Supplemental Poverty Measure Thresholds and Noncash Benefits

Thesia I. Garner (presenter)
(co-authored with Marisa Gudrais)

April 26, 2016
Revised May 11, 2016

The Supplemental Poverty Measure Workshop
Brookings Institution
Washington, DC

BLS

Disclaimer

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

Any views expressed are those of the authors and not necessarily those of the BLS.

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 = sum (food, clothing, shelter, utilities) at micro-level

SPM Threshold = FCSU + little bit more
Supplemental Nutrition Assistance Program (SNAP)
Housing Subsidies
National School Lunch Program (NSLP)
Supplemental Nutrition Program for Women, Infants, and Children (WIC)
Low-Income Home Energy Assistance (LIHEAP)

This Research

- **Purpose**
  - To produce SPM thresholds, testing different approaches, that include the value of in-kind benefits

- **Contribution**
  - Improved SPM that is *consistently defined in terms of thresholds and resources*
  - Improved SPM thresholds that reflect values of commodities and services "purchased by/made available to" consumer units with resources

❖ *NOTE: Thus far, SPM thresholds used by the Census Bureau for the regular publication of SPM poverty statistics DO NOT account for in-kind transfers or noncash benefits.*
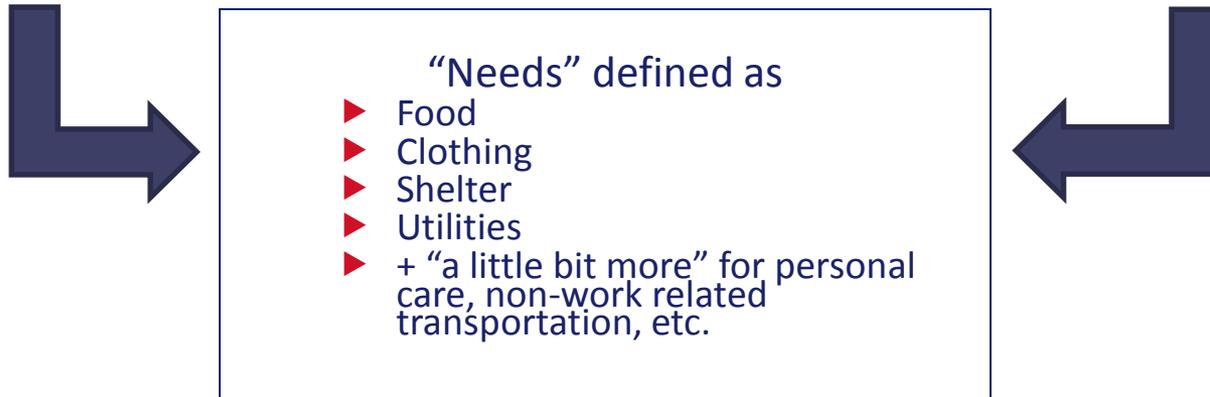
Outline of Presentation

