

Moving to the Median and Expanding the Estimation Sample: The Case for Changing the Expenditures Underlying SPM Thresholds

Liana E. Fox
U.S. Census Bureau

Thesia I. Garner
Bureau of Labor Statistics

FCSM 2018 Research and Policy Conference
March 7-9, 2018

The views expressed in this research, including those related to statistical, methodological, technical, or operational issues, are solely those of the author and do not necessarily reflect the official positions or policies of the U.S. Census Bureau or Bureau of Labor Statistics. The author accepts responsibility for all errors. This presentation is released to inform interested parties of ongoing research and to encourage discussion of work in progress. This presentation reports the results of research and analysis undertaken by U.S. Census Bureau and Bureau of Labor Statistics staff. It has undergone more limited review than official publications.

Poverty: The History of a Measure



National Academy of Sciences convenes a panel of experts to conduct a study of statistical issues in the measurement and understanding of poverty, *June 1992.*

An **Interagency** Technical Working Group on Developing a Supplemental Poverty Measure is formed by Commerce Under Secretary Rebecca Blank and Office of Management and Budget Chief Statistician Katherine Wallman and charged with developing a set of initial starting points to permit the U.S. Census Bureau, in cooperation with the Bureau of Labor Statistics, to produce a Supplemental Poverty Measure, *December 2009*



The Panel on Poverty and Family Assistance publishes a report proposing a new approach for measuring poverty.

Constance F. Citro and Robert T. Michael (editors), *Measuring*

Poverty: A New Approach, Washington, D.C., National Academy Press, 1995.

How to Determine Poverty Status

Resources



Needs



- All resource unit members have the same poverty status.
- For individuals who do not live with family members, their individual resources are compared with the appropriate threshold.

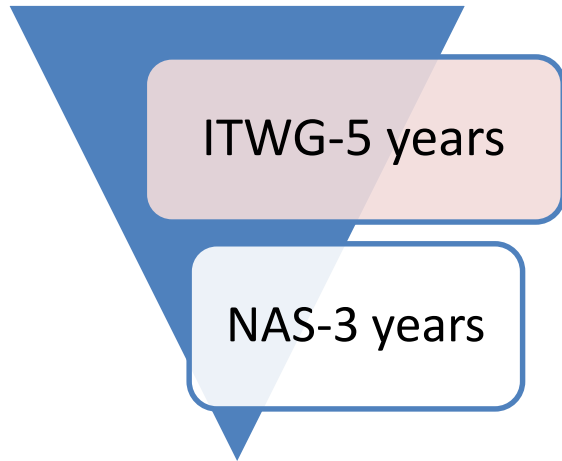
Which Goods and Services?

Food, Clothing, Shelter, Utilities (FCSU)

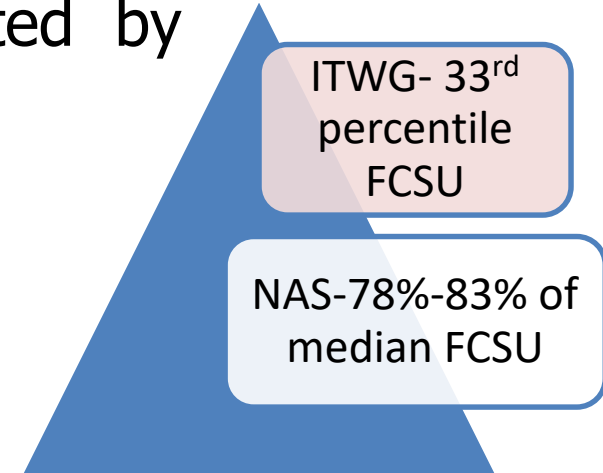


Based on Whom?

