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

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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.*

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

How to Determine Poverty Status

Resources

Needs

• 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

• 30\textsuperscript{th}-36\textsuperscript{th} 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 30-36th 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>Source</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&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>
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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 33rd/2 kids

<table>
<thead>
<tr>
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<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</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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><strong>80% of 47th - 53rd</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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>
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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>13.97</td>
<td>13.28</td>
<td>15.37</td>
</tr>
<tr>
<td>80% of 47th -53rd ptile</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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<th>CU’s with 1+ kid</th>
<th>All CU’s</th>
</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>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 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.
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)

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