- Underlying assumption

- Challenges with CE data

- What needed

- Imputation of in-kind benefits

- Results

  - Aggregates

  - Participation

  - Annual average benefits

  - 2012 SPM Thresholds without and with benefits

- Recommendations
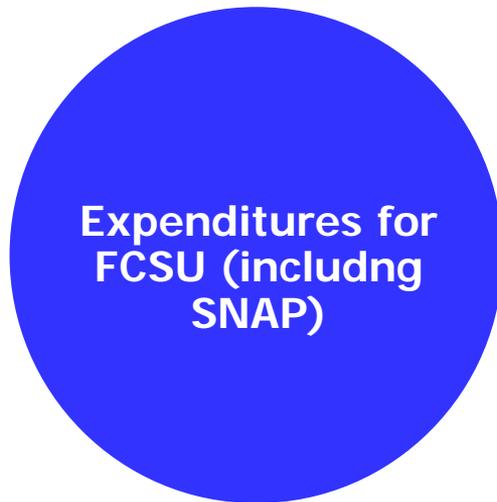
Underlying Assumption

■ **Resources to meet "needs"**

■ **Thresholds represent "needs"**

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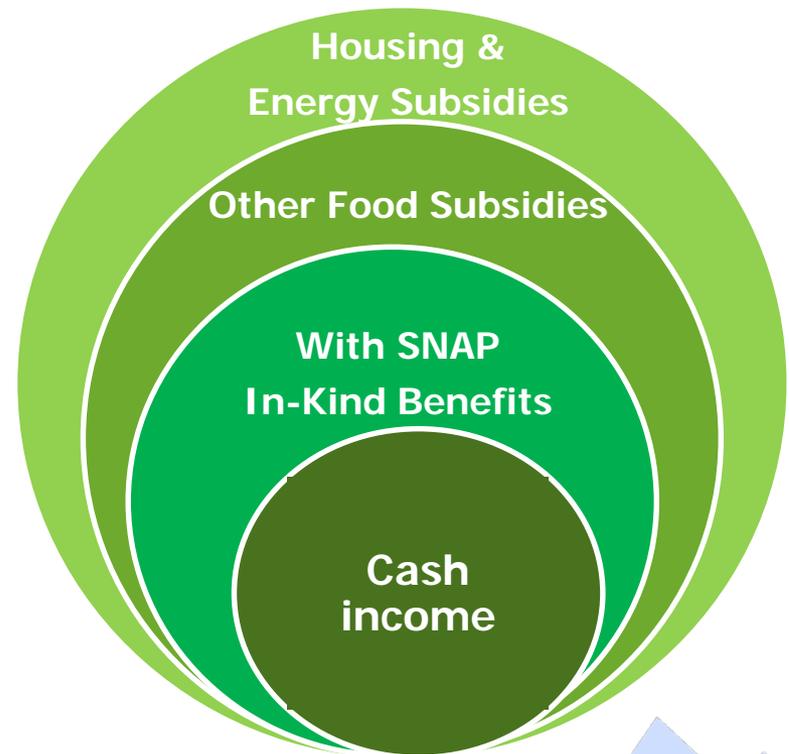▶ + "a little bit more" for personal care, non-work related transportation, etc.

■ For resources: cash + value of in-kind benefits for FCSU

■ For thresholds: out-of-pocket FCSU expenditures + value of FCSU in-kind benefits
  ▶ =Value of need *(what is "purchased" based on resources available)*

BLS

Problem: Thresholds and Resources Inconsistently Defined

Thresholds

Expenditures for FCSU (includng SNAP)

Resources: Official

Housing & Energy Subsidies

Other Food Subsidies

With SNAP In-Kind Benefits

Cash income

BLS

Solution: Thresholds and Resources Consistently Defined

Thresholds

Resources

Expenditures for FCSU (includng SNAP)

