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

Liana E. Fox
U.S. Census Bureau

Thesia I. Garner
Bureau of Labor Statistics

May 20, 2019
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><strong>Total Estimation Sample</strong> (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
<table>
<thead>
<tr>
<th>Benefits</th>
<th>30-36&lt;sup&gt;th&lt;/sup&gt; Ptile of FCSU</th>
<th>47-53&lt;sup&gt;rd&lt;/sup&gt; 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>
<thead>
<tr>
<th></th>
<th>CU’s with 2 kids</th>
<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 33rd/2 kids

<table>
<thead>
<tr>
<th></th>
<th>CU’s with 2 kids</th>
<th>CU’s with 1+ kid</th>
<th>All CU’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>30th - 36th Owners with mortgages</td>
<td>$26,336</td>
<td>$25,530</td>
<td>$27,463</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>$22,298</td>
<td>$21,807</td>
<td>$24,441</td>
</tr>
<tr>
<td>Renters</td>
<td>$26,104</td>
<td>$25,412</td>
<td>$27,235</td>
</tr>
<tr>
<td>80% of 47th - 53rd Owners with mortgages</td>
<td>$26,103</td>
<td>$25,111</td>
<td>$27,664</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>$21,859</td>
<td>$21,225</td>
<td>$24,408</td>
</tr>
<tr>
<td>Renters</td>
<td>$25,439</td>
<td>$24,901</td>
<td>$27,542</td>
</tr>
</tbody>
</table>

2016 SPM Rates

- Rates follow same pattern as thresholds

<table>
<thead>
<tr>
<th></th>
<th>CU’s with 2 kids</th>
<th>CU’s with 1+ kid</th>
<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

<table>
<thead>
<tr>
<th></th>
<th>CU’s with 2 kids</th>
<th>CU’s with 1+ kid</th>
<th>All CU’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>30th -36th ptile</td>
<td>-2.11</td>
<td>-1.54*</td>
<td>-1.81</td>
</tr>
<tr>
<td>80% of 47th -53rd ptile</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>33&lt;sup&gt;rd&lt;/sup&gt;/2 kids</th>
<th>50&lt;sup&gt;th&lt;/sup&gt;/All CU’s</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>13.97 (0.25)</td>
<td>15.58 (0.25)</td>
<td>1.61*</td>
</tr>
<tr>
<td>Under 18</td>
<td>15.24 (0.47)</td>
<td>17.24 (0.48)</td>
<td>2.01*</td>
</tr>
<tr>
<td>18 to 64 years</td>
<td>13.35 (0.29)</td>
<td>14.74 (0.28)</td>
<td>1.39*</td>
</tr>
<tr>
<td>65 years and older</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 33\textsuperscript{rd} to some percentage of median.
  • In 2016, 75.5\% of median would match 33\textsuperscript{rd}/2 kids overall SPM rate.
  • In 2011, 77\% of median would match 33\textsuperscript{rd}/2 kids overall SPM rate.
Contact

Liana E. Fox
Social, Economic & Housing Division
U.S. Census Bureau
liana.e.fox@census.gov

Thesia I. Garner
Division of Price and Index Number Research
Bureau of Labor Statistics
Garner.Thesia@bls.gov
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

By Lisa Fye
Issued September 2017

INTRODUCTION

Since the publication of the first official U.S. poverty estimates, researchers and policymakers have continued to debate the appropriate measures to assess poverty in the United States. Beginning in 1965, the U.S. Census Bureau began publishing the official poverty measure used by the federal government for government programs and poverty statistics. In 2011, the Census Bureau began publishing the Supplemental Poverty Measure (SPM), an alternative poverty measure that seeks to better capture the full range of income and non-income resources and liabilities faced by U.S. households and individuals. This measure was developed by the Census Bureau, with support from the Bureau of Labor Statistics (BLS). The report provides additional resources that describe the Supplemental Poverty Measure.

HIGHLIGHTS

1. In 2016, the official poverty rate was 13.5 percent. This was 0.6 percentage point lower than the official rate of 14.1 percent in 2015 (Table 1 and Figure 1).
2. The SPM rate for 2016 was 12.1 percent, which is 0.8 percentage point lower than the official rate. (Table 1, Figure 2).
3. The percentage of individuals aged 65 or older with SPM income below SPM poverty increased from 6.5 percent in 2015 to 8 percent in 2016. (Table 1 and Figure 1).
4. There were 13 states where the Supplemental Poverty Measure (SPM) poverty rate was lower than the official rate in 2016. (Table 6).

Note: For information on methodology, definitions, and comparisons to other poverty measures, see supplemental material available online at www.census.gov/acs/www/notes/p60-261.html.

2016 SPM Poverty Thresholds for Renters
(Two Adults and Two Children)


U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov