Disclaimer

This paper reports the results of research and analysis undertaken by researchers within the Bureau of Labor Statistics (BLS) and Census Bureau.

Any views expressed are those of the authors and not necessarily those of the BLS or Census Bureau.
Supplemental Poverty Measure (SPM) Joint BLS-Census “Research” Project

Bureau of Labor Statistics (Garner & Gudrais)
- Thresholds
- Research only
- No funding

Bureau of the Census (Short)
- Resources & Poverty rates
- Publication quality
- Funded FY15
Outline

1. Supplemental Poverty Measure (SPM)
2. Problem in current method
3. Impact on thresholds and poverty rates
4. Imputation of in-kind benefits
5. Discussion and conclusions
### Poverty Measures: Official and Supplemental

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What resources do people have to meet their needs?

What we count as available resources differs between the two poverty measures.

The official measure uses cash income, such as wages and salaries, Social Security benefits, interest, dividends, pension or other retirement income.

The SPM starts with cash income, then...

**ADDING BENEFITS**

The SPM adds benefits from the government that are not cash but help families meet their basic needs.

**SUBTRACTING EXPENSES**

The SPM subtracts necessary expenses like taxes, health care, commuting costs for all workers, and child care expenses while parents work.

http://www.census.gov/how/infographics/poverty_measure-how.html
ITWG Guidelines for SPM Thresholds

ITWG stated …

“so far as possible with available data, the calculation of FCSU should include any in-kind benefits that are counted on the resource side for food, shelter, clothing and utilities. This is necessary for consistency of the threshold and resource definitions.” (March 2010)

\[
FCSU = \text{sum (food, clothing, shelter, utilities) at micro-level}
\]

SPM Threshold = FCSU + little bit more

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<td>Low-Income Home Energy Assistance (LIHEAP)</td>
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Underlying Assumption

- Resources to meet “needs”
- Thresholds represent “needs”

“Needs” defined as:
- Food
- Clothing
- Shelter
- Utilities
- + “a little bit more” for personal care, non-work related transportation, etc.

- For resources: cash + value of in-kind benefits for what in thresholds
- For thresholds: spending + value of in-kind benefits

Therefore: Thresholds are not arbitrary but have specific meaning
Problem: Thresholds and Resources Inconsistently Defined

**Thresholds**

- Expenditures for FCSU (including SNAP)

**Resources: Official**

- Cash income
Problem: Thresholds and Resources Consistently Defined

Thresholds

Expenditures for FCSU (including SNAP)

Resources

With SNAP In-Kind Benefits

Cash income
Problem: Thresholds and Resources Inconsistently Defined Thus Far

Thresholds

Expenditures for FCSU (including SNAP)

Resources

Housing & Energy Subsidies

Other Food Subsidies

With SNAP In-Kind Benefits

Cash income
Problem: Thresholds and Resources Consistently Defined

Thresholds

- Housing & Energy Subsidies
- Other Food Subsidies

Resources

- Housing & Energy Subsidies
- Other Food Subsidies
  - With SNAP
    - In-Kind Benefits
    - Cash income

Expenditures for FCSU (including SNAP)
Challenge: Data in the U.S. Consumer Expenditure Interview Survey

- Limited data on Rental Assistance Programs
  - Indicator variables for rented living quarters
    - Is this house a public housing project, that is, it is owned by a local housing authority or other local public agency? (CE variable: pub_hous)
    - Are your housing costs lower because the Federal, State, or local government is paying part of the cost? (CE variable: govtcost)
  - Total rent payments for each of last 3 months (do not include direct payments by local, state, or federal agencies)
  - Expenditures for utilities

- No data on programs but data on potential participants
  - National School Lunch Program (NSLP)
  - Supplemental Nutrition Program for Women, Infants, and Children (WIC)
  - Low income Home Energy Assistance (LIHEAP)
The President’s 2016 Budget and SPM

- Proposes funds for BLS to produce spending measures that would help the U.S. Census Bureau measure poverty more accurately

- If Congress funds this proposal, it would allow BLS to:
  - Release consumer spending data more quickly to help the Census Bureau produce alternative poverty measures each year.
  - Add questions to the Consumer Expenditure Survey on topics such as school breakfasts and lunches and help paying for home heating and other household expenses.
  - Continue research to improve how federal agencies measure poverty.

- Without the funding, our ability to be a full participant in development and maintenance of the supplemental poverty measure is not possible.

