

Proposed Changes to the Supplemental Poverty Measure

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Southern Economic Association –
11/23/2020 (updated 11/24/2020)

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The Supplemental Poverty Measure: 2019

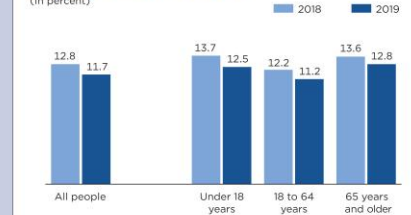
Current Population Reports

By Liana Fox
P60-272
September 2020

INTRODUCTION

Since the publication of the first official U.S. poverty estimates, researchers and policymakers have continued to discuss the best approach to measure income and poverty in the United States. Beginning in 2011, the U.S. Census Bureau began publishing the Supplemental Poverty Measure (SPM), which extends the official poverty measure by taking account of many of the government programs designed to assist low-income families and individuals that are not included in the official poverty measure. The SPM is produced with the support of the Bureau of Labor Statistics (BLS), and this is the tenth in the series. This report presents estimates of the prevalence of poverty in the United States using the official measure and the SPM based on information collected in 2020 and earlier Current Population Survey Annual Social and Economic Supplements (CPS ASEC). The data collection period for the 2020 CPS ASEC coincided with the COVID-19 pandemic, the

Figure 1.
Supplemental Poverty Measure Rates for Total Population
and by Age Group: 2018 and 2019
(In percent)



Note: For information on confidentiality protection, sampling error, nonsampling error, and definitions, see: <<https://www2.census.gov/programs-surveys/cps/techdocs/cpsmar20.pdf>>.
Source: U.S. Census Bureau, Current Population Survey, 2019 and 2020 Annual Social and Economic Supplements (CPS ASEC).

associated public health response, and the end of the economic expansion. For details on the impact of COVID-19 on CPS ASEC data collection, see the text box "The Impact of the Coronavirus (COVID-19) Pandemic on the CPS ASEC."

HIGHLIGHTS

- In 2019, the overall SPM rate was 11.7 percent. This was 1.0 percentage point lower than the 2018 SPM rate of 12.8 (Figure 1).¹

¹ Calculated differences here and throughout this report may differ due to rounding.

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Poverty: The History of a Measure



National Academy of Sciences convenes a panel of experts to conduct a study of statistical issues in the measurement and understanding of poverty. *June 1992.*

1992



The Panel on Poverty and Family Assistance publishes a report proposing a new approach for measuring poverty.

Constance F. Citro and Robert T. Michael (editors), *Measuring Poverty: A New Approach*, Washington D.C., National Academy Press, 1995.

1995

An **Interagency** Technical Working Group on Developing a Supplemental Poverty Measure is formed by Commerce Under Secretary Rebecca Blank and Office of Management and Budget Chief Statistician Katherine Wallman and charged with developing a set of initial starting points to permit the U.S. Census Bureau, in cooperation with the Bureau of Labor Statistics, to produce a Supplemental Poverty Measure. *December 2009.*

2009



Census Bureau in collaboration with the **Bureau of Labor Statistics** publishes the first Research SPM report. *November 2011.*

2011

The **Office of Management and Budget (OMB)** convenes a new interagency technical working group to provide advice on challenges and opportunities brought before it by the Census Bureau and BLS concerning data sources, estimation, survey production, and processing activities for development, implementation, publication, and improvement of the SPM. *January 2016.*

2016

Guidance from the 2009/2010 SPM Interagency Technical Working Group

According to the ITWG suggestions, SPM should be seen as a research measure, improving with changes in data, methodology and research

In evaluation of changes, 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 methodology.

Guidance from ITWG Charter

CHARTER: “Prior to the initial publication of SPM estimates based on changes from the then current SPM, the BLS/Census SPM Development and Implementation Team shall publish a technical report available from the [Census Bureau’s Poverty landing page](#) discussing the need for, and implementation of, such changes.”

Subcommittee on Guidance for Priorities, Schedule of Revisions, and Implementation of Major Changes convened in April 2017. Reported to the ITWG at the June 2017 quarterly meeting.

Criteria for Making Decisions about Changes

From NAS panel:

- Consistent

- Statistically defensible

- Broadly acceptable

- Understandable

- Operationally feasible

Others suggested from 2017 ITWG Subcommittee:

- Impact of change (how much a change matters)

- Portability/replicability in other surveys

- Public support for change

Guidance from Subcommittee on Guidance for Priorities, Schedule of Revisions, and Implementation of Major Changes – June 2017

When?

- Not every year; wait until 2021 for the next major changes

How?

