

# Extended income and time poverty: New estimates for the U.S.

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# Poverty and time

- ▶ **Time poverty:** “the **need to work long hours**, without choice, because the individual or household is **income poor or risks falling into poverty if they were to reduce their working hours** below a certain threshold,” with the consequence that “long working hours that do not allow for **sufficient rest and leisure**” (Rodgers 2024, p.80).
  - ▶ Working hours = *both* **paid** and **unpaid**;
    - ▶ Rest and leisure:” time not devoted to either paid or unpaid work.
  - ▶ Both paid and unpaid work contribute to material living standards.

# Measuring income and time poverty

- ▶ Two dimensions of non-market time in assessing poverty:
  1. **Rest, leisure, and family time**: cannot be outsourced to the market [**maintenance time**].
  2. **Household tasks** (e.g., cooking, cleaning, child supervision) that can be outsourced to the market [**substitutable household production**].
- ▶ Two types of poverty:
  - ▶ **Time poverty**: Absence of time for maintenance (i.e., rest, leisure, and family time)
  - ▶ **Extended income poverty**:
    - ▶ **Money-poor** households (i.e., below the official money poverty line) *OR*
    - ▶ Fall into money poverty if they **have to purchase market substitutes** for household tasks.

## Measuring income and time poverty (cont.)

- ▶ This paper develops and operationalizes this analytical separation:
  - ▶ Usual focus of the literature on *time* poverty: e.g., Bardasi and Wodon 2006, Kalenkoski et al. 2011, 2013.
  - ▶ A few look at adapting money poverty lines (e.g., Vickery 1977, Zacharias et al. 2010), but no separation in types of time (e.g., monetizing deficits in rest and leisure).
  - ▶ Deficits in **two types of time**, and **income**, are **likely to be systematically related**.
- ▶ Empirical estimates of time poverty in the U.S. across socioeconomic subgroups:
  - ▶ CPS Annual and Social and Economic Supplement (ASEC) and American Time Use Survey (ATUS) 2003-2023.
  - ▶ More speculative estimates for 1965+ using the American Heritage Time Use Survey (AHTUS).
  - ▶ No long-run estimates for the U.S. after 1985 (Douthitt 2000) (Kalenkoski et al. use “diary day” data).

## Motivating example: Married couples

	<i>Parents</i>	<i>Childless</i>	<i>Elderly (65+)</i>
Real equivalized family income	\$60,940	\$81,306	\$57,925
Official poverty rate	7%	4%	5%
Hours per week on rest and leisure	101	111	127
Share in sample	17%	13%	10%

*Source: CPS ASEC 2003-2023. Time allocation imputed to ASEC respondents from ATUS.*

## Motivating example: Parents

	<i>Single parents</i>	<i>Married, dual-earner</i>	<i>Married, single-earner</i>
Real equivalized family income	\$25,427	\$70,544	\$48,811
Official poverty rate	36%	2%	14%
<i>Hours per week:</i>			
Rest and leisure	107	96	107
Housework and child supervision	40	84	102
Share in sample	17%	13%	10%

Source: CPS ASEC 2003-2023. Time allocation imputed to ASEC respondents from ATUS.

# Classifying non-paid work time

## **Maintenance time:**

- ▶ Leisure
- ▶ Sleep and personal care
- ▶ Family time (e.g., playing with or reading to children)

## **Substitutable time:**

- ▶ Housework
- ▶ Adult care
- ▶ Child supervision (non-overlapping with housework or care)

Rationale: elasticities of time allocation w.r.t. household income for non-employed (Hamermesh and Biddle 2020).

But arbitrary, preclude overlaps.

# Operationalizing **time** poverty

**Data:** CPS ASEC (2003-2023). Time allocation predicted from ATUS (see Frazis and Stewart 2011, Han et al. 2020, Gautham and Folbre 2025).

*Individual* time devoted to maintenance (i.e., **sleep, leisure, and family time**) falls short of (relative) threshold.

