

Building a Consumption “Poverty” Measure at the BLS: Initial Results

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10:30am-11:50am (paper 2)

Chair: Wenhua Di, Federal Reserve Bank of Dallas

Discussant: David Johnson, University of Michigan *Virtual presentation*

An earlier version of this research was presented during the 2022 ASSA-AEA Meetings



Motivation and Goal

■ Motivation

- ▶ Bureau of Labor Statistics long term interest in producing a consumption measure
- ▶ Interagency Working Group (ITWG) on Evaluating Alternative Poverty Measures Recommendations (report released January 14, 2021)
 - Production of a consumption measure of poverty
 - Not to replace OPM or SPM but to serve as an additional measure

■ Goal of this study

- ▶ To go through the process of producing a consumption measure with what is currently available to us at BLS
- ▶ Provide initial results of “poverty” analysis based on various measures of spending and consumption



Requirements for a “Poverty” Measure

- Line to represent “poverty”
- What is compared to that line



Options to Define “Poverty” Line

■ Absolute deprivation

- ▶ A line that represents minimum spending or consumption needs (e.g., value of minimum goods and services)
- ▶ Yes or no regarding possession of or access to “basic needs”

■ Relative deprivation

- ▶ One’s position in an income or consumption distribution relative to a particular point

■ Subjective deprivation

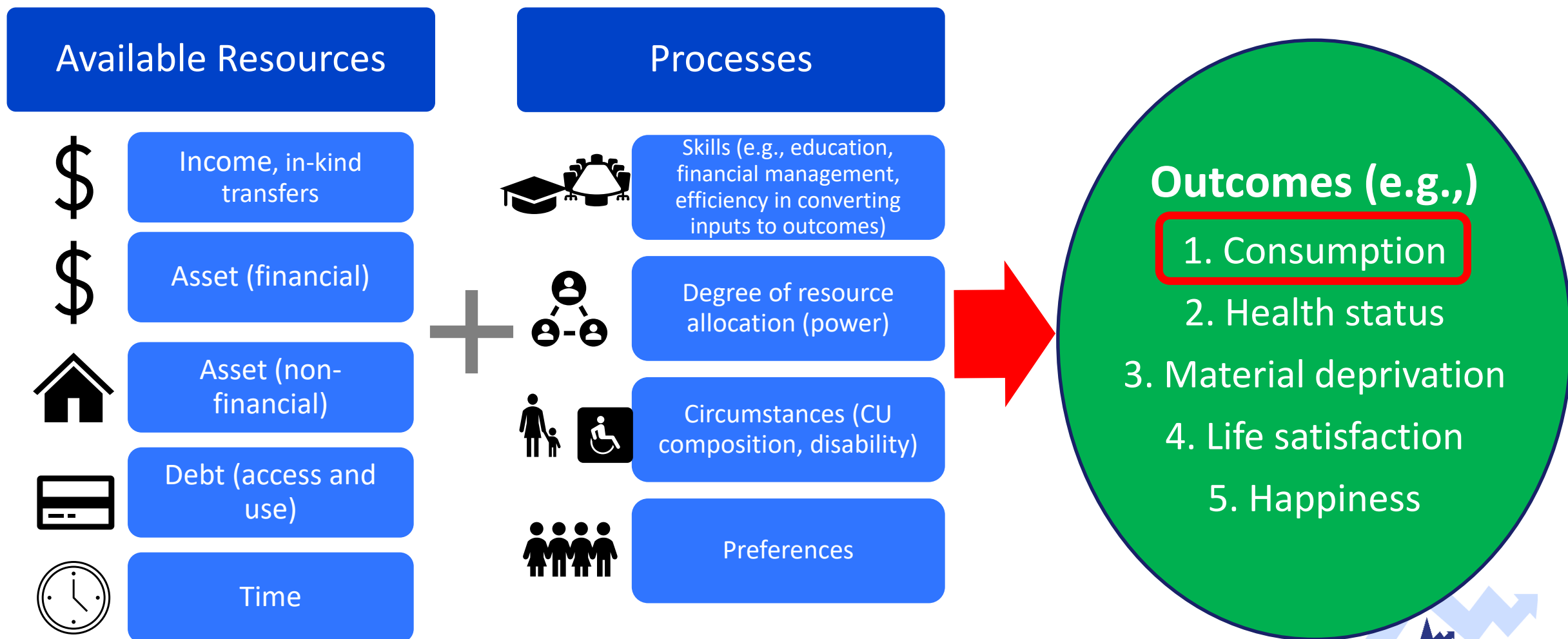
- ▶ Population reported minimum income, spending, consumption needs interacted with actual

Options to Define What to Compare

- Income
- Expenditures
- Consumption
- Possession or access to select goods and services (e.g., health insurance) or deprivation (e.g., food secure, housing secure)



Consumption as a Well-being Outcome: A Function of Resources and Processes



New BLS Initiative to Produce a Comprehensive Consumption Measure

- Designed to reflect how consumer units (CUs) use resources (e.g., income, wealth, time, in-kind benefits) to meet their consumption/material “needs”
- Key data sources: Consumer Expenditure Surveys and American Time Use Survey
- In-house research: imputation of government provided in-kind benefits and flow of services from stock of owned vehicles
- Outside research: contract on valuing home production for own consumption



