# Examining Poverty in 2016 and 2017 Using the Legacy and Updated Current Population Survey Processing System

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## Abstract

The Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS) is the official source of poverty estimates for the United States. In 2014, the Census Bureau introduced redesigned income and health insurance questions, followed by changes beginning in 2015 to allow spouses and unmarried partners to specifically identify as opposite- or same-sex. While data *collection* methods reflected these changes immediately, data *processing* changes have only recently been finalized to take advantage of this new content.

In September 2019, the Census Bureau will release income and poverty estimates in the annual report *Income and Poverty in the United States: 2018* where, for the first time, income and poverty measures will reflect these methodological changes.

This paper documents poverty changes over time as measured with the legacy and updated CPS ASEC processing system for calendar years 2016 and 2017. While prior research has shown that overall poverty estimates for 2016 do not vary statistically across processing systems, this paper evaluates the 2017 data and creates a time series for data users in preparation for the release of the calendar year 2018 data. By presenting this research at the Joint Statistical Meetings, data users will understand the motivation, impact, and interpretation of these data processing changes on estimates of income and poverty in the United States.

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[1] The Census Bureau reviewed this data product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied to this release. CBDRB-FY19-POP001-0002. This paper is released to inform interested parties of ongoing research and to encourage discussion of work in progress. The views expressed on methodological or operational issues are those of the authors and are not necessarily those of the U.S. Census Bureau. Any error or omissions are the sole responsibility of the authors. All data are subject to error arising from a variety of sources, including sampling error, non-sampling error, modeling error, and any other sources of error. For further information on data collection, statistical standards, and accuracy, see <https://www.census.gov/programs-surveys/cps/technical-documentation.html>.

## 1. Measuring Income and Poverty in the Current Population Survey

### 1a. Background

The Current Population Survey (CPS) is a monthly, nationally representative household survey sponsored by the Bureau of Labor Statistics (BLS) and collected by the U.S. Census Bureau (Census). The survey is designed to capture data on widely used labor force estimates, namely the monthly unemployment rate. It is one of the oldest, largest, and most well recognized surveys in the United States.

The CPS Annual Social and Economic Supplement (ASEC) is sponsored by both Census and BLS. The CPS ASEC is fielded February through April of each year, with questions that capture the receipt and value of 51 sources of income over the previous calendar year, as well as non-cash benefits such as the Supplemental Nutrition Assistance Program, subsidized school lunches, and housing assistance.[2] The CPS ASEC also collects data on household composition, family characteristics, and person level demographics at the time of interview.

In addition to serving as a premier source of national estimates on income and earnings, the CPS ASEC provides a historical time series for these estimates going back to 1959. As such, the CPS ASEC serves as the sole source of historical U.S. poverty estimates and—as established by the Office of Management and Budget (OMB) in Statistical Policy Directive 14—is the source of official national poverty estimates for use by the Federal Government.[3]

### 1b. Recent Questionnaire and Processing System Updates

The Census Bureau has been engaged for the past several years in implementing improvements to the CPS ASEC demographic, income, and health insurance sections.[4] These changes have been implemented in a two-step process, beginning first with questionnaire design changes incorporated over the period of 2014 to 2016 followed by more recent changes to the data processing system.

The demographic content in the CPS ASEC is important for poverty status when considering how resources are shared in a resource unit. Beginning in May 2015, the Census Bureau began phasing in changes to the reporting of household relationships in the basic CPS in order to better identify same-sex married couples and unmarried partners. Beginning with the 2017 CPS ASEC, all respondents received the redesigned relationship question. By correctly identifying family status for individuals in these living arrangements, we can estimate a more accurate picture of poverty in the United States.

[2] Data collected on income are then collapsed into 27 variables.
[3] See <https://www.census.gov/topics/income-poverty/poverty/about/history-of-the-poverty-measure/omb-stat-policy-14.html> for additional details on Statistical Policy Directive 14.
[4] As health insurance status does not impact the measurement of poverty, these changes are not discussed in detail.

The other part of the changes pertaining to poverty are the income changes. As illustrated in Figure 1, questionnaire changes to better capture the receipt and value of income sources were incorporated into the 2014 CPS ASEC, referring to reference year 2013, through a probability split panel design. Of the approximately 98,000 households surveyed in the 2014 CPS ASEC, 30,000 addresses were randomly assigned to receive the redesigned income questions. The remaining 68,000 sampled households received the traditional income questions consistent with prior years. In the 2015 CPS ASEC, reference year 2014, the entire sample received the redesigned income questions and this has been the case for all subsequent CPS ASEC data collections. The official poverty measure uses cash resources alone.

Although the above changes were made to the CPS ASEC data *collection* process, the data *processing* system required a code re-write in order to take advantage of the new survey content. Data collected from the updated CPS ASEC instrument has subsequently been formatted to match the traditional survey instrument in order to prevent delaying the annual *Income and Poverty in the United States* report and related data tabulations and research files. Estimates released from the CPS ASEC for calendar years 2013 through 2017 reflect the questionnaire changes, but do not take full advantage of new content in data processing.

With the release of the *Income and Poverty in the United States: 2018* report in September of 2019, step two of this redesign will be complete with the implementation of the updated CPS ASEC data processing system. In an effort to prepare data users for differences they might expect in terms of file structure, content, and estimates, Census has re-released public use data files based on the updated processing system from the 2017 and 2018 CPS ASEC, referred to as the research and bridge file, respectively.[5]

Prior research by Edwards and Creamer (2019) provides further detail on the motivation, implementation, and impact of these income and demographic changes, focusing on calendar year 2016 from the 2017 CPS ASEC research file. The recent release of the 2018 bridge file allows for additional analysis across processing systems for the years of 2016 and 2017. Given that year-to-year comparisons in the *Income and Poverty in the United States: 2018* report will exclusively be based on the updated processing system, it's critical that data users understand how year-to-year conclusions vary across processing systems.

## 2. Methods and Data

As illustrated in the implementation timeline shown in Figure 1, the Census Bureau re-released public use files from the 2017 and 2018 CPS ASEC reflecting the updated processing system in January and April 2019, respectively.[5] The 2017 research file includes estimates for calendar year

[5] Available at <https://www.census.gov/data/datasets/time-series/demo/income-poverty/data-extracts.html>.

2016 and has undergone more limited review than typical Census products, and as such was released as a research file in order to more quickly solicit feedback from data users. The 2018 CPS ASEC bridge file reflects user feedback and improvements for calendar year 2017 estimates. Both files allow external researchers to better understand new variables created by the updated processing system and to evaluate how annual income and poverty estimates compare to those previously published using what is now referred to as the legacy processing system.

To prepare data users for the changes that will be reflected in the September 2019 report *Income and Poverty in the United States: 2018*, this paper presents estimates of poverty using the updated processing system for calendar years 2016 and 2017. Our analysis compares the legacy and updated processing systems, measuring the overall and incremental effect of the new demographic and income updates on estimates of national poverty rates. Comparisons of poverty rates across processing systems are tested for statistically significant differences, noted at the 90 percent confidence level unless otherwise stated. Further, year-to-year comparisons of poverty rates from 2016 to 2017 are compared across processing systems, in order to determine if conclusions about poverty changes over time vary significantly based on the processing system used.

As a supplement to the monthly or "basic" CPS, the ASEC sample begins with eligible households included in the March CPS sample. Additional households are drawn for the ASEC sample from the prior February and following April CPS samples. These additional sampled households are designed to provide more reliable data for Hispanic households, non-Hispanic minority households, and non-Hispanic White households with children 18 years or younger.[6]

However, with the updated processing system, the number of individuals included in the 2017 and 2018 ASEC poverty universe varies slightly. In both data years, approximately 0.01 percent of individuals processed using the legacy processing system were no longer eligible to be included in the sample used for the updated processing system, while a comparable 0.01 percent of individuals processed in the updated processing system were not included in the legacy processing system estimates. This is the result of changes in the edited demographic data which resulted in some households moving in or out of either the ASEC or poverty universe.

Given small differences in the sample composition, as well as changes to some respondents' demographic characteristics, sample weights were recalculated for all respondents. The method for calculating sample weights is consistent with past procedures, with weights controlled to

[6] For additional technical documentation on the CPS ASEC sample, see <https://www.census.gov/programs-surveys/cps/technical-documentation/complete.html>. For more information about the households eligible for the CPS ASEC, please refer to Technical Paper 66, Current Population Survey: Design and Methodology, U.S. Census Bureau, U.S. Department of Commerce, 2006, <www.census.gov/prod/2006pubs/tp-66.pdf>.

independent population estimates of the U.S. civilian noninstitutionalized population in regards to age, sex, and race/Hispanic origin.[7]

## 3. Primary Findings

### 3a. Within-Year Impact of Processing System Changes

Table 1 and Table 2 present poverty rate comparisons across the legacy and updated processing systems for calendar years 2016 and 2017. For both years, we see no significant change in either the number or percent of people in poverty when using the updated processing system compared to the legacy processing system.

In both years however, we do find statistically significant changes in poverty rates by select demographic characteristics, including family status, race and Hispanic origin, age, geographic region and residency, and educational attainment.

