The Research SUPPLEMENTAL POVERTY MEASURE: 2010

Consumer Income

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By
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INTRODUCTION

The current official poverty measure was developed in the early 1960s, and only a few minor changes have been implemented since it was first adopted in 1969 (Orshansky, 1963, 1965a, 1965b; Fisher, 1992). This measure consists of a set of thresholds for families of different sizes and compositions that are compared to before-tax cash income to determine a family's poverty status. At the time they were developed, the official poverty thresholds represented the cost of a minimum diet multiplied by three (to allow for expenditures on other goods and services).

Concerns about the adequacy of the official measure have increased during the past decade (Ruggles, 1990), culminating in a congressional appropriation in 1990 for an independent scientific study of the concepts, measurement methods, and information needs for a poverty measure. In response, the National Academy of Sciences (NAS) established the Panel on Poverty and Family Assistance, which released its report titled *Measuring Poverty: A New Approach* in the spring of 1995, (Citro and Michael, 1995). Based on its assessment of the weaknesses of the current poverty measure, this NAS panel of experts recommended having a measure that better reflects contemporary social and economic realities and government policy. In their report, the NAS panel identified several major weaknesses of the current poverty measure.

- *The current income measure does not reflect the effects of key government policies that alter the disposable income available to families and, hence, their poverty status*. Examples include payroll taxes, which reduce disposable income, and in-kind public benefit programs such as the Food Stamp Program/Supplemental Nutrition Assistance Program (SNAP) that free up resources to spend on nonfood items.
- *The current poverty thresholds do not adjust for rising levels and standards of living that have occurred since 1965.* The official thresholds were approximately equal to half of median income in 1963–64. By 1992, one half median income had increased to more than 120 percent of the official threshold.
- *The current measure does not take into account variation in expenses that are necessary to hold a job and to earn income—expenses that reduce disposable income*. These expenses include transportation costs for getting to work and the increasing costs of child care for working families resulting from increased labor force participation of mothers.
- *The current measure does not take into account variation in medical costs* across population groups depending on differences in health status and insurance coverage and does not account for rising health care costs as a share of family budgets.
- *The current poverty thresholds use family size adjustments that are*

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anomalous and do not take into account important changes in family situations, including payments made for child support and increasing cohabitation among unmarried couples.

- *The current poverty thresholds do not adjust for geographic differences in prices across the nation,* although there are significant variations in prices across geographic areas.

To address these weaknesses, the NAS panel recommended changing the definition of both the poverty thresholds and family resources that are compared with those thresholds to determine poverty status. One of the goals of the NAS panel was to produce a measure of poverty that explicitly accounted for government spending aimed at alleviating the hardship of low-income families. Thus, taking account of tax and transfer policies, such as the food stamp program/SNAP and the earned income tax credit (EITC), the measure would show the effects of these policies on various targeted subgroups, for example, families with children. The current official measure, which does not explicitly take account of these benefits, yields poverty statistics that are unchanged regardless of many of these policy changes.

In 1999 and in 2001, the U.S. Census Bureau released reports that presented a set of experimental poverty measures based on recommendations of the 1995 NAS panel report (Short et al., 1999, Short, 2001). Some additional variations on that measure were included in order to shed light and generate discussion on the various dimensions included in the proposed revision. Comparisons were made across various demographic subgroups in order to illustrate how their poverty rates were affected by the different measures. That work suggested that with these new measures there would be a somewhat different population identified as poor than is typically described by the official poverty measure. This new poverty population would consist of a larger proportion of elderly people, working families, and married-couple families than are identified by the official poverty measure.[1]

In March of 2010, an Interagency Technical Working Group (ITWG) listed suggestions for a Supplemental Poverty Measure (SPM). The ITWG was charged with developing a set of initial starting points to permit the Census Bureau, in cooperation with the Bureau of Labor Statistics (BLS), to produce the SPM that would be released along with the official measure each year. Their suggestions included:

- The *SPM thresholds* should represent a dollar amount spent on a basic set of goods that includes food, clothing, shelter, and utilities (FCSU), and a small additional amount to allow for other needs (e.g., household supplies, personal care, non-work-related transportation). This threshold should be calculated with 5 years of expenditure data for families with exactly two children using Consumer Expenditure Survey data, and it should be adjusted (using a specified equivalence scale) to reflect the needs of different family types and geographic differences in housing costs. Adjustments to thresholds should be made over time to reflect real change in expenditures on this basic bundle of goods at the 33rd percentile of the expenditure distribution.
- *SPM family resources* should be defined as the value of cash income from all sources, plus the value of in-kind benefits that are available to buy the basic bundle of goods (FCSU) minus necessary expenses for critical goods and services not included in the thresholds. In-kind benefits include nutritional assistance, subsidized housing, and home energy assistance. Necessary expenses that must be subtracted include income taxes, social security payroll taxes, childcare and other work-related expenses, child support payments to another household, and contributions toward the cost of medical care and health insurance premiums, or medical out-of-pocket (MOOP) costs.[2]

The ITWG stated further that the official poverty measure, as defined in Office of Management and Budget (OMB) Statistical Policy Directive No. 14, will not be replaced by the SPM. They noted that the official measure is sometimes identified in legislation regarding program eligibility and funding distribution, while the SPM will not be used in this way. The SPM is designed to provide information on aggregate levels of economic need at a national level or within large subpopulations or areas and,

[1] These experimental poverty measures have been updated regularly and are available at <www.census.gov/hhes/povmeas/methodology/nas/index.html>, accessed September 2011.

[2] For information, see ITWG, *Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure* (Interagency), March 2010, available at <www.census.gov/hhes/www/poverty/SPM_TWGObservations.pdf>, accessed September 2011.

Poverty Measure Concepts: Official and Supplemental

	Official Poverty Measure	Supplemental Poverty Measure
Measurement units	Families and unrelated individuals	All related individuals who live at the same address, including any coresident unrelated children who are cared for by the family (such as foster children) and any cohabitors and their children
Poverty threshold	Three times the cost of minimum food diet in 1963	The 33rd percentile of expenditures on food, clothing, shelter, and utilities (FCSU) of consumer units with exactly two children multiplied by 1.2
Threshold adjustments	Vary by family size, composition, and age of householder	Geographic adjustments for differences in housing costs and a three parameter equivalence scale for family size and composition
Updating thresholds	Consumer Price Index: all items	Five year moving average of expenditures on FCSU
Resource measure	Gross before-tax cash income	Sum of cash income, plus in-kind benefits that families can use to meet their FCSU needs, minus taxes (or plus tax credits), minus work expenses, minus out-of-pocket medical expenses

as such, the SPM will be an additional macroeconomic statistic providing further understanding of economic conditions and trends.

This report presents estimates of the prevalence of poverty in the United States, overall and for selected demographic groups, for the official and SPM measures. Comparing the two measures sheds light on the effects of in-kind benefits, taxes, and other nondiscretionary expenses on measured economic well-being. The composition of the poverty populations using the two measures is examined across subgroups to better understand the incidence and receipt of benefits and taxes. Effects of benefits and expenses on SPM rates are explicitly examined. The distribution of income-to-poverty threshold ratios are estimated and compared for the two measures. Finally, SPM estimates for 2009 are compared to the 2010 figures to assess changes in poverty rates from the previous year.

Poverty Estimates for 2010

The measures presented in this study use the 2011 Current Population (CPS) Survey Annual Social and Economic Supplement (ASEC) with income information that refers to calendar year 2010 to estimate SPM resources.[3] These data are the same as are used for the preparation of official poverty statistics and reported in DeNavas et al. (2011).

The official "Orshansky" thresholds are used for the *official* poverty estimates presented here, however, unlike published estimates, unrelated individuals under the age of 15 are included in the poverty universe.

Since the CPS ASEC does not ask income questions for individuals under the age of 15, they are excluded from the universe for official poverty calculations. For the official poverty estimates shown in this paper all unrelated individuals under the age of 15 are included and presumed to be in poverty. For the SPM, they are assumed to share resources with the household reference person.

The SPM thresholds used in this study are based on out-of-pocket spending on food, clothing, shelter, and utilities (FCSU). Thresholds use 2005–2011 quarterly data from the Consumer Expenditure (CE) Survey and are produced by staff at the BLS.[4] Three housing status groups were determined and their expenditures on shelter and utilities produced within the 30–36th percentiles of FCSU

[3] The data in this report are from the "Annual Social and Economic Supplement (ASEC)" to the 2010 and 2011 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 <www.census.gov/hhes/www/p60_238sa.pdf> and <www.census.gov/hhes/www/p60_239sa.pdf>, accessed September 2011.