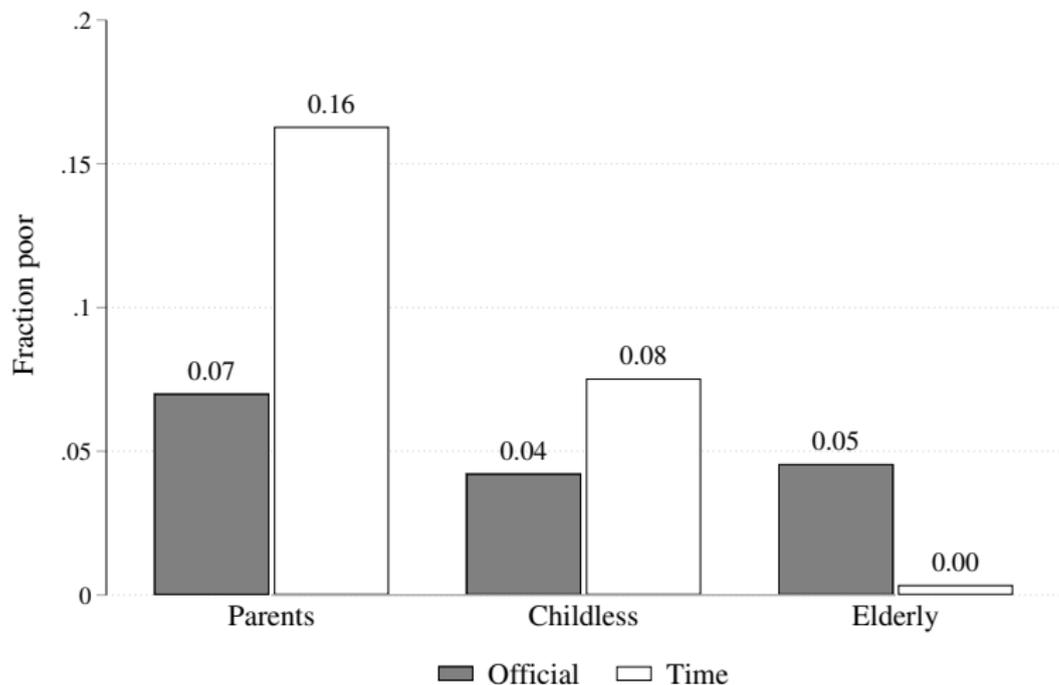
- ▶ Here, threshold = **average less 1 standard deviation** for each category (Goodin et al. 2008, 2010)
- ▶ **98 hours/week** for non-parents and **103 hours/week** for parents (varying by age and number of children).
  - ▶ Overall distributions of time categories relatively stable over time
  - ▶ Comparable to absolute thresholds adopted in Vickery (1977) and Zacharias et al. (2010).

# Operationalizing **extended income** poverty

- ▶ Threshold = **Time** needed for **substitutable tasks** (e.g., housework, child supervision) in **a money-poor household**.
  - ▶ Average time (varying by household size and composition: e.g., number and age of children) for substitutable tasks by **households below official poverty line** (where no member is time poor).
- ▶ **Shortfalls** monetized at **replacement housekeeper wage** (i.e., **what it would cost the household to purchase market substitutes to make up the deficit**).
- ▶ **Subtracted from household income, which is then compared to official poverty line.**
- ▶ Extended poverty is 14.1 percent vs. official poverty at 11.3 percent (2.8 pp or 25% increase).

