
Presence and Persistence of Poverty in U.S. Tax Data

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Background

Administrative tax data are important for accurately measuring income distributions

Most tax-based research has focused on the upper tail of the distribution¹

This paper focuses on the lower tail of the distribution, estimating poverty trends in tax data:

- During and after the Great Recession
- Duration of poverty over that time

¹Piketty and Saez (2003), Auten and Gee (2009)

Preview of results

1. Pre-tax and after-tax poverty trends differ greatly:
 - Tax policies during the Great Recession alleviated much of the pre-tax increase in poverty
 - Focusing on after-tax income shrinks the gap between child poverty and working-age/elderly poverty
2. A sizeable minority experience poverty at some point: 42 percent spent at least one year in after-tax poverty between 2007 and 2018
3. Many exit poverty each year, although many remain, and some exit only to return
 - One-third of those in poverty in 2007 were poor for at least half of the dozen years (2007-2018)

Potential limitations of using tax data

- Non-filers
 - About 10-15% adults do not file a tax return¹
- Narrow “tax-unit” sharing unit
 - Young adults in higher-income families may appear poor if looking just at their tax return if filing separately
- Missing non-taxable cash income

¹Molloy, Smith, & Wozniak (2011)

Solution to these limitations

Solution to Non-filers

- Use information return incomes, consistent with Chetty and Hendren (2018)¹

Solution to tax-unit sharing unit

- The Tax Household Sample
 - Previously completed for 2010,
 - Extended here to cover 2007-2018²
- Link all individuals with the same physical address on tax forms into the same household

Solution to missing non-taxable income

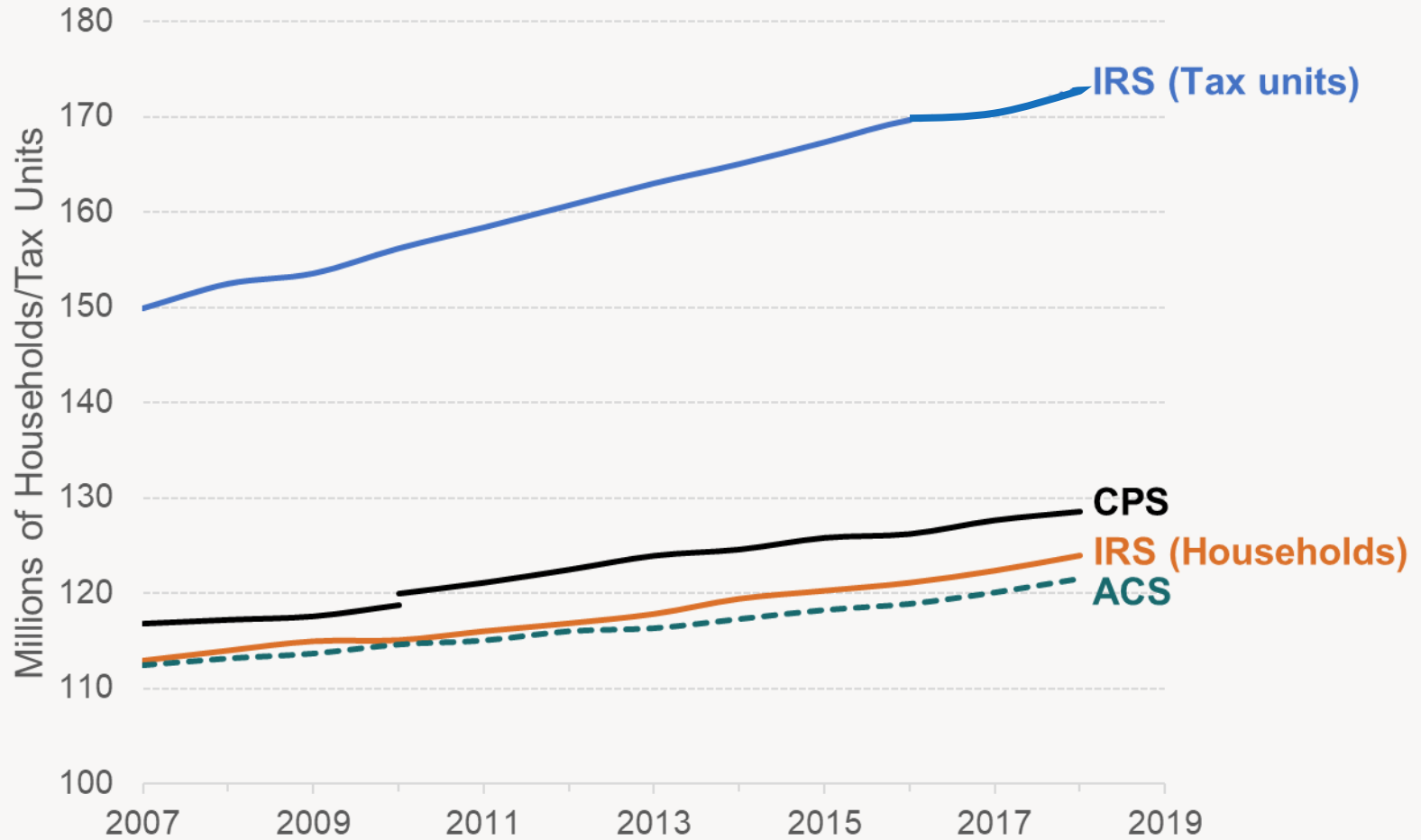
- Anchor 2007 poverty rates to preserve poverty level despite different income definition
- Excluding taxes actually matters more for trends than excluding non-taxable cash income