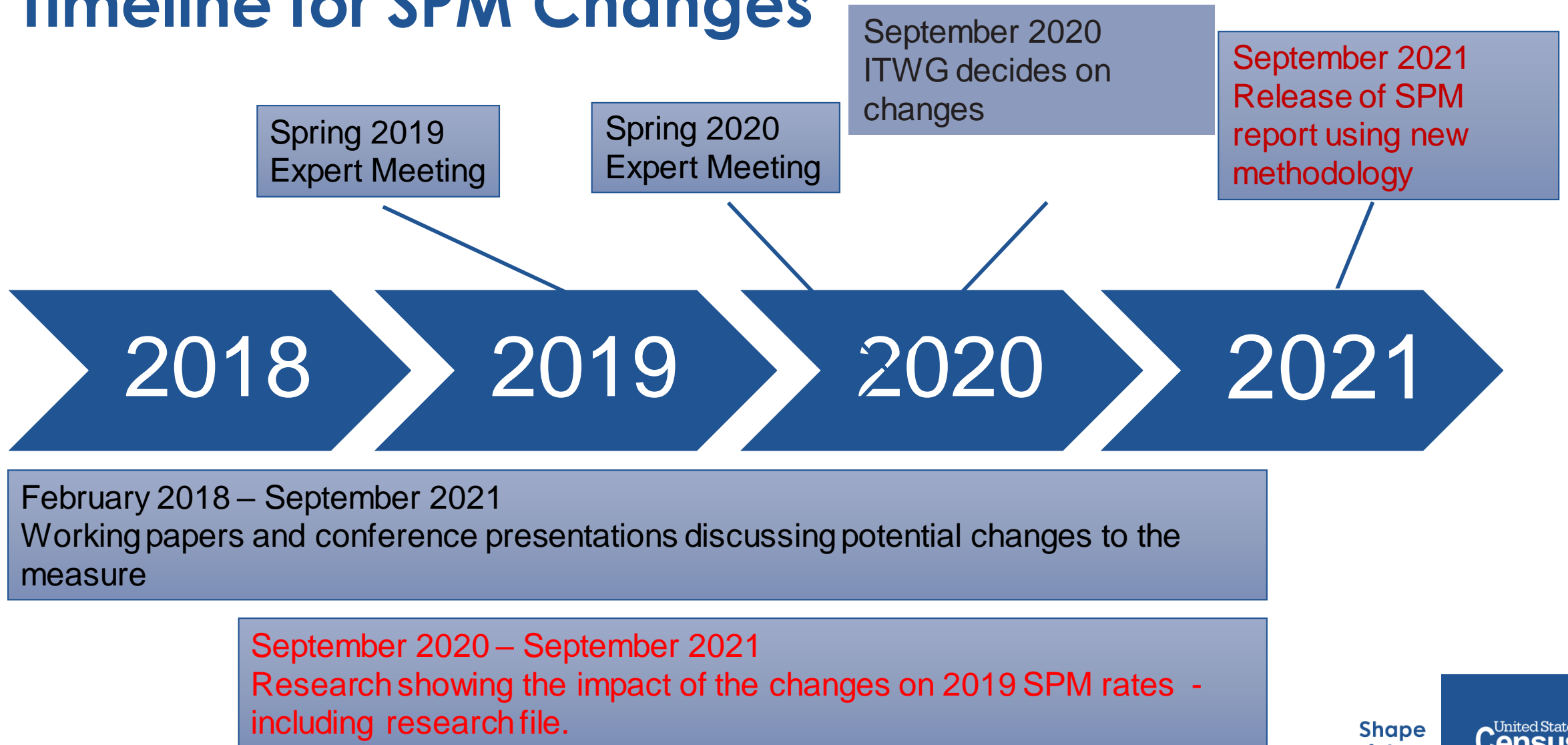
- Prior to major changes, present papers, etc., widely for vetting purposes

What considerations should be given for accepting a change?

- Consistency
- Sample size
- Assumptions/data quality/availability

Timeline shared at March 2018 FCSM Roundtable

Timeline for SPM Changes



Selected Working Papers/Presentations

WORKING PAPER | MARCH 19, 2020

Potential Improvements to the Supplemental Poverty Measure

This presentation gives an overview of potential changes to the SPM under consideration for 2021.

Updates to Thresholds


 Moving to the Median and Expanding the Estimation Sample: The Case for Changing the Expenditures Underlying SPM Thresholds - Liana E. Fox and Thesia I. Garner (Slides) [1.7 MB]


 Adjustments to SPM Thresholds: Focus on In-Kind Benefits, Prices, and Expenditure Definitions - Thesia I. Garner (Slides) [1.4 MB]

WORKING PAPER | FEBRUARY 12, 2018

Moving to the Median and Expanding the Estimation Sample

This paper examines the impact of two potential changes to the SPM thresholds: changing the range of expenditures and expanding the estimation sample.

