The Supplemental Poverty Measure (SPM) and Children: How and Why the SPM and Official Poverty Estimates Differ

by Benjamin Bridges and Robert V. Gesumaria*

In 2011, the Census Bureau released its first report on the Supplemental Poverty Measure (SPM). The SPM addresses many criticisms of the official poverty measure, and its intent is to provide an improved statistical picture of poverty. This article examines the extent of poverty identified by the two measures. First, we look at how the SPM and official-measure poverty estimates differ for various demographic and socioeconomic groups. One finding is that the SPM poverty rate is lower than the official poverty rate for each age subgroup of children (0–5, 6–11, and 12–17) by 5.2, 5.3, and 2.2 percentage points, respectively. Then, we look at why the SPM poverty rates for children are lower than the official poverty rates. An important factor here is the difference in treatment of the earned income tax credit and other refundable tax credits.

Introduction

The Census Bureau has recently begun the annual publication of alternative estimates of poverty for the U.S. population based on new methods intended to address shortcomings in the official measure of poverty. The new Supplemental Poverty Measure (SPM) produces a different overall estimate of the number of poor people in the United States and substantially alters the composition of the population in poverty—much less child poverty, much more aged poverty, and more nonaged adult poverty.

In this article, we present a detailed examination of poverty among children (aged 0–17). This age group accounts for more than a fourth of the persons who are poor under the SPM. For comparison purposes and a more comprehensive view of poverty, some findings are presented for older segments of the U.S. population.[1] Using public-use microdata files recently released by the Census Bureau, we compare and contrast the poverty estimates for 2012 produced under the official poverty measure and new measure. We also attempt to discern why the SPM and official estimates for children differ.

The choice of poverty measure affects the poverty status of participants in the Social Security Administration's (SSA's) Old-Age, Survivors, and Disability Insurance (OASDI) program and the Supplemental Security Income (SSI) program administered by SSA. Moreover, these programs have substantial effects on the poverty status of children. About 70 percent of SPM-poor children are in family units that pay payroll taxes. About a sixth of SPM-poor children are in units receiving Social Security (OASDI) benefits and/or SSI payments.

The official poverty measure consists of a set of thresholds for families of different sizes and

Selected Abbreviations

CPS/ASEC	Current Population Survey's Annual Social and Economic Supplement
FCSU	food, clothing, shelter, and utilities
LIHEAP	Low-Income Home Energy Assistance Program
MOOP	medical out-of-pocket [expenses]

* *The authors are with the Office of Economic Analysis and Comparative Studies, Office of Research, Evaluation, and Statistics, Office of Retirement and Disability Policy, Social Security Administration.*

Selected Abbreviations—*Continued*

MSA	metropolitan statistical area
NSLP	National School Lunch Program
SNAP	Supplemental Nutrition Assistance Program
SPM	supplemental poverty measure
SSA	Social Security Administration
SSI	Supplemental Security Income
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children

compositions that are compared with before-tax cash income to determine a family's poverty status.[2] That measure was developed in the early 1960s by SSA's Mollie Orshansky. The poverty thresholds associated with the official measure are the minimum amounts of such income that families of particular sizes and compositions need in order to be considered not poor.[3] When they were developed, the official thresholds represented the cost of a minimum food diet multiplied by 3 (to allow for expenditures on other goods and services). The thresholds have been kept constant in purchasing power over time by increasing their money values to keep pace with increases in the general price level.

Critics of the official measure point out that the official income or resource measure fails to account for noncash government benefits, taxes, medical out-of-pocket (MOOP) expenses, and work expenses. Those critics also point out that the official thresholds are a very narrow measure of necessary expenditures—that is, food—and are based on very old data.[4] They argue that the official thresholds also fail to adjust for geographic differences in the cost of living, and that the official measure's unit of analysis (the Census-defined family) is too narrow.[5]

In November 2011, the Census Bureau released its first report on the new SPM (Short 2011).[6] The SPM addresses numerous concerns of official-measure critics, and its intent is to provide an improved statistical picture of poverty. The SPM income or resource measure is cash income *plus* in-kind government benefits (such as food stamps and housing subsidies) *minus* nondiscretionary expenses (taxes, MOOP expenses, and work expenses). The SPM thresholds are based on a broad measure of necessary expenditures—food, clothing, shelter, and utilities (FCSU)—and are based on recent, annually updated expenditure data. The SPM thresholds are adjusted for geographic differences in the cost of living. The SPM uses a broader unit of analysis that treats cohabiters and their relatives in a more satisfactory way.[7]

The official poverty measure and the SPM produce rather different estimates of the composition of poverty among demographic and socioeconomic groups (by age, race, Social Security beneficiary status, and so forth). Moreover, the impact of taxes (payroll taxes, refundable tax credits, and income taxes) and in-kind government benefits (food stamps, housing subsidies, and so forth) are directly reflected in SPM estimates, but not in official poverty estimates.

In the next section, we describe in more detail the various features of the SPM (unit, resource, and threshold measures) and contrast them with the corresponding features of the official poverty measure. In the following two sections, we present for 2012 an empirical examination of the two poverty measures. First, for various groups, we compare the SPM estimates with official estimates. We present some estimates for all age groups, but focus on children (aged 0–17). Then, we estimate the effects of various features of the SPM on poverty levels among children. In effect, we attempt to discern why the SPM estimates for children differ from the official estimates.

We find that for the total population, the SPM poverty rate (16.0 percent) exceeds the official poverty rate (15.1 percent).[8] For broad age groups, the SPM and official poverty measure give quite different results. The SPM shows substantially less poverty for persons younger than age 18 (a decrease in the poverty rate from 22.3 percent to 18.1 percent) and much more poverty for persons aged 65 or older (an increase from 9.1 percent to 14.8 percent). For nonaged adults (18–64), the SPM poverty rate (15.5 percent) exceeds the official rate (13.7 percent). We find that lower SPM poverty rates hold for all of the age subgroups in the 0–17 age range.

Many children are classified as poor by only one of the two measures. Approximately 3.4 percent of the children in our sample are counted as nonpoor under the official measure, but as poor under the SPM; on the other hand, 7.6 percent of children are counted as poor under the official measure, but as nonpoor under the SPM. About 14.7 percent of children are considered poor under both poverty measures.