[4] See <www.bls.gov/cex/anthology08/csxanth2.pdf> and <www.bls.gov/cex/anthology08/csxanth3.pdf>, accessed September 2011. See Garner, 2010.

expenditures.[5] The three groups are: owners with mortgages, owners without mortgages, and renters.[6] The thresholds used here include the value of SNAP benefits in the measure of spending on food.[7] The American Community Survey (ACS) is used to adjust the FCSU thresholds for differences in spending on housing across geographic areas.[8]

The measures use different units of analysis. The official measure of poverty uses the census-defined family that includes all individuals residing together who are related by birth, marriage, or adoption, and treats all unrelated individuals over the age of 15 independently. For the SPM, the ITWG suggested that the "family unit" should include all related individuals who live at the same address, as well as any coresident unrelated children who are cared for by the family (such as foster children), and any cohabitors and their children. Independent unrelated individuals living alone are one-person SPM units. This definition corresponds broadly with the unit of data collection (the consumer unit) that is employed for the CE data used to calculate poverty thresholds, and are referred to as *SPM Resource Units*. Selection of the unit of analysis for poverty measurement implies assumptions that members of that unit share income or resources with one another.[9]

Thresholds are adjusted for the size and composition of the SPM resource unit relative to the two adult, two child threshold using an equivalence scale.[10] The official measure adjusts thresholds based on family size, number of children and adults, as well as whether or not the householder is aged 65 and over. The official poverty threshold for a two adult, two child family was $22,113 in 2010. The SPM threshold for 2010, not accounting for housing status, was $24,343. SPM thresholds rose slightly more from 2009 to 2010 than the official thresholds rose over the same period. The official threshold increased by $357 while the overall SPM threshold rose by $489. SPM thresholds for owners with mortgages and renters rose by $568 and $517, respectively.[11] As can be seen in Table 2, these groups comprised about 76 percent of the total population. Thresholds for owners without a mortgage rose by $292 between 2009 and 2010.

Following the recommendations of the NAS report and the ITWG, SPM resources are estimated as the sum of cash income, plus any federal government in-kind benefits that

Two Adult, Two Child Poverty Thresholds: 2009 and 2010

	2009	2010
Official	$21,756	$22,113
Research Supplemental Poverty Measure*		
Not accounting for housing status	$23,854	$24,343
Owners with a mortgage	$24,450	$25,018
Owners without a mortgage	$20,298	$20,590
Renters	$23,874	$24,391

*Garner and Gudrais, Bureau of Labor Statistics, October 2011, <http://www.bls.gov/pir/spmhome.htm>.

[5] See Garner, 2011, and appendix for description of threshold calculation.

[6] Bureau of Labor Statistics (January 2011), Experimental poverty measure Web site, <www.bls.gov/pir/spmhome.htm>, accessed September 2011.

[7] For consistency in measurement with the resource measure, the thresholds should include the value of in-kind benefits, though additional research continues on appropriate methods, see Garner and Hokayem, 2011.

[8] See Renwick, 2011a, 2011b, and appendix for description of the geographic adjustments.

[9] See Provencher, 2011, and appendix for description of the unit of analysis.

[10] See Betson, 1996, and appendix for description of the three-parameter scale.

[11] The difference in thresholds for owners with mortgages and renters from 2009 to 2010 was not statistically different.

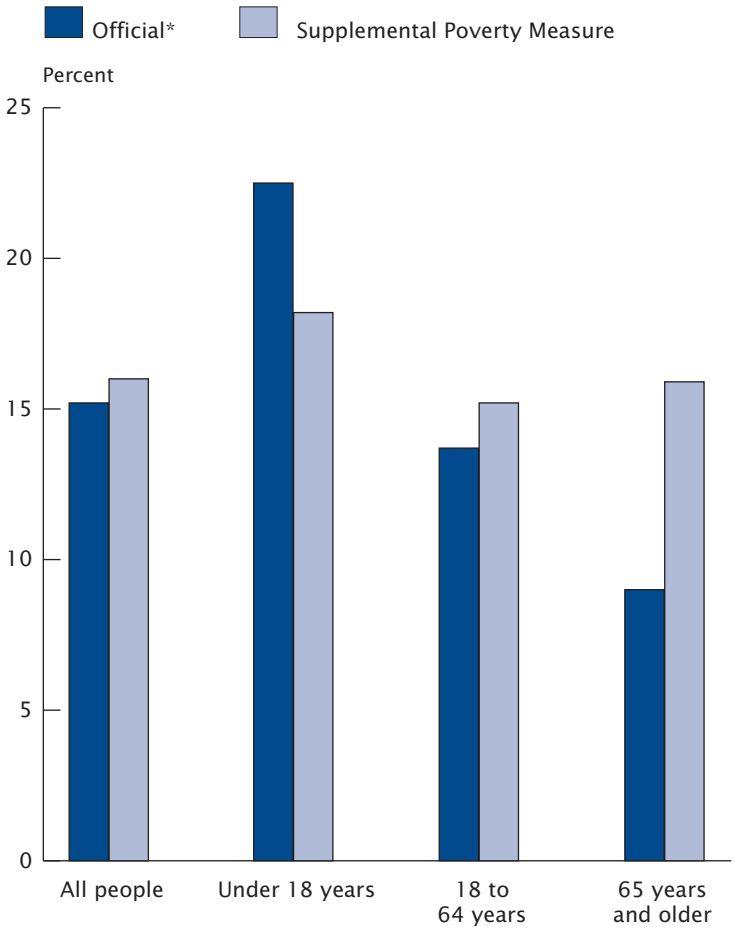
Resource Estimates

SPM Resources = Money Income From All Sources

Plus:	Minus:
Supplemental Nutritional Assistance (SNAP)	Taxes (plus credits such as the Earned Income Tax Credit [EITC])
National School Lunch Program	Expenses Related to Work
Supplementary Nutrition Program for Women, Infants, and Children (WIC)	Child Care Expenses*
Housing subsidies	Medical Out-of-Pocket Expenses (MOOP)*
Low-Income Home Energy Assistance (LIHEAP)	Child Support Paid*

*Items for which data from new CPS ASEC questions are used in the SPM estimates.

Figure 1.
Poverty Rates Using Two Measures for Total Population and by Age Group: 2010



* Includes unrelated individuals under the age of 15.
Source: Current Population Survey, 2011 Annual Social and Economic Supplement.

families can use to meet their food, clothing, shelter, and utility needs, minus taxes (plus tax credits), work expenses, and out-of-pocket expenditures for medical expenses. The research SPM measure presented in this study adds the value of in-kind benefits and subtracts necessary expenses, such as taxes, child care expenses, and medical out-of-pocket expenses. For the SPM measure, estimates from new questions about child care and MOOP are available and subtracted from income.[12] The text box on the previous page summarizes the additions and subtractions for the SPM measure; descriptions are in the appendix.

Figure 1 shows poverty rates for the two measures for the total population and for three age groups: under 18 years, 18 to 64, and 65 years and over. Table 1 shows rates for a number of selected demographic groups. The percent of the population that was poor using the official measure for 2010 was 15.1 percent (DeNavas et al., 2011). For this study, including unrelated individuals under the age of 15 in the universe increases the poverty rate to 15.2 percent.[13] The research SPM yields a rate of 16.0 percent for 2010. While, as noted, SPM poverty thresholds are higher, other parts of the measure also contribute to differences in the estimated prevalence of poverty in the United States.

There were 49.1 million poor using the SPM definition of poverty, more than the 46.6 million using the official definition of poverty with our universe. For most groups, SPM rates are higher than official poverty rates. Comparing the SPM to the official measure shows lower poverty rates for individuals included in new SPM resource units, children, Blacks, renters, those living outside of metropolitan areas, those living in the Midwest and the South, and those covered by only public health insurance. Most other groups have higher poverty rates using the SPM measure compared with the official measure. Official and SPM poverty rates for people in female householder units are not statistically different (these units include single-person units). Note that poverty rates for those 65 years of age and older are higher under the SPM measure compared with the official. This partially reflects that the official thresholds are set lower for families with householders in this age group while the SPM thresholds do not vary by age.

[12] Documentation on the quality of these data is available in various working papers at <www.census.gov/hhes/povmeas/publications/working.html>.

[13] The 15.1 and 15.2 rates are not statistically different.

Table 1.

