Moving to the Median and Expanding the Estimation Sample: The Case for Changing the Expenditures Underlying SPM Thresholds

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ABSTRACT

This paper examines the impact of changing the range of expenditures which serve as the basis for the Supplemental Poverty Measure (SPM) poverty thresholds, and expanding the estimation sample upon which the thresholds are based. Currently, the thresholds are based on the 30-36th percentile range of expenditures for food, clothing, shelter, and utilities (FCSU) incurred by consumer units with two children. This is in contrast to a percentage of the median of FCSU expenditures recommended by the National Academy of Sciences Panel in 1995 (Citro and Michael 1995). Moving back to the median has advantages, including that thresholds and resources would be more consistently defined. Fewer expenditures at the median of the FCSU distribution must be augmented to account for the value of in-kind benefits than at the lower end of the distribution. Further, if in the future, health care needs were to be accounted for in the SPM thresholds, spending at the median would be more representative of spending on private health insurance compared to the lower end of the FCSU distribution which is more likely to either have no health insurance or public insurance for which they do not pay. Additionally, this paper explores the possibility of expanding the estimation sample, whose expenditures underlie the SPM thresholds, from consumer units with exactly two children to either consumer units with one or more children or to all consumer units. Both options would result in larger sample sizes and would reflect the current population distribution more fully. Thresholds based on changing the range of expenditures and estimation sample are produced along with poverty statistics. We recommend that future SPM thresholds be based on a percentage of median FCSU expenditures and that the estimation sample be expanded to either consumer units with children or all consumer units, regardless of the presence of children.

INTRODUCTION

The Supplemental Poverty Measure (SPM) was developed in 2010 as a supplement to the official poverty measure and is based on the observations and recommendations of a 2009 Interagency Technical Working Group on Developing a Supplemental Poverty Measure (ITWG), as well as a 1995 National Academy of Sciences (NAS) Panel on Poverty and Family Assistance. The ITWG was charged with operationalizing the NAS panel's findings and developing a set of initial starting points to permit the Census Bureau, in cooperation with the Bureau of Labor Statistics (BLS), and with support from other federal government agencies, to produce the SPM that would be released along with the official measure each year. Recommendations included, among others, the creation of new poverty thresholds and adjustments to resources. The ITWG considered the SPM to be a work in progress with the expectation that there would be improvements to it over time. The measure would change and adapt with the availability of new data and/or methods and as justified by further research. Since 2010, SPM thresholds and poverty statistics have been produced and published annually.[2] However, as during the ITWG discussions, debates continue regarding setting the threshold at the lower end of the FCSU expenditure distribution and in defining the estimation sample as consumer units with two children only. The purpose of this study is to continue the discussion surrounding these issues with results to test alternative estimation assumptions.

The remainder of the paper is organized into five sections. First is a focus on the current construction of the SPM thresholds. This is followed by an overview of the history of the SPM thresholds, and then alternative threshold options are presented. Next we produce a series of

[2] See Fox (2017) for most recent SPM report.

alternative thresholds and explore the impact of these on SPM poverty rates from 2011-2016. We close with recommendations and future directions for SPM thresholds with regard to a move to the median and changing the estimation sample. Our preliminary results suggest that SPM thresholds based on the median are more consistent with the resources included in the current measure. Second, thresholds based on a larger estimation sample would have more stability than thresholds based only on consumer units with two children.

CURRENT SPM THRESHOLDS

The current SPM thresholds are produced by the Bureau of Labor Statistics (BLS), Division of Price and Index Number Research (DPINR) as a research series.[3] Thresholds are based on spending for FCSU and a multiplier for other basic goods and services like personal care and non-work related transportation. These are produced for reference SPM units composed of two adults with two children. However, the actual thresholds are based on the spending of an estimation sample composed of all consumer units with exactly two children. The conversion to two adults with two children is accomplished through the application of an equivalence scale. Three thresholds are produced each year: one for owners with mortgages, one for owners without mortgages, and one for renters. Separate thresholds by housing tenure status are produced as ITWG members acknowledged that a significant number of low-income consumer units own their homes without mortgages, and therefore have relatively lower shelter expenditures compared to owners with mortgages and renters. Not accounting for this difference would result in an overstatement of the poverty status of owners without mortgages.

[3] See: <https://stats.bls.gov/pir/spmhome.htm>.