¹Includes Forms W-2, SSA-1099, 1099-DIV/MISC/K/R, 5498 & K-1 ²Larrimore, Mortenson, & Splinter (Forthcoming)

Zero-income households

- Most people appear in IRS data
 - Tax returns (Form 1040) or information returns (Form W-2)
 - IRS population is almost always within 2 percent of ACS
- Reasons individuals might not appear:
 - No income
 - Only black-market income
 - Invalid data: missing date of birth or addresses
- How to account for them:
 - Our upper bound assumption: assume the CPS count of people in zero-income households is correct
 - Impute 4 to 5 million additional people in zero-income households each year to match CPS zero counts
 - Consistent with Chetty and Hendren (2018) who assume people not in tax data are true zeros

Household Creation



Poverty Measurement: Resources

Tax return income: both pre-tax and after-tax income

- Note: misses non-taxable cash transfers
(matters for levels, not trends)

Measure at the household level

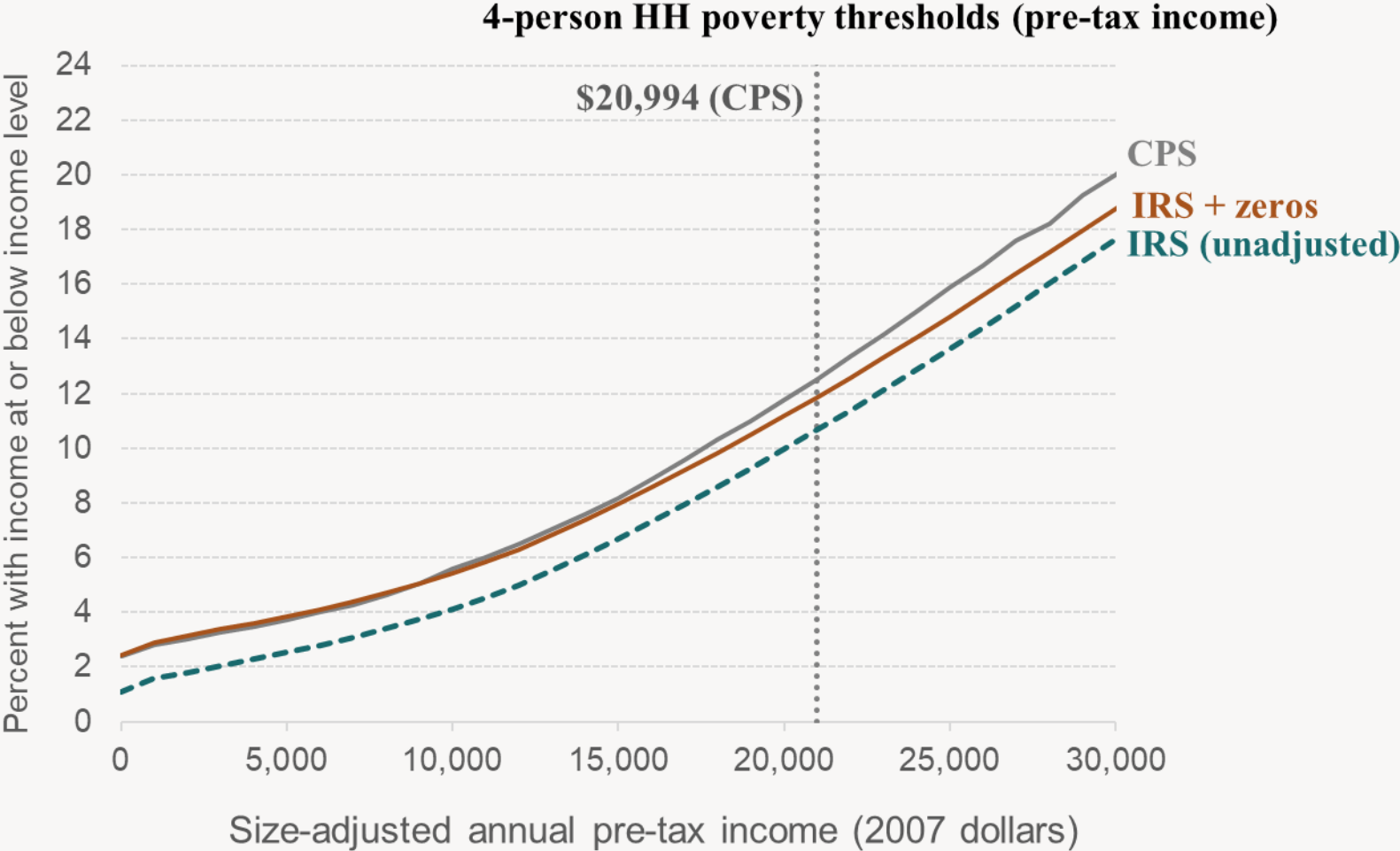
- Consistent with approach of PSID researchers

