

**Deconstructing Poverty Rates among the 65 and Older Population:
Why Has Poverty Increased Since 2015?**

Liana E. Fox, Ph.D.¹

Social, Economic and Housing Statistics Division

U.S. Census Bureau

liana.e.fox@census.gov

José Pacas, Ph.D.

Minnesota Population Center

University of Minnesota

pacas002@umn.edu

SEHSD Working Paper # 2018-13

April 6, 2018

Prepared for the 2018 Population Association of America Annual Meeting, April 26-28, 2018

¹ This paper was prepared for presentation at the 2018 Population Association of America Annual Meeting. It was developed to promote research and advancements in our understanding of poverty measurement. This paper reports the results of research and analysis undertaken by the U.S. Census Bureau. It has undergone more limited review than official publications. Any views expressed on statistical, methodological, technical, or operational issues are those of the authors and not necessarily those of the U.S. Census Bureau. Any errors or omissions are the sole responsibility of the authors. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <www2.census.gov/programs-surveys/cps/techdocs/cpsmar17.pdf>.

ABSTRACT

Last year, 2016, saw the first increase in poverty among individuals aged 65 and over using the Supplemental Poverty Measure (SPM) in 6 years. This paper investigates the underlying causes and explanations of this poverty increase. Utilizing both cross-sectional analyses and a two-year matched sample allows an examination of the shifting demographics of the population aged 65 and over as well as within-family changes across time. By comparing these family and resource compositions between 2014-2015 and 2015-2016, we are able to better identify the factors pushing families with individuals age 65 and older into poverty. We find that a higher share of these families remained in poverty across both 2015 and 2016 than previously, leading to lower rates of mobility out of poverty. Persistent poverty, as well as increases in the share of individuals age 65 and older living in deep poverty, are a cause of concern. Our analyses find that the largest safety net program for older Americans, Social Security, lifted a smaller share of seniors out of poverty in 2016 than in earlier years and that increases in medical expenses among near poor seniors in 2015 are partially responsible for pushing some of these individuals into poverty.

INTRODUCTION

On September 12, 2017, the Census Bureau released estimates of the Supplemental Poverty Measure (SPM) rate for 2016.² This report found that for the first time since 2010, in 2016 there was a statistically significant increase in SPM poverty rates for one of the major age categories. SPM rates for individuals age 65 and older were up, from 13.7 percent in 2015 to 14.5 percent in 2016 (see Figure 1). While recent research suggests that older Americans may be underreporting income, potentially overstating the poverty rate among individuals 65 and older, there is no reason to expect this underreporting would be increasing between 2015 and 2016 (Bee and Mitchell, 2017). The composition of the 65 and over population is diverse, with differing rates of population growth and differences in poverty rates for subgroups of the population.

This paper examines changes in the SPM back to 2009 for the population age 65 and older, with a focus on changes from 2015 to 2016. We examine how the shifting demographics of this population, in combination with differing poverty rates by demographic group, help to explain poverty changes. Among the potential explanations for changing poverty rates, we will explore the role of:

- Rapid population growth;
- Changes in demographics (such as increasing work intensity, changing family structure, and increasing levels of educational attainment); and
- Changes in the role of social safety net and necessary expenses (such as medical expenses) in pushing and pulling the 65+ population into and out of poverty.

To better understand within-family changes across time, we will use a unique matched sample. By looking at families across two years, we will decompose poverty rate dynamics and measure whether

² See Fox (2017).

more families with individuals age 65 and older are remaining in poverty across two years or whether there has been an increase in the number of families entering poverty. We then analyze the change in individual SPM resource components to further identify which component changes are most influential in pushing or keeping families in poverty.

BACKGROUND

Beginning in 2011, the U.S. Census Bureau began publishing the SPM, which extends the official poverty measure by taking account of many of the government programs designed to assist low-income families and individuals that are not included in the official poverty measure. While the official poverty measure only looks at pretax money income, the SPM adds the value of noncash benefits, such as the Supplemental Nutrition Assistance Program (SNAP), school lunches, housing assistance, and refundable tax credits like the Earned Income Tax Credit into the definition of resources. Additionally, necessary expenses for essential goods and services such as taxes, childcare and work expenses, and contributions toward the cost of medical care and health insurance premiums are deducted from income in the supplemental measure. Thresholds for the SPM also vary based on housing tenure type (whether an individual is a renter, homeowner with a mortgage, or homeowner without a mortgage) and geographic cost-of-living. See appendix in Fox (2017) for full details of the SPM.³

³ The Census Bureau Supplemental Poverty Measure statistics are based in part on the 'BLS-DPINR Research Experimental Supplemental Poverty Measure (SPM) thresholds.' Currently, BLS produces the thresholds using Consumer Expenditure (CE) Survey Interview data as an experimental research product. The BLS thresholds do not reflect the rigors of production quality thresholds or related statistics. Questions about the BLS thresholds should be directed to the BLS' Division of Price and Index Number Research (DPINR). Information about the BLS thresholds can be found on the BLS/DPINR website at <https://www.bls.gov/pir/spmhome.htm#threshold>.

METHODS

Using data from the 2010-2017 Current Population Survey Annual Social and Economic Supplements (CPS ASEC), our analysis examines 2009-2016 poverty rates using the SPM methodology, with a focus on differences between 2015 and 2016. This analysis will have a two-step approach. First, we examine the overall changes in poverty rates among individuals age 65 and older via cross-sectional analysis. Second we will leverage the rotation pattern of the CPS in order to construct two-year panels of CPS respondents.

In the cross-sectional analysis, we utilize a decomposition analysis to disentangle the impact of changing demographics from changing returns to demographics. To estimate the share of individuals aged 65 and older who would have fallen into poverty, alternately holding demographics and returns to demographics constant, we consider the following equation:

$$Y_j = \sum(\beta_{dj} \times \gamma_{dj}) \quad (1)$$

where Y_j is the overall SPM rate for individuals age 65 and older in year j , for j equal to either 2015 or 2016; β is the return to demographics (i.e. the poverty rate) for a given demographic group, d (classified by sex; age; work status: employed full-time, full-year, employed part-time or part-year, not employed; family structure: female reference person, male reference person, cohabiting, or married; educational attainment: less than high school, high school, some college, or bachelor's degree; disability status; health insurance status; and race/ethnicity: white non-Hispanic, black non-Hispanic, Hispanic, or Asian non-Hispanic) and; γ is the share of the population in a given demographic group d .

The share of individuals who would have fallen into poverty in 2016 if the distribution of individuals within demographic subgroups had remained at 2015 values can then be expressed as

$$Y_a = \sum(\beta_{d,2016} \times \gamma_{d,2015}) \quad (2)$$

while the share in poverty if returns to demographics had remained constant would be

$$Y_b = \sum(\beta_{d,2015} \times \gamma_{d,2016}) \quad (3)$$

These predicted values can be compared with actual 2015 and 2016 values (Y_{2015} , Y_{2016}) to indicate the role of changes in demographics or poverty rates within subgroups in accounting for the total change in the rate of SPM poverty from 2015 to 2016.

Following the decomposition analysis, we also examine various descriptive differences that could explain the increase in poverty rates among individuals age 65 and older between 2015 and 2016: changes in the distribution of resource-to-poverty threshold ratios; changes in the effect of individual elements on poverty rates; reciprocity rates and conditional mean values of various resources and expenses.

While the front half of the paper examines changes in the cross-sectional CPS ASEC, many of these changes are ideally analyzed in a longitudinal framework. To do so, we will utilize the matched sample to examine family-level changes. In this analysis, we leverage the rotation pattern of the CPS in order to construct two-year panels of CPS respondents. Using data from CPS ASEC 2010-2017, we follow the linking procedure outlined in Rivera Drew, Flood, Warren (2014). By focusing our analysis at the family-level, we are able to identify changes in family composition and different SPM resource components. That is, we utilize the SPM family unit, which allows us to study more complicated resource-sharing units. Furthermore, the changes in family resources can be broken down into the different SPM resource components (i.e. total cash income, non-cash government subsidies, taxes paid and credits received, necessary expenses, and medical expenditures).

Our linking procedure links individuals as well as families. The resulting unweighted sample size is 148,019 families for the 2010-2017 CPS ASEC sample which amounts to 346,770 respondents (see Appendix Table 1). These samples are further broken down based on the presence of an individual age 65 or older. Of the 148,019 families, 37,305 are families with an individual age 65 or older while 110,714 families have no individuals age 65 and older. At the individual-level, of the 346,770 respondents, 59,840 are age 65 and older while 286,930 are under age 65.

Counterfactual analysis

Using the matched sample it is possible to examine which changes in family resource components are more influential in pushing families in or out of poverty. In this section we use a simple counterfactual framework to uncover these influential changes. The intuition behind the approach developed here is captured by the questions: (1) For how many poverty entries is the change in a particular resource pivotal? (2) For how many poverty entries is the change expected? Pivotal change occurs when the change in a particular resource is large enough to push that family into poverty by itself. Expected changes are those where resources change in the expected direction (i.e. wages/salaries drop for families that fall into poverty while medical expenses increase for families that fall into poverty). Expected changes determine the upper bound of relevance of a resource change. Of the percent of expected changes, a proportion will be pivotal. The higher the proportion of pivotal changes, the more influential that resource is in determining poverty (i.e. a lower bound of relevance).