SPM thresholds are based on five years of quarterly Consumer Expenditure Survey (CE) interview data for FCSU for consumer units with exactly two children.[4] Thresholds are updated each year through the production of a new set of SPM thresholds which again are based on the most recent five years of CE data. The five years, or 20 quarters, of FCSU expenditures are converted to threshold year dollars using the All Items Consumer Price Index for All Urban Consumers (CPI-U): U. S. City Average. FCSU expenditures for the estimation sample composed of consumer units for two children are converted to FCSU expenditures for the reference unit composed of two adults with two children. This conversion is done using a three-parameter equivalence scale. This scale allows for a different adjustment for single parents (Betson, 1996). The three-parameter scale is shown below.

$$\text{One and two adults: } scale = (adults)^{0.5} \tag{1a}$$

$$\text{Single parents: } scale = (adults + 0.8 * firstchild + 0.5 * otherchildren)^{0.7} \tag{1b}$$

$$\text{All other families: } scale = (adults + 0.5 * children)^{0.7} \tag{1c}$$

After the equivalence scale conversion, and the conversion to threshold year dollars, consumer units are ranked from lowest to highest by their equivalized FCSU expenditures. FCSU expenditures within the 30^{th}-36^{th} percentile range, approximating the 33^{rd} percentile, are then used to derive the SPM thresholds. The 30^{th}-36^{th} percentile range of the equivalized FCSU expenditure distribution is then multiplied by 1.2 to account for additional basic needs, with adjustments for shelter and utilities expenditures for three housing tenure types: owners with mortgages, owners without mortgages, and renters. See equation (2).

$$SPM\ Threshold_h = 1.2 * FCSU_E - (S + U)_E + (S + U)_h \tag{2}$$

where

[4] 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>.

h = one of three housing tenure groups:
Owners with mortgages
Owners without mortgages, or
Renters

1.2 = multiplier used to account for expenditures for other basic goods and services, like those for household supplies, personal care, and non-work related transportation.

E = entire estimation sample, within the 30th to 36th percentile range of FCSU expenditures, with FCSU expenditures converted to those for consumer units with two adults and two children without distinction by housing tenure.

FCSU = mean of the sum of expenditures for food, clothing, shelter and utilities for the estimation of sample of CUs within the 30th to 36th percentile range of FCSU expenditures.

$S + U$ = mean of the sum of expenditures for shelter and utilities portions of FCSU for the estimation of sample CUs within the 30th to 36th percentile range of FCSU expenditures.

These three thresholds, along with housing shares of the thresholds, are sent to the Census Bureau for two additional adjustments. One is to create thresholds based on the number of children and adults in a unit, again using the three-parameter equivalence scale. And the second adjustment is to account for price differences across geographic areas. The geographic adjustments are based on five-year American Community Survey (ACS) estimates of median gross rents for two-bedroom units with complete kitchen and plumbing facilities.[5] Thresholds and poverty statistics have been produced since 2011.

[5] 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).

Needs Concept

The underlying "needs" concept represented by the SPM thresholds is a spending or payments based one. The assumption is that out-of-pocket spending is a good approximation of the value of what it takes to meet one's basic material needs. The ITWG, and the NAS Panel, defined needs in terms of FCSU plus a little bit more. The poverty threshold is to represent a type of standard of living. SPM resources -- including the value of in-kind benefits – are those available to be used to meet those needs. However, a problem arises when out-of-pocket spending does not fully account for the value of material needs, such as for those with shelter or meal subsidies. Out-of-pocket spending based thresholds would be too low, in the presence of subsidies, relative to resources and consumer units would be misidentified as not poor. Thus, a preferred measure of needs would be represented by the FCSU spending of consumer units who do not participate in benefit programs. Such consumers are more likely to be located around the median of FCSU expenditures rather than in the lower end of the distribution. However, an alternative would be to impute the value of subsidies to meet FCSU needs and add this to FCSU out-of-pocket spending. Our position is that less imputation is better; thus, we propose that SPM thresholds be based on FCSU expenditures around the median.

HISTORICAL PERSPECTIVE

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 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). Building off of the NAS panel's recommendations, the ITWG was formed in 2009 and developed a set of recommendations for the production of the SPM (ITWG, 2010). This section will detail the recommendations for threshold construction from the NAS Panel and the ITWG, with a focus on areas of divergence.