 Controlling for Prices before Estimating SPM Thresholds and the Impact on SPM Poverty Statistics - Thesia I. Garner and Juan D. Munoz Henao [1.0 MB]

 Alternative Poverty Measurement for the U.S.: Focus on Supplemental Poverty Measure Thresholds - Thesia I. Garner and Marisa Gudrais [1.0 MB]

Updates to Geographic Adjustments

 Supplemental Poverty Measure: Alternative Geographic Adjustments - Trudi Renwick (Slides) [1.0 MB]

WORKING PAPER | DECEMBER 2018

Incorporating Amenities into Geographic Adjustments of the SPM

<https://www.census.gov/topics/income-poverty/supplemental-poverty-measure/library/working-papers/topics/potential-changes.html#>

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- Moving to the Median and Expanding the Estimation Sample
- Adjustments to SPM Thresholds: Focus on In-Kind Benefits, Prices and Expenditure Definitions
- Controlling for Prices before Estimating SPM Thresholds
- Supplemental Poverty Measure: Alternative Geographic Adjustments
- Incorporating Health Care/Insurance in Poverty Measures
- Accounting for the Impact of Medicaid on Child Poverty

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Conference Presentations/Roundtables



- Agriculture and Applied Economics Association (AAEA) Annual 2019 Meeting
- Southern Regional Science Association 2019 Conference
- Southern Economics Association (SEA) – 2019
- Roundtable discussions of potential changes to the SPM held at 2019 SGE and APPAM conferences.
- 2020 American Economic Association
- SGE 2020 – Cancelled
- May 2019 and May 2020 Expert Meetings at Brookings

23⁻²⁵ NOV **SEA–SOUTHERN ECONOMIC ASSOCIATION ANNUAL MEETING**
ACADEMIC RESEARCH SEMINAR | EXHIBIT BOOTH | RECEPTION | MOCK INTERVIEWS
📍 Fort Lauderdale, FL

SGE Society of Government Economists

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SPM Changes for September 2021

Resources:

Move from national average value for WIC benefits to state-varying values

Thresholds:

- (1) Move base thresholds from around the 33rd percentile to a percentage of the median. Plan is to select percentage to keep overall SPM rates comparable to the current methodology.
- (2) Expand the estimation sample (for the thresholds) from all consumer units with exactly two children to all consumer units with children but ask the NAS panel to continue to look into this issue.
- (3) Lag the CE data for the thresholds by one year.
- (4) Add imputed in-kind benefits to the thresholds
- (5) Move telephone expenditures out of utilities which means they will not be geographically adjusted
- (6) Add home internet to the thresholds - but not as utilities.
- (7) Use a composite Food/Clothing/Shelter/Utilities consumer price index as opposed to the All Items, All Urban index in adjusting CE data to current year dollars.

Using State-Varying WIC Values

- Currently, the value of WIC in the SPM is estimated using the average national benefit amount. The proposed change would allow the benefit amount to vary by state.
- For 2018, national average monthly WIC benefit value was \$40.96, while states ranged from \$26.52 (Texas) to \$55.87 (Hawaii)
- Will be more consistent with threshold imputations
- Would allow for analysis of future state-level changes in WIC generosity
- Very small impact on poverty rates

Characteristic	2018 SPM-Using National WIC Values		2018 SPM-Using State-Varying WIC Values		Difference
	Est.	MOE	Est.	MOE	
All People	12.77	0.27	12.78	0.27	0.01 *
WIC Recipients	24.78	2.11	25.05	2.09	0.27 *
Sex					
Male	12.12	0.30	12.13	0.30	0.01 *
Female	13.40	0.27	13.41	0.27	0.01
Age					
Under 18 years	13.68	0.52	13.71	0.52	0.03 *
18 to 64 years	12.21	0.28	12.22	0.28	0.01 *
65 years and older	13.59	0.47	13.59	0.47	0.00
Region					
Northeast	12.23	0.62	12.23	0.62	0.00
Midwest	9.20	0.51	9.22	0.51	0.02
South	13.92	0.49	13.94	0.49	0.02
West	14.43	0.56	14.43	0.56	0.00

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

Z Rounds to zero.

Source: U.S. Census Bureau, Current Population Survey, 2019 Annual Social and Economic Supplement.

Source: Liana Fox and Danielle Wilson. Impact of Using State Average WIC Values in the Supplemental Poverty Measure. SEHSD Working Paper #2020-16, October 1, 2020.