To formalize this analysis consider families that are not poor in $t1$ but enter poverty in $t2$. By definition, the following is true:

Using the framework established in Pacas (2017):

$$\text{Total Resource } t1 > \text{Threshold } t1 \rightarrow \text{Not poor in } t1$$

$$\text{Total Resource } t2 < \text{Threshold } t2 \rightarrow \text{Poor in } t2,$$

which implies that the following must be true if a family falls into poverty:

$$\text{Total Resource } t2 - \text{Total Resource } t1 < \text{Threshold } t2 - \text{Threshold } t1$$

For all practical purposes, the right-hand side is zero. Pacas (2017) established that, in practice, the changes in thresholds alone (i.e. family composition changes alone) have a negligible impact on poverty transitions in comparison to the change in total resources that accompany family composition changes. Thus, to simplify analysis, it is defensible to study the following:

$$\text{Total Resource } t2 - \text{Total Resource } t1 < 0$$

By definition, total SPM resources in any time period are defined as:

$$\begin{aligned} \text{Total Resources} = & \text{Wages} + \text{Other Cash Income} + \text{Gov.Subs.} - (\text{Taxes} + \\ & \text{Medical Expenses} + \text{Other Necessary Exp}), \end{aligned}$$

where *Wages* is the total family cash income from wages/salaries, *Other Cash Income* is all other cash income, *Gov.Subs.* is the total non-cash benefits, *Medical Expenses* is the total family medical out-of-pocket expenditures, *Taxes* are total taxes paid, and *Other Necessary Exp.* are a family's necessary work and child care expenses. The change in total SPM resources between two time periods is simply:

$$\begin{aligned} \text{Total Resources } t2 - \text{Total Resources } t1 = & (\text{Wages } t2 - \text{Wages } t1) + \\ & (\text{Other Cash Income } t2 - \text{Other Cash Income } t1) + (\text{Gov.Subs. } t2 - \\ & \text{Gov.Subs. } t1) - [(\text{Taxes } t2 - \text{Taxes } t1) + (\text{Medical Expenses } t2 - \text{Medical Expenses } t1) + \\ & (\text{Other Necessary Exp } t2 - \text{Other Necessary Exp } t1)]. \end{aligned}$$

Since we have established that families entering poverty lose resources between time periods in virtually all cases, the equation can be arranged to isolate a particular change in one resource component. This relationship states that for families who enter poverty, the loss in wages/salaries must be less than the change of expenses of a family net of their other income.

$$(Wages\ t2 - Wages\ t1) < [(Taxes\ t2 - Taxes\ t1) + (Medical\ Expenses\ t2 - Medical\ Expenses\ t1) + (Other\ Necessary\ Exp\ t2 - Other\ Necessary\ Exp\ t1)]. - [(Other\ Cash\ Income\ t2 - Other\ Cash\ Income\ t1) + (Gov.\ Subs.\ t2 - Gov.\ Subs.\ t1)]$$

Using this relationship, one could establish a counterfactual framework by setting all other changes in resources to zero. That is, if none of the other components changed, would this family still be in poverty? But, this approach does not take advantage of the actual changes in resources experienced by a family. Allowing resources to change, it is possible to define pivotal and expected changes. A pivotal change is defined as a change in resources that is large enough to push a family into poverty even if other resources increase or decrease as observed. Then it must be true for a change to be pivotal that a family would not enter poverty without the change in this resource. Then, setting $(Wages\ t2 - Wages\ t1) = 0$, a family would not enter poverty, but for the change in their wage/salary income if the following holds:

$$0 > [(Taxes\ t2 - Taxes\ t1) + (Medical\ Expenses\ t2 - Medical\ Expenses\ t1) + (Other\ Necessary\ Exp\ t2 - Other\ Necessary\ Exp\ t1)]. - [(Other\ Cash\ Income\ t2 - Other\ Cash\ Income\ t1) + (Gov.\ Subs.\ t2 - Gov.\ Subs.\ t1)]$$

In the case where this relationship holds true, the change in the work income is pivotal for entering poverty, once all other components have changed. Using this final equation, the percent of families

who enter poverty for whom the change in work income is sufficient to enter poverty can be calculated. First, define (*Poor_Pivotal*) = 1 if the equation above holds. Then, the percent is calculated as:

$$Wages_{pivotal} = \frac{\Sigma Poor_Pivotal}{\Sigma(NonPoor\ to\ Poor)}$$

The expected condition can be constructed in a similar fashion. Since we know that the change in total resources must be negative in order for a family to fall into poverty, then the expected condition occurs when work income decreases regardless of the change in the other resources. The expected condition for families that enter poverty occurs when: (*Wages t2 – Wages t1*) < 0.

Intuitively, this percentage captures the number of families that enter poverty where the change in resources happen in the expected direction. That is, positive resources (e.g. work income) decrease for families entering poverty while negative resources (e.g. medical expenses) increase. Thus the expected conditions capture all the families that experience the expected change in resources while the sufficient condition captures the subset of these families where the change in one resource is enough to push the family into poverty.

For families exiting poverty, the algebraic exercise is analogous to that just shown but where *Total Resource t2 – Total Resource t1* < 0. That is, all families that exit poverty experience a positive change in total SPM resources overall.

RESULTS

Cross-Sectional Analysis

For the first time since 2010, SPM poverty rates increased for individuals age 65 and older, increasing 0.86 percentage points from 13.68 to 14.55 percent from 2015 to 2016. In contrast, the overall SPM

poverty rate declined 0.54 percentage points. To examine the causes of this poverty increase, we examine how the shifting demographics of this population, in combination with differing poverty rates by demographic group, help to explain poverty changes.

In deconstructing the poverty rate increase, the first consideration is whether the demographics of the 65 and older population have changed, resulting in higher poverty rates due to compositional differences. If for instance, relatively disadvantaged groups were growing faster than more advantaged groups we might see a growth in overall poverty rates without poverty rates for any specific subgroup increasing. Table 1 highlights some of the differences in population growth and poverty rates by demographic subgroup with the population of individuals age 65 and older between 2015 and 2016.⁴ Overall, the 65 and older population grew 3.6% from 2015 to 2016. While a number of subgroups had significant population growth between 2015 and 2016, four subgroups had population growth faster than the overall rate: individuals age 74-76 (12.3%), blacks (5.0%), Hispanics (5.0%) and individuals with a bachelor's degree or higher (9.4%). Individuals age 71-73 and 77-79, females, and individuals with a high school degree or lower educational attainment all experienced slower population growth than the overall rate.

Looking at poverty rates within demographic subgroups, we see significant increases in poverty rates from 2015 to 2016 for the following categories of individuals aged 65 and older: individuals age 74-76, females, whites, individuals with a high school education, individuals with a bachelor's degree or higher, individuals who did not work at least 1 week last year, and individuals living in an SPM unit of

⁴ For subgroup population counts and poverty rates for 2009-2016, see Appendix Tables 2 and 3.

1, but in a household with others. Many of these subgroups also had significant population growth from 2015 to 2016.⁵

To decompose the impact of changing poverty rates within subgroups from changing demographics of the 65 and older population, we performed a decomposition analysis. We first estimated the share of individuals aged 65 and older who would have fallen into poverty by holding demographics constant from 2015 to 2016 and then allowed demographics to change and held returns to demographics constant. Looking at the results in Table 2, we find that if returns to demographics (i.e. poverty rates within subgroups) had remained constant from 2015 to 2016, the overall poverty rate for individuals age 65+ would not have changed by a statistically significant amount, meaning that changing demographics would not have resulted in a different overall poverty rate. Conversely, if demographics would have remained constant from 2015-2016, but within subgroup poverty rates changed, the overall poverty rate would have increased by 0.96 percentage points. Taken together, we see that changes in subgroup poverty rates are responsible for the increase in the overall 65 and over poverty rate from 2015 to 2016, not changes in demographics.

Moving beyond the share of people above or below the poverty line, Figure 2 shows the distribution of resource-to-threshold ratio categories for all individuals age 65 and older in 2015 and 2016. Dividing total SPM resources (cash income + noncash benefits – expenses) by the unit’s applicable poverty threshold shows the distribution of the population controlling for unit size and composition. Resource-to-threshold ratios are useful for gauging the depth of poverty among those with resources above and below their poverty thresholds. Comparing the distribution of individuals age 65 and older in 2015 to

⁵ Subgroups with significant population growth from 2015 to 2016 include: individuals age 68-70, 74-76, and 85 and older; males, females, whites, white, non-Hispanics, blacks, Hispanics, individuals age 65 and older living alone, individuals age 65 and older who are head or spouse/partner of householder, married partners, individuals with some college or more education, individuals who worked less than full-time, full-year and individuals who did not work. See Table 1.

2016, we see a 0.87 percentage point decline in the share with resource-to-threshold ratios just above the poverty threshold (1.0 to 1.49), while there is a significant increase (0.61 percentage points) in the share of individuals age 65 and older below half the poverty line. Looking at this relationship another way, Figure 3 shows a kernel density plot of the resource-to-threshold ratios in 2015 and 2016. It appears that a higher percent of individuals had resources slightly above 100% of the poverty line in 2015 than 2016.

We next turn to examining the impact of individual elements on poverty rates, to see if there are any differences in the magnitude of the effect of various programs or expenses in alleviating or increasing poverty between 2015 and 2016. Table 3 shows the effect of various additions and subtractions on the percent of people age 65 and older who would have been considered poor in 2015 and 2016, holding all else constant and assuming no behavioral changes. Removing a single item from the calculation of SPM resources and recalculating poverty rates shows that Social Security benefits decreased poverty among individuals age 65 and older by a smaller percent in 2016 than 2015. In 2015, Social Security benefits moved 36.17 percent of all seniors out of poverty. In 2016, this impact fell to 34.77 percent. This indicates that the main anti-poverty program for individuals age 65 and older is preventing fewer individuals from falling into poverty in 2016 than 2015. For all other additions and subtractions to SPM resources, the impacts from 2015 to 2016 were not statistically different.

