Using the American Community Survey (ACS) to Implement a Supplemental Poverty Measure (SPM) [1]

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Introduction

In 2009, the Office of Management and Budget's Chief Statistician formed an Interagency Technical Working Group (ITWG) that issued a series of suggestions to the Census Bureau and the Bureau of Labor Statistics on how to develop a new Supplemental Poverty Measure (SPM).[2] Their suggestions drew on the recommendations of the 1995 report of the National Academy of Sciences (NAS) Panel on Poverty and Family Assistance and the extensive research on poverty measurement conducted over the past 15 years at the Census Bureau and elsewhere. The ITWG suggestions focused on the implementation of the new measure using the Current Population Survey Annual Social and Economic Supplement (CPS ASEC). The ITWG stated that the SPM will not replace the official poverty measure and will not be used to define program eligibility. The Census Bureau released preliminary research SPM estimates in November 2011, 2012 and 2013 (Short 2011, Short 2012, Short 2013).

[1] Paper originally presented at the November 2014 Fall Research Conference of the Association for Public Policy Analysis and Management, Albuquerque, NM. This paper reports the results of research and analysis undertaken by Census Bureau staff. It has undergone more limited review than official publications. Any views expressed on statistical, methodological, technical, or operational issues are those of the authors and not necessarily those of the U.S. Census Bureau. Estimates revised May 2015.
[2] Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure. March 2010, http://www.census.gov/hhes/www/poverty/SPM_TWGObservations.pdf

The Census Bureau releases official poverty estimates each year using the CPS ASEC. Poverty estimates calculated using the official definition can be created relatively easily in other surveys. For official poverty estimates for state and sub-state geographic units, the Census Bureau recommends the use of the American Community Survey (ACS).

The research SPM estimates released for the past three years uses the CPS ASEC. Unlike the official definition, the SPM is not as easily calculated in other surveys. Therefore, on April 1, 2011, the Census Bureau sponsored a workshop at the Urban Institute on State Poverty Measurement Using the American Community Survey.[3] The workshop participants discussed the challenges involved in using the ACS to produce SPM estimates. The ACS does not have a number of key data elements required to produce SPM estimates. The ACS does not ask whether or not anyone in a household receives housing assistance, participates in the school lunch program, receives benefits from the Supplemental Nutrition Program for Women, Infants, and Children (WIC) or low-income home energy assistance (LIHEAP). It does not ask the value of Supplemental Nutritional Assistance Program (SNAP, formerly food stamp) benefits. There is no information on medical out-of-pocket expenditures (MOOP), childcare or child support outlays. Calculation of tax liabilities is hampered by a lack of relevant information on relationships and specific income sources. In addition, the ACS only collects information about the relationships to the reference person. Therefore, it is not possible to identify unrelated subfamilies or unmarried partners of persons other than the reference person of each household.

[3] For a summary of the workshop see http://www.urban.org/publications/412396.html

Despite these limitations, researchers have been actively involved in exploring ways in which the ACS data can be used to produce NAS-based and/or SPM poverty estimates. The New York City Center for Economic Opportunity has produced NAS-based estimates for 2005-2012. Professor Mark Stern, at the University of Pennsylvania, has produced estimates for 2005-2007 using the ACS three-year file for the city of Philadelphia and its metropolitan area. New York State's Office of Temporary and Disability Assistance has presented estimates for the state of New York. The Urban Institute has created a NAS-style measure for Minnesota, Connecticut, Georgia, Massachusetts and Illinois and the Institute for Research on Poverty at the University of Wisconsin has implemented NAS-based measure for the state of Wisconsin.[4] In 2013, the Stanford Center on Poverty and Inequality and the Public Policy Institute of California released the California Poverty Measure and the Weldon Cooper Center for Public Service of the University of Virginia released the Virgina Poverty Measure.

The purpose of this paper is to continue to develop a proposal for how these data limitations might be overcome to produce SPM estimates using ACS data.[5] For solving missing data issues, this paper examines how the data in the CPS ASEC might be used to inform ACS imputations. In order to allow outside researchers to work on this issue, this paper assesses the feasibility of producing an ACS public use research file with these

[4] For a comparison of the methods used by each of these groups, see David Betson, Linda Giannarelli and Sheila Zedlewski, Workshop on State Poverty Measurement Using the American Community Survey,"Urban Institute, July 18, 2011, http://www.urban.org/publications/412396.html

[5] The earlier version of this exercise can be found in a paper prepared for the 2012 Population Association of America (PAA) conference and presented at the 2012 APPAM conference. Using the American Community Survey (ACS) to Implement a Supplemental Poverty Measure (SPM) [PDF - 1.1M] Trudi Renwick, Kathleen Short, Ale Bishaw and Charles Hokayem, U.S. Census Bureau (May 2012), SEHSD Working Paper #2012-10. http://www.census.gov/hhes/povmeas/publications/poor/RenwickShortBishawHokayemPAA.pdf

imputations that researchers could use to produce substate SPM estimates. The analysis in this paper uses the 2011 ACS 1-year Public Use Microdata Sample (PUMS) file.[6]

The first section of the paper examines the unit of analysis and poverty universe used to produce SPM estimates. The second section examines the value of noncash benefits that are added to resources to produce the SPM resource measures. The third section looks at the estimates of tax credits and tax liabilities. The fourth section reviews the models used to estimate the expenditure amounts subtracted from resources to produce the SPM resource measure. The fifth section discusses the geographic adjustment of the SPM thresholds. The sixth section looks at some preliminary ACS poverty estimates using the imputed values.

For a review of the methods used by others to address these missing data issues, see the more extensive discussion in Renwick, Short, Bishaw, Hokayem (2012).

1. Poverty Universe/Unit of Analysis

The SPM estimated using the CPS ASEC data defines the poverty universe as the resident civilian noninstitutionalized population. In order to construct ACS estimates comparable to these CPS ASEC estimates, the ACS sample needs to be limited to the resident civilian noninstitutionalized population. While the internal ACS data provides sufficient detail to determine which residents of noninstitutionalized group quarters to

[6] The estimates in this paper are from the 2011 American Community Survey Public Use File and the 2010, 2011 and 2012 Annual Social and Economic Supplements (ASEC) to the Current Population Survey (CPS). The estimates in this paper (which may be shown in text, figures, and tables) are based on responses from a sample of the population and may differ from actual values because of sampling variability or other factors. As a result, apparent differences between the estimates for two or more groups may not be statistically significant. All comparative statements have undergone statistical testing and are significant at the 90 percent confidence level unless otherwise noted. Standard errors were calculated using replicate weights. Further information about the source and accuracy of the estimates is available at http://www.census.gov/acs/www/Downloads/data_documentation/pums/Accuracy/2011AccuracyPUMS.pdf and www.census.gov/hhes/www/p60_245sa.pdf .

exclude (military and college quarters) to construct a comparable sample, the PUMS data does not. Therefore, this analysis limits the sample to persons living in households. [7]

The SPM uses a unit of analysis that differs from the traditional Census Bureau family definition (two or more related persons) used in the official poverty estimates. For the SPM, the unit of analysis is the family plus any cohabiting partners and their relatives. In addition, the SPM expands the poverty universe to include unrelated children under age 15 and groups them in the resource unit of the household reference person. These children are not included in the universe for the official poverty estimates. The SPM also includes all foster children age 21 and younger in the resource unit of the household reference person. In the official measure, foster children under the age of 15 are excluded from the poverty universe while foster children between the ages of 15 and 21 (inclusive) are considered unrelated individuals with their poverty status determined by their own income and the threshold for a single individual. In the SPM all these foster children are included in the resource unit of the household reference person.

The ACS does not have all the information necessary to implement this new unit of analysis. Since the ACS only describes people's relationships to the household reference person, only the cohabiters of household reference persons can be identified. The ACS does not include any questions that can be used to identify unrelated subfamilies.

For this analysis, Census Bureau researchers have developed a routine to assign relationship pointers to all records on the ACS PUMS file.[8] This routine follows the rules

[7] New York City, Wisconsin and the Urban Institute limit their samples in a similar fashion.
[8] This routine was developed by Census Bureau survey statistician, Matthew Brault, in conjunction with work constructing health insurance units.

outlined by the University of Minnesota's IPUMs project.[9] A set of pointers called SPLOC, MOMLOC, and POPLOC are used to identify the location within the household of each individual's own spouse, mother, and father. Like the IPUMs pointers, whenever the family relationship codes are unclear, the routine uses age, marital status, and the order in which individuals are listed on the ACS form to assign the pointers.

