

SPM Thresholds: Imputing Subsidies to the Consumer Expenditure Survey for Poverty Measurement

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

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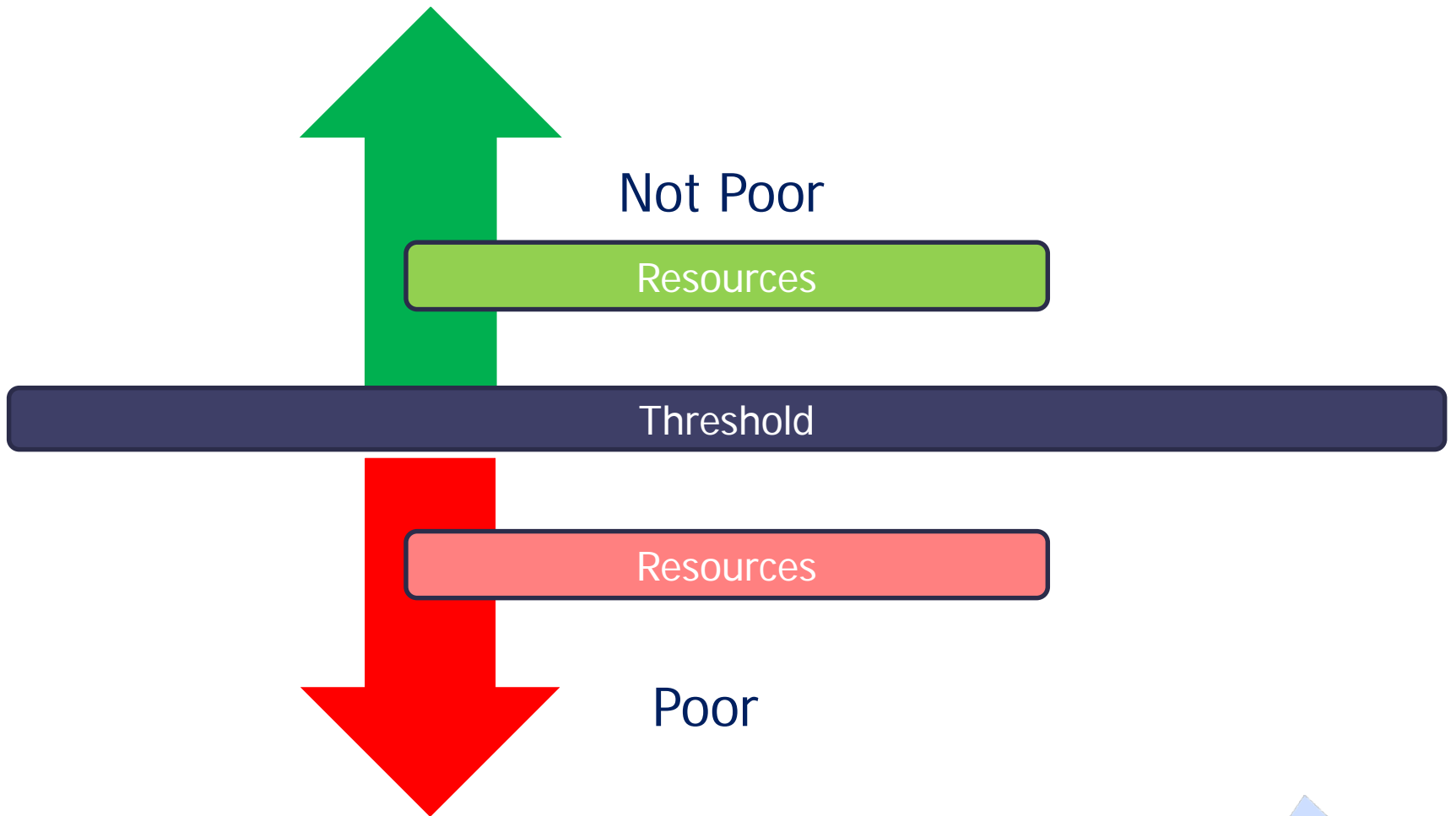


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- Results are preliminary and not to be quoted without authors' permission.



