16.0	16.2							
Oct-10	16.4							16.3	16.6							
Nov-10	16.7							16.6	16.7							
Dec-10	16.7								16.7							
Jan-11	17.3								17.2	17.5						
Feb-11	17.4								17.4	17.4						
Mar-11	17.3								17.1	17.4						
Apr-11	17.5									17.5						
May-11	17.2									17.3	17.1					
Jun-11	16.7									16.9	16.4					
Jul-11	16.8									17.3	16.7					
Aug-11	16.6										16.6					
Sep-11	16.6										16.7	16.4				
Oct-11	16.6										17.0	16.2				
Nov-11	16.2										16.7	16.1				
Dec-11	16.6											16.6				
Jan-12	16.7											16.9	16.0			
Feb-12	16.7											17.0	16.3			
Mar-12	16.7											17.1	16.6			
Apr-12	16.8												16.8			
May-12	16.4												16.6	15.8		
Jun-12	16.6												16.4	16.7		
Jul-12	16.8												17.3	16.7		
Aug-12	16.4													16.4		
Sep-12	16.9													16.9	16.9	
Oct-12	16.6													16.5	16.7	
Nov-12	16.6													16.4	16.6	
Dec-12	16.8														16.8	
Jan-13	16.3															15.9
Feb-13	16.6															16.6
Mar-13	16.7															16.3
Apr-13	16.3															16.4
May-13	16.2															16.3
Jun-13	16.3															16.5
Jul-13	16.6															16.8

Note: Shaded cells indicate months that are not referenced by all rotation groups. In these months, cross-sectional weights are inflated to adjust for missing rotation groups.

**Table 4. 2004 SIPP Panel: Wave and Longitudinal Poverty Rates**

Month	2004 Panel														
	Longitudinal	Wave													
	1	2	3	4	5	6	7	8	9	10	11	12			
Oct-03	15.5	15.5													
Nov-03	15.0	15.0													
Dec-03	14.6	14.6													
Jan-04	14.9	14.9													
Feb-04	14.4	14.7	13.7												
Mar-04	13.7	14.5	13.0												
Apr-04	13.7	14.9	13.2												
May-04	13.5		13.5												
Jun-04	13.4		13.2	13.8											
Jul-04	13.8		14.0	13.6											
Aug-04	13.6		13.5	13.6											
Sep-04	13.3			13.3											
Oct-04	13.4			13.3	13.8										
Nov-04	13.6			13.5	13.7										
Dec-04	13.6			13.8	13.6										
Jan-05	13.9				13.9										
Feb-05	13.9				13.8	13.9									
Mar-05	13.5				13.6	13.4									
Apr-05	13.8				14.0	13.8									
May-05	13.5					13.5									
Jun-05	13.2					13.2	13.4								
Jul-05	13.9					13.9	13.8								
Aug-05	13.3					13.4	13.3								
Sep-05	13.8						13.8								
Oct-05	13.6						13.7	13.4							
Nov-05	13.4						13.7	13.1							
Dec-05	13.6						14.0	13.5							
Jan-06	13.7							13.7							
Feb-06	13.6							13.8	13.0						
Mar-06	13.1							13.5	12.7						
Apr-06	13.6							14.4	13.4						
May-06	13.2								13.2						
Jun-06	13.7								13.7	13.9					
Jul-06	13.9								14.0	13.8					
Aug-06	13.4								13.8	13.3					
Sep-06	13.4									13.4					
Oct-06	13.3									13.2	13.5				
Nov-06	13.1									13.0	13.2				
Dec-06	13.7									13.7	13.7				
Jan-07	13.6										13.6				
Feb-07	13.6										13.9	12.7			
Mar-07	13.5										14.2	12.8			
Apr-07	13.8										14.6	13.5			
May-07	13.3											13.3			
Jun-07	13.9											13.8	14.1		
Jul-07	14.1												14.0	14.2	
Aug-07	13.5													13.4	13.5
Sep-07	13.5														13.5
Oct-07	12.9														12.9
Nov-07	13.2														13.2
Dec-07	13.2														13.2

Note: Shaded cells indicate months that are not referenced by all rotation groups. In these months, cross-sectional weights are inflated to adjust for missing rotation groups.