<https://www.census.gov/library/working-papers/2020/demo/SEHSD-WP2020-16.html>

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Changes to be Implemented in Production of SPM Thresholds for Reference Unit Composed of 2 Adults with 2 Children (2A+2C)

Change – Statistical (access)	Justification
Convert micro-level CU quarterly FCSU to threshold year dollars using composite FCSU CPI-U	More reflective of threshold component price changes
Add in-kind benefits to OOP FCSU	Consistency in measurement with resources
Lag FCSU by 1 year	CPS ASC data not available in time to produce in-kind benefits for thresholds for most recent year
Change – Conceptual	Justification
Expand sample to include CUs with any child (not just those with exactly 2 children)	Represents larger share of the population but with focus on children as a primary beneficiary of poverty programs
Telephone service separate (not in housing utilities)	Increased cell service expenditures as share of total; impacts (S+U) share of thresholds adjusted for differences in median rents across geographies
Add internet	Increased means of communication in addition to telephone
Percentage of median	Expectation of greater stability around the median and less constrained spending

Considered but not Voted to Change

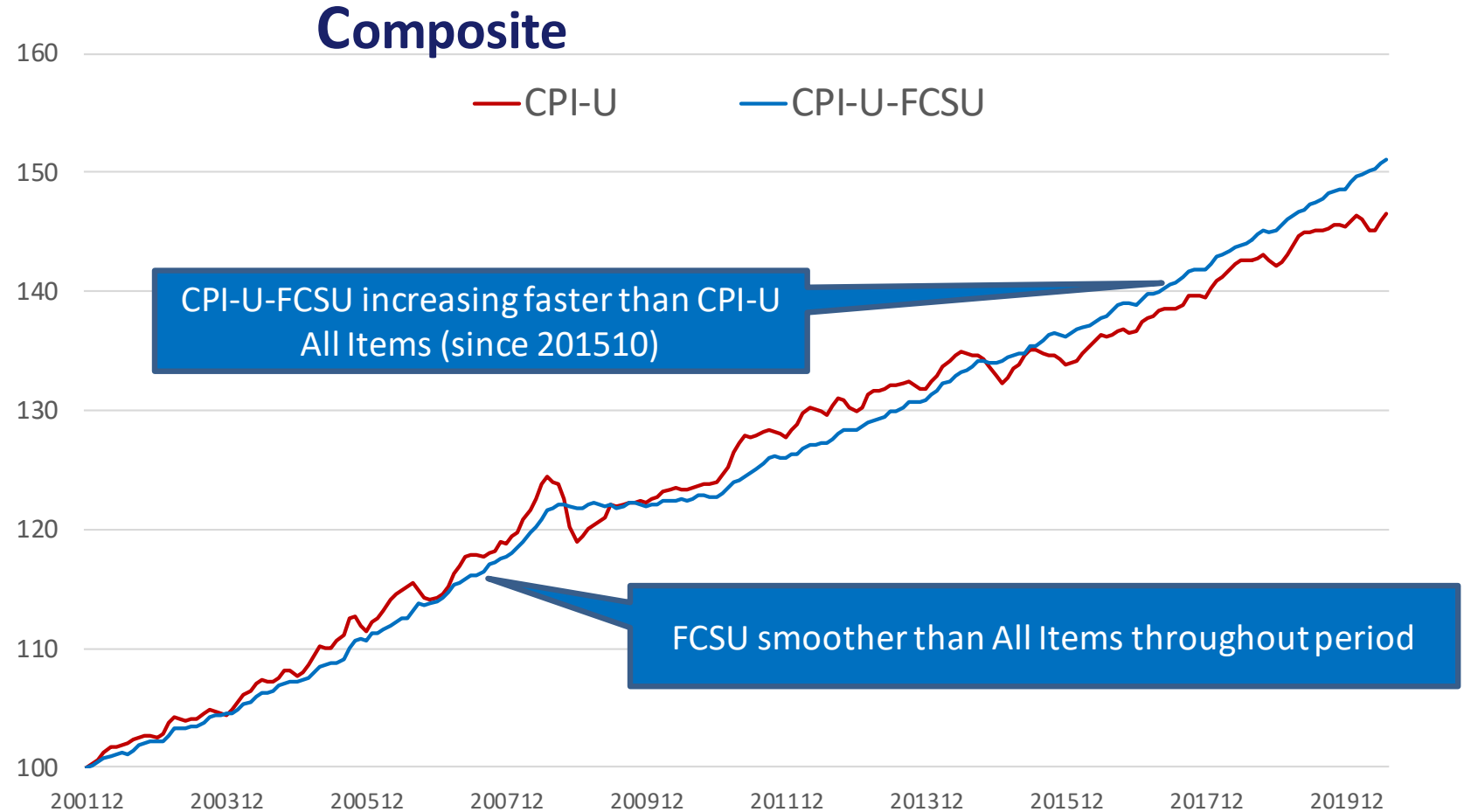
Change – Conceptual	Justification
Base thresholds on 3 versus 5 years of CE data	Reduce impact of short-run recession or growth over years to carry over in following year thresholds
Expand estimation sample to all CUs versus those with children	Thresholds are for all so all CU expenditures should be counted
Anchor thresholds and update by change in prices or overall spending versus re-estimating threshold so updating by rolling 5-year movement in estimation sample median FCSU	Prices or changes in overall spending more reflective of value of threshold based on FCSU