These pointers enable us to create some unrelated subfamilies. All other unrelated individuals aged 15 or older (with the exception of the cohabiting partner of the household reference person and foster children up to the age of 21) are treated as unrelated individuals. If an unrelated individual points to the cohabiting partner as a parent, then they will be included in the same resource unit as the cohabiting partner. Unrelated children under the age of 15, foster children under the age of 22 and unmarried partners are grouped into the resource unit of the household head unless a pointer has been imputed to them.

There are 2,949,875 person level records on the 2011 ACS PUMS file when individuals in group quarters are excluded. Of these, 134,728 records are coded as unrelated individuals in the following codes: roomer or boarder, housemate or roommate, unmarried partner, foster child and other nonrelative. Imputing relationship pointers reduces the number of unrelated individuals by 7,786 records, leaving 126,942 unrelated individuals. Of these remaining unrelated individuals, almost half (62,985) correspond to unmarried partners. Another 5,275 records correspond to children under the age of 15 or foster children under the age of 22. This leaves 58,682 individual records for unrelated individuals who will be treated as one-person resource units.

[9] https://usa.ipums.org/usa/chapter5/chapter5.shtml

Table 1 provides descriptive summary statistics on the unit of analysis used in the official poverty measure and this preliminary SPM measure. In the 2011 ACS, there were 124.3 million SPM resource units (80.3 million families and 44.0 million unrelated individuals) and 131.6 million official poverty resource units (83.1 million families plus 48.5 million unrelated individuals).[10] There were 2.8 million fewer SPM multi-person resource units than official multi-person resource units. For the official poverty measure, all multi-person resource units are families. For the SPM these multi-person resource units include families plus groups formed by either combining a cohabiting partner, a foster child or an unrelated individual under age 15 with a nonfamily householder and families that are formed using the IPUMS pointers. There were about 375,000 unrelated subfamilies identified using the IPUMs pointers.[11] There were 4.5 million fewer single person resource units in the SPM than in the official approach.[12]

In the 2011 ACS, approximately 6.7 million households included a cohabiting partner. There were 900,000 unrelated children under the age of 15 of which 174,000 were foster children. There were an additional 60,000 older (ages 15 to 21) foster children. In order to compare SPM estimates to official poverty estimates, this paper will incorporate unrelated individuals under age 15 into the poverty universe, setting their official poverty status as "in poverty". This is consistent with the way that the poverty universe is defined in the Census Bureau Research SPM reports.

2. Program Participation/Value of Noncash Benefits

[10] For a discussion of the impact of the new unit of analysis in the CPS ASEC, see Provencher (2011).
[11] These relatively small numbers of cases are consistent with the analysis conducted by Heggeness et al. using the IPUMS pointers. They found that the IPUMS pointers were able to attach 63.0 percent of all unrelated children under age 15 to one or two parents who were also unrelated to the household head. In this exercise, about 40 percent of records for unrelated individuals under age 15 were attached to at least one parent.
[12] Heggeness, et.al., 2012, explored issues related to the SPM unit of analysis in the ACS file.

The SPM adds to cash income the value of five noncash or in-kind benefits: SNAP, WIC, school lunch, housing assistance and LIHEAP. Since the ACS asks only whether or not a household receives SNAP benefits (and not the value of SNAP benefits received) and does not ask about other noncash benefits, if the value of these benefits are to be added to resources, methods must be developed to assign participation status to ACS households.

The CPS ASEC includes specific questions on receipt of each of these benefits and asks respondents the value of SNAP and LIHEAP benefits received in the past 12 months. In addition, the CPS ASEC asks respondents who in the household received WIC benefits, the kind of housing assistance (public housing vs. housing voucher), and whether or not children received free or reduced price school lunches. The Census Bureau has developed methods to use these data to estimate the cash value of WIC, school lunch, and housing assistance.[13]

In this paper participation status or recipiency is modeled using data from the CPS ASEC and PROC MI with the logistic method.[14] PROC MI is a SAS procedure that facilitates multiple imputation of missing survey data. PROC MI permits the researcher to select among various methods for the imputation, including regression, predictive mean matching, propensity score, logistic regression, discriminant function or MCMC data augmentation.

[13] See Kathleen Short, 2011, *The Research Supplemental Poverty Measure: 2010*, U.S. Census Bureau, Current Population Reports, P60-241, pp 19-21. The Appendix of this report provides detailed descriptions of each of these in kind benefits, http://www.census.gov/hhes/povmeas/methodology/supplemental/research/Short_ResearchSPM2010.pdf

[14] Modeling each outcome separately ignores any correlation among outcomes. For example, receiving housing assistance is independent of receiving energy assistance.

Pooling three years of CPS ASEC data, a logistic regression is estimated by maximum likelihood. For each completed data set, a random draw is made from the posterior distribution of the parameters. Based on the resulting logistic regression equation, a probability is generated for each case with missing data and a Bernoulloi draw is made for that probability, producing imputed values of 0 or 1 (Paul D. Allison, "Imputation of Categorical Variables with PROC MI," Paper 113-30 SUGI 30).

For benefits, the logistic regressions are run separately for each state. The other household/family characteristics included in the model vary slightly by benefit type. Table 2 provides a list of these household/family characteristics. This paper does not adjust estimates of program participation to correct for underreporting in the CPS ASEC.

For SNAP and LIHEAP, the analysis uses the SAS PROC MI procedure with the predicted mean matching method to impute a value for benefits.[15] For each missing value, it imputes an observed value that is selected from the specified number of nearest observations to the predicted value from the simulated regression model. The predictive mean matching method ensures that imputed values are plausible, and it might be more appropriate than the regression method if the normality assumption is violated. Covariates used by previous research on these programs were included in the model if these covariates were available in both the ACS and the CPS ASEC. The other household/family characteristics included in the models vary by the program or benefit and are shown in Table 2.

This paper does not adjust the estimated benefit amounts to account for underreporting of the dollar value of SNAP or LIHEAP benefits in the CPS ASEC. In

[15] See Mitchell (2013) for an assessment of the validity of this approach for imputing the value of SNAP benefits.

this paper, all amounts are imputed at the level of the SPM resource unit. This eliminates the need to prorate benefit amounts across units in households with more than one SPM resource unit. The values of benefits for WIC and school lunch are estimated using administrative estimates of average benefit outlays from the U.S. Department of Agriculture (USDA). These are the same averages used to assign values to these program benefits in the CPS ASEC. In the CPS ASEC when a household answers affirmatively to the WIC receipt question, the respondent is asked to list the individuals in the household who receive WIC. For school lunch, PROC MI with the logisitic option was used to estimate (1) which school age children bought a lunch at school and then (2) of those who bought lunch at school, who received a free or reduced price lunch. The value of school lunch benefits to the resource unit was calculated by multiplying the number of school age children by the relevant average subsidy per meal (regular or free) times 167 school days per year.[16]

Receipt of housing assistance was assigned to renters using the logistic option in PROC MI based on CPS ASEC responses to the questions on housing assistance. The value of the housing subsidy is estimated using data from the Department of Housing and Urban Development (HUD) and reported household income. Specifically, the SPM considers the value of a housing subsidy to be the difference between the market rent of the housing unit and the rent paid by the household. Since the CPS ASEC does not ask respondents about the market rent of their housing unit, the market rent of subsidized housing for the CPS ASEC is derived from a statistical match between the CPS ASEC

[16] In this exercise, no effort was made to distinguish between free and reduced price school lunch. The value of school lunch for all imputed to receive free or reduced price lunch was set at the value of the free lunch subsidy. This will slightly overstate the value of school lunch. The difference between the subsidy for free and reduced school lunch is quite small: $2.72 per meal vs. $3.12 per meal for 2013.

and HUD administrative records. For this ACS analysis, we conducted a similar statistical match between the ACS PUMS data and the HUD administrative records. Household income and composition data from the ACS were used to calculate the household's required contribution towards housing as per HUD's program rules as a proxy for rent paid which is not known.[17] This required contribution was subtracted from the imputed market rent of the household to estimate the subsidy value. Consistent with the Census Bureau practice in estimating the value of housing subsidies for the CPS ASEC SPM, the value of the housing subsidy is limited to be no more than the housing portion of the threshold minus the expected household contribution.[18]

Table 3 presents the ACS imputed recipiency rates with the estimated recipiency rates in the CPS for each benefit type. It also shows the mean and aggregate benefit amounts in the two surveys, as well as the mean and aggregate benefits for those with income below the official poverty threshold. For most benefits the differences between the imputed estimates in the ACS and the CPS amounts were statistically significant but not large. For example, the mean free and reduced price lunch benefit in the ACS was $493 but $462 in the CPS. Mean housing subsidies and LIHEAP benefits were larger in the ACS than in the CPS, mean WIC benefits were smaller in the ACS than in the CPS while the difference in mean SNAP benefits was not statistically significant.

The differences between the imputed ACS and reported CPS recipiency rates were statistically significant for school lunch, LIHEAP and housing subsidies but not for WIC. There was also a statistically significant difference between the reported ACS

[17] The ACS asks respondents to provide the market rent of their units, not the actual rent paid.
[18] For more detailed description of the method for estimating the value of housing subsidies, see Paul Johnson, Trudi Renwick and Kathleen Short, 2010, "Estimating the Value of Federal Housing Assistance for the Supplemental Poverty Measure," Poverty Measurement Working Paper, U.S. Census Bureau.

SNAP participation rate (13.7 percent) and the reported CPS SNAP participation rate (10.7 percent). For units classified as poor using the official measure, the difference between participation rates for WIC was not statistically significant but the participation rate for housing subsidies was higher in the CPS than the ACS. Among the population in poverty, the ACS imputed participation rates for school lunch and LIHEAP were higher than the rates reported in the CPS.

Looking at the aggregate amounts, ACS estimates for SNAP, school lunch, and LIHEAP were higher than the CPS estimates while the difference in the housing subsidies was not statistically significant. The aggregate amount of WIC benefits in the ACS was lower than in the CPS. For those categorized as poor using the official measure, the differences in aggregate benefit amounts for housing subsidies, school lunch and LIHEAP were not statistically significant. The aggregate amount for SNAP was higher in the ACS than the CPS while the aggregate amount for WIC was higher in the CPS than the ACS.

3. Tax Obligations and Tax Credits.

The SPM resource measure adds estimated values for tax credits and subtracts estimated values for tax obligations. This paper estimates tax obligations and tax credits using a tax calculator. For the CPS ASEC, the Census Bureau uses a tax calculator that takes data from the CPS ASEC questionnaire enhanced with data from a statistical match to Internal Revenue Service (IRS) data. This paper uses estimates from a similar tax model developed for the Census Bureau designed to use ACS data. This process involves forming tax units from ACS households (recognizing that ACS relationship data is more limited than CPS ASEC relationship data but using the IPUMS-style relationship pointers

developed for this exercise) and dividing up some broader ACS income categories into taxable and nontaxable income.

Table 3 provides some summary measures of the means and aggregate dollar amounts for federal insurance contributions act (FICA) payroll tax, federal income tax before credits, and the federal earned income tax credit. State taxes are also included in the calculations. The table shows that a slightly higher percentage of units are assigned payroll taxes overall in the ACS than in the CPS. For those classified as in poverty using the official measure, 52 percent were assigned payroll taxes in the ACS while 45 percent were assigned payroll taxes in the CPS. Average amounts assigned for payroll taxes are slightly lower in the ACS for both groups.

Federal income taxes before credits show a different pattern. A greater percentage of those below poverty using the official measure are assigned tax liability in the CPS. Mean amounts are lower on average in the ACS compared to the CPS for the entire population but the differences are not statistically significant for those below poverty using the official measure. The aggregates amount for the total population is lower for the ACS. For the population in poverty the difference in the aggregate amount of federal taxes before credits was not statistically significant.

The EITC calculation results in a higher percentage of the total population and of the official poor eligible for the EITC in the ACS than in the CPS. Average assigned amounts are lower in the ACS than in the CPS, resulting in differences in the aggregate amounts that were not statistically significant.

These estimates of tax liabilities are preliminary and there are clear improvements that have been made in other work. More complex approaches have been used to form tax

units, improve estimates of tax deductions based on reporting housing expenses in the ACS and divide "other income" into taxable and nontaxable portions.

4. Subtractions from Resources

The SPM uses thresholds derived from Consumer Expenditure Survey data on spending on food, clothing, shelter and utilities. The ITWG suggested that Census subtract expenditures on childcare, child support paid and medical out of pocket expenditures from resources because these three key items are not included in the thresholds and outlays for these purposes reduce the resources available to purchase the expenditures categories included in the threshold. In order to estimate SPM poverty rates in the ACS, the amounts to be subtracted from resources for these expenditures need to be imputed. Child support paid is not included in this paper.[19]

4a. Child Care

This paper uses PROC MI with both the logistic and the predicted means matching method to impute childcare expenditures. For childcare, the sample was limited to those households with children age 13 and younger. For married-couple households or households reporting an unmarried partner, the universe was limited to households in which both the reference person and the spouse or partner were earners. For unmarried household reference persons, the sample was limited to those in which the reference person reported earnings. The logistic method was used to determine which resource units paid for childcare. The predicted means matching method was used to impute an amount to each resource unit.

[19] In the CPS ASEC, the impact of child support paid is very small. The overall poverty rate for 2010 changed from 16.0 percent to 15.9 percent when child support paid was subtracted from resources.

For households designated as "paying for childcare," the predicted weekly outlay was multiplied by the number of weeks worked in the previous year by the reference person, spouse or cohabiting partner with the least number of weeks worked.[20] Since the ACS public use data provides only categorical responses to the question on the number of weeks worked, households were assigned the midpoint of the category as the number of weeks worked. This same estimate of the number of weeks worked was used to assign other work-related expenses using 85 percent of the median other work expenses reported in the SIPP. Finally, work-related expenses including childcare were limited to be no more than the earnings of the household reference person, spouse or cohabiting partner with the lowest earnings. This limit is the same as the limit on work expenses used for the CPS ASEC SPM estimates.

Table 3 compares summary statistics for the ACS imputed childcare outlays to the reported childcare outlays from the CPS ASEC. While 6.0 percent of resource units report some childcare expenses in the CPS ASEC, only 5.5 percent of resource units in the ACS were designated as childcare payers. For all resource units and those in poverty, the mean outlays for the ACS were higher than the mean outlays for the CPS. For resource units with cash income below the official poverty thresholds, the mean imputed amount was $3,453 as compared to the $2,352 reported in the CPS ASEC. The differences in aggregate childcare amounts across the two samples were not statistically significant for either the total population or those below the official poverty threshold.

The childcare imputation is less robust in the ACS due to the limited relationship information. In the CPS ASEC there are parent pointers that enable one to cap childcare

[20] The sample used to estimate the childcare amount was trimmed to eliminate the top 1 percentile of responses. This eliminated cases where the annual expenditures on childcare were reported to exceed $31,200.

and other work-related expenses at the earnings of the parent with the least amount of earnings. In the ACS file the reference person, spouse or cohabiting partner of the household may not be the parent of the child for whom childcare expenses are imputed. The parent might work full time and pay for childcare for 52 weeks while the reference person, spouse or cohabiting partner does not work at all. The method used in this analysis would erroneously fail to impute childcare expenses to this household.

4b. Work Expenses

Table 3 also compares total work expenses. For this variable, 52 percent of official poor resource units were assigned some expenses in the ACS as compared to about 46 percent in the CPS ASEC. Mean amounts for the all resource units were lower in the ACS but mean amounts for units in poverty were higher. The aggregate amount of work-related expenses subtracted from ACS resource units was $11.1 billion less than the CPS ASEC amount. For the officially poor population, the aggregate value of work expenses were higher in the ACS than the CPS. One limitation of the ACS imputed work expenses is the categorical nature of the weeks worked variable in the ACS public use data.

4c. MOOP Models

For the SPM, medical out of pocket expenditures (MOOP) are subtracted from resources before comparing resources to the poverty threshold. Since the CPS ASEC includes specific questions on MOOP spending, these responses are used to estimate total MOOP spending for each resource unit.

In this paper, the CPS ASEC data on MOOP are used to model expenditures on health insurance premiums and other medical out of pocket outlays using PROC MI with the predicted means match method. All imputations were done at the SPM unit level. Outlays on premiums were set to $0 for individuals and families reporting no health insurance or only Medicaid. PROC MI was used to estimate the amount of health insurance premiums and other medical out of pocket expenditures.