**Table 5.** Change in Same-Month Poverty Rates Across Panels and Waves by Characteristics

	2004 Wave 12 Same-Month Poverty	2008 Wave 1 Same-Month Poverty	Change in Poverty 2004 Wave 12 to 2008 Wave 1	2008 Wave 2 Same-Month Poverty	Change in Poverty 2008 Wave 1 to 2008 Wave 2
<b>All People</b>	13.5 (0.2)	16.4 (0.1)	2.9 * (0.2)	15.1 (0.1)	-1.3 * (0.2)
<b>Race</b>					
White alone	11.5 (0.2)	14.4 (0.1)	2.9 * (0.2)	13.4 (0.1)	-1.0 * (0.2)
Black alone	25.1 (0.7)	28.1 (0.4)	3.0 * (0.8)	24.9 (0.4)	-3.2 * (0.6)
Asian alone	12.0 (1)	14.9 (0.5)	2.9 * (1.1)	12.2 (0.5)	-2.7 * (0.8)
<b>Ethnicity</b>					
Hispanic	22.9 (0.6)	27.7 (0.4)	4.8 * (0.8)	25.8 (0.4)	-1.9 * (0.6)
Non-Hispanic	11.8 (0.2)	14.4 (0.1)	2.6 * (0.2)	13.1 (0.1)	-1.2 * (0.2)
<b>Family Type</b>					
Married couple	7.2 (0.2)	9.5 (0.1)	2.4 * (0.2)	8.5 (0.1)	-1.0 * (0.2)
Male householder	17.4 (0.7)	21.5 (0.4)	4.2 * (0.8)	21.6 (0.4)	0.1 (0.6)
Female householder	28.8 (0.5)	31.7 (0.3)	2.9 * (0.6)	28.7 (0.3)	-2.9 * (0.4)
<b>Education</b>					
Less than high school	22.2 (0.6)	27.0 (0.4)	4.8 * (0.7)	24.3 (0.4)	-2.6 * (0.5)
High school graduate	13.6 (0.4)	16.0 (0.3)	2.4 * (0.5)	14.5 (0.3)	-1.5 * (0.4)
Some college, associates degree	10.4 (0.3)	12.8 (0.2)	2.4 * (0.4)	12.2 (0.2)	-0.6 * (0.3)
Bachelor's degree or higher	4.5 (0.3)	6.9 (0.2)	2.5 * (0.3)	5.8 (0.2)	-1.1 * (0.3)

\* Statistically different at the 90 percent confidence level.

Note: Standard errors in parentheses.

Source: U.S. Census Bureau, Survey of Income and Program Participation. 2004 and 2008 Panel.

**Table 6.** 2004 and 2008 SIPP Panel: Decomposing Within-Person and Sample Composition Changes in Same-Month Poverty Across Successive Waves; Weighted (numbers in 1000s)