We examine the poverty of children for various demographic and socioeconomic groups. Most groups of children have a decrease in poverty. Among the groups of children with the largest percentage decreases in poverty are those residing outside metropolitan statistical areas (MSAs), those in units that

have an owner without a mortgage, and those living in the Midwest.[9] A few groups (including children living in the West, those in units that have an owner with a mortgage, and those in units headed by a person with a bachelor's degree) have very small changes in poverty. Two groups of children (Asians and those with private health insurance) have substantial increases in poverty.

As we show later, the net effect of all changes (from the official poverty measure to the SPM) in the *resource measure* decreases the poverty rate of children by 3.4 percentage points;[10] the net effect of the change in the *unit of analysis* decreases the poverty rate of children by 2.2 percentage points; and the net effect of all changes in the *threshold measure* increases the poverty rate by 2.3 percentage points.

Key Features of the Two Poverty Measures: Descriptions and Comparisons

Measurement of poverty within the population has three critical elements:

1. *Unit* measures. Which individuals in a household can reasonably be expected to share resources?
2. *Resource* measures. What should be counted as resources?
3. *Threshold* measures. What minimum resources are required to be considered nonpoor?

In this section, we consider each of those elements in turn.[11] For the SPM and official poverty estimates examined in this article, we use the public-use version of the March 2013 Current Population Survey's Annual Social and Economic Supplement (CPS/ASEC), which gives income information for calendar year 2012.[12] We describe the SPM and official elements as they were implemented for the 2013 CPS/ASEC. Box 1 summarizes the conceptual differences between the two poverty measures.

Unit Measures

The official measure uses as its unit of analysis the Census-defined family, which includes all persons residing together who are related by birth, marriage, or adoption; it treats all unrelated individuals aged 15 or older independently. Proponents of the SPM unit criticize the failure of the official unit to include

Box 1.
Poverty measure concepts: Official and SPM

Concept	Official poverty measure	Supplemental Poverty Measure (SPM)
Unit definition	Conventional definition: Families and unrelated individuals	Broadened definition: All related individuals who live at the same address, including any cohabiters and their relatives and foster children
Resource measure	Before-tax cash income	Cash income *plus* noncash transfers (such as food stamps and housing subsidies) and refundable tax credits *minus* income and payroll taxes, medical out-of-pocket expenses, and work expenses (includes childcare expenses)
Threshold level for base two-adult/two-child unit	Three times the cost of a minimum food diet (from the Department of Agriculture), updated by the U.S. Consumer Price Index	33rd percentile of expenditures on food, clothing, shelter, and utilities (from recent Bureau of Labor Statistics surveys) multiplied by 1.2
Threshold adjustments	Implicit equivalence scale that varies by family size, composition, and age of the family head	Explicit equivalence scale that varies by unit size and composition, but not by age of unit head; also, adjustments for differences in housing costs by (1) housing status (owner with a mortgage and so forth) and (2) geographic area

SOURCES: Short (2013), http://www.census.gov/prod/2013pubs/p60-247.pdf; and DeNavas-Walt, Proctor, and Smith (2013), http://www.census.gov/prod/2013pubs/p60-245.pdf.

all persons at an address who are likely to share resources. In particular, those proponents believe that the official-unit concept does not treat cohabiters and their relatives properly.

Proponents of the SPM believe that the SPM unit better represents the unit that shares economic resources. The SPM unit includes all related persons at the same address, as well as any cohabiters and their relatives, and any coresident unrelated children who are cared for by the family (such as foster children).[13] Most children in SPM units that differ from their official units are in SPM units that are larger than their official units; in larger units, there is more resource sharing that tends to reduce the number of people in poverty.

Resource Measures

The official resource measure is family before-tax money income.[14] Persons in families whose before-tax money income is less than the family's threshold are classified as poor. Proponents of the SPM believe that the official resource measure has the following major weaknesses:[15]

1. The official resources measure does not reflect the effects of government benefit and tax programs that alter the resources available to families and, thus, their poverty status. Those programs are in-kind public benefits, refundable tax credits, and payroll and income taxes.[16]
2. The official resource measure does not account for expenses that are necessary to hold a job and to earn income. Those expenses include transportation costs for getting to and from work and the costs of childcare for working families.[17]
3. The official resource measure also does not account for MOOP expenses.[18]

The SPM resource measure attempts to overcome the weaknesses of the official resource measure. The SPM resource measure is the sum of cash income *plus* refundable tax credits and any government in-kind benefits that families can use to meet their basic needs, which are represented in the thresholds, *minus* taxes and other nondiscretionary expenses for critical goods not included in the thresholds. The importance of these various additions to and subtractions from cash income varies greatly across age groups.

Box 2 summarizes the derivation of the SPM resource concept. The SPM resource measure includes the following government in-kind benefit programs: (1) Housing subsidies, (2) the Low-Income Home Energy Assistance Program (LIHEAP), (3) the National School Lunch Program (NSLP), (4) the Supplemental Nutrition Assistance Program or SNAP (formerly known as the Food Stamp Program), and (5) the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).[19]

Housing subsidies, LIHEAP benefits, and SNAP benefits are intended to help both nonaged and aged persons. By contrast, NSLP and WIC benefits are intended to help nonaged persons. All of these programs are targeted to low-income individuals.

The SPM resource measure also includes the following refundable tax credits: (1) the earned income tax credit and (2) the additional federal childcare tax credit. These credits are intended to help low-income working families, especially those with children.

The following expenses are deducted in deriving SPM unit resources: (1) federal individual income tax (after nonrefundable credits), (2) state individual income tax, (3) Social Security tax payments by employees and the self-employed *plus* federal employee retirement payroll deductions, (4) child support paid, (5) MOOP expenses, and (6) work expenses (including childcare expenses).[20]

Box 2.
Deriving SPM unit resources

SPM resources = money income from all sources—

Plus:

- Housing subsidies
- Low-Income Home Energy Assistance Program (LIHEAP)
- National School Lunch Program (NSLP)
- Supplemental Nutrition Assistance Program (SNAP)
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- Refundable tax credits (such as earned income tax credits (EITC))

Minus:

- Federal individual income taxes
- State individual income taxes
- Payroll taxes
- Child support paid
- Medical out-of-pocket (MOOP) expenses
- Work expenses (includes childcare expenses)

SOURCE: Short (2013), http://www.census.gov/prod/2013pubs/p60-247.pdf.