BLS Comprehensive Consumption Measure Target

■ Expenditures for own consumption



■ In-kind benefits public and private



■ Flow of services



■ Home production



■ Health
■ Education



ITWG Recommendation: What to Include in Consumption

■ Expenditures for own consumption



■ In-kind benefits public and private



■ Flow of services



■ Health insurance

- ▶ Measure with
- ▶ Measure without



Other ITWG Recommendations for Consumption Poverty Measure and BLS

- Data source(s)
 - ▶ Consumer Expenditure Survey Interview
 - ▶ Use administrative data when available, modeling otherwise
- Producer: Bureau of Labor Statistics (*with funding*)
- Produce as soon as possible, with annual updates
- Produce at the state level



ITWG Discussions Related to Poverty Measurement but No Specific Recommendations

■ Thresholds

- ▶ Determine how best to set based on research, and input from stakeholders and experts

■ Price indexes for updating thresholds

- ▶ Conduct a study regarding appropriate index

■ Geographic adjustment of thresholds

- ▶ Consult experts on whether and, if so, how to implement

■ Equivalence scales

- ▶ Conduct a study that will provide a recommendation regarding which are most appropriate

Initial BLS Research

- Data
- Measures considered
- Thresholds
- Results for population
 - ▶ “Poverty” rates
 - ▶ Demographic characteristics
- Summary and conclusions
- Future work



Data Sources

CE Data: 2015Q2-2021Q1

- Quarterly out-of-pocket spending (acquisitions value) with the exception of the following:
 - ▶ Owner-occupied housing
 - ▶ Purchase and financing of vehicles
 - ▶ Cash contributions, purchases of life and other personal insurance, allocations to retirement plans, pensions, annuities, Social Security
- Reported rental equivalence (owned housing)
- Cars and trucks: make, model, year & new or used
- Rental unit: public housing, govt assist, rent control
- Consumer unit demographic variables

NOTE: Data collected in each of 4 quarters representative of a year (e.g., data collected in 2015Q2-2016Q1 represents 2015)

Other

- CPS-ASEC (reference: 2015-2020): household data regarding receipt of government provided in-kind benefits
 - ▶ Amount of Low-Income Home Energy Assistance Program (LIHEAP) benefits
 - ▶ Receipt of National School Lunch Program (NSLP) benefits
 - ▶ Receipt of Supplementary Nutrition Program for Women, Infants, and Children (WIC) benefits
- USDA:
 - ▶ NSLP per meal rate
 - ▶ WIC benefit
 - Average monetary benefit per person
 - Average infant formula rebate per infant



Measures

- Total expenditures
- Consumption expenditures
- Consumption ←
- Income
 - ▶ CE defined after tax income (includes SNAP benefits)
 - ▶ In-kind transfers

Similar to Fisher, Johnson, and Smeeding (2015) & Meyer and Sullivan (2012) with exception of LIHEAP, NSLP, & WIC, and differences in treatment of education, health care, vacation properties

Construction of Measures

Measure	Variable Name	Base	Does not Include	Addition
Total Expenditures	tot_exp	Total Expenditures CE Publication Definition		
Consumption Expenditures	spending_consump	tot_exp	Cash contributions; allocations to and purchases of life insurance, endowments, annuities, and other personal insurance; retirement, pensions, and Social Security	
Consumption	consumption_4	spending_consump	<p>Owner expenses for primary residence; purchases of stoves, refrigerator/freezer, dishwasher, clothes washer/dryer AC window units for owners and renters; shelter expenses associated with vacation homes</p> <p>Expenditures for: health; education; housing while away at school; daycare centers, nursery, pre-school;</p> <p>All vehicle purchases; vehicle finance charges; motorized vehicles for entertainment</p>	<p>Rental equivalence of primary residence</p> <p>Rental equivalence of vacation homes (but not time shares)</p> <p>Flow of services from cars and trucks</p> <p>LIHEAP, NSLP, rental assistance, WIC In-kind transfers</p>
Income	CE defined after tax income with in-kind benefits	CE defined after tax income		LIHEAP, NSLP, rental assistance, WIC In-kind transfers

Thresholds Based on Relative Concept

- Thresholds defined in 3 different ways
 1. Purely relative as 60% of median (i.e., threshold is a function of the same “resource”)
 2. Absolute thresholds for all measures anchored to the threshold for 2015 based on consumption_4
 3. Absolute thresholds for all measures set at values such that poverty rates for all measures anchored to be the same in 2015 as rate for consumption_4 poor (i.e., 16.8% in 2015)
- Absolute thresholds adjusted by Chained Consumer Price Index for All Urban Consumers (CPI-U) for 2015-2020
- Thresholds based on ranking of adult equivalized income, spending, consumption based on 3-parameter equivalence scale as used to produce SPM)
- No geographic adjustment

- These thresholds DO NOT represent a level of “needs”; they represent a point in a distribution