Adjust for household size using square-root of size equivalence scale

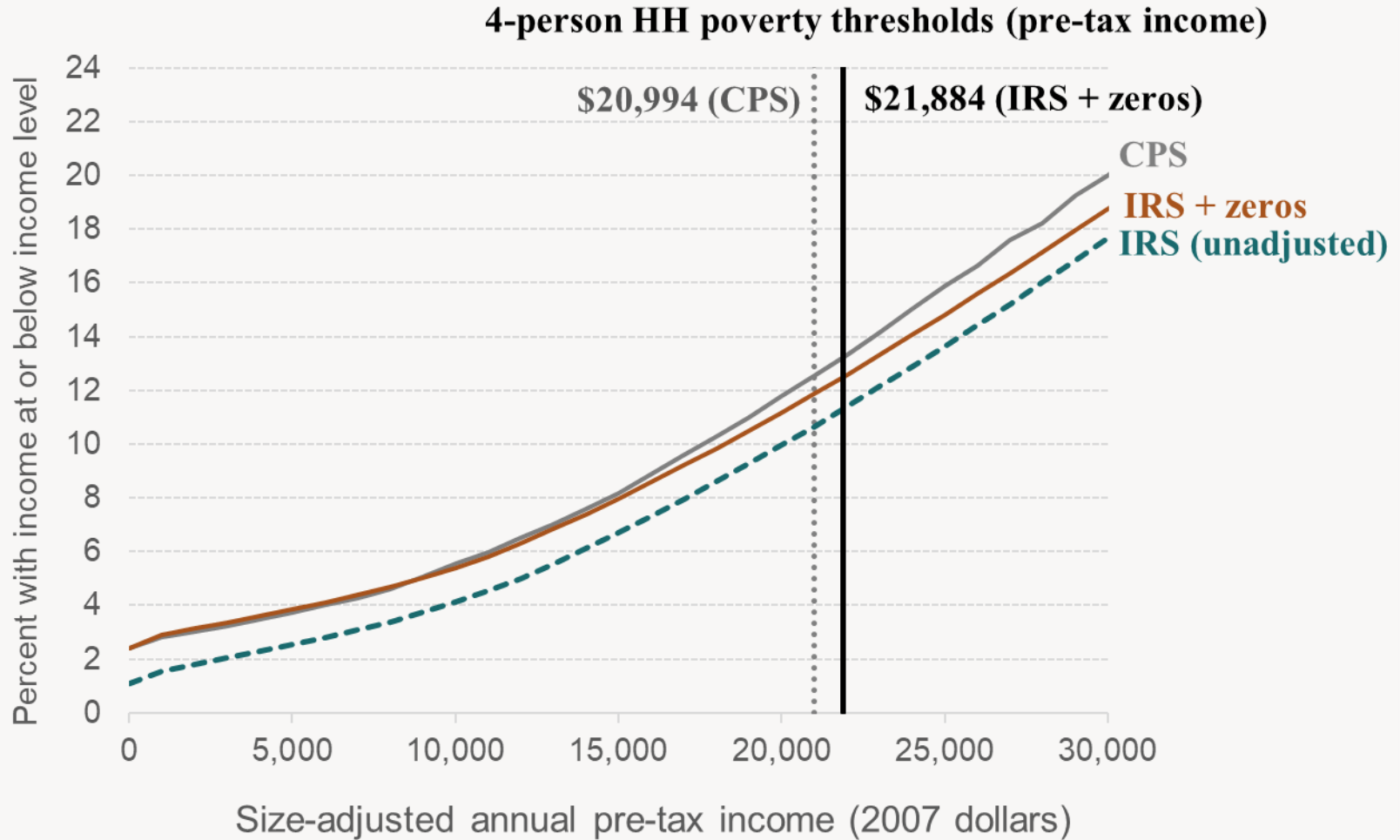
Poverty Measurement: Needs

- IRS captures more income at the bottom of the distribution than the CPS
- Policy question whether this should change rate of poverty
- Anchor thresholds such that our poverty rate matches the official rate in 2007
 - Similar approach to Burkhauser et al. (2019)
 - Consistent with Citro and Michael (1995) suggestion to change resources and needs together
- Adjust threshold in subsequent years using CPI-U (consistent with the Official Poverty Measure)

