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

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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.

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.

How to Determine Poverty Status

- All resource unit members have the same poverty status.
- For individuals who do not live with family members, their individual resources are compared with the appropriate threshold.
Which Goods and Services? Food, Clothing, Shelter, Utilities (FCSU)

+ multiplier for other basic goods and services
Based on Whom?

Standards of living
- ITWG-5 years
- NAS-3 years

Represented by
- ITWG- 33rd percentile FCSU
- NAS-78%-83% of median FCSU

Estimation sample
- NAS- CUs with 2 adults and 2 children
- ITWG-CUs with 2 children
Current SPM Threshold Construction

• Produced by Bureau of Labor Statistics-Division of Price and Index Number Research (BLS-DPINR) using 5 years of Consumer Expenditure Survey Interview (CE) data

• 30th-36th percentile of expenditures of food, clothing, shelter, and utilities (FCSU) plus additional 20%

• Based on estimation sample of resource units with exactly 2 kids

• Separate thresholds by housing tenure: Owners with mortgage, owners without mortgage and renters

• Adjust for unit size/composition and geography
Changes Under Consideration

Expand estimation sample from CU’s with exactly 2 children
• Increase sample size
• Reflect spending patterns of a larger share of the population

Move base from 30-36\textsuperscript{th} percentile to median of FCSU dist.
• Reduce impact of imputed benefits
• Allow for future incorporation of medical expenses
Expand Estimation Sample

• Increase sample size
• Reflect spending patterns of a larger share of the population

## Sample Size for Estimation Samples

<table>
<thead>
<tr>
<th></th>
<th>CU's with 2 kids</th>
<th>CU's with 1+ kids</th>
<th>All CU's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Estimation Sample (unweighted)</td>
<td>n = 14,668</td>
<td>n = 40,620</td>
<td>n = 129,604</td>
</tr>
<tr>
<td>30-36th ptile FCSU</td>
<td>n=860</td>
<td>n=2,396</td>
<td>n= 7,632</td>
</tr>
<tr>
<td>Owners with mortgage</td>
<td>305</td>
<td>773</td>
<td>1,730</td>
</tr>
<tr>
<td>Owners without mortgage</td>
<td>112</td>
<td>332</td>
<td>2,646</td>
</tr>
<tr>
<td>Renters</td>
<td>443</td>
<td>1,291</td>
<td>3,256</td>
</tr>
</tbody>
</table>

**Change Base of Thresholds**

Move base to median

- Reduce impact of imputed benefits
- Allow for future incorporation of medical expenses
### Share of CUs Receiving Benefits

<table>
<thead>
<tr>
<th></th>
<th>30-36\textsuperscript{th} Ptile of FCSU</th>
<th>47-53\textsuperscript{rd} Ptile of FCSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Housing</td>
<td>2.4</td>
<td>1.4</td>
</tr>
<tr>
<td>Govt. Asst. with Rent</td>
<td>2.0</td>
<td>1.4</td>
</tr>
<tr>
<td>SNAP</td>
<td>21.9</td>
<td>12.5</td>
</tr>
<tr>
<td>Private Health Insurance</td>
<td>65.2</td>
<td>74.3</td>
</tr>
</tbody>
</table>

Note: Estimation sample is consumer units with exactly two children.

Alternative Thresholds Examined

- 80% of 47th-53rd percentile (Median)
- CU’s with 1+ kids
- All CU’s

<table>
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<th>CU’s with 1+ kid</th>
<th>All CU’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>30th -36th ptile</td>
<td>33rd/2 kids</td>
<td>33rd/1+ kids</td>
<td>33rd/All</td>
</tr>
<tr>
<td>80% of 47th -53rd ptile</td>
<td>50th/2 kids</td>
<td>50th/1+ kids</td>
<td>50th/All</td>
</tr>
</tbody>
</table>
### Threshold Values Relative to 33\textsuperscript{rd}/2 kids

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<th>All CU’s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30\textsuperscript{th} - 36\textsuperscript{th} Owners</strong></td>
<td>$26,336</td>
<td>$25,530</td>
<td>$27,463</td>
</tr>
<tr>
<td>with mortgages</td>
<td>$22,298</td>
<td>$21,807</td>
<td>$24,441</td>
</tr>
<tr>
<td>without mortgages</td>
<td>$26,104</td>
<td>$25,412</td>
<td>$27,235</td>
</tr>
<tr>
<td>Renters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>80% of 47\textsuperscript{th} - 53\textsuperscript{rd} Owners</strong></td>
<td>$26,103</td>
<td>$25,111</td>
<td>$27,664</td>
</tr>
<tr>
<td>with mortgages</td>
<td>$21,859</td>
<td>$21,225</td>
<td>$24,408</td>
</tr>
<tr>
<td>without mortgages</td>
<td>$25,439</td>
<td>$24,901</td>
<td>$27,542</td>
</tr>
<tr>
<td>Renters</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 2016 SPM Rates