What Is Compared to the Thresholds

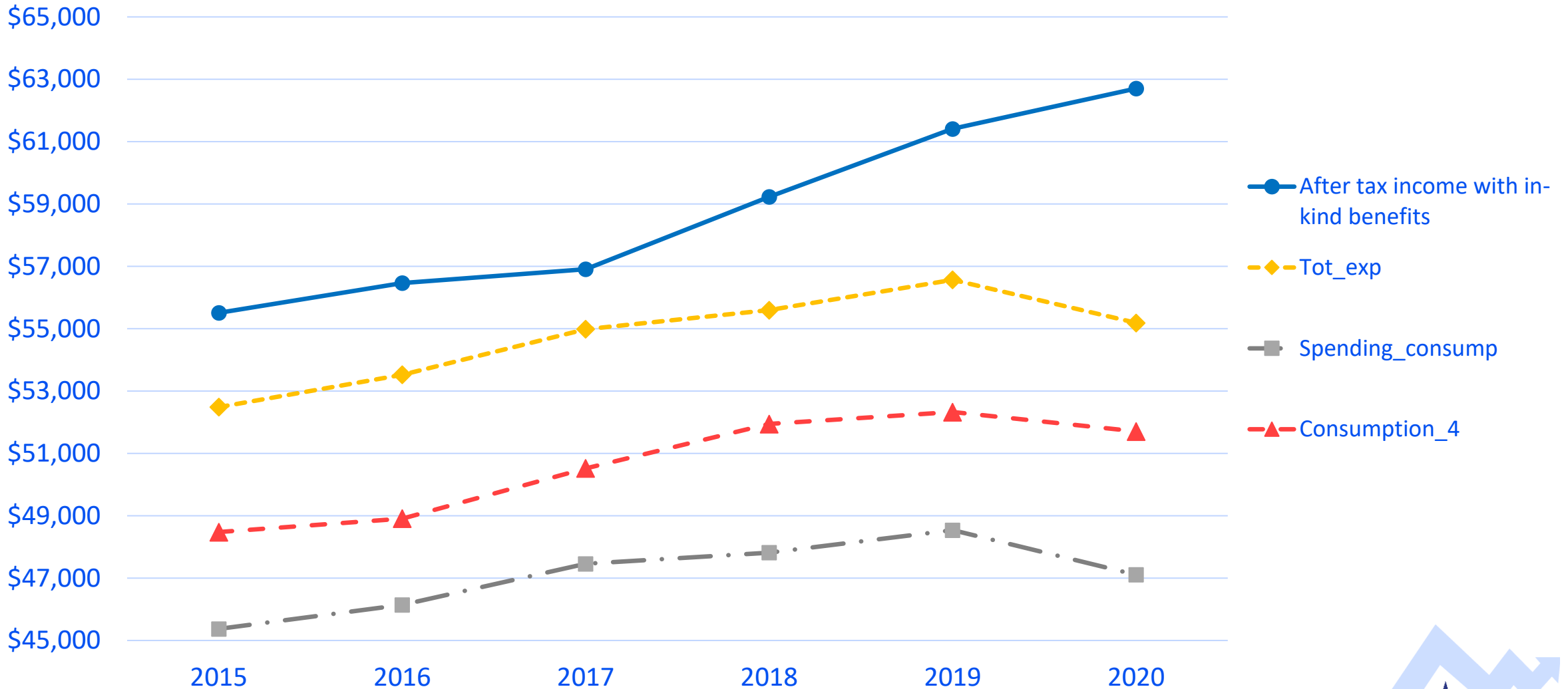
- Adult equivalized income, spending, and consumption (use 3-parameter equivalence scale)
- Quarterly expenditures and consumption (not annualized)
 - ▶ To reflect a year, data collected in any of four quarters, e.g., 2015 represented by 2015Q2-2016Q1
 - ▶ Concern with seasonality so not multiplied by 4 for expenditures and consumption (unlike Meyer and Sullivan 2012)
 - ▶ Concern with representativeness if restricted to 4 complete interviews even with demographic reweighting: Are the results representative of the lower end of the distributions? (unlike Fisher, Johnson, and Smeeding 2015)
- Income/4