# Who is time poor?

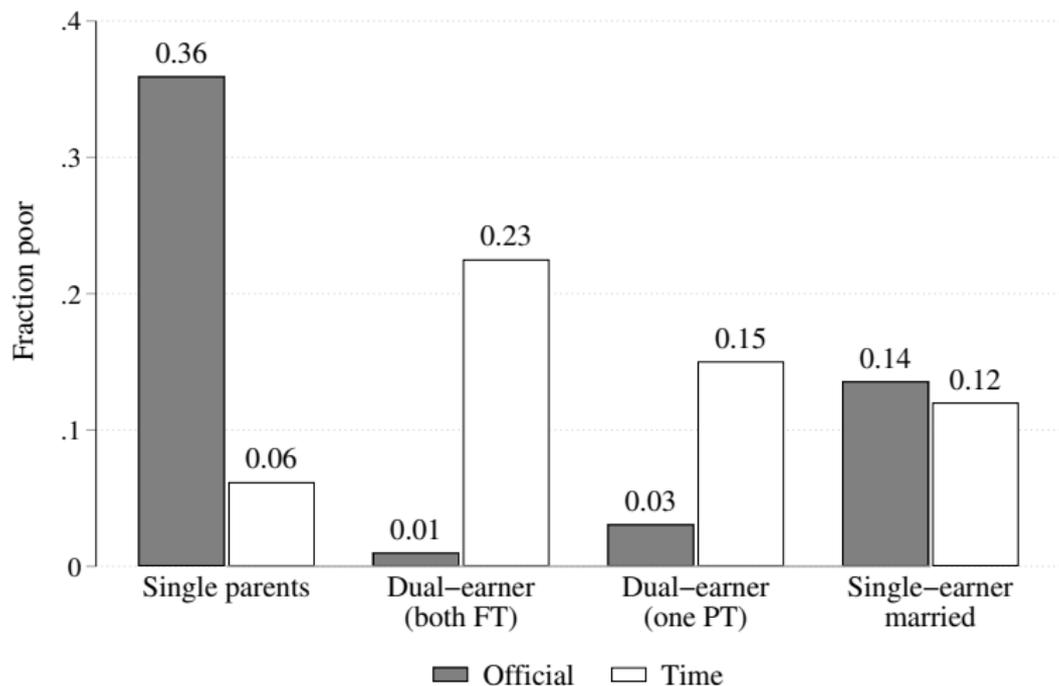
Figure: Married couples



Source: CPS ASEC 2003-2023, all individuals 18+ (N=2,902,080).