President’s 2016 budget would fund data on export prices and poverty measures
March 13, 2015BLS Commissioner

What Approach to Assign In-Kind Benefits to CUs in Consumer Expenditure Survey?

**Criteria Assignment**
- Use eligibility criteria and CU characteristics data to impute eligibility
  - Garner 2010
- Imputed eligibility + participation adjustments
  - Garner, Gudrais, and Short, 2015

**Regression Model Assignment**
- Use participation from another survey plus CU characteristics to impute participation to CUs in CE
  - Garner and Hokayem 2012 with CPS

Use administrative data for benefits levels
IMPACT ON THRESHOLDS AND POVERTY RATES
SPM Thresholds for 2 Adults with 2 Children without and with Imputed In-Kind Benefits: 2012

Without imputed in-kind:
- Owners with mortgages: $25,784
- Renters: $25,105
- Owners without mortgages: $21,400

With imputed in-kind:
- Owners with mortgages: $26,812
- Renters: $26,276
- Owners without mortgages: $21,892
Poverty Rates by Age Group Using SPM Thresholds without and with Imputed In-Kind Benefits: 2012

ALL PEOPLE IN U.S. | WITH imputed in-kind
---|---
16.0% | 15.8%

UNDER 18 YEARS | WITHOUT imputed in-kind
---|---
18.0% | 15.5%

18 TO 64 YEARS | WITH imputed in-kind
---|---
19.3% | 16.4%

OVER 64 YEARS | WITHOUT imputed in-kind
---|---
16.4% | 14.8%

METHODS

FOCUS ON THRESHOLDS
Data for 2012 Thresholds, Resources and Poverty Rates

Thresholds
- U.S. Consumer Expenditure Interview Survey (CE)
- Five years: 2008Q2-2013Q1
- Quarterly data assumed to be independent
- Benefits inputed for each quarter for full CE sample
- FCSU expenditures including in-kind in 2012 dollars
- Produce 2+2 thresholds

Resources
- 2013 March refers to 2012
- Cash and in-kind
In-Kind Benefits Assigned in the CE to All Consumer Units

- CE Assigned
  - Eligibility
  - Participation
  - Benefits

- Comparisons to
  - Administrative data
  - Current Population ASEC
    - Reported participation
    - Imputed benefits
Reported Participation: Housing

Sample: Renters living in public housing or receiving government assistance with housing costs

Reported Rent Paid (+fuel and water utilities) < HUD Fair Market Rent?

Yes

No
Reported Participation: Renters

Renters living in public housing or receiving government assistance with housing costs

Reported Rent Paid (+fuel and water utilities) < HUD Fair Market Rent?

Yes

New Rent = Fair Market Rent

Receive Rental Subsidy

No

New Rent = Reported Rent

No Rental Subsidy

Results Using 5 Years of CE Data for Annual 2012 Estimates:
122 million consumer units in CE, of these
4.95% reported living in public housing or receiving government assistance with housing costs
Rental Subsidies: 2012

Aggregate Rental Subsidies in Billions $

- HUD+USDA 2012: $43.3
- CE 5-yr for 2012: $35.1
- CPS 2012 no cap: $40.4
- CPS 2012 cap: $26.3

Subsidized Rental Units as Percent of All Occupied Housing Units: Subsidy>$0

- 4.30% (HUD+USDA 2012)
- 4.20% (CE 5-yr for 2012)
- 4.00% (CPS 2012 no cap)
- 3.70% (CPS 2012 cap)

Survey results based on weighted data.
NOTE: CPS no cap values reflect no ratio adjustment for living in public housing while CPS cap values do.
Average Annual Rental Subsidy Benefits: 2012

Per CU with Benefit > 0
- CE 5-yr for 2012: $6,926
- CPS 2012 no cap: $7,875

Survey results based on weighted data.
NOTE: CPS no cap values reflect no ratio adjustment for living in public housing while CPS cap values do.
Assumptions for NSLP, WI C, and LI HEAP

- Demographically Eligible
  - Income Eligible
  - Categorically Eligible
  - Participants
Eligibility: NSLP

- CUs with children aged 5-18

  - Paid tuition for elementary or high school?

