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

Resources

• All resource unit members have the same poverty status.

Needs

• 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 30-36^{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>Benefit Type</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

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<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\(^{rd}/2\) kids

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30(^{th}) - 36(^{th}) Owners with mortgages</strong></td>
</tr>
<tr>
<td><strong>30(^{th}) - 36(^{th}) Owners without mortgages</strong></td>
</tr>
<tr>
<td><strong>30(^{th}) - 36(^{th}) Renters</strong></td>
</tr>
<tr>
<td><strong>80% of 47(^{th}) - 53(^{rd}) Owners with mortgages</strong></td>
</tr>
<tr>
<td><strong>80% of 47(^{th}) - 53(^{rd}) Owners without mortgages</strong></td>
</tr>
<tr>
<td><strong>80% of 47(^{th}) - 53(^{rd}) Renters</strong></td>
</tr>
</tbody>
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## 2016 SPM Rates

- Rates follow same pattern as thresholds

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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>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>Age Group</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).”
# The Supplemental Poverty Measure - 2016

**Current Population Reports**

By Lisa Pro
Issued September 2017

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### INTRODUCTION

Since the publication, the official U.S. poverty estimates, researchers, and policymakers have contributed to address the measurement of poverty in the United States. Beginning in 2011, the U.S. Census Bureau began to rely on the Supplemental Poverty Measure (SPM), a revised poverty measure, to bring together the various data sets needed to create a comprehensive and accurate account of poverty in the United States. This measure is calculated by the Census Bureau, which utilizes data from the Current Population Survey and the American Community Survey to estimate poverty levels for a given year.

### METHODS

- **SPM Data**: The SPM data for 2016 are based on data from the 2016 American Community Survey (ACS) and the Supplementary Survey (SIPP).

### RESULTS

- **Supplemental Poverty Measure (SPM)**
  - The SPM, developed by the Census Bureau, is a revised poverty measure that includes a more comprehensive set of resources, such as food stamps, housing subsidies, and medical expenses. The SPM is calculated as the ratio of noncash resources to the cost of a poverty threshold.
  - The SPM is calculated as the ratio of noncash resources to the cost of a poverty threshold.

### CONCLUSION

The Supplemental Poverty Measure (SPM) provides a more comprehensive and accurate picture of poverty in the United States by including the value of noncash resources in the poverty threshold.

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

Sources: Geographic adjustments based on housing costs from the American Community Survey 2011-2015.