# Who is time poor? (cont.)

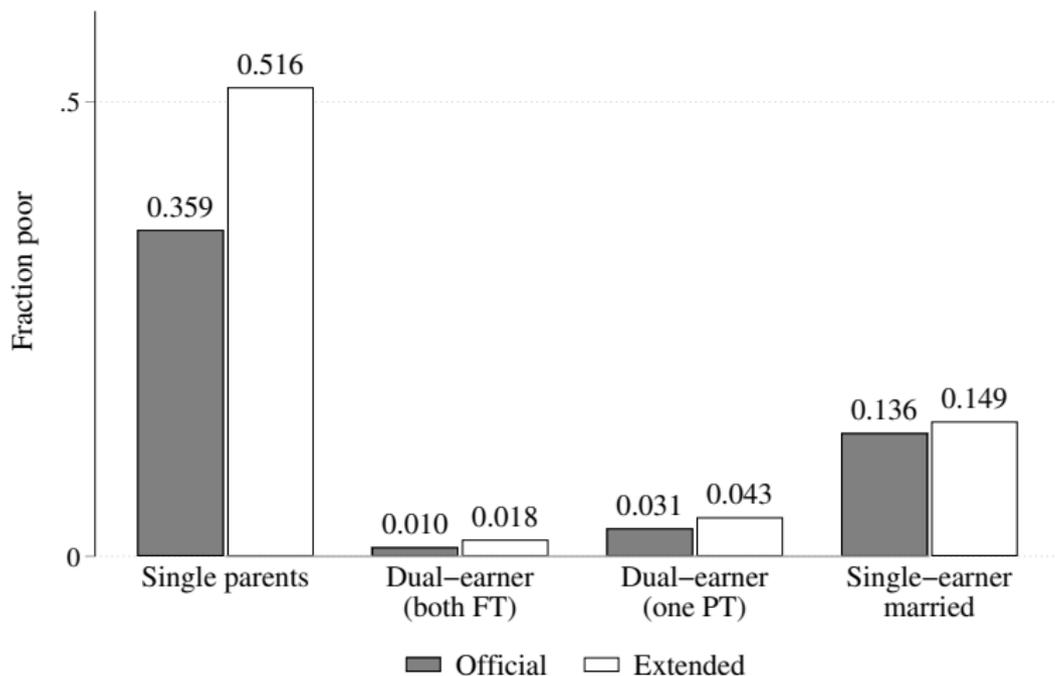
Figure: Parents



Source: CPS ASEC 2003-2023, all individuals 18+ (N=2,902,080).

# Extended income poverty among parents

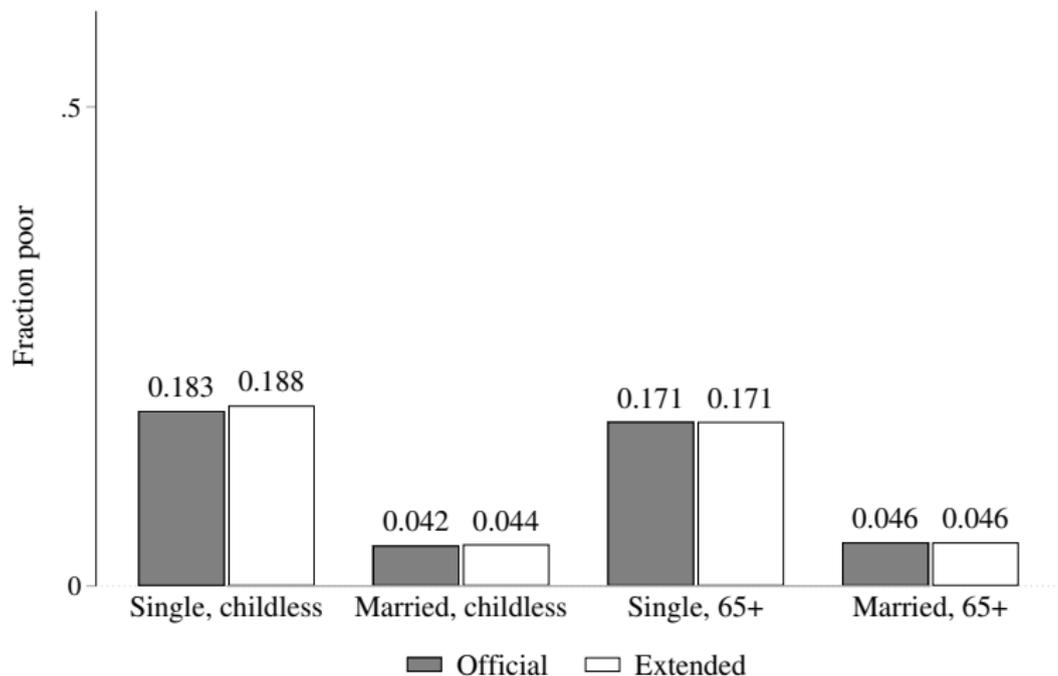
Figure: Parents



Source: CPS ASEC 2003-2023, all individuals 18+ (N=2,902,080).

