

# *Are Expenditures Equal to Consumption?*

## Research and Development at the BLS with Implications for Inequality and Poverty Measurement

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**Discussant: Jean Opsomer, Westat**

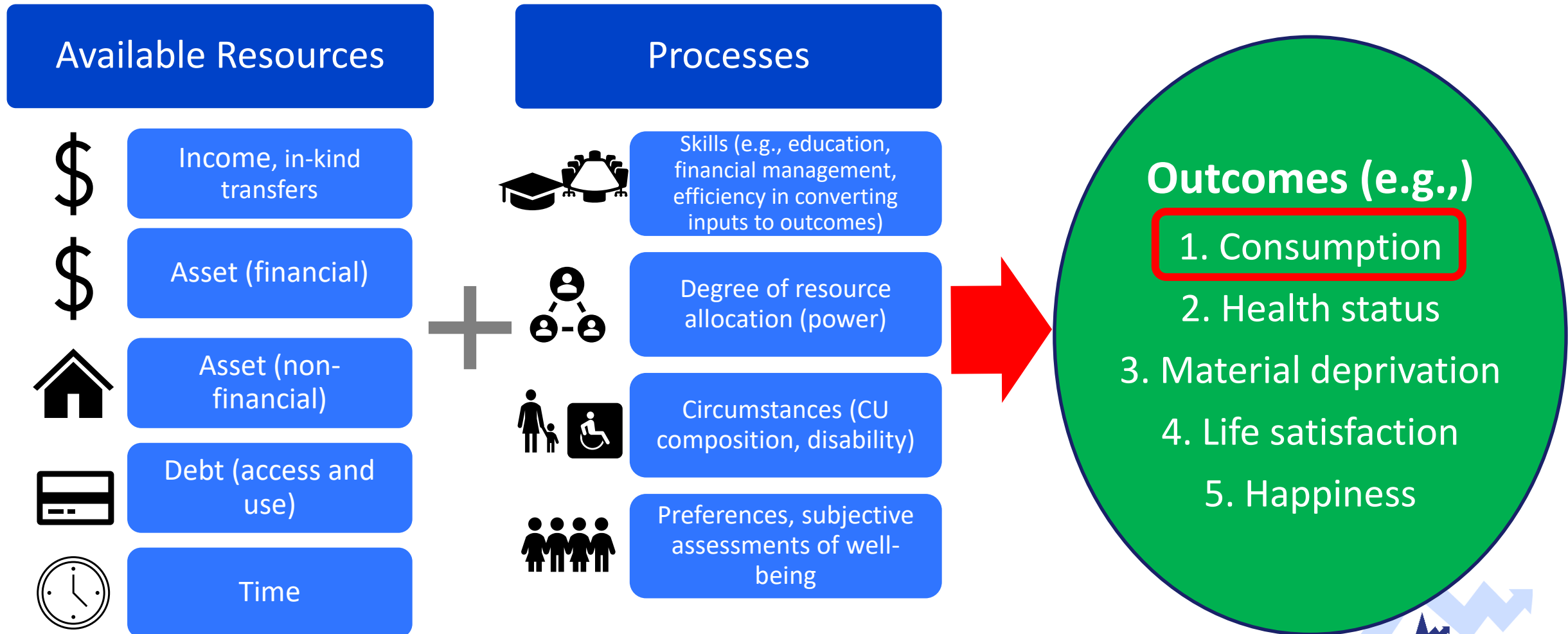


# Why Produce a Comprehensive Consumption Measure?

- Large demand for measure that reflects how people live, not just how they could live
- Period of COVID-19 showed us that more goods and services are produced by household members & consumption of these missing in current measures of economic well-being at the household level
- Supports work and recommendations
  - ▶ Interagency Technical Working Group (ITWG) on Evaluating Alternative Measures of Poverty (2020)
  - ▶ CNSTAT Panel An Integrated System of U.S. Household Income, Wealth, and Consumption Data and Statistics to Inform Policy and Research (present)
  - ▶ OECD expert groups on distributions of income, consumption, and wealth (micro and macro groups)
- ❖ *NOTE: Have presented earlier work on progressions of our measure and used in inequality and poverty at various venues during 2022 (e.g., ASSA, APPAM, SGE, OECD, CNSTAT, FESAC)*



# BLS Initiative Focuses on Consumption as a Well-being Outcome as A Function of Resources and Processes



# Challenge

## ■ Problem

- ▶ Consumer Expenditure Survey is not designed to measure consumption

## ■ Potential solution

- ▶ Identify goods and services for which consumption values missing
- ▶ Impute values

## ■ Potential drawbacks

- ▶ Assumption regarding imputations can limit applications for use
- ▶ Likely still missing top end of distribution



# Outline

- Definitions of consumption expenditures/spending and consumption
  - ▶ OECD Expert Group on Distribution of Household Income, Consumption and Wealth report (2013)
  - ▶ Interagency Technical Working Group (ITWG) on Evaluating Measures of Poverty report (2020)
- Our approach
- Analysis and results
  - ▶ Inequality
  - ▶ Poverty
- Summary and future work



# Consumption Expenditures versus Consumption

(based OECD Framework 2013)

	Consumption Expenditures <sup>2</sup>	Consumption <sup>3</sup>
1. Direct monetary purchases in the market by consumers with special treatment for: <sup>1</sup>	Yes	Yes
a. Purchase price of vehicles and durables	Yes	No
b. Health	Yes	Yes
c. Education	Yes	??
2. Free or subsidized goods and services from an employer	No	Yes
3. Goods and services received from bartering	No	Yes
4. Goods produced from own consumption (e.g., from garden)	No	Yes
5. Own account production (production within household)		
a. Service flows from owner-occupied housing	No	Yes
b. Service flows from stock of vehicles owned	No	Yes
c. Service flows from other consumer durable goods owned	No	Yes
d. Unpaid domestic services (e.g., childcare)	No	Yes
6. In-kind transfers (e.g., gifts received) from other households, businesses, non-profits	No	Yes
7. Social in-kind transfers of goods and services (STiK)	No	Yes

<sup>1</sup> For CE, includes “consumer unit-to-consumer unit” purchases; not included in OECD framework.

<sup>2</sup> Includes goods and services given to people living outside the consumer units.

<sup>3</sup> Excludes goods and services given to people living outside the consumer units.