With SNAP In-Kind Benefits

Cash income
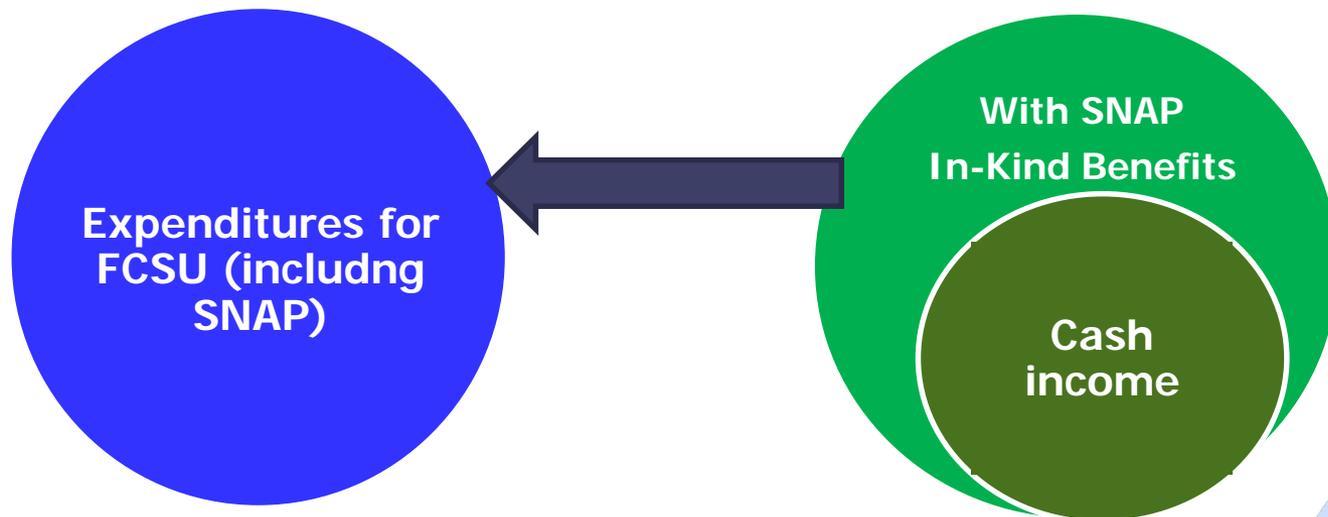
Problem: Thresholds and Resources Inconsistently Defined

Currently published SPM

Thresholds

Resources

Expenditures for FCSU (includng SNAP)

Housing & Energy Subsidies

Other Food Subsidies

With SNAP In-Kind Benefits

Cash income

BLS
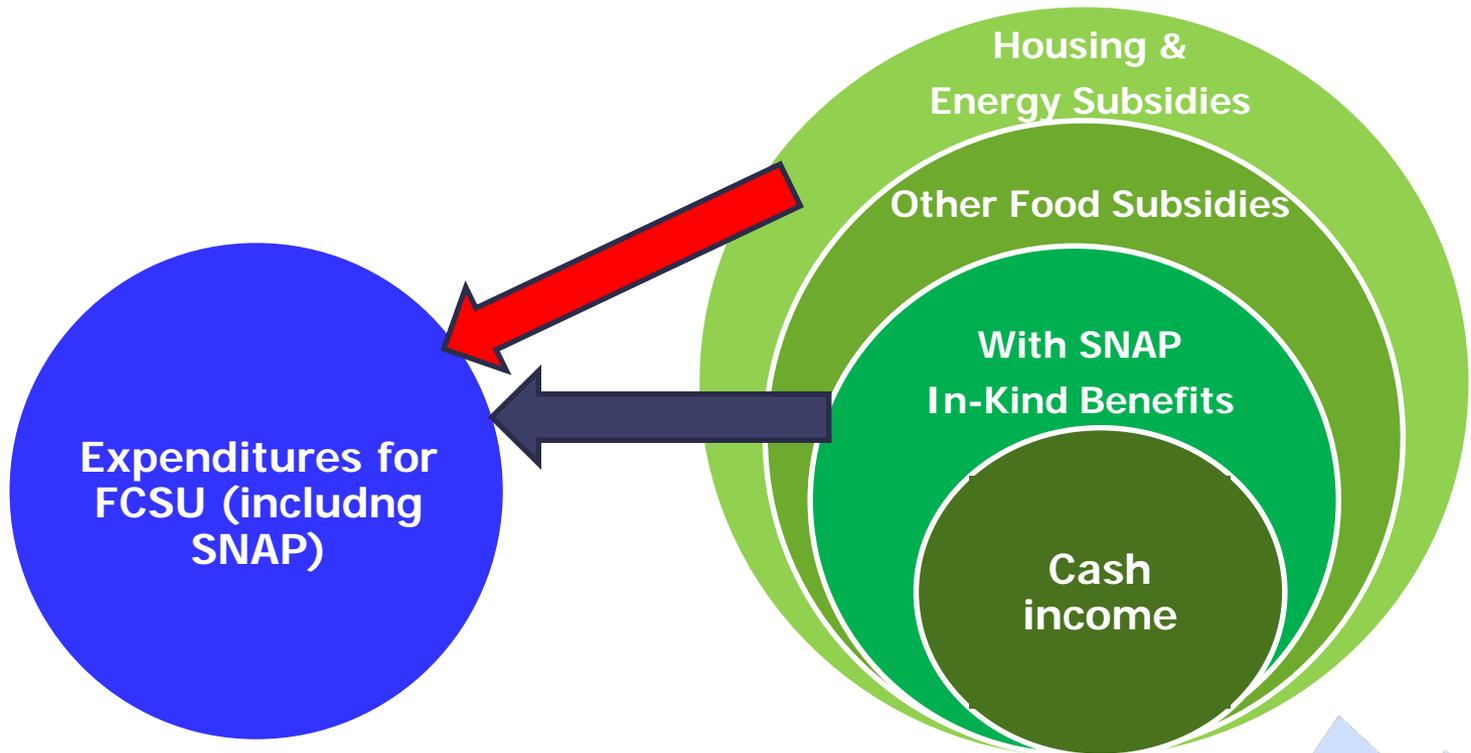
Problem: Thresholds and Resources Consistently Defined

Proposed

Thresholds

Resources

Thresholds circle (blue):
- Housing & Energy Subsidies
- Other Food Subsidies
- Expenditures for FCSU (includng SNAP)

Resources circle (green):
- Housing & Energy Subsidies
- Other Food Subsidies
- With SNAP In-Kind Benefits
- Cash income

BLS
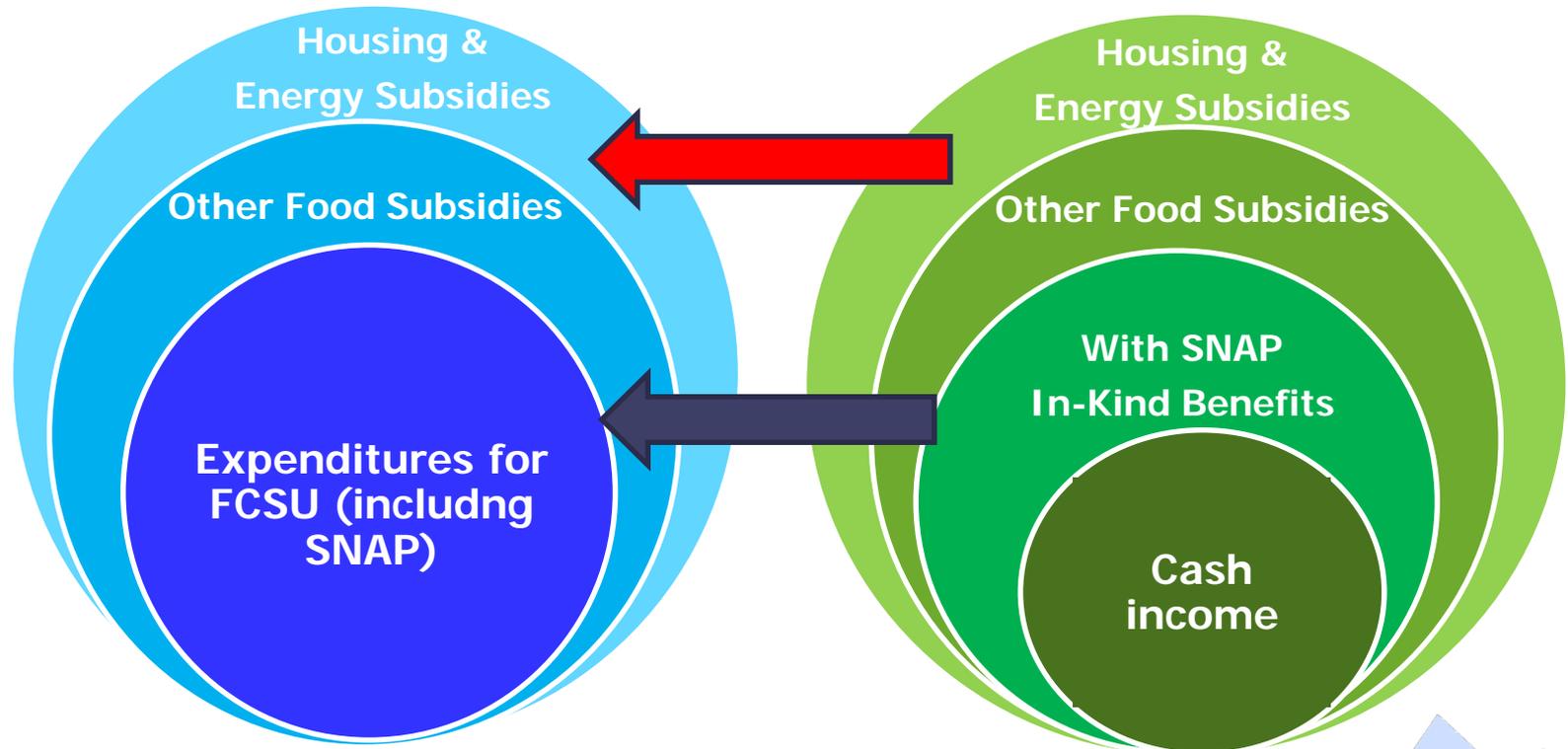
Challenge: Data in the U.S. Consumer Expenditure Interview Survey

- **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)

- **SNAP implicitly included in reported food expenditures**

Expenditures, In-Kind Benefits, and Resources

Benefit	Form of Benefit	Value of Commodity or Service in CE Reported Expenditures?	Commodity or Service Value in Thresholds	In Resources
SNAP	EBT cash-value to CU	yes, as food expenditures= full value	OOP	cash value
Housing Subsidies	Landlord accepts voucher or CU lives in public housing	< full value	OOP+imputed benefit	imputed benefit
NSLP	Direct payment to school	< full value	OOP+imputed benefit	imputed benefit
WIC	Voucher paper or EBT for commodities to CU	< full value	OOP+imputed benefit	imputed benefit
LIHEAP	Direct payment to vendor	< full value	OOP+imputed benefit	imputed benefit

BLS

Threshold Estimation/Reference

- Add in-kind benefits to FCSU at CU level for 2 children, "*FCSU+*"
  - ▶ NSLP
  - ▶ WIC
  - ▶ LIHEAP
  - ▶ Rental subsidies
  - ▶ *Note: food stamp benefits implicitly already in food expenditures*

- Apply 3-parameter equivalence scale to convert to 2 adults with 2 children

- Convert all quarterly expenditures to annual $2012

- Rank *FCSU+* to identify 33rd percentile represented by 30th to 36th percentile range

- Produce means of *FCSU+* and *SU* by housing status

Housing Status Thresholds

- Housing Status Groups, j
  - ▶ Owners with mortgages
  - ▶ Owners without mortgages
  - ▶ Renters

- *SPM Threshold$_j$*

$$= (1.2 * FCSU^+{}_A) - SU_A + SU_j$$

$FCSU^+{}_A$, SU_A , SU_j are means within 30th to 36th percentile range of $FCSU^+{}_A$ for reference CUs

Imputation Approaches

- **CE Based**
  - ► Program eligibility + published stats on program participation
  - ► HUD Fair Market Rents (FMR)

- **CPS Probability**
  - ► ASEC public use data to impute probability of program participation
  - ► HUD Fair Market Rents (FMR)