By family status, individuals living in male reference person, no spouse present families saw increases in poverty rates under the updated processing system in both 2016 and 2017. In 2016, individuals living in opposite-sex married couples experienced increases in poverty under the updated processing system, while in 2017 the opposite effect was observed.

Table 1 shows that there was a statistically significant increase in poverty rates for Hispanics under the new processing system in 2016. However, as shown in Table 2, this finding did not hold in 2017, where statistical changes were limited to race groups.

By age group, in both years we find no significant change in poverty rates for those under age 18 as well as for those aged 18 to 64. Among those aged 65 or older, the updated processing system increases the number of elderly in poverty by 331,000 individuals, and 0.7 percentage points in 2016. In 2017, the number of elderly in poverty increased by 211,000 individuals and 0.4 percentage points.

Across regions and metropolitan areas, we find increased poverty rates in 2016 among people living in the South and outside of Metropolitan Statistical Areas (MSAs). However, in 2017 statistical differences across processing systems are limited to those living inside MSAs, but outside principal cities.

[7] Since survey weights are designed to control for demographic characteristics, the use of weights in this research is dependent on the demographic data being used. For estimates based on legacy demographic edits, legacy weights are used. Revised weights are used for estimates based on the updated demographic edits incorporating same-sex married couples.

In 2016, individuals aged 25 and older with less than a high school diploma saw their poverty rates increase by an additional 1.1 percentage points, although this finding was not repeated in 2017. Alternatively, in both 2016 and 2017, individuals with advanced education including a bachelor's degree or higher—who already had among the lowest poverty rates when using the legacy processing system—saw statistically significant declines in poverty rates when implementing the new processing system. Among those with at least a bachelor's degree, the number of individuals in poverty as calculated using the new processing system declined by 0.2 percentage points in 2016 and 0.5 percentage points in 2017.

### 3b. Across-Year Impact of Processing System Changes

We next examine whether conclusions based on year-to-year poverty rate comparisons varied based on the processing system being used.

Comparing Table 3 to Table 4, we find that from 2016 to 2017, regardless of the processing system used, poverty rates for the overall population are lower in 2017 than in 2016. Conclusions on the number of individuals in poverty do vary by processing system, with the legacy processing system showing no significant change in the number of people in poverty from 2016 to 2017, while estimates derived from the updated processing system in Table 4 do show a significant decline.

In general, there are more statistically significant year-to-year changes in poverty rates when using the updated processing system compared to the legacy processing system. From 2016 to 2017, the legacy processing system indicates individuals in opposite-sex married-couple families, White non-Hispanics, males, those living in the South, those living inside MSAs, those inside MSAs but outside principal cities, and individuals aged 25 and older without a high school diploma experienced no statistically significant changes in poverty rates across years. In comparison, the updated processing system shows statistically significant declines in poverty for each of these groups in 2017. One population group (those with some college education) show a decline in poverty rates measured using the legacy processing system, while these differences are not statistically significant in the updated processing system. Under the legacy processing system, one population group in Table 3, individuals with a bachelor's degree or higher, showed increases in poverty rates from 2016 to 2017. Under the updated processing system, changes in poverty rates for this group are not statistically significant, and no population included in Table 4 showed an increase in poverty rates from 2016 to 2017. In no case are changes in poverty rates across years significantly different and divergent across processing systems.

While the significance of year-to-year change in poverty rates does vary by processing system for select demographic groups, Figure 2 displays the difference in year-to-year differences across processing systems. We find that for demographic groups where the significance of year-to-year changes varies by processing system used, the magnitude of the year-to-year differences are not

statistically different across processing systems. The same is true for overall poverty rates and for demographic groups where year-to-year conclusions were consistent across processing systems. While there are individual differences in year-to-year significance, measures of difference-in-difference show that the measures of change from 2016 to 2017 for the population groups shown in Figure 2 are not statistically different across processing systems.

It is challenging to provide an explanation as to why one processing system would capture year-to-year differences in poverty rates compared to another due to the complicated interaction between the demographic and income edits. For certain populations there may be a change in both family assignments, which would affect both poverty thresholds and aggregate family resources, as well as in personal income, which would impact individual resources. Rothbaum (2019) shows declines in income at the lower end of the distribution under the updated processing system, leading to competing effects where family assignments could be increasing family income (with more earners) while the income edits could be decreasing income.

## 4. Incremental Impacts of CPS Redesign

Next, we discuss how the two components of the CPS ASEC redesign, demographics and income, drive the overall changes in poverty discussed above. To measure the incremental impact of changes to the editing of personal income, we hold family assignments, demographic characteristics, and poverty thresholds constant using the legacy processing system and reassign poverty status based on revised income values. Alternatively, holding personal income constant, but aggregating to revised family compositions provides the isolated impact of the updated demographic edits. In these cases, the sample is limited to individuals included in both of the processing systems.[8] Each point in Figure 3 and Figure 4 denotes the percentage point change from estimates derived from the legacy processing system (standardized at 0) for a given year when implementing only the demographic or income component of the updated processing system. The bar graph indicates the differential impact of the edit across years.

### 4a. Incremental Impact of Demographics

Figure 3 shows the incremental impact of the new demographic edit across population groups in 2016 and 2017. Below, we review how the new demographic edit impacts the measurement of same-sex married-couple families and how poverty changes for this and other demographic groups when holding personal income constant across the two files.

In calendar year 2017, approximately 1.0 million individuals reported being in a same-sex marriage, not statistically different from 2016. As shown in Table 5, individuals in same-sex

[8] Some differences in the count of cases in the matched sample arise because individuals may not consistently be in the poverty universe under different family assignments.

marriages are more likely to live within principal cities. In 2017, 44.9 percent of individuals in same-sex marriages resided within principal cities, compared to a rate of 27.1 percent among the opposite-sex married couple population. Unlike individuals in opposite-sex marriages who have an older age distribution than the total adult population, those in same-sex marriages skew younger. Only 9.1 percent of individuals in same-sex marriages in 2017 were aged 65 or older, compared to 22.9 percent of opposite-sex married couples, and 20.5 percent of the total adult population. While individuals in opposite-sex marriages are more likely than the general population (aged 25 and over) to have received an education culminating in a bachelor's degree or higher, this difference is dramatically more pronounced for individuals in a same-sex marriage. In 2017, 51.9 percent of individuals in same-sex marriages reported receiving at least a bachelor's degree, compared to a rate of 35.0 percent among the general population and 39.7 percent among those in opposite-sex marriages. These differences in educational attainment help to explain variation in personal income based on marital status. In 2017, 31.4 percent of adults in a same-sex marriage had personal incomes greater than $75,000 dollars, higher than the 22.9 percent rate among adults in opposite-sex marriages and 16.6 percent rate among all adults.[9]

By treating respondents who report being in a same-sex marriage as unmarried partners under the legacy processing system, poverty rates among this population vary dramatically from those who report being in an opposite-sex marriage. In 2017, individuals who reported being in a same-sex marriage (but who, under legacy editing procedures, were treated as separate family units) had a poverty rate of 14.4 percent, a full 9.4 percentage points higher than individuals in opposite-sex marriages.[10]

The poverty rate for individuals in same-sex marriages in 2017 (holding personal income constant) declines from 14.4 percent to 3.1 percent when implementing the updated demographic processing system to maintain same-sex married couples as related family members.[11] This is not statistically different from the poverty rate for those in opposite-sex marriages in 2017.

In 2017, a total of 1.2 million people lived in same-sex married-couple families, comprising 0.4 percent of all individuals living in families.[12] Among individuals living in same-sex married-couple families in 2017, poverty rates fell from 14.2 percent when estimated using the legacy

[9] Income estimates are based on the 2018 bridge file, incorporating updates for both demographic and income processing.

[10] The magnitude of the difference in poverty rates across same- and opposite-sex married individuals under legacy editing procedures was not statistically different from 2016 to 2017.

[11] The 11.2 percentage point decline in poverty rates observed among individuals in same-sex marriages when implementing the new demographic edit for 2017 was not statistically different from the decline observed in 2016.

[12] Note, individuals who report being in a same-sex marriage may be classified as living in other family types if another family member is listed as the family reference person.

processing system, to a rate of 2.6 percent when implementing updated demographic edit procedures while holding personal income constant.[13]

As shown in Figure 3, the overall impact of these changes is limited by the small population affected.[14] In 2017, poverty rates decline 0.1 percentage point, with approximately 181,000 individuals no longer in poverty when including same-sex spouses in the family unit and holding income constant based on legacy processing procedures. While this change is statistically significant, point estimates of the poverty rate are consistent when rounded to the tenth decimal place. Findings for 2016 are comparable, with poverty rates statistically lower while point estimates remain consistent to the nearest tenth decimal place.[15]

The impact of the updated family edits across population groups is largely as expected given the characteristics of the same-sex married population as shown in Table 5. As shown in Figure 3, in both 2016 and 2017 the new demographic edit leads to declines in poverty for females, individuals aged 18 to 64, individuals aged 25 and older with a bachelor's degree or higher, and among those living inside MSAs as well as in principal cities. By demographic group, there is no case where the new demographic edit leads to an increase in poverty rates—in cases where the updated demographic edit led to significant changes, poverty rates declined.