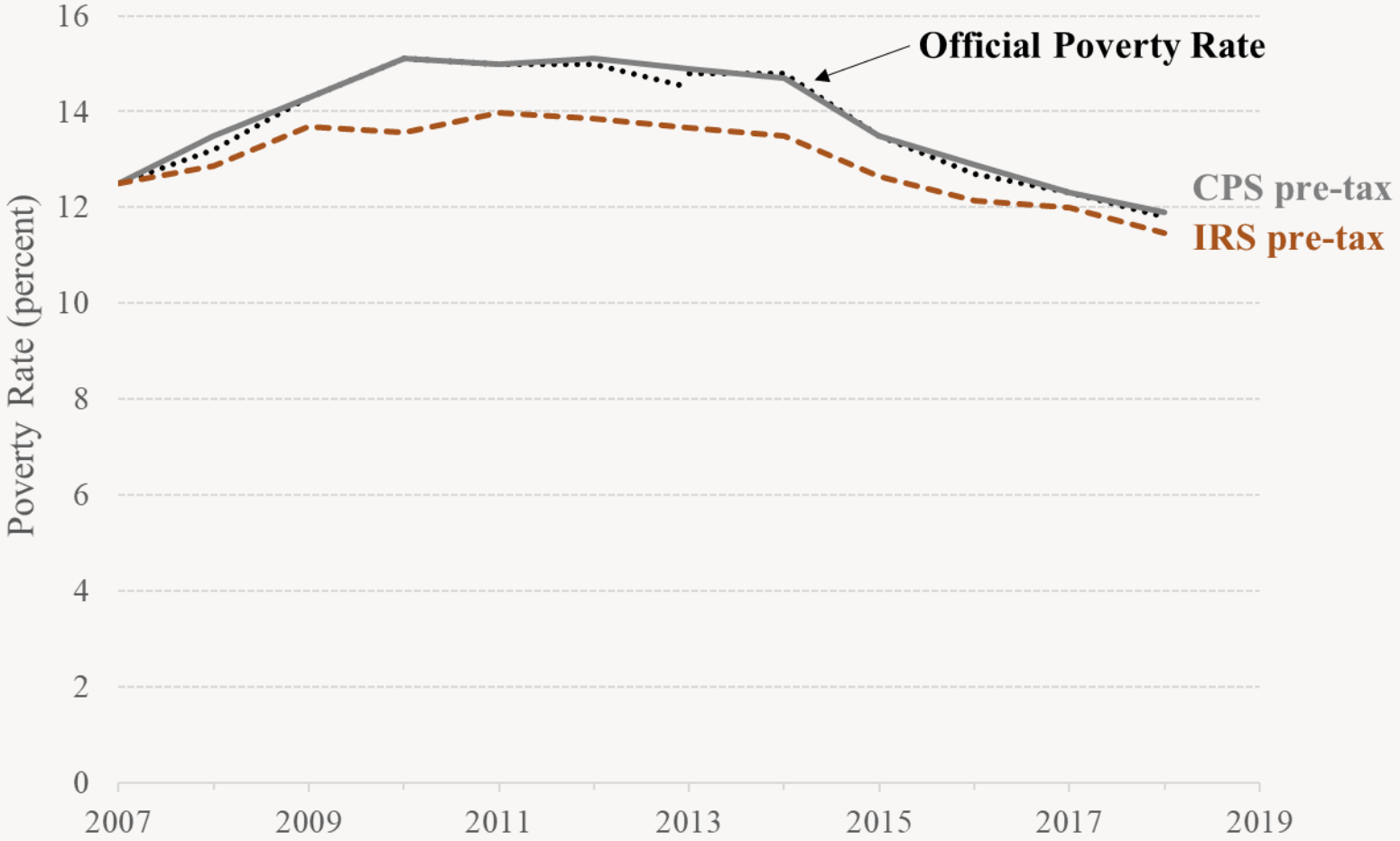
Poverty Thresholds (pre-tax taxable income)



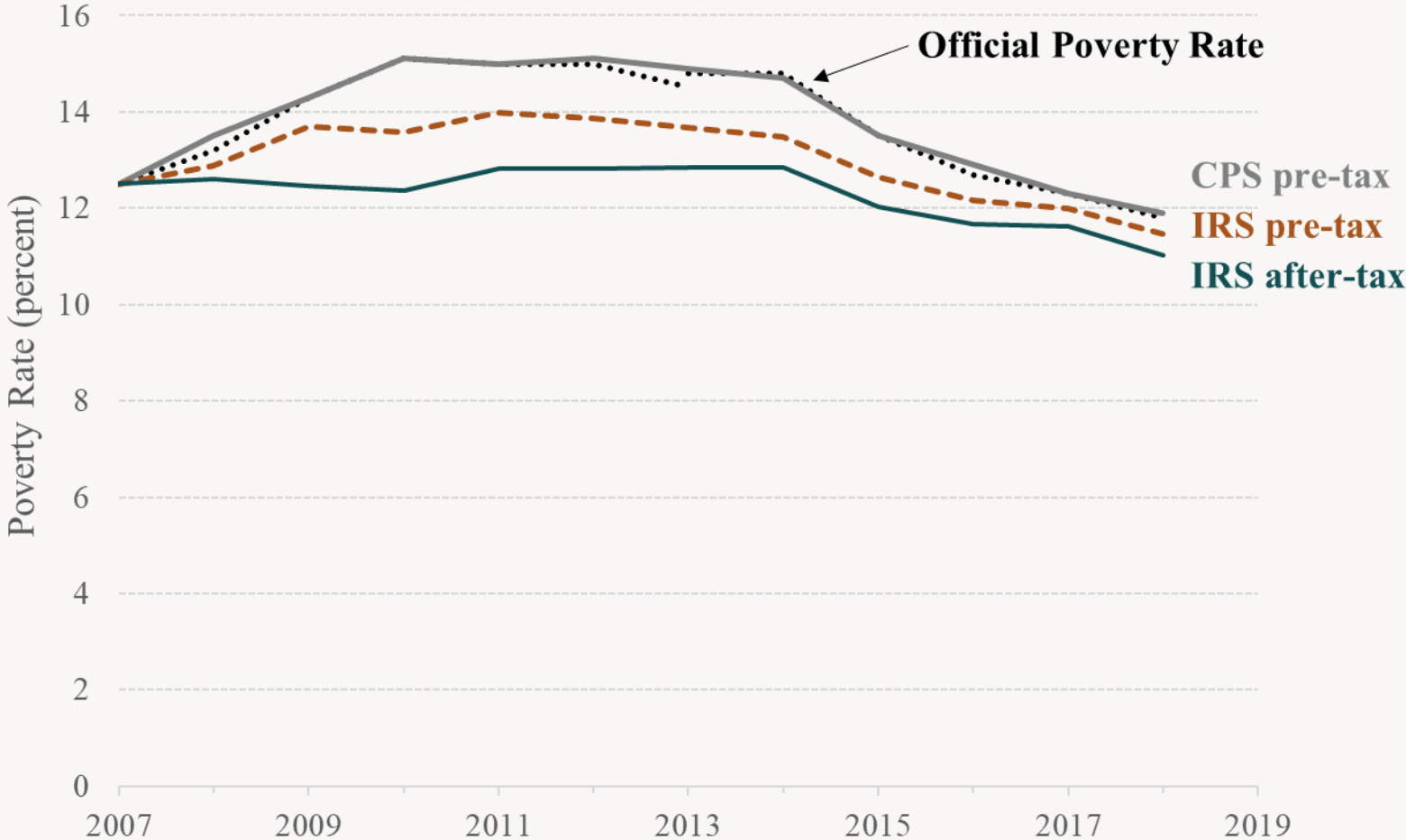
Poverty Thresholds (pre-tax taxable income)



