

# Improvements to Supplemental Poverty Measure for 2021

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## Abstract

This paper summarizes recent improvements to the Supplemental Poverty Measure (SPM) and compares the published estimates for 2019 to estimates for 2019 incorporating these methodological improvements. These improvements were approved by the Interagency Technical Working Group on the Supplemental Poverty Measure in September 2020. Changes were made to both the threshold and resource components of the measure. Implementation of the new methodology did not change the overall SPM rate in 2019 by a statistically significant amount.

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<sup>1</sup> This paper is released to inform interested parties of ongoing research and to encourage discussion of work in progress. Any views expressed are those of the authors and not necessarily of the U.S. Census Bureau. Information on confidentiality protection, sampling error, nonsampling error, and definitions is available at <[www2.census.gov/programs-surveys/cps/techdocs/cpsmar20.pdf](http://www2.census.gov/programs-surveys/cps/techdocs/cpsmar20.pdf)>. The Census Bureau reviewed this data product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied to this release. CBDRB-FY21-POP001-0194

## Introduction

Following decades of research on poverty measurement and guidance from a National Academies of Sciences Panel and the Interagency Technical Working Group on Developing a Supplemental Poverty Measure (SPM), in 2011 the Census Bureau in cooperation with the Bureau of Labor Statistics (BLS) released the first annual SPM report.<sup>2</sup> Since this first publication, no major changes have been made to the SPM, but research has been ongoing at BLS and the Census Bureau on potential improvements and validation of prior assumptions. In 2016, a new Interagency Technical Working Group (ITWG) on improving the SPM was formed to review potential methodological improvements in the measure. In 2018, ITWG announced a process and timeline for considering changes to be made to the SPM. These changes are being implemented in the September 2021 SPM report.<sup>3</sup> This short paper compares the published 2019 SPM rates (Fox 2020) to the 2019 SPM rates using the new methodology.

In September 2020, the ITWG convened to review proposals by Census and BLS on improvements that could feasibly be implemented by September 2021. Methodological improvements were approved for the estimation of both resources and the thresholds. This working paper is a short summary of the impact of the approved measures on SPM thresholds and poverty rates. Additional methodological improvements to the SPM are currently being considered by a Committee on National Statistics (CNSTAT) panel, which convened at the end of 2020.

On the resource side, the valuation of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) changed from a national average value to state-varying values. This change allows for state-level changes to WIC to be reflected in the SPM. Program receipt for WIC is asked in the Current Population Survey Annual Social and Economic Supplement (CPS ASEC), but the dollar value of WIC is not asked. Therefore, since its inception, the SPM has estimated the number of WIC recipients in an SPM unit, assumed 12 months of WIC receipt, and assigned the annual value using the national monthly average WIC benefit as reported by the Food and Nutrition Service of the USDA. As information regarding pregnancy and breast-feeding status is not collected in the CPS ASEC, individuals are given an average value of WIC benefits rather than attempting to impute participant types. The only change to the current resource side of the SPM methodology was to use state-varying averages rather than national averages. Preliminary estimation of this new methodology was detailed in work by Fox and Wilson (2020).

SPM thresholds are produced by BLS using data from the Consumer Expenditure Survey (CE). On the threshold side, the following changes were made: (1) The base of thresholds was moved from the average between the 30th-36th percentile to 83 percent of the average of the 47th-

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<sup>2</sup> The SPM differs from the official poverty measure (OPM) in several ways. In contrast with the OPM, the SPM includes various non-cash programs such as SNAP, WIC, energy assistance, housing subsidies, etc. The SPM also adjusts thresholds geographically to account for differences in housing costs. A full description of differences between the SPM and OPM can be found in Fox (2020).

<sup>3</sup> See <[www.census.gov/topics/income-poverty/supplemental-poverty-measure/library/working-papers/topics/potential-changes.html](https://www.census.gov/topics/income-poverty/supplemental-poverty-measure/library/working-papers/topics/potential-changes.html)> for the timeline of the process as well as working papers and presentations.