Number and Percent of People in Poverty by Different Poverty Measures: 2010

Characteristic	Number** (in thousands)	Official**				SPM				Difference	
		Number		Percent		Number		Percent			
		Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Number	Percent
All People	**306,110**	**46,602**	**850**	**15.2**	**0.3**	**49,094**	**908**	**16.0**	**0.3**	***2,492**	***0.8**
Age											
Under 18 years	74,916	16,823	378	22.5	0.5	13,622	376	18.2	0.5	*–3,201	*–4.3
18 to 64 years	192,015	26,258	556	13.7	0.3	29,235	602	15.2	0.3	*2,976	*1.6
65 years and older	39,179	3,520	161	9.0	0.4	6,237	216	15.9	0.6	*2,716	*6.9
Type of Unit											
In married couple unit	185,723	14,200	581	7.6	0.3	18,295	622	9.9	0.3	*4,095	*2.2
In female householder unit	61,966	17,786	513	28.7	0.7	17,991	552	29.0	0.8	206	0.3
In male householder unit	32,224	5,927	289	18.4	0.8	7,317	308	22.7	0.8	*1,391	*4.3
In new SPM unit	26,197	8,690	341	33.2	1.0	5,490	339	21.0	1.2	*–3,200	*–12.2
Race and Hispanic Origin											
White	243,323	31,959	698	13.1	0.3	34,747	728	14.3	0.3	*2,789	*1.1
White, not Hispanic	197,423	19,819	571	10.0	0.3	21,876	605	11.1	0.3	*2,057	*1.0
Black	39,031	10,741	406	27.5	1.0	9,932	388	25.4	1.0	*–810	*–2.1
Asian	14,332	1,737	161	12.1	1.1	2,397	191	16.7	1.3	*660	*4.6
Hispanic (any race)	49,972	13,346	420	26.7	0.8	14,088	459	28.2	0.9	*742	*1.5
Nativity											
Native born	267,884	38,965	801	14.5	0.3	39,329	845	14.7	0.3	364	0.1
Foreign born	38,226	7,636	288	20.0	0.7	9,765	327	25.5	0.7	*2,128	*5.6
Naturalized citizen	16,801	1,910	119	11.4	0.7	2,829	158	16.8	0.9	*919	*5.5
Not a citizen	21,424	5,727	263	26.7	1.1	6,936	288	32.4	1.2	*1,209	*5.6
Tenure											
Owner	207,290	16,529	565	8.0	0.3	20,205	659	9.7	0.3	*3,676	*1.8
Owner/mortgage	138,324	8,366	389	6.0	0.3	11,419	471	8.3	0.3	*3,053	*2.2
Owner/no mortgage/rent-free	72,180	9,036	413	12.5	0.5	9,581	429	13.3	0.6	*544	*0.8
Renter	95,606	29,199	740	30.5	0.6	28,093	746	29.4	0.6	*–1,106	*–1.2
Residence											
Inside MSAs	258,350	38,650	932	15.0	0.3	42,979	879	16.6	0.3	*4,329	*1.7
Inside principal cities	98,774	19,584	585	19.8	0.5	20,748	611	21.0	0.6	*1,164	*1.2
Outside principal cities	159,576	19,066	742	11.9	0.4	22,231	738	13.9	0.4	*3,165	*2.0
Outside MSAs	47,760	7,951	544	16.6	0.7	6,114	449	12.8	0.7	*–1,837	*–3.8
Region											
Northeast	54,782	7,051	327	12.9	0.6	7,969	342	14.5	0.6	*918	*1.7
Midwest	66,104	9,246	410	14.0	0.6	8,678	356	13.1	0.5	*–569	*–0.9
South	113,275	19,210	577	17.0	0.5	18,503	533	16.3	0.5	*–707	*–0.6
West	71,949	11,094	447	15.4	0.6	13,944	512	19.4	0.7	*2,849	*4.0
Health Insurance Coverage											
With private insurance	195,874	9,336	360	4.8	0.2	14,631	464	7.5	0.2	*5,295	*2.7
With public, no private insurance	60,332	22,694	600	37.6	0.8	19,126	559	31.7	0.8	*–3,568	*–5.9
Not insured	49,904	14,571	408	29.2	0.7	15,337	474	30.7	0.8	*766	*1.5

* Statistically different from zero at the 90 percent confidence level.

** Differs from published official rates as unrelated individuals under 15 years of age are included in the universe.

[1] Confidence Interval obtained using replicate weights (Fay's Method).

Note: Details may not sum to totals because of rounding.

Source: U.S. Census Bureau, Current Population Survey, 2011 Annual Social and Economic Supplement. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <www.census.gov/hhes/www/p60_239sa.pdf>.

Table 2.

Distribution of People in Total and Poverty Population: 2010

Characteristic	Total population		Official**		SPM		
	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	
All People	**306,110**	**69**	**46,602**	**850**	**49,094**	**908**	
Characteristic	Percent of column total						
	Total population		Official**		SPM		Difference official vs SPM
	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	
Age							
Under 18 years	24.5	–	36.1	0.5	27.7	0.5	*–8.4
18 to 64 years	62.7	0.1	56.3	0.5	59.5	0.5	*3.2
65 years and older	12.8	–	7.6	0.3	12.7	0.4	*5.1
Type of Unit							
In married couple unit	60.7	0.4	30.5	1.1	37.3	1.1	*6.8
In female householder unit	20.2	0.3	38.2	1.0	36.6	0.9	*–1.5
In male householder unit	10.5	0.2	12.7	0.5	14.9	0.6	*2.2
In new SPM unit	8.6	0.2	18.6	0.7	11.2	0.7	*–7.5
Race and Hispanic Origin							
White	79.5	–	68.6	0.9	70.8	0.8	*2.2
White, not Hispanic	64.5	–	42.5	0.8	44.6	0.9	*2.0
Black	12.8	–	23.0	0.8	20.2	0.7	*–2.8
Asian	4.7	–	3.7	0.3	4.9	0.4	*1.2
Hispanic (any race)	16.3	–	28.6	0.8	28.7	0.9	0.1
Nativity							
Native born	87.5	0.2	83.6	0.6	80.1	0.6	*–3.5
Foreign born	12.5	0.2	16.4	0.6	19.9	0.6	*3.5
Naturalized citizen	5.5	0.1	4.1	0.2	5.8	0.3	*1.7
Not a citizen	7.0	0.2	12.3	0.6	14.1	0.6	*1.8
Tenure							
Owner	67.7	0.4	35.5	1.0	41.2	1.1	*5.7
Owner/mortgage	45.2	0.4	18.0	0.8	23.3	0.9	*5.3
Owner/no mortgage/rent-free	23.6	0.3	19.4	0.8	19.5	0.8	0.1
Renter	31.2	0.5	62.7	1.1	57.2	1.1	*–5.4
Residence							
Inside MSAs	84.4	0.9	82.9	1.2	87.5	0.9	*4.6
Inside principal cities	32.3	0.6	42.0	1.1	42.3	1.0	0.2
Outside principal cities	52.1	0.8	40.9	1.3	45.3	1.2	*4.4
Outside MSAs	15.6	0.9	17.1	1.2	12.5	0.9	*–4.6
Region							
Northeast	17.9	0.1	15.1	0.6	16.2	0.6	*1.1
Midwest	21.6	0.1	19.8	0.8	17.7	0.7	*–2.2
South	37.0	0.1	41.2	1.0	37.7	0.9	*–3.5
West	23.5	0.1	23.8	0.8	28.4	0.8	*4.6
Health Insurance coverage							
With private insurance	64.0	0.4	20.0	0.7	29.8	0.8	*9.8
With public, no private insurance	19.7	0.3	48.7	0.8	39.0	0.8	*–9.7
Not insured	16.3	0.2	31.3	0.7	31.2	0.7	–

* Statistically different from zero at the 90 percent confidence level.

** Differs from published official rates as unrelated individuals under 15 years of age are included in the universe.

– Represents or rounds to zero.

[1] Confidence Interval obtained using replicate weights (Fay's Method).

Note: Details may not sum to totals because of rounding.

Source: U.S. Census Bureau, Current Population Survey, 2011 Annual Social and Economic Supplement. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <www.census.gov/hhes/www/p60_239sa.pdf>.

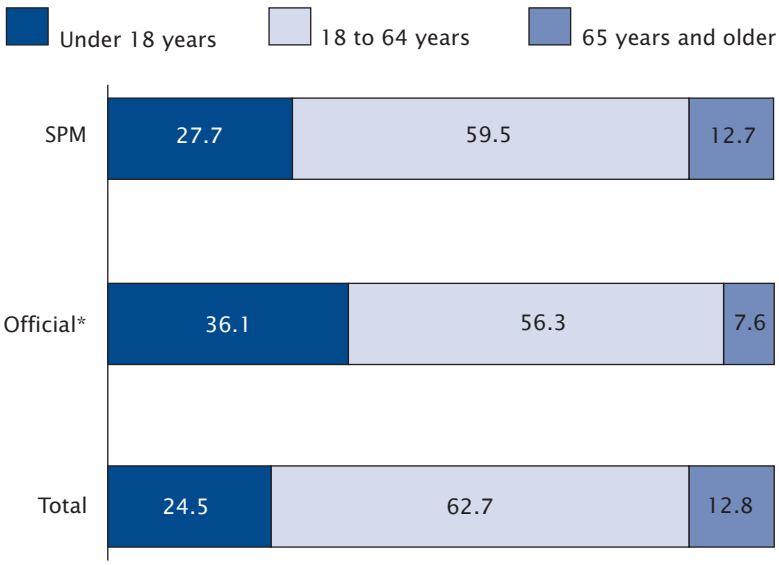
Table 2 compares the distribution of people in the total population across selected groups to the distribution of people classified as poor using the two measures. Figure 2 shows these estimates across age groups. For example, the share of people 65 years and older in poverty is higher when the SPM is used, 12.7 percent compared with 7.6 percent with the official measure. Use of the SPM also results in a higher share of the poor for those who are 18 to 64 years of age, in married-couple families, with male householders, Whites, Asians, the foreign born, homeowners with mortgages, and those with private health insurance. The shares are higher with the SPM for those residing in metropolitan areas but outside principal cities and the Northeast and West regions compared to the official measure. These differences by residence and region reflect the adjustments for geographic price differences in housing that are made to the SPM thresholds.

The share of the poor living in new SPM resource units is lower by about 7 percentage points using the SPM—as this measure includes additional members with income in the unit of analysis who are not included in the family definition employed by the official measure. The proportion that are children, those in female householder families, Blacks, native born, renters, and people with only public insurance is smaller using the SPM, as is the proportion of those living outside metropolitan areas and those living in the Midwest and the South compared to the official measure.[14]

[14] Those of Hispanic origin, homeowners without mortgages, those inside principal cities, and the uninsured did not comprise a statistically different share of the poverty population under the two measures.

Figure 2.
Composition of Total and Poverty Populations by Age Group: 2010

(Percent distribution)



* Includes unrelated individuals under the age of 15.
Source: Current Population Survey, 2011 Annual Social and Economic Supplement.