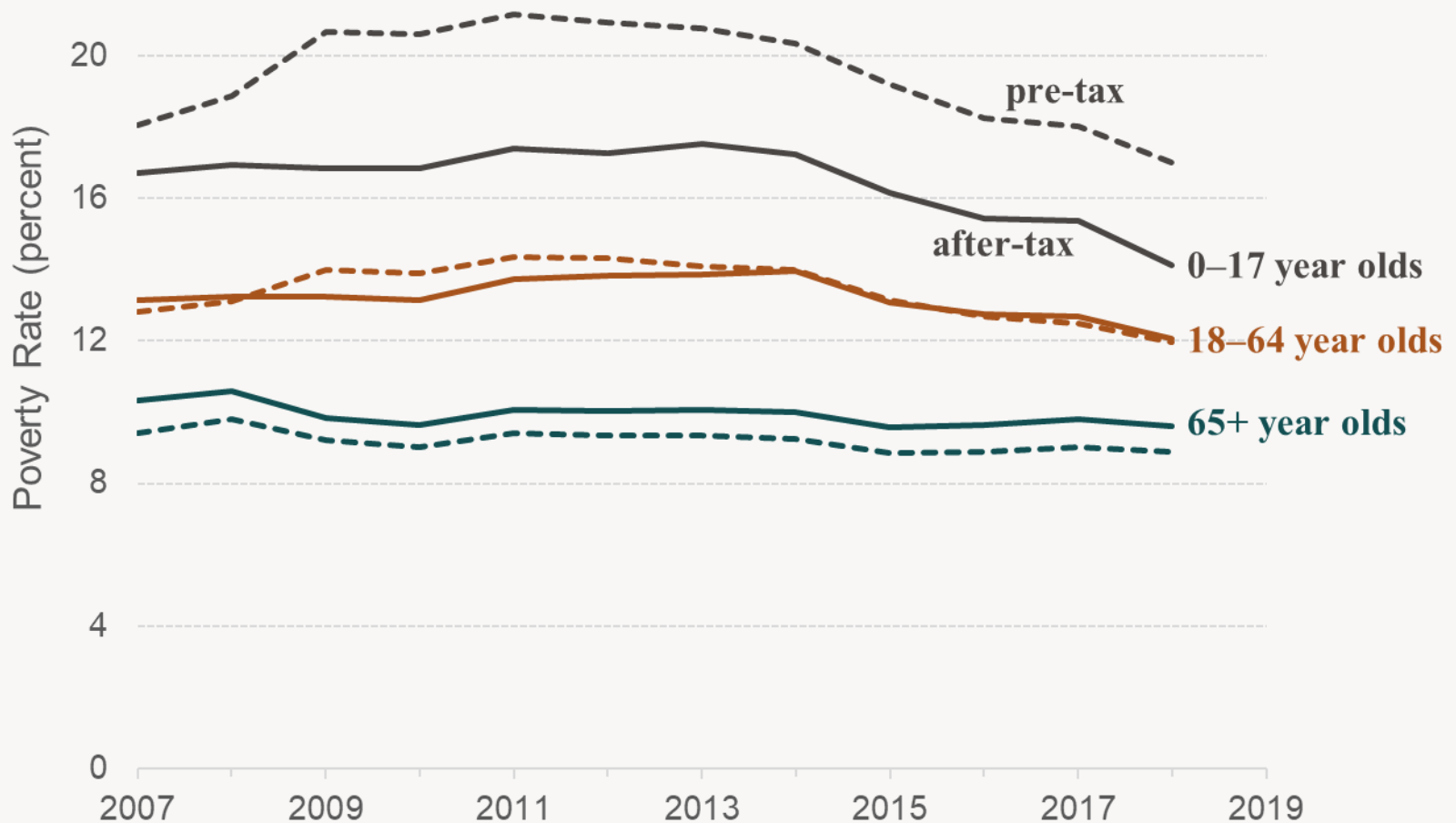
One-Year Poverty Rates (pre-tax income)