NOTE: SPM = Supplemental Poverty Measure.

It should be clear that the relative impact of various types of expenses on household resources tends to vary by age. For instance, payroll taxes and work expenses affect working families. Child support payments come mostly from nonaged persons. Low-income aged units typically have no or low income-tax liabilities.

MOOP expenses are very important for aged persons, but are also important for those who are nonaged. MOOP expenses include health insurance premiums *plus* out-of-pocket expenses for one's own medical care (hospital visits, medical providers, dental services, prescription medicine, vision aids, and medical supplies) and over-the-counter, health-related products.[21] Subtracting MOOP expenses from income, as with taxes and work expenses, better identifies the amount of income that the unit has available to purchase the basic bundle of goods included in the threshold.

Threshold Measures

The official measure uses a set of thresholds for families of different sizes and compositions. The threshold values depend on unit size, number of children, and age of the unit head (younger than 65 *or* 65 or older). At the time they were developed, the official thresholds represented the cost of a minimum food diet multiplied by 3 (to allow for expenditures on other goods and services).[22] The thresholds are updated each year using the U.S. Consumer Price Index for all items.

Proponents of the SPM believe that the official threshold measure has the following major weaknesses:

1. The official thresholds are based on only one category of necessary expenditures; that is, food.[23] The expenditure information used is more than 50 years old. The share of food in expenditures is much lower now than it was 50 years ago. The threshold levels are fixed in real or inflation-adjusted dollars and do not reflect increases over time in real spending on basic needs.
2. The official threshold measure does not adjust for differences in expenditure needs resulting from differences in unit housing-tenure status. For example, homeowners with mortgages, on average, need to make sizable mortgage payments.[24]
3. The official threshold measure does not adjust for geographic differences in the cost of living, which are often large.[25]
4. The official thresholds use family size and composition adjustments that in some cases produce questionable results. For example, some single-parent families have higher thresholds than married-couple families of the same size, implying that children require more resources than adults in certain size families. Critics of the official measure believe that the evidence used in setting thresholds for aged units and for one-person nonaged units is quite weak. In addition, the fact that the equivalence scales are implicit and not transparent is a substantial weakness.

The SPM threshold measure attempts to overcome the disadvantages of the official threshold measure and has the following properties:

1. SPM thresholds represent the amount needed for a basic set of goods that consists of FCSU and an additional amount allowed for other basic needs (household supplies, personal care, nonwork-related transportation). The basic FCSU needs reflect expenditures on this basic bundle of goods around the 33rd percentile of the expenditure distribution, as reported in the Bureau of Labor Statistics' Consumer Expenditure Survey (CE).[26] The SPM thresholds for 2012 are based on 2008–2012 data from the CE. To include other basic needs in the threshold, the basic FCSU needs are multiplied by 1.2. Over time, the thresholds are not fixed in real or inflation-adjusted dollars. Each year, the thresholds are updated using the most recent CE data.
2. SPM thresholds are adjusted for differences in shelter and utility expenditure needs. The thresholds depend on unit housing-tenure status. The groups within that category consist of units that have owners with mortgages, owners without mortgages, and renters. The adjustments are based on CE data.
3. The thresholds are adjusted for geographic differences in housing costs. The adjustment factors are for more than 300 areas and are based on American Community Survey estimates.
4. The threshold for units with two children (the base threshold) is derived from CE data as described in item 1 above. The thresholds for other unit types (differing in size and number of children) are then derived by applying an explicit equivalence scale to that base threshold.[27] Equivalence scales are measures of the relative cost of living for units of different sizes and compositions that are otherwise

similar. For example, if a unit of two adults can live as well as a unit of two adults and two children while spending only three-fourths as much, then relative to the reference unit of two adults and two children, the equivalence-scale value for a two-adult unit is three-fourths. For the purpose of poverty measurement, an equivalence scale is used to adjust the threshold value for the reference unit to provide corresponding thresholds for other unit types. We use a three-parameter equivalence scale, which is described later.

Official Poverty Measure and SPM Estimates: A Comparison

In this section, we begin our empirical examination of the two poverty measures. For the various age groups, we compare the SPM estimates with the official poverty measure estimates. In the following section, for our focus group (persons younger than age 18), we estimate the effects of various features of the SPM on poverty levels, noting why SPM estimates for children differ from the official estimates.

We begin this section by looking at poverty for the total population and for various groups of nonaged and aged persons. Next, we examine deep poverty and the distribution of people by welfare-ratio intervals. Then, we examine movements into and out of poverty. Finally, we look at the poverty of children for various demographic and socioeconomic groups.

Poverty by Age Groups

Table 1 gives numbers and percentages of people in poverty for the total population and for various age groups and age subgroups. For the total population, the SPM poverty rate (16.0 percent) exceeds the official rate (15.1 percent).[28] The number of people poor under the SPM (49.8 million) exceeds the number poor under the official measure (47.0 million) by 2.8 million or 6 percent.[29] MOOP expenses are important in causing SPM poverty to exceed official poverty.[30] The average ratio of resources to threshold is higher for the SPM-poor population (.565) than for the official-poor population (.502). We refer to the ratio of unit resources to the unit threshold as a welfare ratio.

Both Table 1 and the accompanying chart show that for broad age groups, the SPM and official poverty measure give quite different results. Compared with the official measure, the SPM shows much *less* poverty for children (younger than age 18) and much *more* poverty for the aged (65 or older). For children, the SPM poverty rate (18.1 percent) is lower than the official rate (22.3 percent) by 4.2 percentage points or 19 percent.[31] Refundable tax credits are very important for children. For the aged population (65 or older), the SPM poverty rate (14.8 percent) exceeds the official rate (9.1 percent) by about 5.8 percentage points or 63 percent. MOOP expenses are very important for the aged.[32] Note that the official poverty rate is much higher for children than that for the aged population; however, the SPM poverty rate for children is only modestly higher than that for the aged. For the nonaged adult population (18–64), the SPM rate (15.5 percent) exceeds the official rate (13.7 percent) by 1.8 percentage points or 13 percent. For nonaged adults, MOOP expenses are important in causing SPM poverty to be greater than official poverty.[33] Compared with the official measure, the SPM shows much smaller age-group differences in poverty rates (refer to the chart).