Results

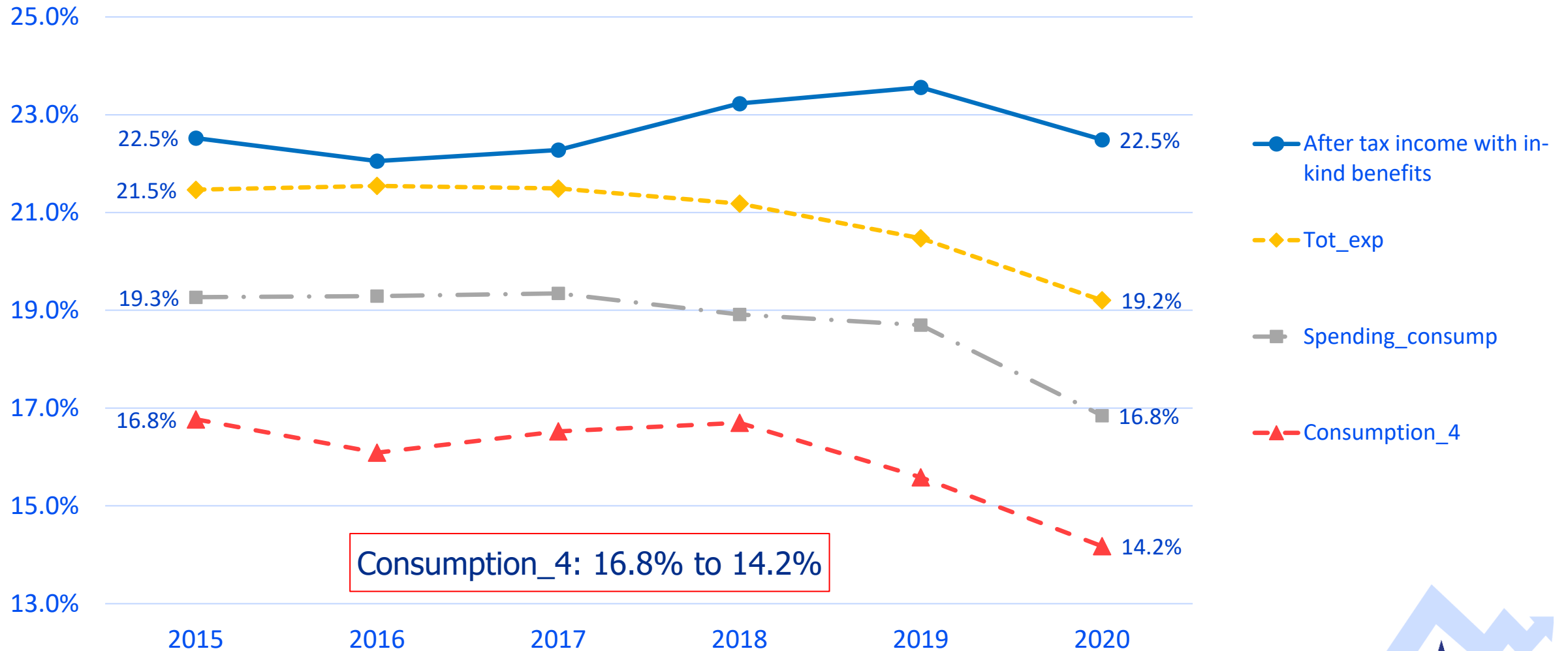
- Medians - annualized
- Poverty rates – by year based on quarterly reference periods
- Characteristics of the “poor”



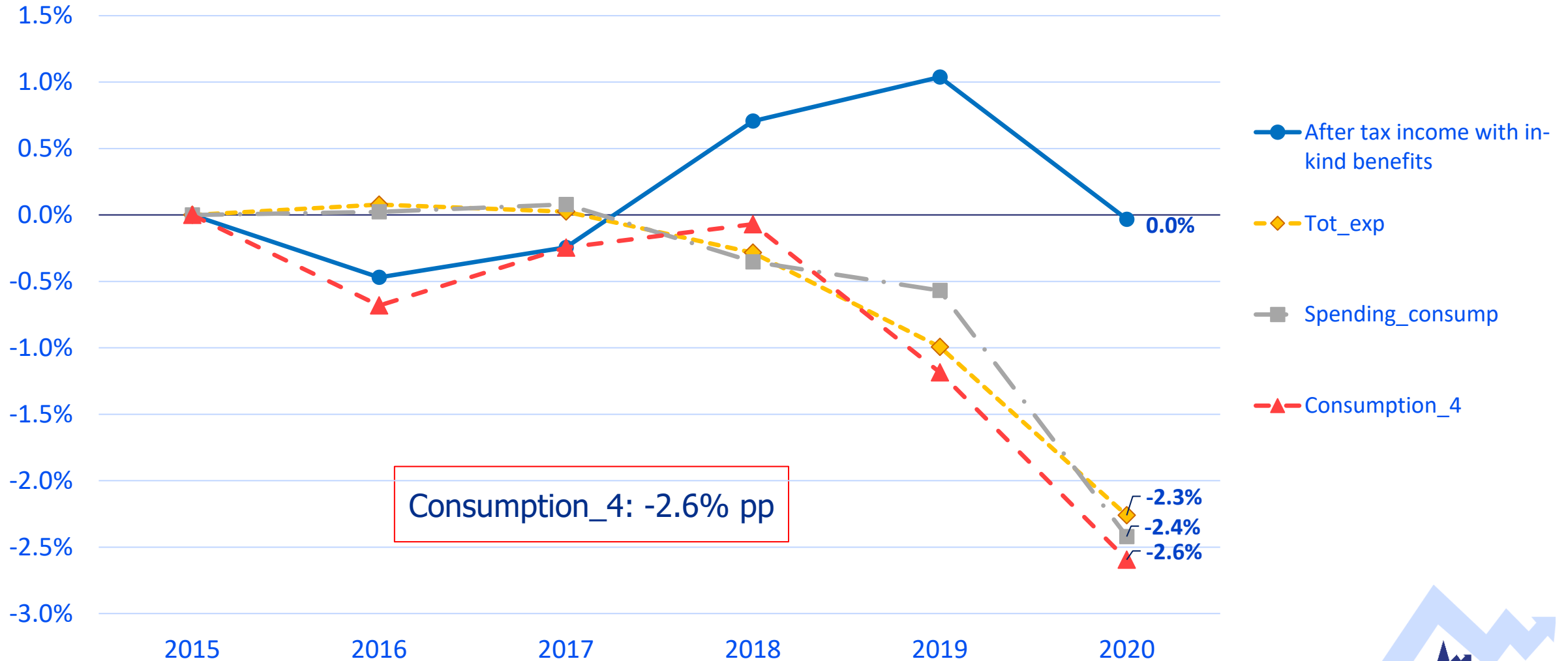
Annualized Medians in Real 2015 Dollars for All Consumers Units Equivalized to CUs with 2 Adults+2 Children (2A+2C)