Population and Estimate	2004 SIPP Panel		2008 SIPP Panel	
	Wave 1 to Wave 2	Wave 2 to Wave 3	Wave 1 to Wave 2	Wave 2 to Wave 3
<i>Previous Wave<sup>a</sup></i>				
In poverty	42,603	38,785	49,134	45,343
Poverty rate	14.9	13.5	16.4	15.1
<i>Current Wave<sup>b</sup></i>				
In poverty	38,785	38,207	45,343	47,127
Poverty rate	13.5	13.3	15.1	15.7
<i>Wave to Wave Differences</i>				
Level difference	-3,818	-578	-3,790	1,784
Percentage point difference	-1.4	-0.2	-1.3	0.6
<i>In Both<sup>a</sup></i>				
In poverty in both	24,620	24,008	27,867	28,897
Exit poverty in second wave	13,184	10,551	15,534	10,994
Entered poverty in second wave	9,891	9,487	12,038	11,960
Not in poverty in both	214,519	217,006	216,884	220,950
Within person last wave poverty rate	14.4	13.2	15.9	14.6
Within person current wave poverty rate	13.2	12.8	14.7	15.0
<i>Within Person Differences</i>				
Level difference (entered-exit)	-3,293	-1,064	-3,496	966
Percentage point difference	-1.3	-0.4	-1.3	0.4
<i>Only in Previous Wave<sup>a</sup></i>				
In poverty	4,799	4,226	5,732	5,452
Poverty rate	19.7	16.0	21.5	20.0
<i>Only in Current Wave<sup>b</sup></i>				
In poverty	844	3,105	1,250	4,468
Poverty rate	19.0	20.7	23.0	25.8
<i>Survey Composition Differences</i>				
Level difference (w/o weighting adj.)	-3,954	-1,121	-4,482	-985
Percentage point difference	-0.7	4.6	1.5	5.8
<i>Weighting Adjustment<sup>c</sup></i>				
Second wave, first weight (in poverty) <sup>a</sup>	34,511	33,495	39,905	40,857
Second wave, second weight (in poverty) <sup>b</sup>	37,941	35,102	44,093	42,660
Weighting adjustment	3,430	1,607	4,188	1,803
Adj. survey composition level differences	-524	486	-294	818
<i>Percent of Total Change</i>				
Net effect of sample changes	13.7%	-84.0%	7.8%	45.9%
Net effect of transitions in poverty status	86.2%	184.0%	92.2%	54.1%

<sup>a</sup> First wave same-month reference weight used.

<sup>b</sup> Second wave same-month reference weight used.

<sup>c</sup> Limited to individuals in both waves.

Note: Methods derived from Czajka, Mabli, and Cody (2008) and Anderson and Fields (2010).

Source: U.S. Census Bureau, Survey of Income and Program Participation. 2004 and 2008 Panel.

1 **Table 7.** 2008 Panel, Demographic and Economic Characteristics of Sample Members by Presence and Poverty Status Across Waves

