Anchored and Relative: Supplemental Thresholds for the Supplemental Poverty Measure

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ABSTRACT

Following decades of research, the Supplemental Poverty Measure (SPM) was developed in 2011 by the U.S. Census Bureau and Bureau of Labor Statistics (BLS), as an improvement to the official poverty measure. The SPM incorporates a more inclusive family definition, including additional resources (adding non-cash benefits and subtracting necessary expenses), as well as developing a quasi-relative poverty threshold adjusted geographically and by housing tenure status (renters and owners with and without a mortgage). Many researchers and practitioners have asked for alternative specifications of this threshold, with some researchers preferring an absolute threshold to allow better comparisons to the official poverty measure and others asking for a relative threshold to allow for international comparisons. This paper details the conceptual differences among relative, quasi-relative, and anchored poverty thresholds. This paper also develops and implements a series of anchored and relative thresholds and explores the impact of these alternatives on SPM poverty rates from 2009-2016. Finally, all taxes and government transfers captured in the SPM are subtracted from resources to assess the total impact of taxes and transfers on poverty rates.

INTRODUCTION

From the first release of statistics estimating the number of individuals classified as falling below a "low-income" level in 1965, poverty measurement in the United States has always been controversial. Primary among the disagreements is the purpose of a poverty measure. Should a poverty measure allow one to compare current economic well-being in the U.S. to a point in the past? Compare the U.S. to other countries? Or should it be used to assess the effectiveness of governmental anti-poverty programs? Some see the poverty measure as an indicator of social inclusion and the ability of citizens to participate fully in society, while others believe that a poverty measure should estimate the share of the population facing some absolute level of deprivation.

No one poverty measure can possibly satisfy all these competing demands. Some can be addressed by simply raising or lowering the level of a poverty threshold, while others require different constructs in establishing and updating a threshold. This paper details the conceptual differences among three of these poverty measurement concepts: relative, quasi-relative, and absolute poverty thresholds. This paper also develops and implements a series of anchored and relative thresholds and explores the impact of these alternatives on poverty rates from 2009-2016. Finally, all taxes and government transfers are subtracted from resources to assess the total impact of taxes and transfers on poverty rates for each alternative.

BACKGROUND

The official poverty threshold for the United States was developed by a Social Security Administration economist, Mollie Orshansky, in the mid-1960s. Orshansky based her threshold on the Department of Agriculture's 1955 Household Food Consumption Survey, which found

that families of three or more persons spent one-third of their after-tax income on food. As a result, Orshanky set the poverty threshold at a level of three times the USDA's economy food plan. While most would consider these thresholds to be an absolute measure of poverty, Orshanksy described her threshold as a "relatively absolute" measure of poverty, as it was based on consumption behaviors at a particular point in time, but updated for changes in prices like an absolute measure (see Fisher, 1997 for a full history of the Orshansky thresholds). These thresholds were later established as the official poverty thresholds by the Office of Management and Budget (OMB) in Statistical Policy Directive 14 and updated annually using the Consumer Price Index. Prior to the official designation by OMB, previous Census publications used a "low-income" standard to examine families with incomes below $3,000 in 1963.[2] At the time, this low-income level was roughly 50% of median income.

For over 40 years, the official poverty measure was the only annual measure of poverty produced by the U.S. Census Bureau. However, criticisms of the official poverty measure, which compares pre-tax cash income to the absolute thresholds, grew over time. In 1990, a congressional appropriation funded an independent scientific study of the concepts, measurement methods, and information necessary for a poverty measure. In 1995, the National Academy of Sciences (NAS) Panel on Poverty and Family Assistance released its report detailing suggested improvements in the measure of poverty in the United States (Citro and Michael, 1995). Among the recommendations, the NAS panel recommended setting poverty thresholds at a percentage of median expenditures on a basic bundle of goods including food, clothing, shelter and utilities (FCSU) plus an additional amount for other basic necessities and establishing an automatic mechanism for recalculating thresholds annually to reflect real consumption changes using a

[2] See <www2.census.gov/prod2/popscan/p60-045.pdf >

three-year average of Consumer Expenditure (CE) Survey data. Building off of the NAS panel's recommendations, the Interagency Technical Working Group on Developing a Supplemental Poverty Measure (ITWG) was formed in 2009 and developed a set of initial starting points to permit the U.S. Census Bureau, in cooperation with the Bureau of Labor Statistics (BLS), to produce an alternative poverty measure (ITWG, 2010).

The Supplemental Poverty Measure (SPM) was first published in 2011 as an improvement to the official poverty measure, incorporating a more inclusive family definition, including additional resources (adding non-cash benefits and subtracting necessary expenses), as well as developing a quasi-relative poverty threshold adjusted geographically and by housing tenure status (renters and owners with and without a mortgage). The quasi-relative threshold was developed in accordance with recommendations from the ITWG. It is produced by the BLS Division of Price and Index Number Research (BLS-DPINR) using CE Survey data. The term "quasi-relative" is used for the current SPM thresholds as they are based on changes in expenditures of two-child consumer units. As expenditures vary less year-to-year than do incomes, the SPM threshold changes in the same direction as income, but not by the same magnitude as income. Hence, the term "quasi-relative" is used (Johnson and Smeeding, 2012).

While the quasi-relative threshold follows NAS and ITWG guidance, many researchers and practitioners have asked for alternative specifications of this threshold, with some researchers preferring an absolute threshold to allow better comparisons to the official poverty measure and others asking for a relative threshold to allow for international comparisons. The terms "absolute" and "relative" are often used to differentiate between poverty measurement concepts. An absolute, or anchored threshold, is fixed at a given point in time and then annually adjusted by a measure reflecting only changes in prices. On the other hand, a relative poverty threshold,

similar to those used in most EU countries, is tied to current standards of living and is typically based on a percentage of median income or consumption.