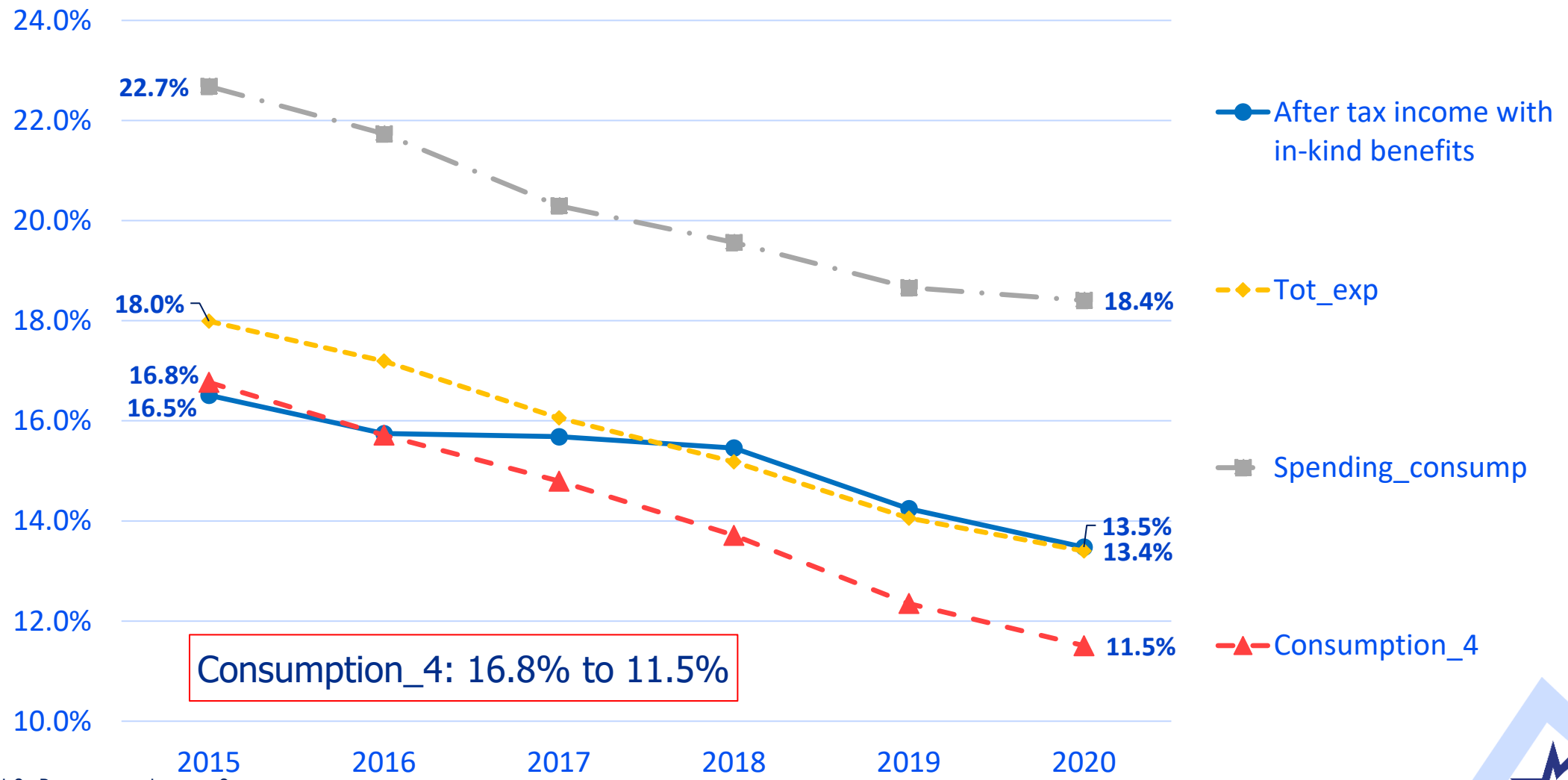
Poverty Rates Based on Purely Relative Thresholds (reproduced as 60% of median each year): 2015-2020