	Wave 1 to Wave 2						Wave 2 to Wave 3					
	In Both <sup>1</sup>			Only in Previous <sup>1</sup>	Only in Current		In Both <sup>1</sup>			Only in Previous <sup>1</sup>	Only in Current	
	All	No Change	Entered Poverty				Exited Poverty	All	No Change			Entered Poverty
<b>Age</b>	37.1	37.6	31.1	33.0	34.1	19.0 *	37.2	37.7	30.8	32.7	33.9	29.7 *
<b>Relationship</b>												
Reference person (w/ related persons in hhld.)	26.6	27.1	22.5	22.8	23.5	4.7 *	26.5	26.9	22.8	22.8	23.2	18.8 *
Reference person (w/o related persons in hhld.)	12.8	12.6	14.5	15.2	14.7 *	0.9 *	13.0	12.9	13.8	16.5	11.7 *	9.3 *
Spouse	20.0	20.7	14.2	14.2	16.5	5.8 *	20.0	20.5	13.6	13.7	16.1	13.5 *
Child	30.4	30.0	32.9 *	33.6	30.2	50.6 *	30.5	30.2	36.2 *	31.3	31.1	36.4 *
Grandchild	1.9	1.9	2.5	1.9 *	2.4	11.9 *	2.0	1.9	3.2	2.9 *	2.6	4.6 *
Parent	0.9	0.9	0.6	0.8	0.9 *	1.9	0.8	0.8	0.7	0.9	1.6 *	1.1
Sibling	0.9	0.9	0.8	1.0	1.4	2.7 *	0.9	0.8	1.2	0.8	1.4	1.7 *
Other relative	1.8	1.7	2.4	2.5	2.8 *	9.3 *	1.9	1.9	2.5	2.4	3.6 *	4.9 *
Foster child	0.0	0.0	-	-	0.0	0.1	0.0	0.0	-	-	0.1	0.1
Unmarried partner	2.3	2.1	5.1 *	3.7	3.1	3.2	2.3	2.2	3.0 *	4.1	3.2	3.4
Housemate/roommate	1.1	1.0	2.1	2.4	2.3	3.3	1.1	1.0	1.7	2.3	2.7	2.7
Roomer/boarder	0.2	0.2	0.5	0.4	0.6	1.5	0.2	0.2	0.3	0.4	0.8	0.8
Other nonrelative	0.8	0.7	1.8 *	1.5	1.7	4.1 *	0.7	0.7	1.0 *	1.9	2.1	2.6 *
<b>Race</b>												
White alone	80.7	81.1	78.7 *	74.7	73.0	76.0	80.5	81.0	76.0 *	75.1	74.0	74.0
Black alone	12.1	11.8	13.0 *	16.7	17.8 *	16.7	12.3	11.9	16.3 *	16.2	16.2 *	17.7
Asian alone	3.6	3.6	3.7	4.3	5.3	3.3 *	3.7	3.7	3.7	3.8	5.0	4.7 *
<b>Ethnicity</b>												
Hispanic	15.2	14.2	24.6	24.3	19.2	23.9	15.4	14.4	26.1	25.8	18.8	21.0
Non-Hispanic	84.8	85.8	75.4	75.7	80.8	76.1	84.6	85.6	73.9	74.2	81.2	79.0
<b>Family Type</b>												
Married couple	63.5	64.9	51.5	50.8 *	54.3	52.5	63.5	64.7	52.3	47.4 *	54.2	54.8
Male householder	13.0	12.4	21.4 *	15.8 *	17.1	17.4	12.8	12.4	16.2 *	19.6 *	17.8	16.6
Female householder	23.5	22.7	27.0 *	33.4	28.6	30.1	23.7	22.9	31.5 *	33.0	28.0	28.6
<b>Education</b>												
Less than high school	17.6	16.6	25.5	27.5	19.1	24.3 *	17.7	16.8	28.3	28.8	19.2	17.2 *
High school graduate	24.1	23.8	27.0	27.0	26.1 *	30.4	24.2	24.0	27.3	25.1	24.3 *	28.5
Some college, associates degree	33.1	33.4	33.0	28.7 *	33.5	31.8	32.9	33.0	30.2	32.3 *	35.1	34.5
Bachelor's degree or higher	25.2	26.2	14.5	16.8 *	21.2	13.5 *	25.2	26.2	14.3	13.8 *	21.4	19.8 *
<b>In poverty</b>	14.7	-	-	-	21.5	23.0	15.0	-	-	-	20.0	25.8
<b>Proportion</b>	89.5 *	89.9 *	4.4	5.7 *	8.7 *	1.8 *	86.0 *	91.6 *	4.4	4.0 *	8.6 *	5.5 *
<b>N (unweighted)</b>	96,055	86,167	4,298	5,590	9,237	1,948	89,123	81,628	3,860	3,635	8,880	5,698
<b>N</b>	272,323	244,752	12,038	15,534	26,611	5,434	272,801	249,847	11,960	10,994	27,207	17,307

<sup>1</sup> Uses previous wave characteristics and weight.

\* Statistically different at the 90 percent confidence level from the comparable estimate from the Wave 2 to Wave 3 table, and vice versa.

Note: Standard errors in parentheses.

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



3 **Table 8.** 2004 Panel, Demographic and Economic Characteristics of Sample Members by Presence and Poverty Status Across Waves

