

The Evolution of Time and Income Poverty in the United States 2005 - 2022

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Outline

- Motivation
- Data
- LIMTIP
- Results
- Conclusions

What we find

- When we take time into account we find that poverty is substantially more widespread in the US than the official estimates suggest
- Time poverty rates are higher for women than for men and for the employed than for the non-employed
- The pandemic has created massive shifts in time use and in public policy (though the latter has ended), causing reductions in both time and income poverty

Motivation

- Feminist Economics has long advocated for the recognition, reduction, and redistribution of unpaid work done in households
- We have been working on a research program that addresses these three goals:
 - Recognition: the Levy Institute Measure of Time and Income/Consumption Poverty (LIMTIP/LIMTCP)
 - Reduction: Macro-micro model of social infrastructure expansion
 - Redistribution: Alternative schemes

Why a Time – Income Nexus

- Poverty lines are supposed to reflect the command over a minimum quantity of goods and services that is necessary for survival
- A certain minimum quantity of time must be devoted to household production for the typical household to reproduce itself as a unit
- US thresholds implicitly assumed "that a household with income equal to the poverty standard must have a person working full time in the home to be nonpoor" (Clair Vickery 1977: 30)

Why a Time – Income Nexus

- The time requirement for household production must be explicitly taken into account because some households may not be able to meet that requirement and may not have sufficient income to purchase the requisite market substitutes
- For such households, the standard poverty lines do not represent the command over a minimum quantity of goods and services
- Ignoring time deficits leads to inconsistency: thresholds presuppose the time requirement but the definition of resources ignores time availability

Data Sources

- Base data sets
 - Annual Social and Economic Supplement to the Current Population Survey
 - American Time Use Survey
 - Merged Outgoing Rotations Group
- Period: annual from 2005 to 2022

Poverty Measures Comparison (Creamer 2022)

POVERTY MEASURE CONCEPTS: OFFICIAL AND SUPPLEMENTAL		
Concept	Official Poverty Measure	Supplemental Poverty Measure
Measurement Units	Families (individuals related by birth, marriage, or adoption) or unrelated individuals.	Resource units (official family definition plus any coresident unrelated children, foster children, and unmarried partners and their relatives) or unrelated individuals (who are not otherwise included in the family definition).
Poverty Threshold	Three times the cost of a minimum food diet in 1963.	Based on recent expenditures of food, clothing, shelter, utilities, telephone, and internet (FCSUti).
Threshold Adjustments	Vary by family size, composition, and age of householder.	Vary by family size, composition, and tenure with geographic adjustments for differences in housing costs.
Updating Thresholds	Consumer Price Index for All Urban Consumers: all items.	Most recent 5-year moving average of expenditures on FCSUti, lagged 1 year.
Resource Measure	Gross before-tax cash income.	Sum of cash income, plus noncash benefits that resource units can use to meet their FCSUti needs, minus taxes (or plus tax credits), work expenses, medical expenses, and child support paid to another household.
Universe	Civilian noninstitutionalized population, excluding unrelated individuals under age 15 for whom poverty status cannot be determined.	Official poverty measure universe, plus unrelated individuals under age 15.
Time Series	1959–present.	2009–present.

LIMTIP

- Individual Time Balance

$$X_{ij} = 168 - M - \alpha_{ij}R_j - D_{ij}(L_{ij} + T)$$

X_{ij} : time balance of individual i in household j

M : minimum required time for personal maintenance and nonsubstitutable household activities

α_{ij} : the share of individual i in R_j

R_j : the minimum substitutable household production required to subsist with the poverty-level of income