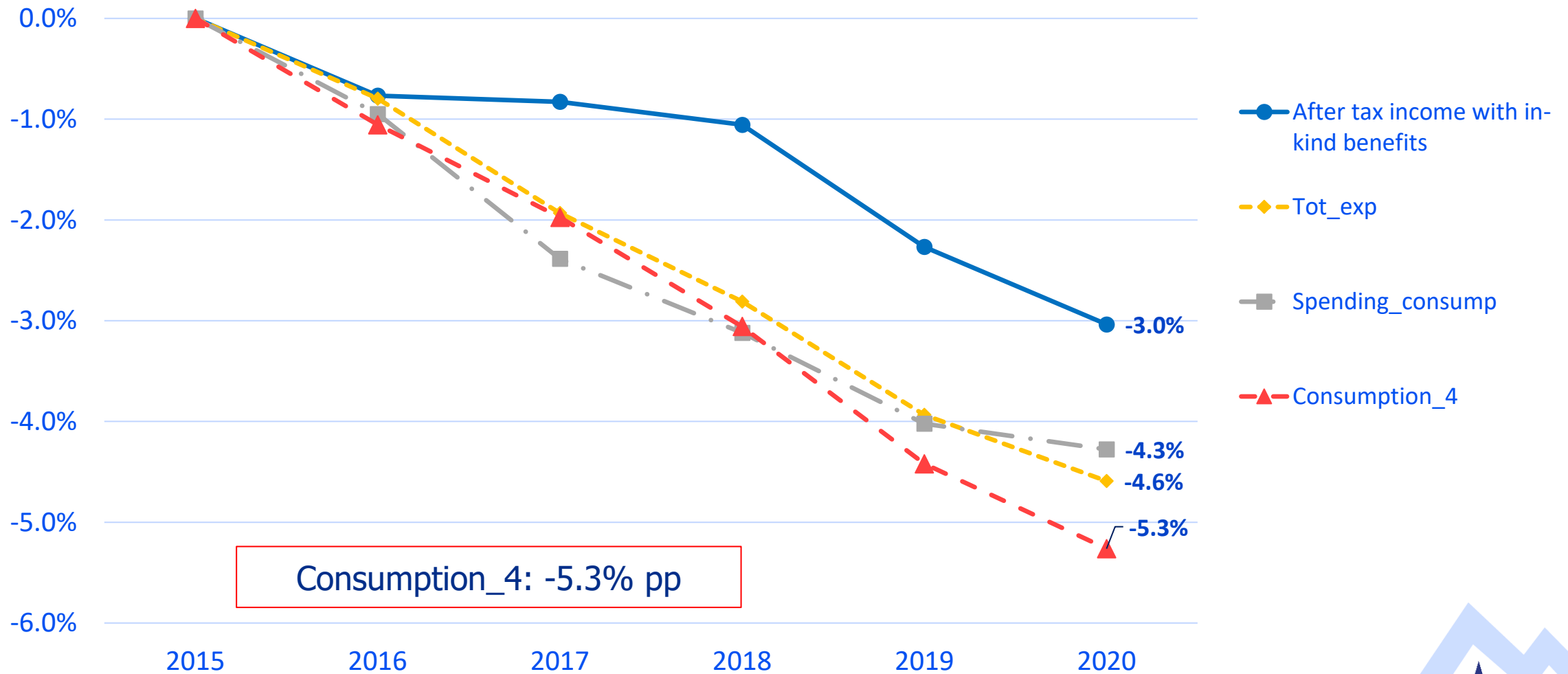
Change in Poverty Rates Based on Purely Relative Thresholds: 2015-2020



Poverty Rates Based on Absolute Thresholds that Equal 2015 Threshold for Consumption_4 Updated by C-CPI-U: 2015-2020