	Wave 1 to Wave 2						Wave 2 to Wave 3					
	In Both <sup>1</sup>			Only in Previous <sup>1</sup>	Only in Current	In Both <sup>1</sup>			Only in Previous <sup>1</sup>	Only in Current		
	All	No Transition	Entered Poverty			Exited Poverty	All	No Transition			Entered Poverty	Exited Poverty
<b>Age</b>	36.2	36.7	31.9 *	30.3	35.5 *	21.2 *	36.4	36.9	29.7 *	31.1	34.1 *	29.9 *
<b>Relationship</b>												
Reference person (w/ related persons in hhhd.)	26.8	27.2	22.7	22.9	24.8	5.7 *	26.8	27.2	22.2	23.0	23.8	19.2 *
Reference person (w/o related persons in hhhd.)	12.3	12.1 *	16.2	14.1	14.8 *	2.0 *	12.7	12.5 *	15.3	14.8	11.9 *	8.4 *
Spouse	20.4	21.1	13.9 *	12.8	18.0	8.1 *	20.3	21.0	11.6 *	12.7	17.8	14.5 *
Child	31.1	30.8	33.1	33.9	28.8 *	46.2 *	30.9	30.7	34.4	33.9	30.9 *	34.9 *
Grandchild	1.8	1.7	2.6	3.2	1.4 *	9.4 *	1.9	1.7	3.4	3.1	2.1 *	4.4 *
Parent	0.9	0.9	0.9	0.7	0.9	1.9	0.8	0.8	1.3	1.0	1.2	1.2
Sibling	0.9	0.9	0.9	1.3	1.5	2.8 *	0.9	0.9	1.0	0.9	1.3	1.7 *
Other relative	1.7	1.6	1.9	1.9	2.5 *	7.7 *	1.6	1.6	2.6	1.9	3.3 *	4.8 *
Foster child	0.0	0.0	0.0	-	0.0	0.2	0.0	0.0	-	0.1	0.1	0.1
Unmarried partner	2.0	1.8	3.4	4.7	2.7	6.0 *	2.1	1.9	4.0	3.8	2.8	3.8 *
Housemate/roommate	1.0	0.9	2.0	2.3	2.6	4.4	1.0	0.9	2.4	2.3	2.3	3.1
Roomer/boarder	0.3	0.2	0.7	0.8	0.5	1.5	0.2	0.2	0.5	0.5	0.8	0.9
Other nonrelative	0.7	0.6	1.8	1.5	1.4	4.1	0.7	0.6	1.3	1.9	1.6	3.0
<b>Race</b>												
White alone	81.0	81.5	76.2	75.3	76.8	76.7	80.9	81.4	75.3	73.2	78.0	77.9
Black alone	12.3	11.9	16.2	17.7	14.7	15.5	12.4	11.9	17.9	18.5	13.6	13.8
Asian alone	3.3	3.3	2.9	3.2	4.9	3.8	3.3	3.3	2.5	3.5	4.8	4.7
<b>Ethnicity</b>												
Hispanic	13.6	12.8 *	19.4	23.7 *	17.7	21.1 *	13.8	13.3 *	20.8	20.2 *	16.4	17.2 *
Non-Hispanic	86.4	87.2 *	80.6	76.3 *	82.3	78.9 *	86.2	86.7 *	79.2	79.8 *	83.6	82.8 *
<b>Family Type</b>												
Married couple	65.0	66.7	50.1 *	45.6	55.5 *	55.2	64.5	66.1	45.3 *	46.5	59.4 *	56.1
Male householder	11.9	11.4	17.2 *	18.5	16.9	16.7	12.1	11.5	20.4 *	18.6	15.5	15.7
Female householder	23.1	22.0	32.7	36.0	27.6 *	28.0	23.3	22.4	34.4	35.0	25.2 *	28.2
<b>Education</b>												
Less than high school	19.8 *	19.0 *	26.8	29.7	20.2	23.1 *	18.8 *	18.1 *	25.8	28.3	20.3	18.8 *
High school graduate	24.4 *	24.2 *	27.3	26.0	26.8	31.8	25.5 *	25.3 *	25.8	27.6	26.9	29.4
Some college, associates degree	33.1	33.3	31.8	31.6	33.0	30.4	32.8	32.9	31.4	31.7	32.8	32.2
Bachelor's degree or higher	22.7	23.5	14.1	12.7	20.0	14.7 *	22.9	23.7	14.0	12.4	20.0	19.6 *
<b>In poverty</b>	13.2	-	-	-	19.7 *	19.0	12.8	-	-	-	16.0 *	20.7
<b>Proportion</b>	90.1 *	91.2 *	3.8 *	5.0 *	8.4 *	1.5 *	86.3 *	92.3 *	3.6 *	4.0 *	8.7 *	5.0 *
<b>N (unweighted)</b>	101,082	92,039	3,894	5,149	9,196	1,930	93,657	86,364	3,437	3,856	9,355	5,879
<b>N</b>	262,215	239,140	9,891	13,184	24,302	4,435	261,052	241,014	9,487	10,551	26,336	15,004

<sup>1</sup> Uses previous wave characteristics and weight.