The NAS Panel recommended that poverty thresholds be set using the reference group of consumer units with two adults and two children and adjusted for other family types using equivalence scales. The estimation sample upon whose expenditures the thresholds were based was the same as the reference unit. Two criteria that the NAS panel emphasized when selecting this reference group were that this family type would fall near the center of the family size distribution rather than at one of the extremes; and that a relatively large proportion of the population fall into this family type. The Panel noted that by staying near the center of the family size distribution the impact of the equivalence scales would be reduced. The larger proportion of the population covered by the reference unit the more representative the spending needs would be of the total population. When the NAS Panel was preparing its report, the two-adult/two-child unit was the third most common household type, comprising 13 percent of households in 1992. However, in terms of the number of individuals, these households were the most common household type, with 20 percent of all people living in a two-adult/two-child household.[6]

The ITWG provided a distinction regarding the estimation sample and the reference unit. Although the NAS Panel recommended a broader definition of family, their prototype was the traditional family as defined by birth, marriage, or adoption. With the ITWG recommendations,

[6] See Citro and Michael (1995), p. 101.

the broader consumer unit or SPM unit is used. In the CE context, SPM units are the same as consumer units. For resources, a new unit of analysis was defined to include all related individuals who live at the same address, any co-resident unrelated children who are cared for by the family (e.g., foster children), and any cohabitors and their children. The estimation sample, as opposed to the reference unit, includes consumer units with exactly two children. Moving to a consumer unit concept reflects the fact that the composition of housing units or "families" continues to change in the U.S. and is different from what it was in the early 1990s. Expanding the estimation sample to include any number of adults with children reflected the situation in 2010 that the largest percentage of consumer units with children were those with two children. The reference unit would remain the one with two adults and two children, but again, the unit being a consumer unit, not a family.

The NAS Panel also recommended that the new poverty threshold should be based on a constant percentage of median annual FCSU expenditures for two adults with two children plus a small multiplier to account for other needs. They noted that the percentage selected is a matter of judgment. However, based on an examination of FCSU expenditures for the reference unit in 1992, the Panel recommended that the percentage be somewhere between 78 and 83 percent of the median.[7] These percentages of the median corresponded to the 30th to the 35th percentile ranges of FCSU expenditures for the reference unit using 1992 CE data. All NAS thresholds produced by Garner, alone or with Short, have been based on both percentages of the median.[8]

Why did the Panel recommend that a new poverty thresholds based on a percentage of the median? Based on our reading of the Panel's report, they assumed that if the threshold were

[7] Citro and Michael (1995), p. 149.
[8] Short and Garner (2002)

based on a particular percentile in the FCSU distribution, say the 30th percentile, then, by definition, 30 percent of the families would always be poor. The Panel reasoned that "when the thresholds are based on a percentage of median income or expenditures, changes that affect the distribution of income or expenditures below the median can increase or decrease the poverty rate."

The ITWG recommended that three thresholds be produced: for renters, owners with mortgages, and owners without mortgages. Each year's thresholds would be based on the 30th-36th percentile-range of a five-year rolling average of food, clothing, shelter and utilities (FCSU) expenditures for consumer units with two children. These thresholds would be further adjusted to account for unit composition and geographic price differences. Resources would include the value of monetary income as well as the value of in-kind benefits. Resources would be net of taxes, work related expenses, and health care expenditures.

The ITWG recommended that SPM thresholds be based on the range of FCSU expenditures around the 33rd percentile range. The justification for this was that the value in this percentile range was equal to 78 to 83 percent of the median. There was an acknowledgement that since FCSU expenditures and SPM resources are not perfectly correlated; basing the thresholds on a particular percentile of the FCSU expenditure is not equal to a relative poverty measure.

The ITWG recommended that SPM thresholds be based on FCSU expenditures around the 33rd percentile rather than the median, and that the experience of consumer units with two children serve as the basis of the thresholds. The ITWG justified their choice as a point in the distribution below the median, but above those in "extreme need" (ITWG, 2010). The 33rd percentile was chosen so that thresholds would be set at a level that two-thirds of families are able to meet or

exceed. However, there is a question as to the efficacy of using the 30th-36th percentiles of the expenditure distribution as opposed to examining some percentage of the median, such as 78% to 83% of the median as was used for the National Academy of Sciences Panel thresholds (Citro and Michael 1995).

Moving to the median has some methodological advantages. First, fewer consumer units at the median receive in-kind benefits, so moving to the median would reduce the need to impute some of these noncash benefits, as well as the impact of these imputations on the thresholds. Thresholds that are based on FCSU expenditures around the 33rd percentile range result in a SPM measure that is more inconsistent with the resource measure than the median without additional imputations. As noted earlier, resources include the value of in-kind benefits that can be used to "purchase" or meet the needs as defined by the SPM thresholds. However, current SPM thresholds do not fully account for the value of these needs, for example those of renters with subsidies, and thus the value of these benefits need to be including in the thresholds.[9] Second, if one were to add health care to the bundle of goods and services represented by the SPM thresholds, the median would more adequately account for health care spending needs than the range of expenditures around the 33rd percentile. Based on earlier research, Garner and Short found that consumer units with FCSU plus health/medical care (FCSUM) expenditures around the median have private health insurance while those the lower end of the FCSUM spending distribution either do not have health insurance or have public insurance for which they do not pay.[10]

[9] See the following paper for a discussion of these issues: <https://stats.bls.gov/pir/spm/spm_imputed_inkind_benefits.pdf>.
[10] Garner and Short, 2014, paper prepared for the ASSA meetings; presentation available at: <https://stats.bls.gov/pir/spm/spm_pp_oop14.pdf> . Other approaches to account for health care needs in poverty thresholds have been proposed, for example, by Korenman and Remler (see this FCSM session).