The official poverty measure does not take account of taxes or of in-kind benefits aimed at improving the economic situation of the poor. Besides taking account of necessary expenses, such as MOOP and expenses related to work, the SPM includes taxes and in-kind transfers. Table 3a shows the effect that each addition and subtraction has on the SPM rate in 2010, holding all else the same and assuming no behavioral changes. Additions and subtractions are shown for all people and by age group. Removing one item from the calculation of family resources and recalculating poverty rates shows that including the Earned Income Tax Credit (EITC) results in lower poverty rates; without including the EITC in resources, the poverty rate for all people would have been 18.0 percent rather than 16.0 percent, all else constant. Taking account of SNAP benefits, housing subsidies, school lunch programs, WIC, and energy assistance programs results in lower poverty rates as well. On the other hand, subtracting amounts paid for child support, income and payroll taxes, work-related expenses, and MOOP results in higher poverty rates. Without subtracting MOOP from income, the SPM rate for 2010 would be 12.7 percent rather than 16.0 percent. Figure 3 shows the percentage point difference in the SPM rate for each item for the 2 years for which the SPM has been calculated, 2009 and 2010.

Similar calculations for 2009 (Figure 3 and Table 3b) show the effects of in-kind benefits and nondiscretionary expenses on SPM rates in both years. Differences in

Table 3a.
Effect of Excluding Individual Elements on SPM Rates: 2010

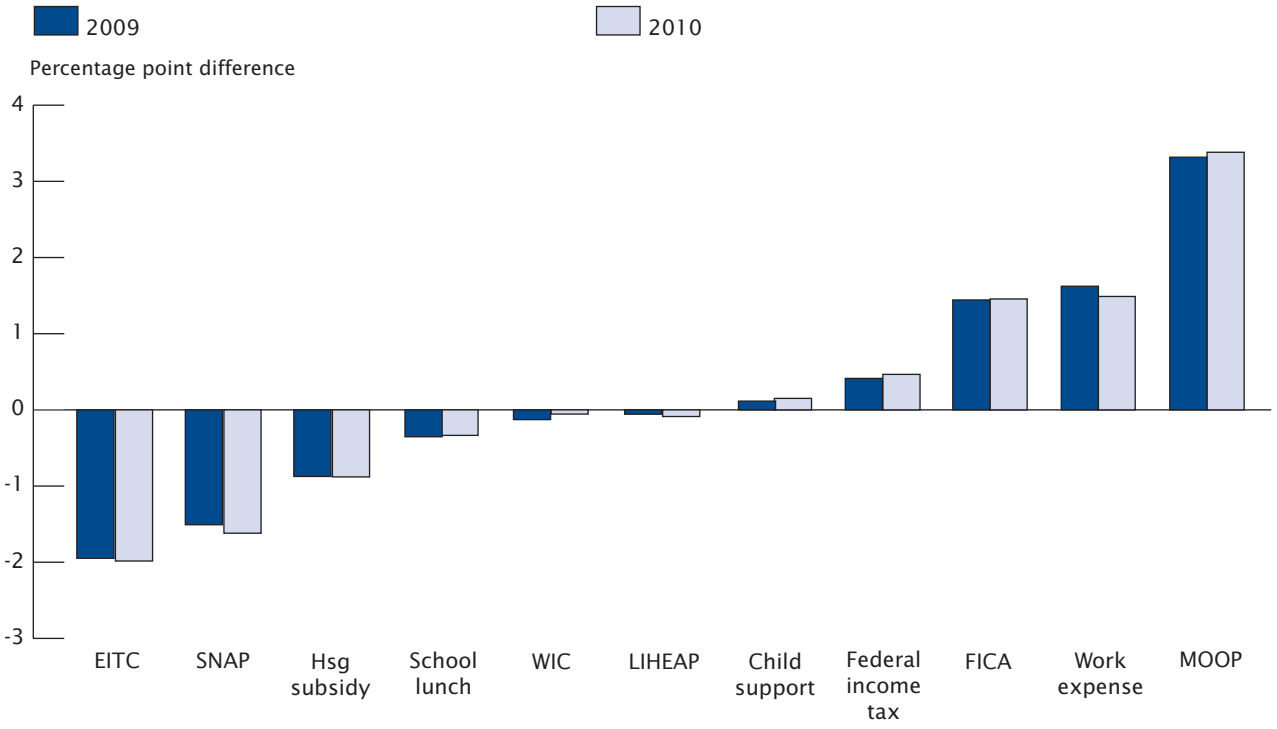
Elements	All persons		Under 18 years		18 to 64 years		65 years and older	
	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)
Research SPM	**16.0**	**0.3**	**18.2**	**0.5**	**15.2**	**0.3**	**15.9**	**0.6**
EITC	18.0	0.3	22.4	0.5	16.7	0.3	16.1	0.6
SNAP	17.7	0.3	21.2	0.5	16.5	0.3	16.8	0.6
Housing subsidy	16.9	0.3	19.5	0.5	15.9	0.3	17.1	0.6
School lunch	16.4	0.3	19.0	0.5	15.4	0.3	16.0	0.6
WIC	16.1	0.3	18.3	0.5	15.3	0.3	15.9	0.6
LIHEAP	16.1	0.3	18.3	0.5	15.3	0.3	16.0	0.5
Child support paid	15.9	0.3	18.1	0.5	15.0	0.3	15.9	0.6
Federal income tax before credits	15.6	0.3	17.9	0.5	14.7	0.3	15.7	0.6
FICA	14.6	0.3	16.3	0.5	13.7	0.3	15.6	0.6
Work expense	14.5	0.3	16.2	0.5	13.7	0.3	15.6	0.6
MOOP	12.7	0.3	15.4	0.5	12.4	0.3	8.6	0.4

[1] Confidence Interval obtained using replicate weights (Fay's Method).

Note: Details may not sum to totals because of rounding.

Source: U.S. Census Bureau, Current Population Survey, 2011 Annual Social and Economic Supplement. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <www.census.gov/hhes/www/p60_239sa.pdf>.

Figure 3.
Difference in SPM Rate After Including Each Element: 2009 and 2010



Source: Current Population Survey, 2010 and 2011 Annual Social and Economic Supplement.

Table 3b.

Effect of Excluding Individual Elements on SPM Rates: 2009

Elements	All persons		Under 18 years		18 to 64 years		65 years and older	
	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)
Research SPM	**15.3**	**0.3**	**17.3**	**0.5**	**14.4**	**0.3**	**15.5**	**0.4**
EITC	17.2	0.3	21.3	0.5	15.9	0.3	15.6	0.6
SNAP	16.8	0.3	20.1	0.6	15.6	0.3	16.1	0.6
Housing subsidy	16.1	0.3	18.6	0.6	15.1	0.3	16.6	0.6
School lunch	15.6	0.3	18.1	0.5	14.7	0.3	15.5	0.6
WIC	15.4	0.3	17.5	0.5	14.5	0.3	15.5	0.6
LIHEAP	15.3	0.3	17.3	0.5	14.5	0.3	15.6	0.6
Child support paid	15.2	0.3	17.1	0.5	14.3	0.3	15.5	0.6
Federal income tax before credits	14.9	0.3	16.9	0.5	13.9	0.3	15.3	0.6
FICA	13.8	0.3	15.3	0.5	13.0	0.3	15.2	0.6
Work expense	13.7	0.3	15.1	0.5	12.8	0.3	15.2	0.6
MOOP	12.0	0.3	14.3	0.5	11.7	0.3	8.5	0.6

[1] Confidence Interval obtained using replicate weights (Fay's Method).

Note: Details may not sum to totals because of rounding.

Source: U.S. Census Bureau, Current Population Survey, 2010 Annual Social and Economic Supplement. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <www.census.gov/hhes/www/p60_238sa.pdf>.

Table 4.

Percentage of People by Ratio of Income/Resources to Poverty Threshold: 2010

Characteristic	Less than 0.5		0.5 to 0.99		1.0 to 1.99		2.0 to 3.99		4 or more	
	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)
Official**										
All people	**6.8**	**0.2**	**8.4**	**0.2**	**18.8**	**0.3**	**30.2**	**0.3**	**35.8**	**0.4**
Age										
Under 18 years	10.4	0.4	12.1	0.4	21.4	0.5	29.2	0.5	26.8	0.5
18 to 64 years	6.3	0.2	7.4	0.2	16.3	0.3	29.8	0.3	40.2	0.4
65 years and older	2.5	0.2	6.5	0.3	25.6	0.8	34.0	0.8	31.4	0.8
Race and Hispanic origin										
White	5.6	0.2	7.5	0.2	17.9	0.3	30.7	0.4	38.2	0.4
White, not Hispanic	4.4	0.2	5.7	0.2	15.6	0.3	31.0	0.4	43.4	0.5
Black	13.6	0.8	13.9	0.7	23.9	0.9	28.5	1.0	20.1	0.8
Asian	5.9	0.9	6.2	0.8	16.2	1.3	27.8	1.5	43.9	1.8
Hispanic (any race)	11.1	0.6	15.6	0.7	28.0	0.8	29.3	0.8	16.0	0.7
SPM										
All people	**5.4**	**0.2**	**10.7**	**0.2**	**31.8**	**0.3**	**34.8**	**0.4**	**17.3**	**0.3**
Age										
Under 18 years	5.3	0.3	12.8	0.5	38.6	0.6	32.5	0.5	10.8	0.4
18 to 64 years	5.5	0.2	9.7	0.2	29.0	0.3	36.2	0.4	19.6	0.3
65 years and older	4.6	0.3	11.3	0.5	33.1	0.7	32.5	0.8	18.5	0.7
Race and Hispanic Origin										
White	4.8	0.2	9.5	0.2	30.2	0.4	36.3	0.4	19.2	0.3
White, not Hispanic	4.0	0.2	7.1	0.2	26.8	0.4	39.6	0.5	22.4	0.4
Black	7.8	0.6	17.7	0.8	40.9	1.1	26.7	0.9	7.0	0.4
Asian	6.2	0.8	10.6	1.2	31.6	1.7	34.2	1.8	17.4	1.2
Hispanic (any race)	8.6	0.6	19.6	0.8	44.3	0.8	22.2	0.8	5.4	0.3

* Statistically different from zero at the 90 percent confidence level.