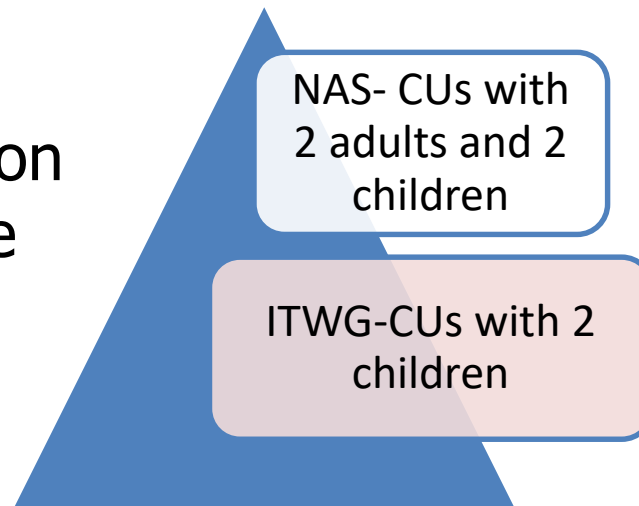
Standards of living



Represented by



Estimation
sample



Current SPM Threshold Construction

- Produced by Bureau of Labor Statistics-Division of Price and Index Number Research (BLS-DPINR) using 5 years of Consumer Expenditure Survey Interview (CE) data
- 30th-36th percentile of expenditures of food, clothing, shelter, and utilities (FCSU) plus additional 20%
- Based on estimation sample of resource units with *exactly* 2 kids
- Separate thresholds by housing tenure: Owners with mortgage, owners without mortgage and renters
- Adjust for unit size/composition and geography

Changes Under Consideration

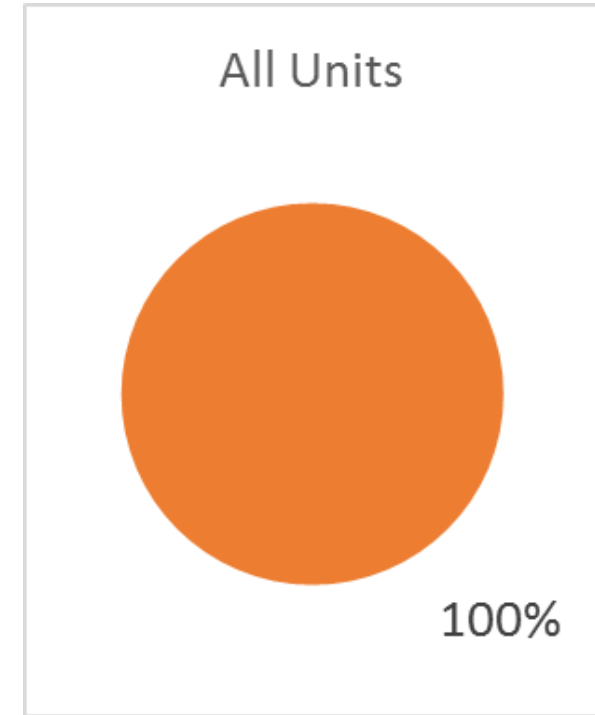
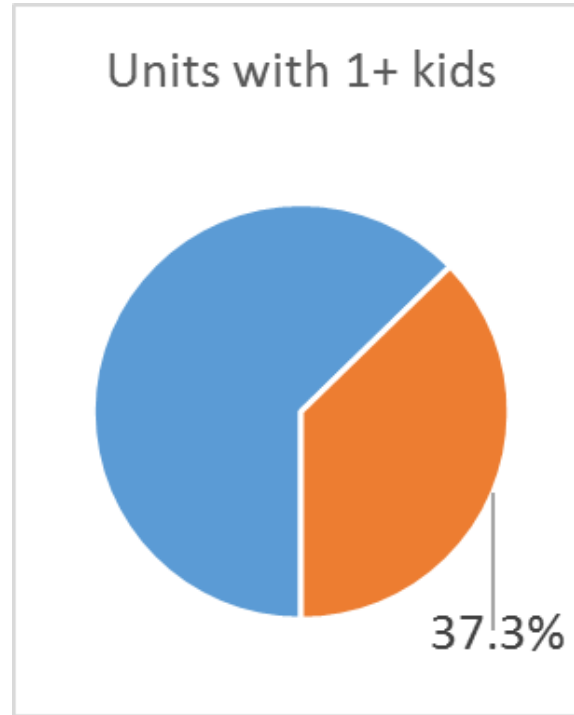
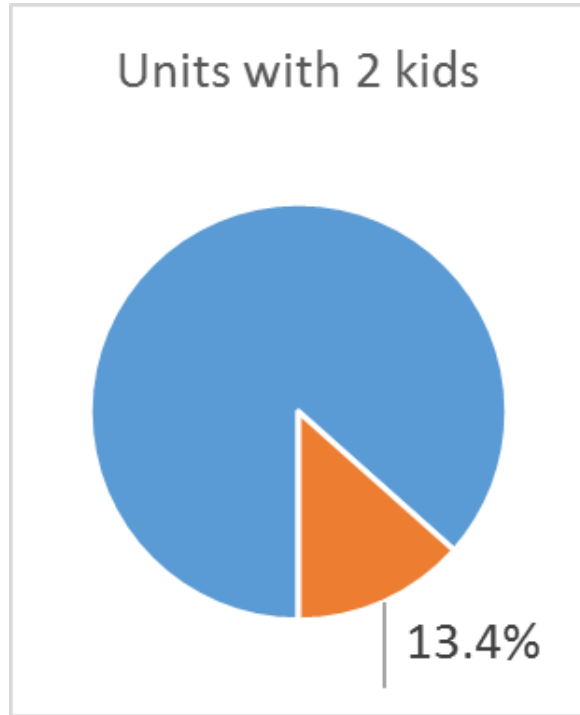
Expand estimation sample from CU's with exactly 2 children