All Poverty Measures



This Research

■ Purpose

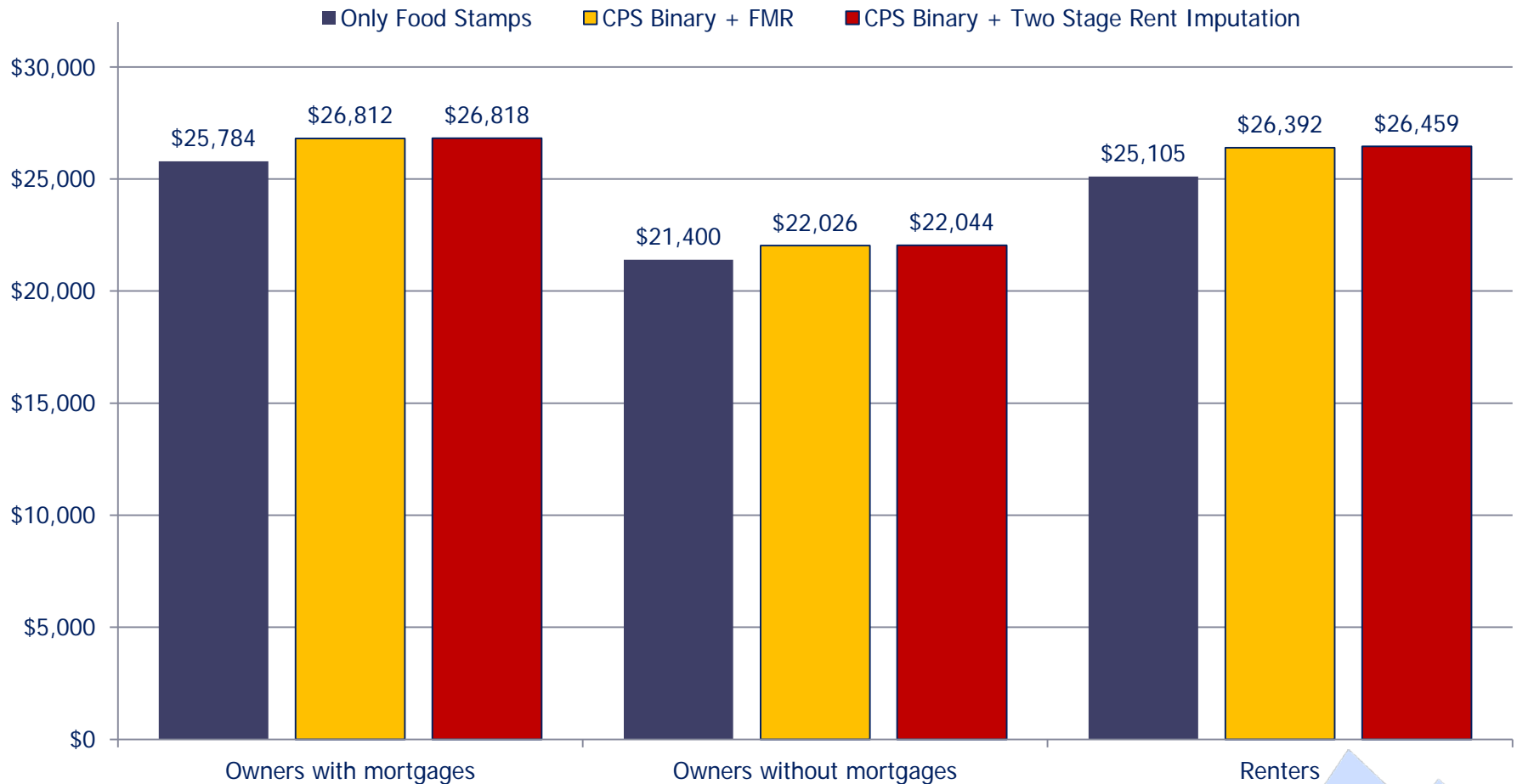
- ▶ Justification to add in-kind benefits to out-of-pocket spending data upon which Supplemental Poverty Measure (SPM) Thresholds are based
- ▶ Impute benefits, at the micro-level & examine inclusion on all “expenditures”
- ▶ Produce SPM thresholds that include the value of in-kind benefits

■ Contribution

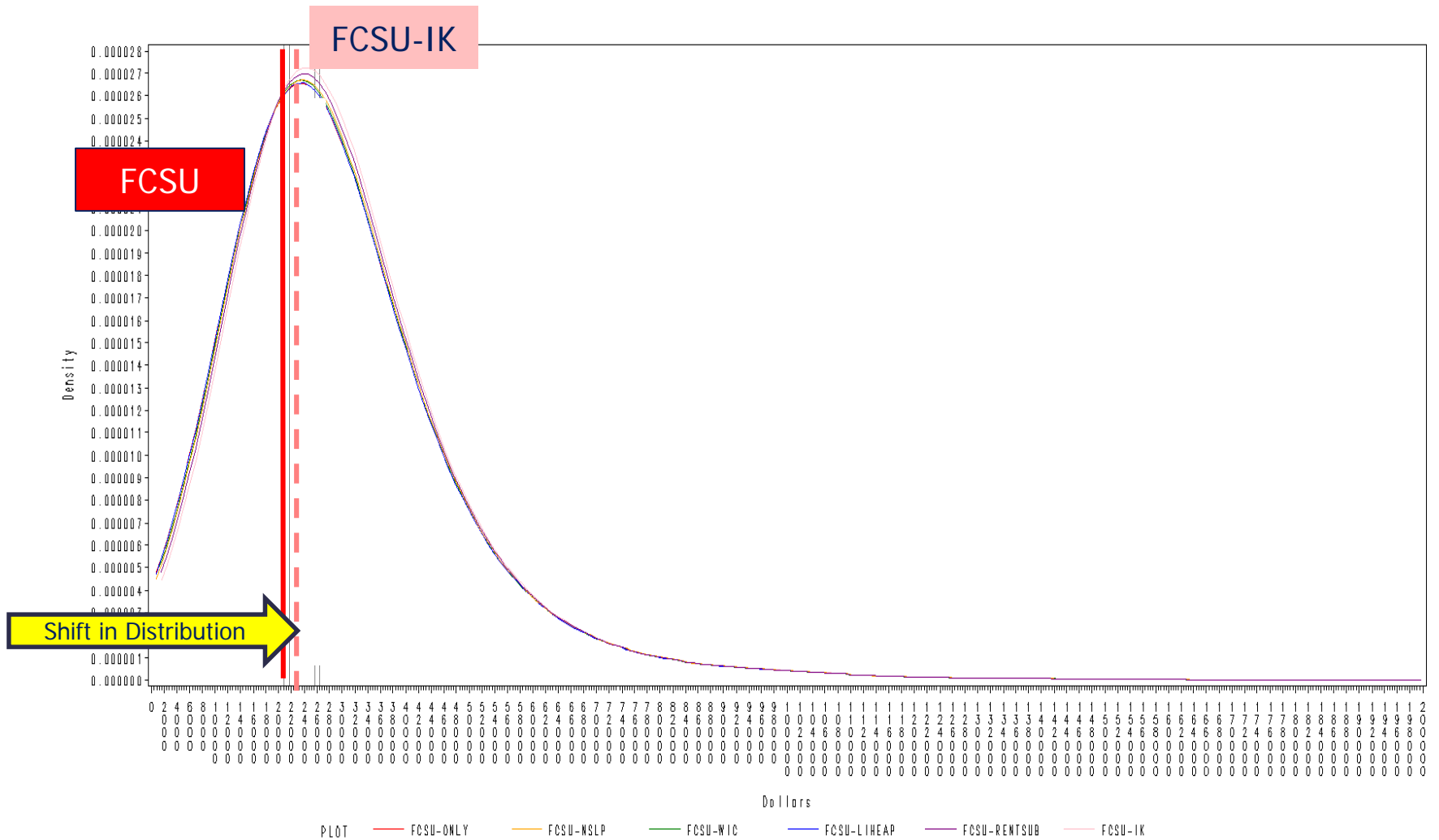
- ▶ Improved SPM that is *consistently defined in terms of thresholds and resources*
- ▶ Improved SPM thresholds that more nearly reflect consumption of basic bundle

❖ *NOTE: Thus far, SPM thresholds used by the Census Bureau for the regular publication of SPM poverty statistics DO NOT account for in-kind subsidies.*

2012 SPM Thresholds with and without In-Kind Imputed Benefits: 2 Adults with 2 Children (“2A+2C”)



Density of FCSU and FCSU-IK for 2A+2C



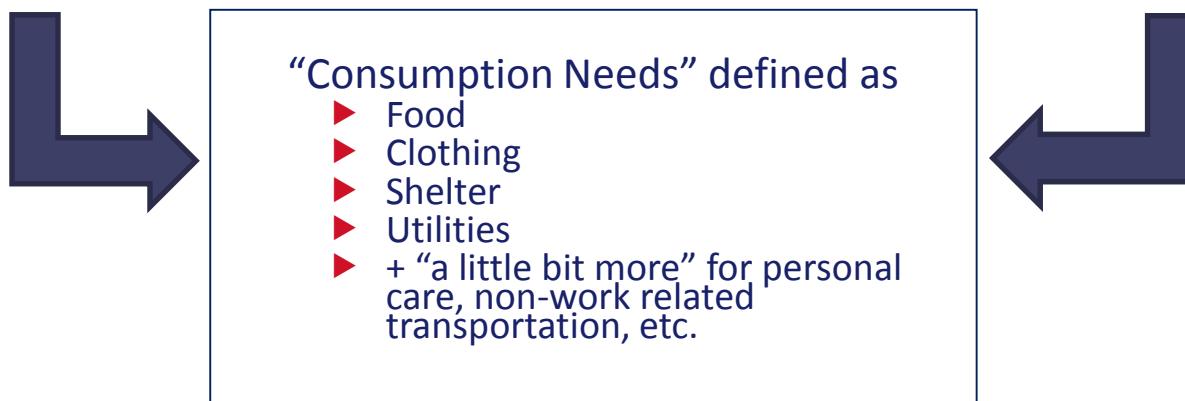
NAS Justification

- Effectiveness of benefit programs on poverty measurement
- Thresholds and resources consistently defined with each other
- *“...proposed thresholds, although developed in somewhat different ways, reflect concept of budget for consumption needs” (NAS Report, 1995, pp. 66-67)*
- *“Hence, ... resources should add to money income the value of near-money in-kind benefits that are intended to support consumption” (pp. 67)*

Underlying Assumptions

■ Resources to meet “needs”

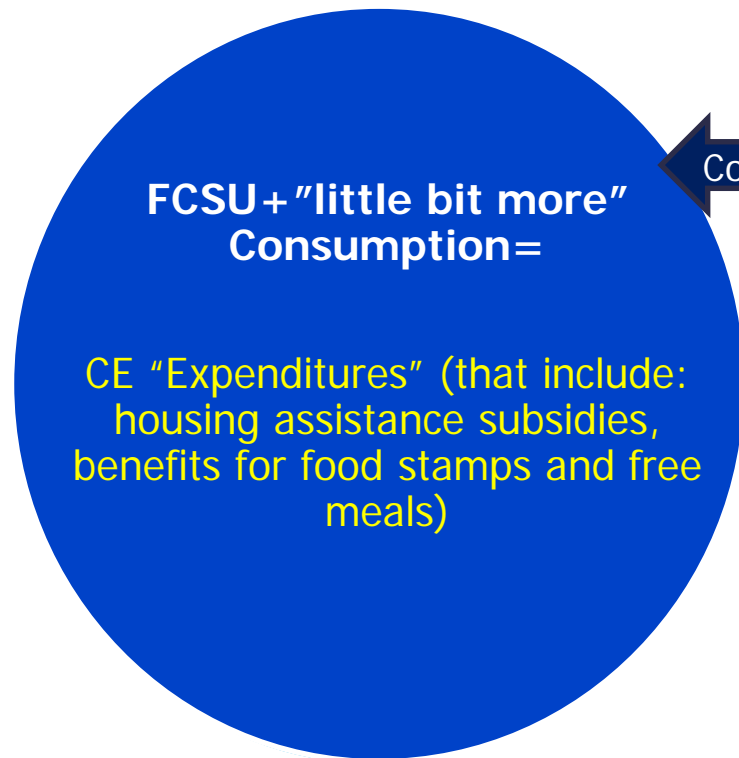
■ Thresholds represent “needs”