Absolute thresholds are set with the assumption that there is a definable level of need and that this basic level of need does not change over time, except with changes in prices. In comparison, relative thresholds are based on actual expenditures or income of a population and are updated regularly based on changes in consumption or income. Relative thresholds acknowledge that basic necessities change over time with standards of living and technological improvements in a country.

A main concern with relative poverty thresholds is that a country could experience increasing poverty rates in a period of widespread economic prosperity. As income rises, the share of the population below any given percentage of median household income, could also increase despite the majority of these individuals experiencing income growth from one year to the next. Conversely, during a recession or depression the number of individuals in poverty could decline. Furthermore, as standards of living improve over time, individuals who are considered poor by the measure will differ over time. Relative thresholds also do not provide a stable target against which to assess the impacts of government programs.

An absolute, or anchored threshold, has the advantage of allowing the researcher to disentangle changing family resources from changes in overall living standards, by comparing income to a threshold based on living standards at a given time. This comparison is especially relevant when a researcher wants to know whether increases in poverty rates are due to increases in living standards/expenditures or whether individuals have fewer resources available to meet their needs.

This paper will compare the current quasi-relative SPM threshold with two alternative series: anchored and relative thresholds. Several specifications of each alternative will be examined.

DATA AND METHODS

This paper analyzes data from the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) for 2010-2017, covering calendar years 2009-2016. Three sets of thresholds and poverty rates are analyzed in this paper—quasi-relative, anchored and relative. The quasi-relative and anchored thresholds are based on the BLS-DPINR's analysis of 2005-2016 CE data.[3] The relative thresholds are based solely on CPS ASEC data. While there are many possible ways to operationalize relative thresholds, the method chosen here aims to stay as consistent as possible with the U.S. Census Bureau's current implementation of ITWG recommendations.

Thresholds and resources are both examined at the SPM resource unit level for all three sets of analyses.[4] This corresponds to the definition of a family used by the U.S. Census Bureau (individuals living together who are related by birth, marriage, or adoption), plus any coresident unrelated children, foster children, and unmarried partners and their relatives. Unrelated individuals (who are not otherwise included in the resource unit definition) are considered separate SPM resource units within a household. Poverty rates are examined at the individual level, with the assumption that all members of a SPM resource unit share resources, face the same poverty threshold, and have the same poverty status. For all poverty rates examined in this

[3] See < https://stats.bls.gov/cex/> for information on the CE.
[4] While relative thresholds are typically examined at the household level in international comparisons, the unit of analysis remains constant across all three concepts to allow for consistent comparison.

paper, resources for each SPM unit are compared to an equivalence-adjusted threshold.[5] If resources fall below the threshold, all members of the SPM unit are considered to be in poverty.

Resources

The SPM takes into account a comprehensive definition of resources that includes in-kind benefits and subtracts out necessary expenses and taxes. First, it adds the value of in-kind benefits that are available to buy basic goods to cash income. In-kind benefits include nutritional assistance (Supplemental Nutrition Assistance Program (SNAP), National School Lunch Program, and the Supplementary Nutrition Program for Women, Infants, and Children (WIC)), subsidized housing and home energy assistance (LIHEAP). Then it subtracts necessary expenses for critical goods and services not included in the thresholds from resources. Necessary expenses that are subtracted include income taxes, Social Security payroll taxes, childcare and other work-related expenses, child support payments to another household, and contributions toward the cost of medical care and health insurance premiums. Full details of the SPM resource calculation can be found in the appendix of Fox (2017).

Quasi-Relative Thresholds

The first set of thresholds analyzed are the standard SPM thresholds used in the production of the annual SPM report (Short, 2011, 2012, 2013, 2014, 2015; Renwick and Fox, 2016; Fox, 2017). These thresholds are produced by the BLS-DPINR and will be referred to as quasi-relative thresholds throughout this paper.

The quasi-relative thresholds were developed to be consistent with the NAS panel recommendations and the suggestions of the ITWG. These thresholds use 5 years of quarterly

[5] All thresholds are adjusted for family size and composition using the same three-parameter equivalence scale used in the U.S. Census Bureau's annual SPM report (see appendix in Fox, 2017).

CE interview data and are produced for three housing tenure groups (owners with mortgages, owners without mortgages, and renters) to account for differences in housing costs. Thresholds reflect average spending within the 30th to 36th percentile range of FCSU expenditures for consumer units with two children, multiplied by 1.2 to account for additional basic needs, with adjustments for shelter and utilities for each housing group. All expenditures are adjusted using a three-parameter equivalence scale.[6]

Individual SPM units are assigned a threshold based on their housing tenure status, family composition and geographic adjustment. Family composition is adjusted using a three-parameter equivalence scale.[7] Geographic adjustments are based on 5-year American Community Survey (ACS) estimates of median gross rents for two-bedroom units with complete kitchen and plumbing facilities. In 2016, 349 geographic adjustment factors were applied to the CPS ASEC.[8]

Anchored Thresholds

The second set of thresholds analyzed are the anchored thresholds. These thresholds follow the Census and BLS methodology for estimating quasi-relative thresholds, but instead of updating these for changes in consumption using the CE, these thresholds are selected for a given year and adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS). The anchored thresholds allow an analysis of the NAS panel's recommendation to examine an alternative set of poverty rates for evaluation purposes using the same initial thresholds, but annually updating for price changes rather than changes in consumption:

[6] These are referred to as BLS-DPINR Research Experimental Supplemental Poverty Measure (SPM) Thresholds. See the following for further information: <https://stats.bls.gov/pir/spmhome.htm>.

