Poverty Measures for the U.S.

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This paper is released to inform interested parties of ongoing research and to encourage discussion of work in progress. This paper reports the results of research and analysis undertaken by Census Bureau staff. It has undergone more limited review than official publications.
Outline of presentation

- Official poverty measure
  - CPS ASEC
  - Official Thresholds
  - Poverty Statistics
  - Poverty Guidelines/FPL
- Other sources of “official” estimates
  - ACS, SIPP, SAIPE
- Other poverty measures
  - SPM

United States Census Bureau
Official Poverty Measure

• First adopted in 1969
• Continues under OMB Statistical Directive 14
• The 2011 official poverty rate for the nation was 15.0 percent
• Not changed from 2010
• 46.2 million people in poverty
Current Population Survey (CPS)

- Produce monthly employment estimates for the United States and states for selected characteristics and subpopulations.
- With the Annual Social Economic Supplement provide timely estimates of income and health insurance, as well as official poverty estimates, March Supplement.
- Annual sample size is about 100,000 addresses.
- Telephone and personal-visit interviews for the 50 states and the District of Columbia. The CPS is a voluntary survey.
- Includes people at their usual place of residence (where they spend most of the time during the year).

CPS ASEC (Cont’d)

- CPS asks about more than 50 sources of income, including questions about the amount of several noncash benefits such as food stamps and employment-related health insurance, during the previous calendar year.
- Interviews conducted February-April, asks about last calendar year income.
- Unrelated subfamilies are identified and poverty status is determined as a family.
- State-representative sample; state data are published using 3-year average to reduce standard errors.
- Rich historical data
  - For characteristics of U.S. population – since 1959
  - For state level – since 1980
### Poverty Thresholds for 2012 by Size of Family and Number of Related Children Under 18 Years

<table>
<thead>
<tr>
<th>Size of family unit</th>
<th>Related children under 18 years</th>
<th>None</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four</th>
<th>Five</th>
<th>Six</th>
<th>Seven</th>
<th>Eight</th>
</tr>
</thead>
<tbody>
<tr>
<td>One person (unrelated individual)</td>
<td>Under 65 years</td>
<td>11,945</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>65 years and over</td>
<td>11,011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two people</td>
<td>Householder under 65 years</td>
<td>15,374</td>
<td>15,925</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Householder 65 years and over</td>
<td>13,878</td>
<td>15,765</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three people</td>
<td></td>
<td>17,969</td>
<td>18,480</td>
<td>18,498</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Four people</td>
<td></td>
<td>23,681</td>
<td>24,069</td>
<td>23,283</td>
<td>23,364</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Five people</td>
<td></td>
<td>28,558</td>
<td>28,974</td>
<td>28,087</td>
<td>27,400</td>
<td>26,981</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six people</td>
<td></td>
<td>32,847</td>
<td>32,978</td>
<td>32,298</td>
<td>31,647</td>
<td>30,676</td>
<td>30,104</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seven people</td>
<td></td>
<td>37,796</td>
<td>38,031</td>
<td>37,217</td>
<td>36,651</td>
<td>35,594</td>
<td>34,362</td>
<td>33,009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eight people</td>
<td></td>
<td>42,271</td>
<td>42,644</td>
<td>41,876</td>
<td>41,204</td>
<td>40,249</td>
<td>39,038</td>
<td>37,777</td>
<td>37,457</td>
<td></td>
</tr>
<tr>
<td>Nine people or more</td>
<td></td>
<td>50,819</td>
<td>51,095</td>
<td>50,416</td>
<td>49,845</td>
<td>48,908</td>
<td>47,620</td>
<td>46,454</td>
<td>46,165</td>
<td>44,387</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau.

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**Figure 4.**

**Number in Poverty and Poverty Rate: 1959 to 2011**

![Chart showing number in poverty and poverty rate from 1959 to 2011](chart.png)

- **Number in Poverty**: 46.2 million
- **Poverty Rate**: 15.0%

Note: The data points are placed at the midpoints of the respective years.

Figure 5. Poverty Rates by Age: 1959 to 2011

- **65 years and older**: 21.9 percent
- **18 to 64 years**: 13.7 percent
- **Under 18 years**: 8.7 percent

**Note:** The data points are placed at the midpoints of the respective years. Data for people 18 to 64 and 65 and older are not available from 1960 to 1965.