53rd percentiles; (2) The estimation sample was expanded from consumer units with exactly two children to all consumer units with children; (3) CE data were lagged by one year to estimate the thresholds; (4) Imputed in-kind benefits (i.e., LIHEAP, NSLP, Rental Assistance, and WIC) were added to the thresholds; (5) Telephone expenditures were no longer geographically adjusted;<sup>4</sup> (6) Home internet was added to the thresholds; (7) The All Items, All Urban index was replaced by a composite Food, Clothing, Shelter, and Utilities Consumer Price index to adjust threshold components. The decision to implement these various changes was based on work from Fox and Garner (2018), Garner et al. (2019), and Garner (2020). For methodological details and related research regarding the SPM thresholds, refer to <<https://stats.bls.gov/pir/spmhome.htm>>.

BLS implemented these changes to the thresholds and reproduced threshold values for a reference consumer unit composed of two adults and two children, through the use of an equivalence scale, for three housing tenure types: owners with a mortgage, owners without a mortgage, and renters. The published and revised thresholds for 2019, as well as the housing share of the thresholds that are geographically adjusted are detailed in Table 1. The combined threshold changes did not change any of thresholds by a statistically significant amount, but did reduce the portion of the thresholds that are geographically adjusted. The portion adjusted is restricted to housing; housing is defined to include shelter and utilities. The housing share for the 2019 published thresholds included telephone in utilities, while for the 2019 re-estimated thresholds utilities are limited to energy (i.e., electricity, natural gas, and other fuels) and water and related public utilities. In the 2019 re-estimated thresholds, telephone joined food and clothing and the introduction of internet as the parts of the thresholds not geographically adjusted. These changes will continue to be implemented in future years.

**Table 1: Comparison of 2019 Supplemental Poverty Thresholds for Two-Adult Two-Child Consumer Units: Published vs. Revised**

Tenure	2019-Revised		2019-Published	
	Threshold	Housing Share	Threshold	Housing Share
Owners with mortgages	\$29,080	44.0%	\$29,234	49.9%
Owners without mortgages	\$24,413	33.3%	\$24,980	41.3%
Renters	\$29,194	44.2%	\$28,881	49.3%

Source: The thresholds were produced by Juan D. Munoz under the guidance of Thesia I. Garner. Munoz and Garner work in the Division of Price and Index Number Research, 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. For methodological details and related research regarding the SPM thresholds, refer to: <<https://stats.bls.gov/pir/spmhome.htm>>. The 2019 revised thresholds and housing shares were finalized as of July 28, 2021.

<sup>4</sup> Since the inception of the SPM, telephone expenditures were categorized as utilities and therefore included in the housing portion of the thresholds and subject to geographic adjustment. Going forward, telephone expenditures will be taken out of the shelter component and included with home internet as a separate threshold component.

The changes to both the resource and threshold components are reflected in the SPM rates detailed in Table 2 for 2019. Table 2 shows a comparison of previously published 2019 SPM rates compared with the revised 2019 rates. Implementation of the new methodology did not change the overall SPM rate by a statistically significant amount. Renters and individuals with a disability were among the groups with the largest changes to their poverty rates, increasing 0.6 and 0.7 percentage points, respectively with the new methodology. Owners without a mortgage and Asians both had 0.4 percentage point declines in their poverty rates using the new methodology. Overall, the magnitude of the methodological changes to the SPM was less than one percentage point for each of the groups examined in Table 2.

Public-use microdata extracts implementing the new SPM methodology for calendar year 2019 are available at: <https://www.census.gov/topics/income-poverty/supplemental-poverty-measure/data/datasets.html>. Additional extracts extending the adjustments historically will be available in the near future.