[7] The three-parameter scale is calculated in the following way: One and two adults: $scale = (adults)^{0.5}$; Single parents: $scale = (adults + 0.8 * first\ child + 0.5 * other\ children)^{0.7}$; All other families: $scale = (adults + 0.5 * children)^{0.7}$.

[8] Separate medians were estimated for each of the metropolitan statistical areas large enough to be identified on the public-use version of the CPS ASEC file, as well as state-level medians for all smaller metropolitan areas and for nonmetropolitan areas. In 2016, 260 MSAs, 47 nonmetropolitan, and 42 smaller metro areas were identified resulting in 349 geographic adjustment factors. For details on the calculation, see Renwick (2011).

RECOMMENDATION 2.3. When the new poverty threshold concept is first implemented and for several years thereafter, the Census Bureau should produce a second set of poverty rates for evaluation purposes by using the new thresholds updated only for price changes (rather than for changes in consumption of the basic goods and services in the poverty budget) (Citro and Michael, 1995: 105).

These thresholds have been set at three time periods, 2009, 2012, and 2016, to allow for a comparison of results anchoring to different years. By definition, these thresholds will always be parallel over time as they are each adjusted by the same inflation factor across years. However, poverty rates will not necessarily be parallel as the distribution of resources changes from year-to-year.

Relative Thresholds

The final set of thresholds analyzed are the relative thresholds. Internationally, most relative poverty thresholds are based on household-level disposable income. For consistency and ease of comparison to the quasi-relative and anchored thresholds, the SPM resource unit level of analysis is maintained in the relative thresholds. Furthermore, the relative measure presented here represents an attempt to stay within the current parameters of the SPM and, as such, the same classification of resources, equivalence scales, and geographic adjustments are used. The one area of divergence is that the relative thresholds are not broken into separate thresholds by housing tenure type. Median resources by housing tenure vary considerably, but their representation in the resource distribution is unbalanced—with renters typically falling lower in the resource distribution than owners with or without a mortgage. As the intent of adjusting for housing tenure type is to account for differences in resources necessary to meet housing costs, setting a lower threshold for renters would be inappropriate. Examining differences in resources by housing tenure near the median of the total distribution results in very similar thresholds across the housing tenure categories. Future research could explore ways to scale three types of

thresholds, either to match the proportional scaling in the CE or to use another data source in the estimation. Future research could also explore geographically-adjusting resources before estimating the median, but as the current quasi-relative thresholds do not adjust for geographic differences before estimating the distribution of expenditure, neither does this implementation of a relative measure.

The relative thresholds are based on median total resources among resource units with two children. Total resources (including all additions and subtractions in the SPM) are first adjusted by the three-parameter equivalence scale and then the median is estimated for the sample of resource units with two children. This threshold is then scaled by a factor of 50%, 60% or 80% and adjusted for family composition and geographic adjustments.

The table below details the differences between the three sets of poverty thresholds.

Poverty Measure Concepts: Quasi-Relative, Anchored, and Relative

	Quasi-Relative Measure (Current SPM)	Anchored Measure	Relative Measure
Poverty Threshold	30th-36th percentile of expenditures of food, clothing, shelter, and utilities (FCSU) plus additional 20% for resource units with 2 kids	Same as quasi-relative	Median total resources for units with 2 kids
Specifications Examined	No alternate specifications examined	Anchored in 2009, 2012 and 2016	Set at 50%, 60% and 80% of median
Updating Thresholds	5-year moving average of expenditures on FCSU	Adjusted for inflation using CPI-U-RS	Adjusted by annual median resources
Threshold Adjustments	Vary by family size and composition, as well as geographic adjustments for differences in housing costs by tenure	Same as quasi-relative	Vary by family size and composition, as well as geographic difference; does not vary by housing tenure
Resource Measure	Sum of cash income, plus noncash benefits that resource units can use to meet their FCSU needs, minus taxes (or plus tax credits), minus work expenses, medical expenses, and child	Same as quasi-relative	Same as quasi-relative

	support paid to another household		
Measurement Unit	Resource units (official family definition plus any coresident unrelated children, foster children, unmarried partners and their relatives) or unrelated individuals (who are not otherwise included in the family definition)	Same as quasi-relative	Same as quasi-relative

RESULTS

Table 1 shows the average two-adult, two-child threshold for the three poverty concepts from 2009-2016. While no resource unit faces the average threshold—each unit receives a threshold that varies depending on unit composition (number of adults and children), a geographic adjustment factor, and in the quasi-relative and anchored thresholds, housing tenure type (owners with a mortgage, owners without a mortgage, and renters)—the average poverty threshold is illustrative of the trends from 2009-2016 in the three poverty concepts.[9]

For simplicity, a single specification of each poverty measurement concept is displayed in Figure 1—quasi-relative, anchored in 2009, and 50% of median resources. As shown in Figure 1, the relative thresholds, which are based on a single year of data from the CPS ASEC, are more volatile year-to-year than either the quasi-relative or anchored thresholds which are based on 5 years of CE data. An alternative specification of relative thresholds could provide for smoother trends over time by averaging data from multiple years. However, due to the relatively short period of available data in the CPS ASEC capturing all components of the SPM, as well as the

[9] It should be noted that the BLS does not produce an average threshold, but rather three thresholds for each year varying by housing tenure type. Average thresholds are estimated by the author based on the share of the CE sample falling into each of the three housing tenure categories in each year.

redesign of income questions in 2013, using even a three-year average would not allow for much examination of trends over time.[10]

Table 2 shows the overall poverty rates for each poverty measurement concept for 2009-2016. Each of the thresholds are equivalence-adjusted for unit size/composition and then compared to total resources for the unit. The SPM poverty rates in Table 2 represent the share of the population living in a unit with resources falling below their respective thresholds. From 2009 to 2016, the share of individuals classified as poor using the quasi-relative SPM threshold fell from 15.1 percent in 2009 to 14.0 percent in 2016. A smaller decline can be seen using the anchored thresholds, with SPM poverty rates only declining 0.4 percentage points for the anchored in 2009 poverty rates. In comparison, poverty rates increased 0.9 percentage points from 2009 to 2016 using the 50% of median relative thresholds.