To further unpack why Social Security might be moving fewer seniors out of poverty, we next look at reciprocity rates and conditional means of values in 2015 and 2016. Reciprocity rates indicate the share of individuals age 65 and older who are receiving a given benefit or who have values for a given expense that exceed \$0. Table 4 shows the change in conditional means of various SPM components and the share of individuals living in a unit with a positive value. Overall, we see that the share of individuals age 65 and older living in a unit that receives Social Security declined 0.49 percentage

points (from 86.12 to 85.63 percent) between 2015 and 2016. However, conditional on receiving a positive value of Social Security, the mean benefit receipt increased by \$291 per year. Looking at conditional means, we see large declines in child support paid and workers' compensation received. However, both of these components impact less than 1 percent of individuals age 65 and older.

Short Panel Analysis

We now shift to examining changes utilizing a longitudinal framework. Using the two-year CPS panels described above, we are able to examine poverty transitions or churn, as well as understand changes in family composition and resources.

Table 5 decomposes linked poverty rates into its churn rates. To clarify terminology, the first year a family is observed in the data will be referred to as $t1$ and the second year will be denoted by $t2$. Thus, the sample ends with a $t1$ of 2015 and a $t2$ of 2016. Poverty rates will refer to the poverty rate using $t2$ observations such that a given year's poverty rate can be decomposed into families entering poverty plus families remaining in poverty. Poverty transitions will generally be referred to in the following manner. Those families not transitioning, those consistently either below or above the poverty threshold in both time periods, will be referred to as Poor-to-Poor (P-P) or "Always Poor" and NonPoor-to-NonPoor (NP-NP) or "Never Poor." Similarly, families transitioning will be denoted by Poor-to-NonPoor (P-NP) for those exiting poverty and NonPoor-to-Poor (NP-P) for those entering poverty. Churn is defined as a transition from either Poor-to-NonPoor or NonPoor-to-Poor across two consecutive years. This is in comparison to the persistent states of Always Poor and Never Poor.

Churn

As can be seen in Figure 4, the change in poverty rates between the 65 and over population and the under 65 population are driven by different rates of churn. More specifically, the 65 and over

population usually exhibits a higher rate of churn (transitioners) than the under 65 population and a lower rate of those Always Poor.⁶ That is, there is more movement in and out of poverty among individuals 65 and over than those under age 65. Figure 4 gives visual evidence of why the 65 and over poverty rate has increased between 2015 and 2016. Intuitively, a rise in the poverty rate could be a combination of more people remaining poor, less people exiting poverty, and/or more people entering poverty. In the case of individuals age 65 and over, the statistically significant change has been the drop in the share of people exiting poverty from 8.7 percent between 2014-2015 to 7.5 percent in 2015-2016. Indeed, this level of exits from poverty is the lowest it has been since 2009, the first year for which SPM data are available. Moreover, 2015-2016 is the first year in which the rate of people exiting poverty is statistically different from the rate of people entering poverty (7.5 percent v. 9.1 percent, respectively). Finally, though there seems to be a slight uptick in those remaining poor between 2015-2016, the difference is not statistically significant. In summary, by decomposing the poverty rate, we see that the rise in elderly poverty rate is largely driven by a decrease in those not exiting poverty.

Where exactly are these families moving?

While the cross-sectional results suggest that the overall distribution of resources has increased around the poverty thresholds, the linked CPS ASEC allows us to investigate the individual-level income movements of people across two years. Table 5 is the transition matrix of individuals between their $t1$ resource-to-threshold ratio and $t2$ ratios. The matrices show that for 2015-2016, a large proportion of individuals age 65 and older (4.9%) stay within 100-150% of the poverty threshold in both time periods while about 3% stay within 150-200% of the poverty threshold. The largest proportion of

⁶ The rates of churn for individuals age 65 and older are higher than for the under 65 population in all years except for Poor-to-NonPoor transitions in 2016. The share of Always Poor for the 65 and older population is lower than the under 65 rate in all years except in 2009.

individuals age 65 and older (15.25%) stay about 400% of the poverty threshold in both time periods. Transitions in resources tend to be small for those near their poverty threshold, with 2.1% of people moving from 100-150% to 50-100% while 0.9% move to 0-50% in 2015-2016. The matrix points to the subtle shifts that people close to poverty experience. Those moving from poverty tend to move to near poverty rather than 200% above their poverty threshold. In 2015-2016, only 2.5% of people transitioned from poverty to near poverty, compared with 3.2% in 2014-2015. Additionally, a higher share of the total distribution transitioned into deep poverty (below 50% of the poverty threshold) in 2015-2016 than in 2014-2015 (4.4% vs 3.3%).

How does 2015-2016 compare to 2014-2015? Taking the difference between the two matrices allows us to isolate the growth in certain transitions across the two time periods (Table 6). Focusing on the changes in cell percentages, we can see that there has been a decrease (0.8 percentage points) in the percent of people exiting poverty into near poverty.⁷ The implication of this finding is that movements in resources can be relatively small but, for those near poverty, just above or below, small changes can be the difference between moving in or out of poverty.

What exactly is changing for these families?

We now transition the analysis from individuals to families to understand how changes in family structure and resources could be impacting individual poverty rates. To increase sample size, we combine two cohorts of data (2013-2014 and 2014-2015) for our “before” analysis to compare with the 2015-2016 cohort. For simplicity, these are referred to as families in 2013-2015, although the differences are all single year differences. All dollars are in 2016 Consumer Price Index for All Urban Consumers (CPI-U) adjusted dollars. To start, consider all families with a family member aged 65 or

⁷ 0.8 is the sum of the cell percentages corresponding to (T1 (0-0.5), T2 (1-1.5)) and (T1 (0.5-1), T2 (1-1.5))) from Table 6. That is, -0.24 and $-0.51 = 0.8$.

older in 2015-2016. On average, all families lost about \$1,300 (\$1,264) between 2015-2016 (Table 7a). As established in the previous section, a substantial part of the growth in poverty is due to the movements across the near poor groups.

Focusing on the near-poor population (those with resources between 100% and 150% of their poverty threshold in $t1$) as shown in Table 7b, it becomes apparent that there has been an overall shift in the change of resources. Between 2013-2015, families in this resource range experienced an apparent average gain of \$366 in total SPM resources from one year to the next. However, in 2015-2016, these families experienced an apparent average loss of \$515. While neither of these changes were statistically different from 0, these two estimates are statistically different from one another. The largest drivers of this loss were reductions in Social Security receipt and retirement income. In 2013-2015, the average family saw an increase of about \$400 in SS income. In 2015-2016, these families saw an apparent drop of about \$200. While the 2015-2016 amount was not significantly different from \$0, these two estimates are statistically different from one another. As for retirement income, in 2013-2015, the average family saw an apparent increase of about \$100 and an apparent drop of about \$200 in 2015-2016, and while neither of these changes were statistically different from \$0, they are significantly different from one another. Finally, medical expenses for these families in 2015-2016 started with an average of about \$500 more in medical expenditures in $t1$ than families in 2013-2015.

Counterfactuals

Because the SPM contains many different resource components, it is difficult to ascertain which resource changes are more influential in pushing families in or out of poverty. In this section we use a simple counterfactual framework to uncover these influential changes. As detailed in the methods section, this analysis examines the following questions: (1) For how many poverty entries is the change in a particular resource pivotal (i.e. the change in a particular resource from $t1$ to $t2$ is large

enough to push that family into poverty by itself, even if other resources increase or decrease as observed)?; and (2) For how many poverty entries is the change expected (i.e. given that a family transitioned from one poverty status to another from $t1$ to $t2$, did resources change in the predictable direction)? Expected changes determine the upper bound of relevance of a resource change. Of the percent of expected changes, a proportion will be pivotal. The higher the proportion of pivotal changes, the more influential that resource is in determining poverty (i.e. a lower bound of relevance). The results for these sets of calculations are shown in Table 8.

From the counterfactual analysis we notice a few things. First, we can see that changes in Social Security income play the largest role in moving families in and out of poverty. About 76% of families entering poverty in 2016 saw a decrease in Social Security income and 18.7% of all families entering poverty experienced a decrease large enough to push them into poverty (a pivotal change). Three other resource components are relatively influential: income from wages/salary (8.6% pivotal), retirement income (7% pivotal) and medical expenditures (6.6% pivotal). Examined jointly, 45.9% of NonPoor to Poor experienced at least 1 pivotal change, while 43.9% of Poor to NonPoor experienced at least 1 pivotal change.

In sum, the framework set up in this section establishes a ranking of the relative importance of resource component changes in pushing families in and out of poverty. This analysis reveals that the changes in Social Security income are more influential in pushing families in and out of poverty. Because of the smaller sample size of families with individuals age 65 and over who enter or exit poverty, it is not possible to ascertain with statistical significance whether these changes are different from prior years. Results are included in Table 8 for 2015 as well.

Family Structure Changes

Finally, we examine the potential impact of family structure changes. The vast majority of families did not change in composition across either of the two-year panels examined. Overall, 92% of families had no change in the number of people in the unit. While few families changed size across two subsequent years, it is possible for a family to remain the same size, but change composition (e.g. a spouse dies and a parent moves into the house, possibly losing an earner and gaining a non-earner). However, we find no evidence of a significant changes in family composition among families without a size change (See Appendix Tables 4 & 5).

These results seem to be consistent with the cross-sectional decomposition analysis which found that changes in subgroup poverty rates, rather than changes in demographics, appear to be driving the increase in the poverty rate for individuals 65 and older between 2015 and 2016. These results are also consistent with previous research which found that changes in thresholds due to unit composition changes have a negligible impact on poverty transitions in comparison to the changes in resources associated with the change (e.g. losing a unit member will decrease poverty thresholds and therefore decrease the likelihood of a unit falling into poverty, but the loss of resources from that unit member is likely to have a larger impact on the unit's poverty transition probability) (Pacas, 2017).