Price Indexes to Adjust Quarterly FCSU Expenditures into Threshold Year \$: Monthly CPI-U All Items vs CPI-U-FCSU

Statistical

Adjust quarterly FCSU by “composite FCSU-CPI-U”

$$FCSU_{i,2016} = \left(\frac{FCSU_{CPIFCSU_{2016}}}{FCSU_{CPIFCSU_{q \text{ or } yr}}} \right) * FCSU_{i,yr}$$



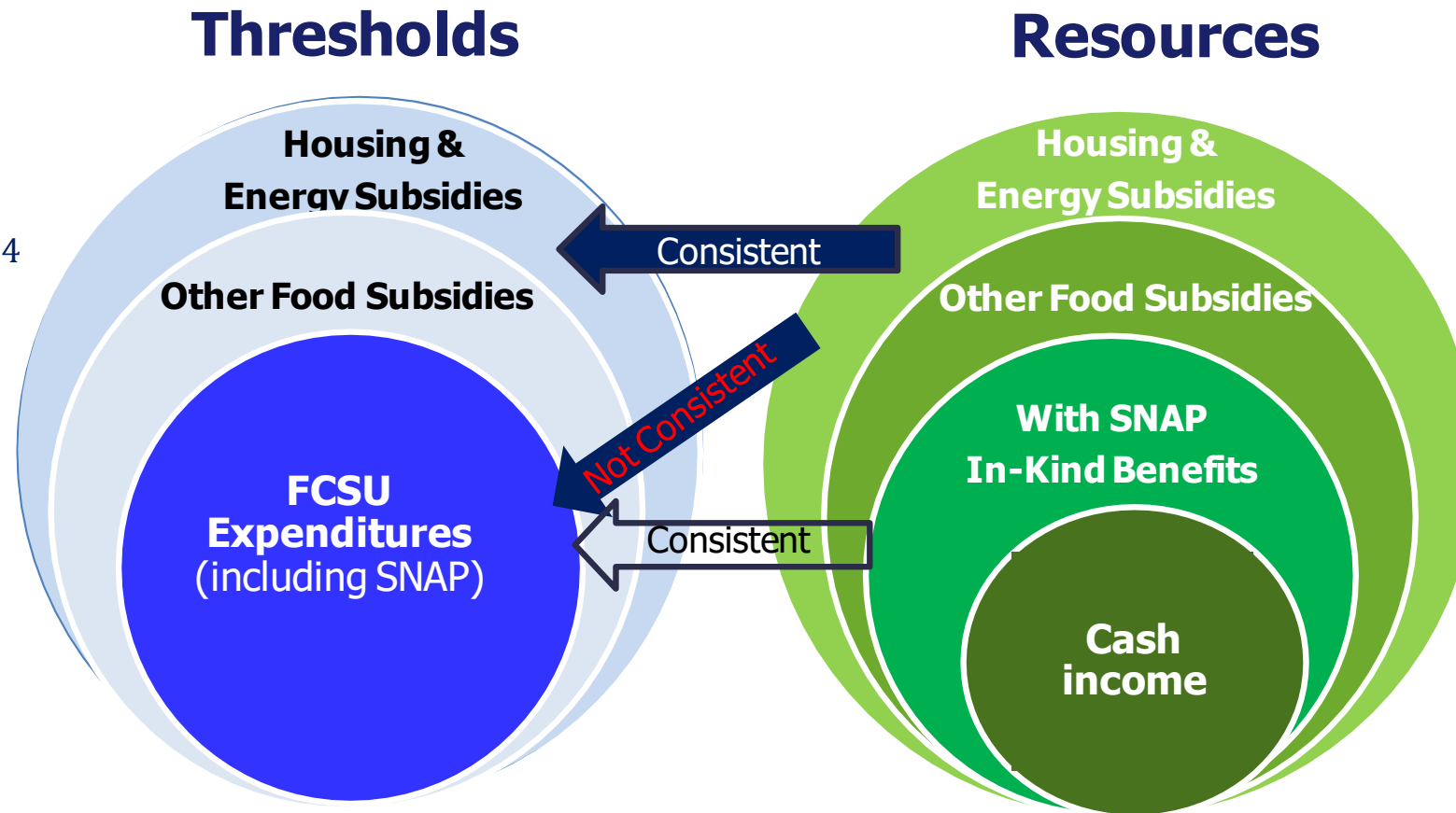
Source: Monthly indexes produced by Josh Klick, CPI Division, BLS, November 4, 2020.