Poverty Guidelines

- The other version of the federal poverty measure
- Issued each year in the Federal Register by the Department of Health and Human Services (HHS).
- A simplification of the poverty thresholds for use for administrative purposes
- Loosely referred to as the “federal poverty level” (FPL)
- The 2013 HHS poverty guidelines only reflect price changes through calendar year 2012; accordingly, they are approximately equal to the Census Bureau poverty thresholds for calendar year 2012.
FPL for 2013

The following figures are the 2013 HHS poverty guidelines which are scheduled to be published in the Federal Register on January 24, 2013. (Additional information will be posted after the guidelines are published.)

2013 POVERTY GUIDELINES FOR THE 48 CONTIGUOUS STATES AND THE DISTRICT OF COLUMBIA

<table>
<thead>
<tr>
<th>Persons in family/household</th>
<th>Poverty guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$11,490</td>
</tr>
<tr>
<td>2</td>
<td>$15,310</td>
</tr>
<tr>
<td>3</td>
<td>$19,330</td>
</tr>
<tr>
<td>4</td>
<td>$23,350</td>
</tr>
<tr>
<td>5</td>
<td>$27,570</td>
</tr>
<tr>
<td>6</td>
<td>$31,590</td>
</tr>
<tr>
<td>7</td>
<td>$35,610</td>
</tr>
<tr>
<td>8</td>
<td>$39,630</td>
</tr>
</tbody>
</table>

For families/households with more than 8 persons, add $4,020 for each additional person.

Administrative Purposes

• Programs using the guidelines (or percentage multiples of the guidelines — for instance, 125 percent or 185 percent of the guidelines) in determining eligibility include
  • Head Start, the Food Stamp Program, the National School Lunch Program, the Low-Income Home Energy Assistance Program, and the Children’s Health Insurance Program.
  • Note that in general, cash public assistance programs (Temporary Assistance for Needy Families and Supplemental Security Income) do NOT use the poverty guidelines in determining eligibility.
  • The Earned Income Tax Credit program also does NOT use the poverty guidelines to determine eligibility
Survey of Income and Program Participation (SIPP)

- A longitudinal survey designed to track changes (income) over time for the same households.
- The SIPP is conducted in 4-month intervals, or waves, using CAI (Computer Assisted Interviews) either in person or via telephone.
- Interviewers return to the same household (not housing unit) and attempt to follow people interviewed in the first wave even if they move.
- Each wave contains the same set of core questions about the last 4 months, or reference period, and a set of topical questions that vary from wave to wave. **Most detail about income.**
- About 65,500 addresses were in the initial sample for the SIPP 2008 Panel.
Figure 10. Median Length of Poverty Spells by Selected Characteristics: 2004–2006

Note: Panel surveys, including the PSID 2004 Panel, give respondents the option of reporting more than one race. These data can be shown in two ways: (1) as mutually exclusive from other race groups, which may be denoted by “alone” or (2) not mutually exclusive with other race groups, denoted by “alone or in combination with other race groups.” This figure shows race using the first method, because inaccuracies may be of any race. Data for Hispanics are not mutually exclusive with race. Female householders have no husband present and male householders have no wife present.


For information on confidentiality protection and sampling and nonsampling error, see http://www.census.gov/sipp/source.html.
American Community Survey (ACS)

• The American Community Survey (ACS), is a nationwide survey that collects essentially the same information on people and housing that was collected on the short and the long-form questionnaires used in Census 2000 and earlier censuses.

• Three modes of data collection methods are used
  – Mail out/mail back
  – Telephone (CATI) (for those with telephone numbers)
  – Personal visit (CAPI) (for those sampled non responding addresses)

• The ACS is a continuous survey,
  – in which each month a sample of about 290,000 housing unit addresses receive a questionnaire.
  – Nearly, 3.5 million addresses are surveyed each year.

ACS (cont’d)

• Reference period is the 12-month period prior to the interview month.

• Includes resident population of the United States and Puerto Rico living in housing units and group quarters

• Current residents at the selected address using the “Two month” rule, whether or not they have ‘usual residence elsewhere’

• Asks about money income using a series of eight questions during the past 12 months
ACS - CPS Comparison

- In general national level estimates from both surveys are consistent and comparable, most of the differences are not statistically significant.
- It is recommended to use the CPS estimates at the national level.
- State level estimates in general are similar and no systematic differences observed.
- For use at state and lower geographic levels ACS estimates are recommended.