SUMMARY

This paper has explored a range of explanations for the increase in SPM poverty rates for the population of individuals age 65 and older between 2015 and 2016. Utilizing both a cross-sectional and short panel approach, we examined how the shifting demographics of this population, in combination with differing poverty rates by demographic group, help to explain the poverty increase.

To deconstruct this question, we examined the impacts of population growth, changing demographics and changes in resources and expenses. We find that while the 65 and older population has experienced considerable population growth in the past year, this population growth has actually been focused on relatively more advantaged subgroups. Similarly, changing family compositions do not appear to be driving increases in poverty, at least at levels that are currently observable in our matched sample given its limited sample size.

However, both the cross-sectional and panel analyses highlight the importance of Social Security income in failing to move as many individuals age 65 and older out of poverty in 2016 than in 2015. Given the lack of family composition changes, the reasons behind the declining anti-poverty impact of Social Security are unclear. Additional work, ideally with a larger sample, should further explore this relationship.

Importantly, this paper finds that the increase in the SPM poverty rate is not the only concerning statistic for the 65 and older population. Both deep poverty and persistent poverty also increased for older Americans. The rate of deep poverty increased 0.61 percentage points, accounting for the majority of the 0.86 percentage point increase in poverty. Furthermore, the panel analysis found that the rate of churn out of poverty from one year to the next was lower between 2015-2016 than in any other time since 2009. Taken together, these indicators suggest that further research and close observation of additional indicators of well-being of adults age 65 and older is warranted.

REFERENCES

- Bee, A. & Mitchell, J. (2017). Do older Americans have more income than we think? (SEHSD Working Paper Number 2017-39). Washington, D.C.: U.S. Census Bureau. Available at <www.census.gov/content/dam/Census/library/working-papers/2017/demo/SEHSD-WP2017-39.pdf>
- Fox, L. (2017). The Supplemental Poverty Measure: 2016. *Current Population Reports*, P60-261. Washington, D.C.: U.S. Census Bureau. Available at <www.census.gov/content/dam/Census/library/publications/2017/demo/p60-261.pdf>
- Pacas Viscarra, J. D. (2017). Innovative methods for using census data to study poverty, labor markets, and policy (Doctoral dissertation). University of Minnesota. Retrieved from <https://conservancy.umn.edu/bitstream/handle/11299/191475/PacasViscarra_umn_0130E_18667.pdf>
- Rivera Drew, J. A., Flood, S., & Warren, J. R. (2014). Making full use of the longitudinal design of the current population survey: Methods for linking records across 16 months¹. *Journal of Economic and Social Measurement*, 39(3), 121-144

Table 1. Demographic Components of Poverty for Individuals Age 65 and Older: 2015 and 2016

OVERALL-65+						
Characteristic	Population			Poverty Rate		
	2016	2015	Change (%)	2016	2015	Change (Pct Pt)
Overall-65+	49,274	47,547	3.63 *	14.55	13.68	0.86 *
Age						
65-67	10,360	10,122	2.35	12.43	12.86	-0.42
68-70	9,560	8,932	7.03 *	12.28	11.96	0.32
71-73	6,907	6,964	-0.82	12.72	11.87	0.85
74-76	6,237	5,554	12.30 *	14.63	12.10	2.53 *
77-79	4,693	4,791	-2.04	15.60	14.18	1.42
80-84	5,645	5,637	0.14	17.10	15.46	1.63
85+	5,872	5,547	5.86 *	20.73	19.59	1.14
Sex						
Male	22,160	21,209	4.48 *	12.52	11.87	0.65
Female	27,114	26,337	2.95 *	16.20	15.14	1.06 *
Race and Hispanic Origin						
White	41,623	40,254	3.40 *	13.22	12.05	1.17 *
White, not Hispanic	37,951	36,682	3.46 *	11.95	10.81	1.14 *
Black	4,561	4,343	5.01 *	23.06	24.08	-1.02
Asian	2,209	2,130	3.67	20.29	20.46	-0.17
Hispanic (any race)	4,057	3,863	5.02 *	26.16	24.66	1.50
Family Structure						
65+ individual living alone (only 1 person in HH)	3,526	3,278	7.55 *	22.20	19.61	2.59
65+ individual living in SPM unit of 1, but in HH with others	11,109	11,008	0.92	21.91	19.54	2.36 *
65+ individual is head or spouse/partner	30,992	29,888	3.70 *	10.82	10.75	0.07
Married	27,117	26,097	3.91 *	10.08	9.88	0.19
Cohabiting partners	927	956	-3.02	10.71	9.54	1.17
Unmarried, but living with other relatives	2,948	2,835	4.01	17.70	19.12	-1.42
65+ individual is living in unit, but not head, spouse/partner	3,647	3,373	8.13	16.39	14.80	1.60
Householder is 65+ person's child (perrp=6)	2,234	2,085	7.17	18.24	15.61	2.63
Householder is other relative (perrp=4,5,7,8,9)	1,329	1,217	9.21	12.99	12.26	0.73
Educational Attainment						
No high school diploma	6,859	6,953	-1.36	27.66	26.58	1.07
High school, no college	15,899	15,807	0.58	15.13	13.95	1.17 *
Some college	11,905	11,431	4.15 *	12.29	11.75	0.53
Bachelor's degree or higher	14,611	13,355	9.40 *	9.61	8.30	1.31 *
Work Status						
Worked full-time, year-round	5,412	5,271	2.68	2.25	2.70	-0.46
Less than full-time, year-round	6,009	5,682	5.77 *	6.70	6.68	0.02
Did not work at least 1 week	37,852	36,594	3.44 *	17.55	16.35	1.20 *

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

Source: U.S. Census Bureau, Current Population Survey, 2016 and 2017 Annual Social and Economic Supplements.

Table 2. Poverty Rate Decomposition Analysis: 2015 and 2016

	Share in Poverty	Percentage Point Change
Actual value, 2015	13.68%	
Actual value, 2016	14.55%	0.86%*
Holding constant returns to demographics ($\beta_{2015} \times \gamma_{2016}$)	13.55%	-0.13%
Holding constant demographics ($\beta_{2016} \times \gamma_{2015}$)	14.64%	0.96%*

* An asterisk following an estimate indicates difference is statistically different from zero at the 90 percent confidence level.
Source: U.S. Census Bureau, Current Population Survey, 2016 and 2017 Annual Social and Economic Supplements.

Table 3. Effect of Individual Elements on SPM Rates: 2016 and 2015

	2016		2015		Difference
	Estimate	Margin of error [†] (±)	Estimate	Margin of error [†] (±)	Estimate
Social Security	-34.77	0.73	-36.17	0.79	1.40 *
Refundable tax credits	-0.20	0.05	-0.19	0.05	-0.01
SNAP	-0.64	0.10	-0.77	0.12	0.13
SSI	-1.23	0.13	-1.33	0.17	0.10
Housing subsidies	-1.27	0.15	-1.07	0.15	-0.20
Child support received	-0.02	0.01	-0.03	0.02	0.02
School lunch	-0.02	0.02	-0.04	0.03	0.02
TANF/general assistance	-0.04	0.02	-0.02	0.02	-0.02
Unemployment insurance	-0.04	0.02	-0.03	0.02	0.00
LIHEAP	-0.07	0.03	-0.09	0.04	0.01
Workers' compensation	-0.05	0.03	-0.03	0.02	-0.02
WIC	-0.01	0.01	-0.01	0.01	0.00
Child support paid	0.01	0.02	0.02	0.02	-0.01
Federal income tax	0.14	0.05	0.16	0.06	-0.02
FICA	0.34	0.07	0.38	0.08	-0.04
Work expenses	0.42	0.08	0.53	0.10	-0.10
Medical expenses	5.76	0.35	5.66	0.31	0.10

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

[†] The margin of error (MOE) is a measure of an estimate's variability. The larger the MOE in relation to the size of the estimate, the less reliable the estimate. This number, when added to and subtracted from the estimate, forms the 90 percent confidence interval. The MOEs shown in this table are based on standard errors calculated using replicate weights. For more information see 'Standard Errors and Their Use' at www2.census.gov/library/publications/2017/demo/p60-259sa.pdf.

Source: U.S. Census Bureau, Current Population Survey, 2016 and 2017 Annual Social and Economic Supplements.

Table 4. Reciprocity Rates and Conditional Means for SPM Components: 2015 and 2016

	Overall-65+					
	Conditional Means			Reciprocity Rates (Share of 65+ Ind. Living in SPM unit with value>0)		
	2016	2015	2016-2015	2016	2015	2016-2015
SPM total resources	53,294	51,516	1,778 *	97.86	98.06	-0.21 *
SPM total cash income	70,535	68,173	2,362 *	98.98	99.00	-0.03 *
Social Security	23,073	22,782	291 *	85.63	86.12	-0.49 *
EITC	1,563	1,629	-66	4.73	4.87	-0.14
SNAP	1,840	1,904	-64	7.27	7.30	-0.03
SSI	8,163	8,302	-138	4.64	4.35	0.29
Housing subsidies	4,018	3,990	28	3.06	2.84	0.22
Child support received	5,714	4,334	1,380	0.73	0.77	-0.04
School lunch	554	536	18	3.95	3.95	0.00
TANF/general assistance	4,119	3,397	722	0.53	0.48	0.05
Unemployment insurance	4,806	5,463	-657	1.24	1.29	-0.06
LIHEAP	395	408	-12	3.17	3.17	0.00
Workers' compensation	8,947	17,258	-8,312 *	0.46	0.45	0.01 *
WIC	752	770	-18	0.40	0.47	-0.07
Child support paid	6,533	10,047	-3,514 *	0.34	0.27	0.06 *
Federal income tax	13,242	13,073	168	53.40	52.37	1.03
State income tax	3,477	3,088	389 *	38.92	39.19	-0.28 *
FICA	4,993	4,968	25	41.35	41.04	0.30
Work expenses	2,572	2,702	-130 *	41.34	41.02	0.32 *
Medical expenses	6,723	6,315	408 *	98.22	98.31	-0.10 *

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

Source: U.S. Census Bureau, Current Population Survey, 2016 and 2017 Annual Social and Economic Supplements.