    - No = Public School or Free Private
    - Yes = Paid Private School
Eligibility: NSLP

- **CU with children aged 5-18**
- **Paid tuition for elementary or high school?**
  - **No** = Public School or Free Private
  - **Yes** = Paid Private School

  - **Income Eligible:** CU income $\leq$ poverty guideline
    - Reduced Lunch Eligible
  - **Categorically Eligible:** SNAP or Welfare Income
    - Free Lunch Eligible
    - Full Paid Lunch Eligible

  - **No NSLP Subsidy**
Eligibility: NSLP

CUs with children aged 5-18

Paid tuition for elementary or high school?

No = Public School or Free Private

Income Eligible: CU income \leq poverty guideline

Reduced Lunch Eligible

Full Paid Lunch Eligible

Paid for School Meal?

No

Yes

Paid for School Meal?

No

Yes
Eligibility: NSLP

CU with children aged 5-18

Paid tuition for elementary or high school?

No = Public School or Free Private

Yes = Paid Private School

Income Eligible: CU income <= poverty guideline

Categorically Eligible; SNAP or Welfare Income

Reduced Lunch Eligible

Full Paid Lunch Eligible

Paid for School Meal?

No

Yes

No NSLP Subsidy

Results for Annual 2012 Estimates

56 million students in CUs, of these:
31.4% eligible for free
10.3% eligible for reduced
58.3% full paid
Assign NSLP Participation: 2012

- Impute CE participation starting with CE derived eligibility
- Apply participation rates based on USDA Food and Nutrition Service administrative data
  - Participation rate for each meal category = average daily meals served divided by number of students certified/approved in the category
  - Example for FY 2010: of those approved for
    - Free: 81.9% participate
    - Reduced: 73.1% participate
    - Paid full: 43.7% participate
Distribution of NSLP Student Participation: 2012

USDA Reported
- Paid, 30.5%
- Reduced, 8.4%
- Free, 61.1%

CE 5-yr for 2012
- Paid, 27.3%
- Reduced, 4.6%
- Free, 68.0%
Assign NSLP Benefits: 2012

- Follow Census Bureau approach to assign NSLP benefit to individuals in Cus

- Use “lower 48 states” average per meal values reported by USDA for schools in which less than 60% of lunches were served during the preceding year were free or reduced price, plus commodity program values

- Assume students attend school 9 months (167 days)
NSLP Aggregate Benefits: 2012

in Billions $

- CE 5-yr for 2012: $8.0
- USDA 9 months in 2012: $10.8
- CPS 2012: $10.7
### Percentage of CUs Receiving NSLP Benefits and Average Annual Subsidy: 2012

#### Percent of all CUs: Benefits>0

- **CE 5-yr for 2012:** 14.3%
- **CPS 2012:** 17.5%

#### Annual Average Benefit per CU with Benefits>0

- **CPS 2012:** $\$476.00$
- **CE 5-yr for 2012:** $\$460$
Eligibility: WIC

CUs with women aged 15-45 with infants, infants, & children aged 1-4

Yes = In Eligible Population

No = Not in Eligible Population
Eligibility: WIC

CUs with women aged 15-45 with infants, infants, & children aged 1-4

Yes = In Eligible Population

Income Eligible: CU income<=poverty guideline

Categorically Eligible; SNAP, Welfare Income, or Medicaid

No = Not in Eligible Population

Women with infants

Infants

Children

Results for Annual 2012 Estimates

12 million moms, infants, and children, of these:
14.8% infants eligible
73.4% children aged 1 to 4 years eligible
11.9% women eligible
Assign WIC Participation: 2012

- Impute CE participation starting with CE derived eligibility
- For CE, apply published coverage rates to eligible children and women
  - Coverage rate = number of individuals participating divided by number eligible for women, infants, and children by geographic area
  - Eligibility estimated by researchers using CPS data (FNS by Urban Institute: Betson et al. 2011 for 2009 and Johnson et al. 2015 for 2010-2012)
  - Number of participants in WIC from FNS administrative data
Distribution of WIC Individual Participation: 2012

**USDA Reported**
- Women, 23.5%
- Infant, 23.2%
- Children, 53.2%

**CPS Reported**
- Women, 22.2%
- Infant, 19.8%
- Children, 57.9%

**CE 5-yr for 2012**
- Women, 11.3%
- Infant, 21.8%
- Children, 66.9%
Assign WIC Benefits: 2012

- Follow Census Bureau approach to assign WIC benefit to individuals in Cus
- Use national monthly per person reported by USDA to derive annual estimates
- Assume all children receive benefits for year
- Assume all but “pregnant” moms receive benefits for year; preg. 9 months
WIC Aggregates: 2012