Figure 3. Percentage of People in Poverty in the Past 12 Months for the District of Columbia by Census Tract: 2006–2010

Source: U.S. Census Bureau, 2006–2010 American Community Survey. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www.
American Fact Finder

What We Provide

The following data are available on American FactFinder:

- American Community Survey  more »  |  get data »
- American Housing Survey  more »  |  get data »
- Annual Surveys of Governments  more »  |  get data »
- Census of Governments  more »  |  get data »
- Annual Economic Surveys  more »
- Decennial Census  more »  |  get data »
- Economic Census  more »  |  get data »
- Equal Employment Opportunity (EEO) Tabulation  more »  |  get data »
- Population Estimates Program  more »  |  get data »
- Puerto Rico Community Survey  more »  |  get data »
Small Area Income and Poverty Estimates (SAIPE)

- SAIPE poverty estimates for children in families ages 5-17 is a key input for the Dept. of Education’s Title I allocation process.

- SAIPE provides this estimate to Dept. of Education, who combines it with additional information.
Small Area Income and Poverty Estimates (SAIPE)

- Model-based estimates—poverty model uses census and CPS data, IRS individual tax return data, and food stamp data
- State/County data available for these statistics:
  -- Number of people in poverty
  -- Number of people under 5 in poverty (state only)
  -- Number of related children 5-17 in poverty
  -- Number of persons under 18 in poverty
  -- Median household income

Input Variables

- American Community Survey (ACS) 1-year estimates
- ACS 5-year estimates (SD model)
- Federal Tax Information (FTI)
- Supplemental Nutrition Assistance Program (SNAP, formerly Food Stamp) participation records
- Population estimates based on the decennial 2010 counts
- Supplemental Security Income (SSI) participation (state only)
Figure 19. Percentage of School-Age Children in Families in Poverty by School District: 2011

Poverty - Experimental Measures

The U.S. Census Bureau is committed to developing and improving measures of poverty and economic well-being. The Experimental Poverty Measures project aims to develop and evaluate new approaches to measuring poverty, including the Supplemental Poverty Measure (SPM). The SPM is designed to provide a more comprehensive picture of poverty than the official poverty measure. For more information, please visit the U.S. Census Bureau website.
National Academy of Sciences
Panel on Poverty and Family Assistance


The official measure does not account for
• Provision of in-kind benefits
• Necessary expenses (taxes, health care, work)
• Changes in family or household structure
• Higher standards and levels of living since 1965
• Geographic price differences among regions

Recommended Changes to Improve the Measure of Poverty in the U.S.

http://www.census.gov/hhes/povmeas/methodology/nas/report.html

Supplemental Poverty Measure (SPM)

Observations from the Interagency Technical Working Group - March 2, 2010

• Will not replace the official poverty measure
• Will not be used for resource allocation or program eligibility
• Census Bureau and BLS responsible for improving and updating the measure
• Continued research and improvement
• Based on National Academy of Sciences expert panel recommendations


Economic Unit of Analysis

**Official**
- Families or unrelated individuals

**Supplemental**
- All related individuals who live at the same address, any co-resident unrelated children who are cared for by the family (such as foster children), and any co-habitors and their relatives

Method: Cohabiting Partners

- **Cohabiting couple:** Two unrelated individuals who live in the same household, are over the age of 14, and identify each other as a boyfriend, girlfriend, or partner.
- The Current Population Survey (CPS) began collecting data on cohabiting partners of the householder in 1996; and recently expanded collection to any unrelated, unmarried adults in 2007.

  **Official measure**
  - Cohabiting partners are divided into separate units

  **SPM measure**
  - Cohabiting partners are included in the same unit
Method: UIs Under Age 15

- Unrelated individual (UI): A household member who is unrelated to the householder and not the spouse or child (under age 18) of any other household member.
- The CPS does not ask income questions to persons under age 15

<table>
<thead>
<tr>
<th>Official measure</th>
<th>SPM measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>UIs under age 15 are excluded from the poverty universe</td>
<td>UIs under age 15 are included in the householder’s unit</td>
</tr>
</tbody>
</table>

Method: UIs Age 15 to 21

- Under the Fostering Connections to Success and Increasing Adoptions Act of 2008, guardians of foster children are eligible to receive foster payments until the child is age 21.

<table>
<thead>
<tr>
<th>Official measure</th>
<th>SPM measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foster children age 15 or older are single-person units of analysis</td>
<td>Foster children under age 22 are included in the householder’s unit</td>
</tr>
</tbody>
</table>
Method: Related Individuals
Age 18 or Older

- The official definition of a subfamily groups parents, spouses and their children who are under age 18 into a family unit.
- Since 1989, only children under age 18 who were never married and have a parent present in the household have been included in a subfamily.