Table 5. Transition Matrices: 2014-2015 and 2015-2016

		T2 Poverty Ratio									
2014-2015		0-0.5	0.5-1	1-1.5	1.5-2	2-2.5	2.5-3	3-3.5	3.5-4	4+	Total
T1 Poverty Ratio	0-0.5	0.70%	0.79%	0.99%	0.74%	0.41%	0.28%	0.18%	0.10%	0.57%	4.76%
	0.5-1	0.65%	1.96%	2.22%	1.07%	0.67%	0.44%	0.37%	0.11%	0.49%	7.99%
	1-1.5	0.65%	2.05%	4.81%	2.52%	1.45%	0.64%	0.69%	0.43%	1.24%	14.49%
	1.5-2	0.51%	1.15%	2.71%	2.66%	1.69%	1.23%	0.75%	0.39%	1.53%	12.61%
	2-2.5	0.17%	0.74%	1.34%	1.54%	1.91%	1.36%	0.99%	0.71%	1.47%	10.23%
	2.5-3	0.44%	0.43%	1.00%	1.11%	1.30%	1.42%	0.90%	0.51%	2.46%	9.57%
	3-3.5	0.18%	0.31%	0.46%	0.86%	0.70%	0.88%	1.12%	0.55%	1.87%	6.94%
	3.5-4	0.19%	0.26%	0.43%	0.40%	0.69%	0.51%	0.70%	0.66%	2.14%	5.98%
	4+	0.47%	0.95%	1.57%	1.74%	1.66%	2.05%	2.12%	2.11%	14.77%	27.43%
	Total (Cell)	3.97%	8.64%	15.53%	12.64%	10.47%	8.82%	7.83%	5.56%	26.55%	100.00%
2015-2016		T2 Poverty Ratio									
		0-0.5	0.5-1	1-1.5	1.5-2	2-2.5	2.5-3	3-3.5	3.5-4	4+	Total
T1 Poverty Ratio	0-0.5	0.58%	1.03%	0.75%	0.65%	0.36%	0.22%	0.19%	0.04%	0.35%	4.18%
	0.5-1	0.98%	1.96%	1.71%	0.99%	0.54%	0.37%	0.33%	0.14%	0.77%	7.80%
	1-1.5	0.90%	2.11%	4.88%	2.48%	1.21%	0.89%	0.51%	0.39%	1.30%	14.67%
	1.5-2	0.71%	1.11%	2.25%	2.99%	1.46%	1.18%	0.81%	0.57%	1.53%	12.62%
	2-2.5	0.47%	0.65%	1.16%	1.58%	1.57%	1.32%	0.92%	0.46%	1.65%	9.77%
	2.5-3	0.33%	0.36%	0.91%	1.06%	1.36%	1.14%	1.10%	0.69%	1.66%	8.61%
	3-3.5	0.28%	0.45%	0.53%	0.71%	1.12%	0.92%	1.20%	0.73%	2.16%	8.08%
	3.5-4	0.09%	0.19%	0.44%	0.77%	0.75%	0.50%	0.89%	0.81%	1.89%	6.33%
	4+	0.60%	0.87%	1.59%	1.71%	1.60%	2.09%	1.95%	2.27%	15.25%	27.94%
	Total (Cell)	4.96%	8.74%	14.21%	12.95%	9.96%	8.64%	7.90%	6.10%	26.54%	100.00%

z: Rounds to 0

Note: All shares are statistically different from zero at the 90 percent confidence level.

Source: CPS-ASEC 2015-2017

Table 6. Difference in Transition Probabilities for 2015-2016 to 2014-2015

		T2 Poverty Ratio									
		0-0.5	0.5-1	1-1.5	1.5-2	2-2.5	2.5-3	3-3.5	3.5-4	4+	Total
T1 Poverty Ratio	0-0.5	-0.12%	0.24%	-0.24%	-0.09%	-0.05%	-0.05%	0.01%	-0.05%	-0.22% *	-0.58%
	0.5-1	0.33% *	z	-0.51% *	-0.08%	-0.13%	-0.06%	-0.05%	0.03%	0.28% *	-0.19%
	1-1.5	0.25% *	0.07%	0.06%	-0.03%	-0.23%	0.24% *	-0.18%	-0.05%	0.06%	0.18%
	1.5-2	0.20%	-0.04%	-0.46% *	0.33%	-0.22%	-0.04%	0.06%	0.19%	z	0.01%
	2-2.5	0.30% *	-0.09%	-0.17%	0.04%	-0.34%	-0.04%	-0.07%	-0.26% *	0.17%	-0.46%
	2.5-3	-0.11%	-0.07%	-0.10%	-0.05%	0.06%	-0.28%	0.20%	0.19%	-0.81% *	-0.96%
	3-3.5	0.10%	0.14%	0.06%	-0.15%	0.42% *	0.03%	0.08%	0.18%	0.29%	1.14%
	3.5-4	-0.09%	-0.07%	0.01%	0.37% *	0.06%	-0.01%	0.19%	0.15%	-0.26%	0.35%
	4+	0.13%	-0.08%	0.02%	-0.03%	-0.06%	0.04%	-0.16%	0.16%	0.48%	0.51%
	Total	0.99%	0.10%	-1.32%	0.31%	-0.51%	-0.18%	0.07%	0.54%	-0.01%	

z: Rounds to 0

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

Source: CPS-ASEC 2015-2017

Table 7a. Changes in Resources - All Families - 2013-2016

	All Families				NonPoor to Poor				Poor to NonPoor			
	2013-2015		2015-2016		2013-2015		2015-2016		2013-2015		2015-2016	
	T1	Change	T1	Change	T1	Change	T1	Change	T1	Change	T1	Change
SPM Resources	44,443	-339	46,467	-1,264 *	33,701	-26,071 *	35,370	-28,274 *	7,331	26,620 *	7,291	29,543 *
Total Cash/NonCash Resource	59,054	-872	62,154	-1,754	41,551	-28,289 *	44,338	-30,461 *	13,501	29,482 *	13,676	33,240 *
Income from Wages/Salary	19,359	-1,952 *	20,172	-1,781 *	7,284	-5,658 *	6,645	-5,685 *	1,618	6,742 *	2,215	5,537 *
Business Income	1,813	-274	2,152	-450	791	-533 *	1,310	-846 *	105	725 *	158	1,010 *
Farm Income	283	134	388	-132	14	11	87	-86	47	982	2	43
SS Income	17,882	712 *	18,463	637 *	16,885	-8,012 *	18,930	-9,189 *	9,285	8,509 *	9,149	9,143 *
Retirement Income	10,815	1,014 *	12,327	314	8,794	-8,148 *	9,938	-9,092 *	692	7,942 *	651	10,401 *
Government Subsidies	2,651	242 *	3,020	-432 * +	3,791	-2,483 *	2,668	-1,233 * +	1,131	1,470 *	904	2,695 * +
<i>SNAP</i>	113	-4	99	2	233	-26	162	80 * +	211	-30	167	-10
<i>LIHEAP</i>	12	3 *	13	2	16	14 *	31	-2	20	-1	14	1
<i>Housing Subsidies</i>	130	-11	112	13 +	298	-22	175	40	259	-69 *	194	7
Rent etc.	6,014	-681 *	5,408	187 +	3,837	-3,394 *	4,567	-4,246 *	479	2,991 *	493	4,458 *
Assist etc.	236	-66 *	226	-97 *	154	-71	194	-84	143	120	104	-46
Negatives												
Taxes Paid	8,194	-179	9,257	-873 *	3,427	-3,159 *	4,140	-3,980 *	269	4,280 *	222	4,524 *
Medical Expenditures	5,636	-236 *	5,683	369 * +	4,041	1,090 *	4,474	1,959 *	5,650	-1,544 *	5,843	-985 *
Necessary Expenses	728	-64 *	747	14 +	383	-150 *	354	-166 *	251	127 *	320	158 *
Observations	10184	10184	5431	5431	1005	1005	537	537	1026	1026	478	478

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

+ A plus sign following an estimate indicates the change from 2013-2015 is statistically different from the change from 2015-2016 at the 90 percent confidence level.

Source: CPS-ASEC 2014-2017

Table 7b. Changes in Resources - Only Near Poor - 2013-2016

	All Near Poor Families					NearPoor to Poor					Poor to Near Poor			
	2013-2015		2015-2016			2013-2015		2015-2016			2013-2015		2015-2016	
	T1	Change	T1	Change		T1	Change	T1	Change		T1	Change	T1	Change
SPM Resources	12,267	366 *	12,641	-515	+	16,443	-7,517 *	16,632	-8,538 *	8,466	7,842 *	8,402	8,633 *	
Total Cash/NonCash Resource	16,226	136	17,040	-507		19,755	-6,778 *	20,051	-7,068 *	12,958	6,980 *	13,821	8,206 *	
Income from Wages/Salary	1,695	-206	1,757	-95		2,279	-1,206 *	1,057	-239	+	1,102	777 *	1,981	479
Business Income	191	-36	337	-46		297	-185	1,068	-424		6	107	205	190 *
Farm Income	-3	17	12	-16	+	z	68	z	z		1	-1	z	z
SS Income	11,206	421 *	11,768	-191	+	13,142	-4,286 *	14,764	-5,394 *	9,506	4,936 *	9,202	5,633 *	
Retirement Income	613	97	724	-194	+	762	-428 *	821	-552 *	322	650 *	750	615	
Government Subsidies	2,098	-92	2,126	-1		2,766	-601 *	2,011	-151	1,628	276	1,305	890 * +	
<i>SNAP</i>	331	-3	274	39		354	-41	348	-63	311	45	251	98	
<i>LIHEAP</i>	33	11 *	49	-3	+	31	4	73	-31	29	11	28	5	
<i>Housing Subsidies</i>	575	-35	573	40		771	-132	500	-44	423	52	397	182 *	
Rent etc.	322	-72	197	69		315	-139	211	-319 *	229	276	191	502 *	
Assist etc.	105	7	120	-33		194	1	118	11	163	-41	187	-103	
Negatives														
Taxes Paid	231	-29	236	-17		326	-183 *	240	-138	140	140 *	186	230 *	
Medical Expenditures	3,518	-166	3,958	8		2,729	1,035 *	3,043	1,564 *	4,208	-1,052 *	4,938	-624	
Necessary Expenses	209	-35 *	206	17	+	257	-113 *	137	44	+	143	50 *	295	-33
Observations	1995	1995	995	995		386	386	203	203	407	407	177	177	

z: Rounds to 0

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

+ A plus sign following an estimate indicates the change from 2013-2015 is statistically different from the change from 2015-2016 at the 90 percent confidence level.