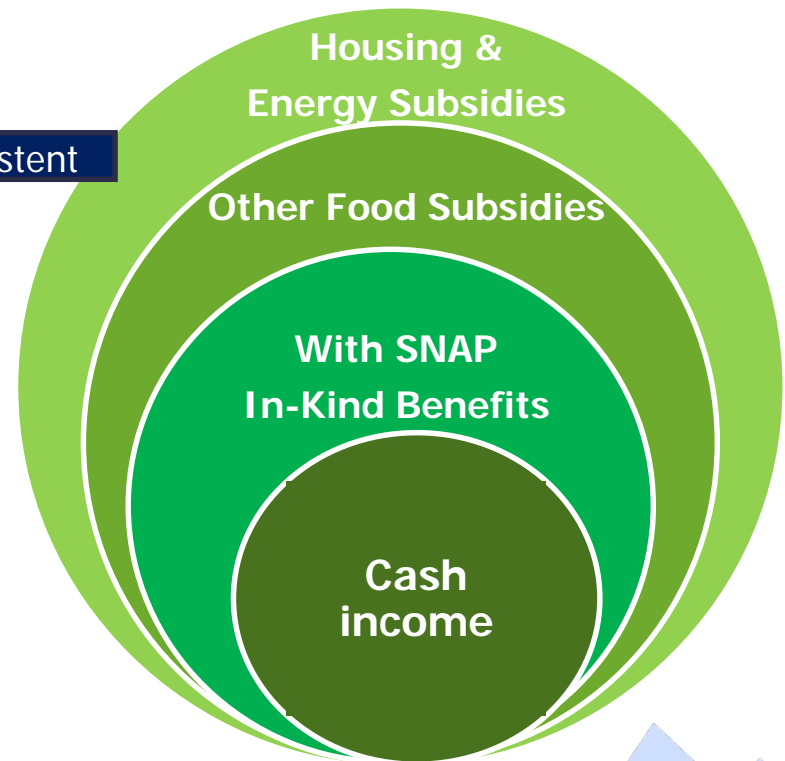
- **Threshold Concept:** FCSU “consumption needs”
- **Measurement Concept Assumed:** CE expenditures that **include** housing assistance subsidies (rent and utilities) and benefits from food stamps and **free meals** (NAS, 1995, pp. 393-394)

NAS Proposal and Measurement Assumption: Consistency

Thresholds



Resources



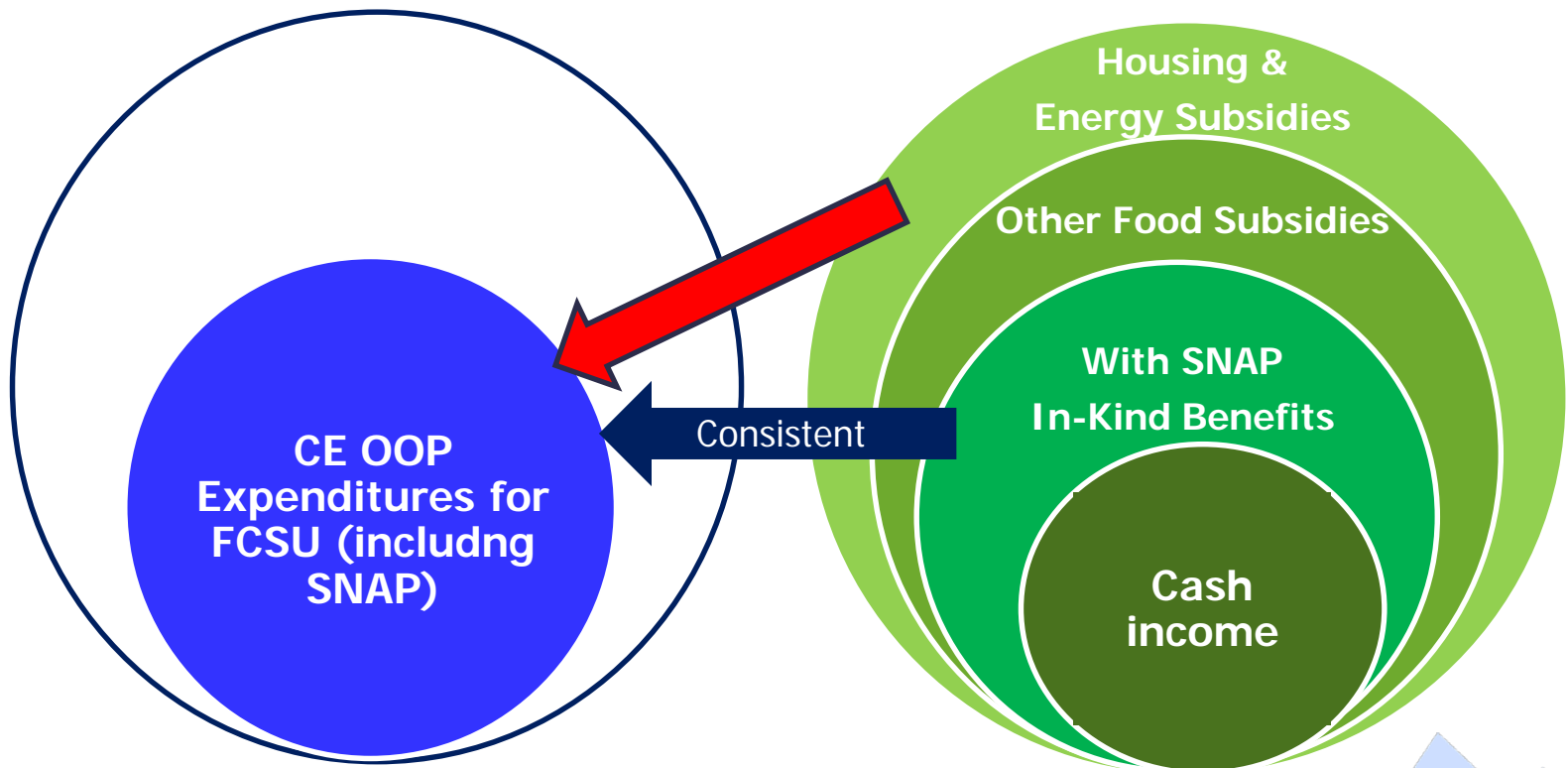
Consistent

Missing Data Problem: Thresholds and Resources Inconsistently Defined

Currently published SPM

Thresholds

Resources



Acknowledged CE Measurement Issue: ITWG (2010) 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)

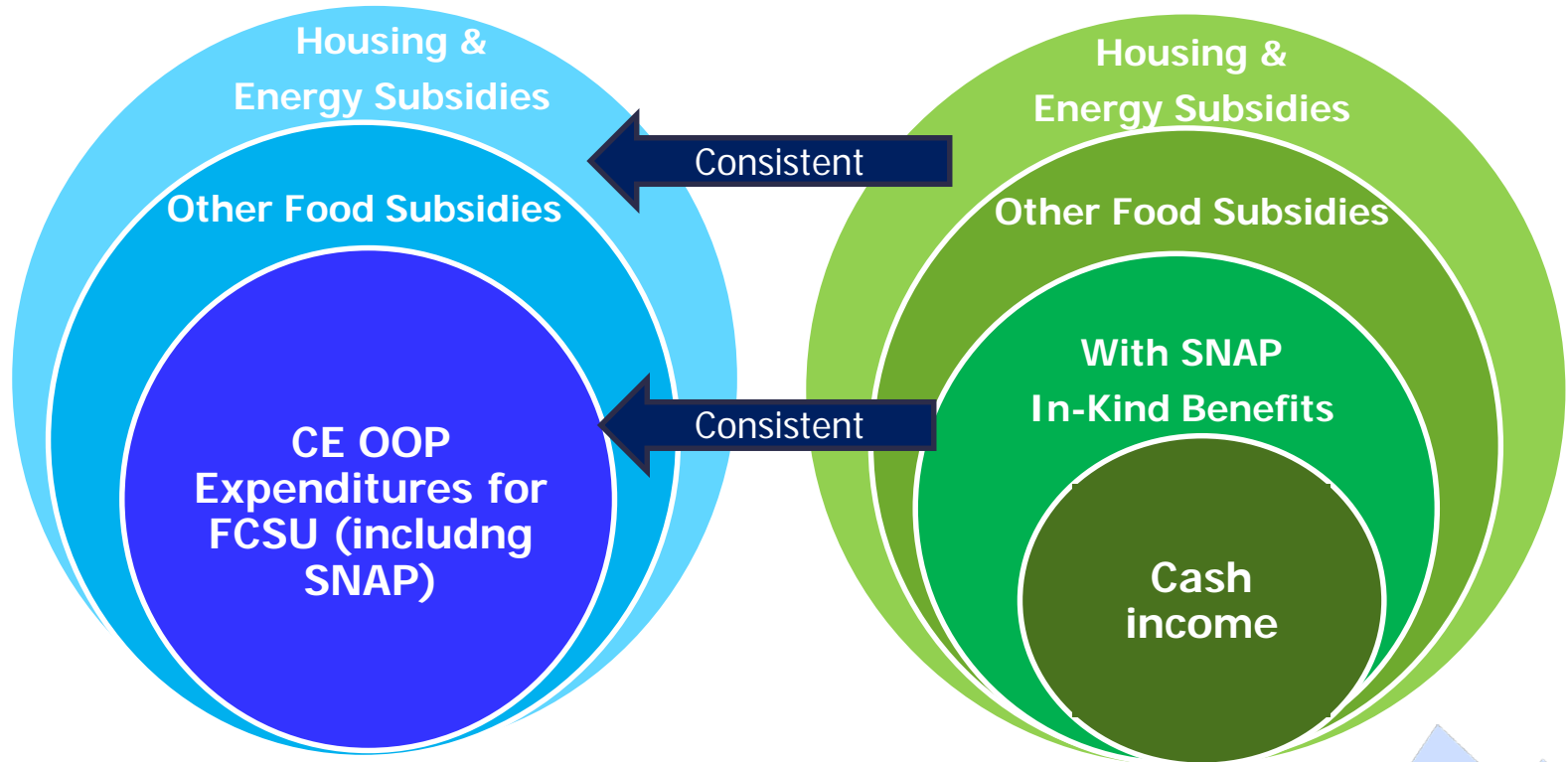
Low-Income Home Energy Assistance (LIHEAP)

Problem: Thresholds and Resources Consistently Defined

Proposed

Thresholds

Resources



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

- Expenditures collected: out-of-pocket
- 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

EBT: Electronic benefit transfers
Full value could be at recipient or market value



Imputation Approaches

- CPS Binary + FMRs
 - ▶ 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
- Benefit values assigned to participants based on administrative data excluding CE-based 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 characteristics

- 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 plus Hawaii and Alaska
 - Rates for schools in which less than 60% of lunches served were free or reduced priced for all but District of Columbia Louisiana, Mississippi, and New Mexico (60% + with free or reduced, USDEd)
 - ▶ Different values (same values for commodities)
 - 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
 - ▶ U.S. Department of Housing and Urban Development 2008-2012 Fair Market Rents (FMRs) matched to CE by Census tract and number of bedrooms
 - ▶ Imputed from CE renters not in rent controlled units, not public housing, not rental assistance



FCSU-IK Estimation

- All Consumer Units in 5 years of CE data underlying 2012 SPM thresholds
 - ▶ Add in-kind benefits to FCSU out-of-pocket expenditures at CU (micro) level
 - ▶ Convert all quarterly expenditures to annual \$2012

- Restricted to SPM Thresholds Estimation Sample
 - ▶ Apply 3-parameter equivalence scale to convert estimation sample (CUs with 2 children) FCSU to $2A+2C$
Rank $FCSU^+$ to identify 33rd percentile represented by 30th to 36th percentile range
 - ▶ Produce means of $FCSU^+$ and SU by housing status
 - ▶ Estimate thresholds for
 - Owners with mortgages
 - Owners without mortgages
 - Renters

CE-Imputed In-Kind Benefits in Comparison: Aggregates

Data Source	NSLP	WIC*	LIHEAP	Rent Subsidies	
				FMR	CE imputed rent
CE Imputed Participation from CPS (5 years of data)	\$10.2	\$4.6	\$1.0	\$35.1	\$47.0
CPS 2012	\$10.7	\$3.1	\$1.6	\$40.4	
USDA FY2012		\$6.5			
USDA FY2013	\$10.8	\$6.4			
USDA 9 months 2012					
HUD+USDA 2012				\$43.3	
HHS 2010 in 2012\$					
Heating			\$2.9		
Cooling			\$0.3		

*WIC: CE estimates and USDA based on pre-rebate values for infant food.



CE-Imputed In-Kind Benefits in Comparison: CU/HH Participation

Data Source	NSLP	WIC*	LIHEAP	Rent Subsidies	
				FMR	CE imputed rent
CE Imputed Participation from CPS (5 years of data)	19.0%	2.8%	2.2%	4.2%	4.5%
CPS 2012	17.5%	2.8%	3.3%	4.0%	
HHS 2010 in 2012\$					
Heating			6.3%		
Cooling			0.8%		

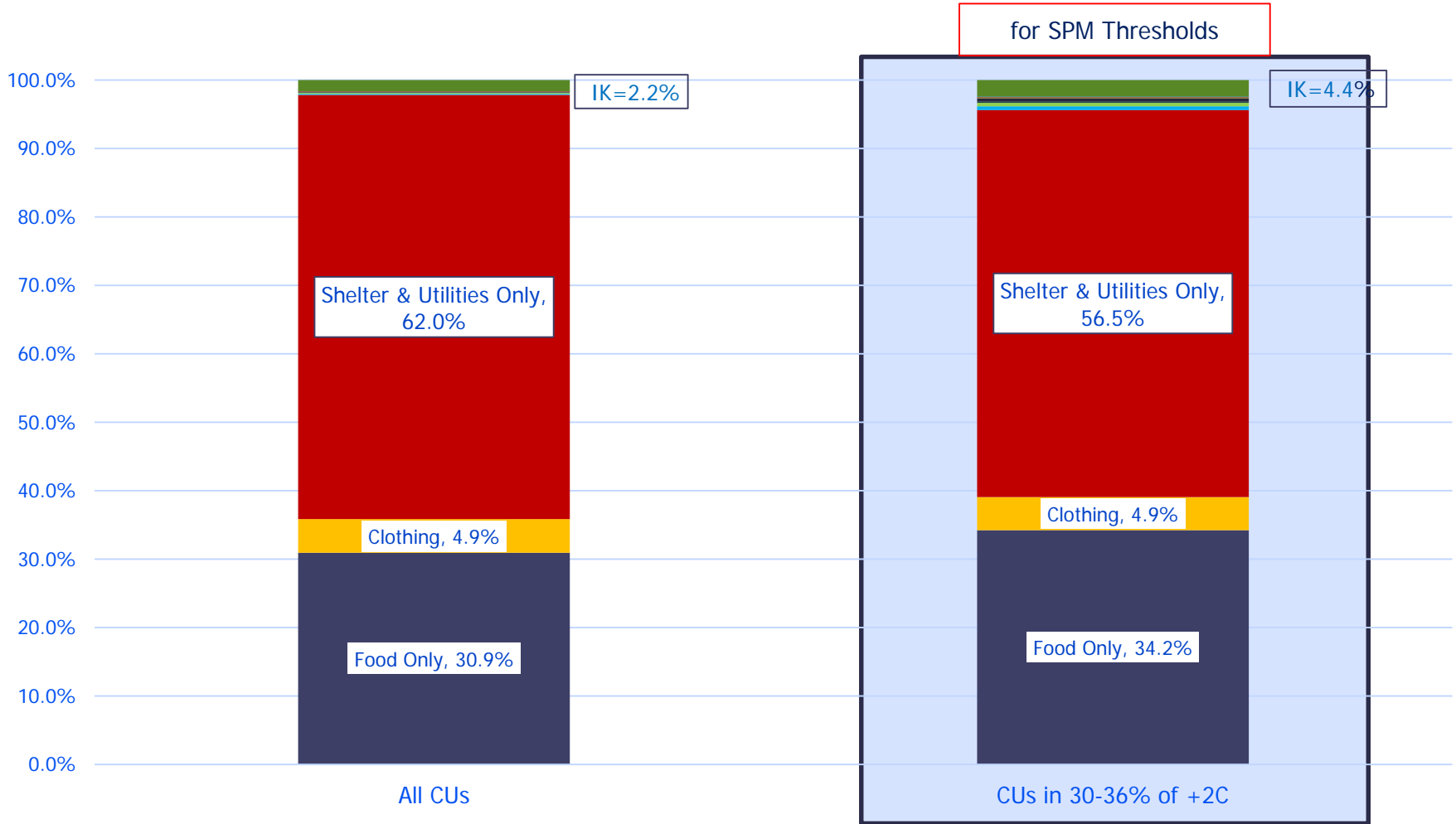
*WIC: CE estimates based on pre-rebate values for infant food.

CE-Imputed In-Kind Benefits in Comparison: Annual Average Benefit per CU/HH

Data Source	NSLP	WIC*	LIHEAP	Rent Subsidies	
				FMR	CE imputed rent
CE Imputed Participation from CPS (5 years of data)	\$441	\$1,334	\$367	\$6,926	\$8,591
CPS 2012	\$478	\$861	\$383	\$7,675	
HHS 2010 in 2012\$					
Heating			\$391		
Cooling			\$293		

*WIC: CE estimates based on pre-rebate values for infant food.

Percent of 2012 Aggregate Dollars Using 5 Years of CE Data



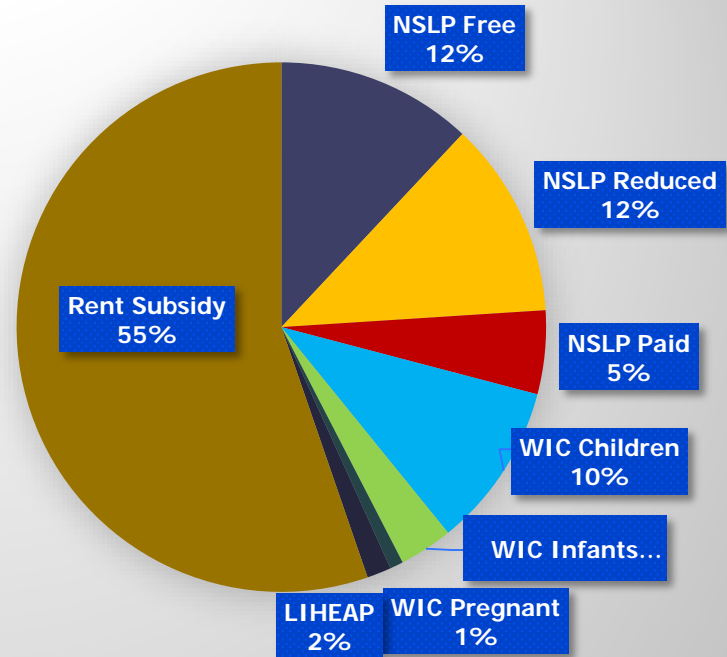
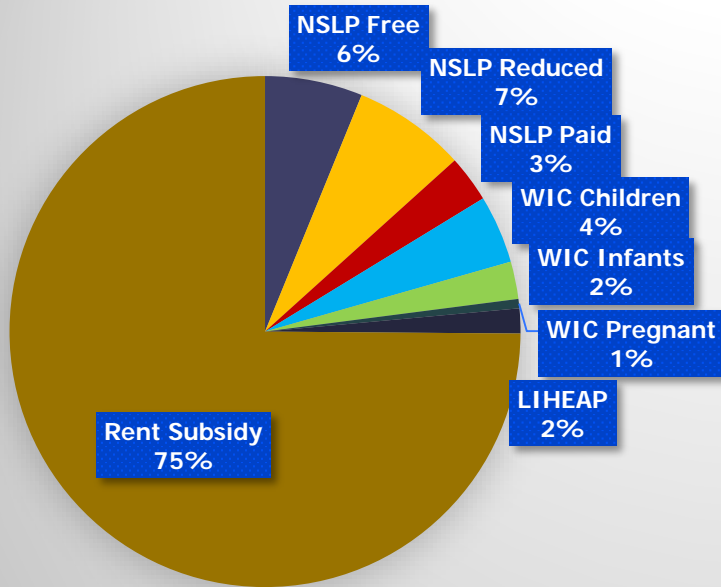
Aggregates based on CE imputed rent subsidies