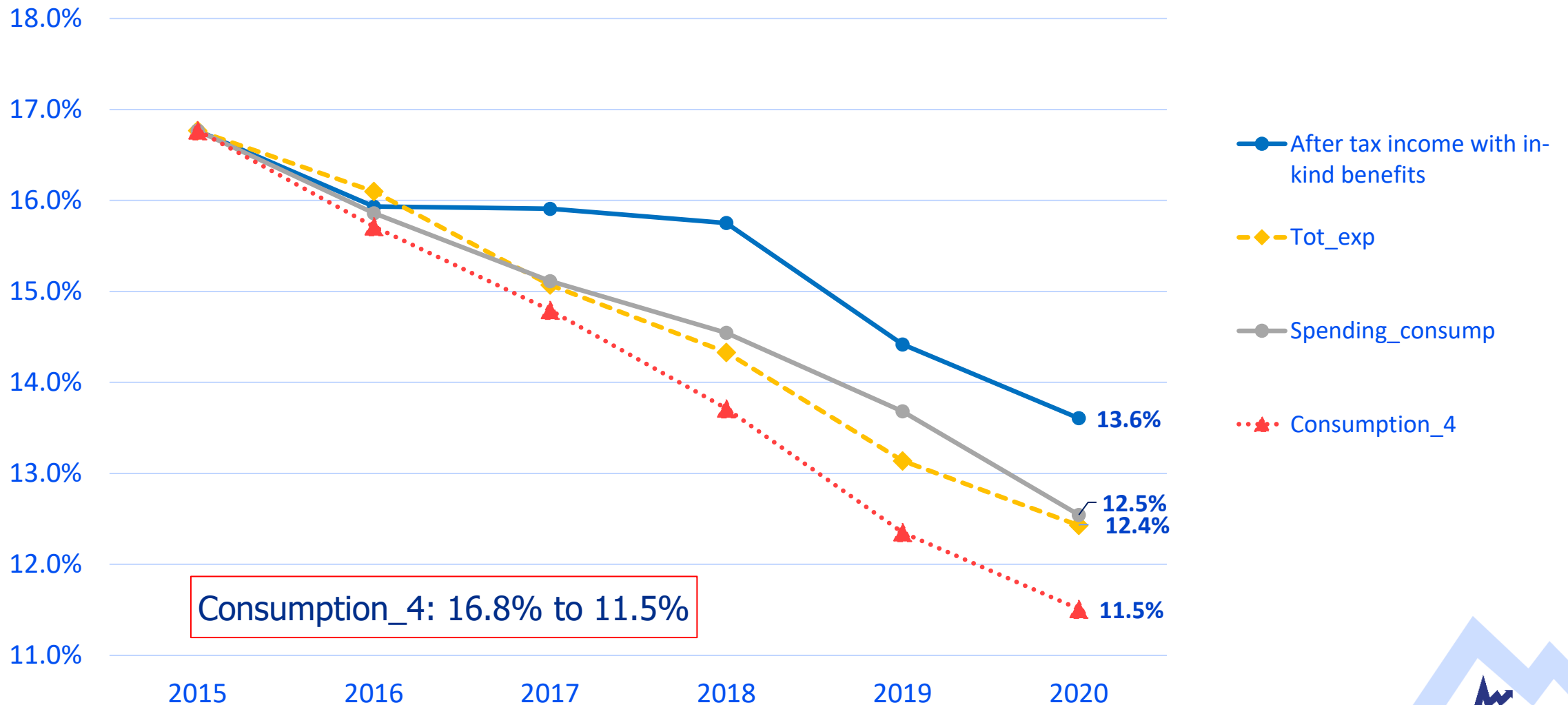


Change in Poverty Rates for Absolute Thresholds Anchored to 2015 Threshold for Consumption_4 Updated by C-CPI-U: 2015-2020



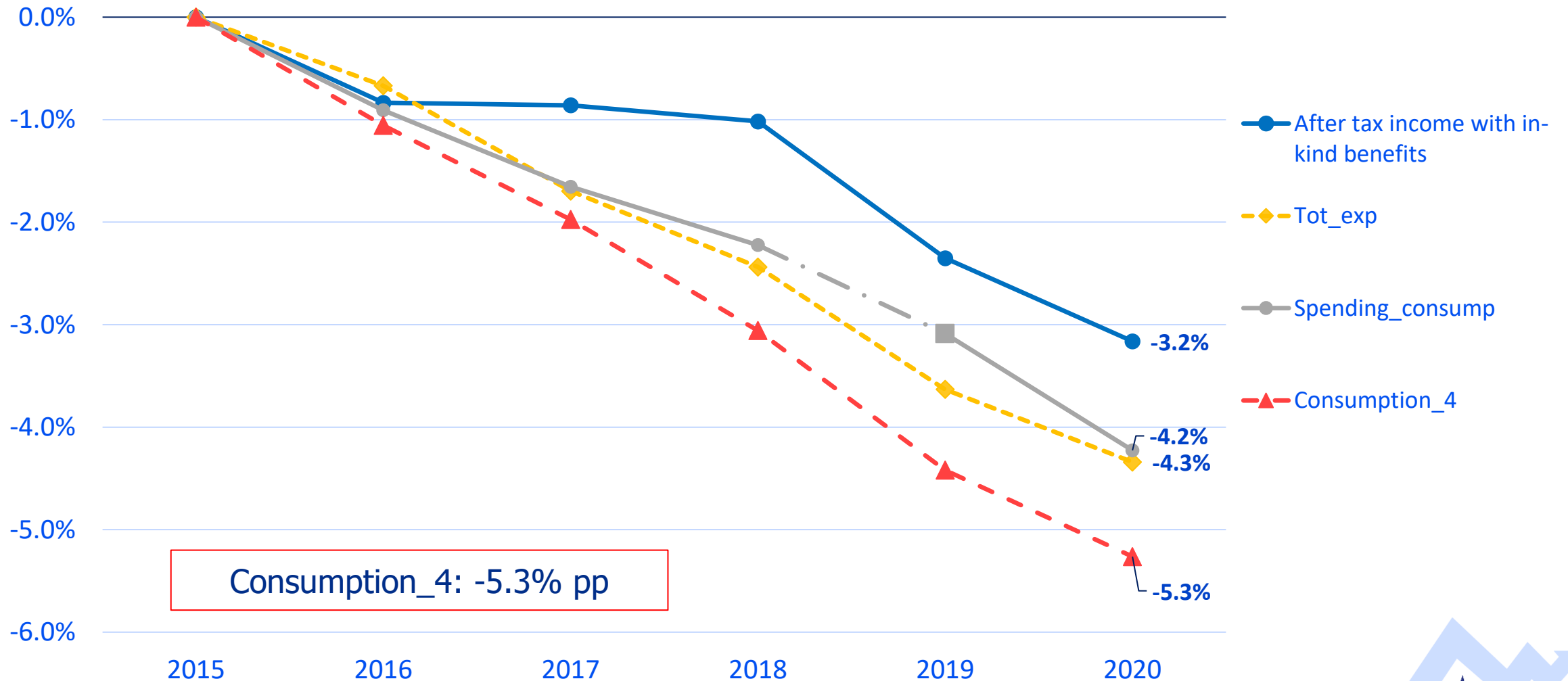
Poverty Rates Based on Absolute Thresholds for 2015 Set to Levels that Result in Same Poverty Rates as for 2015