Figure 2 shows a comparison of poverty rates using the quasi-relative, anchored in 2009, and 50% of median resources' thresholds. Similar to the thresholds, the poverty rates for the relative series are more volatile than the quasi-relative and anchored series.

Table 3 shows poverty rates for the three poverty concepts, overall and by three major age categories: under age 18, 18-64 and 65 and older. For children under age 18, poverty rates declined from 2009 to 2016 using the quasi-relative and anchored thresholds and increased using the relative thresholds. Similarly, poverty rates for children are consistently higher than for the other two age groups in the quasi-relative and anchored series, but this relationship is less consistent using the relative thresholds.[11]

[10] Using imputations of SPM components not reported in the CPS ASEC prior to 2009 as well as scaling income prior to 2013 to provide comparable results for the post-redesign period, would allow for multi-year averages, but that is beyond the scope of this paper (see Fox et al 2015 and Wimer et al 2016 for details on imputing SPM components prior to 2009).

[11] Relative poverty rates for children are lower than adults aged 65 and older in 2016, higher in 2015 and not statistically different between 2009-2014. Relative poverty rates for children are higher than adults aged 18-64 for all years examined.

An important contribution of the SPM is that it allows us to gauge the potential magnitude of the effect of tax credits and transfers in alleviating poverty. While Table 3 estimates poverty rates taking into account taxes, transfers and necessary expenses, Table 4 shows poverty rates excluding the total impact of government taxes and transfers from resources.[12] The poverty rate in 2009 using the quasi-relative SPM threshold was 15.1 percent. However, excluding government taxes and transfers, the poverty rate would have been 27.8 percent. In other words, in the absence of government programs, poverty rates would have been 12.6 percentage points higher in 2009, all else equal.

As shown in Figure 3, by all three poverty concepts and for all three major age categories, the impact of government taxes and transfers on poverty reduction declined from 2009-2016. Government programs had the largest anti-poverty impact among individuals aged 65 and older, moving approximately two-thirds of individuals who would have fallen into poverty in the absence of government programs out of poverty.[13]

CONCLUSION

This paper has examined two alternative poverty measurement concepts: relative and anchored thresholds and applied them to the SPM. This analysis has shown that while the poverty rates from three similar thresholds produce poverty rates that are fairly similar, rates over time among the three differ. Using the quasi-relative SPM, poverty rates decrease about 1 percentage point between 2009 and 2016, using the anchored they decrease by about half of that. Conversely, looking at relative thresholds leads to a conclusion that poverty rates increased around 1

[12] Total government taxes and transfers include the following programs: Social Security, Supplemental Security Income (SSI), housing subsidies, SNAP, School lunch, Temporary Assistance to Needy Families (TANF)/general assistance, WIC, LIHEAP, unemployment insurance, federal income taxes (including tax credits), payroll taxes and state income taxes.

[13] Examining the ratio of the percentage point differences to the estimated poverty rate excluding taxes and transfers for all three poverty concepts in each year 2009-2016 in Table 4, results in an estimated range of poverty reduction from 59.3% to 72.7%, with the average reduction of 68.8%, or roughly two-thirds.

percentage point between 2009 and 2016. While these magnitudes are small, they also only examine an eight-year period. Looking at longer time periods could potentially amplify the differences in the three poverty concepts, as was the case in Wimer et al. (2016) compared with Fox et al. (2015), which both used a 50-year time period and found very different trends in SPM poverty rates depending on whether a quasi-relative or anchored threshold was utilized.

However, it is important to note that while conclusions about the role of government taxes and transfers differ, conclusions about the differences in the magnitude of the effect over time did not differ. Government taxes and transfers substantially reduce poverty rates for all three poverty concepts and for all three major age categories, but the impact of these policies has declined between 2009 and 2016.