** Differs from published official rates as unrelated individuals under 15 years of age are included in the universe.

[1] Confidence Interval obtained using replicate weights (Fay's Method).

Note: Details may not sum to totals because of rounding.

Source: U.S. Census Bureau, Current Population Survey, 2011 Annual Social and Economic Supplement. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <www.census.gov/hhes/www/p60_239sa.pdf>.

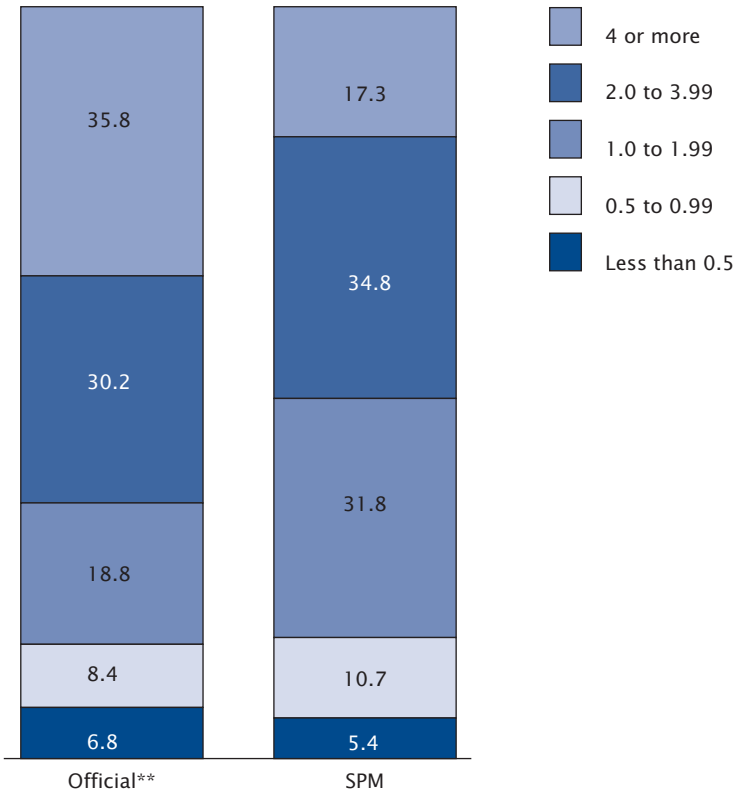
rates were not statistically significant with some small exceptions. The effect of WIC benefits on SPM rates was slightly smaller in 2010 than in 2009. Child support paid had a slightly larger effect on SPM rates in 2010 than in 2009, while work expenses had a smaller effect on SPM rates in 2010. Subtracting work expenses from income in 2010 increased the SPM rate by 1.5 percent. In 2009, work expenses increased the rate by 1.6 percentage points. This change resulted from a decline in the number of workers in 2010 compared with 2009.[15] All other effects were not statistically different between the two years. Median total SPM resources fell from $36,381 for 2009 (in 2010 dollars) to $35,811 in 2010, a decline of 1.6 percent.

Table 3a also shows similar calculations for three age groups. For children, not accounting for the EITC would result in a poverty rate of 22.4 percent, rather than 18.2 percent. The inclusion of each of the listed in-kind benefits results in lower poverty rates for children. Not subtracting MOOP from the income of families with children would have resulted in a poverty rate of 15.4 percent. Findings are similar for the other two age groups shown. For the 65 years and older group, however, WIC has no statistically significant effect while SPM rates increase by about 7.3 percentage points with the subtraction of MOOP from income. Clearly, the subtraction of MOOP has an important effect on SPM rates for this group.

Comparing the distribution of gross cash income with that of SPM resources also allows an examination of the effect of taxes and transfers on SPM rates. Table 4 shows the distribution of income-to-poverty threshold ratios for various groups. Dividing income by the poverty threshold controls income by unit size and composition. Figure 4 shows the percent in income-to-threshold ratio categories of the distribution for all people. In general, the comparison suggests that there is a smaller percentage of the population in the lowest category of the distribution using the SPM. For most groups, including targeted in-kind benefits reduces the percent of the population in the lowest category—those with income below half their poverty threshold. This is true for most of the groups shown in Table 4, with some exceptions—those over age 64 and Asians. Those 65 years and older show a higher percentage below half of the poverty line with the SPM, 4.6 percent compared to 2.5 percent with the official measure. As shown earlier, many of the in-kind benefits included in the SPM are not targeted to this population. Further, many transfers received by this group are in cash, especially social security payments, and are captured in the official measure as well as the SPM.

Figure 4.
Distribution of People by Income-to-Threshold Ratios: 2010

(Percent distribution)



* Includes unrelated individuals under the age of 15.
Source: Current Population Survey, 2011 Annual Social and Economic Supplements.

[15] See Table 2, DeNavas-Walt et al., 2011; the number of workers declined by 1.6 million between 2009 and 2010.

Table 5.

Percentage of People in Poverty Using the Supplemental Poverty Measure: 2009–2010

(Numbers in thousands)

Characteristic	Below poverty level								Difference	
	SPM 2009				SPM 2010					
	Number		Percent		Number		Percent			
	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Est.	90 percent C.I.[1] (±)	Number	Percent
All People	**46,471**	**882**	**15.3**	**0.3**	**49,094**	**908**	**16.0**	**0.3**	***2,622**	***0.8**
Age										
Under 18 years	12,951	393	17.3	0.5	13,622	376	18.2	0.5	*671	*0.9
18 to 64 years	27,537	570	14.4	0.3	29,235	602	15.2	0.3	*1,698	*0.8
65 years and older	5,984	233	15.5	0.6	6,237	216	15.9	0.6	253	0.4
Type of Unit										
In married couple unit	17,677	575	9.5	0.3	18,295	622	9.9	0.3	618	0.4
In female householder unit	16,894	572	27.9	0.8	17,991	552	29.0	0.8	*1,097	*1.1
In male householder unit	6,960	271	21.9	0.8	7,317	308	22.7	0.8	357	0.8
In new SPM unit	4,940	338	19.4	1.2	5,490	339	21.0	1.2	*550	1.5
Race and Hispanic Origin										
White	33,097	729	13.7	0.3	34,747	728	14.3	0.3	*1,651	*0.6
White, not Hispanic	20,696	587	10.5	0.3	21,876	605	11.1	0.3	*1,180	*0.6
Black	9,029	364	23.4	0.9	9,932	388	25.4	1.0	*902	*2.1
Asian	2,524	181	18.0	1.3	2,397	191	16.7	1.3	–127	–1.3
Hispanic (any race)	13,485	458	27.6	0.9	14,088	459	28.2	0.9	*603	0.6
Nativity										
Native born	37,010	805	13.9	0.3	39,329	845	14.7	0.3	*2,319	*0.8
Foreign born	9,462	347	25.2	0.8	9,765	327	25.5	0.7	303	0.4
Naturalized citizen	2,710	144	16.9	0.9	2,829	158	16.8	0.9	119	–0.1
Not a citizen	6,752	306	31.3	1.1	6,936	288	32.4	1.2	184	1.1
Tenure										
Owner	19,895	597	9.5	0.3	20,205	659	9.7	0.3	310	0.2
Owner/mortgage	11,958	414	8.0	0.3	11,419	471	8.3	0.3	–538	0.2
Owner/no mortgage/rent-free	8,748	431	13.8	0.6	9,581	429	13.3	0.6	*833	–0.5
Renter	25,766	720	28.0	0.7	28,093	746	29.4	0.6	*2,327	*1.4
Residence										
Inside MSAs	40,000	863	15.6	0.3	42,979	879	16.6	0.3	*2,979	*1.0
Inside principal cities	19,227	666	19.6	0.6	20,748	611	21.0	0.6	*1,521	*1.4
Outside principal cities	20,773	747	13.1	0.4	22,231	738	13.9	0.4	*1,458	*0.8
Outside MSAs	6,471	524	13.5	0.8	6,114	449	12.8	0.7	–357	–0.7
Region										
Northeast	7,467	317	13.7	0.6	7,969	342	14.5	0.6	*502	*0.9
Midwest	7,995	353	12.1	0.5	8,678	356	13.1	0.5	*683	*1.0
South	17,697	507	15.8	0.5	18,503	533	16.3	0.5	*806	*0.6
West	13,312	455	18.7	0.6	13,944	512	19.4	0.7	*632	0.7
Health Insurance Coverage										
With private insurance	13,498	449	6.9	0.2	14,631	464	7.5	0.2	*1,133	*0.6
With public, no private insurance	18,107	509	30.7	0.7	19,126	559	31.7	0.8	*1,019	*1.0
Not insured	14,866	441	30.3	0.7	15,337	474	30.7	0.8	471	0.4

* Statistically different from zero at the 90 percent confidence level.

[1] Confidence Interval obtained using replicate weights (Fay's Method).

Note: Details may not sum to totals because of rounding.