In-kind Benefits Included in FCSU, Lag by One Year Due to CPS Data Access for All but Rental Subsidies

Statistical

$$FCSU_{i,a} = (F_{i,q} + C_{i,q} + S_{i,q} + U_{i,q}) * 4 + WIC_{i,a} + NSLP_{i,a} + LIHEAP_{i,a} + (RS_{i,q}) * 4$$



Expanding the Sample to Consumer Units with Any Number of Children from those with Exactly Two Children

Conceptual

	CU's with exactly 2 children	CU's with 1+ children
Total Estimation Sample (% of U.S. weighted sample of CUs based on 5 years of data)	n = 14,668 (11.4%)	n = 40,623 (31.4%)

Of *all people* living in the U.S. (person weighted population):
 19.1% in CUs with 2 children; **51.6% in CUs with any children** 48.4% in CUs with no children

Of *all CUs* living in the U.S. (CU weighted population):
 13.4% have exactly 1 child; 11.4% have exactly 2 children; 6.6% have more than 2 children;
 68.6% have no children

Of *CUs with children* (CU weighted population):
 42.7 % have exactly 1 child; 36.3% have exactly 2 children; 21% have more than 2 children

Move Telephone out of Housing Utilities and Add Internet

Conceptual

$$\text{Published: } SPM_{p,j,T} = 1.2 * FCSU_{p,T} - SU(\textcolor{red}{t})_{p,T} + SU(\textcolor{red}{t})_{p,j,T}$$

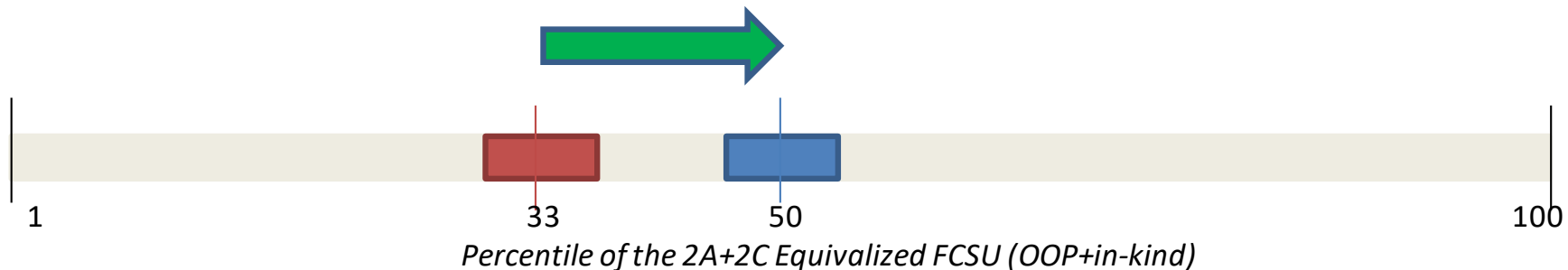
$$\text{Alternative}(\textcolor{red}{t}): SPM_{p,j,T} = 1.2 * FC\textcolor{red}{t}SU_{p,T} - SU_{p,T} + SU_{p,j,T}$$

$$\text{Alternative } (\textcolor{red}{t}\textcolor{green}{i}): SPM_{p,j,T} = 1.2 * FC\textcolor{red}{t}\textcolor{green}{i}SU_{p,T} - SU_{p,T} + SU_{p,j,T}$$

P = “33rd” percentile represented by the average within the 30-36 percentile range of FCSU for published;
= “50th” percentile represented by the average within the 47-53 percentile range of FCSU for proposed
 j = housing group: owners with mortgages, owners without mortgages, renters with paid rent
 T = threshold year