- Rates follow same pattern as thresholds

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<th>All CU’s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30th -36th ptile</strong></td>
<td>13.97</td>
<td>13.28</td>
<td>15.37</td>
</tr>
<tr>
<td><strong>80% of 47th -53rd ptile</strong></td>
<td>13.45</td>
<td>12.79</td>
<td>15.58</td>
</tr>
</tbody>
</table>

## Change in SPM Rates from 2011-2016

- Only 33rd/1+ kid statistically different from 33rd/2 kids

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</tr>
</thead>
<tbody>
<tr>
<td><strong>30th -36th ptile</strong></td>
<td>-2.11</td>
<td>-1.54*</td>
<td>-1.81</td>
</tr>
<tr>
<td><strong>80% of 47th -53rd ptile</strong></td>
<td>-1.90</td>
<td>-1.58</td>
<td>-1.76</td>
</tr>
</tbody>
</table>

# SPM Rates by Age: 2016

<table>
<thead>
<tr>
<th></th>
<th>33rd/2 kids</th>
<th>50th/All CU’s</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall</strong></td>
<td>13.97 (0.25)</td>
<td>15.58 (0.25)</td>
<td>1.61*</td>
</tr>
<tr>
<td><strong>Under 18</strong></td>
<td>15.24 (0.47)</td>
<td>17.24 (0.48)</td>
<td>2.01*</td>
</tr>
<tr>
<td><strong>18 to 64 years</strong></td>
<td>13.35 (0.29)</td>
<td>14.74 (0.28)</td>
<td>1.39*</td>
</tr>
<tr>
<td><strong>65 years and older</strong></td>
<td>14.55 (0.47)</td>
<td>16.43 (0.50)</td>
<td>1.88*</td>
</tr>
</tbody>
</table>

* An asterisk following an estimate indicates difference is statistically different from zero at the 90 percent confidence interval. Note: Margins of error in parentheses. Source: U.S. Census Bureau, Current Population Survey, 2017 Annual Social and Economic Supplement.
Summary/Recommendations

• We recommend expanding the estimation sample
  – 1+ kids would nearly triple sample size, and keep similar attributes.
  – All CU’s would increase sample size 9-fold, but concern that families without children spend differently than families with children.

• We recommend moving the base of the threshold from 33rd to some percentage of median.
  – In 2016, 75.5% of median would match 33rd/2 kids overall SPM rate.
  – In 2011, 77% of median would match 33rd/2 kids overall SPM rate.
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Extra Slides
ITWG Guidance

• According to the ITWG recommendations, SPM should be seen as a research measure, improving due to changes in data, methodology or research.

• 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 (ITWG, 2010).”
Supplemental Poverty Measure (SPM)

The Supplemental Poverty Measure - 2016
Current Population Reports

INTRODUCTION
Since the publication of the first official U.S. poverty estimates, researchers and policymakers have continued to discuss the need to measure poverty in the United States. Beginning in 2011, the U.S. Census Bureau began using the Supplemental Poverty Measure (SPM) to measure poverty for the entire population. The SPM is a poverty measure that takes into account the value of noncash benefits received by individuals and families. This is a remarkable improvement over previous poverty measures. The SPM was released by the Census Bureau with support from the Bureau of Labor Statistics (BLS). This report provides updated estimates of the poverty rate for the United States using the official measure and the SPM based on income data collected in 2017 and other Current Population Survey Annual Social and Economic Supplements (CPS ASEC).

HIGHLIGHTS
- In 2018, the overall SPM was 13.0 percent. This was 0.6 percentage points below the rate calculated using the 2017 CPS ASEC data (13.6 percent; Figure 2 and Figure 3).
- The SPM data for 2016 were consistent with the SPM data for 2017. The SPM poverty rate for all households was 12.7 percent in 2016 (13.1 percent in 2017).
- The SPM data for 2015 were consistent with the SPM data for 2016. The SPM poverty rate for all households was 13.2 percent in 2015 (12.7 percent in 2016).
- The SPM poverty rate for all households aged 65 or older was 10.3 percent in 2016 (10.6 percent in 2015).
- The SPM poverty rate for all households aged 65 or older was 7.1 percent in 2016 (7.0 percent in 2015).
- The SPM poverty rate for all households aged 65 or older was 11.9 percent in 2016 (11.6 percent in 2015).
2016 SPM Poverty Thresholds for Renters
(Two Adults and Two Children)