Table 3 provides some summary statistics for the MOOP imputations and compares these to reported MOOP expenditures from the CPS ASEC. In the CPS ASEC, 94.9 percent of resource units had some MOOP outlays. For the ACS the modeled estimate is 92.8 percent, statistically different from the CPS ASEC estimate. For officially poor resource units, the estimates are 85.6 percent and 83.7 percent. For both the total sample and the officially poor resource units, the mean of the imputed ACS MOOP is larger than the reported MOOP from the CPS ASEC. The total ACS imputed MOOP is 23.8 billion dollars less than the CPS ASEC reported amount. For the officially poor population, the difference in the aggregate MOOP imputed is not statistically significant.

The MOOP imputations are constrained by the limited data available from the ACS. The ACS does not ask about health status or receipt of disability payments, two variables important in the MOOP model used in the NAS measures. In addition, the health insurance questions are not directly comparable between the two surveys. The CPS ASEC asks about health insurance at any time during the reference year. The ACS asks about health insurance coverage at the time of the survey.

5. Thresholds.

The ACS is a continuous survey and asks respondents to report their income in the previous 12 months. When calculating ACS estimates of poverty rates using the official definition, the poverty thresholds vary by family size, age of reference person, number of children and the month of the survey. Since this research uses the PUMS file (which does not disclose the month of the survey), an annual threshold is used. In order to be consistent with this threshold choice, the analysis uses the adjusted cash income variable from the PUMS file.[21]

The ITWG suggested that the housing portion of the SPM thresholds be adjusted for geographic differences in housing costs.[22] These adjustments factors are calculated for specific metropolitan statistical areas with populations greater than 100,000. There is a single average adjustment factor for smaller metropolitan areas in each state and one adjustment factor for households outside metropolitan statistical areas in each state. Since the ACS PUMS files does not identify metropolitan statistical areas, the adjustment factors used for the 2011 research SPM estimates from the CPS ASEC were used with the ACS 2011 internal file to calculate average geographic adjustment factors for each PUMA. These adjustment factors were then assigned to each household based on the location of the unit.

While PUMAs were selected as the geographic unit for the indices because this is the smallest level of geography identifiable on the ACS PUMS file, the index values are based on differences in housing costs across larger metropolitan areas. The April 2011 Urban Institute workshop included a discussion of the appropriate level of geography to

[21] Thresholds are estimated by the Bureau of Labor Statistics and can be found at http://www.bls.gov/pir/spmhome.htm.

[22] See Renwick, Trudi. Geographic Adjustments of Supplemental Poverty Measure Thresholds: Using the American Community Survey Five-Year Data on Housing Costs, July 2011, U.S. Census Bureau.

calculate the geographic indices. In that discussion there was concern that the geographic unit should be larger than a single PUMA. The Urban Institute used Super-PUMAS in their analysis. IRP aggregated PUMAs into larger regional units. NYC CEO used a single geographic adjustment factor for all parts of New York City, in essence combining numerous PUMAs.[23]

6. Preliminary SPM estimates

Table 4 compares official poverty rates to SPM rates by demographic group including age, family type, race, Hispanic origin, nativity, tenure, region of residence and health insurance status and compares the official poverty rates to the SPM rates for each group. Table 5 compares the distribution of the poverty population across different characteristics for each measure. Table 6 compares official poverty and SPM rates for each state and the District of Columbia. Table 7 summarizes the effect of excluding individual resource elements on SPM poverty rates in the ACS and CPS ASEC. Tables 8 and 9 examine the "differences in differences" --- for specific demographic groups and for each state, whether the difference between the SPM rate and the official poverty rates in the ACS is different than the difference in the CPS ASEC.

For 2011, the SPM rate for the total population from the ACS was 17.4 percent while the official poverty rate was 15.9 percent. There was a statistically significant difference in the rates for every category included in Table 4 except the poverty rate for those with a disability. The SPM rate was higher than the official rate for most groups. The official poverty rate was higher than the SPM poverty rate for children, people in new SPM resource units, Blacks, renters, people living in the Midwest, and people with only public insurance.

[23] Betson, Giannarelli and Zedlewski (2011) p. 6.

Since the overall SPM rate was higher than the official rate, it is not surprising that the SPM rates were higher for most groups. Table 5 shows how the distribution of the population in poverty differs across the two measures. For example, children were 35.4 percent of the official poor but 27.7 percent of the SPM poor. Other groups whose share of the poor population shrank using the SPM include: people in female householder units, people in new SPM units, Blacks, Hispanics, native born, renters, people living in the Midwest, people living in the South, and people with only public health insurance coverage. For all other groups in Table 5 the shares went up.

The SPM rate was statistically different from the official poverty rate in all but 12 states (Alabama, Delaware, Idaho, Louisiana, Nebraska, North Dakota, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee and Wyoming). The SPM rate was higher than the official rate in: Arizona, California, Colorado, Connecticut, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, New York, North Carolina, Utah, Virginia and Washington. For the other 19 states, the official poverty rate was higher than the SPM rate.

For 2011, the SPM rate for the total population using the ACS was 17.4 percent, higher than the 16.1 SPM rate from the CPS ASEC. The official rates also differed across these surveys in 2011: 15.9 for the ACS vs. 15.1 in the CPS ASEC. There are many reasons why the poverty estimates from the ACS would be distinguishable from the CPS ASEC poverty estimates. These include differences in the reference period (the past calendar year vs. the past 12 months), more detailed income-reporting categories in the

CPS ASEC than in the ACS, and mode of data collection.[24] Despite these reservations, it is important to assess to what extent these differences are a result of imprecise imputation of the missing elements.

Table 7 examines the effect of each resource element on the overall SPM poverty rate and the SPM poverty rates for specific age groups. For example, in the ACS the SPM poverty rate without the EITC would be 19.4 percent rather than 17.4 percent. In other words, adding the EITC to resources decreases the overall poverty rate by 2.1 percentage points. In the CPS, the impact of the EITC is to reduce the SPM poverty rate from 18.0 percent to 16.1 percent, a decrease of about 2.0 percentage points. The difference between the ACS marginal impact and the CPS ASEC marginal impact is not statistically significant.

The marginal impact of SNAP benefits is higher in the ACS than in the CPS for the total population, children and adults aged 18 to 64. This is consistent with the estimates shown in Table 3. The ACS SNAP imputations add 9.2 billion more to resources than the resources added in the CPS. In the case of SNAP, much of this is driven by the higher participation rates in the ACS compared to the CPS. These are both reported rates and not the result of our imputations.

The differences in the marginal impacts due to school lunch and LIHEAP and were not statistically significant for any group. The marginal differences for WIC were lower for adults aged 18 to 64, perhaps because there are some childless females (most likely pregnant) receiving WIC benefits in the CPS ASEC who were not modeled in the

[24] For more information on the differences between the ACS and CPS ASEC poverty estimates see http://www.census.gov/hhes/www/poverty/about/datasources/factsheet.html

ACS. Some of this may be the result of the less precise parent pointers in the ACS which prevent us from correctly associating small children with their parents.

For the tax estimates, the differences in the marginal impacts for FICA and EITC were not statistically significant. The differences in the marginal estimates for federal taxes before credits were statistically significant but small.

For work expenses and MOOP almost all the differences in the marginal were statistically significant. For work expenses, the ACS marginals were slightly greater than the CPS estimates for the total population[25] and each of the three age groups. Table 8 compares the difference between the SPM rate and the official poverty rate in the ACS to the difference in the CPS ASEC for specific demographic groups. For the total population and most demographic groups, the difference in the difference is statistically significant. The differences are not statistically significant for whites, Hispanics, foreign born, renters, those living in the Northeast and the West, people with only public health insurance coverage and less than full-year, full-time workers. When the differences between the ACS and the CPS are statistically significant, if they are higher in the ACS they are also higher in the CPS and vice versa with the exception of people living in the South. For people living in the South, the ACS SPM estimate is 1.0 percentage point higher than the official estimate while in the CPS the SPM estimate is 0.1 percentage point lower. Some of the statistically significant differences may be the result of conceptual differences between the questions in the ACS and the CPS ASEC, e.g., health insurance status and work experience.

[25] The earlier version of this paper (presented at APPAM in November 2014) had a very large difference in the marginal impact of MOOP for the those aged 65 and older (7.0 percentage points). This revision to the models reduced that gap to 0.5 percentage points but the difference was still statistically significant.

Table 9 summarizes the differences between the SPM rates and the official poverty rates for each of the 50 states and the District of Columbia. For twenty states the differences are statistically significant. For sixteen of these twenty states (all but Alaska, Indiana, North Carolina and Tennesssee) if the SPM was higher than the official rate in the ACS it was also higher in the CPS ASEC and vice versa.