Change Base of Thresholds: Move to a Percentage of the Median

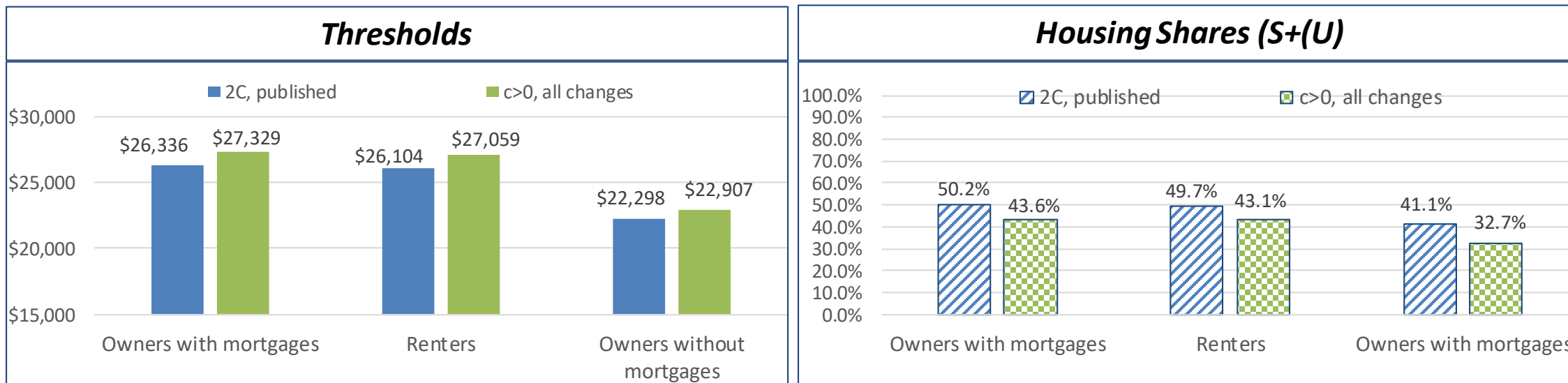
Conceptual



- Back to NAS Panel (1995) recommendation
- Less likely to reflect constrained spending (unlike at lower end of FCSU distribution)
- Expected to be more stable than around the “33rd” percentile (empirical question)
- If in future, if health insurance added to represent health care needs, out-of-pocket spending likely to be a better proxy of “need” as opposed to position lower in FCSU distribution (could still imputed value of health insurance or account for health care needs in another way)

Impact of Combined Changes* on Underlying CE Samples and 2A+2C Thresholds: 2016

	Estimation Sample	
	CU's with exactly 2 children	CU's with 1+ children
Estimation Sample , unweighted observations (percentage of all CU observations for the U.S., weighted and unweighted approx. same)	n = 14,668 (11.3%)	n = 40,623 (31.3%)
-Of all people living in the US (weighted population): 19.1% in CUs with exactly 2 children; 51.6% in CUs with any children; 48.4% in CUs with no children -Of CUs with children (weighted CUs): 36.3% have exactly 2 children; 42.7 % have exactly 1 child		

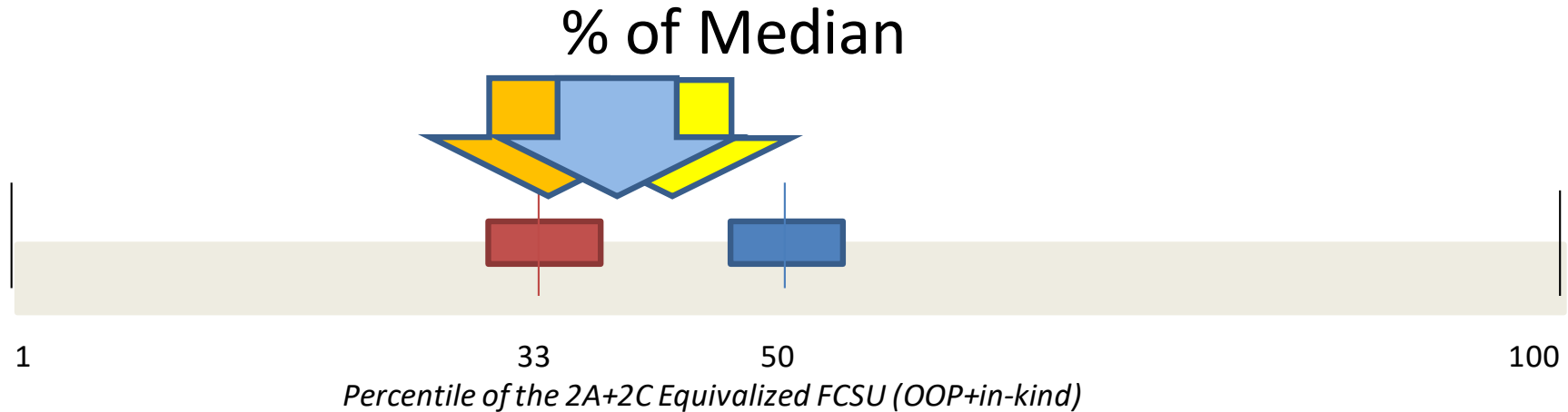


-Published base on 2C, 5 years of data, data not lagged by 1 year, no in-kind (except for SNAP), telephone in U, no internet;