The ITWG recommended that the sample upon whose expenditures the SPM thresholds would be based would be consumer units with two children. In contrast, the NAS Panel derived thresholds based on FCSU expenditures of families with two adults and two children. The change was made to account for the change in consumer unit or household composition since the Panel's initial report and to increase the estimation sample. Increasing the sample size should result in a decrease in the margin of error in the thresholds. With bigger sample sizes, the sample mean becomes a more accurate estimate of the parametric mean, so the standard error of the mean becomes smaller. However, the standard error will also be affected by the differences in the characteristics of estimation samples. In this study, thresholds are also derived based on the FCSU expenditures of all consumer units and on those of consumer units with any number of children.

ALTERNATIVE THRESHOLD OPTIONS

This paper explores the impact of two types of modifications to the current SPM thresholds on SPM poverty rates in 2011 and 2016. These modifications are examined separately and jointly. The first modification expands the reference group from consumer units with exactly two children to either consumer units with one or more children or to all consumer units regardless of the presence of children. The second modification moves the basis of the FCSU distribution from the 33rd percentile (30th-36th) to 80% of the median (47th-53rd).[11]

While the NAS panel based their choice of a reference family based on the modal living arrangements of individuals in 1992, household compositions have changed over time. In 2016, only 12 percent of people lived in a two-adult/two-child household, compared with 18 percent in

[11] This share of the median (80%) is chosen as the midpoint of the NAS recommendations, but is otherwise somewhat arbitrary.

a two-child household and 50 percent in a household with one or more children (see Table 1).[12] The size of the reference family group is a cause of concern as the thresholds are based on 7 percent (the 30th-36th percentiles) of consumer units with exactly two children in the Consumer Expenditure Survey (CE). This sample size is broken down further by housing tenure type. Table 2 shows sample sizes for consumer units with various restrictions using five years of CE interview data. For 2016, in the current threshold specification, the thresholds for owners without a mortgage is based off of a sample of 112 consumer units. This leads to potential concerns about volatility in thresholds. Expanding the reference group to consumer units with one or more children or to all consumer units regardless of the presence of children substantially improves the sample size and reduces the magnitudes of the standard errors.

In addition to expanding the reference group to be more inclusive, this paper examines moving the point in the distribution examined from the 33rd percentile to the median. The primary justification for this move is that expenditures at the median are more representative of the general population than the 33rd percentile. Expenditures in the lower end of the FCSU distribution must be augmented to account for the value of in-kind benefits for food, shelter, and utilities in order to produce SPM thresholds that are consistently defined with resources that include the value of such benefits. Table 3 shows the difference in the share of consumer units receiving noncash benefits at the 33rd versus the 50th percentile of the FCSU distribution. In the estimation sample for 2016, 4.4 percent of units reported receiving public housing or government assistance with rent. At the median, this share drops to 2.8 percent. Thus, the importance of these imputations would decline with a shift to the median.

[12] Author's calculations using U.S. Census Bureau, Current Population Survey, 2017 Annual Social and Economic Supplement.

Second, a greater percentage of consumer units around the median have private insurance compared to those in the lower end of the spending distribution (74 percent vs. 65 percent with the current estimation sample—see Table 3); thus, if in the future health care needs were to be accounted for in the SPM thresholds, spending on private health insurance by consumer units would be a better measure of these needs in contrast to the spending by consumer units who have no health insurance or public insurance for which they do not pay.

RESULTS

The impact of these modifications on SPM thresholds and standard errors in 2011 and 2016 can be seen in Table 4. The current SPM thresholds (33rd/2 child) are in bold.[13] Keeping the same reference group, but moving the basis of the FCSU distribution from the 33rd to 80% of the median (50th/2 child) decreases thresholds in both 2011 and 2016, as does expanding the reference group to all consumer units with one or more children (33rd/1+ child and 50th/1+child). However, further expanding the reference group to all consumer units regardless of presence of children in the unit, increases thresholds in both 2011 and 2016.