**Table 2.**  
**Comparison of 2019 Supplemental Poverty Estimates Using Production and Revised SPM files**

(Numbers and margin of error in thousands. People as of March of the following year. Information on confidentiality protection, sampling error, nonsampling error, and definitions is available at <<https://www2.census.gov/programs-surveys/cps/techdocs/cpsmar20.pdf>>)

Characteristic	SPM 2019-Revised				SPM 2019-Published				Difference	
	Number		Percent		Number		Percent		Number	Percent
	Estimate	Margin of error <sup>1</sup> (±)	Estimate	Margin of error <sup>1</sup> (±)	Estimate	Margin of error <sup>1</sup> (±)	Estimate	Margin of error <sup>1</sup> (±)		
<b>All people</b>	38,300	876	11.8	0.3	38,163	895	11.7	0.3	138	Z
<b>Sex</b>										
Male	17,666	485	11.1	0.3	17,655	489	11.1	0.3	11	Z
Female	20,634	498	12.4	0.3	20,508	508	12.4	0.3	*126	*0.1
<b>Age</b>										
Under 18 years	9,253	358	12.6	0.5	9,119	354	12.5	0.5	*134	*0.2
18 to 64 years	22,073	603	11.2	0.3	22,072	606	11.2	0.3	1	Z
65 years and older	6,975	251	12.8	0.5	6,972	258	12.8	0.5	3	Z
<b>Type of Unit</b>										
Married couple	13,479	620	6.8	0.3	13,703	625	6.9	0.3	*-224	*-0.1
Cohabiting partners	3,147	330	12.1	1.2	3,167	324	12.1	1.1	-20	-0.1
Female reference person	9,732	474	23.8	1.0	9,526	478	23.3	1.0	*207	*0.5
Male reference person	2,141	236	14.2	1.5	2,162	237	14.3	1.5	-21	-0.1
Unrelated individuals	9,801	319	21.6	0.6	9,605	320	21.2	0.6	*196	*0.4
<b>Race<sup>2</sup> and Hispanic Origin</b>										
White	26,029	645	10.5	0.3	26,089	669	10.5	0.3	-60	Z
White, not Hispanic	15,921	477	8.2	0.2	15,914	492	8.2	0.3	8	Z
Black	8,144	409	18.9	1.0	7,907	408	18.3	0.9	*237	*0.5
Asian	2,257	189	11.3	0.9	2,327	191	11.7	1.0	*-70	*-0.4
Hispanic (any race)	11,437	478	18.8	0.8	11,464	475	18.9	0.8	-27	Z
<b>Nativity</b>										
Native-born	30,460	733	10.9	0.3	30,238	761	10.8	0.3	*222	*0.1
Foreign-born	7,840	322	17.5	0.7	7,924	318	17.6	0.7	*-84	*-0.2
Naturalized citizen	3,076	200	13.5	0.9	3,109	197	13.7	0.9	-33	-0.1
Not a citizen	4,764	259	21.5	1.2	4,815	261	21.7	1.2	-51	-0.2
<b>Educational Attainment</b>										
Total, age 25 and older	24,312	547	10.9	0.2	24,319	558	10.9	0.2	-7	Z
No high school diploma	5,600	261	27.7	1.1	5,563	267	27.5	1.1	37	0.2
High school, no college	8,588	305	13.9	0.5	8,543	319	13.9	0.5	45	0.1
Some college	5,449	231	9.5	0.4	5,472	238	9.5	0.4	-23	Z
Bachelor's degree or higher	4,674	214	5.6	0.2	4,741	219	5.7	0.3	*-67	*-0.1
<b>Tenure</b>										
Owner/mortgage	7,035	389	5.1	0.3	7,146	385	5.2	0.3	*-111	*-0.1
Owner/no mortgage/rent free	9,726	424	10.9	0.4	10,057	458	11.2	0.5	*-331	*-0.4
Renter	21,540	760	22.1	0.7	20,960	765	21.5	0.7	*580	*0.6
<b>Residence<sup>3</sup></b>										
Inside metropolitan statistical areas	33,359	871	11.8	0.3	33,426	881	11.8	0.3	-67	Z
Inside principal cities	15,654	673	14.9	0.6	15,527	672	14.8	0.6	127	0.1
Outside principal cities	17,705	631	10.0	0.3	17,898	640	10.1	0.3	*-194	*-0.1
Outside metropolitan statistical areas	4,941	458	11.6	0.7	4,737	442	11.2	0.7	*205	*0.5
<b>Region</b>										
Northeast	6,341	366	11.5	0.7	6,431	383	11.7	0.7	-90	-0.2
Midwest	6,081	355	9.0	0.5	5,944	347	8.8	0.5	*137	*0.2
South	15,662	644	12.6	0.5	15,466	628	12.4	0.5	*195	*0.2
West	10,216	405	13.1	0.5	10,321	402	13.2	0.5	*-105	*-0.1