# Extended income poverty among non-parents

Figure: Non-parents



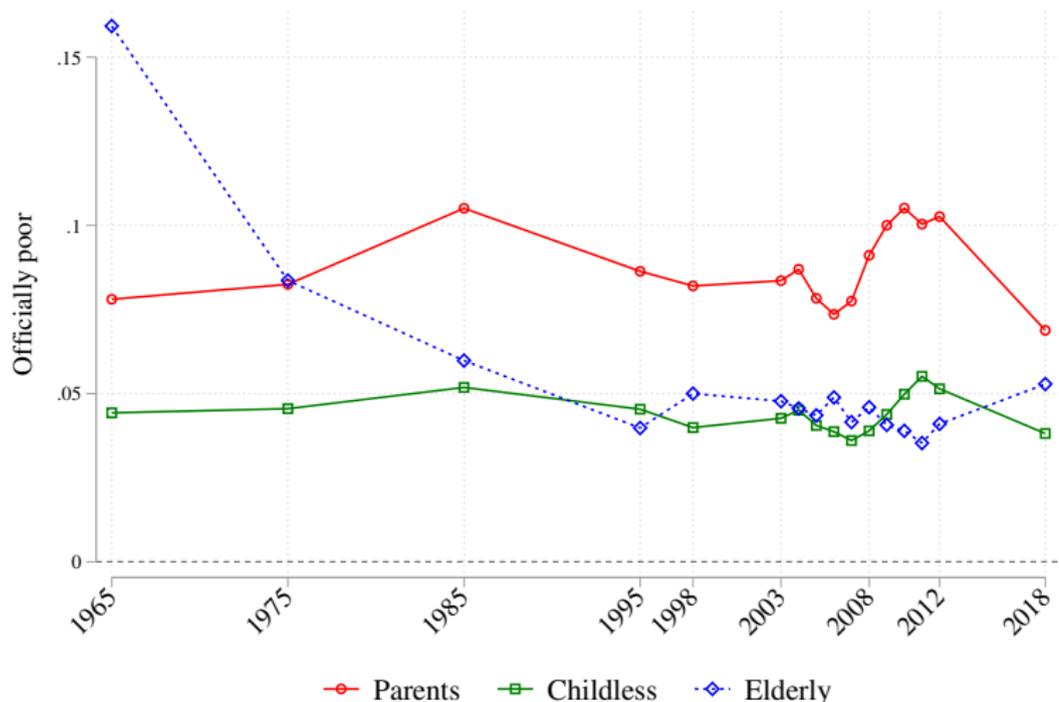
Source: CPS ASEC 2003-2023, all individuals 18+ (N=2,902,080).

# Long-run trends

- ▶ American Heritage Time Use Survey Data: National time-diary samples (1965, 1975, 1985, 1995, 1998, 2003-2018).
  - ▶ Fewer covariates for imputation
  - ▶ No data on supervisory childcare (apply imputations from 2003-2023 ATUS)
- ▶ **Time poverty**: common threshold across years (for sleep, leisure, and family time).
- ▶ **Extended income poverty**: compute threshold for substitutable time *separately by year* (i.e., average substitutable time by money-poor but not time-poor households by size and composition).