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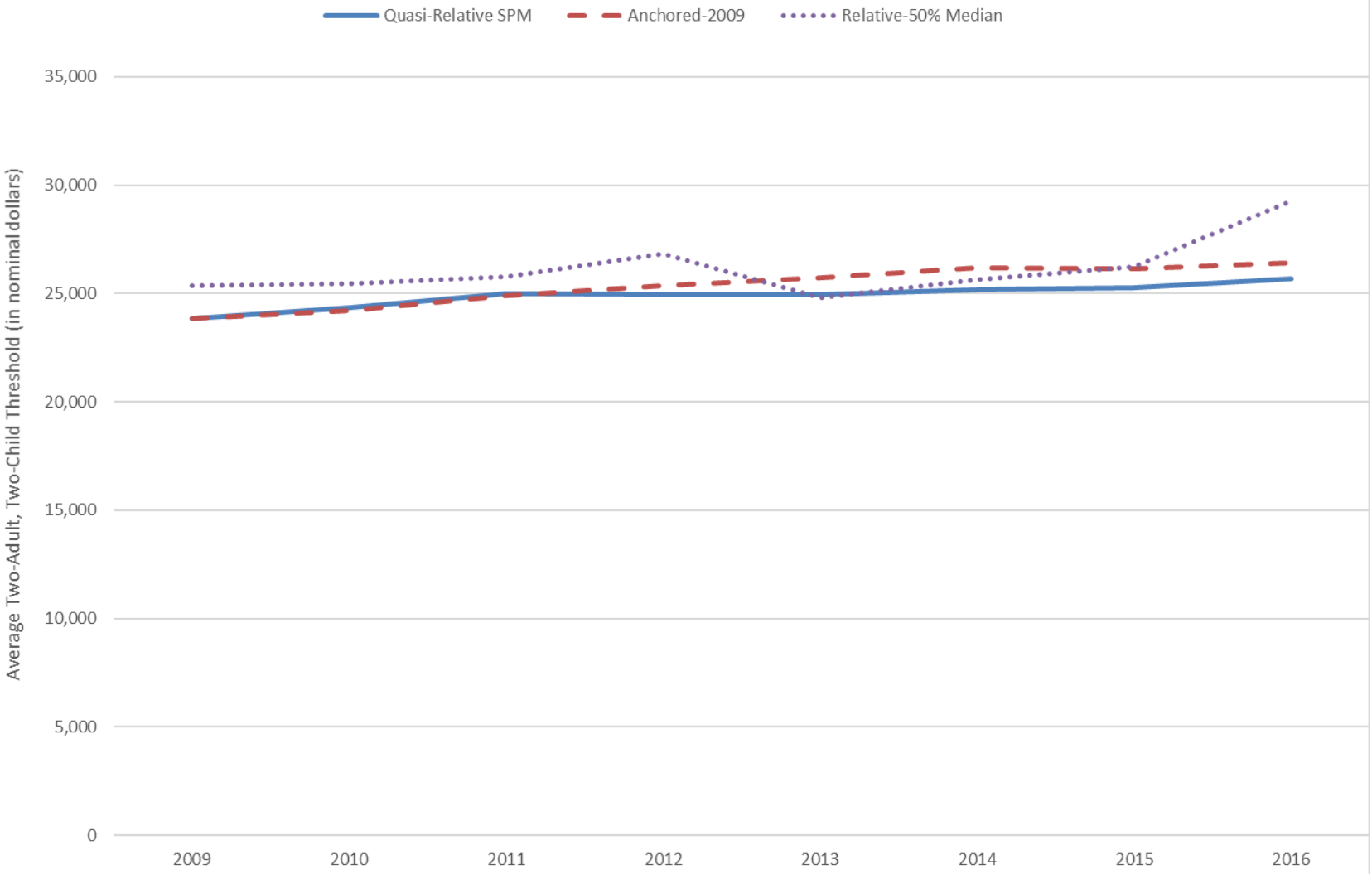
Table 1. Average Two-Adult, Two-Child SPM Thresholds Using Alternative Concepts: 2009-2016

	2009	2010	2011	2012	2013	2014	2015	2016
Quasi-Relative								
SPM	$23,854	$24,343	$24,999	$24,959	$24,931	$25,178	$25,262	$25,701
Anchored								
2016	$23,149	$23,502	$24,169	$24,633	$25,009	$25,437	$25,415	$25,701
2012	$23,478	$23,835	$24,499	$24,959	$25,340	$25,764	$25,721	$26,014
2009	$23,854	$24,216	$24,892	$25,360	$25,748	$26,180	$26,139	$26,436
Relative								
50% Median	$25,365	$25,452	$25,766	$26,854	$24,787	$25,649	$26,254	$29,280
60% Median	$30,438	$30,542	$30,919	$32,224	$29,745	$30,779	$31,505	$35,135
80% Median	$40,583	$40,723	$41,225	$42,966	$39,659	$41,038	$42,006	$46,847

Source: Quasi-relative and anchored thresholds based on author's adjustment of BLS-DPINR's SPM Research Thresholds based on 2005-2016 Consumer Expenditure Survey data. Relative thresholds based on Current Population Survey Annual Social and Economic Supplements, 2010-2017.

Figure 1. Average Two-Adult, Two-Child SPM Poverty Thresholds by Concept: 2009-2016