See footnotes at end of table.

**Table 2.**  
**Comparison of 2019 Supplemental Poverty Estimates Using Production and Revised SPM files--Con.**

(Numbers and margin of error in thousands. People as of March of the following year. Information on confidentiality protection, sampling error, nonsampling error, and definitions is available at <<https://www2.census.gov/programs-surveys/cps/techdocs/cpsmar20.pdf>>)

available at <https://www2.census.gov/programs-surveys/sps/tables/tables/spsmar20.pdf>

Characteristic	SPM 2019-Revised				SPM 2019-Published				Difference	
	Number		Percent		Number		Percent			
	Estimate	Margin of error <sup>1</sup> (±)	Estimate	Margin of error <sup>1</sup> (±)	Estimate	Margin of error <sup>1</sup> (±)	Estimate	Margin of error <sup>1</sup> (±)	Number	Percent
Health Insurance Coverage										
With private insurance	11,933	500	5.4	0.2	12,202	491	5.5	0.2	*-269	*-0.1
With public, no private insurance	19,993	534	25.8	0.6	19,600	556	25.3	0.6	*393	*0.5
Not insured	6,375	323	23.8	1.1	6,361	322	23.7	1.1	14	0.1
Work Experience										
Total, 18 to 64 years	22,073	603	11.2	0.3	22,072	606	11.2	0.3	1	Z
All workers	10,491	365	6.8	0.2	10,599	368	6.9	0.2	*-108	*-0.1
Worked full-time, year-round	4,371	225	3.9	0.2	4,487	226	4.0	0.2	*-116	*-0.1
Less than full-time, year-round	6,120	255	14.6	0.5	6,112	256	14.6	0.5	8	Z
Did not work at least 1 week	11,582	388	27.0	0.8	11,473	390	26.8	0.8	*109	*0.3
Disability Status <sup>4</sup>										
Total, 18 to 64 years	22,073	603	11.2	0.3	22,072	606	11.2	0.3	1	Z
With a disability	3,203	164	22.2	1.1	3,107	168	21.5	1.2	*96	*0.7
With no disability	18,804	554	10.3	0.3	18,899	556	10.4	0.3	-95	-0.1

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

Z Rounds to zero.

<sup>1</sup> A 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. MOEs shown in this table are based on standard errors calculated using replicate weights.

<sup>2</sup> Federal surveys now 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. Data for American Indians and Alaska Natives, Native Hawaiians and Other Pacific Islanders, and those reporting two or more races are not shown separately.

<sup>3</sup> Information on metropolitan statistical areas and principal cities is available at <[www.census.gov/programs-surveys/metro-micro/about/glossary.html](http://www.census.gov/programs-surveys/metro-micro/about/glossary.html)>.

<sup>4</sup> The sum of those with and without a disability does not equal the total because disability status is not defined for individuals in the U.S. armed forces.

Note: Details may not sum to totals due to rounding.

Source: U.S. Census Bureau, Current Population Survey, 2020 Annual Social and Economic Supplement (CPS ASEC).

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