<table>
<thead>
<tr>
<th>Official measure</th>
<th>SPM measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children 18 years old or older who are unrelated to the primary family are treated as UIs</td>
<td>Children 18 years old or older are included in the same unit as their parent(s)</td>
</tr>
</tbody>
</table>

Method: Unmarried Parents

- In some households, a child lives with both parents but the parents are not married and do not identify as a cohabiting couple.

<table>
<thead>
<tr>
<th>Official measure</th>
<th>SPM measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>A child will only be included in the unit of one parent.</td>
<td>Children and their parents are included in the same unit regardless of the relationship between the parents.</td>
</tr>
</tbody>
</table>
Example of a Household

<table>
<thead>
<tr>
<th>Name</th>
<th>Relationship</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albert</td>
<td>Householder</td>
<td>45</td>
</tr>
<tr>
<td>Bernice</td>
<td>Cohabiting partner of householder</td>
<td>47</td>
</tr>
<tr>
<td>Christopher</td>
<td>Child of householder</td>
<td>13</td>
</tr>
<tr>
<td>Daniel</td>
<td>Child of householder’s cohabiting partner</td>
<td>19</td>
</tr>
<tr>
<td>Elizabeth</td>
<td>Foster child of householder</td>
<td>12</td>
</tr>
<tr>
<td>Frank</td>
<td>Foster child of householder</td>
<td>19</td>
</tr>
</tbody>
</table>
Example of a Household

Official Measure

- Albert
- Christopher
- Daniel
- Frank

SPM

- Albert
- Bernice
- Christopher
- Daniel
- Elizabeth
- Frank

Types of SPM Resource Units before and after new unit formation: 2011

- Married couple
- Male head resp
- Female head resp
- Cohabitors
- Unrelated individual < 15
- Unmarried parent

United States Census Bureau
### Comparing the Official measure and SPM Threshold Concept

#### Official Measure
- Cost of minimum food diet for a two adult/two child family in 1963 times three to cover all other expenses

#### Supplemental Measure
- Expenditures over the most recent 5 years on food, clothing, and shelter (including utilities and all mortgage expenses) (FCSU) from the Consumer Expenditure Surveys
  - Range around 33rd percentile
  - All family units with exactly 2 children (adjusted, when needed, to be equivalent to 2 adult/2 child family unit)
  - Plus 20 percent to cover all other expenses.

### Threshold Adjustments: by shelter type

#### Official
- No adjustments

#### Supplemental
- Adjust by distinguishing differences in shelter expenditures by renters, owners with a mortgage, and owners without a mortgage
NAS Panel acknowledged the differing spending but similar consumption needs of owners and renters.

“An alternative [to a consumption-based measure] would be to develop separate thresholds for owners with low or no housing costs and other owners and renters (Citro and Michael 1995, p. 345).

Results for CE and SPM estimation sample using FCSU distribution.

With the 30th to 36th percentile of FCSU adult equivalent spending, weighted by persons.

One approach to start.

Threshold equations:

\[ SPM_i = (FCSU_{aeq_{all}} - (S + U)_{aeq_{all}} + (S + U)_{aeq_i}) \times 1.2 \times 3^{0.7} \]

- Housing groups:
  - Owners with mortgages
  - Owners without mortgages
  - Renters

- \( all \) is the full reference sample.
Threshold Adjustments: family size and composition

**Official**
- Separately developed thresholds by family type; lower thresholds for elderly singles and couples

**Supplemental**
- Reference family threshold adjusted by use of a three parameter equivalence scale, which assumes children need less than adults and economies of scale for larger families

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**Equivalence Scales**

- Needs of adults and children
- Economies of scale of FCSU within reference units

➤ 3-parameter scale

- Couples with no children: \( (A)^{0.5} = 1.41 \)
- Single parent: \( (A + 0.8 \cdot (1_{\text{first child}}) + 0.5 \cdot (C - 1))^{0.7} \)
- More than 1 adult: \( (A + 0.5 \cdot C)^{0.7} \)
Threshold Adjustments: by geographic area

**Official**
- No adjustments

**Supplemental**
- Adjust for housing cost differences using five years of ACS data on rental costs
- Make adjustments by MSA and non-MSAs in each state
- Continue to research inter-area price indices

Official and SPM Thresholds for 2 Adults and 2 Children Economic Units: 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>Official</th>
<th>Owners with a mortgage</th>
<th>Owners without a mortgage</th>
<th>Renters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplemental Poverty Thresholds</td>
<td>$22,811</td>
<td>$25,703</td>
<td>$21,175</td>
<td>$25,222</td>
</tr>
</tbody>
</table>