D_{ij} : indicator for employment status

L_{ij} : time spent on income-generating activities

T : commuting time

LIMTIP

- Household Time Deficits

$$X_j = \sum_{i=1}^{I_j} \min(0, X_{ij})$$

- Time-adjusted Poverty Threshold

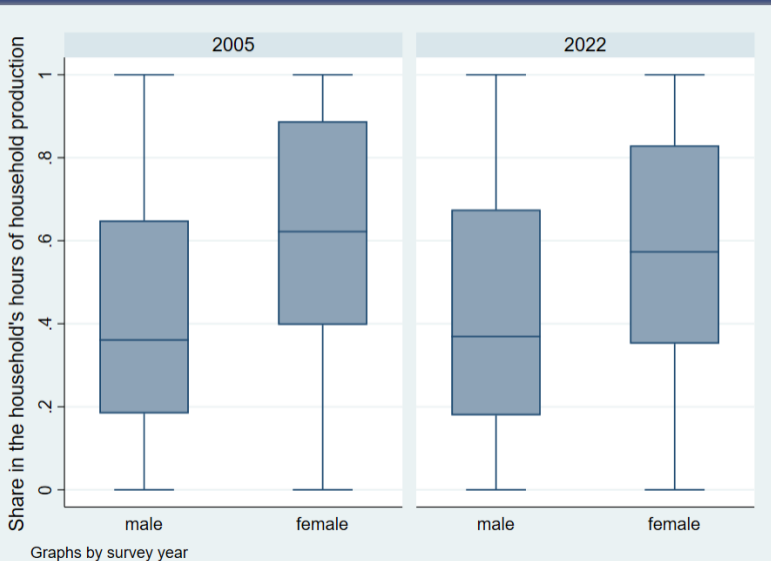
$$\hat{P}_j = P^o - pX_j$$

M: Minimum required time for personal maintenance

- Average weekly hours by persons 18 to 64 years
 - Time for personal care (time-use data)
 - Time for minimum leisure and nonsubstitutable activities (assumptions)

	2005	2022
Personal Maintenance	83	86
<i>Personal Care</i>	73	76
<i>Minimum Leisure</i>	10	10
Nonsubstitutable Household Activities	7	7
Total	90	93

α_{ij} : Person's share in the total hours of household production

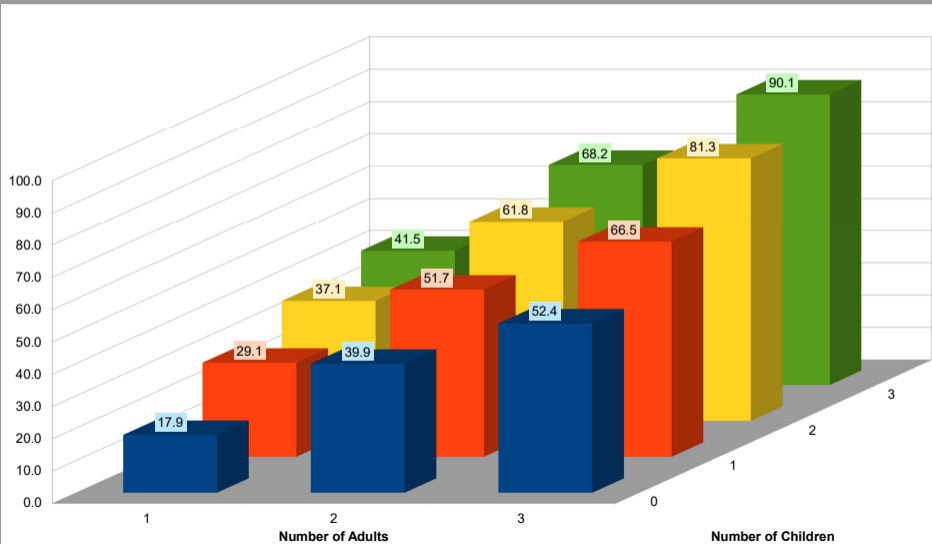


R_j : Poverty-level household production requirements

- We estimate a non-linear model for households that have
 - SPM resources near the official SPM poverty line, so as to gauge poverty-level time requirements
 - At least one nonemployed adult present, so as to ensure that the requirements are derived from households that are not as likely to be suffering from time deficits.

$$THP = a_0 (A_{18-59} + a_1 C_{0-6} + a_2 C_{7-17} + a_3 E_{60+})^b + e$$

R_j : Poverty-level household production requirements (2014)



T: Commuting Time

- Average hours for individuals working full-time and part-time
- Separately by geographic division

Table: Average time spent commuting, 2018 (minutes per day)

Census Division	Full-Time	Part-Time
New England	44.7	35.8
Middle Atlantic	48.9	32.1
East North Central	39.9	31.3
West North Central	33.2	27.3
South Atlantic	49.1	29.1
East South Central	36.7	21.8
West South Central	35.1	35.5
Mountain	34.1	19.8
Pacific	45.4	31.0

Two-dimensional poverty measure

Household Income-poor if household income is less than the poverty threshold adjusted by the time deficit; time-poor if any of the members have a time deficit.