Future Research

There are several areas which should be investigated in future research, including:

- Imputation of the parent pointers. In particular, why does our routine assign fewer unrelated children to parents than the IPUMs pointers.
- Assessment of whether or not using more than one year of CPS ASEC data in the PROC MI procedures enhances the imputations.
- MOOP and child care in the thresholds. Rather than imputing MOOP and child care, we could include these in the thresholds. This is an approach that has been used in several states and is worth considering for a national model.
- Unit of analysis. Given the lack of relationship pointer, should we be using the household as the unit of analysis rather than the SPM resource unit for ACS estimates?
- Taxes. Can we use **TAXSIM**[26] rather than our own tax model for the tax estimates?

The next step in the development of this public use file will be to take advantage of the power of the multiple imputation process to produce multiple files. This would allow users to estimate the variance introduced by the imputation process. Further research is

[26] Feenberg (1993).

required to develop efficient methods of producing multiple imputations as well as guidance to end users on how to use the multiple implicates.

Conclusion

This exercise has shown that using PROC MI is a reasonable approach to creating a public use ACS SPM research file. While statistically different than the CPS ASEC SPM rate for 2011, the difference between the two national rates is comparable to the difference between the 2011 ACS and the CPS ASEC official national poverty rates. Using this ACS file, we were able to report single year estimates of SPM rates for all 50 states and the District of Columbia. The marginal impacts of individual SPM resource elements across the two surveys were not statistically significant for many of the elements. Even when the differences in the marginal impacts were statistically significant (SNAP, WIC, Federal Income Taxes before Credits, Work Expenses), the differences were small.

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Table 1: Poverty Universe and Unit of Analysis
(In Thousands)

	SPM		Official			Difference
	Estimate	SE	Estimate	SE		
Total Poverty Universe*	303,586	0.2	302,685	17.7	*	-900
Number of UI under 15	900	17.7	NA			
Foster Children	174	5.0	NA			
Other UI under 15	726	16.0	NA			
Number of foster children	234	7.7	60	15.8	*	-174
Under 15	174	5.0	NA			
15 to 21 years of age	60	3.4	60	3.4		0
Number of cohabitors	6,722	28.9	NA			
Number of Families/Resource Units	124,253	61.9	131,570	70.6	*	7,316
Multi-person Families/Resource Units	80,298	90.0	83,077	84.0	*	2,779
Primary Families (includes household reference person)	79,924	91.3	83,077	84.0	*	3,154
Secondary Families	375	10.2	-			
Single Person Resource Units	43,955	98.5	48,492	84.8	*	4,537

*Excluding group quarters

Source: 2011 American Community Survey Public Use File

Table 2: Model Covariates by Benefit Type/Expenditure

	Housing Assistance (logit)	Child Care (logit and pmm)	LIHEAP (logit and pmm)	Subsidized Lunch (logit)	Free or Reduced Lunch (logit)	SNAP (pmm)	WIC (logit)	MOOP (logit and PMM)
Household/Family Type	Single parent with a child Male head of SPM unit Elderly head of SPM unit	Single parent with a child Male head of SPM unit	Single parent with a child Male head of SPM unit Elderly head of SPM unit	Single parent with a child Male head of SPM unit	Single parent with a child Male head of SPM unit	Single parent with a child Male head of SPM unit Elderly head of SPM unit	Single parent with a child Male head of SPM unit	Married head of SPM unit Elderly head of SPM unit
Household/Family Size	Presence of children Number of people in the unit	Number of children under 2 years of age Number of children 3 to 4 years of age Number of children 5 to 10 years of age Number of children 11 to 13 years of age	Presence of children Number of people in the unit	Number of children 5 to 10 years of age Number of children 11 to 13 years of age Number of children 14 to 18 years of age	Number of children 5 to 10 years of age Number of children 11 to 13 years of age Number of children 14 to 18 years of age	Presence of children Number of people in the unit	Number of children under 2 years of age Number of children 3 to 4 years of age	Number of adults in SPM Unit Number of children in SPM unit One person (nonelderly) SPM unit
Age	Age of unit head Age squared	Age of unit head Age squared	Age of unit head Age squared	Age of unit head Age squared	Age of unit head Age squared	Age of unit head Age squared	Age of unit head Age squared	Age of unit head Age squared
Educational Attainment	Less than a high school eduction High school diploma but did not finish college	Less than a high school eduction High school diploma but did not finish college	Less than a high school eduction High school diploma but did not finish college	Less than a high school eduction High school diploma but did not finish college	Less than a high school eduction High school diploma but did not finish college	Less than a high school eduction High school diploma but did not finish college	Less than a high school eduction High school diploma but did not finish college	
Income	Log of cash income	Log of cash income	Log of cash income	Log of cash income	Log of cash income	Log of cash income	Log of cash income	Log of cash income
Program Participation	Number of people reporting Medicaid receipt Log of public assistance income Receipt of SNAP Value of SNAP benefits	Number of people reporting Medicaid receipt Log of public assistance income Receipt of SNAP	Number of people reporting Medicaid receipt Log of public assistance income Receipt of SNAP Value of SNAP benefits	Number of people reporting Medicaid receipt Log of public assistance income Receipt of SNAP	Number of people reporting Medicaid receipt Log of public assistance income Receipt of SNAP Receipt of housing assistance	Number of people reporting Medicaid receipt Log of public assistance	Number of people reporting Medicaid receipt Log of public assistance income Receipt of SNAP Receipt of housing assistance	Number of people reporting Medicaid receipt Number of people reporting Medicare receipt Number uninsured Number with employer provided insurance

Table 2: Model Covariates by Benefit Type/Expenditure

	Value of LIHEAP benefits							Number with private insurance Dual coverage (Medicare and Medicaid)
Geography	Partition by State	Partition by State	Partition by State	Partition by State	Partition by State	Partition by State	Partition by State	Partition by State
Employment	Worked full time Did not work in previous year	Worked full time	Worked full time Did not work in previous year	Worked full time Did not work in previous year	Worked full time Did not work in previous year	Worked full time Did not work in previous year	Worked full time Did not work in previous year	Worked full time Did not work in previous year
Race/Ethnicity	Black head of household Hispanic head of household	Black head of household Hispanic head of household	Black head of household Hispanic head of household	Black head of household Hispanic head of household	Black head of household Hispanic head of household	Black head of household Hispanic head of household	Black head of household Hispanic head of household	Black head of household Hispanic head of household
Disability	Presence of someone with a disability in the SPM unit		Presence of someone with a disability in the SPM unit			Presence of someone with a disability in the SPM unit	Presence of someone with a disability in the SPM unit	
Tenure			Renter (dummy)					
Universe	All SPM units reporting tenure as "rent"	SPM units with children 13 years of age or less in which for husband-wife families head and spouse are classified as "earners"; for male-headed or female-headed SPM units where head is earner; for SPM units with unmarried partner, where head and partner are earners.	All SPM units	All SPM units with school age children	All SPM units with school age children who are assigned "yes" to school lunch participation question.	All SPM units with "yes" response to ACS SNAP receipt question.	All SPM units with children ages 0-5.	All SPM units

Tabe 3. Recipiency Rates, Means and Aggregate of Key SPM Elements: ACS vs CPS 2011

BENEFITS

	Total Population					Population in Poverty (official)				
	ACS		CPS			ACS		CPS		
	Estimate	se	**Estimate**	se	Difference	**Estimate**	se	**Estimate**	se	Difference
Recipiency/Payment Rates										
SNAP	13.7%	0.04%	10.7%	0.1%	* 3.0%	46.7%	0.15%	39.7%	0.6%	* 7.0%
Housing Subsidies	3.3%	0.02%	3.6%	0.1%	* -0.3%	14.6%	0.10%	15.7%	0.5%	* -1.1%
Lunch	18.5%	0.04%	18.1%	0.2%	* 0.4%	27.2%	0.13%	26.2%	0.5%	* 0.9%
HEAP	3.7%	0.02%	3.5%	0.1%	* 0.2%	12.1%	0.09%	11.4%	0.3%	* 0.7%
WIC	2.9%	0.02%	3.0%	0.1%	-0.1%	9.2%	0.10%	9.6%	0.3%	-0.4%
Means										
SNAP	2,928	8	2,873	35	* 55	3,205	11	3,328	43	* -124
Housing Subsidies	5,304	23	4,768	96	* 535	6,175	26	5,689	121	* 486
Lunch	493	1	462	4	* 31	865	3	844	12	* 21
HEAP	398	2	385	7	* 13	402	3	389	12	13
WIC	873	3	892	10	* -19	914	5	920	15	-6
Aggregates (in billions)										
SNAP	48.7	0.20	39.0	0.6	* 9.7	28.1	0.14	25.8	0.5	* 2.3
Housing Subsidies	21.1	0.16	21.8	0.8	-0.7	16.9	0.13	17.4	0.7	-0.5
Lunch	11.1	0.04	10.6	0.1	* 0.5	4.4	0.03	4.3	0.1	0.1
HEAP	1.8	0.01	1.7	0.1	* 0.1	0.9	0.01	0.9	0.0	0.0
WIC	3.1	0.02	3.4	0.1	* -0.3	1.6	0.02	1.7	0.1	* -0.1