Consumption_4 Rate (16.8%): 2015-2020



Consumption_4: 16.8% to 11.5%

Change in Poverty Rates Based on Absolute Thresholds Set to Levels that Result in Same Rates as 2015 Consumption_4 Poverty Rate (16.8%): 2015-2020



Income Poor, Consumption Poor, or Both?

Rates Based on Thresholds Set to Levels that Result in Same Rates as 2015 Consumption_4 Rate (16.8%)

2015

		After Tax Income Poor	
		Yes	No
Consumption_4 Poor	Yes	7.9%	8.9%
	No	8.9%	74.3%

Income Poverty Rate 16.7%

Consumption Poverty Rate
16.8%

2020

		After Tax Income Poor	
		Yes	No
Consumption_4 Poor	Yes	4.7%	6.8%
	No	8.9%	79.6%

Income Poverty Rate 13.6%

Consumption Poverty Rate
11.5%



Demographic Characteristics of the U.S. Population Compared to Study-defined “Poor”: 2015

Characteristics	U.S. Population	Below Consumption_4 Threshold	Below After-Tax Income with In-kind Benefits Threshold	Below Both Income and Consumption Thresholds
<i>Race</i>				
White non-Hispanic	64.7%	47.7%	49.6%	45.9%
Black non-Hispanic	12.5%	20.9%	19.4%	21.7%
Hispanic	16.3%	25.5%	24.2%	26.8%
Other	6.5%	5.7%	6.9%	5.6%
<i>Degree of Urbanization</i>				
Central City	34.4%	42.4%	41.2%	43.1%
Other Urban Areas	46.5%	33.7%	39.8%	35.3%
Rural Areas	19.2%	23.9%	19.1%	21.7%
<i>Education</i>				
Less than High School Graduate	13.0%	31.6%	28.4%	37.2%
High School Graduate	23.4%	32.2%	29.3%	30.8%
Some College	21.6%	21.7%	23.2%	20.9%
Associates Degree or Higher	42.0%	14.5%	19.1%	11.0%

Demographic Characteristics of the U.S. Population Compared to “Poor”: 2015

Characteristics	U.S. Population	Below Consumption_4 Threshold	Below After-Tax Income with In-kind Benefits Threshold	Below Both Income and Consumption Thresholds
<i>CU Member in Age Group</i>				
0-17 years old	51.2%	64.6%	53.5%	62.3%
<i>Marital Status</i>				
Single Mother	5.8%	11.4%	13.4%	14.6%
Married Couple Only	17.8%	4.7%	8.8%	4.3%
Married Couple with Others	44.0%	42.4%	30.0%	32.5%
<i>CU Earner Composition</i>				
Reference Person OR Spouse Only	27.9%	31.4%	37.0%	36.4%
Reference Person AND Spouse Only	26.2%	10.4%	5.7%	4.2%
No Earners	14.7%	20.6%	34.5%	33.3%



Summary and Conclusions

- Broader consumption measure more in-line with the theoretical measurement objective than measures based on total expenditures or consumption spending alone
- Median total expenditures and consumption follow similar trends
- Relative poverty, in general, decreases from total expenditures to consumption
- For anchored poverty rate thresholds, “poverty” rate for the income poor decreases by less than the “poverty” rate for the Consumption_4 poor
 - ▶ Surprising result, given that median income increased faster than median Consumption_4
 - ▶ Possibly explained by the relative size of the poverty gaps for each measure: poverty gap for income poor is larger than poverty gap for consumption_4 poor
 - ▶ Thus, a larger level change in median income may not lead to a larger reduction in income poverty
- These results DO NOT reflect poverty in terms of minimum needs

Future Work

- Decompose poverty by demographic characteristics and by source, e.g.
 - ▶ Contribution of changes in of household composition
 - ▶ Contribution of changes in income and consumption components (e.g.: earnings versus in-kind benefits; food at home versus rental equivalence)
- Look at the potential role of debt versus changes in assets (financial and non-financial) on changes in poverty
- For consumption measure
 - ▶ Produce a consumption measure that includes health insurance
 - ▶ Expand back to 2009 (same year for which imputed in-kind benefits are being imputed for production of SPM thresholds)
- For income measure: expand back to at least 2014 when BLS fully implemented the use of TAXSIM to estimate federal and state income taxes imputed with TAXSIM
- Compare to the consumption measures created by others



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