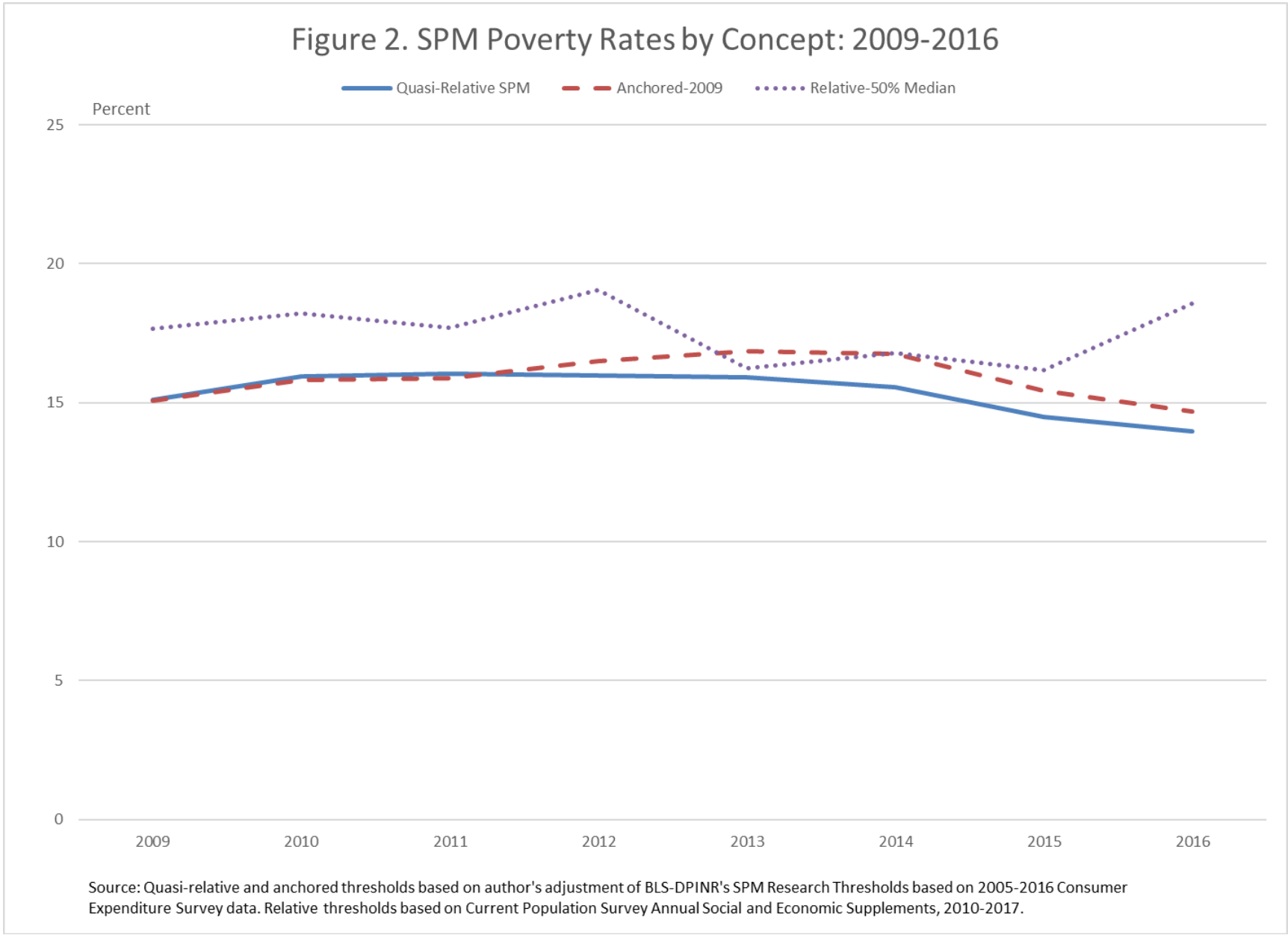
Source: Quasi-relative and anchored thresholds based on author's adjustment of BLS-DPINR's SPM Research Thresholds based on 2005-2016 Consumer Expenditure Survey data. Relative thresholds based on Current Population Survey Annual Social and Economic Supplements, 2010-2017.

Table 2. SPM Poverty Rates by Concept, Overall 2009-2016

	2009	2010	2011	2012	2013	2014	2015	2016
Population	304,282	306,553	308,827	311,116	313,443	316,168	318,868	320,372
Quasi-Relative								
SPM	15.1	15.9	16.1	16.0	15.9	15.6	14.5	14.0
	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.2)	(0.2)	(0.2)
Anchored								
2016	14.3	15.0	15.1	15.7	16.1	15.9	14.7	14.0
	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.2)	(0.2)	(0.2)
2012	14.6	15.3	15.4	16.0	16.3	16.2	14.9	14.2
	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.2)	(0.2)	(0.2)
2009	15.1	15.8	15.9	16.5	16.8	16.7	15.4	14.7
	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.2)	(0.2)	(0.2)
Relative								
50% Median	17.7	18.2	17.7	19.1	16.2	16.8	16.2	18.6
	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.2)	(0.2)	(0.2)
60% Median	25.0	25.6	25.1	26.8	23.2	24.0	23.1	25.9
	(0.2)	(0.2)	(0.2)	(0.2)	(0.4)	(0.2)	(0.2)	(0.2)
80% Median	39.3	39.7	39.1	40.7	37.3	38.0	37.2	39.7
	(0.2)	(0.2)	(0.2)	(0.2)	(0.4)	(0.2)	(0.2)	(0.2)

Note: Standard errors in parentheses. Data for 2013-2016 reflect the implementation of the redesigned income questions.

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



Source: Quasi-relative and anchored thresholds based on author's adjustment of BLS-DPINR's SPM Research Thresholds based on 2005-2016 Consumer Expenditure Survey data. Relative thresholds based on Current Population Survey Annual Social and Economic Supplements, 2010-2017.

Table 3. Percentage of People in Poverty Using Different Poverty Concepts: 2009 to 2016