*Thresholds with changes based on 33rd percentile rather than a percent of median since percentage selection can be set to obtain the same thresholds (assume relationship between FCSU at "33rd" and "50th" percentiles)

How to Select the Percentage of the Median

Conceptual



- Based on FCSU relationship to to “33rd”?
- Public opinion (e.g., Gallup Poll)?
- Relative (e.g., $0.5 \times \text{median equivalent FCSU}$)?

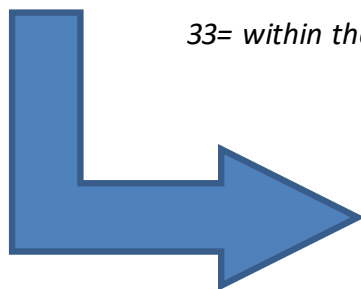
Select % of Median to Offset Impact of Changes to Equate to Published: Example with 2016 Thresholds

$$SPM_{j,2016} = 1.2 * FCSU_{33,2016} - SU_{33,2016} + SU_{33,j.2016}$$

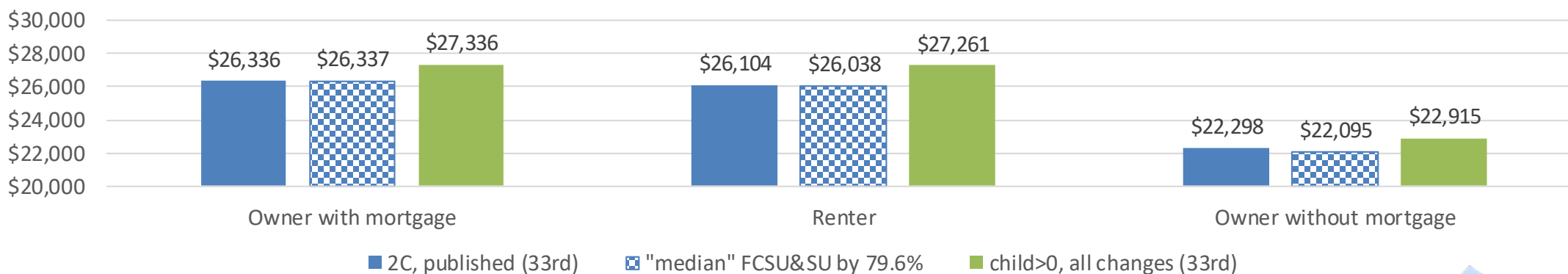
% of "median"

$$SPM_{j,2016} = 1.2 * 79.6\% * FCSU_{50,2016} - 79.6\% * SU_{50,2016} + 79.6\% * SU_{50,j.2016}$$

33= within the 30-36 percentile range of FCSU; 50 = within the 47-53 percentile range of FCSU



Set thresholds to *published for 2016* to reduce impact of changes



79.6% of "median" FCSU and SU within "median" range to result in thresholds that are approximately equal to published thresholds

NAS Panel

FY2020 Budget includes pass back to support a CNSTAT panel on evaluating and improving the SPM – \$2 million

– *The Census Bureau will fund a research study by the National Academies of Sciences, Engineering, and Medicine to evaluate and improve the supplemental poverty measure.*

- CNSTAT will convene a panel (approximately 12 people)
- 24 month duration – starting end of 2020?
- Five 1.5 day meetings – including an initial public meeting to prioritize issues and concerns
- Final report at the end of 24 months

Changes we are NOT considering for 2021 but could be on the agenda for the NAS panel:

Resources

- Capping medical out of pocket (MOOP) expenses
- Correcting survey data for underreporting
- Commuting cost variation

Thresholds

- Moving to a health-inclusive poverty measure
- Changes to the geographic adjustments of the thresholds
- Expanding to all consumer units
- Restrict to 3 years of CE data rather than 5 years
- Use of 12 months of CU data rather than multiplying quarterly by 4
- Use payments-based cost index as opposed to CPI to adjust FCSU
- Geographic adjustment of housing (S+U) expenditure data prior to threshold creation
- Replace out-of-pocket spending with rental equivalence for owners so only need to produce one threshold per year
- Replace 20% multiplier with spending on specific categories of goods and services (e.g. personal care and non-work related transportation)

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