Correspondingly, applying these alternative thresholds results in lower overall SPM rates for the expanded reference group (33rd/1+ child and 50th/1+ child), as well as the modified basis of the distribution (50th/2 child), but higher SPM rates when utilizing the full reference group of all consumer units (33rd/All and 50th/All). These relationships are consistent in both years (see Table 5), with poverty rates ranging from 14.4 percent in 2011 for the specification of 50th/1+ child to

[13] The 2011 thresholds differ slightly from previously published thresholds due to a correction to the construction of the thresholds with reference to "other fuels" which are included in utilities. This change was introduced in 2005; however, only beginning in the 2013 is this change reflected in the published SPM thresholds. For consistency, this change has been implemented for 2011 in this paper.

17.3 for the specification of 50th/All. In 2016, poverty rates for the alternative specifications ranged from 12.8 (50th/1+ child) to 15.6 percent (50th/All).

One potentially important consideration is the impact of these alternative thresholds on trends over time. While this paper only examines two time periods and not a complete time trend, future work should explore all possible years. Table 6 shows the difference in poverty rates between 2011 and 2016. Under the current construction (33rd/2 kids), poverty declined 2.1 percentage points between 2011 and 2016. In comparison, in the 33rd/1+ kid construction, poverty declined by a smaller amount, 1.5 percentage points. However, all other alternative specifications result in differences between 2011 and 2016 that are not statistically different from the current construction. This suggests that, with the exception of the 33rd/1 child specification, any of the alternative specifications examined would result in different poverty rates for a given year, but not necessarily different trends over time.

Table 7 shows the impact of moving from the current 33rd/2 kid specification to the 50th/All CU specification. Setting thresholds at 80 percent of the median threshold, would result in poverty increases overall and for each of the subgroups examined.

RECOMMENDATIONS/FUTURE DIRECTIONS FOR SPM

As noted in the ITWG recommendations, the SPM should be seen as a research measure, improving due to changes in data, methodology or research. A priority should be placed on "consistency between threshold and resource definitions, data availability, simplicity in estimation, stability of the measure over time, and ease in explaining the methodology (ITWG, 2010)." Following these parameters, we recommend moving the base of the SPM threshold from the 30th-36th to some percentage of the median (47th-53rd percentiles). In this paper we examined

80% of the median, but this exact percentage is open for debate. In 2016, 75.5% of the median (for all consumer units) would give the same overall SPM rate as the current model specification. In 2011, 77% of the median (for all consumer units) would produce the same rate as was previously published for 2011.

Moving to the median of the expenditure distribution opens up the possibility of adding medical expenses into the threshold at a later date, as medical expenses around the median are more reflective of the overall population than medical expenses at the 33rd percentile. Additionally, moving to the median lessens the impact of imputing in-kind benefits into the threshold, as fewer consumer units receive in-kind benefits at the median than at the 33rd percentile (Table 3). We do however, believe that in-kind benefits should still be imputed in the threshold and other research is currently examining these efforts (Garner, Gudrais, and Short, 2016).

In addition to moving the base of the SPM threshold from the 33rd percentile to the median of the FCSU distribution, we recommend expanding the estimation sample from consumer units with exactly two children, to either all consumer units with children or all consumer units, regardless of child presence. This move will increase sample size in the estimation sample and provide more reliable estimates for the three housing tenure types. However, which estimation sample to use is an open question. One potential concern is that households with children spend differently than households without children. Future work should re-evaluate the three-parameter equivalence scale to see whether it adequately reflects these spending differences.

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TABLES/FIGURES

Table 1. Distribution of Households and Individuals by Household Composition: 2016

	Share of Households	Share of People
Size of household		
1 person	28.1	11.1
2 person	34.4	27.6
3 person	15.4	19.0
4 person	12.8	21.0
5 person	5.8	11.8
6+ person	3.5	9.5
Types of 4 person households		
2+ adults married in 4 person HH	10.1	16.4
2+ adults cohab in 4 person HH	0.9	1.5
2+ adults not married in 4 person HH	1.2	2.1
Types of households with kids		
2 adult/2 child in 4 person HH	7.6	12.2
2 child in any size HH	11.1	18.4
1+ child in any size HH	30.4	49.5
Household size		
Mean	2.5	3.3
Median	2	3

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

Table 2. Sample Size Unweighted in 5-Year Consumer Expenditure Survey: 2016

	CU's with 2 children		CU's with 1+ children		All CU's	
Total Estimation Sample (unweighted)	n = 14,668		n = 40,620		n = 129,604	
Within FCSU Distributions	30-36th ptile (n=860)	47-53 ptile (n=864)	30-36th ptile (n=2,396)	47-53 ptile (n=2,425)	30-36th ptile (n= 7,632)	47-53 ptile (n= 7,711)
Owners with mortgage	305	423	773	1,104	1,730	2,527
Owners without mortgage	112	75	332	235	2,646	2,075
Renters	443	366	1291	1,086	3,256	3,109

Source: Bureau of Labor Statistics, Consumer Expenditure Survey Interview Data, 2012Q2-2017Q1.