- Increase sample size
- Reflect spending patterns of a larger share of the population

Move base from 30-36th percentile to median of FCSU dist.

- Reduce impact of imputed benefits
- Allow for future incorporation of medical expenses

Expand Estimation Sample



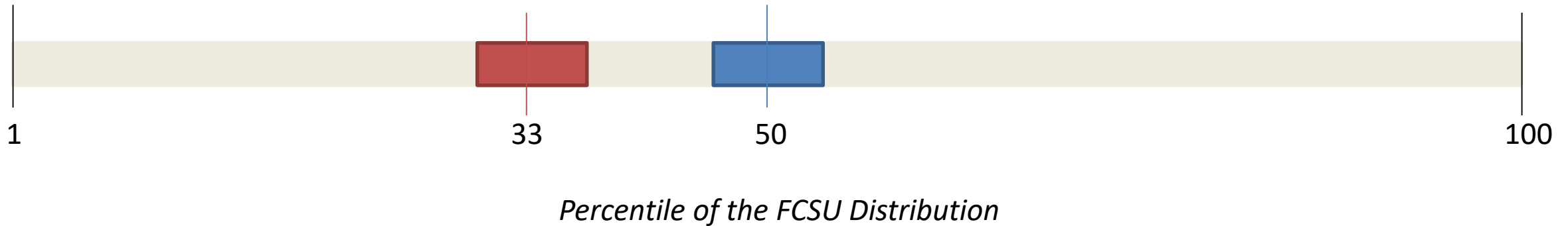
- Increase sample size
- Reflect spending patterns of a larger share of the population

Sample Size for Estimation Samples

	CU's with 2 kids	CU's with 1+ kids	All CU's
Total Estimation Sample (unweighted)	n = 14,668	n = 40,620	n = 129,604
30-36th ptile FCSU	n=860	n=2,396	n= 7,632
Owners with mortgage	305	773	1,730
Owners without mortgage	112	332	2,646
Renters	443	1,291	3,256

Source: Bureau of Labor Statistics, Consumer Expenditure Survey Interview Data, 2012Q2-2017Q1.

Change Base of Thresholds



Move base to median

- Reduce impact of imputed benefits
- Allow for future incorporation of medical expenses

Share of CUs Receiving Benefits

	30-36 th Ptile of FCSU	47-53 rd Ptile of FCSU
Public Housing	2.4	1.4
Govt. Asst. with Rent	2.0	1.4
SNAP	21.9	12.5
Private Health Insurance	65.2	74.3

Note: Estimation sample is consumer units with exactly two children.

Source: Bureau of Labor Statistics, Consumer Expenditure Survey Interview Data, 2012Q2-2017Q1.