Aggregate Shares of In-kind Benefits

All Cus: IK=2.2% of Aggregate

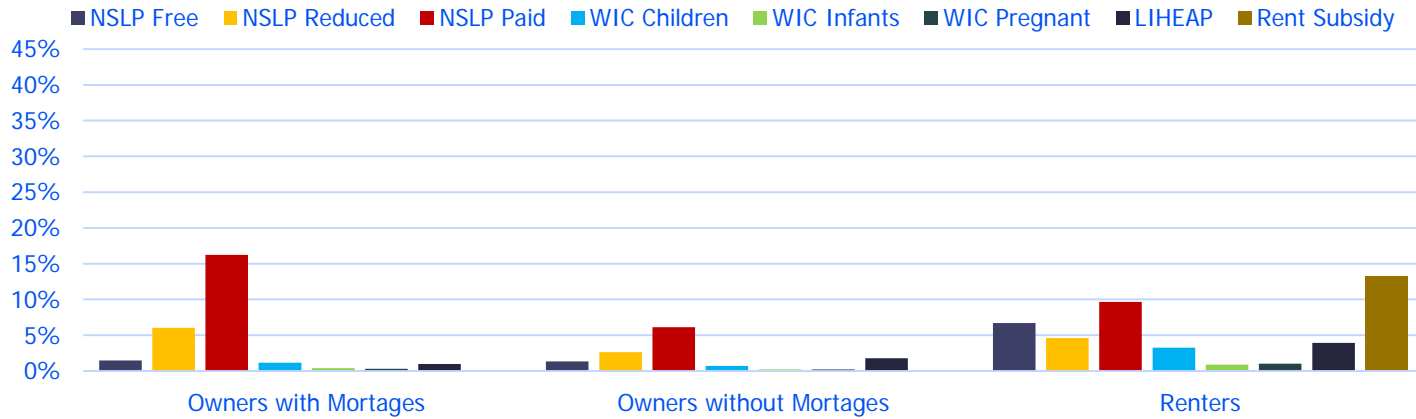
CUs in 30-36th Percentile "2+2":
4.4% of Aggregate



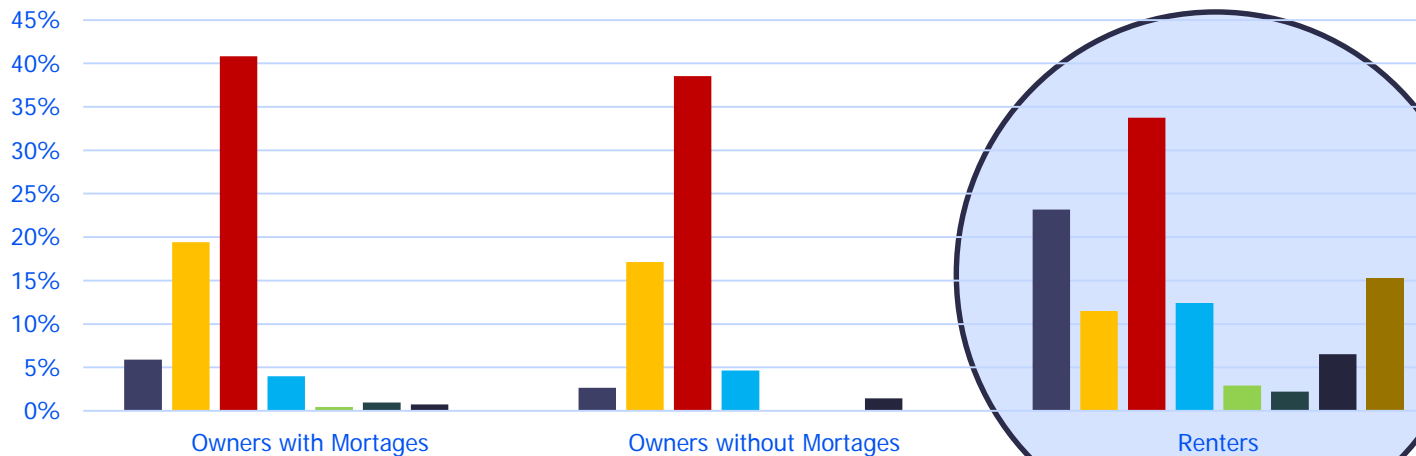
Aggregates based on CE imputed rent subsidies

Distribution of CUs with IK Benefits

All CUs



CUs with 2 children in 30-36th



Recommendations

1. Add in-kind benefits at CUs level to OOP FCSU spending

- Consistency in threshold and resource definitions
- Improved SPM thresholds that reflect values of commodities and services “purchased by/made available to” CUs (*consumption* for all but owner-occupied housing)

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