# Officially poverty rates

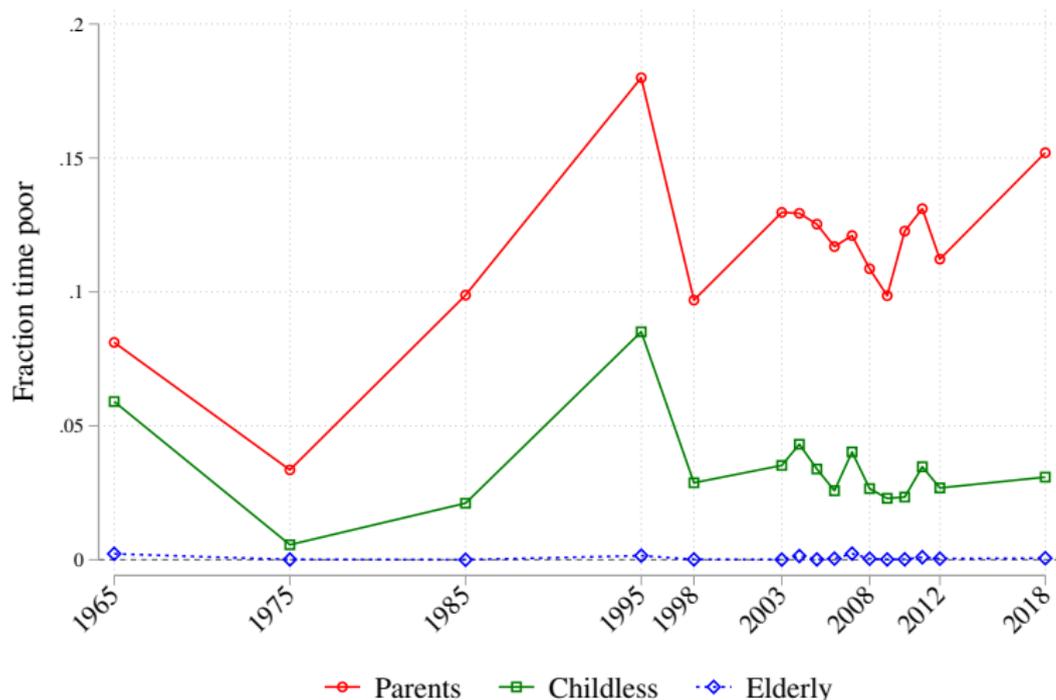
Figure: Married couples



Source: CPS ASEC 1965-2018.

# Time poverty rates

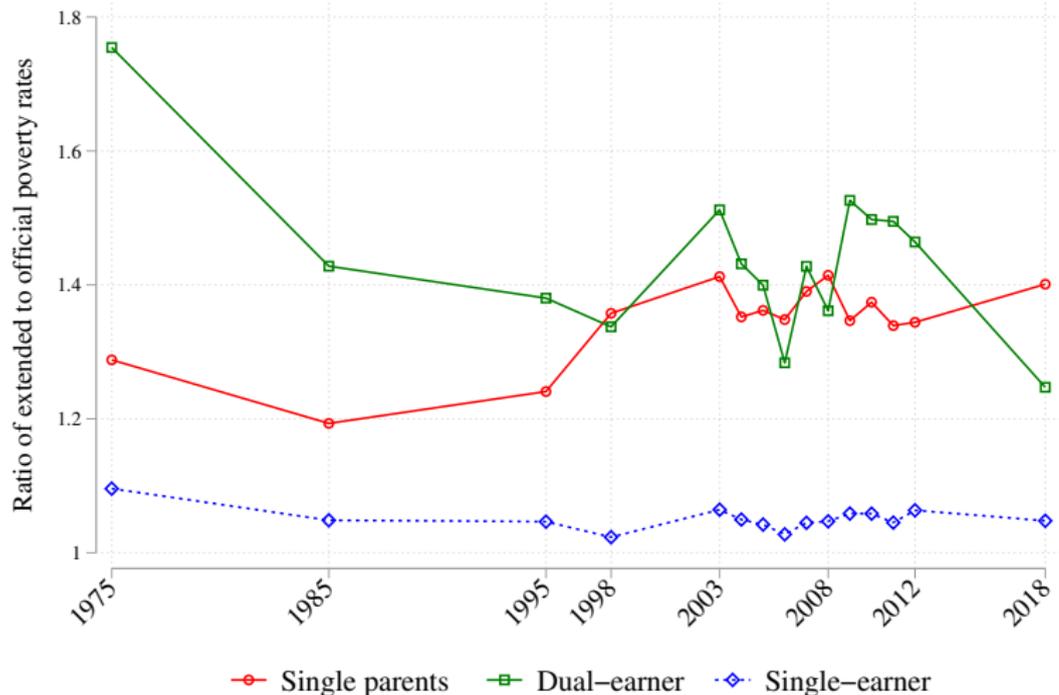
Figure: Married couples



Source: CPS ASEC 1965-2018.

# Extended income poverty rates

Figure: Parents



Source: CPS ASEC 1965-2018.

## Discussion and next steps

- ▶ Overcomes some issues with extended income measures (e.g., BEA HPSAs or microdata based estimates: Frazis and Stewart 2011):
  - ▶ Thresholds
  - ▶ Consideration of leisure time.
- ▶ Improving imputation quality
- ▶ Robustness to alternative thresholds
- ▶ Supplemental Poverty Measure (SPM) rather than official poverty
- ▶ Validation?

**Questions/comments welcome.**  
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