Source: U.S. Census Bureau, Current Population Survey, 2010 and 2011 Annual Social and Economic Supplement. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <www.census.gov/hhes/www/p60_239sa.pdf>.

Note that the percentage of the 65 years and older age group with cash income below half their threshold is lower than that of other age groups under the official measure, (2.5 percent) while the percentage for children is higher (10.4 percent). Subtracting MOOP and other expenses and adding in-kind benefits in the SPM narrows the differences across the three age groups.[16] On the other hand, the SPM shows a smaller percentage with income or resources in the highest category—four or more times the thresholds. The SPM resource measure subtracts taxes, compared with the official that does not, bringing down the percent of people with income in the highest category.

Table 4 shows similar calculations by race and ethnicity. There are smaller percentages with income below half of their SPM thresholds, compared with the official measure, for all groups shown except for Asians. For this group, the percentage in the lowest category is higher using the SPM compared with the official measure. For Blacks, the percentage in this lowest category falls from 13.6 percent with the official measure to 7.8 percent with the SPM. The percentage of Whites and Hispanics in the lowest category is also lower using the SPM.

As has been documented (De Navas et al., 2011), real median household gross cash income declined by 2.3 percent between 2009 and 2010. Coupled with increased thresholds, this change resulted in an increase in the official poverty rate of 0.8 percentage point. Table 5 shows SPM rates for 2009 and 2010, calculated in a comparable way.[17] In 2009, the percentage poor using the SPM was 15.3 percent and in 2010, that rate rose to 16.0 percent. The changes in the poverty rates for the two measures were not statistically different from each other; however, changes in the components of the two measures are of interest. As noted earlier, the SPM threshold rose more than the official threshold. On the other hand, median SPM resources declined by 1.6 percent, reflecting only small changes between 2009 and 2010 in the effect of in-kind benefits received and nondiscretionary expenses subtracted. While for most elements the effect of additions and subtractions between the 2 years was not different, there were small differences in the effect on poverty rates from WIC and child support payments in 2010, and a smaller increase in rates from the subtraction of work-related expenses between 2009 and 2010.

Between the 2 years, poverty rates increased for all groups except for those 65 years and older, Asians, Hispanics, the foreign born, homeowners (with and without mortgages), those residing outside MSAs, those in the West, and the uninsured. These groups showed no statistically significant change in SPM rates from 2009 estimates. The number of poor increased between 2009 and 2010 for all groups with rate increases. In addition, the number poor increased for those in new SPM units, Hispanics, owners with no mortgages, and those residing in the West. The number of poor for other groups was not significantly different between the 2 years.

SUMMARY

This paper laid groundwork for developing a new Supplemental Poverty Measure for the United States. Estimates presented were based on data from the 2005 to 2011 CE and the CPS 2010 and 2011 ASEC and refer to calendar years 2009 and 2010. The results illustrate differences between the official measure of poverty and a poverty measure that takes account of in-kind benefits received by families and nondiscretionary expenses that they must pay. The SPM also employs a new poverty threshold that is updated with information on expenses for food, clothing, shelter, and utilities that families face. Results showed higher SPM poverty rates than the official measure for most groups.

In addition, the distribution of people in the total population and the distribution of people classified as in poverty using the two measures were examined. Results showed a higher proportion of several groups were poor using the SPM. These groups were adults aged 18 to 64 and 65 and over, those in married-couple families or with male householders, Whites, Asians, the foreign born, homeowners with mortgages, and those with private health insurance. The shares of the poverty population were also higher with the SPM for those residing in the suburbs and the Northeast and West. Other findings showed that the SPM allows us to examine the effects of taxes and in-kind transfers on the poor and on important groups within the poverty population. As such, there are lower percentages of the SPM poverty populations in the very high and very low resource categories than we find using the official measure. Since in-kind benefits help those in

[16] The percentage below half the poverty threshold for those under 18 years and 18 to 64 years using the SPM were not statistically different.

[17] The estimates shown here differ from previously released SPM estimates for 2009 (Short, 2011a) due to changes in the tax model used in these estimates. See the appendix for a description.

extreme poverty, there were lower percentages of individuals with resources below half the SPM threshold for most groups. The effect of benefits received from each program and expenses on taxes and other nondiscretionary expenses on SPM rates were examined. It was shown that medical out-of-pocket expenses had an important effect on SPM rates and on the well-being of those 65 years and older, in particular.

These findings are similar to those reported in earlier work using a variety of experimental poverty measures that followed recommendations of the NAS poverty panel (Short et al., 1999, and Short, 2001). Experimental poverty rates based on the NAS panel recommendations have been calculated every year since 1999. While SPM rates are only available for 2009 and 2010, estimates are available for earlier years for a variety of experimental poverty measures, including the most recent for 2010.[18] They include poverty rates that employ CE based thresholds, as well as thresholds that increase each year from 1999 based on changes in the Consumer Price Index (similar to the official thresholds) and estimates that do not adjust thresholds for geographic differences in housing costs. Examining these measures sheds light on the effect of changes in the threshold updating mechanism and in geographic adjustments to the thresholds.

[18] These estimates are available on the Census Bureau Web site.

Future Research and Plans for the SPM

This study presented estimates of poverty prevalence in the United States employing research on the SPM. This report includes tables on various aspects of the SPM for a select set of subgroups of the population, descriptive text, and an appendix of technical documentation. Similar reports, in a full production mode, are often accompanied by additional detailed tables, public-use microdata, and more extensive analysis of the findings. These additions will not be available with this report, or future reports, without additional funding.

Further, the estimates reported here are based on additional data collected in the CPS ASEC with new questions added for this purpose. These new data are an invaluable input to the SPM findings reported here, as well as, beginning to serve other research efforts on the topics of child care expenses, child support paid, and medical expenses that were not possible previously. Without additional funding these questions may have to be removed from the survey.

The SPM estimates provided here shed new light on the information released with the official poverty measure. These data provide important additional information on the makeup and characteristics of the poverty population that differ from findings presented earlier this year by the Census Bureau. To be most useful, the SPM would be released at the same time as the official measure, as is the intent of the ITWG. Current resources do not allow this simultaneous release. BLS is not able to produce SPM thresholds in a time frame that would allow earlier release of the SPM, and the Census Bureau is working with limited resources in this effort.

While the measure presented here represents a large body of work that has already been done, each element of the measure requires improvements to enable a clear understanding of the economic well-being of individuals. Research on this measure continues in a number of important areas. These include taking account of in-kind benefits in the thresholds, examining the effect of adjusting medical expenses for the uninsured, incorporating geographical differences in costs relating to transportation, and estimating these measures in other surveys that include the Survey of Income and Program Participation (SIPP) and the ACS.

Several of the suggestions on calculating the SPM made by the ITWG are yet to be completed. The ITWG suggested that research be conducted examining the medical expenses of the uninsured. Caswell and Short (2011) examined this issue. Including in-kind benefits in thresholds has also been further explored by Garner and Hokayem (2011). The ITWG also suggested improving the method used to assign work-related expenses, particularly related to commuting costs. Other researchers have suggested that geographic adjustments for differences in housing costs should also control for differences in transportation costs. Rapino, McKenzie, and Marley (2011) have examined this issue.

In their 1995 report, the NAS panel recommended that the Census Bureau use the SIPP for estimating

resources for the new poverty measure (Citro and Michael). As they noted, the SIPP is well designed for this purpose. Earlier work (Short, 2003) employed these data for such estimates. This research shed light on estimates of resources based on the CPS ASEC and the inherent limitations in the use of those data. Updating this work will be part of the research effort for the SPM. Other lines of research will include working to incorporate an SPM using the ACS. While more restricted in the available information than the CPS ASEC, these data allow estimates for smaller areas of geography than other data sets. The goal in this work is to prepare a limited but nationally consistent SPM for smaller localities.

The Census Bureau and the BLS will continue their research efforts on this important topic and improve the measures presented here as resources allow. With additional funding, this work will move from a research operation to full-fledged production. At that time, the Census Bureau would be prepared to release estimates of the SPM at the same time as the release of the official poverty statistics; and BLS could move forward in its efforts to add important questions to the CE and formalize the threshold production effort.

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APPENDIX
SPM METHODOLOGY

Poverty Thresholds

Consistent with the NAS panel recommendations and the suggestions of the ITWG, the SPM thresholds are based on out-of-pocket spending on food, clothing, shelter, and utilities (FCSU). Five years of Consumer Expenditure Survey (CE) data for consumer units with exactly two children (regardless of relationship to the family) are used to create the estimation sample. Unmarried partners and those who share expenses with others in the household are included in the consumer unit. FCSU expenditures are converted to adult equivalent values using a three-parameter equivalence scale (see below for description). The average of the FCSU expenditures defining the 30th and 36th percentile of this distribution is multiplied by 1.2 to account for additional basic needs. The "three-parameter equivalence scale" is applied to this amount to produce an overall threshold for a unit composed of two adults and two children.

To account for differences in housing costs, a base threshold for all consumer units with two children was calculated, and then the overall shelter and utilities portion was replaced by what consumer units with different housing statuses spend on shelter and utilities. Three housing status groups were determined and their expenditures on shelter and utilities produced within the 30–36th percentiles of FCSU expenditures. The three groups are: owners with mortgages, owners without mortgages, and renters. The new questions, first introduced in the 2010 CPS ASEC, are used to ascertain the presence of a mortgage (Semega and Sarkar, 2010) in order to assign, in conjunction with other tenure questions, the appropriate threshold to each SPM resource unit.