- **CPS Binary**
  - ► ASEC public use data to impute 0,1 program participation
  - ► HUD Fair Market Rents (FMR)

- **CPS Binary + CE imputed rents**
  - ► ASEC public use data to impute 0, 1 program participation
  - ► Imputed rents using internal CE data: 2-stage rent model

➢ Regression-based program participation, except CE based

➢ Benefit values assigned to participants based on administrative data excluding CE-based imputed rents

Imputation Approaches

- **CE Based**
  - ▶ Program eligibility + published stats on program participation
  - ▶ HUD Fair Market Rents (FMR)

- **CPS Probability**
  - ▶ ASEC public use data to impute probability of program participation
  - ▶ HUD Fair Market Rents (FMR)

- **CPS Binary**
  - ▶ ASEC public use data to impute 0,1 program participation
  - ▶ HUD Fair Market Rents (FMR)

- **CPS Binary + CE imputed rents**
  - ▶ ASEC public use data to impute program participation
  - ▶ Imputed rents using internal CE data: 2-stage rent model

First time persented

- ➢ Regression-based program participation, except CE based
- ➢ Benefit values assigned to participants based on administrative data excluding CE imputed rents

Imputations: Survey Data

- U.S. Consumer Expenditure Survey Interview
  - Consumer unit (CU) level data
  - CU and member characteristics
  - Quarterly data collected 2008Q2 – 2013Q1
  - Rents for unsubsidized, non-rent controlled units + rental unit characterisics

- U.S. Current Population Survey Annual Social and Economic Supplement (CPS ASEC) public use data accessed from NBER
  - Household level data
  - Household and member characteristics
  - Same years as in CE: collected 2009-2013 refers to 2008-2012
  - NSLP, WIC, and LIHEAP reported program participation

Imputations: Benefits Data

- NSLP: U.S. Department of Agriculture for 2008-2012
  - ▶ Average per school lunch payment rates
    - – Over 48 contiguous states
    - – Rates for schools in which less than 60% of lunches served were free or reduced priced
  - ▶ Different values
    - – Free
    - – Reduced
    - – Student paid full price for lunch (but also subsidized by USDA)
- WIC: U.S. Department of Agriculture for 2008-2012
  - ▶ Average national monthly values per person
- LIHEAP: U.S. Department of Health and Human Services for 2009
  - ▶ Average annual benefit levels per household per state adjusted by CPI
  - ▶ Benefits
    - – Heating
    - – Cooling (not all states offer this benefit)
- Subsidized rents (including utilities): U.S. Department of Housing and Urban Development 2008-2012 Fair Market Rents (FMRs)
  - ▶ Matched to CE by Census tract and number of bedrooms

CE-Imputed In-Kind Benefits Compared to Other Data: Aggregates

Data Source	NSLP	WIC	LIHEAP	Rent Subsidies
CE data to support 2012 SPM Thresholds				
CE Based	$ 8.0	$3.6	$1.4	$35.1
CPS Probabilities	$10.2	$7.1	$1.0	$35.1
CPS Binary+FMR	$10.2	$3.4	$1.0	$35.1
CPS Binary+CE Imputed Rent	$10.2	$3.4	$1.0	$47.0
CPS 2012	$10.7	$3.1	$1.6	$40.4
USDA FY2012		$4.8		
USDA FY2013	$10.8	$4.5		
USDA 9 months 2012				
HUD+USDA 2012				$43.3
HHS 2010 in 2012$				
Heating			$2.9	
Cooling			$0.3	

CE-Imputed In-Kind Benefits Compared to Other Data: CU/HH Participation

Data Source	NSLP	WIC	LIHEAP	Rent Subsidies
CE data to support 2012 SPM Thresholds				
CE Based	14.3%	6.4%	20.4%	4.2%
CPS Probabilities	27.6%	44.6%	79.2%	4.2%
CPS Binary+FMR	19.0%	2.8%	2.2%	4.2%
CPS Binary+CE Imputed Rent	19.0%	2.8%	2.2%	4.5%
CPS 2012	17.5%	2.8%	3.3%	4.0%
HHS 2010 in 2012$				
Heating			6.3%	
Cooling			0.8%	

