

Defining Poverty in Terms of Time and Income in the United States: An Update

Misty L. Heggeness

Social, Economic, and Housing Statistics Division

U.S. Census Bureau

Sarah M. Flood

Minnesota Population Center

University of Minnesota

Jose Pacas

Minnesota Population Center/Department of Applied Economics

University of Minnesota

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Short Abstract

Understanding poverty in terms of time use is not a new phenomenon. A 1977 article by Vickery theorizes a generalized definition of poverty using both income and time dimensions. She uses time diary data to identify families who are income poor, time poor, and both and highlights the importance of a time dimension to poverty, particularly as it relates to different household configurations. Under her generalized definition of poverty, "...the 1973 poverty population would have increased the number of poor female-headed families with children by 14 percent and increased the proportion of all families in poverty from .088 to .093 (35)." This paper uses the American Time Use Survey (ATUS-X) and the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) from 2003 to 2011 to update Vickery's analysis. We estimate poverty rates from 2003-2011 by income, time, and a combination of both for diverse household configurations. We also estimate the effect of household configuration on changes to the definition of poverty, controlling for a variety of socio-demographic factors such as age, race, and education.

Long Abstract

Economic theories of the household delineate preferences, time, and money (or monetary resources) as the factors contributing to and constraining a household's consumption (Becker 1965). Each adult member of the household has a limited number of hours per day for work, household production, leisure, and maintenance activities (like sleep). We define work as paid labor outside of the household. For family members to be productive laborers and members of society, a minimum amount of time is required on household production activities, such as preparing meals, childcare, washing clothes, and cleaning. Families face two major constraints for improving or maintaining their own wellbeing: income and asset constraints and time constraints. These constraints limit the family's ability for household production and influence family members' labor market participation. While the research on the labor supply of household members and household income is extensive, less research exists on the impact of time constraints for household production on family wellbeing, particularly families in poverty.

In the United States, the official poverty measure compares a family's total income to a poverty threshold, which varies by the age of the householder, as well as the number of children and adults in a family. This method of measurement began in the early 1960s (Fisher 1992). For the past five decades, poverty measurement assesses only the impact of a family's earned income from work on their wellbeing.

While income is important in the determination of one's poverty status and consumption power, other factors matter. In fact, the National Academy of Sciences assessed the extent to which a national poverty measure should incorporate other relevant factors (Citro & Michael 1995). Identifying other relevant factors in poverty measurement is not a new phenomenon however. Of particular interest to this paper is the development of a poverty measurement that

incorporates both time and income into the measure (Vickery 1977; Harvey & Mukhopadhyay 2007; Burchardt 2008; Bardasi & Wodon, 2010; Hobbes, De Groot, Voet, & Sarkhel, 2011; Zacharias 2011).

Family and household configurations are important considerations for a poverty measure that incorporates time into the measure. In the late 1970s, Vickery (1977) examined the effect of time constraints on poverty measurement. She presents a generalized definition of poverty measurement that includes both time and income elements. Vickery argues that household formation is relevant when measuring poverty. A lone parent household will have less time and income resources available to them than a two-parent household will. However, any measure that adjusts only for income and not time will underestimate the amount of lone-parents in poverty. While Vickery's analysis is a foundation for bringing poverty measurement in line with economic theories of household production and time allocation, she conducted her analysis at a moment in time when time use data was not readily available and household configuration was not as diverse as it is today.

Others have continued Vickery's work at attempting to quantify the impact of time constraints on overall wellbeing and poverty measurement. Burchardt (2008) uses the United Kingdom's Time Use Survey from 2000 to estimate the percent of time poor and income poor and estimates the impact of various characteristics and factors on the risk of being time or income poor. She finds approximately 3.0 percent of working age adults are time and income poor, as are between 10 and 14 percent of children. Of particular interest is her finding that lone parents had time and income poor poverty rates of 42 to 56 percent. This follows Vickery's argument and findings that lone parents have much fewer time resources available to them than

two parent families and, therefore, are more vulnerable to poverty when incorporating time into the poverty definition.

Zacharias (2011) and Zacharias, Antonopoulos, and Masterson (2012) extend Vickery's model to include poverty measures for a family unit, as well as individual time and income poor measures for individuals. Zacharias et al. provide estimates for Mexico, Argentina, and Chile. They argue that by just focusing on a family unit, one misses gendered inequalities in poverty. Women have more fragmented leisure than men do, which could be an indicator of time poor (Bianchi et al. 2006). Take, for example, a mother who works and takes on most of the household production responsibilities in her household. Let us assume she is individually time poor, meaning that her work and household production responsibilities are greater than the amount of time she has available in a 24-hour period. She lives with the father of her children, who has excess leisure, or non-work, time available, and his excess leisure time is greater than her time deficit. If we sum the family's total time, they will not be time poor because the time surplus of the father is greater than the time deficit of the mother and, because the family is the unit of analysis, no individuals within the household are considered time poor, even though the mother is.

While Zacharias, Antonopoulos, and Masterson replicate Vickery's 1977 study with some adaptations for Mexico, Chile, and Argentina, there have been no updates of her study with data from the United States. Since the 1970s, much has changed in terms of household configuration and data availability. Multigenerational households are becoming more common, as is cohabitation. The American Time Use Survey is the first federally funded, ongoing time diary data collection in the United States. Since 2003, more than 120,000 time diaries have been collected from the non-institutionalized US population, allowing us to look at differences by

diverse household configurations. We update Vickery's analysis for the United States using a rich dataset that merges nationally representative household survey data with time use data.

Data

We use integrated data from the American Time Use Survey (ATUS), a time diary study of a nationally representative sample of Americans (Abraham et al. 2012). The survey is fielded on all days of the week, with weekends oversampled, and weights correcting for the survey design. Respondents detail the activities they engaged in over a 24-hour period from 4:00 a.m. of a specified day until 4:00 a.m. of the following day. Reported activities are coded using a three-tier, six-digit coding scheme with over 400 activity categories. All responses are recorded using Computer Assisted Telephone Interview (CATI) procedures.

The sampling frame for the ATUS is households completing their participation in the Current Population Survey (CPS), a survey asking detailed information about labor force participation and demographic characteristics. Because ATUS respondents (one per household) are drawn from the CPS, we have data about respondents both at the time of the ATUS and during the preceding months. We analyze the subsample of ATUS respondents who participated in the CPS Annual Social and Economic (ASEC) Supplement to the CPS (six to nine months prior to participation in the ATUS). We use IPUMS-CPS (King et al. 2012) data from the ASEC to capture measures of poverty since the ATUS contains limited income data. Because only a subsample of ATUS respondents links to the ASEC, we adjust analysis weights accordingly (ATUS-X 2010).

Next Steps

We replicate Vickery's estimates of the poor in the United States using three measures, time poor, income poor, and both time and income poor. We assume a minimal number of hours per day for self-care (for example, sleep) and household production. If an individual's number of hours worked, hours in leisure, and hours necessary for household production and self-care are greater than the 24 hours allocated in a day, we define them as individually time poor (Zacharias 2011). We expect to find that lone parent poverty rates will increase substantively when we incorporate time into the poverty measure, and that women, who tend to bear higher time costs associated with household production, are more likely to be time poor. We also expect to find variations of poverty rates by different household configurations.

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