	Quasi-relative SPM		Anchored-2009		Relative-50% Median		SPM vs Anchored		SPM vs Relative	
Year	Estimate	Margin of error[†] (±)	Estimate	Margin of error[†] (±)	Estimate	Margin of error[†] (±)	Pct-Pt Diff.		Pct-Pt Diff.	
OVERALL										
2009	15.1	0.3	15.1	0.3	17.7	0.3	Z		2.5	*
2010	15.9	0.3	15.8	0.3	18.2	0.3	-0.1	*	2.3	*
2011	16.1	0.3	15.9	0.3	17.7	0.3	-0.2	*	1.7	*
2012	16.0	0.3	16.5	0.3	19.1	0.3	0.5	*	3.1	*
2013	15.9	0.5	16.8	0.5	16.2	0.5	0.9	*	0.3	*
2014	15.6	0.3	16.7	0.3	16.8	0.3	1.2	*	1.2	*
2015	14.5	0.3	15.4	0.3	16.2	0.3	0.9	*	1.7	*
2016	14.0	0.3	14.7	0.2	18.6	0.3	0.7	*	4.6	*
CHILDREN (UNDER 18 YEARS)										
2009	17.0	0.5	17.0	0.5	19.7	0.6	Z		2.7	*
2010	17.9	0.5	17.8	0.5	20.1	0.5	-0.1	*	2.2	*
2011	18.0	0.5	17.8	0.5	19.4	0.5	-0.2	*	1.4	*
2012	18.0	0.5	18.7	0.5	21.2	0.5	0.7	*	3.2	*
2013	18.1	0.9	19.3	0.9	18.1	0.9	1.2	*	-0.1	
2014	17.1	0.5	18.6	0.5	18.0	0.5	1.5	*	0.9	*
2015	16.2	0.5	17.5	0.5	17.9	0.5	1.2	*	1.7	*
2016	15.2	0.5	16.2	0.5	20.4	0.5	1.0	*	5.2	*
ADULTS AGED 18-64										
2009	14.4	0.3	14.4	0.3	16.4	0.3	Z		2.0	*
2010	15.2	0.3	15.1	0.3	17.0	0.3	-0.1	*	1.8	*
2011	15.5	0.3	15.4	0.3	16.8	0.3	-0.1	*	1.3	*
2012	15.5	0.3	15.9	0.3	18.0	0.3	0.4	*	2.5	*
2013	15.1	0.5	16.0	0.5	15.3	0.5	0.8	*	0.2	
2014	15.3	0.3	16.3	0.3	16.2	0.3	1.0	*	0.9	*
2015	14.1	0.3	14.9	0.3	15.4	0.3	0.8	*	1.3	*
2016	13.3	0.3	14.0	0.3	17.2	0.3	0.7	*	3.9	*
ADULTS AGED 65+										
2009	14.9	0.6	14.9	0.6	19.8	0.6	Z		4.9	*
2010	15.8	0.6	15.7	0.5	20.4	0.6	-0.1	*	4.6	*
2011	15.1	0.5	15.0	0.5	19.1	0.6	0.0		4.1	*
2012	14.8	0.5	15.4	0.5	20.4	0.6	0.6	*	5.6	*
2013	15.6	0.9	16.6	0.9	17.4	0.8	1.0	*	1.7	*
2014	14.4	0.5	15.7	0.5	17.4	0.5	1.3	*	3.0	*
2015	13.7	0.5	14.6	0.5	16.7	0.6	0.9	*	3.0	*
2016	14.5	0.5	15.2	0.5	21.3	0.6	0.6	*	6.7	*

Z Represents or rounds to zero.

* 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>.

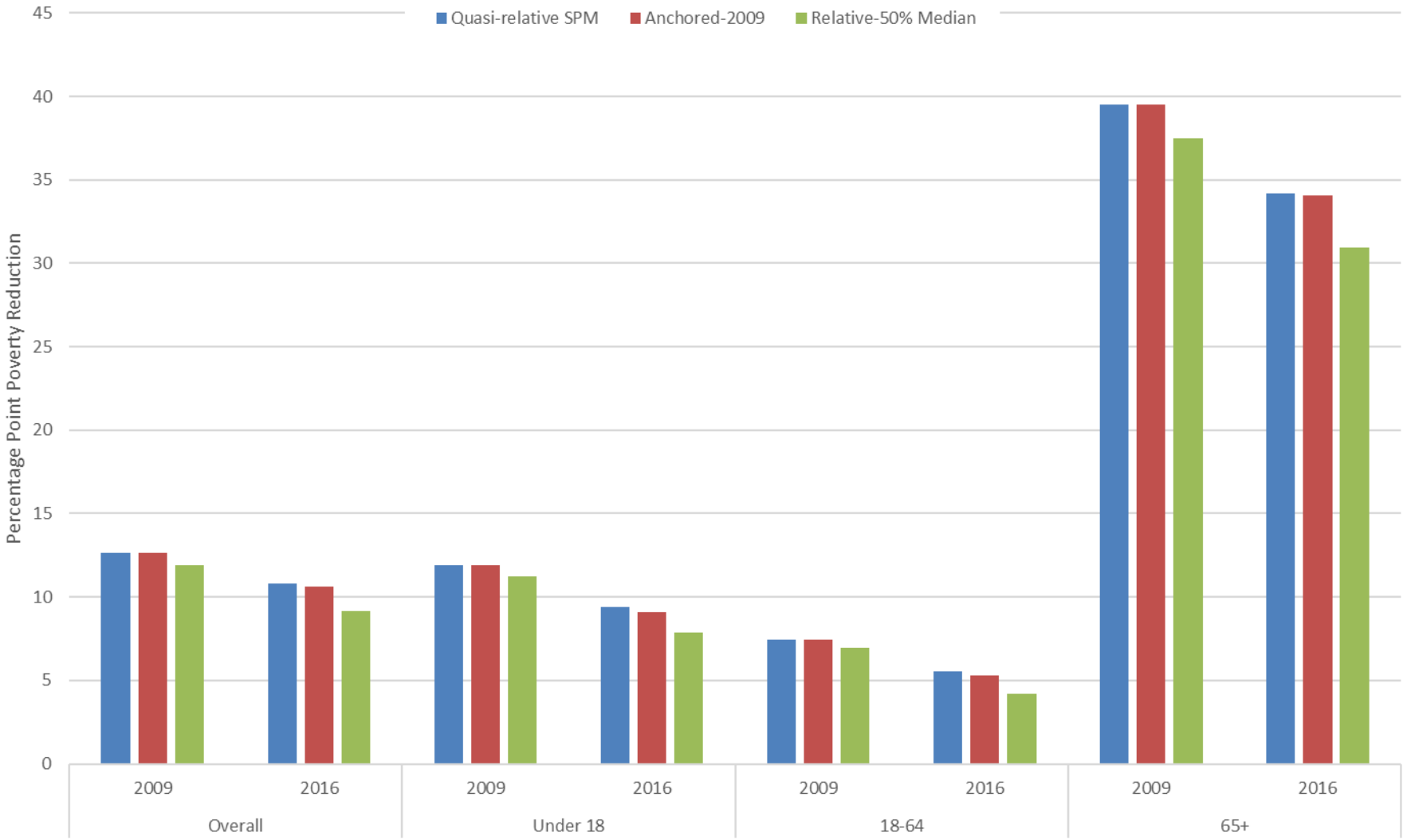
Source: U.S. Census Bureau, Current Population Survey, 2010-2017 Annual Social and Economic Supplements.