$y_j < y^o \Rightarrow$ income/consumption-poor household

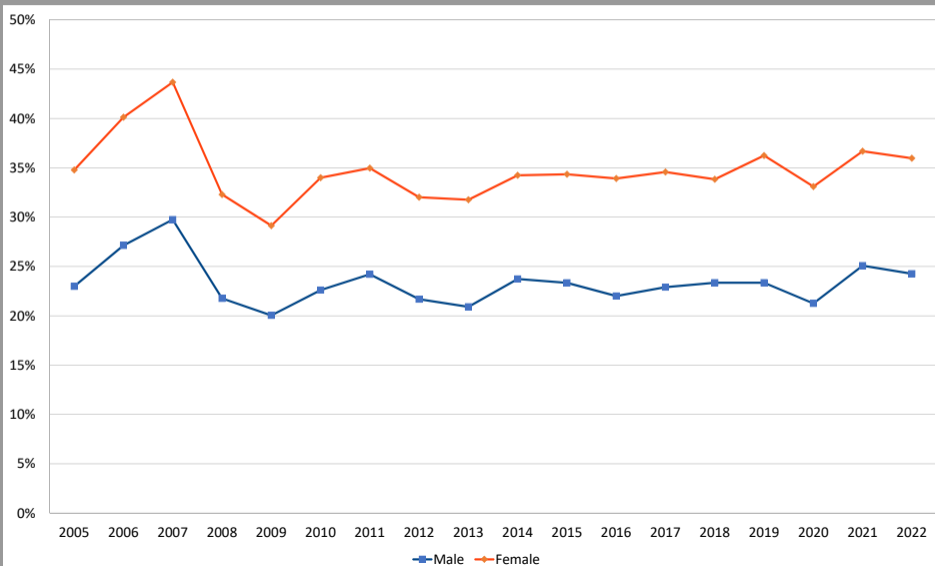
$X_j < 0 \Rightarrow$ time-poor household

Individual Income-poor if household income is less than the consumption poverty threshold adjusted by the time deficit; time-poor if she has a time deficit.

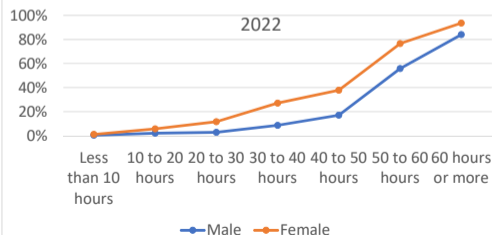
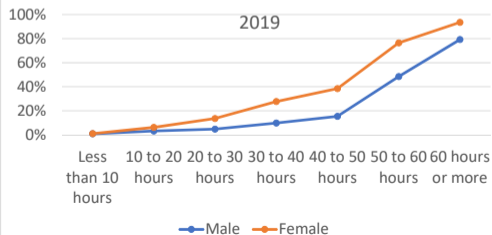
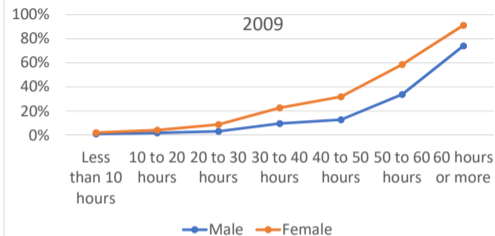
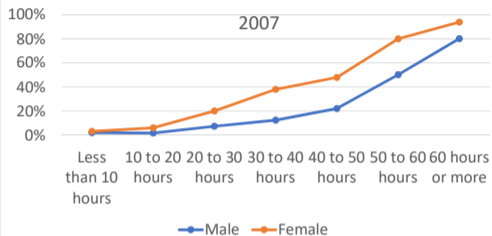
$y_j < y^o \Rightarrow$ income/consumption-poor individual