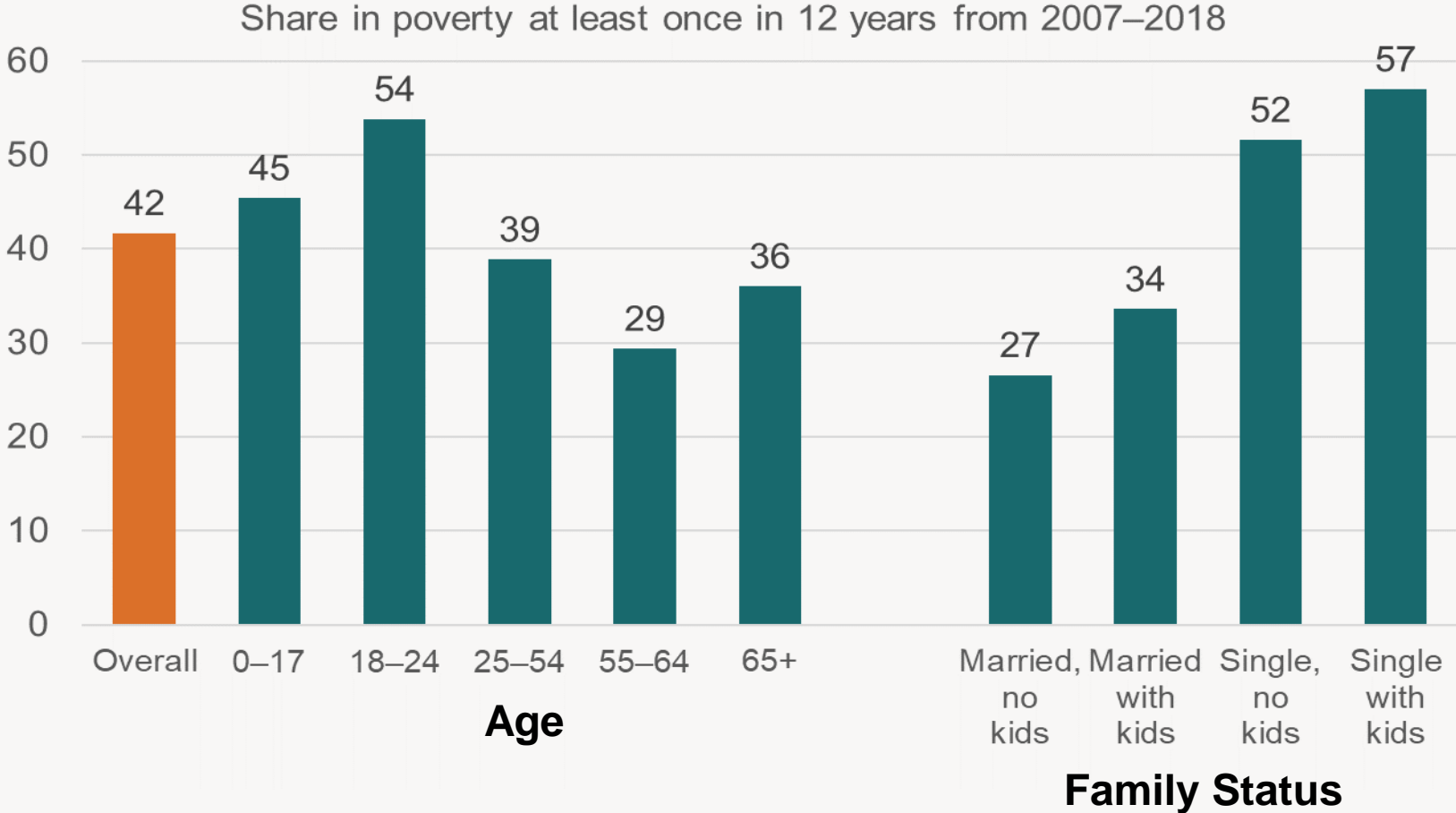
One-Year Poverty Rates



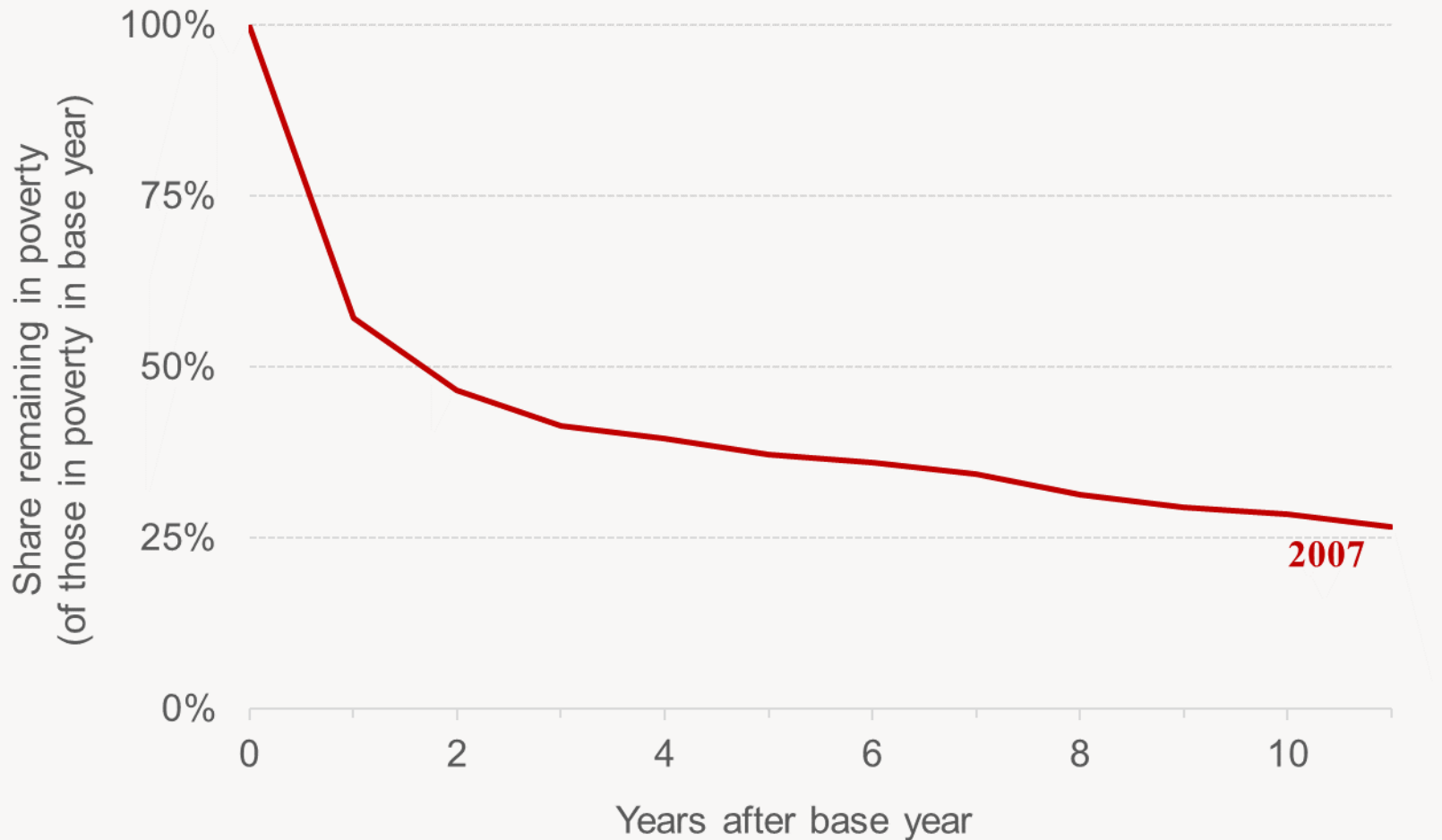
Pre-tax and After-tax Poverty Rates by Age