For children, the average welfare ratio is much higher for those poor under the SPM (.630) than for those poor under the official measure (.497). However, for the aged population, the average welfare ratio is markedly lower for those poor under the SPM (.535) than for those poor under the official measure (.622).[34]

For children, we also look at poverty rates for detailed age subgroups (Table 1). For all three age subgroups (0–5, 6–11, and 12–17), the SPM rates fall short of the official rates. For the youngest two subgroups, the shortfalls are about 5 percentage points; for the oldest subgroup, the shortfall is about 2 percentage points.

Deep Poverty by Age Groups

People in units with unit resources that amount to less than 50 percent of the unit threshold are said to be in deep SPM or deep official poverty.[35] Table 2 gives numbers and percentages of people in deep poverty for the same age groups and age subgroups shown in Table 1.

For the total population, the SPM deep poverty rate (5.2 percent) is lower than the official-measure deep poverty rate (6.7 percent). By contrast, as discussed earlier, the SPM poverty rate (16.0 percent) exceeds the official poverty rate (15.1 percent). Although the SPM counts 4.8 million fewer people in deep poverty, the number of SPM nondeep poor exceeds the official-measure count of nondeep poor by 7.6 million people. SNAP benefits and refundable tax credits are important determinants in causing SPM deep poverty to be

Table 1.
Number and percentage of people in poverty under the two poverty measures, by selected age groups, 2012

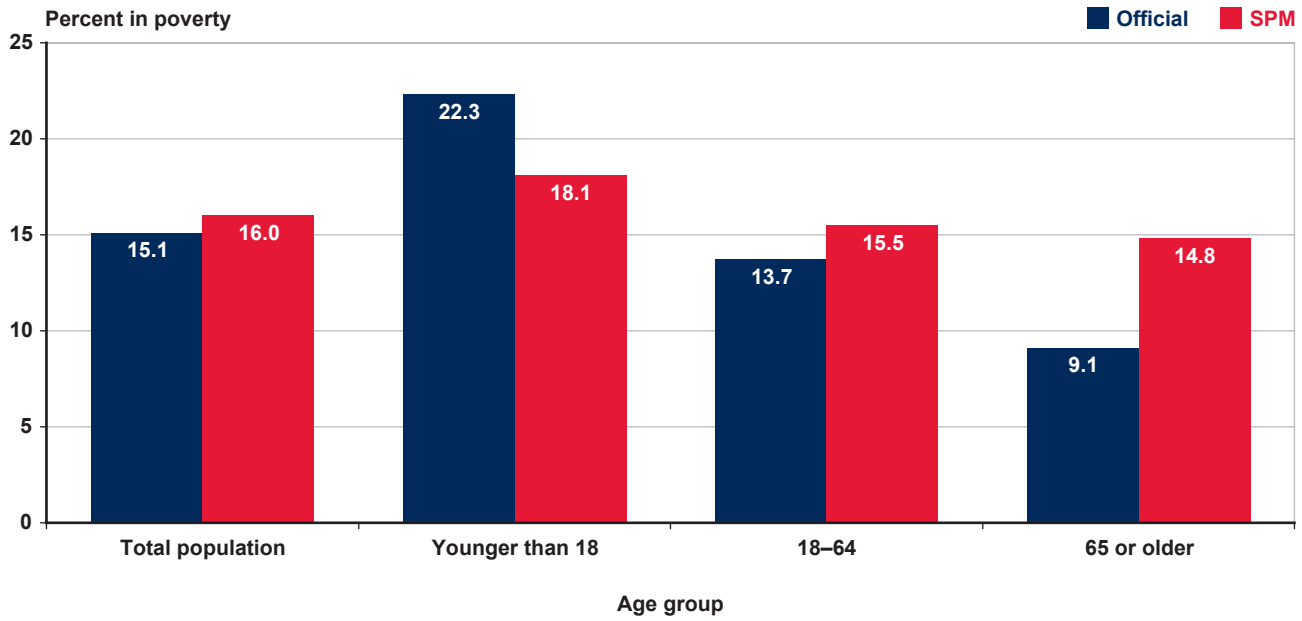
Age group	Total number	Official poverty		SPM poverty		Percentage point difference between SPM and official poverty rates
		Number	Percent	Number	Percent	
Total population	311,116	46,962	15.1	49,785	16.0	0.9
Younger than 18	74,187	16,541	22.3	13,433	18.1	-4.2
0–5	24,053	6,108	25.4	4,857	20.2	-5.2
6–11	24,538	5,680	23.1	4,389	17.9	-5.3
12–17	25,596	4,752	18.6	4,187	16.4	-2.2
18–64	193,642	26,496	13.7	29,934	15.5	1.8
65 or older	43,287	3,926	9.1	6,418	14.8	5.8

SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTES: Numbers are in thousands. The values in the last column do not necessarily equal the difference between the SPM and official-measure poverty rates because of rounding.

SPM = Supplemental Poverty Measure.

Chart.
Official and SPM poverty rates, by broad age groups, 2012



SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTE: SPM = Supplemental Poverty Measure.

Table 2.

Number and percentage of people in deep poverty[a] under the two poverty measures, by selected age groups, 2012

Age group	Total number	Official deep poverty		SPM deep poverty		Percentage point difference between SPM and official deep poverty rates
		Number	Percent	Number	Percent	
Total population	311,116	20,868	6.7	16,067	5.2	-1.5
Younger than 18	74,187	7,612	10.3	3,532	4.8	-5.5
0–5	24,053	3,050	12.7	1,242	5.2	-7.5
6–11	24,538	2,499	10.2	1,104	4.5	-5.7
12–17	25,596	2,062	8.1	1,185	4.6	-3.4
18–64	193,642	12,082	6.2	10,493	5.4	-0.8
65 or older	43,287	1,175	2.7	2,042	4.7	2.0

SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTES: Numbers are in thousands. The values in the last column do not necessarily equal the difference between the SPM and official-measure deep poverty rates because of rounding.

SPM = Supplemental Poverty Measure.

a. People in units with resources that amount to less than 50 percent of threshold.

lower than official-measure deep poverty. The average welfare ratio is lower for the SPM deep poor (.095) than for the official-measure deep poor (.178).