$X_{ij} < 0 \Rightarrow$ time-poor individual

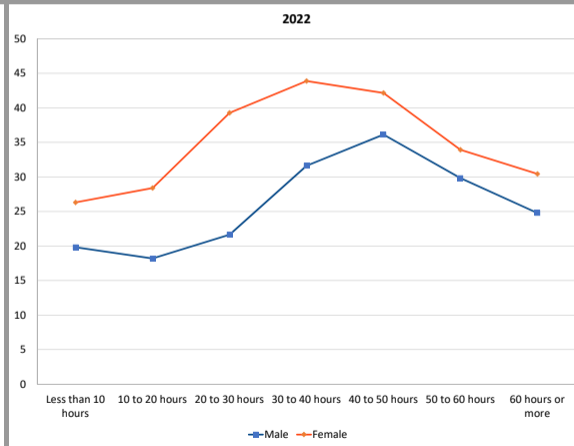
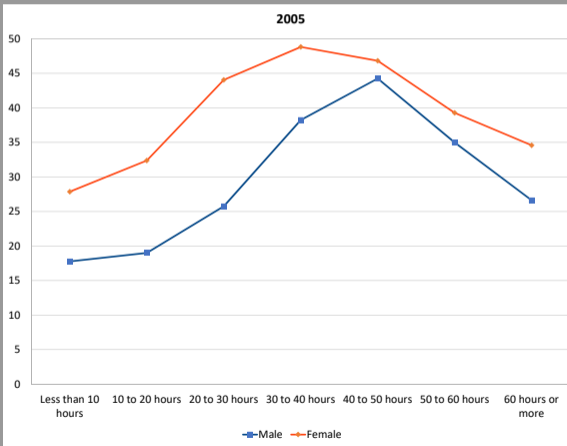
Time Poverty Rates of Employed Individuals by Sex



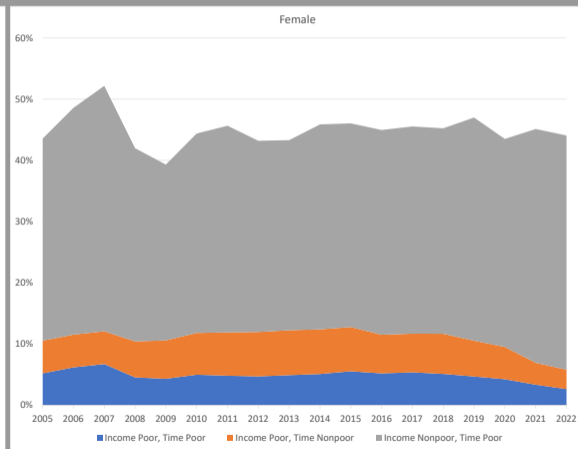
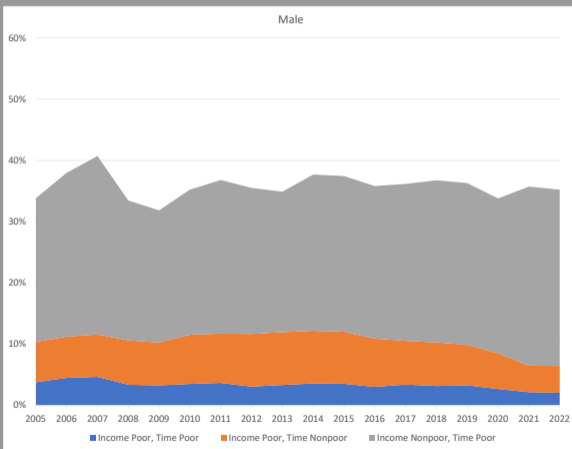
Time Poverty by Usual Hours of Work and Sex