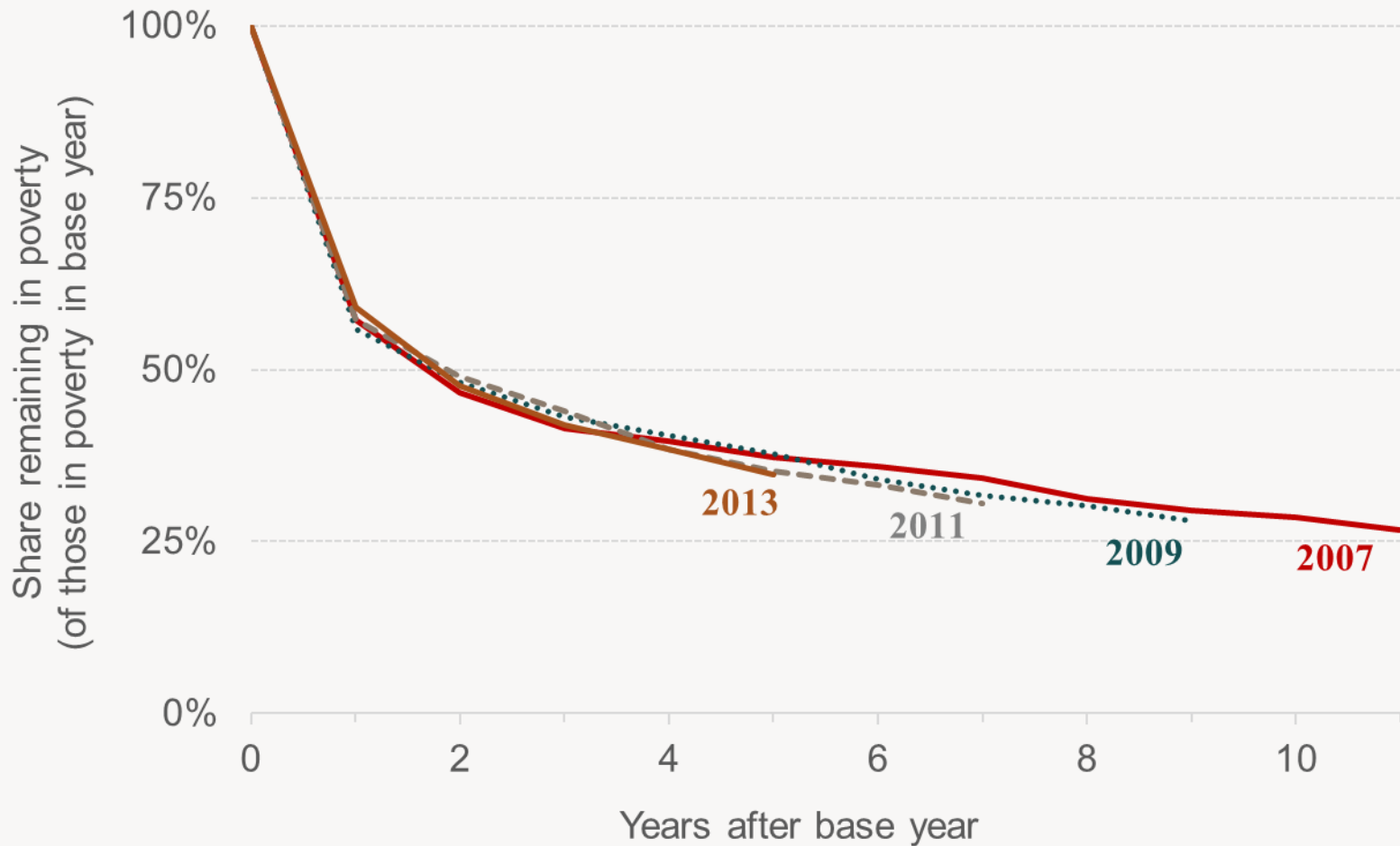
Frequency of ever experiencing poverty by age and marital status (2007-2018)