For broad age groups of the aged and nonaged, the SPM and official poverty measure give quite different results for deep poverty. Compared with the official measure, for deep poverty (and for overall poverty), the SPM shows a much lower rate for children (younger than age 18) and a much higher rate for the aged (65 or older). For children, the SPM deep poverty rate (4.8 percent) is less than half the official poverty rate (10.3 percent). For children, SNAP benefits and refundable tax credits are important determinants in causing SPM deep poverty to be lower than official-measure deep poverty. For the aged population (65 or older), the SPM deep poverty rate (4.7 percent) exceeds the official poverty rate by 2.0 percentage points or 74 percent. For that group, MOOP expenses are very important in causing SPM deep poverty to be higher than official-measure deep poverty. Note that under the official measure, the deep poverty rate for children is much higher than that for the aged population; however, under the SPM, the deep poverty rate of children is about the same as that for the aged. For nonaged adults (18–64), the SPM deep poverty rate (5.4 percent) is lower than the official deep poverty rate (6.2 percent) by 0.8 percentage points or 13 percent. For that group, SNAP benefits and refundable tax credits are important determinants in causing SPM deep poverty to be lower than official-measure deep poverty.

For children, the average welfare ratio for the SPM deep poor (.168) is a bit lower than that for the official-measure deep poor (.202). For the aged, the average welfare ratio for the SPM deep poor (-.013) is substantially lower than that for the official-measure deep poor (.171).[36,37]

We also look at deep poverty rates for detailed age subgroups of children (Table 2). For all three age subgroups (0–5, 6–11, and 12–17), the SPM rates fall short of the official-measure deep poverty rates, with differences decreasing with age, from 7.5 percentage points to 3.4 points.

Distributions of People by Welfare-Ratio Classes and Age Groups

We next compare distributions of economic welfare measured using SPM concepts with those measured using official poverty measure concepts. Table 3 shows the percentage distributions of people in the various age groups and age subgroups by welfare-ratio intervals. As we stated earlier, the welfare ratio is defined as the ratio of unit resources to the unit poverty threshold.[38] People in poverty and in deep poverty are those in units with welfare ratios less than 1.0 and less than 0.5.

Table 3.

Percentage distribution of people under the two poverty measures, by welfare-ratio[a] intervals and selected age groups, 2012

Age group	Welfare-ratio intervals						
	Less than 0.50	0.50–0.99 [b]	1.00–1.24 [b]	1.25–1.49 [b]	1.50–1.99 [b]	2.00–3.99 [b]	4.00 or more
				Official			
Total population	6.7	8.4	4.7	4.9	9.6	30.0	35.7
Younger than 18	10.3	12.0	5.7	5.8	10.4	29.0	26.9
0–5	12.7	12.7	5.9	5.7	10.6	27.6	24.9
6–11	10.2	13.0	6.0	5.7	10.0	28.9	26.2
12–17	8.1	10.5	5.3	5.9	10.5	30.4	29.4
18–64	6.2	7.4	4.2	4.3	8.6	29.5	39.7
65 or older	2.7	6.4	5.5	6.3	12.8	33.7	32.6
				SPM			
Total population	5.2	10.8	8.5	8.5	14.2	34.6	18.2
Younger than 18	4.8	13.3	10.6	10.7	16.3	32.7	11.7
0–5	5.2	15.0	12.0	11.3	16.0	31.0	9.5
6–11	4.5	13.4	10.7	10.7	16.4	32.6	11.8
12–17	4.6	11.7	9.1	10.2	16.3	34.4	13.6
18–64	5.4	10.0	7.5	7.6	13.5	35.7	20.3
65 or older	4.7	10.1	9.3	8.8	14.3	33.1	19.7

SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTES: Row percentages sum to approximately 100.0.

SPM = Supplemental Poverty Measure.

a. The ratio of unit resources to the unit poverty threshold.

b. Less than the lower bound of next interval.

Compared with the official poverty measure, for the total population, the SPM shows a higher share of people in each of the five middle welfare-ratio classes (with welfare ratios equal to or greater than 0.50 and less than 4.00) and a much lower share in the top welfare-ratio class (with ratios of 4.00 or more). This pattern also holds for all of the age subgroups of the nonaged population shown in Table 3. For children, the official poverty measure assigns 63 percent to the five middle welfare-ratio classes compared with 84 percent under the SPM. The lower shares in the top welfare-ratio class result in large part from the subtraction of tax payments in computing the SPM resource measure.

"Movements" Into and Out of Poverty by Age Groups

When the basis for poverty measurement changes, the composition of the population designated as poor also changes. We refer to such redesignations in poverty status as *movements* into and out of poverty that are solely attributable to the switch to a different method for determining who is poor.[39] We now discuss the effects on poverty status (movements into and out of poverty) of changing the way that poverty is measured—from the official poverty measure to the SPM.

Table 4 gives percentages of people exiting poverty, staying in poverty, and entering poverty for the various age groups and age subgroups. We know that for the total population, the SPM poverty rate (16.0 percent) exceeds the official rate (15.1 percent). Switching to the SPM moves some people into poverty (official nonpoor who become SPM poor) and others out of poverty (official poor who become SPM nonpoor). That switch to the SPM moves about 4.9 percent of the population into poverty and about 4.0 percent out of poverty, which accounts for the 0.9 percentage point net increase in the measured poverty rate. Payroll taxes, work expenses, and especially MOOP expenses are important determinants in moving people into poverty. Refundable tax credits and SNAP benefits

Table 4.
Percentage of people defined as poor under the official poverty measure and poverty-status effects of a shift to the SPM, by selected age groups, 2012

Age group	Official poor [a]	Exit poverty [b]	Stay in poverty [c]	Enter poverty [d]	SPM poor [e]
Total population	15.1	4.0	11.1	4.9	16.0
Younger than 18	22.3	7.6	14.7	3.4	18.1
0–5	25.4	8.9	16.5	3.7	20.2
6–11	23.1	8.4	14.8	3.1	17.9
12–17	18.6	5.8	12.8	3.6	16.4
18–64	13.7	3.2	10.5	5.0	15.5
65 or older	9.1	1.4	7.7	7.2	14.8

SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTE: SPM = Supplemental Poverty Measure.

a. "Exit poverty" column *plus* "Stay in poverty" column.

b. Official poor, but SPM nonpoor.

c. Official poor and SPM poor.

d. Official nonpoor, but SPM poor.

e. "Stay in poverty" column *plus* "Enter poverty" column.

are important determinants in moving people out of poverty. About 11.1 percent of the population is considered poor under both poverty measures.