# Included in BLS Publication of Consumer Spending but not in Consumption Spending nor in Consumption

- Cash contributions
- Allocations to and purchases of life insurance
- Endowments
- Annuities
- Other personal insurance
- Retirement, pensions, and Social Security



# ITWG Recommendation: What to Include in Consumption

- Expenditures for own consumption



- In-kind benefits public and private



- Flow of services

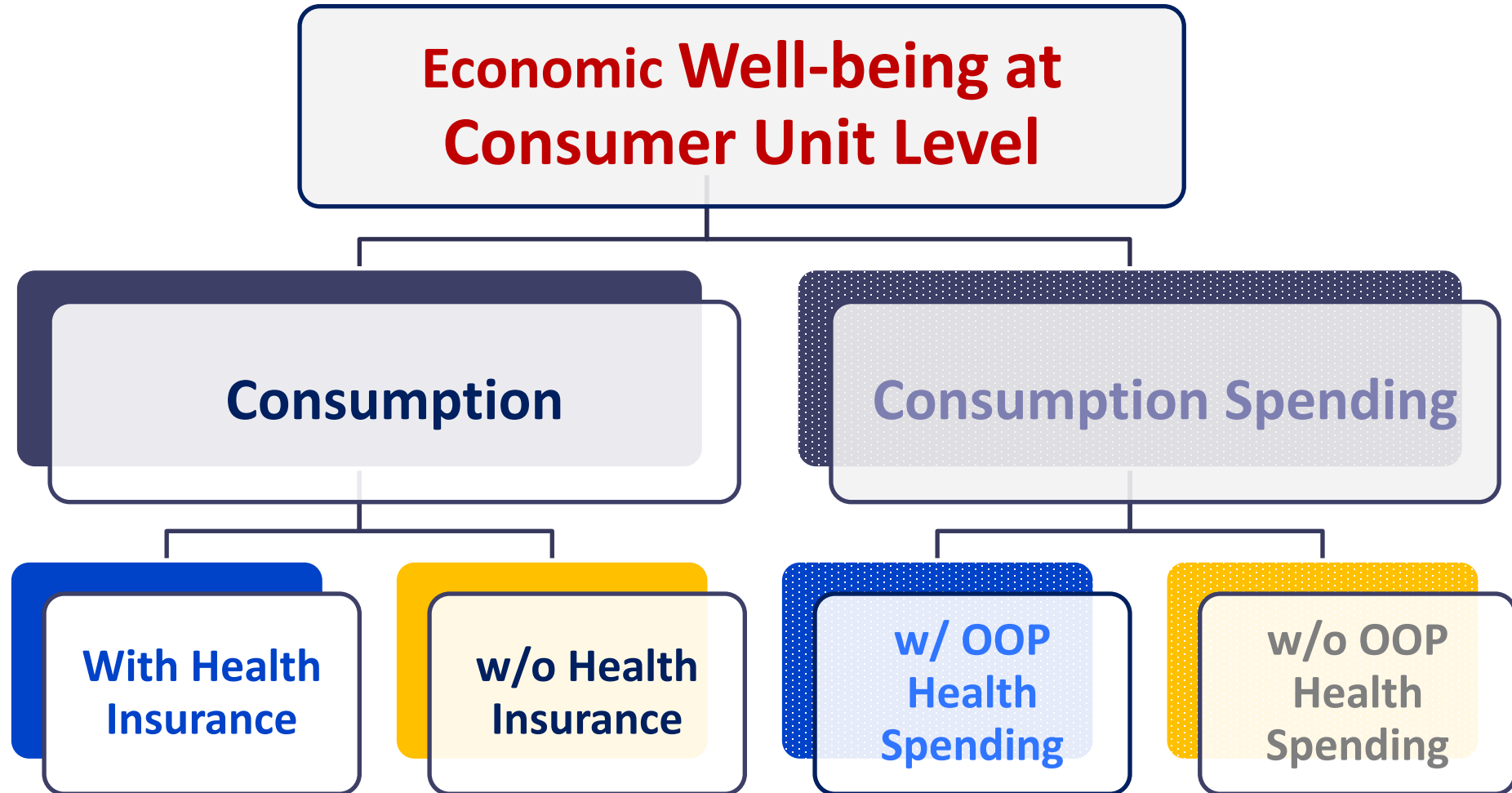


- Health insurance
  - ▶ With and without





# Measures Produced for Analysis



NOTE: None of these measures include "Education"

# Data Sources

## For Most Goods and Services:

### *U.S. Consumer Expenditure Survey Interview*

- Time period: 2019Q2-2020Q1 to represent 2019
- Interviewed up to 4 times, 3-month recall
- Consumer unit (CU)
- Out-of-pocket spending for most goods and services
- Rental equivalence for owned shelter
- Rent paid & characteristics to impute market rents when in-kind rental assistance
- Stock of cars and trucks to produce flow of services

## In-kind Employer Benefits

- Medical Expenditure Panel Survey (MEPS-IC) from the Agency for Healthcare Research and Quality: employer-provided health insurance

## Other In-kind Federal Government Benefits

- CPS-ASEC (households/members): reported receipt of government provided in-kind benefits
  - ▶ School meals (NSLP)
  - ▶ Women, infants, and children (WIC)
  - ▶ LIHEAP (receipt and values)
- USDA: food assistance programs
- Center for Medicare and Medicaid Services (CMS) National Health Expenditure (NHE)
  - ▶ Medicare
  - ▶ Medicaid

# Method to Produce Inequality and Poverty Statistics

- Apply equivalence scale to adjust for differences in consumer unit size
  - ▶ 3-parameter equivalence scale (same as used for SPM thresholds)
  - ▶ Assign equivalized value to each person within CU (i.e.,  $\text{population weight} = \text{FINLWT21} * \text{CUsize}$ )
- Distributional and inequality analysis (consumer units and person population weighted)
  - ▶ Rank people by equivalized values to derive cutoff points for deciles, weight by persons
  - ▶ Aggregate inequality measures and results by deciles
- Poverty Analysis (population weighted)
  - ▶ Relative poverty threshold as 60% of median equivalized measure values
  - ▶ Absolute poverty threshold set as the same for all measures
  - ▶ Poverty rates for total U.S. population and for subpopulations of the “poor”