Supplemental Poverty Thresholds
Official and Research SPM Thresholds for Two Adult, Two Child Units with Geographic Adjustments: 2011

SPM thresholds for renters in California: 2011

Official Threshold

22,811

25,222

32,057

17,718

35,151

United States
Census Bureau

7/8/2013
Family Resource Definition

**Official**
- Gross (before-tax) money income from all sources

**Supplemental**
- Gross (before-tax) money income from all sources
- PLUS value of near-money federal in-kind benefits for FCSU (e.g., SNAP, housing subsidies) and tax credits (EITC).
- MINUS income and payroll taxes and other nondiscretionary expenses
  - child care, work-related expenses;
  - child support payments;
  - out-of-pocket medical care expenses, including health insurance premiums)

Nondiscretionary Expenses

**Payroll and state and federal income taxes**
- Use current methods, incorporate CPS ASEC questions

**Child care and other work related expenses**
- Use data from CPS ASEC questions on child care expenses paid
- SIPP for other work expenses

**Medical Out of Pocket Expenditures (MOOP)**
- Use data from CPS ASEC questions
- investigate the pros and cons of making an adjustment for the uninsured

**Child Support Paid**
- Use data from CPS ASEC questions to subtract child support paid from income
Figure 1: Poverty rates using two measures for total population and by age group: 2011

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Official**</th>
<th>SPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>All People</td>
<td>15.1</td>
<td>18.1</td>
</tr>
<tr>
<td>Under 18 years</td>
<td>22.3</td>
<td>18.1</td>
</tr>
<tr>
<td>18 to 64 years</td>
<td>13.7</td>
<td>15.5</td>
</tr>
<tr>
<td>65 years and older</td>
<td>8.7</td>
<td>15.1</td>
</tr>
</tbody>
</table>

**Includes unrelated individuals under age 15.

Poverty rates by race and ethnicity: 2011

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Official**</th>
<th>SPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>White non-Hispanic</td>
<td>9.9</td>
<td>11.0</td>
</tr>
<tr>
<td>Black alone</td>
<td>27.8</td>
<td>25.7</td>
</tr>
<tr>
<td>Asian alone</td>
<td>12.3</td>
<td>16.9</td>
</tr>
<tr>
<td>Hispanic</td>
<td>25.4</td>
<td>28.0</td>
</tr>
</tbody>
</table>

**Includes unrelated individuals under age 15.
Difference in SPM rate after including each element

Difference in SPM rate after including each element

Difference in SPM rates after including each element

Percentage point difference

Percentage point difference

United States Census Bureau
Poverty Rates 2011

- For most groups, SPM rates are higher than official poverty rates
- The SPM shows lower poverty rates for
  - Children
  - Individuals included in new SPM resource units
  - Blacks
  - Individuals living outside metropolitan areas
  - Individuals living in the Midwest
  - Individuals covered by only public health insurance
  - Those with a disability
- Official and SPM poverty rates for people in female householder units, the native born, renters, and those living in the South are not statistically different

Figure 4: Distribution of people by income-to-threshold ratios: 2011

** Includes unrelated individuals under age 15.
**Distribution of *children* by ratio of income to poverty threshold: 2011**

- 4.0 or more: 26.3%
- 2.0 to 3.99: 29.1%
- 1.0 to 1.99: 22.3%
- 0.5 to 1.0: 12%
- less than .5: 10.3%
- Official**: 100%
- SPM**: 11.4%

**Includes unrelated individuals under age 15.**

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**Distribution of *people over age 64* by ratio of income to poverty thresholds: 2011**

- 4.0 or more: 32.2%
- 2.0 to 3.99: 34.2%
- 1.0 to 1.99: 24.9%
- 0.5 to 1.0: 6.5%
- less than .5: 2.3%
- Official**: 100%
- SPM**: 18.9%

**Includes unrelated individuals under age 15.**
State level estimates

- Use the ACS or …
- Three year averages from CPS
- SPM estimates for 2009-2011 available
- Compare OPM to SPM for states
  - 14 states higher with SPM
  - 26 states lower
  - 10 not statistically different
- California higher 7.3 percentage points – from OPM 16.3 % to SPM 23.5 %
Ongoing improvements

Suggested by ITWG
1. Geographic adjustments
2. Medical out-of-pocket expenses for uninsured
3. Work-related expenses
4. In-kind benefits in the SPM thresholds
5. Housing tenure adjustments

Other work at the Census Bureau
- Taxes
- Investigate under-reporting of benefits and sources of cash income
- Estimate SPM in other data sets such as ACS and SIPP

Contact:
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