Poverty Persistence: Share of those in poverty in 2007 who are poor in later years



Poverty Persistence



Poverty Persistence: Years in poverty through 2018 if poor in 2007

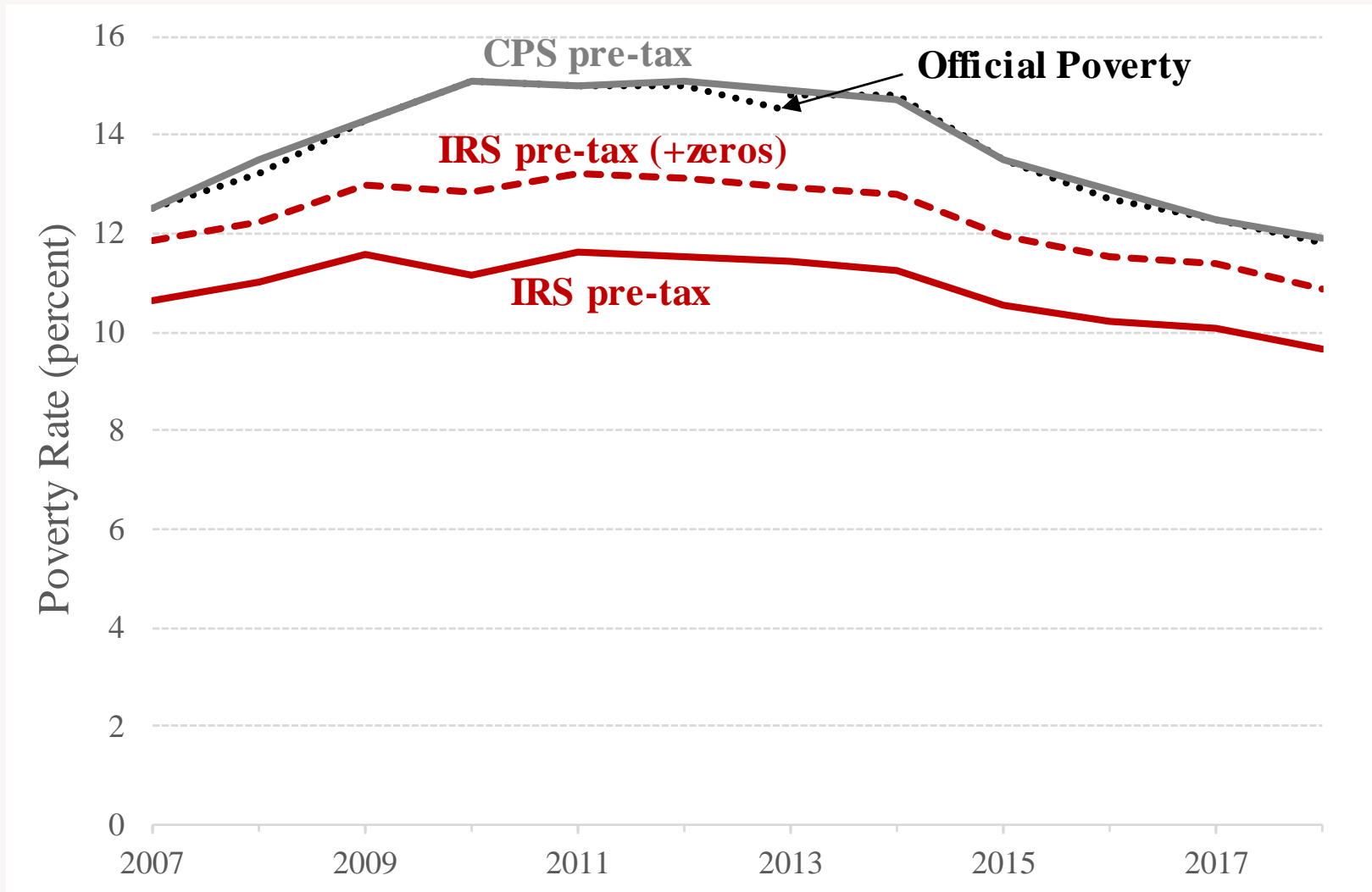
Demographic Characteristic	Share by years in poverty 2007–2018 if in poverty in 2007					Average years
	1	2	3–5	6–9	10+	
All Individuals	19	15	33	24	9	4.5
Age (2007)						
0–17	15	15	37	27	6	4.5
18–24	20	17	37	22	4	3.9
25–54	19	15	33	24	9	4.5
55–64	21	14	27	23	16	5.0
65+	23	13	25	21	17	5.0
Family Status (2007)						
Married, No Children	20	15	31	23	11	4.3
Married, Children	21	17	35	22	6	4.6
Single, No Children	16	14	33	26	10	4.1
Single, Children	17	16	38	25	5	4.8

Conclusions

1. Extended the Tax Household Sample: 2007-2018
 - Household Identifiers now available in the IRS' CDW for researchers with access to those data
2. Taxes matter for poverty trends – especially during periods (like the Great Recession) with temporary tax provisions.
 - After-tax poverty increased by 0.3 percentage points from 2007 through 2011, compared to 1.5 percentage points for pre-tax poverty in the tax data
3. Forty-two percent of people spent at least one year in after-tax poverty between 2007 and 2018
4. Among those in poverty in 2007, 40 percent were non-poor in 2008 and 19 percent were never poor again through 2018. However, one-third of those in poverty in 2007 were poor for at least half of the dozen years

Appendix Slides

Unanchored poverty rates



Unanchored poverty rates