TAXES

	Total Population					Population in Poverty (official)				
	ACS		CPS			ACS		CPS		
	Estimate	se	**Estimate**	se	Difference	**Estimate**	se	**Estimate**	se	Difference
Recipiency/Payment Rates										
EITC	18.3%	0.0%	15.9%	0.1%	* 2.4%	40.4%	0.2%	35.0%	0.5%	* 5.4%
Federal Tax Before Credits	70.1%	0.0%	69.4%	0.2%	* 0.7%	8.2%	0.1%	11.0%	0.4%	* -2.8%
FICA	76.4%	0.0%	75.5%	0.2%	* 0.9%	52.0%	0.1%	45.2%	0.6%	* 6.8%
State Tax	53.7%	0.0%	53.9%	0.2%	-0.2%	11.3%	0.1%	11.3%	0.4%	0.0%
Means										
EITC	1,956	5	2,135	18	* -179	2,266	10	2,451	38	* -185
Federal Tax Before Credits	10,257	21	10,895	112	* -639	2,607	54	2,590	437	17
FICA	3,744	4	3,961	18	* -218	804	4	864	17	* -60
State Tax	3,543	8	3,285	32	* 258	(69)	15	395	95	* -464
Aggregates (in billions)										
EITC	43.3	0.1	43.0	0.5	0.3	17.2	0.1	16.8	0.3	0.4
Federal Tax Before Credits	870.9	2.0	960.5	9.9	* -89.6	4.0	0.1	5.6	1.0	-1.5
FICA	346.6	0.4	379.9	1.9	* -33.2	7.9	0.0	7.6	0.2	0.2
State Tax	230.3	0.6	224.9	2.2	* 5.4	(0.1)	0.0	0.87	0.2	* -1.0

NECESSARY EXPENSES

	Total Population					Population in Poverty (official)				
	ACS		CPS			ACS		CPS		
	Estimate	se	**Estimate**	se	Difference	**Estimate**	se	**Estimate**	se	Difference
Recipiency/Payment Rates										
Work Expenses	76.4%	0.0%	75.6%	0.2%	* 0.8%	52.0%	0.2%	45.5%	0.6%	* 6.5%
MOOP	92.8%	0.0%	94.9%	0.1%	* -2.1%	83.7%	0.1%	85.6%	0.4%	* -1.9%
Child Care	5.5%	0.0%	6.0%	0.1%	* -0.5%	3.5%	0.1%	4.0%	0.2%	* -0.5%
Means										
Work Expenses	2,292	3	2,326	9	* -34	1,421	6	1,327	15	* 94
MOOP	4,127	8	4,047	36	* 80	1,837	18	1,682	38	* 155
Child Care	5,845	141	5,108	97	* 737	3,453	105	2,352	145	* 1101
Aggregates (in billions)										
Work Expenses	212.2	0.33	223.4	0.94	* -11.1	13.9	0.09	11.8	0.20	* 2.1
MOOP	464.0	0.98	487.8	4.43	* -23.8	28.8	0.28	28.1	0.73	0.7
Child Care	38.9	0.96	39.1	0.84	-0.2	2.3	0.08	1.8	0.15	0.5

Source: 2011 American Community Survey Public Use File and 2012 Current Population Survey Annual Social and Economic Supplement

Table 4. Number and Percentage of People in Poverty by Different Poverty Measures: 2011

	Total (in thousands)	Supplemental Poverty Measure				Official Poverty Measure				Difference	
		Number	SE	Percent	SE	Number	SE	Percent	SE	Number	Percent
Total Population	303,586	52,762	181	17.38	0.06	48,354	184	15.93	0.06	4,407 *	1.5 *
Age			-				-				
Under 18 years	73,631	14,589	83	19.81	0.11	17,133	100	23.27	0.13	(2,544) *	(3.5) *
18 to 64 years	190,041	31,587	103	16.62	0.05	27,577	94	14.51	0.05	4,010 *	2.1 *
65 years and older	39,914	6,586	32	16.50	0.08	3,644	21	9.13	0.05	2,941 *	7.4 *
Type of Unit			-				-				
Married couple	186,605	20,801	120	11.15	0.07	14,908	103	7.99	0.06	5,893 *	3.2 *
Female householder	63,046	19,570	102	31.04	0.14	18,608	98	29.52	0.13	962 *	1.5 *
Male householder	31,511	7,863	58	24.95	0.14	6,739	56	21.39	0.14	1,124 *	3.6 *
New SPM	22,424	4,527	51	20.19	0.21	8,099	65	36.12	0.22	(3,572) *	(15.9) *
Race and Hispanic Origin			-				-				
White	225,632	32,596	122	14.45	0.05	29,278	136	12.98	0.06	3,318 *	1.5 *
White, not Hispanic	192,405	23,738	107	12.34	0.06	21,048	111	10.94	0.06	2,690 *	1.4 *
Black	37,435	10,286	66	27.48	0.18	10,420	64	27.83	0.17	(134) *	(0.4) *
Asian	14,726	2,831	37	19.22	0.25	1,857	30	12.61	0.20	974 *	6.6 *
Hispanic (any race)	50,967	14,268	86	27.99	0.17	13,252	87	26.00	0.17	1,015 *	2.0 *
Nativity			-				-				
Native born	263,881	42,442	151	16.08	0.06	40,616	151	15.39	0.06	1,826 *	0.7 *
Foreign born	39,704	10,320	61	25.99	0.13	7,739	59	19.49	0.13	2,581 *	6.5 *
Naturalized citizen	17,950	3,287	27	18.31	0.15	2,027	21	11.29	0.11	1,260 *	7.0 *
Not a citizen	21,754	7,033	56	32.33	0.20	5,712	55	26.26	0.22	1,321 *	6.1 *
Tenure			-				-				
Owner	201,238	21,223	116	10.55	0.06	15,885	93	7.89	0.05	5,338 *	2.7 *
Owner/mortgage	146,642	13,460	101	9.18	0.07	9,398	77	6.41	0.05	4,063 *	2.8 *
Owner/no mortgage	59,687	9,314	55	15.60	0.08	8,172	54	13.69	0.09	1,142 *	1.9 *
Renter	97,256	29,987	158	30.83	0.11	30,784	173	31.65	0.11	(797) *	(0.8) *
Region			-				-				
Northeast	53,816	8,053	56	14.96	0.10	7,142	52	13.27	0.10	911 *	1.7 *
Midwest	65,387	9,546	70	14.60	0.11	9,843	76	15.05	0.12	(296) *	(0.5) *
South	113,095	21,015	102	18.58	0.09	19,837	90	17.54	0.08	1,178 *	1.0 *
West	71,287	14,147	88	19.85	0.12	11,533	80	16.18	0.11	2,614 *	3.7 *
Health Insurance Coverage			-				-				
With private coverage	192,816	16,460	74	8.54	0.04	10,485	62	5.44	0.04	5,975 *	3.1 *
With public, no private coverage	63,917	21,418	96	33.51	0.12	24,533	102	38.38	0.12	(3,114) *	(4.9) *
Not insured	46,852	14,883	85	31.77	0.14	13,337	83	28.47	0.14	1,546 *	3.3 *
Disability Status			-				-				
Without a disability	170,912	26,421	98	15.46	0.06	22,398	89	13.11	0.05	4,023 *	2.4 *
With a disability	19,129	5,166	27	27.01	0.13	5,179	28	27.07	0.12	(13) *	(0.1)
Work Experience			-				-				
All workers	146,293	16,822	66	11.50	0.05	13,250	55	9.06	0.04	3,572 *	2.4 *
Worked full-time, year-round	94,069	5,156	35	5.48	0.04	2,801	26	2.98	0.03	2,354 *	2.5 *
Les than full-time year-round	52,224	11,666	54	22.34	0.09	10,449	47	20.01	0.09	1,218 *	2.3 *
Did not work at least 1 week	43,747	14,765	62	33.75	0.11	14,327	61	32.75	0.11	438 *	1.0 *