Table 4. Percentage of People in Poverty Using Different Poverty Measures, Excluding Taxes and Transfers: 2009 to 2016

	Quasi-relative SPM		Anchored-2009		Relative-50% Median		Quasi-relative SPM	Anchored-2009	Relative-50% Median
Year	Estimate	Margin of error† (±)	Estimate	Margin of error† (±)	Estimate	Margin of error† (±)	Pct-Pt Diff.	Pct-Pt Diff.	Pct-Pt Diff.
OVERALL									
2009	27.8	0.3	27.8	0.3	29.6	0.3	12.6 *	12.6 *	11.9 *
2010	28.5	0.4	28.4	0.4	30.1	0.4	12.5 *	12.6 *	11.9 *
2011	28.4	0.3	28.3	0.3	29.5	0.3	12.3 *	12.4 *	11.8 *
2012	28.5	0.3	28.9	0.3	30.5	0.4	12.6 *	12.4 *	11.4 *
2013	27.8	0.6	28.5	0.6	28.1	0.6	11.9 *	11.7 *	11.9 *
2014	27.0	0.3	27.7	0.4	27.8	0.3	11.4 *	11.0 *	11.0 *
2015	25.9	0.4	26.5	0.4	27.0	0.4	11.4 *	11.1 *	10.8 *
2016	24.8	0.3	25.3	0.3	27.7	0.3	10.8 *	10.6 *	9.2 *
CHILDREN (UNDER 18 YEARS)									
2009	29.0	0.6	29.0	0.6	31.0	0.6	11.9 *	11.9 *	11.3 *
2010	29.8	0.6	29.7	0.6	31.5	0.6	11.9 *	11.9 *	11.4 *
2011	29.5	0.5	29.4	0.5	30.6	0.5	11.5 *	11.7 *	11.2 *
2012	29.5	0.6	30.0	0.6	31.6	0.6	11.5 *	11.3 *	10.4 *
2013	29.3	1.0	30.2	1.1	29.4	1.0	11.1 *	10.9 *	11.4 *
2014	27.7	0.6	28.7	0.6	28.5	0.6	10.7 *	10.2 *	10.5 *
2015	26.6	0.6	27.5	0.6	27.9	0.6	10.4 *	10.0 *	10.0 *
2016	24.6	0.6	25.3	0.6	28.3	0.6	9.4 *	9.1 *	7.9 *
ADULTS AGED 18-64									
2009	21.9	0.3	21.9	0.3	23.4	0.3	7.4 *	7.4 *	7.0 *
2010	22.7	0.4	22.6	0.4	24.0	0.4	7.5 *	7.5 *	7.0 *
2011	22.5	0.3	22.5	0.3	23.5	0.3	7.0 *	7.1 *	6.7 *
2012	22.5	0.3	22.8	0.3	24.2	0.4	7.0 *	6.9 *	6.2 *
2013	22.0	0.6	22.7	0.6	22.2	0.6	6.8 *	6.7 *	6.9 *
2014	21.3	0.4	22.0	0.4	22.0	0.4	6.0 *	5.7 *	5.8 *
2015	19.9	0.3	20.5	0.3	20.8	0.3	5.8 *	5.6 *	5.4 *
2016	18.9	0.3	19.3	0.3	21.4	0.3	5.5 *	5.3 *	4.2 *
ADULTS AGED 65+									
2009	54.4	0.8	54.4	0.8	57.3	0.8	39.5 *	39.5 *	37.5 *
2010	54.1	0.8	54.1	0.8	56.9	0.8	38.3 *	38.4 *	36.5 *
2011	53.5	0.8	53.5	0.8	55.3	0.7	38.4 *	38.4 *	36.2 *
2012	53.9	0.7	54.2	0.7	56.8	0.7	39.1 *	38.8 *	36.4 *
2013	50.4	1.2	50.9	1.2	51.8	1.2	34.8 *	34.3 *	34.5 *
2014	49.8	0.7	50.5	0.7	51.4	0.7	35.4 *	34.8 *	34.0 *
2015	49.4	0.8	50.0	0.8	51.2	0.8	35.7 *	35.4 *	34.5 *
2016	48.7	0.8	49.2	0.8	52.2	0.8	34.2 *	34.1 *	31.0 *

* 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, 2010-2017 Annual Social and Economic Supplements.

Figure 3: Impact of Government Taxes and Transfers on SPM Poverty Rates, 2009 & 2016



Source: Quasi-relative and anchored thresholds based on author's adjustment of BLS-DPINR's SPM Research Thresholds based on 2005-2016 Consumer Expenditure Survey data. Relative thresholds based on Current Population Survey Annual Social and Economic Supplements, 2010-2017.