Source: CPS-ASEC 2014-2017

Table 8: Counterfactuals Analysis of Resources: 2015 to 2016

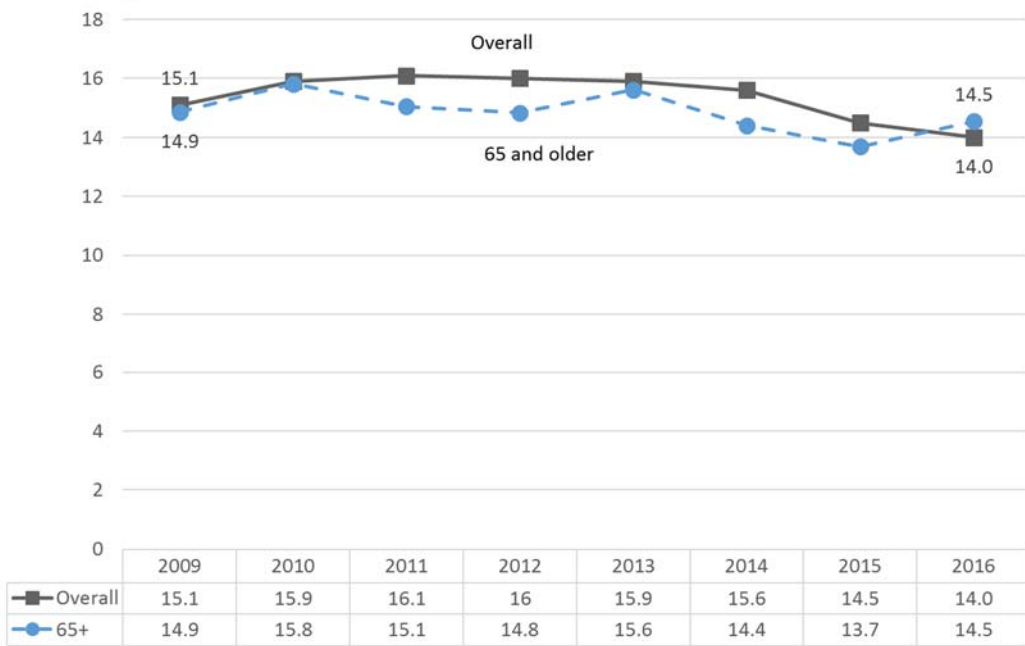
	NonPoor to Poor			
	Expected		Pivotal	
	2015	2016	2015	2016
Income from Wages/Salary	24.25% *	20.78% *	10.61% *	8.57% *
Business Income	3.71% *	4.52% *	0.99% *	1.42% *
Farm Income	0.53% *	0.56% *	z	0.16%
SS Income	72.04% *	75.89% *	16.93% *	18.70% *
Retirement Income	37.61% *	39.87% *	7.07% *	7.04% *
Government Subsidies	26.86% *	23.56% *	4.93% *	3.88% *
<i>SNAP</i>	9.03% *	7.30% *	0.55% *	0.37% *
<i>LIHEAP</i>	3.33% *	5.22% *	0.05%	0.11%
<i>Housing Subsidies</i>	4.89% *	2.67% *	0.62% *	0.51% *
Rent etc.	48.74% *	50.11% *	2.02% *	2.03% *
Assist etc.	3.78% *	2.68% *	0.26% *	0.15%
Taxes Paid	7.12% *	5.86% *	0.12%	z
Medical Expenditures	50.83% *	49.79% *	5.01% *	6.62% *
Necessary Expenses	9.77% *	10.63% *	0.17%	z
	Poor to NonPoor			
	Expected		Pivotal	
	2015	2016	2015	2016
Income from Wages/Salary	18.42% *	23.14% *	7.34% *	8.75% *
Business Income	4.14% *	4.64% *	1.41% *	1.07% *
Farm Income	0.95% *	0.29% *	0.21%	0.17%
SS Income	76.98% *	74.73% *	19.75% *	18.64% *
Retirement Income	38.03% *	40.56% *	6.69% *	7.31% *
Government Subsidies	23.68% *	24.46% *	2.59% *	4.13% *
<i>SNAP</i>	7.71% *	7.21% *	0.16%	0.41%
<i>LIHEAP</i>	3.62% *	1.93% *	z	z
<i>Housing Subsidies</i>	2.91% *	4.00% *	0.40% *	0.77% *
Rent etc.	45.74% *	47.16% *	1.94% *	1.78% *
Assist etc.	3.48% *	1.88% *	0.24% *	0.05%
Taxes Paid	8.39% *	7.34% *	0.04%	z
Medical Expenditures	51.86% *	47.27% *	4.39% *	2.88% *
Necessary Expenses	10.98% *	7.92% *	0.09%	0.13%

z: Rounds to 0

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

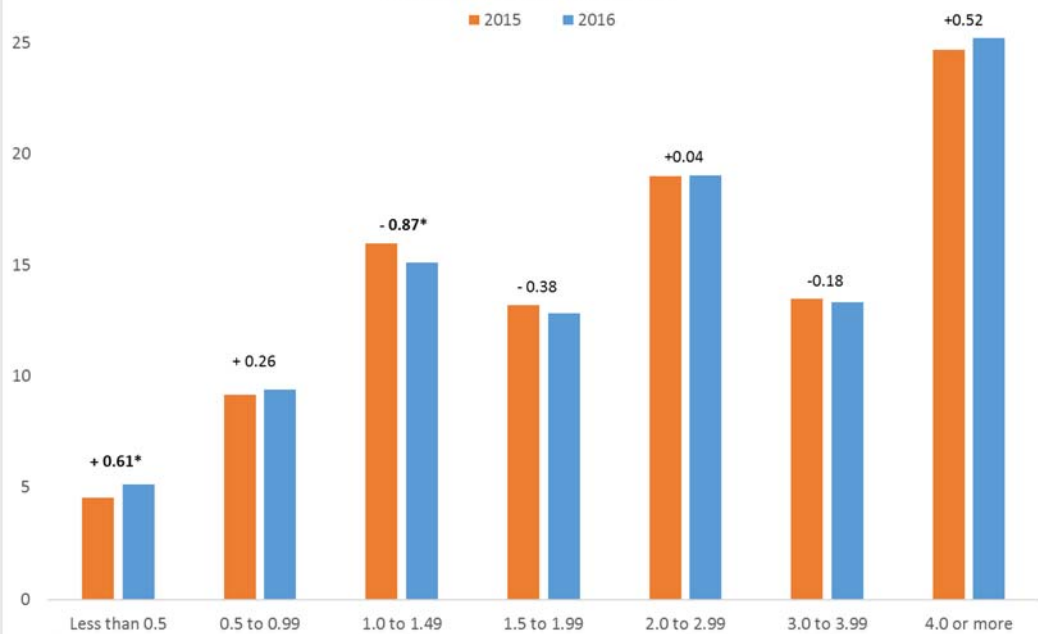
Source: CPS-ASEC 2016-2017

Figure 1. SPM Poverty Rates for Individuals 65+: 2009-2016



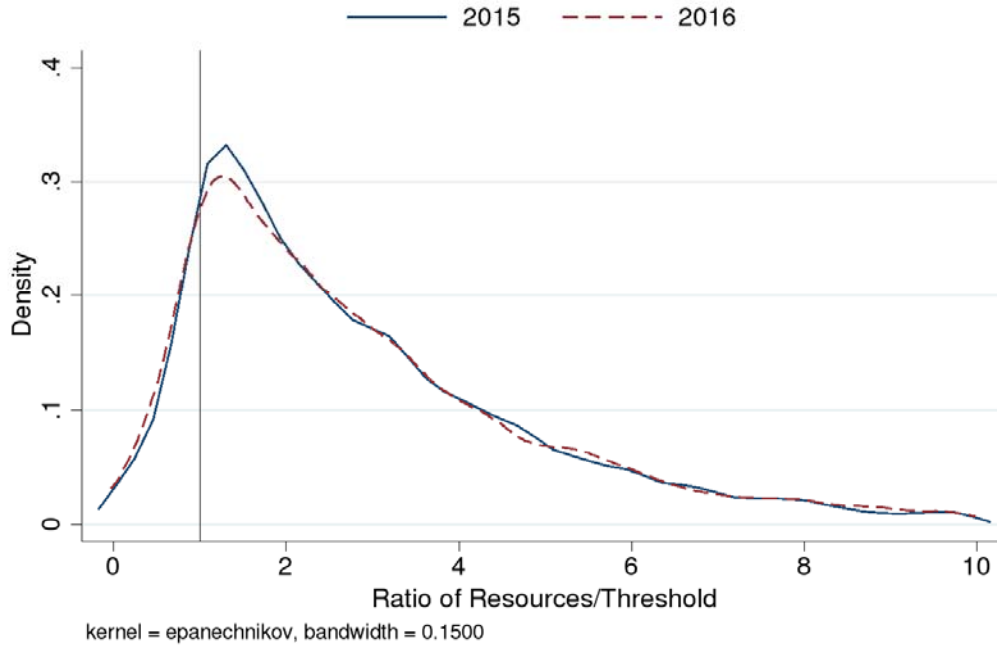
Note: The data for 2013 and beyond reflect the implementation of the redesigned income questions.
 Source: U.S. Census Bureau, Current Population Survey, 2010-2017 Annual Social and Economic Supplements.