For children (younger than age 18), the SPM poverty rate (18.1 percent) is lower than the official rate (22.3 percent). A switch to the SPM moves about 3.4 percent of children into poverty and about 7.6 percent out of poverty. Payroll taxes, work expenses, and especially MOOP expenses are important determinants in moving children into poverty. Refundable tax credits and SNAP benefits are important in moving children out of poverty. About 14.7 percent of children are considered poor under both poverty measures.[40]

For the aged (65 or older), the SPM poverty rate (14.8 percent) exceeds the official rate (9.1 percent). Switching to the SPM moves about 7.2 percent of the aged population into poverty and only about 1.4 percent out of poverty, which accounts for the large increase in that group's poverty rate. MOOP expenses are especially important in moving aged persons into poverty. Housing subsidies are important in moving aged persons out of poverty. About 7.7 percent of the aged population is considered poor under both poverty measures.

For nonaged adults (18–64), the SPM poverty rate (15.5 percent) exceeds the official rate (13.7 percent). Switching to the SPM moves about 5.0 percent of the nonaged adult population into poverty and about 3.2 percent out of poverty. MOOP expenses, work expenses, and payroll taxes are important determinants in moving nonaged adults into poverty. Refundable tax credits and SNAP benefits are important determinants in moving nonaged adults out of poverty. About 10.5 percent of nonaged adults are considered poor under both poverty measures.

Table 5 gives joint percentage distributions of children, by their official poverty measure and SPM welfare-ratio classes, for those exiting poverty, entering poverty, poor under both measures, and not poor under both measures. Much of the movement into and out of poverty among children occurs near the poverty line. Thus, of the 2.6 million children entering poverty, about 63 percent move from the 1.00–1.49 welfare-ratio class to the 0.50–0.99 class.[41] Similarly, of the 5.7 million children exiting poverty, 64 percent move from the 0.50–0.99 welfare-ratio class to the 1.00–1.49 class. Of those poor under both poverty measures, 4 percent move into deep poverty, and 30 percent move out of deep poverty.

Poverty of Children by Various Demographic and Socioeconomic Characteristics

We now turn to more detailed comparisons of the SPM and official poverty measure for children and examine results for various demographic and socioeconomic groups.

Table 5.

Changes in the poverty status of children, by welfare-ratio[a] interval, 2012: Joint percentage distributions by change category

Official measure welfare-ratio interval	SPM welfare-ratio interval					
	Less than 0.50	0.50–0.99 [b]	1.00–1.49 [b]	1.50–1.99 [b]	2.00–3.99 [b]	4.00 or more
			Exiting poverty [c]			
Less than 0.50	0.0	0.0	16.7	4.1	4.4	0.5
0.50–0.99 [b]	0.0	0.0	64.3	7.4	2.5	0.0
			Entering poverty [d]			
1.00–1.49 [b]	4.3	62.5	0.0	0.0	0.0	0.0
1.50–1.99 [b]	2.1	20.3	0.0	0.0	0.0	0.0
2.00–3.99 [b]	1.5	8.2	0.0	0.0	0.0	0.0
4.00 or more	1.0	0.1	0.0	0.0	0.0	0.0
			Poor under both measures			
Less than 0.50	26.1	30.5	0.0	0.0	0.0	0.0
0.50–0.99 [b]	4.3	39.1	0.0	0.0	0.0	0.0
			Not poor under both measures			
1.00–1.49 [b]	0.0	0.0	9.2	2.7	0.4	0.0
1.50–1.99 [b]	0.0	0.0	6.9	4.9	1.0	0.0
2.00–3.99 [b]	0.0	0.0	4.2	12.7	21.6	0.2
4.00 or more	0.0	0.0	0.0	0.4	20.3	15.4

SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTES: For each change category (children who exit poverty, those who enter poverty, those poor under both poverty measures, and those not poor under both poverty measures), the percentages sum to approximately 100.0.

SPM = Supplemental Poverty Measure.

a. The ratio of unit resources to the unit poverty threshold.

b. Less than the lower bound of the next higher interval.

c. Official poor, but SPM nonpoor.

d. Official nonpoor, but SPM poor.

Table 6 shows population counts, poverty rates, and differences in poverty for a sizable number of groups, by selected characteristics. Note that the population counts range from quite large (69 million) to quite small (less than 4 million). Most groups of children have a decrease in poverty. Among the groups of children with the largest percentage decreases in poverty are those residing outside of MSAs, those in units that have an owner without a mortgage, and those living in the Midwest (column 5). Among the groups with the largest percentage point decreases in poverty are children with only public health insurance, those in units with a nonmarried head, and those living outside of MSAs (column 4). A few groups (including children living in the West, those in units that have an owner with a mortgage, and those in units headed by a person with a bachelor's degree) have very small changes in poverty. Two groups of children (Asians and those with private health insurance) have substantial increases in poverty.

Among unit housing-tenure status groups, children in units that have owners without mortgages have a quite large relative decrease in poverty (-33 percent); that is, their SPM poverty rate is substantially lower than their official-measure poverty rate. Children in units that have owners with mortgages show very little change in poverty (an increase of 5 percent). Children in units that have a renter show a decrease in poverty of 22 percent. This pattern of percentage differences reflects in considerable part the fact that the SPM thresholds take housing-tenure status into account. SPM thresholds for units without mortgages are considerably lower than those for other units. In addition, MOOP expenses and taxes are more important

Table 6.
Percentage of children aged 0–17 in poverty under the two poverty measures, by selected characteristics, 2012