Table 3. Weighted Distribution of Consumer Units within Percentile Ranges for 2016 Threshold Estimation Samples

	30-36 Percentile of FCSU Expenditures			47-53 Percentile of FCSU Expenditures		
	CUs with 2 Children (n=860)	CUs with One or More Children (n=2,396)	All CUs (n=7,632)	CUs with 2 Children (n=864)	CUs with One or More Children (n=2,425)	All CUs (n=7,711)
	Weighted Percentage Distributions (%)					
Number of Children in CU						
0	0.0	0.0	62.7	0.0	0.0	66.0
1	0.0	40.0	15.4	0.0	45.3	15.3
2	100.0	35.2	13.4	100.0	36.0	12.3
3	0.0	16.6	5.6	0.0	13.3	4.7
4 or more	0.0	8.2	2.9	0.0	5.4	1.7
Housing Tenure						
Owner with Mortgage	38.2	34.5	23.9	50.3	47.5	34.0
Owner without Mortgage	12.9	13.7	34.1	9.0	9.1	26.3
Renter	48.9	51.8	42.0	40.7	43.4	39.7
Participation in Public Assistance Program						
Public Housing	2.4	2.2	2.1	1.4	1.2	1.1
Government Assistance with Rents	2.0	2.4	1.9	1.4	1.6	0.8
SNAP	21.9	22.4	13.3	12.5	13.4	6.7
Welfare Income	2.0	2.8	1.2	1.4	1.2	0.8
Medicaid	34.7	39.0	21.6	21.9	25.3	13.6
Someone in the CU Has…						
Medicare	8.3	9.5	31.2	4.2	8.1	27.2
Private Health Insurance	65.2	63.8	65.9	74.3	73.4	73.1

NOTE: Consumer units living in college or university student housing are out of scope.

Source: Bureau of Labor Statistics, Consumer Expenditure Survey Interview Data, 2012Q2-2017Q1.

Table 4. Alternative Thresholds and Standard Errors for SPM: 2011 and 2016

		2011			2016		
		CU's with 2 children	CU's with 1+ children	All CU's	CU's with 2 children	CU's with 1+ children	All CU's
Thresholds							
30-36th ptile	Owners with mortgages	**$25,696**	$24,672	$26,207	**$26,336**	$25,530	$27,463
	Owners without mortgages	**$21,221**	$20,925	$23,367	**$22,298**	$21,807	$24,441
	Renters	**$25,241**	$24,033	$25,887	**$26,104**	$25,412	$27,235
0.8*(47-53 ptile)	Owners with mortgages	$25,187	$24,183	$26,533	$26,103	$25,111	$27,664
	Owners without mortgages	$20,770	$20,487	$23,259	$21,859	$21,225	$24,408
	Renters	$24,569	$23,757	$26,044	$25,439	$24,901	$27,542
Standard errors							
30-36th ptile	Owners with mortgages	**$344**	$367	$288	**$280**	$244	$180
	Owners without mortgages	**$296**	$308	$275	**$390**	$240	$177
	Renters	**$383**	$357	$302	**$302**	$236	$228
0.8*(47-53 ptile)	Owners with mortgages	$297	$296	$266	$360	$236	$219
	Owners without mortgages	$391	$290	$266	$347	$314	$188
	Renters	$336	$338	$296	$282	$212	$183

Source: The thresholds, shares, and means were produced by Juan D. Munoz, and under the guidance of Thesia I. Garner. Munoz and Garner work in the Division of Price and Index Number Research, Bureau of Labor Statistics (BLS). These thresholds and statistics are produced for research purposes only using the U.S. Consumer Expenditure Interview Survey. The thresholds are not BLS production quality. This work is solely that of the authors and does not necessarily reflect the official positions or policies of the Bureau of Labor Statistics, or the views of other staff members within this agency. For methodological details and related research regarding the SPM thresholds, see: <https://stats.bls.gov/pir/spmhome.htm>.