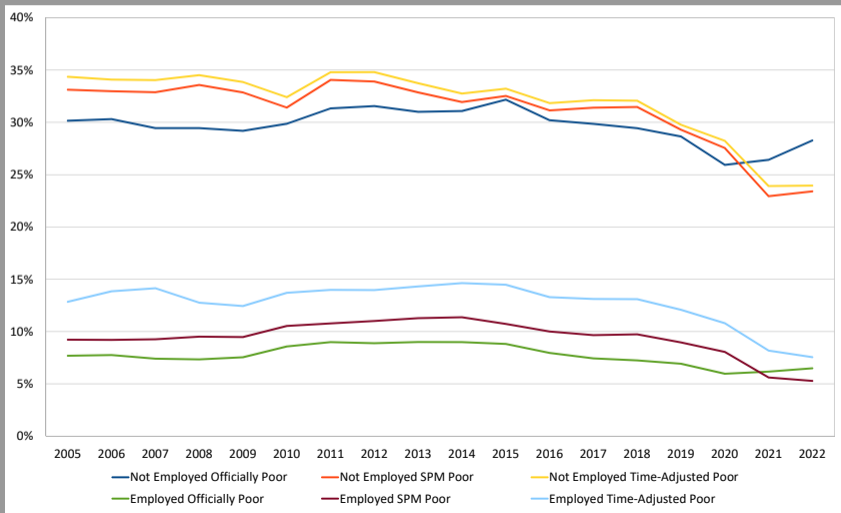
Required Hours of HH Production of the Time Poor by Usual Hours of Work and Sex, 2005 & 2022



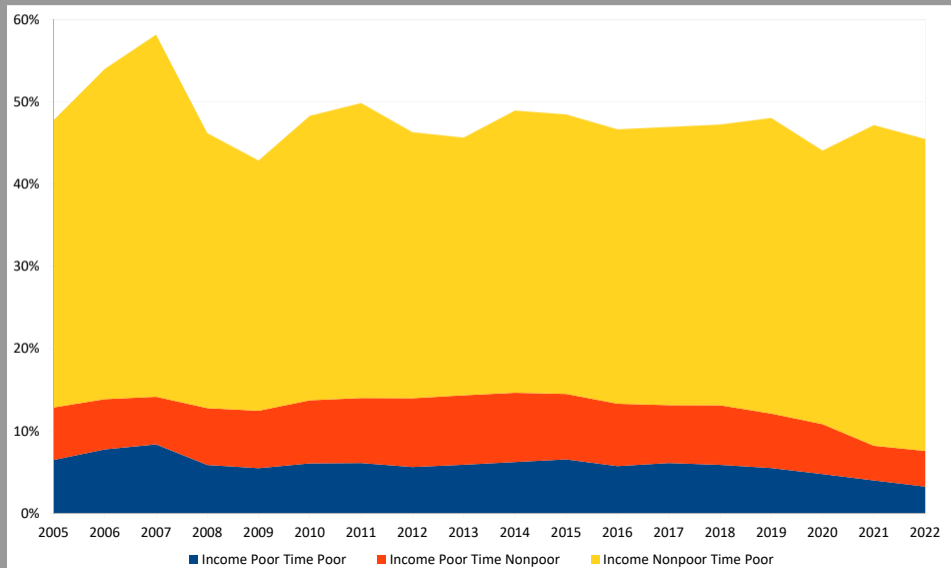
Time and Income Poverty Status of Employed Individuals



Official, SPM, and Time-adjusted Poverty rates for SPM Units, by Employment



Time and Income Poverty of Employed SPM Units, 2005 - 2022



Conclusions

- Time Poverty
 - is widespread in the United States
 - is concentrated among the employed
 - is substantially higher for women than men
- Income Poverty
 - as measured understates the scale of poverty in the US
- The COVID-19 Pandemic
 - The pandemic, with its shift to more work from home, has reduced time poverty
 - Pandemic responses, especially the child tax credit, have drastically reduced income poverty

Thank you!

Thank You!

Our publications can be found on our website:

<http://www.levyinstitute.org/research/the-levy-institute-measure-of-time-and-income-poverty>