Source: American Community Survey 2011

Table 5. Distribution of People in Total and Poverty Populations: 2011

Characteristic	Total		SPM		Official		Difference/	
	Estimate	SE	Estimate	SE	Estimate	SE		
Age								
Under 18 years	24.3	0.0	27.7	0.1	35.4	0.1	(7.8)	*
18 to 64 years	62.6	0.0	59.9	0.1	57.0	0.1	2.8	*
65 years and older	13.2	0.0	12.5	0.1	7.5	0.0	4.9	*
Type of Unit								
Married couple	61.5	0.1	39.4	0.2	30.8	0.2	8.6	*
Female householder	20.8	0.1	37.1	0.1	38.5	0.2	(1.4)	*
Male householder	10.4	0.0	14.9	0.1	13.9	0.1	1.0	*
New SPM	7.4	0.0	8.6	0.1	16.8	0.1	(8.2)	*
Race and Hispanic Origin								
White	74.3	0.0	61.8	0.1	60.6	0.1	1.2	*
White, not Hispanic	63.4	0.0	45.0	0.1	43.5	0.1	1.5	*
Black	12.3	0.0	19.5	0.1	21.6	0.1	(2.1)	*
Asian	4.9	0.0	5.4	0.1	3.8	0.1	1.5	*
Hispanic (any race)	16.8	0.0	27.0	0.1	27.4	0.1	(0.4)	*
Nativity								
Native born	86.9	0.0	80.4	0.1	84.0	0.1	(3.6)	*
Foreign born	13.1	0.0	19.6	0.1	16.0	0.1	3.6	*
Naturalized citizen	5.9	0.0	6.2	0.1	4.2	0.0	2.0	*
Not a citizen	7.2	0.0	13.3	0.1	11.8	0.1	1.5	*
Tenure								
Owner	66.3	0.1	40.2	0.2	32.9	0.2	7.4	*
Owner/mortgage	48.3	0.1	25.5	0.2	19.4	0.1	6.1	*
Owner/no mortgage	19.7	0.1	17.7	0.1	16.9	0.1	0.8	*
Renter	32.0	0.1	56.8	0.2	63.7	0.2	(6.8)	*
Region								
Northeast	17.7	0.0	15.3	0.1	14.8	0.1	0.5	*
Midwest	21.5	0.0	18.1	0.1	20.4	0.1	(2.3)	*
South	37.3	0.0	39.8	0.1	41.0	0.1	(1.2)	*
West	23.5	0.0	26.8	0.1	23.9	0.1	3.0	*
Health Insurance Coverage								
With private coverage	63.5	0.1	31.2	0.1	21.7	0.1	9.5	*
With public, no private coverage	21.1	0.0	40.6	0.1	50.7	0.1	(10.1)	*
Not insured	15.4	0.0	28.2	0.1	27.6	0.1	0.6	*

Source: American Community Survey 2011

Table 6. SPM and Official Poverty Rates by State: 2011

	SPM	Official		Difference
US Total	**17.4%**	**15.9%**	*	**1.5%**
Alabama	19.0%	19.1%		-0.1%
Alaska	8.5%	10.4%	*	-2.0%
Arizona	20.0%	19.3%	*	0.8%
Arkansas	17.8%	18.9%	*	-1.0%
California	22.8%	16.6%	*	6.2%
Colorado	15.4%	13.4%	*	2.0%
Connecticut	12.3%	10.8%	*	1.4%
Delaware	12.9%	12.3%		0.6%
District of Colulmbia	21.4%	18.2%	*	3.2%
Florida	21.3%	17.0%	*	4.2%
Georgia	20.3%	19.2%	*	1.1%
Hawaii	15.2%	11.9%	*	3.3%
Idaho	15.6%	15.9%		-0.3%
Illinois	16.2%	14.8%	*	1.4%
Indiana	16.4%	15.9%	*	0.5%
Iowa	11.9%	12.8%	*	-1.0%
Kansas	12.9%	14.4%	*	-1.4%
Kentucky	18.8%	19.7%	*	-0.9%
Louisiana	20.3%	20.3%		0.0%
Maine	11.9%	14.3%	*	-2.4%
Maryland	14.5%	10.2%	*	4.2%
Massachusetts	13.7%	11.6%	*	2.1%
Michigan	16.2%	17.1%	*	-0.9%
Minnesota	11.0%	11.5%	*	-0.5%
Mississippi	21.5%	22.6%	*	-1.2%

	SPM	Official		Diffference
Missouri	15.3%	16.0%	*	-0.7%
Montana	11.6%	13.9%	*	-2.2%
Nebraska	11.6%	12.2%		-0.6%
Nevada	20.4%	16.2%	*	4.1%
New Hampshire	9.6%	8.7%	*	0.9%
New Jersey	14.9%	10.3%	*	4.6%
New Mexico	18.7%	21.3%	*	-2.6%
New York	17.8%	15.7%	*	2.1%
North Carolina	18.1%	17.7%	*	0.4%
North Dakota	10.9%	11.0%		-0.2%
Ohio	14.8%	16.5%	*	-1.7%
Oklahoma	15.7%	17.7%	*	-1.9%
Oregon	17.2%	17.0%		0.2%
Pennsylvania	13.5%	13.6%		-0.1%
Rhode Island	13.7%	14.4%		-0.7%
South Carolina	18.7%	19.0%		-0.2%
South Dakota	11.2%	12.7%	*	-1.5%
Tennessee	18.6%	18.2%		0.4%
Texas	18.2%	18.5%	*	-0.3%
Utah	16.2%	13.7%	*	2.5%
Vermont	7.6%	11.1%	*	-3.6%
Virginia	14.7%	11.7%	*	2.9%
Washington	15.0%	14.0%	*	1.0%
West Virginia	18.0%	18.8%	*	-0.8%
Wisconsin	12.6%	13.8%	*	-1.2%
Wyoming	10.4%	11.5%		-1.1%

Source: American Community Survey 2011

Table 7. Marginal Impacts of Key SPM Elements: Comparison of ACS to CPS for 2011

		ACS	SE	CPS	SE		Difference
BENEFITS							
SNAP	Total Pop	1.79%	0.02%	1.54%	0.06%	*	0.25%
	Under 18	3.15%	0.05%	2.84%	0.14%	*	0.31%
	18 to 64	1.46%	0.02%	1.22%	0.05%	*	0.24%
	Over 65	0.86%	0.02%	0.74%	0.07%		0.12%
Housing Assistance	Total Pop	0.67%	0.01%	0.95%	0.05%	*	-0.29%
	Under 18	0.95%	0.03%	1.40%	0.10%	*	-0.45%
	18 to 64	0.50%	0.01%	0.73%	0.04%	*	-0.22%
	Over 65	0.91%	0.02%	1.20%	0.10%	*	-0.29%
School Lunch	Total Pop	0.36%	0.01%	0.35%	0.03%		0.01%
	Under 18	0.85%	0.03%	0.86%	0.08%		-0.01%
	18 to 64	0.24%	0.01%	0.22%	0.02%		0.02%
	Over 65	0.03%	0.00%	0.03%	0.01%		-0.01%
WIC	Total Pop	0.12%	0.01%	0.15%	0.02%		-0.03%
	Under 18	0.29%	0.02%	0.34%	0.05%		-0.04%
	18 to 64	0.08%	0.00%	0.11%	0.02%	*	-0.03%
	Over 65	0.01%	0.00%	0.00%	0.00%		0.00%
LIHEAP	Total Pop	0.05%	0.00%	0.06%	9.76E-05		0.00%
	Under 18	0.07%	0.01%	0.05%	0.02%		0.02%
	18 to 64	0.05%	0.00%	0.05%	0.01%		0.00%
	Over 65	0.05%	0.00%	0.08%	0.02%		-0.03%
TAXES							
		ACS	**SE**	**CPS**	**SE**		**Difference**
EITC	Total Pop	2.06%	0.02%	1.98%	0.07%		0.07%
	Under 18	4.36%	0.05%	4.20%	0.16%		0.16%
	18 to 64	1.57%	0.02%	1.53%	0.06%		0.03%
	Over 65	0.15%	0.01%	0.12%	0.03%		0.03%
FICA	Total Pop	-1.27%	0.02%	-1.28%	0.06%		0.02%
	Under 18	-1.62%	0.03%	-1.70%	0.10%		0.08%
	18 to 64	-1.34%	0.02%	-1.35%	0.06%		0.01%
	Over 65	-0.30%	0.01%	-0.25%	0.04%		-0.05%
Federal Income Taxes Before Credits	Total Pop	-0.42%	0.01%	-0.48%	0.03%	*	0.06%
	Under 18	-0.41%	0.01%	-0.30%	0.04%	*	-0.11%
	18 to 64	-0.49%	0.01%	-0.60%	0.04%	*	0.11%
	Over 65	-0.12%	0.01%	-0.26%	0.06%	*	0.13%
NECESSARY EXPENDITURES							
		ACS	**SE**	**CPS**	**SE**		**Difference**
MOOP	Total Pop	-3.74%	0.03%	-3.39%	0.09%	*	-0.35%
	Under 18	-3.13%	0.04%	-2.80%	0.14%	*	-0.33%
	18 to 64	-3.19%	0.03%	-2.83%	0.09%	*	-0.36%
	Over 65	-7.48%	0.05%	-7.03%	0.24%	*	-0.44%
Work Expenses	Total Pop	-1.84%	0.02%	-1.67%	0.06%	*	-0.17%
	Under 18	-2.54%	0.04%	-2.27%	0.12%	*	-0.27%
	18 to 64	-1.87%	0.02%	-1.73%	0.07%	*	-0.14%
	Over 65	-0.43%	0.01%	-0.32%	0.04%	*	-0.10%