# Results and Analysis

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- ▶ Basic statistics
- ▶ Inequality and distributions
- ▶ Poverty

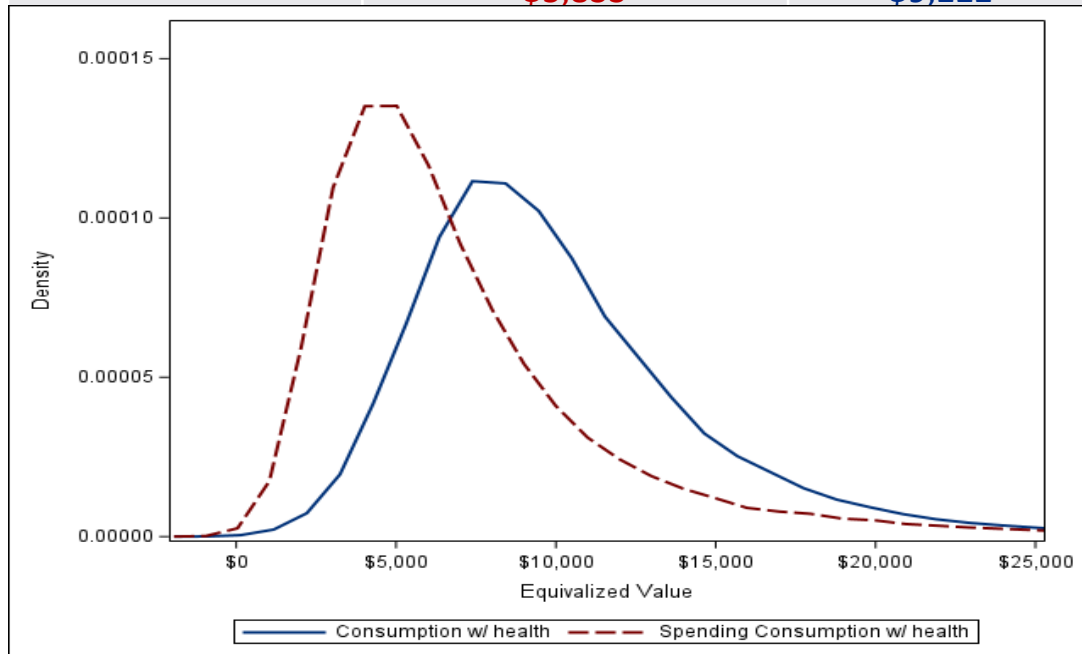


# Moving from Expenditures to Consumption

## Densities of Quarterly Equivalized Values: 2019

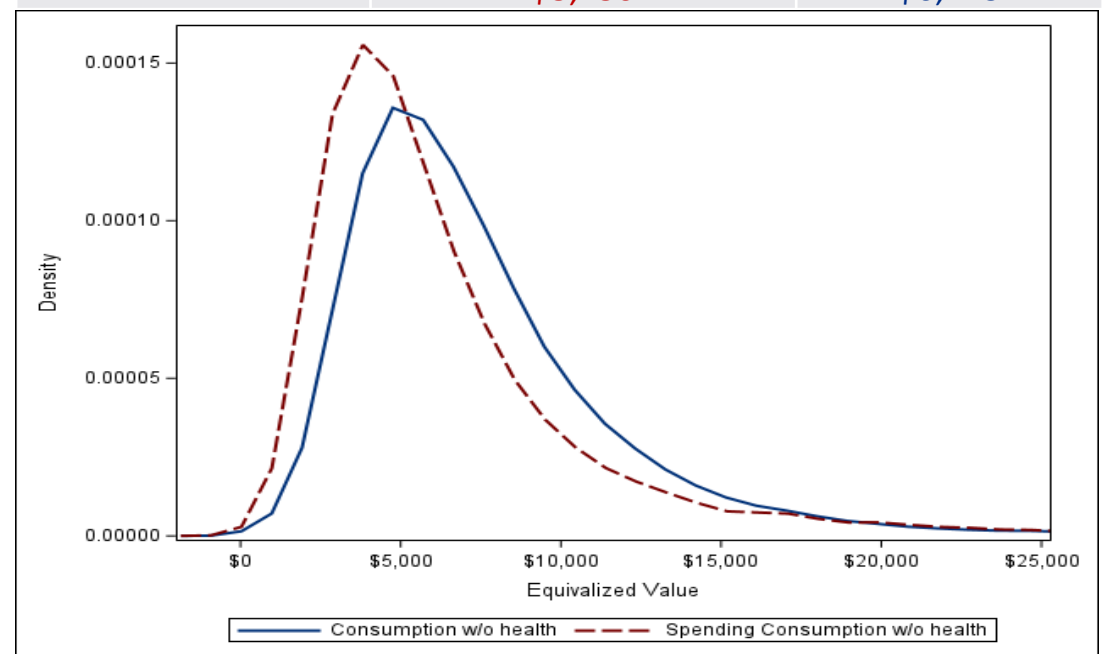
### With OOP Health or Health Insurance

	Spending	Consumption
Mean	\$7,383	\$10,233
Median	\$5,833	\$9,222



### Without Health

	Spending	Consumption
Mean	\$6,648	\$7,523
Median	\$5,150	\$6,443

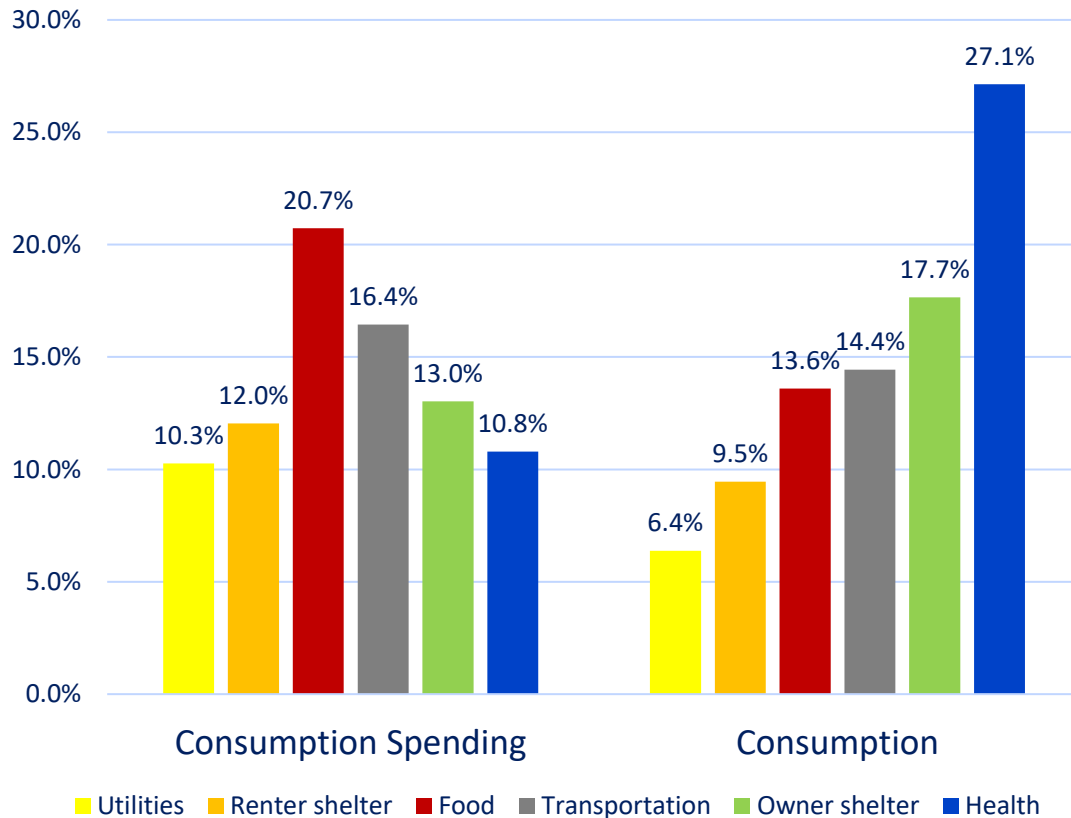