In Billions $
Percentage of CUs Receiving WIC Benefits and Average Annual Subsidy: 2012

**Percent of all CUs: Benefits>0**

- CE 5-yr for 2012: 6.4%
- CPS 2012: 2.8%

**Annual Average Benefit per CU with Benefits>0**

- CE 5-yr for 2012: $465
- CPS 2012: $861.00
Eligibility: LI HEAP

CUs with heating expenses in winter and cooling expense in summer

Yes = In Eligible Population

No = Not in Eligible Population
Eligibility: LI HEAP

CUs with heating expenses in winter and cooling expense in summer

Yes = In Eligible Population

No = Not in Eligible Population

Income Eligible: CU income <= poverty guideline or state guidelines

Categorically Eligible: SNAP, Welfare Income, or SSI

Heating

Cooling

Results for Annual 2012 Estimates

122 million Consumer Units, of these:
29.9% eligible (no duplicates)
(27% income eligible; 12% program eligible)

compared to 26%-38% Income Eligibility using HHS derived eligibles and data from CPS data for 2010
Assign LIHEAP Participation: 2012

- Derive conditional participation rates (for all who are eligible) from HHS administrative data and CPS household data
  - Income eligibility estimated by HHS contractor using CPS data (LIHEAP Report to Congress for Fiscal Year 2010)
  - Participation rate for heating assistance by state = number of households receiving assistance from HHS administrative data divided by estimated number income eligible households based on CPS data
  - Participation rate for cooling assistance by state = number of households receiving assistance from HHS administrative data divided by estimated number income eligible households based on CPS data

- Apply HHS conditional participation rates to CE eligibles
  - Unable to identify exactly which CUs participate so assign conditional probability to each LIHEAP eligible CU by state
  - Results in lower average LIHEAP benefit for larger percentage of CUs
Assign LIHEAP Benefits: 2012

- Follow HHS and State guidelines for applying average state LIHEAP benefits (based on 2009 reports)

- Assume cooling assistance benefit if CU referenced April-September

- Assume heating assistance benefit if CU referenced October-March

- Weighted average when overlap months in survey
Aggregate LI HEAP Benefits: 2012

In Billions $

$3.2

$1.7

$1.6

HHS 2010
CE 5-yr for 2012
CPS 20122
Percentage of Households/ CUs Participating in LI HEAP and Average Annual LI HEAP Subsidy: 2012

Participation of eligible households/CUs

- HHS 2010: 3.6%
- CE 5-yr for 2012 sum of rates: 3.5%
- CPS 2012: 3.3%

Annual Average Benefit per Unit

- HHS 2010: $342
- CPS 2012: $383
- CE 5-yr average: $395

HHS: simple average heating and cooling
IMPLICATIONS FOR SPM POVERTY
2012 SPM Thresholds that Account for In-Kind Benefits are Higher: Differences in SPM Thresholds with and without In-Kind Benefits

- Renters: $1,171*
- Owners with Mortgages: $1,028*
- Owners without Mortgages: $493

* Statistically significant from zero
Greater Population Poverty in 2012 when Consistently Defined SPM Thresholds and Resources

All People: 3,098,000

- Under 18 years: 942,000
- 18 to 64 years: 1,729,000
- 65 years and older: 428,000

Renters: 1,628,000

Owners with mortgage: 1,013,000

Owners without mortgage: 457,000

All are statistically significant differences in poverty populations. SPM poverty values for owners without mortgages also include consumer units living in rent free housing units.
SPM vs. SPM-IK vs. SPM with Unsubsidized CUs
Only Thresholds for 2 Adults + 2 Children: 2012

Owners with Mortgages
- SPM no Subsidized Cus: $29,555
- SPM-IK: $26,812
- SPM: $25,784

Renters
- SPM no Subsidized Cus: $29,212
- SPM-IK: $26,276
- SPM: $25,105

 Owners without Mortgages
- SPM no Subsidized Cus: $23,945
- SPM-IK: $21,892
- SPM: $21,400
Conclusion

- Valuing in-kind benefits to be included in thresholds estimation critically important for consistency with resources.

- Challenges associated with getting data from administrative sources and integrating with survey data.

- Improved imputation needed for LIHEAP benefits.

- Funding from Congress to improved CE for SPM threshold production.
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