Changes in poverty rates across family types observed in Figure 3 reflect the complicated movement of individuals' family classification across files. Of the 1.0 million individuals in same-sex marriages in 2017, only 16.7 percent had been listed as having any related family members using legacy demographic family assignments. As such, the total number of individuals in 2017 living without relatives in the household (unrelated individuals) declines from 60.8 to 59.8 million when using the updated processing system, with the majority of this decline (810,000 individuals) reflecting movement into same-sex married-couple families. Figure 5 illustrates the movement of individuals across family classifications when implementing the updated demographic edit for calendar year 2017. In addition to the 810,000 individuals who were previously classified as unrelated individuals, 280,000 individuals newly classified as living in same-sex married families were formerly classified as living in female reference person, no spouse present families, while 85,000 had been classified as living in male reference person, no spouse present families.

[13] Note, Table 1 and Table 2 compare poverty rates for individuals based on their family and demographic characteristics across the respective CPS ASEC processing systems. Because individuals in same-sex married families in the updated processing were in different family classifications in the legacy processing, direct comparisons for this population are not shown.

[14] Given the small population of individuals who are reassigned family units based on the reporting of a same-sex marriage, statistical tests across estimates are biased towards Type I error, that is, falsely concluding that estimates are statistically different when they are not.

[15] The magnitude of the decline in poverty rates when implementing the new demographic editing procedure was not statistically different across years.

While there are resulting declines in the number of individuals in poverty for both unrelated individuals and those in female reference person, no spouse present families, the impact on poverty rates is only statistically significant for unrelated individuals, an increase of 0.1 percentage point in 2016 and 2017.[16] This incongruent result reflects the fact that individuals formerly classified as having no relatives in the household, but who join primary families under the updated demographic edit, had lower poverty rates than those who continued to be classified as unrelated individuals. The 2017 poverty rate for individuals in primary families declines by 0.1 percentage point under the updated demographic edit, reflecting the impact of an additional 982,000 individuals who had previously been considered unrelated individuals or unrelated subfamily members.[17]

As was the case when examining the overall processing change, we examine whether the impact of the demographic edit varied from 2016 to 2017. The results are presented in the bar graph in Figure 3. We find that the impact of the demographic edit was larger for Blacks in 2016, while for those living in the West or aged 25 and older with some college education the demographic edit had a larger impact on poverty rates for 2017.

### 4b. Incremental Impact of Income

The CPS ASEC questionnaire and processing system updates aimed to improve data quality and collection of different income sources, especially retirement income and other asset holdings. The questionnaire updates provide more detailed income variables and utilized income ranges for some income sources where respondents did not provide specific income amounts. The updated income edits utilize these new range values and also raised income top codes, which led to higher incomes in the upper end of the distribution.

One group that was expected to experience changes to their poverty status due to these changes was the aged 65 and older population. When examining income sources, Rothbaum (2019) shows that there are decreases in retirement income,[18] Social Security, and Supplemental Security Income across the income distribution in 2016 and 2017. Rothbaum (2019) also notes that an issue was found in the processing system where pension income was being counted twice for some individuals. Retirement income declined for all householders at the $10^{th}$, $25^{th}$, $50^{th}$, and $75^{th}$ percentiles in 2016. This same finding holds in 2017 for households in those distribution cutoffs, as well as at the $90^{th}$ percentile. The decreases in retirement income in the different parts of the distribution suggests that the pension issue noted in Rothbaum (2019) was resolved.

[16] The magnitude of the difference in poverty rates for unrelated individuals under legacy editing procedures was not statistically different from 2016 to 2017.

[17] In 2017, approximately 166,000 individuals classified as living in primary families under the legacy processing system were classified as living in unrelated subfamilies or as unrelated individuals in the bridge file, resulting in a net increase of 815,000 individuals living in primary families. The magnitude of the difference in poverty rates for individuals living in primary families under legacy editing procedures was not statistically different from 2016 to 2017.

[18] The sum of six individual retirement income sources.

Social Security and Supplemental Security Income, which are not aggregated in retirement income, decreased at the 10th and 25th percentiles for all households in both 2016 and 2017 (Rothbaum, 2019). In 2016, median household income increased for householders aged 65 and older by 1.8 percent, but decreased by 2.3 percent at the 10th percentile. Interestingly, there are no significant changes at the median or 10th percentile for aged 65 and older households in 2017.

As a result of changes in income received from different sources at the lower end of the distribution, poverty rates increase for individuals aged 65 and older when holding legacy family assignments constant. In 2017, poverty rates for the aged 65 and older population increased by 0.4 percentage point (227,000 individuals) from a rate of 9.2 to 9.6 percent. This increase is not statistically different from the increase observed among this population in 2016 when implementing the new income edits and holding family assignments constant.

In terms of the overall poverty rate, there are no statistically significant changes in poverty for the overall population as a result of the income edits alone in 2016 or 2017. In 2016, implementing the income edits and holding family assignments constant increases poverty rates for opposite-sex married couple and male reference person no spouse present families, those of Hispanic origin, males, those in the South, those living outside of MSAs, and those without a high school diploma or with a high school diploma and no college. The only group which experiences a decrease in poverty as a result of the income edits is unrelated subfamilies.[19]

The impact of the updated income edits across demographic groups varies in 2017 from 2016. Poverty rates decrease for opposite-sex married couples and increasing for male reference person no spouse present families. Additionally, Blacks and those with some college education have higher poverty rates as a result of the income edits in 2017. Lastly, implementing the updated income edit leads to a lower poverty rate among people with a bachelor's degree or higher. It is difficult to explain why this is the case because there are no obvious reasons why these groups would be especially, or differentially, affected by the income edits across years.

We next examine whether the incremental impacts of the income edits are different in 2016 and 2017. The results are presented in the bar graphs in Figure 4. Changes in poverty rates when implementing the income edits are smaller in 2017 than in 2016 for Whites, individuals living in the South, and individuals with less than a high school diploma or a bachelor's degree or higher. For those with some college education it is opposite, with the absolute percentage point change in 2017 being larger than 2016.

[19] Not shown in Figure 4 for clarity of figure.

## 5. Discussion

Our findings show that overall poverty rates in the CPS ASEC are not statistically significantly different across the legacy and updated processing systems in the 2017 and 2018 CPS ASEC. We present results which show that the demographic and income processing changes alternatively affect poverty rates across demographic groups.

We also show the incremental impact of the two processing system changes individually by allowing either demographics or income to vary amongst the files, while holding the other constant. In the case of individuals in same-sex married-couple families in 2017, poverty decreased by 11.2 percentage points as a result of the new demographic editing procedures. Under the new income edits, the number of people in poverty among the population aged 65 and older increased by 227,000. This is driven by decreases in reported income at the lower end of the income distribution, especially in two key sources of income among this population: retirement income and Social Security income.

Our findings on the impact of same-sex married families in the updated processing system are consistent with estimates released from Edwards and Lindstrom (2017) using the 2015 and 2016 CPS ASEC same-sex extract files.[20] Like prior research, we continue to find that people in same-sex married families make up a small proportion of the total population. As a result, there are small changes in overall poverty rates, with the changes being statistically lower at the hundredth decimal place when implementing the new demographic edits and holding personal income constant. We also find that when treating same-sex married couples as a single family, poverty rates for these individuals decline sharply, resulting in poverty rates that do not vary statistically across the same- and opposite-sex married populations.

## 6. Next Steps

As illustrated in Figure 1, the redesign of the CPS ASEC has consisted of a four year, two-step process updating both the survey instrument and the processing system. Public use files from the 2017 and 2018 CPS ASEC using the updated processing system became available in January and April 2019, respectively.[21] The release of these two files using the updated processing system provide a time series in preparation for the release of calendar year 2018 data in September 2019—the first release of the CPS ASEC reflecting both the redesigned questionnaire content and processing changes. At this time, there is no schedule to reprocess or re-release data prior to calendar year 2016 using the updated processing system.

[20] Prior year CPS ASEC extract files are available at <https://www.census.gov/data/datasets/time-series/demo/income-poverty/data-extracts.html>.

[21] For access to public use data files, see <https://www.census.gov/data/datasets/time-series/demo/income-poverty/cps-asec-design.html>.