NOTE: Based on quarterly adult equivalized values; population weighted (FINLW21\**Cusize*); consumption spending includes out-of-pocket spending on health insurance, goods, and services while consumption only includes health insurance; measures do not include Education; unweighted sample size=21270 (10 observations with 0 or negative values dropped)

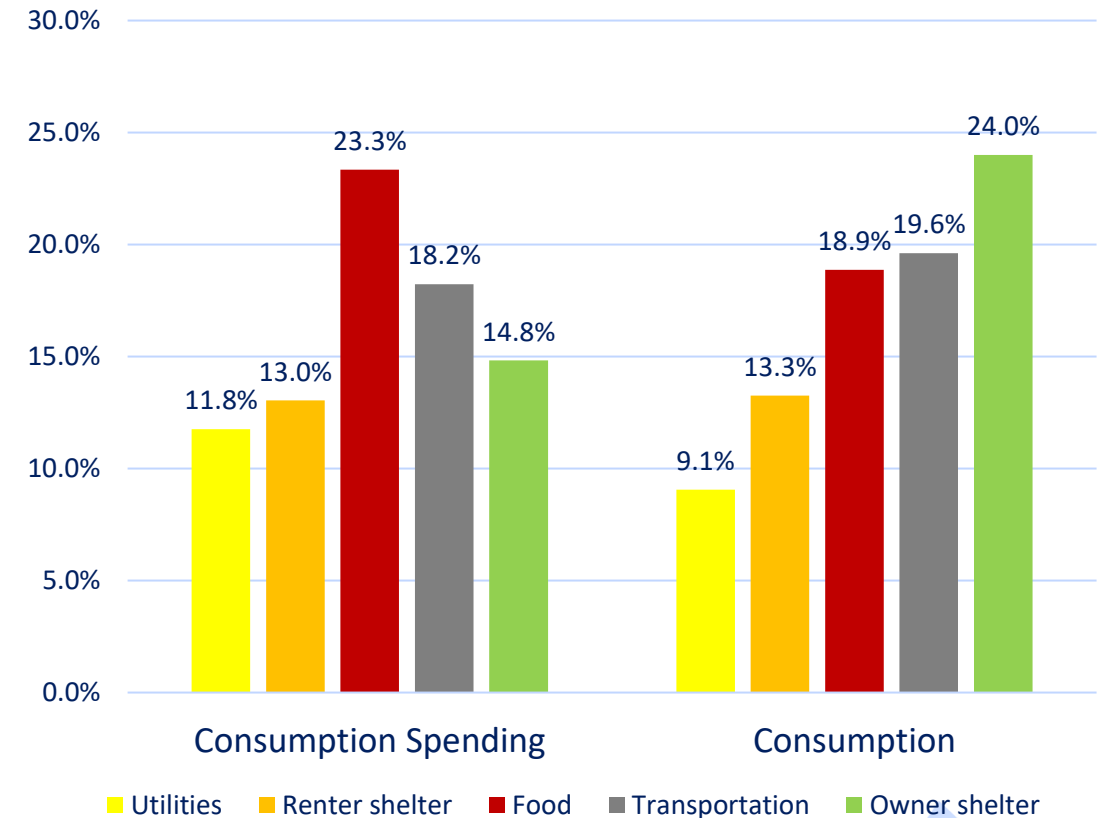
# Moving from Expenditures to Consumption

## Average Consumer Unit Shares: 2019

### With OOP Health or Health Insurance



### Without Health



NOTE: Based on quarterly values for Consumer Units, population weighted as (FINLWT21\*CU); measures do not include Education; unweighted sample size=21270 (10 observations with 0 or negative values dropped)