Alternative Thresholds Examined

- 80% of 47th-53rd percentile (Median)
- CU's with 1+ kids
- All CU's

	CU's with 2 kids	CU's with 1+ kid	All CU's
30 th -36 th ptile	33 rd /2 kids	33 rd /1+ kids	33 rd /All
80% of 47 th -53 rd ptile	50 th /2 kids	50 th /1+ kids	50 th /All

Threshold Values Relative to 33rd/2 kids

		CU's with 2 kids	CU's with 1+ kid	All CU's
30 th - 36 th	Owners with mortgages	\$26,336	\$25,530	\$27,463
	Owners without mortgages	\$22,298	\$21,807	\$24,441
	Renters	\$26,104	\$25,412	\$27,235
80% of 47 th - 53 rd	Owners with mortgages	\$26,103	\$25,111	\$27,664
	Owners without mortgages	\$21,859	\$21,225	\$24,408
	Renters	\$25,439	\$24,901	\$27,542

Source: Bureau of Labor Statistics, Consumer Expenditure Survey Interview Data, 2012Q2-2017Q1.

2016 SPM Rates

- Rates follow same pattern as thresholds

	CU's with 2 kids	CU's with 1+ kid	All CU's
30 th -36 th ptile	13.97	13.28	15.37
80% of 47 th -53 rd ptile	13.45	12.79	15.58

Source: U.S. Census Bureau, Current Population Survey, 2017 Annual Social and Economic Supplement.

Change in SPM Rates from 2011-2016

- Only 33rd/1+ kid statistically different from 33rd/2 kids

	CU's with 2 kids	CU's with 1+ kid	All CU's
30 th -36 th ptile	-2.11	-1.54*	-1.81
80% of 47 th -53 rd ptile	-1.90	-1.58	-1.76

Source: U.S. Census Bureau, Current Population Survey, 2017 Annual Social and Economic Supplement.

SPM Rates by Age: 2016

	33 rd /2 kids	50 th /All CU's	Difference
Overall	13.97 (0.25)	15.58 (0.25)	1.61*
Under 18	15.24 (0.47)	17.24 (0.48)	2.01*
18 to 64 years	13.35 (0.29)	14.74 (0.28)	1.39*
65 years and older	14.55 (0.47)	16.43 (0.50)	1.88*

* An asterisk following an estimate indicates difference is statistically different from zero at the 90 percent confidence interval. Note: Margins of error in parentheses. Source: U.S. Census Bureau, Current Population Survey, 2017 Annual Social and Economic Supplement.

Summary/Recommendations

- We recommend expanding the estimation sample
 - 1+ kids would nearly triple sample size, and keep similar attributes.
 - All CU's would increase sample size 9-fold, but concern that families without children spend differently than families with children.
- We recommend moving the base of the threshold from 33rd to some percentage of median.
 - In 2016, 75.5% of median would match 33rd/2 kids overall SPM rate.
 - In 2011, 77% of median would match 33rd/2 kids overall SPM rate.

Contact

Liana E. Fox

Social, Economic & Housing Division

U.S. Census Bureau

liana.e.fox@census.gov

Thesia I. Garner

Division of Price and Index Number Research

Bureau of Labor Statistics

Garner.Thesia@bls.gov

Extra Slides

ITWG Guidance

- According to the ITWG recommendations, SPM should be seen as a research measure, improving due to changes in data, methodology or research.
- Priority should be placed on “consistency between threshold and resource definitions, data availability, simplicity in estimation, stability of the measure over time, and ease in explaining methodology (ITWG, 2010).”

Supplemental Poverty Measure (SPM)

The Supplemental Poverty Measure: 2016
Current Population Reports

By Lisa Fox
 Issued September 2017
 HHS-17-001

INTRODUCTION

Since the publication of the first official U.S. poverty estimates, researchers and policymakers have continued to discuss the best approach to measure income and poverty in the United States. Beginning in 2011, the U.S. Census Bureau began publishing the Supplemental Poverty Measure (SPM), which extends the official poverty measure by taking account of many of the government programs designed to assist low-income families and individuals that are not included in the official poverty measure. This is the seventh report describing the SPM released by the Census Bureau, with support from the Bureau of Labor Statistics (BLS). This report presents updated estimates of the prevalence of poverty in the United States using the official measure and the SPM based on information collected in 2017 and earlier Current Population Survey Annual Social and Economic Supplements (CPS ASEC).