Characteristic	Number	Percent		Difference between SPM and official poverty rates	
		Official poor	SPM poor	Percentage point	Percent
Total population	74,187	22.3	18.1	-4.2	-19
Sex and marital status of head [a]					
Male	34,431	14.1	12.6	-1.5	-11
Married [b]	28,597	10.9	10.5	-0.5	-4
Not married [c]	5,835	29.6	23.1	-6.5	-22
Female	39,756	29.4	22.9	-6.5	-22
Married	20,845	12.7	11.3	-1.4	-11
Not married	18,911	47.8	35.6	-12.2	-25
Marital status of head [a]					
Married	49,441	11.7	10.8	-0.9	-7
Not married	24,746	43.5	32.7	-10.9	-25
Race[d] and Hispanic origin					
White	54,388	18.9	15.5	-3.5	-18
White, not Hispanic	38,978	12.8	9.6	-3.2	-25
Black	11,161	38.4	29.2	-9.1	-24
Asian	3,611	14.2	17.6	3.4	24
Hispanic (any race)	17,789	34.3	30.3	-4.0	-12
Nativity of head [a]					
Native born	58,451	20.0	15.2	-4.8	-24
Foreign born	15,736	30.8	29.0	-1.8	-6
Naturalized citizen	6,599	19.3	18.7	-0.6	-3
Not a citizen	9,137	39.1	36.4	-2.7	-7
Unit housing-tenure status					
Owner with a mortgage	35,787	7.8	8.2	0.4	5
Owner without a mortgage/rent free[e]	9,973	22.3	15.0	-7.2	-33
Renter	28,426	40.6	31.7	-8.9	-22
Residence[f]					
Inside MSAs	62,826	21.4	18.5	-2.8	-13
Outside MSAs	10,763	26.9	15.5	-11.5	-43
Region					
Northeast	12,150	20.1	17.4	-2.7	-14
Midwest	15,881	20.3	14.0	-6.3	-31
South	28,115	24.7	18.6	-6.1	-25
West	18,041	21.7	21.4	-0.4	-2
Health insurance coverage					
Private insurance	44,586	6.0	7.3	1.2	20
Public insurance only	23,015	50.8	36.0	-14.9	-29
No insurance	6,586	32.6	29.2	-3.4	-11
SPM unit's beneficiary status					
With Social Security and/or SSI	8,063	33.7	26.1	-7.6	-23
Without Social Security or SSI	66,124	20.9	17.1	-3.8	-18

Continued

Table 6.
Percentage of children aged 0–17 in poverty under the two poverty measures, by selected characteristics, 2012—*Continued*

Characteristic	Number	Percent		Difference between SPM and official poverty rates	
		Official poor	SPM poor	Percentage point	Percent
Work experience of head [a]					
All workers	58,319	15.4	11.9	-3.5	-23
Worked full time, year round	41,409	8.7	7.4	-1.3	-15
Worked less than full time, year round	16,910	31.8	22.8	-9.0	-28
Did not work during year	15,868	47.7	41.0	-6.7	-14
SPM unit's payroll tax status					
With payroll tax	68,925	17.5	13.6	-3.9	-22
Without payroll tax	5,262	84.5	76.7	-7.8	-9
Disability status					
With a disability	3,874	41.6	34.1	-7.5	-18
Without a disability	69,734	21.4	17.3	-4.0	-19
Education of head [a]					
Less than a high school diploma	10,399	51.3	40.8	-10.5	-20
High school diploma or more	63,788	17.6	14.4	-3.2	-18
High school diploma	18,839	30.1	23.7	-6.5	-21
Some college	21,812	19.6	15.5	-4.1	-21
Bachelor's degree or more	23,137	5.4	5.8	0.4	8
Bachelor's degree	14,909	6.3	6.6	0.3	5
More than a bachelor's degree	8,228	3.8	4.4	0.6	15
Less than bachelor's degree	51,050	29.9	23.7	-6.3	-21

SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTES: Numbers are in thousands.

MSA = metropolitan statistical area; SPM = Supplemental Poverty Measure; SSI = Supplemental Security Income.

a. The term "head" always refers to the head of the SPM unit.

b. Married, spouse present in the household.

c. In addition to people widowed, divorced, or never married, this category also includes those who are married with the spouse absent from the household.

d. Excludes people who report more than one race.

e. Includes nonowners who live rent free.

f. Excludes a small number of persons where confidentiality rules prevent identification of MSA status on the public-use data file. Such identification is available on the Census Bureau's internal data file.

in increasing poverty for children in units that have owners with mortgages than for those in units that have renters. SNAP benefits and housing subsidies are more important in reducing poverty for children in units that have renters than for children in units that have owners with mortgages.

Children residing inside MSAs have a modest decrease in poverty (-13 percent), but children who live outside MSAs have a very sizable decrease in poverty (-43 percent). This pattern of percentage differences reflects the fact that the SPM threshold incorporates adjustments for geographic differences in housing costs, which are, on average, considerably higher inside MSAs than they are outside MSAs.

Among regions, children residing in the West and Northeast have the smallest percentage decreases in poverty (-2 and -14 percent). Children living in the Midwest and South have large percentage decreases in poverty (31 percent and 25 percent). Again, these patterns reflect the fact that the SPM threshold incorporates adjustments for geographic differences in housing costs. In addition, refundable tax credits are

more important in reducing poverty for children residing in the Midwest and South than for those residing in the West and Northeast.

Hispanics have a smaller relative decrease in poverty (-12 percent) than do non-Hispanic whites (-25 percent).[42] Children in SPM units with foreign-born heads have a much smaller relative decrease in poverty (-6 percent) than do children in units with native-born heads (-24 percent).[43] These patterns in large part reflect the fact that the SPM threshold incorporates adjustments for geographic differences in housing costs.[44] In addition, SNAP benefits are more important in reducing poverty for native-born children than for those who are foreign born.[45]

Asian children have a large relative increase in poverty (24 percent). White and black children have similar decreases in poverty (-18 percent and -24 percent). The geographic adjustment for cost-of-living differences sharply increases the poverty of Asian children, but causes little relative change in the numbers of poor white and black children.[46] In addition, refundable tax credits, SNAP benefits, and other noncash transfers are more important in reducing the poverty of white and black children than of Asian children.[47]

For each of the six previously discussed categories (unit housing-tenure status, residence, region, Hispanic origin, nativity of head, and race), differences between the SPM and official poverty measure thresholds play a key role in determining the patterns of percentage differences in poverty changes.

The relative decrease in poverty is considerably smaller for children in units with married heads (-7 percent) than for those in units with nonmarried heads (-25 percent) and considerably smaller for those in units with male heads (-11 percent) than for those in units with female heads (-22 percent). These patterns reflect the net effects of a number of offsetting effects that are due to differences in threshold, resource, and unit measures.

Children in units with a working head have a somewhat larger relative decrease in poverty (-23 percent) than do those in units with a nonworking head (-14 percent).[48] This pattern reflects the net effects of a number of sizable offsetting effects. Payroll taxes, work expenses, and MOOP expenses are more important in increasing the poverty of children in units with working heads. By contrast, refundable tax credits and other noncash transfers are more important in reducing the poverty of children in units with working heads.

