Supplemental Poverty Measure: Measuring the Impact of Programs and Policies at the State Level Using the American Community Survey

Trudi Renwick, US Census Bureau, SEHSD Division (7H175), Washington DC 20233-8500, 301-763-5133, 301-763-3232 fax, email: Trudi.J.Renwick@census.gov

This paper will provide poverty estimates of the Supplemental Poverty Measure (SPM) for 2011 using the American Community Survey (ACS). The paper will include state level estimates of SPM rates and the impact of individual elements of the SPM. For the first time, this paper will compare the impact of individual elements of the SPM on SPM rates at the state level. This analysis will combine data from the ACS, the Current Population Survey Annual Social and Economic Supplement (CPS ASEC), and administrative data from the U.S. Department of Housing and Urban Development to create a public use file. Records in the ACS will be matched with records in the CPS ASEC using a predicted means match. The file will include numerous implicates of the imputed variables to enable researchers to take into account both sample variance and the variance added by the imputations.

Since the Bureau recommends the use of the American Community Survey (ACS) for poverty estimates for sub-national geographic units, it is important to explore how this new measure can be estimated from ACS data. The challenge is that the ACS is missing a number of key data elements required to produce SPM estimates, including program participation, the value of SNAP benefits, taxes, child care expenses, medical out of pocket expenditures and some relationship codes. [1]

Building on the extraordinary work at the state and local level using the ACS to develop SPM-like estimates, the author has developed a preliminary ACS SPM research file. This file includes imputed relationship pointers to ACS PUMS data used to form tax units and SPM resource units. The file contains estimates from a new tax calculator that has been created to model taxes in the ACS.

---

[1] On April 1, 2011, the Census Bureau sponsored a workshop at the Urban Institute on State Poverty Measurement Using the American Community Survey. (For a summary of the workshop see http://www.urban.org/publications/412396.htm.l) This workshop was designed to provide expert advice to the Census Bureau on the development of a SPM at the state level using the ACS. The workshop participants discussed the myriad challenges involved in using the ACS to produce SPM estimates. The summary of the workshop concludes with the following text: *The conversation confirmed that producing state-level estimates of the SPM using the ACS is a challenging undertaking. There are no easy shortcuts. Nonetheless, researchers agreed that it is not in our collective interests for multiple variants of the SPM to spring up. Most agreed that ideally one institution would take charge of creating a common framework for implementing the SPM on the ACS. Workshop participants hoped that the Census Bureau would play this role. No other institution has the range of expertise, resources, and access to confidential data to undertake this task.*

The ACS SPM research file uses several years of data from the Current Population Survey Annual Social and Economic Supplement to impute missing values to the standard ACS public use file. The file uses PROC MI to perform a predicted means match to impute the amount of food stamps, child care expenses, and medical out of pocket expenses. The paper also uses PROC MI with a logistic model to impute recipiency status for housing assistance, energy assistance, benefits from the Women, Infants and Children's (WIC) feeding program and participation in regular, reduced-price and free school lunch. A statistical match to administrative data from the U.S. Department of Housing and Urban Development (HUD) is used to estimate the value of housing subsidies.

The author will build on her previous work creating the ACS SPM research file to estimate not only state level poverty rates but state level estimates of the impact of individual SPM elements on these state poverty rates. For example, the paper will compare the anti-poverty effect of SNAP benefits in New York to the anti-poverty effect of SNAP benefits in Mississippi. Where possible, these incremental effects will be compared to the effects estimated by other poverty researchers developing state level SPM-like measures.

This paper will also explore the use of multiple imputations for each of the missing variables. The author will analyze the data to determine the appropriate number of imputations for the missing variables and then create one data set for each imputation. Calculating poverty rates and other key estimates using these multiple data sets will enable variance estimates to include the variance related to the imputations as well as the sampling variance.