\* Statistically different at the 90 percent confidence level from the comparable estimate from the Wave 2 to Wave 3 table, and vice versa.

Note: Standard errors in parentheses.

Source: U.S. Census Bureau, Survey of Income and Program Participation. 2004 Panel.

5 **Table 9.** 2008 Panel, Probability of Income Changes across Waves; by Income Source

Wave 1 - Wave 2					
	Total Income	Earned Income	Property Income	Transfer Income	Other Income
Probability of New Income <sup>1</sup>	32.0	13.5	13.7	0.9	4.9
Probability of Increase in Income <sup>2</sup>	39.0	29.2	28.2	31.7	29.3
Probability of Exiting Poverty Given New Income <sup>3</sup>	28.2	27.3	7.3	20.3	17.3
Probability of Exiting Poverty Given Increase in Income <sup>3</sup>	8.3	6.8	3.0	20.4	7.3

Wave 2 - Wave 3					
	Total Income	Earned Income	Property Income	Transfer Income	Other Income
Probability of New Income <sup>1</sup>	25.7	10.0	10.9	0.8	4.5
Probability of Increase in Income <sup>2</sup>	37.7	25.6	25.7	31.2	33.5
Probability of Exiting Poverty Given New Income <sup>3</sup>	25.0	26.8	5.1	15.6	11.7
Probability of Exiting Poverty Given Increase in Income <sup>3</sup>	6.3	5.6	2.2	15.2	4.6

Changes Wave 1-2 to Wave 2-3					
	Total Income	Earned Income	Property Income	Transfer Income	Other Income
Change in Probability of New Income	-6.3 *	-3.4 *	-2.8 *	-0.1 *	-0.4 *
Change in Probability of Increase in Income	-1.3 *	-3.6 *	-2.5 *	-0.4	4.2 *
Change in Probability of Exiting Poverty Given New Income	-3.2 *	-0.4	-2.2 *	-4.6 *	-5.6 *
Change in Probability of Exiting Poverty Given Increase in Income	-2.0 *	-1.2 *	-0.9 *	-5.2 *	-2.7 *

<sup>1</sup> Denominator includes all people who did not report income for a given source in the earlier wave.

<sup>2</sup> Denominator includes all people who reported income for a given source in both the earlier and later wave.

<sup>3</sup> Income change is based on individual's changes in income, while poverty status is calculated at the family level.

\* Differences are statistically significant at the 90 percent confidence level.

Note: Estimates calculated at the person level for individuals age 15 and over as of the later wave in a comparison. Estimates are weighted using the earlier wave weights.

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

8 **Table 10.** 2008 Panel, Probability of Income Changes across Waves; by Individual Characteristics