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## Appendix

**Figure 1.** Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) Implementation Timeline

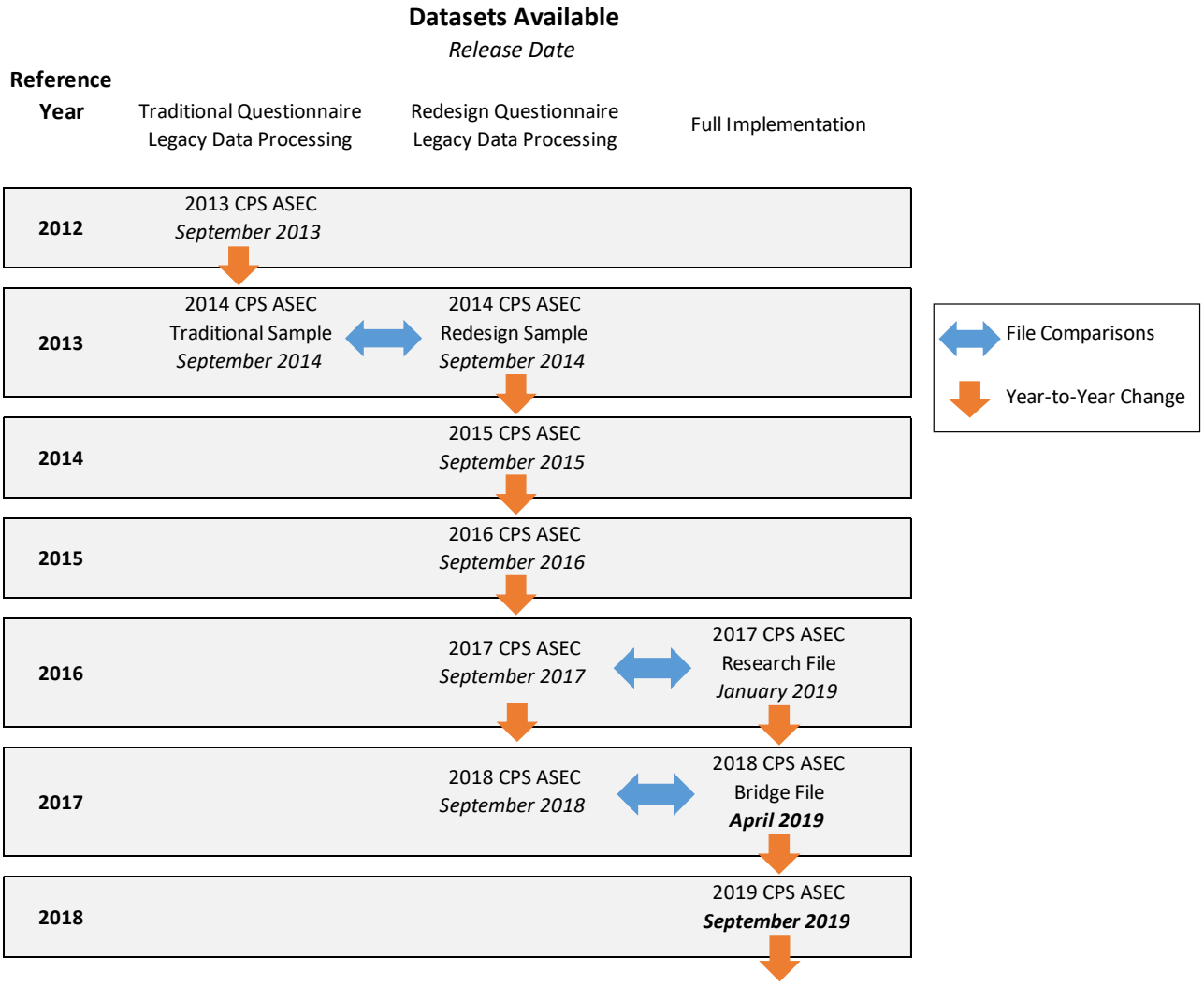


**Table 1:** Legacy and Updated Processing System: 2017 CPS ASEC, Calendar Year 2016

| Characteristic | 2016 Legacy Processing System | | | 2016 Updated Processing System[1] | | | Change in poverty (2016 updated less 2016 legacy) | |
|---|---|---|---|---|---|---|---|---|
| | Total | Below poverty | | Total | Below poverty | | | |
| | | Number | Percent | | Number | Percent | Number | Percent |
| **PEOPLE** | | | | | | | | |
| **Total** | 319,900 | 40,620 | 12.7 | 319,900 | 40,840 | 12.8 | 228 | 0.1 |
| **Family Status** | | | | | | | | |
| In families | 259,900 | 27,760 | 10.7 | 260,600 | 28,140 | 10.8 | 374 | 0.1 |
| Opposite-sex married | 192,800 | 11,250 | 5.8 | 193,200 | 11,690 | 6.1 | *437 | *0.2 |
| Same-sex married | (X) | (X) | (X) | 1,187 | 51 | 4.3 | (X) | (X) |
| Female reference person, no spouse present | 48,240 | 13,910 | 28.8 | 47,670 | 13,620 | 28.6 | *-290 | -0.3 |
| Male reference person, no spouse present | 18,780 | 2,596 | 13.8 | 18,610 | 2,772 | 14.9 | *176 | *1.1 |
| In unrelated subfamilies | 1,208 | 519 | 43.0 | 1,236 | 501 | 40.5 | -18 | -2.5 |
| Unrelated individuals | 58,840 | 12,340 | 21.0 | 58,010 | 12,210 | 21.0 | -127 | 0.1 |
| **Race and Hispanic Origin** | | | | | | | | |
| White | 246,000 | 27,110 | 11.0 | 246,000 | 27,370 | 11.1 | 255 | 0.1 |
| White, not Hispanic | 195,200 | 17,260 | 8.8 | 195,200 | 17,330 | 8.9 | 63 | Z |
| Black | 41,960 | 9,234 | 22.0 | 41,960 | 9,162 | 21.8 | -72 | -0.2 |
| Asian | 18,880 | 1,908 | 10.1 | 18,870 | 1,827 | 9.7 | -81 | -0.4 |
| Hispanic (any race) | 57,560 | 11,140 | 19.4 | 57,550 | 11,410 | 19.8 | *270 | *0.5 |
| **Sex** | | | | | | | | |
| Male | 156,700 | 17,690 | 11.3 | 156,700 | 17,920 | 11.4 | 236 | 0.2 |
| Female | 163,200 | 22,930 | 14.0 | 163,200 | 22,920 | 14.0 | -7 | Z |
| **Age** | | | | | | | | |
| Under age 18 | 73,590 | 13,250 | 18.0 | 73,600 | 13,240 | 18.0 | -14 | Z |
| Aged 18 to 64 | 197,100 | 22,800 | 11.6 | 197,000 | 22,710 | 11.5 | -89 | Z |
| Aged 65 and older | 49,270 | 4,568 | 9.3 | 49,260 | 4,899 | 9.9 | *331 | *0.7 |
| **Region** | | | | | | | | |
| Northeast | 55,470 | 5,969 | 10.8 | 55,470 | 5,919 | 10.7 | -50 | -0.1 |
| Midwest | 66,900 | 7,809 | 11.7 | 66,880 | 7,716 | 11.5 | -93 | -0.1 |
| South | 121,200 | 17,030 | 14.1 | 121,200 | 17,470 | 14.4 | *446 | *0.4 |
| West | 76,380 | 9,810 | 12.8 | 76,390 | 9,735 | 12.7 | -74 | -0.1 |
| **Residence** | | | | | | | | |
| Inside metropolitan statistical areas | 276,300 | 33,720 | 12.2 | 276,300 | 33,730 | 12.2 | 12 | Z |
| Inside principal cities | 103,300 | 16,490 | 16.0 | 103,200 | 16,460 | 15.9 | -35 | Z |
| Outside principal cities | 173,000 | 17,220 | 10.0 | 173,100 | 17,270 | 10.0 | 46 | Z |
| Outside metropolitan statistical areas | 43,610 | 6,898 | 15.8 | 43,600 | 7,114 | 16.3 | *217 | *0.5 |
| **Educational Attainment** | | | | | | | | |
| Total, aged 25 and older | 216,900 | 22,640 | 10.4 | 216,900 | 22,820 | 10.5 | 180 | 0.1 |
| No high school diploma | 22,540 | 5,599 | 24.8 | 22,540 | 5,839 | 25.9 | *241 | *1.1 |
| High school, no college | 62,510 | 8,309 | 13.3 | 62,500 | 8,467 | 13.5 | 158 | 0.3 |
| Some college | 57,770 | 5,430 | 9.4 | 57,780 | 5,364 | 9.3 | -66 | -0.1 |
| Bachelor's degree or higher | 74,100 | 3,299 | 4.5 | 74,090 | 3,145 | 4.2 | *-153 | *-0.2 |

Numbers in thousands.

*An asterisk preceding an estimate indicates change is statistically different from zero at the 90 percent confidence level.

(X) Estimate not available.

Z Represents or rounds to zero. Percentage estimates may not reflect reported numbers due to Census rounding standards for disclosure.

[1] Estimates from the 2017 CPS ASEC updated processing system reflect different underlying universes and weights. Results may vary from those previously presented by Edwards & Creamer (2019) due to weighting corrections reflected in these estimates.