Figure 2: Percentage of Individuals 65+ by Ratio of Resources/Poverty Threshold, 2015 and 2016



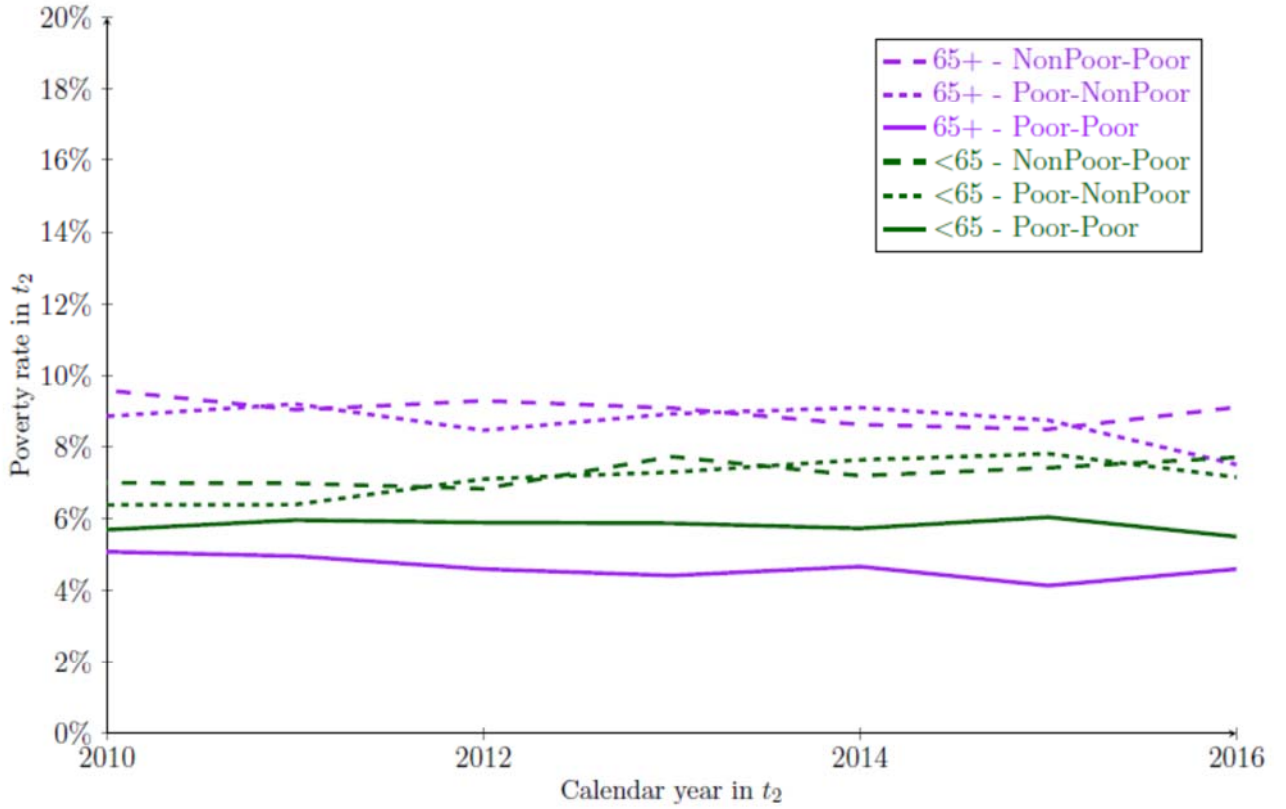
* An asterisk following an estimate indicates difference is statistically different from zero at the 90 percent confidence level.
 Source: U.S. Census Bureau, Current Population Survey, 2016-2017 Annual Social and Economic Supplements.

Figure 3: Distribution of Poverty Ratios by Year



Source: U.S. Census Bureau, Current Population Survey, 2010-2017 Annual Social and Economic Supplements.

Figure 4: Churn - Individual-level



Source: CPS-ASEC 2010-2017.

Appendix Table 1 - Linked Panel Sample Sizes, 2009-2016

Family-level	Linked Year							
	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	Total
Never Poor	17,669	17,431	17,193	16,926	13,912	16,388	15,772	115,291
Nonpoor to Poor	1,832	1,784	1,721	1,826	1,432	1,778	1,700	12,073
Poor to Nonpoor	1,667	1,669	1,756	1,768	1,542	1,845	1,615	11,862
Always Poor	1,317	1,366	1,318	1,283	1,076	1,274	1,159	8,793
Total	22,485	22,250	21,988	21,803	17,962	21,285	20,246	148,019
Non-elderly	17,245	16,822	16,562	16,207	13,350	15,713	14,815	110,714
Elderly	5,240	5,428	5,426	5,596	4,612	5,572	5,431	37,305
Individual-level	Linked Year							
	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	Total
Never Poor	42,462	41,738	41,136	40,253	33,668	39,817	38,133	277,207
Nonpoor to Poor	3,845	3,772	3,623	3,770	3,082	3,853	3,670	25,615
Poor to Nonpoor	3,480	3,434	3,768	3,699	3,254	3,986	3,482	25,103
Always Poor	2,829	2,852	2,822	2,767	2,227	2,789	2,559	18,845
Total	52,616	51,796	51,349	50,489	42,231	50,445	47,844	346,770
<65	Linked Year							
	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	Total
Never Poor	36,113	35,125	34,372	33,281	27,962	32,900	31,277	231,030
Col. %	0.8094	0.8067	0.8017	0.7913	0.7945	0.7874	0.7965	0.8
Nonpoor to Poor	3,002	2,997	2,830	2,951	2,419	3,050	2,882	20,131
Col. %	0.0699	0.0698	0.0683	0.0772	0.0719	0.0741	0.077	0.0731
Poor to Nonpoor	2,736	2,654	3,009	2,906	2,582	3,191	2,786	19,864
Col. %	0.0638	0.0639	0.071	0.0729	0.0763	0.078	0.0715	0.07
Always Poor	2,380	2,392	2,405	2,360	1,852	2,377	2,139	15,905
Col. %	0.0569	0.0596	0.0589	0.0587	0.0573	0.0604	0.055	0.0568
Total	44,231	43,168	42,616	41,498	34,815	41,518	39,084	286,930
65+	Linked Year							
	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	Total
Never Poor	6,349	6,613	6,764	6,972	5,706	6,917	6,856	46,177
Col. %	0.7651	0.7684	0.7769	0.776	0.7764	0.7865	0.7881	0.7773
Nonpoor to Poor	843	775	793	819	663	803	788	5,484
Col. %	0.0956	0.0902	0.0927	0.0907	0.0861	0.0848	0.0909	0.0895
Poor to Nonpoor	744	780	759	793	672	795	696	5,239
Col. %	0.0884	0.0918	0.0845	0.0891	0.0908	0.0873	0.075	0.0872
Always Poor	449	460	417	407	375	412	420	2,940
Col. %	0.0508	0.0496	0.046	0.0442	0.0467	0.0414	0.046	0.046
Total	8,385	8,628	8,733	8,991	7,416	8,927	8,760	59,840

Source: U.S. Census Bureau, Current Population Survey, 2010-2017 Annual Social and Economic Supplements.

Appendix Table 2. Population, Age 65 and Older: 2009 - 2016

Characteristic	65+ population (in thousands)							
	2009	2010	2011	2012	2013	2014	2015	2016
Overall-65+	38,947	39,777	41,507	43,287	44,963	45,994	47,547	49,274
Age								
65-67	7,858	7,636	8,376	9,605	9,986	10,217	10,122	10,360
68-70	6,319	6,916	7,553	7,295	8,053	8,020	8,932	9,560
71-73	5,472	5,522	5,738	6,046	6,506	6,877	6,964	6,907
74-76	4,615	4,808	4,941	4,915	4,901	5,296	5,554	6,237
77-79	4,218	4,081	4,106	4,437	4,608	4,530	4,791	4,693
80-84	5,780	5,792	5,786	5,692	5,539	5,480	5,637	5,645
85+	4,685	5,022	5,006	5,296	5,369	5,575	5,547	5,872
Sex								
Male	16,968	17,382	18,332	19,298	20,216	20,439	21,209	22,160
Female	21,979	22,395	23,174	23,990	24,747	25,555	26,337	27,114
Race and Hispanic Origin								
White	33,680	34,274	35,732	37,039	38,475	39,054	40,254	41,623
White, not Hispanic	31,157	31,616	32,904	34,131	35,322	35,727	36,682	37,951
Black	3,366	3,443	3,640	3,893	3,933	4,143	4,343	4,561
Asian	1,372	1,484	1,555	1,669	1,845	2,029	2,130	2,209
Hispanic (any race)	2,716	2,860	3,036	3,213	3,443	3,636	3,863	4,057
Family Structure								
65+ individual living alone (only 1 person in HH)	11,414	11,468	11,831	12,107	12,723	13,295	13,631	13,888
65+ individual living in SPM unit of 1, but in HH with others	512	578	474	586	494	581	655	746
65+ individual is head or spouse/partner	24,106	24,521	26,115	27,283	28,467	28,764	29,888	30,992
Married	21,041	21,457	22,984	23,919	24,992	25,147	26,097	27,117
Cohabiting partners	607	656	690	795	798	841	956	927
Unmarried, but living with other relatives	2,458	2,407	2,441	2,569	2,677	2,775	2,835	2,948
65+ individual is living in unit, but not head, spouse/partner	2,914	3,210	3,086	3,311	3,279	3,354	3,373	3,647
Householder is 65+ person's child (perhp=6)	1,764	1,919	1,883	2,043	2,063	2,064	2,085	2,234
Householder is other relative (perhp=4,5,7,8,9)	1,098	1,244	1,129	1,205	1,090	1,233	1,217	1,329
Educational Attainment								
No high school diploma	7,912	7,688	7,840	7,547	7,310	7,207	6,953	6,859
High school, no college	14,178	14,446	14,759	15,120	15,770	15,915	15,807	15,899
Some college	8,052	8,410	8,834	9,675	10,101	10,605	11,431	11,905
Bachelor's degree or higher	8,805	9,233	10,074	10,945	11,782	12,267	13,355	14,611
Work Status								
Worked full-time, year-round	3,475	3,698	4,146	4,298	4,666	5,215	5,271	5,412
Less than full-time, year-round	4,285	4,455	4,522	5,153	5,183	5,172	5,682	6,009
Did not work at least 1 week	31,187	31,623	32,838	33,836	35,114	35,607	36,594	37,852