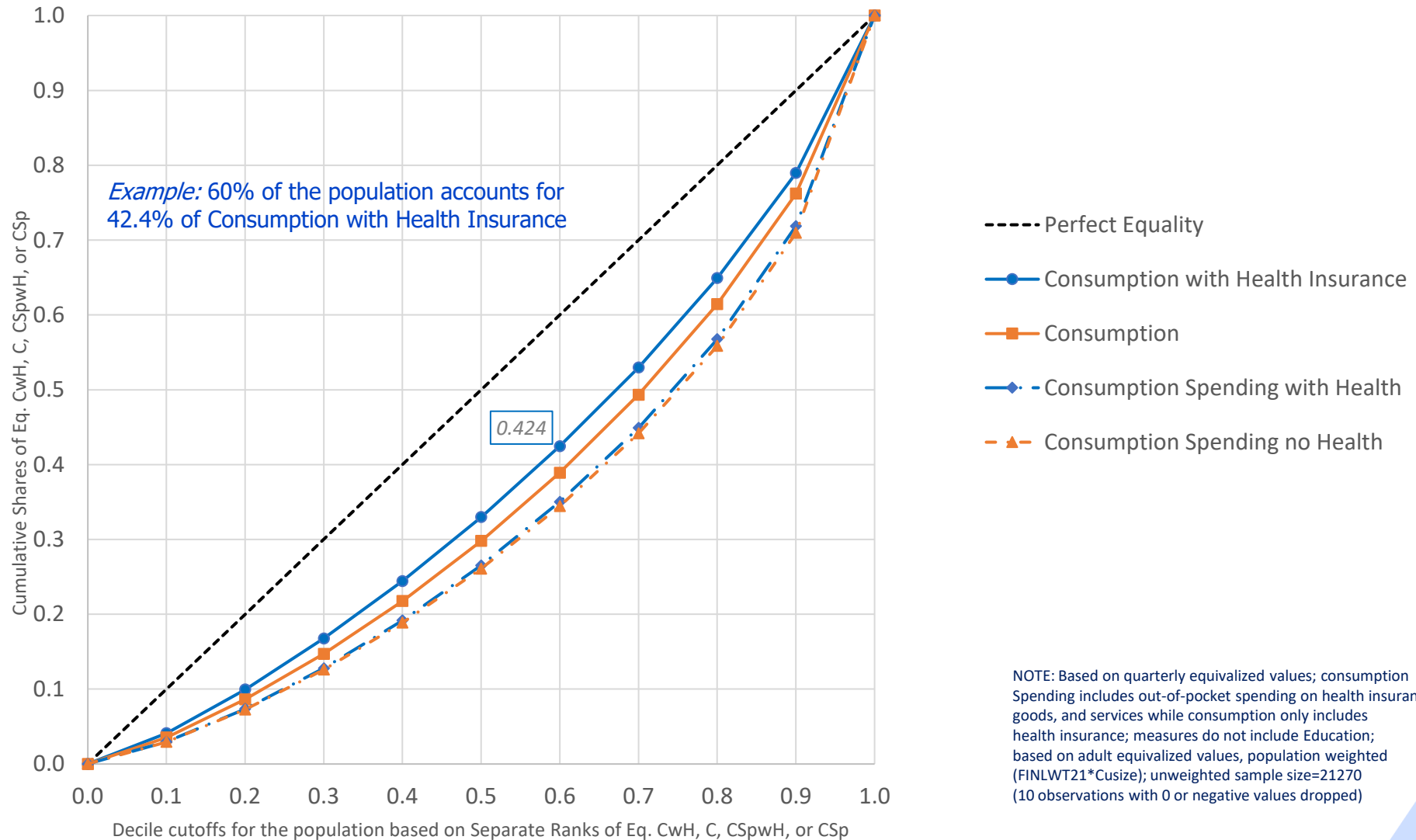
# Inequality and Distributional Analysis

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- ▶ Lorenz curves
- ▶ Aggregate Inequality Indices
- ▶ Deciles



# Lorenz Curves of Equivalized Consumption and Spending: 2019





# Aggregate Inequality Indices for Consumption versus Consumption Spending with and without OOP Health or Health Insurance: 2019

Consumption		
<b>With Health Insurance</b>		
Gini		0.25
Thiel		0.11
Mean log deviation		0.11
90/10 ratio		3.04
<b>Without Health Insurance</b>		
Gini		0.30
Thiel		0.16
Mean log deviation		0.15
90/10 ratio		3.55

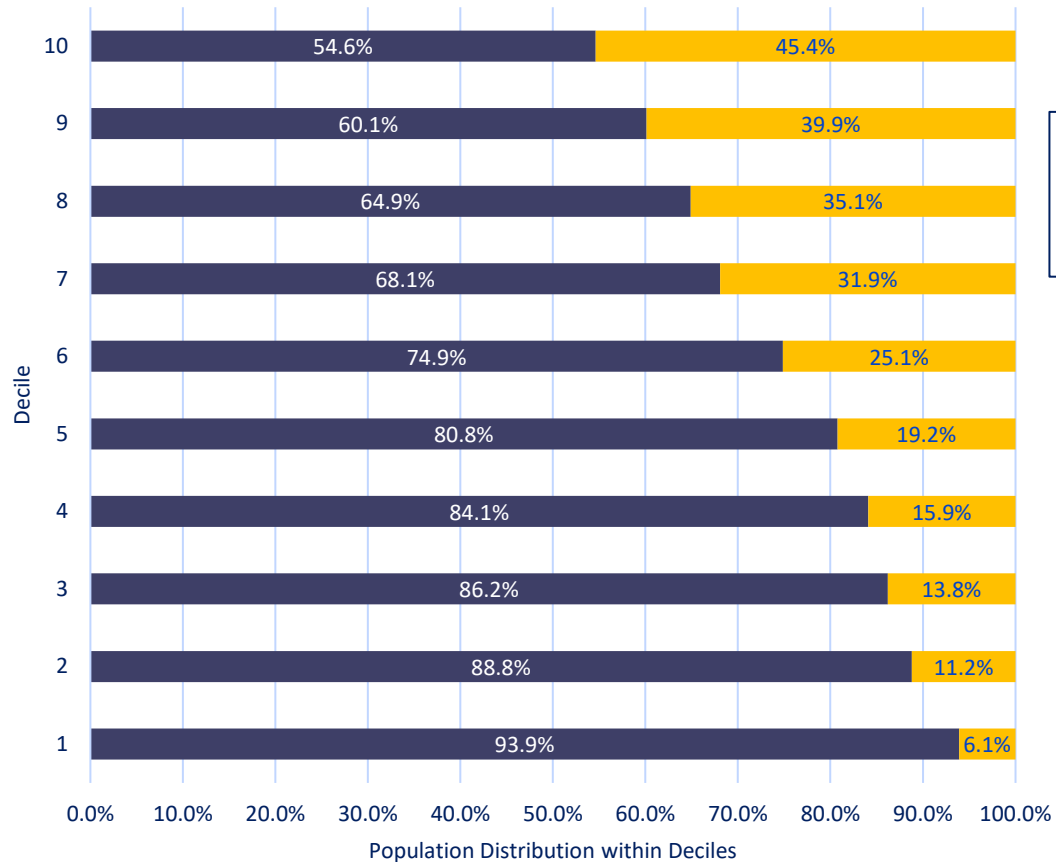
Consumption Spending		
<b>With OOP Health Expenditures</b>		
Gini		0.35
Thiel		0.23
Mean log deviation		0.21
90/10 ratio		4.42
<b>Without OOP Health Expenditures</b>		
Gini		0.36
Thiel		0.24
Mean log deviation		0.22
90/10 ratio		4.63