Table 5. SPM Rates Using Alternative Thresholds, 2011 and 2016

	2011			2016		
	CU's with 2 children	CU's with 1+ children	All CU's	CU's with 2 children	CU's with 1+ children	All CU's
30-36th ptile	**16.08** **(0.18)**	14.82 (0.17)	17.19 (0.18)	**13.97** **(0.15)**	13.28 (0.15)	15.37 (0.15)
0.8*(47-53 ptile)	15.35 (0.17)	14.37 (0.17)	17.34 (0.18)	13.45 (0.16)	12.79 (0.15)	15.58 (0.15)

Note: Standard errors in parentheses.
Source: U.S. Census Bureau, Current Population Survey, 2012 and 2017 Annual Social and Economic Supplements.

Table 6. Change in SPM Rates from 2011 to 2016 Using Alternative Thresholds

	CU's with 2 children	CU's with 1+ children	All CU's
30-36th ptile	**-2.11** **(0.24)**	-1.54* (0.23)	-1.81 (0.23)
0.8*(47-53 ptile)	-1.90 (0.23)	-1.58 (0.23)	-1.76 (0.24)

Note: Standard errors in parentheses. Asterisk indicates that change is statistically different from the change in the current SPM rates (33rd/2 child).
Source: U.S. Census Bureau, Current Population Survey, 2012 and 2017 Annual Social and Economic Supplements.

Table 7. Number and Percentage of People in Poverty Using Alternative SPM Thresholds: 2016

Characteristic	33rd/2 kids				50th/All CUs				Difference	
	Number		Percentage		Number		Percentage			
	Estimate	Margin of error† (+/-)	Estimate	Margin of error† (+/-)	Estimate	Margin of error† (+/-)	Estimate	Margin of error† (+/-)	Number	Percent
All People	44,752	810	13.97	0.25	49,909	801	15.58	0.25	5,156 *	1.61 *
Sex										
Male	20,693	438	13.19	0.28	23,142	440	14.75	0.28	2,449 *	1.56 *
Female	24,059	476	14.72	0.29	26,767	480	16.38	0.29	2,708 *	1.66 *
Age										
Under 18 years	11,281	349	15.24	0.47	12,768	356	17.24	0.48	1,487 *	2.01 *
18 to 64 years	26,303	571	13.35	0.29	29,046	557	14.74	0.28	2,743 *	1.39 *
65 years and older	7,168	235	14.55	0.47	8,095	245	16.43	0.50	927 *	1.88 *
Type of Unit										
Married couple unit	16,516	601	8.59	0.31	18,943	606	9.85	0.31	2,427 *	1.26 *
Cohabiting partner unit	3,261	284	13.05	1.01	3,723	288	14.90	0.99	462 *	1.85 *
Female reference person unit	11,655	498	27.26	1.02	12,732	513	29.78	1.02	1,078 *	2.52 *
Male reference person unit	2,635	258	17.53	1.61	2,912	269	19.38	1.66	277 *	1.84 *
Unrelated individuals	10,685	343	23.61	0.58	11,598	343	25.63	0.56	913 *	2.02 *
Race[1] and Hispanic Origin										
White	30,717	617	12.47	0.25	34,381	597	13.96	0.24	3,664 *	1.49 *
White, not Hispanic	19,446	564	9.95	0.29	21,677	561	11.09	0.29	2,231 *	1.14 *
Black	9,086	390	21.61	0.93	10,049	401	23.90	0.95	964 *	2.29 *
Asian	2,774	204	14.68	1.09	3,055	212	16.17	1.12	281 *	1.49 *
Hispanic (any race)	12,670	432	21.97	0.75	14,296	433	24.79	0.75	1,626 *	2.82 *
Nativity										
Native born	35,515	728	12.84	0.26	39,515	734	14.29	0.26	4,000 *	1.45 *
Foreign born	9,237	325	21.06	0.68	10,394	332	23.70	0.67	1,157 *	2.64 *
Naturalized citizen	3,205	171	15.70	0.78	3,670	174	17.98	0.78	465 *	2.28 *
Not a citizen	6,032	263	25.73	1.00	6,724	262	28.68	0.96	692 *	2.95 *
Educational Attainment										
Total, aged 25 and older	27,929	503	12.88	0.23	31,059	505	14.32	0.23	3,130 *	1.44 *
No high school diploma	6,356	227	28.20	0.83	7,078	237	31.40	0.85	722 *	3.20 *
High school, no college	10,139	317	16.22	0.47	11,336	336	18.13	0.49	1,197 *	1.91 *
Some college, no degree	6,615	251	11.45	0.40	7,385	254	12.79	0.40	771 *	1.33 *
Bachelor's degree or higher	4,819	225	6.50	0.30	5,260	230	7.10	0.31	441 *	0.59 *
Tenure										
Owner	19,149	611	9.09	0.28	21,682	636	10.29	0.28	2,534 *	1.20 *
Owner/mortgage	10,122	461	7.40	0.32	11,184	479	8.18	0.33	1,062 *	0.78 *
Owner/no mortgage/rentfree	9,825	417	12.71	0.49	11,372	450	14.71	0.52	1,548 *	2.00 *
Renter	24,806	703	23.33	0.58	27,352	711	25.73	0.57	2,547 *	2.40 *

See footnotes at the end of table.