Source: U.S. Census Bureau, Current Population Survey, 2010-2017 Annual Social and Economic Supplements.

Appendix Table 3. SPM Poverty Rates, Age 65 and Older: 2009 - 2016

Characteristic	SPM Poverty Rate							
	2009	2010	2011	2012	2013	2014	2015	2016
Overall-65+	14.86	15.82	15.05	14.83	15.61	14.41	13.68	14.55
Age								
65-67	12.03	12.45	11.74	12.16	12.61	12.46	12.86	12.43
68-70	12.41	12.80	12.58	12.08	13.72	12.77	11.96	12.28
71-73	12.98	14.36	13.49	12.31	13.64	12.01	11.87	12.72
74-76	15.84	16.15	15.54	14.17	18.06	14.00	12.10	14.63
77-79	16.80	16.99	17.64	16.75	15.51	16.27	14.18	15.60
80-84	17.52	18.94	18.77	18.98	17.81	17.05	15.46	17.10
85+	19.11	21.84	19.22	20.87	21.98	19.58	19.59	20.73
Sex								
Male	12.19	13.53	12.27	12.45	13.43	11.78	11.87	12.52
Female	16.92	17.60	17.25	16.74	17.39	16.51	15.14	16.20
Race and Hispanic Origin								
White	13.34	14.45	13.83	13.78	14.25	12.97	12.05	13.22
White, not Hispanic	12.31	13.34	12.67	12.48	12.79	11.61	10.81	11.95
Black	25.91	24.80	23.78	22.42	25.42	23.42	24.08	23.06
Asian	23.78	25.08	20.68	18.30	20.23	23.51	20.46	20.29
Hispanic (any race)	26.72	27.13	27.41	29.59	29.48	27.44	24.66	26.16
Family Structure								
65+ individual living alone (only 1 person in HH)	19.82	21.43	21.38	21.15	22.06	20.45	18.86	21.06
65+ individual living in SPM unit of 1, but in HH with others	37.45	38.04	40.89	39.50	44.28	38.12	34.13	39.11
65+ individual is head or spouse/partner	11.85	12.62	11.51	11.37	12.06	10.88	10.75	10.82
Married	10.76	11.72	10.80	10.66	10.99	10.01	9.88	10.08
Cohabiting partners	14.69	14.49	9.48	6.52	15.66	10.34	9.54	10.71
Unmarried, but living with other relatives	20.54	20.08	18.85	19.45	20.97	18.95	19.12	17.70
65+ individual is living in unit, but not head, spouse/partner	16.35	16.22	16.73	15.89	17.11	16.64	14.80	16.39
Householder is 65+ person's child (perhp=6)	16.34	15.90	18.26	17.17	18.08	18.36	15.61	18.24
Householder is other relative (perhp=4,5,7,8,9)	15.94	16.57	14.45	14.13	13.04	13.97	12.26	12.99
Educational Attainment								
No high school diploma	24.84	26.96	26.88	26.65	31.90	28.51	26.58	27.66
High school, no college	14.48	15.62	15.10	14.58	15.15	14.59	13.95	15.13
Some college	12.21	12.86	12.20	12.18	11.56	11.12	11.75	12.29
Bachelor's degree or higher	8.92	9.54	8.28	9.37	9.58	8.74	8.30	9.61
Work Status								
Worked full-time, year-round	3.76	3.24	3.21	3.29	3.38	3.01	2.70	2.25
Less than full-time, year-round	6.21	6.93	6.68	6.75	7.40	6.83	6.68	6.70
Did not work at least 1 week	17.29	18.54	17.70	17.53	18.45	17.18	16.35	17.55

Source: U.S. Census Bureau, Current Population Survey, 2010-2017 Annual Social and Economic Supplements.

Appendix Table 4: Family Composition Changes: 2014-2015 and 2015-2016

	Diff		PoortoNear		PoortoNon		NearToPoor		NontoPoor	
	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016
Gain Person	3%	3%	4%	7% *	5%	6%	6%	z *	4%	2% *
Lose Person	5%	5%	5%	7%	4%	7% *	4%	2%	7%	6%
No Change	92%	92%	92%	86% *	91%	87% *	90%	97% *	88%	92% *
Gain Adult	3%	3%	4%	7%	5%	6%	6%	1% *	5%	2% *
Lose Adult	5%	5%	4%	6%	4%	6%	4%	2%	7%	6%
No Change	93%	92%	92%	87% *	91%	88% *	90%	96% *	88%	92% *
Gain Child	z	z	z	z	z	z	z	z	1%	z
Lose Child	1%	1%	1%	1%	1%	1%	1%	2%	1%	1%
No Change	99%	99%	99%	99%	99%	99%	99%	98%	99%	99%
Gain FT Worker	4%	5%	2%	4%	6%	7%	2%	2%	2%	2%
Lose FT Worker	7%	6%	2%	1%	1%	1%	5%	2%	9%	8%
No Change	88%	89%	96%	95%	92%	92%	93%	97% *	89%	91%
Gain PT Worker	7%	7%	4%	4%	6%	5%	4%	1%	5%	4%
Lose PT Worker	7%	8%	3%	5%	5%	6%	4%	4%	5%	5%
No Change	86%	86%	92%	91%	90%	88%	92%	95%	90%	91%
Gain Non-Worker	9%	9%	6%	8%	5%	7%	9%	2% *	12%	11%
Lose Non-Worker	7%	7%	7%	6%	10%	12%	3%	3%	6%	5%
No Change	84%	84%	87%	86%	85%	81% *	88%	95% *	82%	84%
Gain Retired Ind.	11%	12%	13%	13%	11%	13%	12%	8% *	15%	13%
Lose Retired Ind.	9%	10%	14%	7%	12%	14%	9%	9%	11%	13%
No Change	79%	77%	73%	80%	76%	74%	79%	84% *	75%	74%
Gain Ill Ind.	4%	5%	9%	6%	7%	7%	8%	7%	7%	9%
Lose Ill Ind.	5%	5%	11%	10%	7%	9%	5%	7%	6%	6%
No Change	91%	89%	80%	84%	86%	85%	87%	86%	87%	85%
At least one person	2%	2%	2%	1%	3%	2%	2%	z	2%	1%
At least one person	4%	4%	3%	3%	2%	1%	1%	1%	5%	5%
Observations	5572	5431	218	177	553	478	207	203	563	537

z: Rounds to 0

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

Source: CPS-ASEC 2015-2017

Appendix Table 5: Family Composition Changes Among Families with No Change in Size: 2014-2015 and 2015-2016

	Diff		PoortoNear		PoortoNon		NeartoPoor		NontoPoor	
	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016
Gain FT Worker	4%	4%	2%	3%	4%	5%	2%	2%	2%	1%
Lose FT Worker	6%	6%	1%	1%	1%	1%	4%	1% *	8%	7%
No Change	90%	91%	97%	97%	94%	94%	94%	98% *	90%	92%
Gain PT Worker	7%	6%	4%	3%	5%	5%	5%	1% *	5%	3%
Lose PT Worker	7%	7%	2%	3%	4%	4%	2%	4%	5%	6%
No Change	87%	87%	94%	94%	91%	90%	93%	96% *	90%	91%
Gain Non-Worker	8%	8%	3%	2%	3%	3%	4%	2%	10%	10%
Lose Non-Worker	4%	4%	4%	2%	7%	8%	2%	1%	2%	2%
No Change	88%	88%	92%	96%	90%	88%	94%	97% *	88%	88%
Gain Retired Ind.	11%	12%	12%	10%	11%	10%	11%	8% *	14%	13%
Lose Retired Ind.	7%	9%	13%	6% *	11%	13%	9%	7% *	8%	12%
No Change	82%	79%	76%	83% *	77%	77%	80%	85% *	78%	75%
Gain Ill Ind.	4%	5%	9%	6%	6%	6%	7%	6%	6%	9%
Lose Ill Ind.	4%	5%	11%	9%	7%	8%	5%	7%	5%	5%
No Change	92%	90%	80%	85% *	87%	86%	88%	87%	89%	86%
At least one person	2%	2%	2%	1%	3%	2%	2%	0%	2%	1%
At least one person	4%	4%	2%	1%	2%	1%	1%	1%	5%	6%
Observations	5122	4946	198	156	501	422	187	192	503	488

z: Rounds to 0

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

Source: CPS-ASEC 2015-2017