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

**Table 2:** Legacy and Updated Processing: 2018 CPS ASEC, Calendar Year 2017

| Characteristic | 2017 Legacy Processing System | | | 2017 Updated Processing System[1] | | | Change in poverty (2017 updated less 2017 legacy) | |
|---|---|---|---|---|---|---|---|---|
| | Total | Below poverty | | Total | Below poverty | | | |
| | | Number | Percent | | Number | Percent | Number | Percent |
| **PEOPLE** | | | | | | | | |
| **Total** | 322,500 | 39,700 | 12.3 | 322,500 | 39,560 | 12.3 | -134 | Z |
| **Family Status** | | | | | | | | |
| In families | 260,700 | 26,770 | 10.3 | 261,600 | 26,720 | 10.2 | -46 | -0.1 |
| Opposite-sex married | 194,000 | 11,000 | 5.7 | 194,400 | 10,600 | 5.5 | *-398 | *-0.2 |
| Same-sex married | (X) | (X) | (X) | 1,184 | 22 | 1.8 | (X) | (X) |
| Female reference person, no spouse present | 48,000 | 13,380 | 27.9 | 47,520 | 13,520 | 28.5 | 147 | *0.6 |
| Male reference person, no spouse present | 18,670 | 2,388 | 12.8 | 18,450 | 2,571 | 13.9 | *183 | *1.1 |
| In unrelated subfamilies | 1,054 | 339 | 32.2 | 1,113 | 379 | 34.1 | 40 | 1.9 |
| Unrelated individuals | 60,790 | 12,590 | 20.7 | 59,840 | 12,460 | 20.8 | -128 | 0.1 |
| **Race and Hispanic Origin** | | | | | | | | |
| White | 247,300 | 26,440 | 10.7 | 247,300 | 26,030 | 10.5 | *-410 | *-0.2 |
| White, not Hispanic | 195,300 | 16,990 | 8.7 | 195,200 | 16,620 | 8.5 | *-374 | *-0.2 |
| Black | 42,470 | 8,993 | 21.2 | 42,480 | 9,224 | 21.7 | *231 | *0.5 |
| Asian | 19,470 | 1,953 | 10.0 | 19,530 | 1,891 | 9.7 | -62 | -0.3 |
| Hispanic (any race) | 59,050 | 10,790 | 18.3 | 59,050 | 10,820 | 18.3 | 26 | Z |
| **Sex** | | | | | | | | |
| Male | 158,100 | 17,360 | 11.0 | 158,100 | 17,270 | 10.9 | -93 | -0.1 |
| Female | 164,400 | 22,330 | 13.6 | 164,400 | 22,290 | 13.6 | -41 | Z |
| **Age** | | | | | | | | |
| Under age 18 | 73,360 | 12,810 | 17.5 | 73,470 | 12,760 | 17.4 | -49 | -0.1 |
| Aged 18 to 64 | 198,100 | 22,210 | 11.2 | 198,000 | 21,910 | 11.1 | -296 | -0.1 |
| Aged 65 and older | 51,080 | 4,681 | 9.2 | 51,070 | 4,893 | 9.6 | *211 | *0.4 |
| **Region** | | | | | | | | |
| Northeast | 55,970 | 6,373 | 11.4 | 55,960 | 6,347 | 11.3 | -26 | Z |
| Midwest | 67,340 | 7,647 | 11.4 | 67,340 | 7,571 | 11.2 | -76 | -0.1 |
| South | 122,300 | 16,610 | 13.6 | 122,300 | 16,470 | 13.5 | -135 | -0.1 |
| West | 76,980 | 9,069 | 11.8 | 76,980 | 9,172 | 11.9 | 103 | 0.1 |
| **Residence** | | | | | | | | |
| Inside metropolitan statistical areas | 279,500 | 33,320 | 11.9 | 279,500 | 33,090 | 11.8 | -228 | -0.1 |
| Inside principal cities | 103,900 | 16,220 | 15.6 | 103,900 | 16,370 | 15.8 | 152 | 0.1 |
| Outside principal cities | 175,700 | 17,100 | 9.7 | 175,700 | 16,720 | 9.5 | *-380 | *-0.2 |
| Outside metropolitan statistical areas | 43,010 | 6,376 | 14.8 | 43,000 | 6,470 | 15.0 | 94 | 0.2 |
| **Educational Attainment** | | | | | | | | |
| Total, aged 25 and older | 219,800 | 22,160 | 10.1 | 219,800 | 22,010 | 10.0 | -156 | -0.1 |
| No high school diploma | 22,410 | 5,485 | 24.5 | 22,400 | 5,488 | 24.5 | 3 | Z |
| High school, no college | 62,690 | 7,942 | 12.7 | 62,670 | 8,054 | 12.9 | 112 | 0.2 |
| Some college | 57,810 | 5,075 | 8.8 | 57,830 | 5,178 | 9.0 | 104 | 0.2 |
| Bachelor's degree or higher | 76,920 | 3,661 | 4.8 | 76,920 | 3,286 | 4.3 | *-375 | *-0.5 |

Numbers in thousands.
*An asterisk preceding an estimate indicates change is statistically different from zero at the 90 percent confidence level.
(X) Estimate not available.
Z Represents or rounds to zero. Percentage estimates may not reflect reported numbers due to Census rounding standards for disclosure.
[1] Estimates from the 2018 CPS ASEC updated processing system reflect different underlying universes and weights.
Source: U.S. Census Bureau, Current Population Survey, 2018 Annual Social and Economic Supplement.

**Table 3:** 2016 to 2017, Legacy Processing System

| Characteristic | 2016 Legacy Processing System | | | 2017 Legacy Processing System | | | Change in poverty (2017 less 2016) | |
|---|---|---|---|---|---|---|---|---|
| | Total | Below poverty | | Total | Below poverty | | | |
| | | Number | Percent | | Number | Percent | Number | Percent |
| **PEOPLE** | | | | | | | | |
| **Total** | 319,900 | 40,620 | 12.7 | 322,500 | 39,700 | 12.3 | -918 | *-0.4 |
| **Family Status** | | | | | | | | |
| In families | 259,900 | 27,760 | 10.7 | 260,700 | 26,770 | 10.3 | *-995 | *-0.4 |
| Opposite-sex married | 192,800 | 11,250 | 5.8 | 194,000 | 11,000 | 5.7 | -252 | -0.2 |
| Female reference person, no spouse present | 48,240 | 13,910 | 28.8 | 48,000 | 13,380 | 27.9 | -535 | -1.0 |
| Male reference person, no spouse present | 18,780 | 2,596 | 13.8 | 18,670 | 2,388 | 12.8 | -208 | -1.0 |
| In unrelated subfamilies | 1,208 | 519 | 43.0 | 1,054 | 339 | 32.2 | *-180 | *-10.8 |
| Unrelated individuals | 58,840 | 12,340 | 21.0 | 60,790 | 12,590 | 20.7 | 257 | -0.2 |
| **Race and Hispanic Origin** | | | | | | | | |
| White | 246,000 | 27,110 | 11.0 | 247,300 | 26,440 | 10.7 | -677 | *-0.3 |
| White, not Hispanic | 195,200 | 17,260 | 8.8 | 195,300 | 16,990 | 8.7 | -270 | -0.1 |
| Black | 41,960 | 9,234 | 22.0 | 42,470 | 8,993 | 21.2 | -241 | -0.8 |
| Asian | 18,880 | 1,908 | 10.1 | 19,470 | 1,953 | 10.0 | 45 | -0.1 |
| Hispanic (any race) | 57,560 | 11,140 | 19.4 | 59,050 | 10,790 | 18.3 | -348 | *-1.1 |
| **Sex** | | | | | | | | |
| Male | 156,700 | 17,690 | 11.3 | 158,100 | 17,360 | 11.0 | -321 | -0.3 |
| Female | 163,200 | 22,930 | 14.0 | 164,400 | 22,330 | 13.6 | -598 | *-0.5 |
| **Age** | | | | | | | | |
| Under age 18 | 73,590 | 13,250 | 18.0 | 73,360 | 12,810 | 17.5 | -445 | -0.6 |
| Aged 18 to 64 | 197,100 | 22,800 | 11.6 | 198,100 | 22,210 | 11.2 | -586 | *-0.4 |
| Aged 65 and older | 49,270 | 4,568 | 9.3 | 51,080 | 4,681 | 9.2 | 114 | -0.1 |
| **Region** | | | | | | | | |
| Northeast | 55,470 | 5,969 | 10.8 | 55,970 | 6,373 | 11.4 | 404 | 0.6 |
| Midwest | 66,900 | 7,809 | 11.7 | 67,340 | 7,647 | 11.4 | -162 | -0.3 |
| South | 121,200 | 17,030 | 14.1 | 122,300 | 16,610 | 13.6 | -420 | -0.5 |
| West | 76,380 | 9,810 | 12.8 | 76,980 | 9,069 | 11.8 | *-740 | *-1.1 |
| **Residence** | | | | | | | | |
| Inside metropolitan statistical areas | 276,300 | 33,720 | 12.2 | 279,500 | 33,320 | 11.9 | -396 | -0.3 |
| Inside principal cities | 103,300 | 16,490 | 16.0 | 103,900 | 16,220 | 15.6 | -277 | -0.4 |
| Outside principal cities | 173,000 | 17,220 | 10.0 | 175,700 | 17,100 | 9.7 | -119 | -0.2 |
| Outside metropolitan statistical areas | 43,610 | 6,898 | 15.8 | 43,010 | 6,376 | 14.8 | *-522 | *-1.0 |
| **Educational Attainment** | | | | | | | | |
| Total, aged 25 and older | 216,900 | 22,640 | 10.4 | 219,800 | 22,160 | 10.1 | -473 | *-0.4 |
| No high school diploma | 22,540 | 5,599 | 24.8 | 22,410 | 5,485 | 24.5 | -113 | -0.4 |
| High school, no college | 62,510 | 8,309 | 13.3 | 62,690 | 7,942 | 12.7 | *-367 | *-0.6 |
| Some college | 57,770 | 5,430 | 9.4 | 57,810 | 5,075 | 8.8 | *-356 | *-0.6 |
| Bachelor's degree or higher | 74,100 | 3,299 | 4.5 | 76,920 | 3,661 | 4.8 | *363 | *0.3 |

Numbers in thousands.