	Total Income											
	Probability of New Income <sup>1</sup>			Probability of Exiting Poverty Given New Income <sup>3</sup>			Probability of Increase in Income <sup>2</sup>			Probability of Exiting Poverty Given Increase in Income <sup>3</sup>		
	Wave 1-2	Wave 2-3	Change	Wave 1-2	Wave 2-3	Change	Wave 1-2	Wave 2-3	Change	Wave 1-2	Wave 2-3	Change
<b>All People</b>	32.0	25.7	-6.3 *	28.2	25.0	-3.2 *	39.0	37.7	-1.3 *	8.3	6.3	-2.0 *
	0.5	0.5	0.7	0.9	1.0	1.3	0.2	0.2	0.3	0.2	0.2	0.3
<b>Race</b>												
White alone	32.7	26.7	-6.0 *	28.0	24.5	-3.5 *	39.2	38.0	-1.2 *	7.6	5.9	-1.7 *
	0.6	0.6	0.8	1.0	1.1	1.5	0.2	0.2	0.3	0.2	0.2	0.3
Black alone	29.8	22.6	-7.3 *	28.1	27.3	-0.8	38.2	35.5	-2.8 *	12.7	9.0	-3.7 *
	1.2	1.2	1.7	2.1	3.0	3.7	0.6	0.7	0.9	0.7	0.7	1.0
Asian alone	33.5	22.4	-11.1 *	32.8	32.0	-0.8	37.0	34.6	-2.4 *	9.1	6.4	-2.7 *
	2.0	2.0	2.8	3.4	4.7	5.8	1.0	1.0	1.5	1.0	0.9	1.3
<b>Ethnicity</b>												
Hispanic	26.3	22.3	-4.0 *	34.4	30.0	-4.5	35.5	34.0	-1.6	13.2	10.8	-2.3 *
	1.0	1.0	1.4	2.2	2.5	3.3	0.7	0.7	1.0	0.8	0.8	1.1
Non-Hispanic	33.9	26.8	-7.1 *	26.7	23.7	-3.0 *	39.5	38.2	-1.3 *	7.7	5.8	-1.9 *
	0.6	0.6	0.8	0.9	1.1	1.4	0.2	0.2	0.3	0.2	0.2	0.3
<b>Family Type</b>												
Married Couple	31.1	23.7	-7.4 *	21.5	18.7	-2.8 *	38.9	37.5	-1.4 *	5.2	3.6	-1.6 *
	0.6	0.6	0.9	1.0	1.1	1.5	0.3	0.3	0.4	0.2	0.2	0.3
Male householder	42.5	36.4	-6.2 *	49.1	43.3	-5.8	37.5	36.4	-1.2	12.0	11.5	-0.5
	1.6	1.7	2.3	2.5	2.9	3.8	0.5	0.6	0.8	0.6	0.6	0.9
Female householder	29.6	26.0	-3.6 *	31.7	28.0	-3.7	40.3	39.0	-1.3 *	13.9	10.1	-3.8 *
	0.9	1.0	1.4	1.8	2.0	2.7	0.4	0.4	0.6	0.5	0.4	0.6
<b>Education</b>												
Less than high school	19.9	17.6	-2.3 *	24.2	20.1	-4.2 *	36.2	37.2	1.0	14.3	10.9	-3.4 *
	0.6	0.6	0.9	1.5	1.6	2.2	0.6	0.6	0.8	0.7	0.6	0.9
High school graduate	38.6	29.8	-8.8 *	31.2	25.2	-6.0 *	37.8	36.2	-1.6 *	9.6	7.0	-2.6 *
	1.1	1.1	1.6	1.7	1.9	2.6	0.4	0.4	0.6	0.4	0.4	0.6
Some college, associates degree	41.4	33.6	-7.8 *	26.3	29.4	3.1	39.4	38.0	-1.4 *	7.5	6.4	-1.1 *
	1.1	1.2	1.6	1.6	2.0	2.6	0.4	0.4	0.5	0.3	0.3	0.4
Bachelor's degree or higher	52.9	39.1	-13.8 *	35.2	29.7	-5.5	40.9	38.8	-2.2 *	5.6	3.5	-2.1 *
	1.7	2.0	2.6	2.3	2.9	3.7	0.4	0.4	0.6	0.3	0.2	0.4

<sup>1</sup> Denominator includes all people who did not report income for a given source in the earlier wave.

<sup>2</sup> Denominator includes all people who reported income for a given source in both the earlier and later wave.

<sup>3</sup> Income change is based on individual's change

\* Differences are statistically significant at the 90 percent confidence level

Note: Estimates calculated at the person level for individuals age 15 and over as of the later wave in a comparison. Estimates are weighted using the earlier wave weights. Characteristics based on reports in the earlier wave.

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