NOTE: Based on quarterly adult equivalized values; population weighted (FINLWT21\*Cosize); consumption spending includes out-of-pocket spending on health insurance, goods, and services while consumption only includes health insurance; measures do not include Education; unweighted sample size=21270 (10 observations with 0 or negative values dropped)

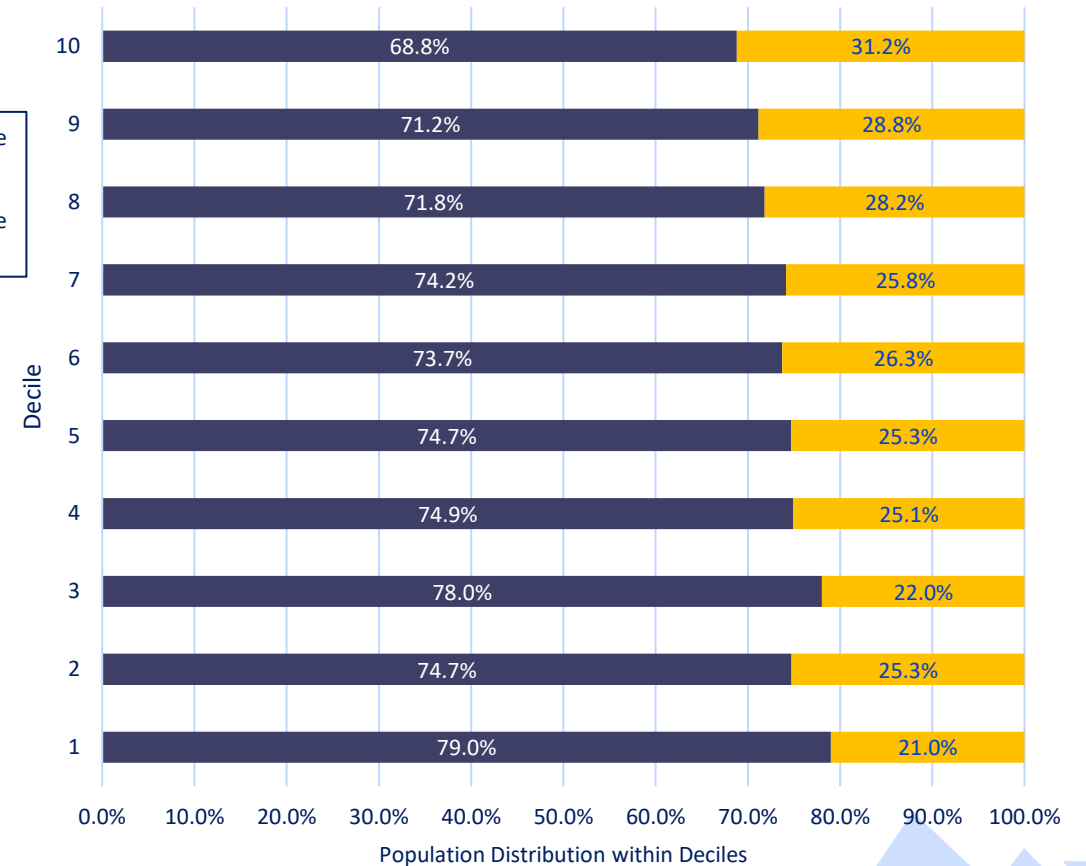


# Distribution of CUs by Age of Reference Person within Deciles of Consumption with and without Health Insurance: 2019

## Consumption With Health Insurance Deciles



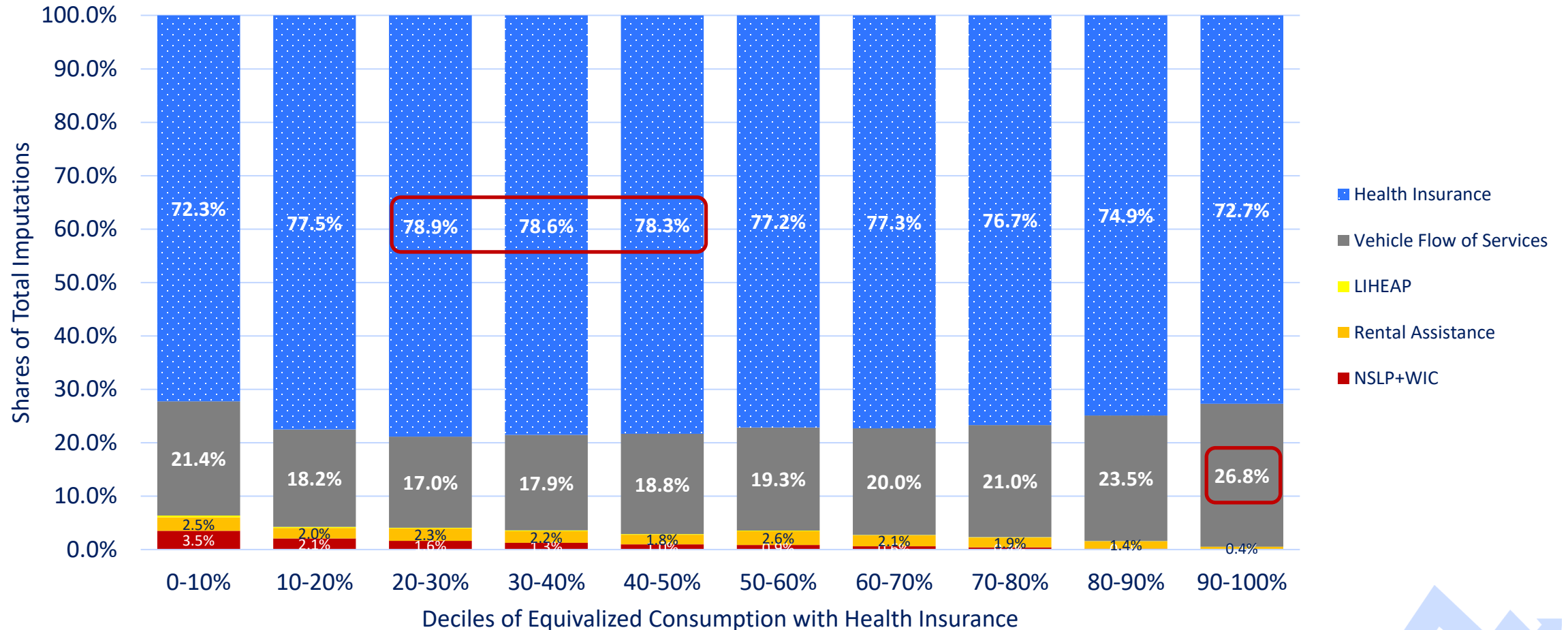
## Consumption without Health Insurance Deciles