For consistency in measurement with the resource measure, the thresholds should include the value of in-kind benefits (Garner and Short, 2010). While the Census Bureau has a long history and experience in collecting and imputing the value of in-kind benefits (U.S. Bureau of the Census, 1982), this is not the case for BLS and the CE. Since the value of SNAP benefits is implicitly collected in the CE as food expenditures, it is included in the SPM thresholds used here. The CE collects data on whether or not a consumer unit lives in subsidized housing or participates in another government program that results in reduced rent but does not collect data on the receipt of other in-kind benefits. As per the ITWG suggestions, methods to impute the value of school lunch, WIC, and rent subsidies are the subject of ongoing research, see Garner and Hokayem, 2011.

Equivalence Scales

The ITWG guidelines state that the three-parameter equivalence scale is to be used to adjust reference thresholds for the number of adults and children. The three-parameter scale allows for a different adjustment for single parents (Betson, 1996). This scale has been used in several BLS and Census Bureau studies (Johnson et al., 1997; Short et al., 1999; Short, 2001). The three-parameter scale is calculated in the following way:

One and two adults:
$scale = (adults)^{0.5}$

Single parents:
$scale = (adults + 0.8 * first\ child + 0.5 * other\ children)^{0.7}$

All other families:
$scale = (adults + 0.5 * children)^{0.7}$

In the calculation used to produce thresholds for two adults, the scale is set to 1.41. The economy of scale factor is set at 0.70 for other family types. The NAS Panel recommended a range of 0.65 to 0.75.

Geographic Adjustments

The American Community Survey (ACS) is used to adjust the FCSU thresholds for differences in prices across geographic areas. The geographic adjustments are based on 5-year ACS estimates of median gross rents for two-bedroom apartments with complete kitchen and plumbing facilities (Renwick, 2011a and 2011b). Separate medians were estimated for each of the 264 metropolitan statistical areas (MSAs) large enough to be identified on the public use version of the CPS ASEC file. This results in 358 adjustment factors. For each state, a median is estimated for all nonmetro areas (48), for each MSA with a population above the CPS ASEC limit (264), and for a combination of all other metro areas within a state (46). Renwick, 2011a shows state-level SPM estimates for calendar year 2009 based on 1 year of CPS data. The Census Bureau recommends the use of 3-year averages to compare estimates across states and 2-year averages to evaluate changes in state estimates over time. See Current Population Survey, 2011 ASEC Technical Documentation, <www.census.gov/apsd/techdoc/cps/cpsmar11.pdf>.

Unit of Analysis

The ITWG suggested that the "family unit" include all related individuals who live at the same address, any coresident unrelated children who are cared for by the family (such as foster children[19]), and any cohabitors and their children. Similar units were developed and analyzed showing that a broadening of the unit definition generally resulted in lower poverty rates (Short, 2009). Additional information on these units is documented by Kreider, 2010 and Provencher, 2011. This definition corresponds broadly with the unit of data collection (the consumer unit) that is employed for the CE data that are used to calculate poverty thresholds. They are referred to as *SPM Resource Units*. Employing these definitions for 2009 found about 7 percent of units change, including units that added a cohabitor, an unrelated individual under the age of 15, foster child aged 15 to 21, or an unmarried parent of a child in the family. Note that some units change for more than one of these reasons. Further, some of the weighting differs due to forming these units of analysis. For all new family units that have a set of male/female partners, the female person's weight is used as the SPM family weight. For all other new units there is no change.[20]

IN-KIND BENEFITS

Supplemental Nutrition Assistance Program (SNAP)

SNAP benefits (formerly known as food stamps) are designed to allow eligible low-income households to afford a nutritionally adequate diet. Households who participate in the SNAP program are assumed to devote 30 percent of their countable monthly cash income to the purchase of food, and SNAP benefits make up the remaining cost of an adequate low-cost diet. This amount is set at the level of the U.S. Department of Agriculture's Thrifty Food Plan. In the CPS, respondents report if anyone in the household ever received SNAP benefits in the previous calendar year and if so, the face value of those benefits. The annual household amount is prorated to SPM Resource Units within each household.

In 2008, as a part of the Food, Conservation, and Energy Act of 2008, the name of the program changed from food stamps to the Supplemental Nutrition Assistance program. With the change in the name of the federal program and state-by-state differences in the program name, the quality of CPS ASEC responses may deteriorate if respondents are uncertain of the name of the program from which they receive benefits. Most states have changed the name of the state program to SNAP but a number of states have adopted their own program name. The CPS questionnaire can use the specific state name of the state of residence of the respondent.

The 2011 CPS ASEC changed the questions asking about the receipt of food stamps:

2009 and 2010 CPS ASEC:

Did (you/anyone in this household) get food stamps or a food stamp benefit card at any time during 2009?

1 Yes
2 No

At any time during 2009, even for one month, did (you/ anyone in this household) receive any food assistance from (State Program name)?

1 Yes
2 No

Which of the people now living here were covered by that food assistance during 2009?

2011 CPS ASEC :

At any time during 2010, even for one month, did (you/ anyone in this household) receive any food assistance from (State Program name) or a food assistance benefit card (such as State EBT card name)?

1 Yes
2 No

Which of the people now living here were covered by that food assistance during 2010?

This change in the question resulted in a noticeable decline in the number of households reporting food stamp receipt during a time when administrative data showed an increase. As a result, a Monte Carlo method was used to assign food stamps to households reporting none. Assignment was based on reported receipt during the previous year (for sample households interviewed both years), participation in other public assistance programs (TANF, SSI, Medicaid, energy assistance, or rental assistance) and household total money income. Imputation flags were set for cases where food stamp receipt was changed as a result of this adjustment.

National School Lunch Program

This program offers children free meals if family income is below 130 percent of federal poverty guidelines, reduced-price meals if family income is between 130 and 185 percent of the federal poverty guidelines, and a subsidized

[19] Foster children up to the age of 22 are included in the new unit.

[20] Appropriate weighting of these new units is an area of additional research at the Census Bureau.

meal for all other children. In the CPS the reference person is asked how many children "usually" ate a complete lunch at school, and if it was a free or reduce-priced school lunch. Since we have no further information, the value of school meals is based on the assumption that the children received the lunches every day during the last school year. Note that this method may overestimate the benefits received by each family. To value benefits we obtain amounts on the cost per lunch from the Department of Agriculture Food and Nutrition Service that administers the school lunch program. There is no value included for school breakfast.[21]

Supplementary Nutrition Program for Women, Infants, and Children (WIC)

This program is designed to provide food assistance and nutritional screening to low-income pregnant and postpartum women and their infants, and to low-income children up to the age of 5. Incomes must be at or below 185 percent of the poverty guidelines and participants must be nutritionally at-risk (having abnormal nutritional conditions, nutrition-related medical conditions, or dietary deficiencies). Benefits include supplemental foods in the form of food items or vouchers for purchases of specific food items. There are questions on current receipt of WIC in the CPS. Lacking additional information, we assume 12 months of participation and value the benefit using program information obtained from the Department of Agriculture. As with school lunch, assuming year-long participation may overestimate the value of WIC benefits received by a given SPM family.

Low-Income Home Energy Assistance Program (LIHEAP)

This program provides three types of energy assistance. Under this program, states may help pay heating or cooling bills, provide allotments for low-cost weatherization, or provide assistance during energy-related emergencies. States determine eligibility and can provide assistance in various ways, including cash payments, vendor payments, two-party checks, vouchers/coupons, and payments directly to landlords. The 2010 CPS ASEC asked if, since October 1 of the previous year, the reference person received help with heating costs and, if yes, the amount received. In ASEC 2011, the question on energy assistance asked for information about the entire year and captures assistance for cooling paid in the summer months or emergency benefits paid after the February/March/April survey date. Many households receive both a "regular" benefit and one or more crisis or emergency benefits. Additionally, since LIHEAP payments are often made directly to a utility company or fuel oil vendor, many households may have difficulty reporting the precise amount of the LIHEAP payment made on their behalf.

Housing Assistance

Households can receive housing assistance from a plethora of federal, state, and local programs. Federal housing assistance consists of a number of programs administered primarily by the U.S. Department of Housing and Urban Development (HUD). These programs traditionally take the form of rental subsidies and mortgage-interest subsidies, targeted to very-low-income renters and are either project-based (public housing) or tenant-based (vouchers). The value of housing subsidies is estimated as the difference between the "market rent" for the housing unit and the total tenant payment. The "market rent" for the household is estimated using a statistical match with the HUD administrative data from the Public and Indian Housing Information Center (PIC) and the Tenant Rental Assistance Certification System (TRACS). For each household identified in the CPS ASEC as receiving help with rent or living in public housing, an attempt was made to match on state, Core Based Statistical Area (CBSA), and household size.[22] The total tenant payment is estimated using the total income reported by the household on the CPS ASEC and HUD program rules. Generally, participants in either public housing or tenant-based subsidy programs administered by HUD are expected to contribute towards housing costs the greater of one third of their "adjusted" income or 10 percent of their gross

[21] In the SIPP, respondents report the number of breakfasts eaten by the children per week, similar to the report of school lunches. Calculating a value for this subsidy in the same way as was done for the school lunch program, yielded an amount of approximately $2.8 billion for all families in the SIPP for the year 2004. For information on confidentiality protection, sampling error, nonsampling error, and definitions, for the 2004 Survey of Income and Program Participation, see <www.census.gov/apsd/techdoc/sipp/sipp.html>, accessed September 2011.