*An asterisk preceding an estimate indicates change is statistically different from zero at the 90 percent confidence level.

(X) Estimate not available.

Z Represents or rounds to zero. Percentage estimates may not reflect reported numbers due to Census rounding standards for disclosure.

Source: U.S. Census Bureau, Current Population Survey, 2017 and 2018 Annual Social and Economic Supplement.

**Table 4:** 2016 to 2017, Updated Processing System

| Characteristic | 2016 Updated Processing System[1] | | | 2017 Updated Processing System | | | Change in poverty (2017 less 2016) | |
|---|---|---|---|---|---|---|---|---|
| | Total | Below poverty | | Total | Below poverty | | | |
| | | Number | Percent | | Number | Percent | Number | Percent |
| **PEOPLE** | | | | | | | | |
| **Total** | 319,900 | 40,840 | 12.8 | 322,500 | 39,560 | 12.3 | *-1,281 | *-0.5 |
| **Family Status** | | | | | | | | |
| In families | 260,600 | 28,140 | 10.8 | 261,600 | 26,720 | 10.2 | *-1,416 | *-0.6 |
| Opposite-sex married | 193,200 | 11,690 | 6.1 | 194,400 | 10,600 | 5.5 | *-1,087 | *-0.6 |
| Same-sex married | 1,187 | 51 | 4.3 | 1,184 | 22 | 1.8 | -30 | -2.5 |
| Female reference person, no spouse present | 47,670 | 13,620 | 28.6 | 47,520 | 13,520 | 28.5 | -98 | -0.1 |
| Male reference person, no spouse present | 18,610 | 2,772 | 14.9 | 18,450 | 2,571 | 13.9 | -201 | -1.0 |
| In unrelated subfamilies | 1,236 | 500 | 40.5 | 1,113 | 379 | 34.1 | *-121 | -6.4 |
| Unrelated individuals | 58,010 | 12,210 | 21.0 | 59,840 | 12,460 | 20.8 | 257 | -0.2 |
| **Race and Hispanic Origin** | | | | | | | | |
| White | 246,000 | 27,370 | 11.1 | 247,300 | 26,030 | 10.5 | *-1,342 | *-0.6 |
| White, not Hispanic | 195,200 | 17,330 | 8.9 | 195,200 | 16,620 | 8.5 | *-706 | *-0.4 |
| Black | 41,960 | 9,162 | 21.8 | 42,480 | 9,224 | 21.7 | 62 | -0.1 |
| Asian | 18,870 | 1,827 | 9.7 | 19,530 | 1,891 | 9.7 | 63 | Z |
| Hispanic (any race) | 57,550 | 11,410 | 19.8 | 59,050 | 10,820 | 18.3 | *-592 | *-1.5 |
| **Sex** | | | | | | | | |
| Male | 156,700 | 17,920 | 11.4 | 158,100 | 17,270 | 10.9 | *-650 | *-0.5 |
| Female | 163,200 | 22,920 | 14.0 | 164,400 | 22,290 | 13.6 | *-631 | *-0.5 |
| **Age** | | | | | | | | |
| Under age 18 | 73,600 | 13,240 | 18.0 | 73,470 | 12,760 | 17.4 | -481 | -0.6 |
| Aged 18 to 64 | 197,000 | 22,710 | 11.5 | 198,000 | 21,910 | 11.1 | *-794 | *-0.5 |
| Aged 65 and older | 49,260 | 4,899 | 9.9 | 51,070 | 4,893 | 9.6 | -6 | -0.4 |
| **Region** | | | | | | | | |
| Northeast | 55,470 | 5,919 | 10.7 | 55,960 | 6,347 | 11.3 | *428 | 0.7 |
| Midwest | 66,880 | 7,716 | 11.5 | 67,340 | 7,571 | 11.2 | -145 | -0.3 |
| South | 121,200 | 17,470 | 14.4 | 122,300 | 16,470 | 13.5 | *-1,001 | *-0.9 |
| West | 76,390 | 9,735 | 12.7 | 76,980 | 9,172 | 11.9 | *-563 | *-0.8 |
| **Residence** | | | | | | | | |
| Inside metropolitan statistical areas | 276,300 | 33,730 | 12.2 | 279,500 | 33,090 | 11.8 | -636 | *-0.4 |
| Inside principal cities | 103,200 | 16,460 | 15.9 | 103,900 | 16,370 | 15.8 | -91 | -0.2 |
| Outside principal cities | 173,100 | 17,270 | 10.0 | 175,700 | 16,720 | 9.5 | -545 | *-0.5 |
| Outside metropolitan statistical areas | 43,600 | 7,114 | 16.3 | 43,000 | 6,470 | 15.0 | *-644 | *-1.3 |
| **Educational Attainment** | | | | | | | | |
| Total, aged 25 and older | 216,900 | 22,820 | 10.5 | 219,800 | 22,010 | 10.0 | -809 | -0.5 |
| No high school diploma | 22,540 | 5,839 | 25.9 | 22,400 | 5,488 | 24.5 | *-351 | *-1.4 |
| High school, no college | 62,500 | 8,467 | 13.5 | 62,670 | 8,054 | 12.9 | *-413 | *-0.7 |
| Some college | 57,780 | 5,364 | 9.3 | 57,830 | 5,178 | 9.0 | -186 | -0.3 |
| Bachelor's degree or higher | 74,090 | 3,145 | 4.2 | 76,920 | 3,286 | 4.3 | 141 | Z |

Numbers in thousands.

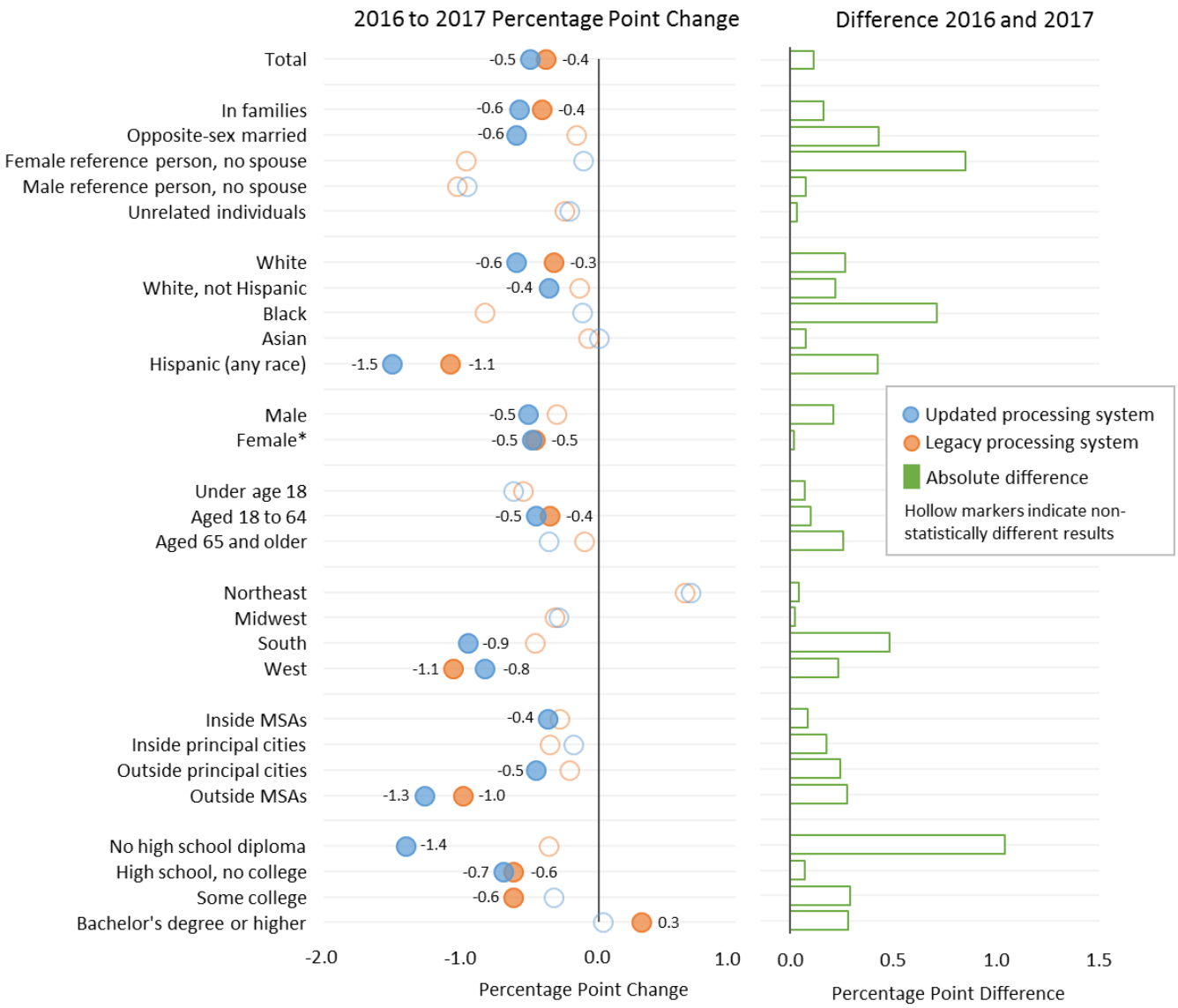
*An asterisk preceding an estimate indicates change is statistically different from zero at the 90 percent confidence level.