CE-Imputed In-Kind Benefits Compared to Other Data: Annual Average Benefit per CU/HH

Data Source	NSLP	WIC	LIHEAP	Rent Subsidies
CE data to support 2012 SPM Thresholds				
CE Based	$460	$465	$54	$6,926
CPS Probabilities	$303	$130	$10	$6,926
CPS Binary+FMR	$441	$1006	$367	$6,926
CPS Binary+CE Imputed Rent	$441	$1006	$367	$8,591
CPS 2012	$478	$861	$383	$7,875
HHS 2010 in 2012$				
Heating			$391	
Cooling			$293	

2012 SPM Thresholds with and without In-Kind Imputed Benefits: 2A+2C

Owners with mortgages: SNAP Only $25,784; CE Based $26,810; CPS Probit $26,922; CPS Binary + FMR $26,765; CPS Binary + Two Stage Rent Imputation $26,795

Owners without mortgages: SNAP Only $21,400; CE Based $21,881; CPS Probit $21,852; CPS Binary + FMR $21,934; CPS Binary + Two Stage Rent Imputation $21,949

Renters: SNAP Only $25,105; CE Based $26,289; CPS Probit $26,482; CPS Binary + FMR $26,402; CPS Binary + Two Stage Rent Imputation $26,442

Legend: SNAP Only | CE Based | CPS Probit | CPS Binary + FMR | CPS Binary + Two Stage Rent Imputation

Expenditures, In-Kind Benefits, and Resources

Benefit	Form of Benefit	Value of Commodity or Service in CE Reported Expenditures?	Commodity or Service Value in Thresholds	In Resources
SNAP	EBT cash-value to CU	yes, as food expenditures= full value	OOP	cash value
Housing Subsidies	Landlord accepts voucher or CU lives in public housing	< full value	OOP+imputed benefit	imputed benefit
NSLP	Direct payment to school	< full value	OOP+imputed benefit	imputed benefit
WIC	Voucher paper or EBT for commodities to CU (& cash value voucher for fruits and veggies to CU)	< full value yes, as food expenditure for WIC fruits and veggies	OOP+imputed benefit	imputed benefit (w/$cash voucher)
LIHEAP	Direct payment to vendor (& check to CU to pay for "utilities" included in rent)	< full value Yes, as expenditures for LIHEAP utilities	OOP+imputed benefit	imputed benefit (w/$check)

BLS

Recommendations

1. Include in-kind benefits values in SPM thresholds

➢ Consistency in threshold and resource definitions

➢ Improved SPM thresholds that reflect values of commodities and services "purchased by/made available to" consumer units with SPM resources

2. Use simplest method to reflect participation and valuations, but which?

■ Administrative totals?

■ CPS ASEC aggregates, participation, averages?

3. Continue research on in-kind benefit programs and data availability

■ WIC and LIHEAP cash value components

■ CE imputed rents vs. FMRs

■ Explore possibility of 2 renter thresholds (with and without subsidies)

Contact Information

Thesia I. Garner

Supervisory Research Economist

Division of Price and Index Number Research/

Office of Prices and Living Conditions

http://stats.bls.gov/pir/spmhome.htm

202-691-6576

garner.thesia@bls.gov

BLS

Extra Slide

2012 Thresholds Based on Full Estimation Sample vs. Restricted by Benefit Non-participation: 2A+2C

Legend:
- ■ SNAP Only
- ■ CPS Binary + FMR
- ■ CPS Binary + Two Stage Rent Imputation
- ■ Sample restricted: Drops all CUs with Free/Reduced Lunch, WIC, LIHEAP, and Rent Subsidies