HIGHLIGHTS

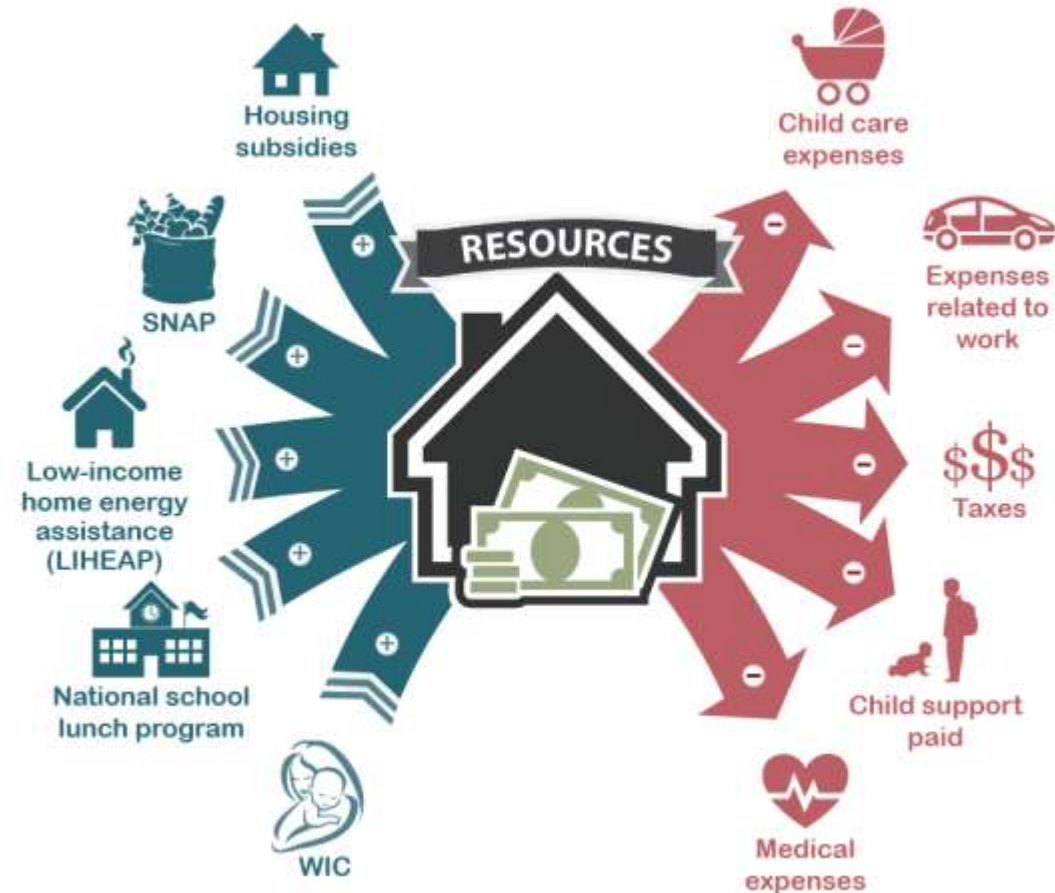
- In 2016, the overall SPM rate was 13.9 percent. This was 0.6 percentage points lower than the 2015 SPM rate of 14.5 (figure 1 and figure 2).
- SPM rates went down for children under age 18 and adults aged 18 to 64. SPM rates for individuals aged 65 and older were up, from 13.7 percent in 2015 to 14.5 percent in 2016 (figure 3).
- The SPM rate for 2016 was 1.2 percentage points higher than the official poverty rate of 12.7 percent (figure 3).
- The percentage of individuals aged 65 and older with SPM resources below half their SPM threshold increased from 4.5 percent in 2015 to 5.2 percent in 2016 (figure 6 and Appendix Table 6-4).
- There were 13 states plus the District of Columbia for which SPM rates were higher than official poverty rates, 20 states with lower rates, and 17 states for

Figure 1. SPM Poverty Rates for Total Population and by Age Group: 2015 and 2016
 (in percent)

Age Group	2015	2016
All people	14.5	13.9
Under 18 years	16.7	15.1
18 to 64 years	14.1	13.3
65 years and over	13.7	14.5