(X) Estimate not available. Z Represents or rounds to zero. Percentage estimates may not reflect reported numbers due to Census disclosure standards.

[1] 2017 CPS ASEC results may vary from those previously presented by Edwards & Creamer (2019) due to weighting corrections reflected in these estimates.

Source: U.S. Census Bureau, Current Population Survey, 2017 and 2018 Annual Social and Economic Supplement.

**Figure 2:** 2016 to 2017 Change in Poverty Rates and Difference-in-Difference across Processing Systems




*The percentage point change in the poverty rate for females from 2016 to 2017 was significant in both processing systems. A decline of 0.47 percentage points under the legacy processing system and 0.49 percentage points under the updated processing system. The difference across these years-to-year changes was not statistically significant across processing systems.

Note: Difference between 2016 and 2017 in absolute terms. Results may vary from those previously presented by Edwards & Creamer (2019) due to weighting corrections reflected the 2017 CPS ASEC updated processing system. Unrelated subfamilies omitted for brevity. Results available on request. Estimates from the 2017 and 2018 CPS ASEC updated processing system reflect different underlying universes and weights.

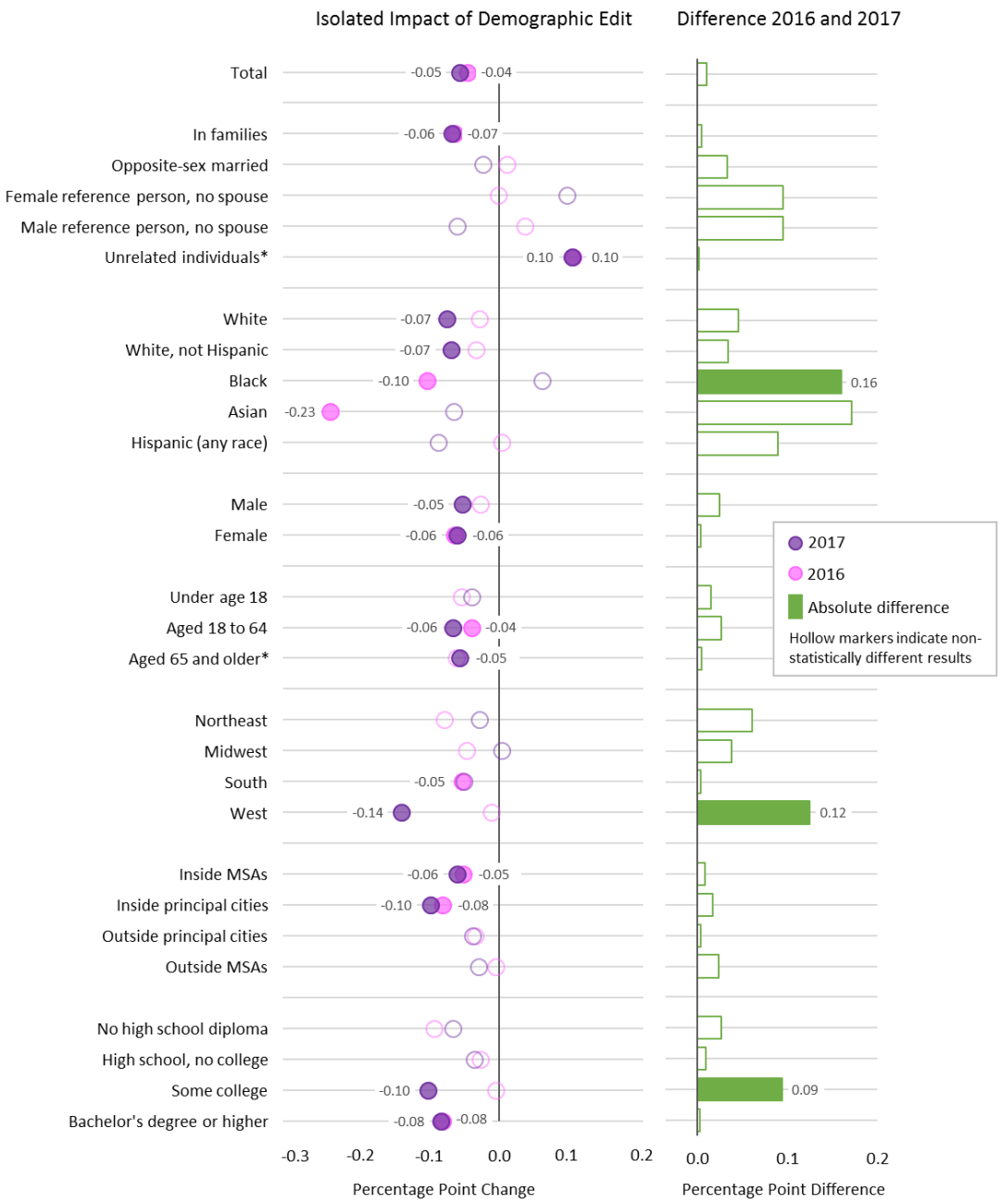
Source: U.S. Census Bureau, Current Population Survey, 2017 and 2018 Annual Social and Economic Supplement.

**Table 5:** Comparing those in Opposite Sex Marriages to Same Sex Marriages: Calendar Year 2017

| Characteristic | Opposite Sex Married Couples | | Same Sex Married Couples | | Difference (Same-sex less Opposite-sex) |
|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Percent |
| **PEOPLE** | | | | | |
| **Total** | 126,900 | 100.0 | 1,008 | 100.0 | (X) |
| **Race and Hispanic Origin** | | | | | |
| White | 104,800 | 82.6 | 900 | 89.3 | *6.7 |
| White, not Hispanic | 87,910 | 69.3 | 763 | 75.7 | *6.4 |
| Black | 9,761 | 7.7 | 53 | 5.3 | *-2.4 |
| Asian | 9,298 | 7.3 | 20 | 2.0 | *-5.4 |
| Hispanic (any race) | 18,520 | 14.6 | 150 | 14.9 | 0.3 |
| **Sex** | | | | | |
| Male | 63,780 | 50.3 | 468 | 46.4 | -3.8 |
| Female | 63,130 | 49.7 | 540 | 53.6 | 3.8 |
| **Age** | | | | | |
| Aged 18 to 64 | 97,840 | 77.1 | 916 | 90.9 | *13.8 |
| Aged 65 and older | 29,050 | 22.9 | 92 | 9.1 | *-13.8 |
| **Region** | | | | | |
| Northeast | 21,550 | 17.0 | 194 | 19.3 | 2.3 |
| Midwest | 27,320 | 21.5 | 129 | 12.8 | *-8.7 |
| South | 47,900 | 37.7 | 344 | 34.2 | -3.6 |
| West | 30,140 | 23.8 | 340 | 33.8 | *-10.0 |
| **Residence** | | | | | |
| Inside metropolitan statistical areas | 109,000 | 85.9 | 914 | 90.8 | *4.9 |
| Inside principal cities | 34,330 | 27.1 | 453 | 44.9 | *18.0 |
| Outside principal cities | 74,630 | 58.8 | 462 | 45.8 | *-13.0 |
| Outside metropolitan statistical areas | 17,950 | 14.1 | 93 | 9.3 | *-4.9 |
| **Educational Attainment** | | | | | |
| Total, aged 25 and older | 124,800 | 98.4 | 990 | 98.3 | -0.1 |
| No high school diploma | 10,930 | 8.8 | 36 | 3.6 | *-5.2 |
| High school, no college | 32,930 | 26.4 | 170 | 17.2 | *-9.2 |
| Some college, | 31,430 | 25.2 | 270 | 27.2 | 2.1 |
| Bachelor's degree or higher | 49,560 | 39.7 | 514 | 51.9 | *12.2 |

Numbers in thousands.
*An asterisk indicates change is statistically different from zero at the 90 percent confidence level.
(X) Estimate not available. Percentage estimates may not reflect reported numbers due to Census disclosure standards.
Note: Estimates of family status are derived from the 2018 CPS ASEC legacy processing system. Other characteristics are based on the 2018 CPS ASEC updated processing system.
Source: U.S. Census Bureau, Current Population Survey, 2018 Annual Social and Economic Supplement.