Source: American Community Survey 2011

Table 8: Comparing the Diffierences between SPM Estimates and Official Poverty Estimates for 2011: ACS vs CPS

	SPM rate minus Official Poverty Rate				Difference
	ACS	se	CPS	se	
Total Population	1.5	0.04	1.0	0.15	* 0.5
Age					
Under 18 years	-3.5	0.09	-4.3	0.28	* 0.8
18 to 64 years	2.1	0.04	1.8	0.14	* 0.3
65 years and older	7.4	0.07	6.3	0.27	* 1.1
Type of Unit					0.0
Married couple	3.2	0.04	2.5	0.17	* 0.7
Female householder	1.5	0.11	0.3	0.35	* 1.2
Male householder	3.6	0.10	4.6	0.32	* -1.0
New SPM	-15.9	0.21	-12.5	0.61	* -3.4
Race and Hispanic Origin					0.0
White	1.5	0.04	1.3	0.15	0.2
White, not Hispanic	1.4	0.04	1.0	0.14	* 0.4
Black	-0.4	0.13	-2.1	0.45	* 1.7
Asian	6.6	0.18	4.6	0.59	* 2.0
Hispanic (any race)	2.0	0.13	2.4	0.49	-0.4
Nativity					0.0
Native born	0.7	0.04	0.1	0.15	* 0.6
Foreign born	6.5	0.10	6.7	0.38	-0.2
Naturalized citizen	7.0	0.12	5.8	0.45	* 1.2
Not a citizen	6.1	0.18	7.5	0.55	* -1.4
Tenure					0.0
Owner	2.7	0.04	1.8	0.14	* 0.9
Owner/mortgage	2.8	0.05	2.3	0.16	* 0.5
Owner/no mortgage	1.9	0.07	0.5	0.24	* 1.4
Renter	-0.8	0.09	-0.6	0.35	-0.2
Region					0.0
Northeast	1.7	0.09	1.8	0.32	-0.1
Midwest	-0.5	0.09	-1.3	0.24	* 0.8
South	1.0	0.07	-0.1	0.24	* 1.1
West	3.7	0.09	4.1	0.35	-0.4
Health Insurance Coverage					0.0
With private coverage	3.1	0.03	2.6	0.13	* 0.5
With public, no private coverage	-4.9	0.11	-5.5	0.38	0.6
Not insured	3.3	0.12	2.6	0.40	* 0.7
Disability Status					0.0
Without a disability	2.4	0.04	1.1	0.15	* 1.3
With a disability	-0.1	0.12	-1.2	0.49	* 1.1
Work Experience					0.0
All workers	2.4	0.04	2.2	0.12	* 0.2
Worked full-time, year-round	2.5	0.03	2.3	0.11	* 0.2
Les than full-time year-round	2.3	0.09	2.1	0.26	0.2
Did not work at least 1 week	1.0	0.08	0.2	0.30	* 0.8

Source: 2011 American Community Survey Public Use File and 2012 Current Population Survey Annual Social and Economic Supplement

Table 9: Comparing the Diffierences between SPM Estimates and Official Poverty Estimates for 2011: ACS vs CPS - States

	SPM rate minus Official Poverty Rate					
	ACS	se	CPS	se		Difference
US Total	1.5	0.041	1.0	0.146	*	**0.5**
Alabama	-0.1	0.003	-0.4	1.536		0.3
Alaska	-2.0	0.006	1.6	0.945	*	-3.6
Arizona	0.8	0.003	0.5	1.055		0.3
Arkansas	-1.0	0.005	-1.5	1.013		0.5
California	6.2	0.001	7.6	0.536	*	-1.4
Colorado	2.0	0.002	1.1	0.822		0.9
Connecticut	1.4	0.003	2.8	0.827	*	-1.4
Delaware	0.6	0.006	1.2	0.869		-0.6
District of Columbia	3.2	0.013	4.3	1.200		-1.1
Florida	4.2	0.002	3.8	0.624		0.4
Georgia	1.1	0.002	0.5	0.854		0.6
Hawaii	3.3	0.006	6.3	1.175	*	-3.0
Idaho	-0.3	0.005	-3.5	1.179	*	3.2
Illinois	1.4	0.002	1.0	0.532		0.4
Indiana	0.5	0.003	-1.1	0.811	*	1.6
Iowa	-1.0	0.003	-1.8	0.725		0.8
Kansas	-1.4	0.005	-2.8	0.837		1.4
Kentucky	-0.9	0.003	-3.6	1.201	*	2.7
Louisiana	0.0	0.003	-3.5	1.174	*	3.5
Maine	-2.4	0.005	-2.3	0.766		-0.1
Maryland	4.2	0.002	3.2	0.656		1.0
Massachusetts	2.1	0.002	2.5	0.830		-0.4
Michigan	-0.9	0.002	-2.0	0.626	*	1.1
Minnesota	-0.5	0.003	0.1	0.532		-0.6
Mississippi	-1.2	0.005	-4.2	1.118	*	3.0

	SPM rate minus Official Poverty Rate					
	ACS	se	CPS	se		Difference
Missouri	-0.7	0.003	-2.9	0.903	*	2.2
Montana	0.0	0.007	-3.8	1.048		3.8
Nebraska	-0.6	0.005	-0.5	0.750		-0.1
Nevada	4.1	0.005	5.0	0.987		-0.9
Newhampshire	0.9	0.004	3.1	0.711	*	-2.2
Newjersey	4.6	0.002	4.7	0.782		-0.1
New Mexico	-2.6	0.006	-6.4	1.086	*	3.8
New York	2.1	0.002	1.9	0.578		0.2
North Carolina	0.4	0.002	-2.0	1.106	*	2.4
North Dakota	-0.2	0.005	-1.5	0.962		1.3
Ohio	-1.7	0.002	-2.4	0.824		0.7
Oklahoma	-1.9	0.004	-1.9	1.525		0.0
Oregon	0.2	0.003	0.4	1.090		-0.2
Pennsylvania	-0.1	0.002	-0.5	0.791		0.4
Rhode Island	-0.7	0.006	0.1	0.886		-0.8
South Carolina	-0.2	0.003	-2.0	0.980	*	1.8
South Dakota	-1.5	0.009	-4.5	1.101	*	3.0
Tennessee	0.4	0.002	-2.0	0.712	*	2.4
Texas	-0.3	0.002	-1.0	0.512		0.7
Utah	2.5	0.004	0.1	1.071	*	2.4
Vermont	-3.6	0.007	-1.6	0.783	*	-2.0
Virginia	2.9	0.002	2.5	0.734		0.4
Washington	1.0	0.002	0.4	1.042		0.6
West Virginia	-0.8	0.004	-4.3	1.080	*	3.5
Wisconsin	-1.2	0.003	-2.0	0.822		0.8
Wyoming	-1.1	0.007	-0.4	0.632		-0.7

Source: 2011 American Community Survey Public Use File and 2012 Current Population Survey Annual Social and Economic Supplement