NOTE: Deciles based on adult equivalized values and distributions are for Consumer Units, population weighted (FINLWT21\*Cusize); unweighted sample size=21270 (10 observations with 0 or negative values dropped)



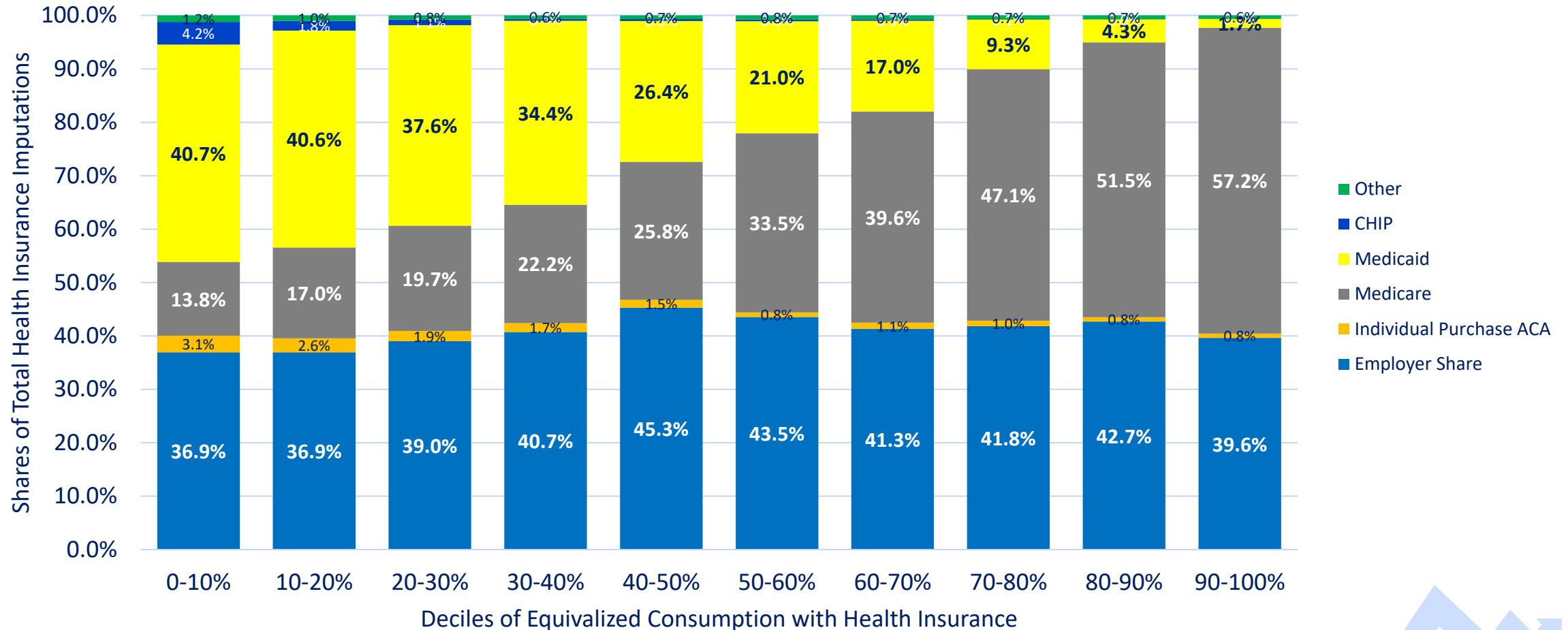
# Shares of Aggregate Imputations within Deciles of Consumption with Health Insurance: 2019



NOTE: Percentage shares based on aggregate Consumer Unit consumption with health insurance within deciles; Education is not included in the consumption measure; aggregates are based on CU weighted (FINLWT21) values; deciles are based on ranking of quarterly equalized values with cutoffs based on person weighting (FINLWT(Cusize))



# Shares of Aggregate Health Insurance Imputations within Deciles of Consumption with Health Insurance: 2019



NOTE: Percentage shares based on aggregate Consumer Unit health insurance imputations within consumption with health insurance deciles; Education is not included in the consumption measure; aggregates are based on CU weighted (FINLWT21) values; deciles are based on ranking of quarterly equalized values with cutoffs based on person weighting (FINLWT(Cusize))