**Figure 3**. Isolated Impact of Demographic Edit on Poverty Rates and Difference-in-Difference: Calendar Year 2016 and 2017

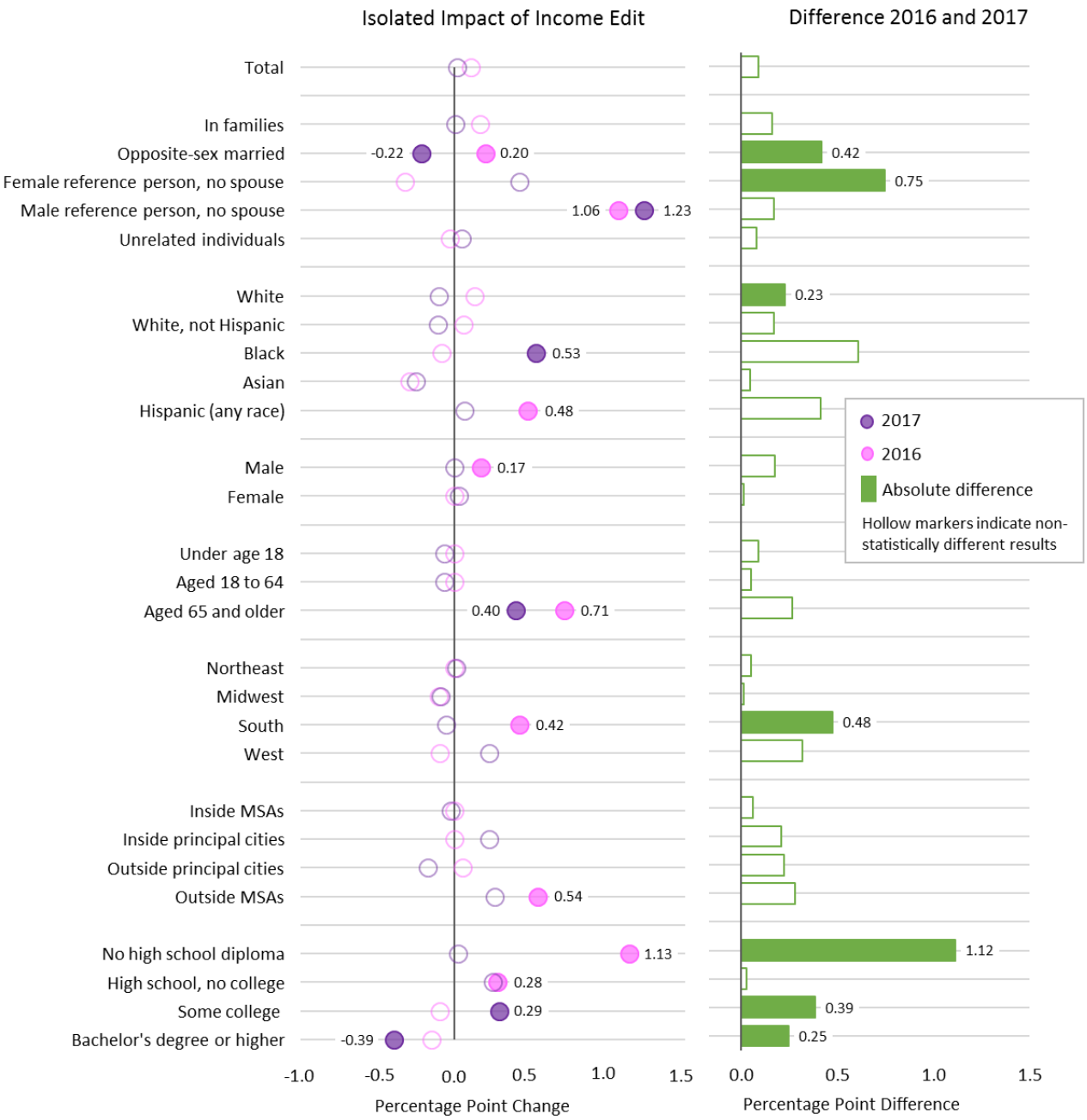



*The percentage point change in the poverty rate for unrelated individuals under the updated demographic edit was significant in both 2016 and 2017. An increase of 0.100 percentage point in 2016 and 0.102 percentage point in 2017. The difference in the percentage point change across years was not statistically significant. The percentage point change in the poverty rate for individuals aged 65 and older under the updated demographic edit was significant only in 2017, a decline of 0.05 percentage point. The difference in the percentage point change across years not statistically significant.

Note: Difference between 2016 and 2017 in absolute terms. Results may vary from those previously presented by Edwards & Creamer (2019) due to weighting corrections reflected the 2017 CPS ASEC updated processing system. Unrelated subfamilies omitted for brevity. Results available on request. Estimates from the 2017 and 2018 CPS ASEC updated processing system reflect different underlying universes and weights.

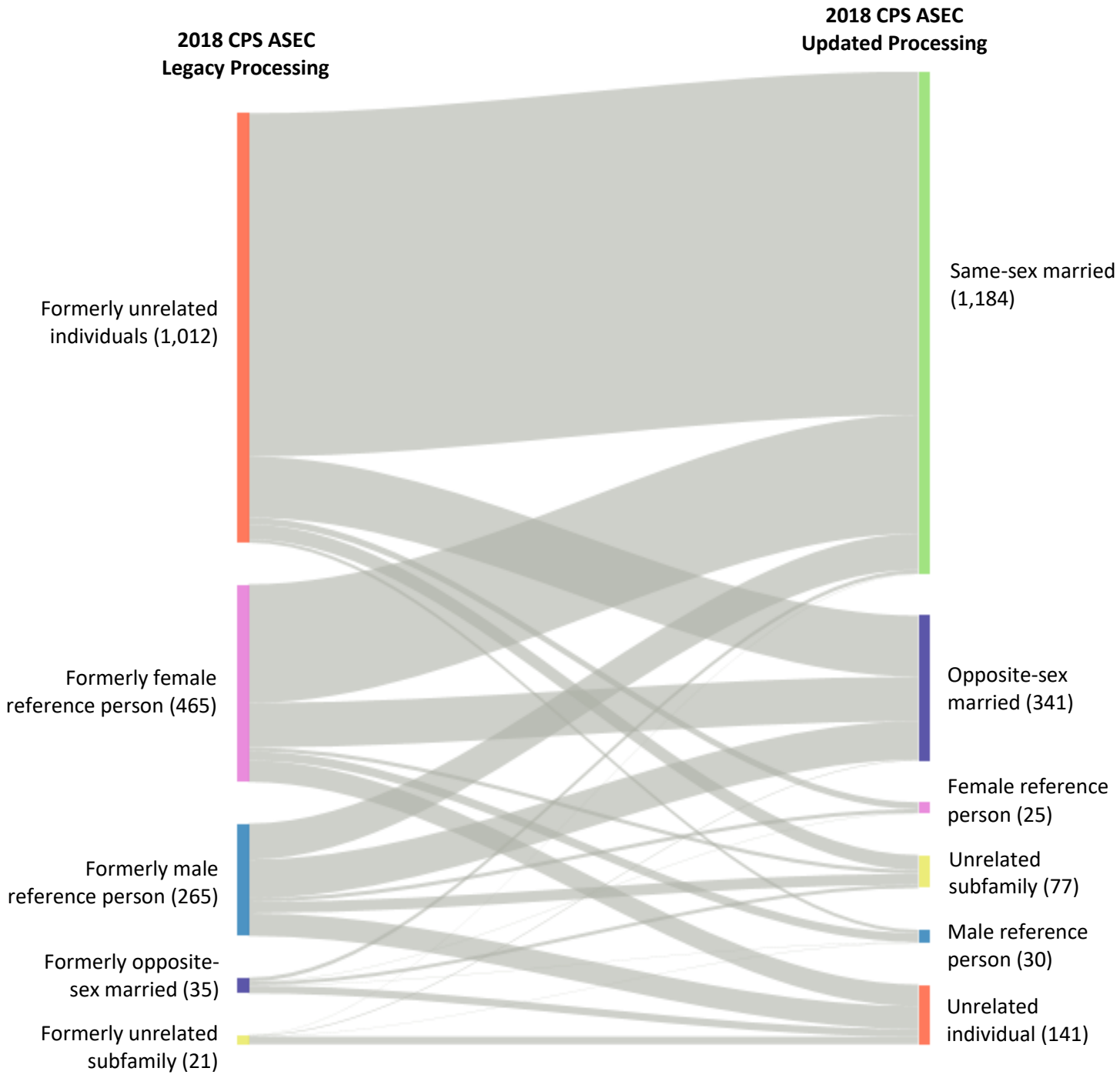
Source: U.S. Census Bureau, Current Population Survey, 2017 and 2018 Annual Social and Economic Supplement.

**Figure 4.** Isolated Impact of Income Edit on Poverty Rates and Difference-in-Difference: Calendar Year 2016 and 2017




Note: Difference between 2016 and 2017 in absolute terms. Results may vary from those previously presented by Edwards & Creamer (2019) due to weighting corrections reflected the 2017 CPS ASEC updated processing system. Unrelated subfamilies omitted for brevity. Results available on request. Estimates from the 2017 and 2018 CPS ASEC updated processing system reflect different underlying universes and weights.
Source: U.S. Census Bureau, Current Population Survey, 2017 and 2018 Annual Social and Economic Supplement.

**Figure 5:** Changes in Individual's Family Classification Across the 2018 Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) Files Processing Systems




Numbers in thousands.
Estimates from the 2018 CPS ASEC updated processing system reflect different underlying universes and weights.
Source: U.S. Census Bureau, Current Population Survey, 2018 Annual Social and Economic Supplement.