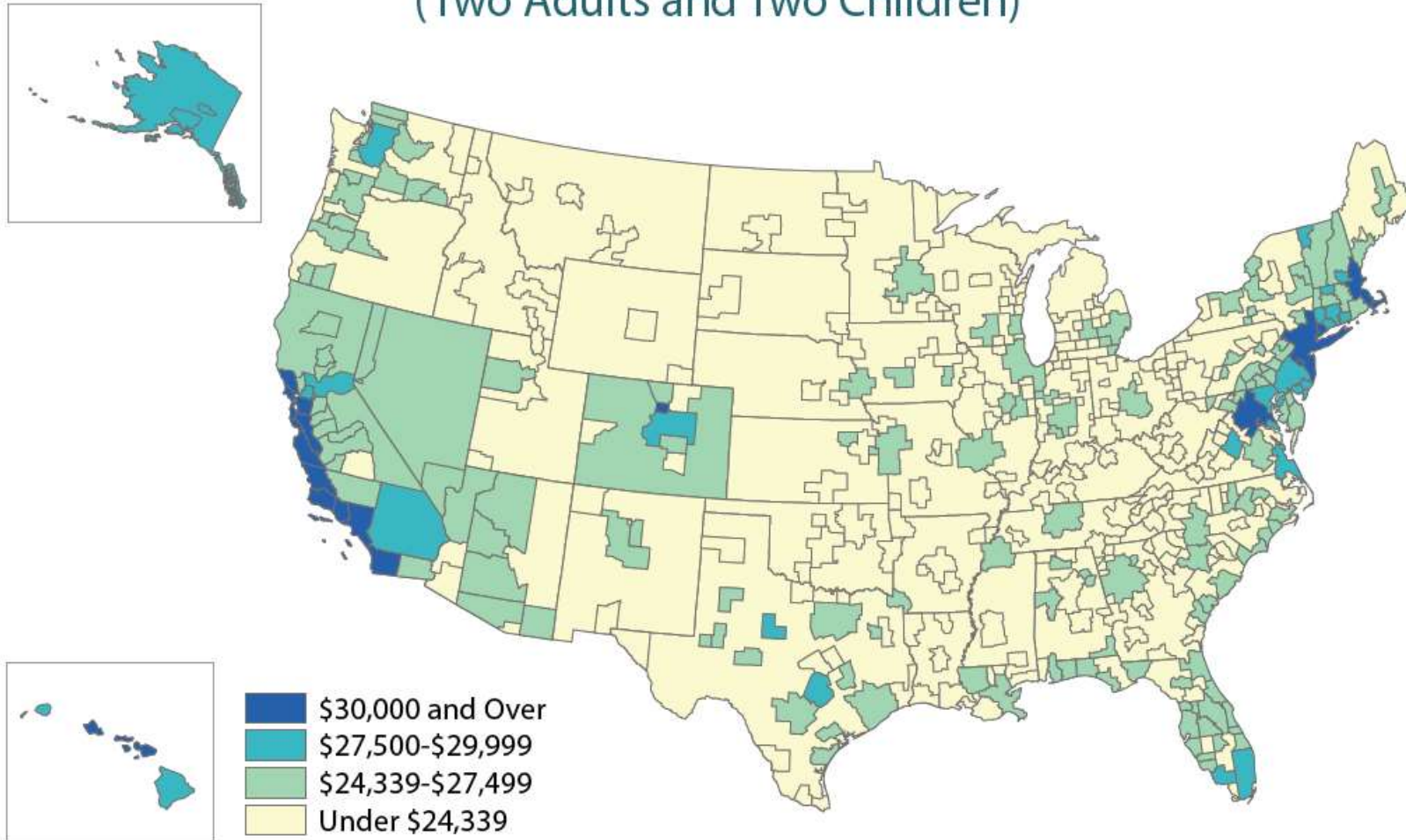
Source: For information on methodology, estimation, sampling error, conceptual issues, and definitions, see current Census program reports, especially the table in part 17 of the report. U.S. Census Bureau, Current Population Survey, 2016-2017 Annual Social and Economic Supplements.

United States Census Bureau | U.S. Department of Commerce, Economics and Statistics Administration, U.S. CENSUS BUREAU, census.gov



Source: U.S. Census Bureau, Current Population Survey, 2017 Annual Social and Economic Supplement. www2.census.gov/library/publications/2017/demo/p60-261.html.

2016 SPM Poverty Thresholds for Renters (Two Adults and Two Children)



Sources: Geographic adjustments based on housing costs from the American Community Survey 2011-2015.
Base thresholds are from the Bureau of Labor Statistic <<https://stats.bls.gov/pir/spmhome.htm>>.