[22] HUD operates two major housing assistance programs: public housing and tenant-based or voucher programs. Since the HUD administrative data only include estimates of gross or contract rent for tenant-based housing assistance programs, the contract rents assigned to CPS ASEC households living in public housing are adjusted by a factor of 767/971. This adjustment factor was derived from data published in the "Picture of Subsidized Households: 2008" which estimates the average tenant payment and the average subsidy by type of assistance. The average contract rent would be the sum of these two estimates: $324+647=971 for tenant-based and $255+512=767 for public housing, <www.huduser.org/portal/picture2008/index.html>, accessed September 2011.

income.[23] See Johnson et al., 2010 for more details on this method. Initially subsidies are estimated at the household level. If there is more than one SPM family in a household, then the value of the subsidy is prorated based on the number of people in the SPM family relative to the total number of people in the household.

Housing subsidies help families pay their rent and as such are added to income for the SPM. However, there is general agreement that, while the value of a housing subsidy can free up a family's income to purchase food and other basic items, it will only do so to the extent that it meets the need for shelter. Thus, the values for housing subsidies included as income are limited to the proportion of the threshold that is allocated to housing costs. The subsidy is capped at the housing portion of the appropriate threshold *minus* the total tenant payment.

NECESSARY EXPENSES SUBTRACTED FROM RESOURCES

Taxes

The NAS panel and the ITWG recommended that the calculation of family resources for poverty measurement should subtract necessary expenses that must be paid by the family. The measure subtracts federal, state, and local income taxes, and social security payroll taxes (FICA) before assessing the ability of a family to obtain basic necessities such as food, clothing, and shelter. Taking account of taxes allows us to account for receipt of the federal or state earned income credit (EITC) and other tax credits. The CPS ASEC does not collect information on taxes paid but relies on a tax calculator to simulate taxes paid. These simulations include federal and state income taxes and social security payroll taxes. These simulations also use a statistical match to the Statistics of Income (SOI) microdata file of tax returns. The Census Bureau is conducting research to incorporate the newly reported information in the CPS ASEC on family relationships and expenses. Webster, 2011, describes these new methods. Although some of these changes were included in earlier work (Short, 2011a) these changes are not included in the estimates presented in this paper.

Work-Related Expenses

Going to work and earning a wage often entails incurring expenses, such as travel to work and purchase of uniforms or tools. For work-related expenses (other than child care) the NAS panel recommended subtracting a fixed amount for each earner 18 years or older. Their calculation was based on 1987 Survey of Income and Program Participation (SIPP) data that collected information on work expenses in a set of supplementary questions. They calculated 85 percent of median weekly expenses —$14.42 per week worked for anyone over 18 in the family in 1992. Total expenses were obtained by multiplying this fixed amount by the number of weeks respondents reported working in the year. The panel argued that, since many families make other sacrifices to minimize work expenses (e.g., move near work, work opposing shifts) and these other costs would not be reflected in reported expenses, it would be better to use a fixed dollar amount. The ITWG suggested that further research on this topic and a refinement of methods would be valuable. Also, the suggestion has been made that commuting costs may vary across geographic areas and should be considered in addition to housing costs when constructing geographic adjustments. Rapino et al., 2010, 2011, have addressed new research on this topic.

Since the 1996 Panel of SIPP, the work-related expenses topical module has been repeated every year.[24] Each person in the SIPP reports their own expenditures on work-related items in a given week. The most recent available data are used to calculate median weekly expenses. The number of weeks worked, reported in the CPS ASEC, is multiplied by the 85 percent of median weekly work-related expenses for each person to arrive at annual work-related expenses.

Child Care Expenses

Another important part of work-related expenses is paying someone to care for children while parents work. These expenses have become important for families with young children in which both parents (or single parent) work. To account for child care expenses while parents worked, in the CPS, parents are asked whether or not they pay for child care and, starting in 2010, how much they spent. The amount paid for any type of child care, while parents are at work, are summed over all children. The NAS report recommended

[23] HUD regulations define "adjusted household income" as cash income excluding income from certain sources minus numerous deductions. Three of the income exclusions can be identified from the CPS ASEC: income from the employment of children, student financial assistance, and earnings in excess of $480 for each full-time student 18 years or older. Deductions which can be modeled from the CPS ASEC include: $480 for each dependent, $400 for any elderly or disabled family member, child care, and medical expenses.

[24] The 2004 panel wave 9 topical modules were not collected due to budget considerations.

capping the amount subtracted from income, when combined with other work-related expenses, so that these do not exceed reported earnings of the lowest earner in the family. The ITWG also made this recommendation. This capping procedure is applied before determining poverty status.[25] (See MacCartney and Laughlin, 2010, for an evaluation of these data in the 2010 ASEC.)

Child Support Paid

The NAS panel recommended that, since child support received from other households is counted as income, child support paid out to those households should be deducted from those households who paid. Without this, all child support is double counted in overall income statistics. New questions ascertaining amounts paid in child support have been included in the 2010 CPS ASEC, and these reported amounts are subtracted in the estimates presented here. Grall, 2010, discusses the quality of these data.

Medical Out-of-Pocket Expenses (MOOP)

The ITWG recommended subtracting medical out-of-pocket expenses from income, following the NAS panel. The NAS panel was aware that expenditures for health care are a significant portion of a family budget and have become an increasingly larger budget item since the 1960s. These expenses include the payment of health insurance premiums plus other medically necessary items such as prescription drugs and doctor copayments that are not paid for by insurance. Subtracting these "actual" amounts from income, like taxes and work expenses, leaves the amount of income that the family has available to purchase the basic bundle of goods (food, clothing, shelter, and utilities [FCSU] and a "little bit more").

While many individuals and families have health insurance that covers most of the very large expenses, there are the costs of health insurance premiums and other small fees that the typical family pays out of pocket. Further, there are some who are not covered by medical insurance. Questions ascertaining medical out-of-pocket expenditures have also been included in the 2010 CPS ASEC (see Caswell and O'Hara, 2010, for information on the quality of these data). In these questions, respondents report expenditures on health insurance premiums that do not include Medicare Part B premiums. Medicare Part B premiums pose a particular problem for these estimates. The CPS ASEC instrument identifies that a respondent reported Social Security Retirement Benefit net of Medicare Part B premiums. For these respondents, a Part B premium set at a fixed amount of $96.40 per month is automatically added to income. Corrections for these applied amounts are discussed in Caswell and Short, 2011 and applied here. To be consistent with what is added to the SSR income in these cases, the same amount is added to reported premium expenditures.[26] For the remaining respondents that report Medicare status, Medicare Part B premiums are simulated using the rules for income and tax filing status in 2009 (Medicare.gov, 2009).[27] The simplifying assumption is made that married respondents with "spouse present" file married joint returns. For these cases the combined reported income of both spouses is used to determine the appropriate Part B premium. Finally, it is assumed that the following two groups pay zero Part B premiums: 1) dual-eligible respondents (i.e., Medicare and Medicaid), and 2) those with a family income less than 135 percent of the federal poverty level. The latter assumption is based on a rough estimate of eligibility and participation in at least one of the following programs: Qualified Medicare Beneficiary (QMB), Specified Low-Income Medicare Beneficiary (SLMB), or Qualified Individual-1 (QI-1). We abstract from the possibility of (state-specific) asset requirements.

The questions about MOOP, introduced in the 2010 CPS ASEC, were refined in the 2011 questionnaire. Comparison to the Medical Expenditure Panel Survey revealed

[25] Some analysts have suggested that this cap may be inappropriate in certain cases, such as if the parent is in school, looking for work, or receiving types of compensation other than earnings.

[26] In these cases, it is important to assign an amount for Medicare Part B premiums that is equal to what is added to the resource side, i.e., SSR income, of the poverty calculation. Note that the instrument calculation is done irrespective of Medicaid status, and therefore dual-enrollees who report "net" SSR income receive an estimate for Medicare Part B that is added to reported premiums.

[27] The CPS ASEC does not collect the number of months that a person was on Medicare; therefore we make the simplifying assumption that respondents were insured for the entire year. Given this data limitation, this assumption is appropriate as most all individuals on Medicare do not transition out of Medicare.

that fewer individuals reported small dollar amounts in the CPS and more reported zero spending.

The CPS MOOP question about premium in both years was:

"During 2009, about how much did (fill name) pay for health insurance premiums [for (fill self) or others in the household]? Please include premiums paid for HMOs, Fee for Service Plans, Commercial Medicare Supplements, or other special purpose plans, such as vision or dental plans. Include prescription drug insurance such as Medicare Part D premiums or Medicare Advantage premiums. DO NOT include Medicare Part B premiums."

This was followed by a question on expenditures for medical care and supplies:

"During 2009, bout how much was paid for (fill name)'s own medical care, including payments for hospital visits, medical providers, dentists, medicine, or medical supplies? Include any amount paid on (fill name)'s behalf by you or anyone else in this household." There was a separate, but similar, question for children.

In the 2011 ASEC a question was added on over-the-counter MOOP spending:

"During 2010, about how much was paid for [name/you] pay for over-the-counter health related products such as aspirin, cold remedies, bandages, first aid supplies, and other items?"

Other refinements included checks in the questionnaire to remind respondents about earlier reported health insurance information and revisions to the imputation procedures employed for missing responses. The addition of this question and other refinements resulted in an increase in the percent reporting expenditures for MOOP overall and, for those reporting, smaller amounts on average.

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