Table 7. Number and Percentage of People in Poverty Using Alternative SPM Thresholds: 2016-con.

Characteristic	33rd/2 kids				50th/All CUs				Difference	
	Number		Percentage		Number		Percentage			
	Estimate	Margin of error† (+/-)	Estimate	Margin of error† (+/-)	Estimate	Margin of error† (+/-)	Estimate	Margin of error† (+/-)	Number	Percent
Residence										
Inside MSAs	39,125	843	14.13	0.28	43,635	867	15.76	0.28	4,510 *	1.63 *
Inside principal cities	18,057	669	17.31	0.52	20,055	712	19.23	0.56	1,998 *	1.92 *
Outside principal cities	21,068	656	12.21	0.33	23,580	690	13.67	0.34	2,511 *	1.46 *
Outside MSAs[2]	5,627	501	12.92	0.75	6,274	554	14.40	0.81	647 *	1.48 *
Region										
Northeast	6,874	320	12.37	0.58	8,011	360	14.42	0.65	1,136 *	2.05 *
Midwest	7,424	361	11.08	0.53	8,043	366	12.00	0.54	620 *	0.92 *
South	17,966	616	14.81	0.51	19,790	614	16.31	0.50	1,824 *	1.50 *
West	12,489	452	16.33	0.59	14,065	478	18.39	0.63	1,576 *	2.06 *
Health Insurance Coverage										
With private insurance	17,898	545	8.28	0.25	20,129	564	9.31	0.26	2,230 *	1.03 *
With public, no private insurance	19,646	510	25.81	0.58	21,980	524	28.88	0.61	2,334 *	3.07 *
Not insured	7,208	268	25.69	0.92	7,800	268	27.81	0.89	592 *	2.11 *
Work Experience										
Total 18 to 64 years	26,303	571	13.35	0.29	29,046	557	14.74	0.28	2,743 *	1.39 *
All workers	12,111	361	8.03	0.24	13,808	364	9.15	0.24	1,697 *	1.12 *
Worked full-time, year-round	5,099	207	4.73	0.19	5,986	218	5.55	0.20	888 *	0.82 *
Less than full-time, year-round	7,012	258	16.26	0.55	7,822	266	18.14	0.56	809 *	1.88 *
Did not work at least 1 week	14,193	395	30.75	0.73	15,238	394	33.02	0.72	1,046 *	2.27 *
Disability Status[3]										
Total 18 to 64 years	26,303	571	13.35	0.29	29,046	557	14.74	0.28	2,743 *	1.39 *
With a disability	3,905	182	25.35	1.01	4,244	191	27.55	1.05	338 *	2.20 *
With no disability	22,350	533	12.36	0.29	24,754	528	13.69	0.29	2,404 *	1.33 *

* An asterisk preceding an estimate indicates change 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 <www.census.gov/library/publications/2017/demo/p60-259sa.pdf>.

[1] Federal surveys give respondents the option of reporting more than one race. Therefore, two basic ways of defining a race group are possible. A group such as Asian may be defined as those who reported Asian and no other race (the race-alone or single-race concept) or as those who reported Asian regardless of whether they also reported another race (the race-alone-or-in-combination concept). This table shows data using the first approach (race alone). The use of the single-race population does not imply that it is the preferred method of presenting or analyzing data. The Census Bureau uses a variety of approaches. Information on people who reported more than one race, such as White and American Indian and Alaska Native or Asian and Black or African American, is available from Census 2010 through American FactFinder. About 2.9 percent of people reported more than one race in Census 2010. Data for American Indians and Alaska Natives, Native Hawaiians and Other Pacific Islanders, and those reporting two or more races are not shown separately.

[2] The 'Outside metropolitan statistical areas' category includes both micropolitan statistical areas and territory outside of metropolitan and micropolitan statistical areas. For more information, see 'About Metropolitan and Micropolitan Statistical Areas' at <www.census.gov/programs-surveys/metro-micro.html>.

[3] The sum of those with and without a disability does not equal the total because disability status is not defined for individuals in the Armed Forces.

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