# Poverty Measurement and Analysis

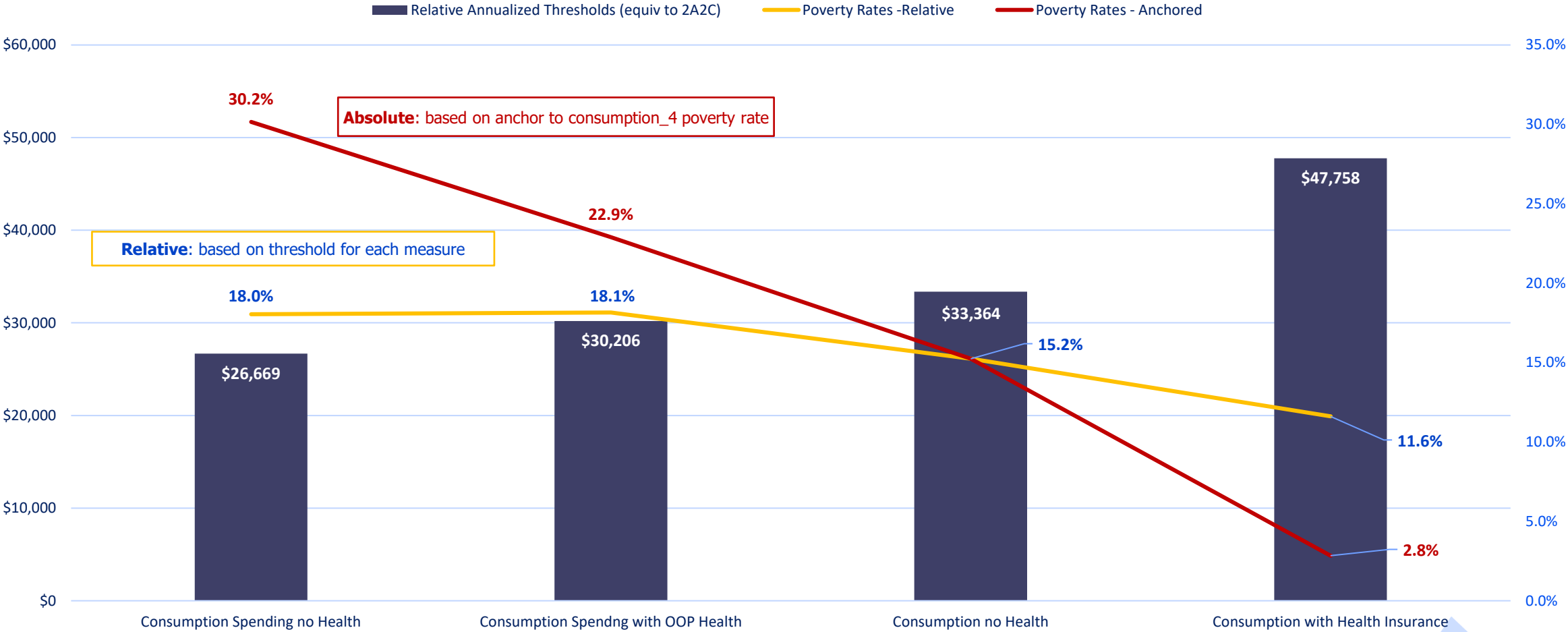
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# Thresholds Based on Relative Concept

- For this study: thresholds defined in 2 different ways
  1. Purely relative as 60% of median (i.e., threshold is a function of the same “measure”)
  2. Absolute threshold for all measures set at relative threshold for “Consumption without Health Insurance”
- Adult equivalized relative thresholds
  - ▶ Consumption spending with and without OOP health expenditures
  - ▶ Consumption with and without health insurance
  - ▶ 3-parameter equivalence scale (as used to produce SPM)
- Show “annualized” relative thresholds equivalized to those for 2 adults and 2 children
- No geographic adjustment
- NOTE: these thresholds DO NOT represent a level of “needs”; they represent a point in a distribution

# Annualized 2A+2C Relative Poverty Thresholds and Person Poverty Rates: 2019



NOTE: Thresholds based on quarterly adult equivalized values; population weighted (FINLWT21\*Cusize); consumption spending includes out-of-pocket spending on health insurance, goods, and services while consumption only includes health insurance; measures do not include Education; unweighted sample size=21270 (10 observations with 0 or negative values dropped)



# Demographic Characteristics of the U.S. Population Compared to Study-defined “Poor”: 2019

Characteristic of Consumer Unit	U.S. Population	Below Consumption without Health Insurance Threshold	Below Consumption with Health Insurance Threshold
<i>Age of Reference Person for CU</i>			
Less than Age 65	81.3%	83.1%	93.6%
Greater than or Equal 65	18.7%	16.9%	6.4%
<i>With Imputation</i>			
LIHEAP	3.3%	10.7%	4.2%
NSLP	30.7%	52.5%	45.4%
WIC (including infant formula rebate)	4.0%	12.1%	5.9%
Rental assistance	3.8%	11.2%	3.4%
Health insurance	90.2%	NA	36.2%
Vehicle flow of services (positive values)	88.2%	73.0%	73.7%

NOTE: Thresholds based on quarterly adult equivalized values; population weighted (FINLWT21\*CuSize); consumption spending includes out-of-pocket spending on health insurance, goods, and services while consumption only includes health insurance; measures do not include Education; unweighted sample size=21270 (10 observations with 0 or negative values dropped)





# Public Assistance and Health Imputations of the U.S. Population Compared to “Poor”: 2019

Characteristic of Consumer Unit	U.S. Population	Below Consumption without Health Insurance Threshold	Below Consumption with Health Insurance Threshold
<i>With Health Insurance Imputation by Type</i>			
Employer provided only	45.0%	21.4%	25.8%
Individual ACA only	1.8%	1.4%	4.3%
Medicare only	12.5%	12.3%	6.3%
Medicaid only	11.0%	29.4%	17.1%
CHIP only	0.8%	2.2%	4.2%
Other only	1.3%	0.8%	2.2%
<i>No Health Insurance Imputation</i>			
& with OOP health insurance premium	3.5%	1.6%	7.3%
& without OOP health insurance premium	6.2%	9.6%	28.1%

NOTE: Thresholds based on quarterly adult equivalized values; population weighted (FINLWT21\*Csuzie); consumption spending includes out-of-pocket spending on health insurance, goods, and services while consumption only includes health insurance; measures do not include Education; unweighted sample size=21270 (10 observations with 0 or negative values dropped)



# Summary

- Broader consumption measure more in-line with the theoretical measurement objective than measures based on total expenditures or consumption spending alone
- As move from consumption spending to consumption
  - ▶ More equal distributions
  - ▶ Lower poverty rate based on consumption with health insurance when using a relative threshold

Consumer Expenditures  $\neq$  Consumption Spending  $\neq$  Consumption

# Future Work

- Imputations
  - ▶ Health insurance subnational
  - ▶ Rents for CUs living rent-free
- Address issue of health insurance imputations pushing people over an anchored poverty line
- Evaluate options to include education
- Add value of home production for own consumption
- Continue with inequality and poverty analyses
- Add more years to our analysis
- Progress will be posted on <https://www.bls.gov/cex/consumption-home.htm>



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