Children in SPM units with payroll tax liability have a sizable relative decrease in poverty (-22 percent).[49] Children in units without payroll tax liability have very high poverty rates, but the shift from the official poverty measure to the SPM produces a modest relative decrease in their poverty rate (-9 percent). This pattern again reflects the net effects of a number of sizable offsetting effects. Payroll taxes, work expenses, and MOOP expenses are more important in increasing the poverty of children in units with payroll taxes. Refundable tax credits, other noncash transfers, and the SPM unit definition are more important in reducing the poverty of children in units with payroll taxes.

The percentage decrease in poverty among children in units with disabled heads is about the same as that for those in units with nondisabled heads (-18 percent and -19 percent).[50,51] This similarity of percentage decreases again reflects the net effects of a number of sizable offsetting effects. Refundable tax credits are much more important in reducing the poverty of children in units with nondisabled heads; the refundable earned income tax credit is received by working families.[52] SNAP benefits and housing subsidies are a bit more important in reducing the poverty of children in units with disabled heads. In addition, work expenses and payroll taxes are somewhat more important in increasing the poverty of children in units with nondisabled heads.[53]

Children in units receiving Social Security benefits and/or SSI payments have a slightly larger relative decrease in poverty (-23 percent) than do children in units without Social Security or SSI (-18 percent).[54] This similarity of percentage decreases again reflects the net effects of a number of sizable offsetting effects. SNAP benefits and housing subsidies are somewhat more important in reducing the poverty of children in beneficiary units. In addition, the geographic adjustments for cost-of-living differences somewhat reduces the poverty of children in beneficiary units and increases the poverty of those in nonbeneficiary units. Also, payroll taxes and work expenses are somewhat more important in increasing the poverty of children in nonbeneficiary units.[55] Refundable tax credits are much more important in reducing the poverty of children in nonbeneficiary units.

Children in units with private health insurance have a sizable increase in poverty (20 percent).[56] On the other hand, children in units with only public health insurance and those in units with no health insurance

have decreases in poverty (-29 and -11 percent).[57] This pattern reflects the fact that MOOP expenses, taxes, and work expenses are more important in increasing the poverty of children in units with private insurance than for those in units with only public insurance or no insurance.[58] SNAP benefits and housing subsidies are more important in reducing the poverty of children in units with only public insurance than for those in units with no insurance.

For children in units headed by a person without a bachelor's degree, poverty *decreases* by about 20 percent for each of the three listed levels of education. For children in units headed by a person with a bachelor's degree or more, poverty *increases* by 8 percent. (The increases in poverty are 5 percent for children in units headed by a person with only a bachelor's degree and 15 percent for children in units headed by a person with more than a bachelor's degree.) This pattern in part reflects the fact that SNAP benefits and other noncash transfers are more important in reducing the poverty of children in units headed by a person with less than a bachelor's degree. In addition, MOOP expenses are more important in increasing the poverty of children in units headed by a person with a bachelor's degree or more.

For each of these eight previously discussed categories (marital status of head, sex of head, work experience of head, SPM unit's payroll tax status, disability status, SPM unit's beneficiary status, health insurance coverage, and education of head), differences between the SPM and official resource measures play a key role in determining the patterns of percentage differences in poverty changes. For a number of those categories, the patterns of percentage differences in poverty changes are the net result of sizable offsetting resource-measure effects.

Effects of Various Features of the SPM on the Poverty of Children

The 4.2 percentage point decrease in measured poverty among children can be attributed to specific features of the SPM. A number of those features decrease poverty, but others increase it. We now consider the effects of the SPM's resource, threshold, and unit measures.

Effects of Elements of the Resource Measure

In the following three subsections, we (1) consider the effects of noncash transfers and refundable tax credits, (2) examine the effects of taxes and other nondiscretionary expenses, and (3) analyze the combined effect of all the resource-measure elements.

Noncash transfers and refundable tax credits. For each of these programs, we compare SPM poverty with the poverty that results when the benefits of the program are subtracted from the resource measure, but the SPM thresholds and SPM units are unchanged.[59] We view the change in poverty as the result of a specified change in the way it is measured.

There is another way to interpret the change in poverty. We could view the change in poverty as the effect of a change in program policy for a given measure of poverty, namely, the effect on SPM poverty of introducing the program. Our estimate of the increase in resources that is the result of the introduction of the program equals the amount of program benefits.[60] It does not include any changes in other resource components that are due to the program's behavioral (work effort and so forth) and interprogram effects.[61]

The six in-kind benefit and tax programs considered here are refundable tax credits,[62] housing subsidies, LIHEAP, NSLP, SNAP, and WIC. Table 7 (top panel, column 1) gives the percentage point decreases in the SPM poverty rate for the total population of children; those decreases are attributed to each of the six programs. Four of the programs—refundable tax credits, SNAP, housing subsidies, and NSLP—have quite discernible effects on SPM poverty of children. Refundable tax credits have by far the largest impact—a reduction in the poverty rate of 6.7 percentage points. Including SNAP benefits, housing subsidies, NSLP subsidies in the resource measure reduces the measured poverty rate by 2.9, 1.4, and 0.9 percentage points, respectively. Refundable tax credits are primarily intended to help low-income working families with children.[63] SNAP benefits and housing subsidies target low-income nonaged and aged persons. The NSLP targets low-income families with school-age children. The other two programs (LIHEAP and WIC) are not large enough to have sizable effects on the poverty rates among children aged 0–17. The sum of the six individual effects is very large (12.3 percentage points).

Government cash transfers such as Social Security benefits and SSI payments are included as resources by both the SPM and the official poverty measure.[64] Including Social Security and SSI benefit amounts in SPM resources reduces the SPM poverty rate of children by 2.0 and 0.8 percentage points (not shown). Including Social Security and SSI benefit amounts in the official resource measure reduces the official

Table 7.
Percentage point changes in the SPM poverty rate attributed to individual additions to and subtractions from SPM resources for children aged 0–17, by selected age groups, 2012

SPM resource addition or subtraction	Total (younger than 18)	0–5	6–11	12–17
		Poverty-reducing components		
Additions (refundable tax credits and noncash transfers)				
Refundable tax credits	-6.7	-7.4	-7.3	-5.5
Housing subsidies	-1.4	-1.5	-1.4	-1.2
LIHEAP (energy assistance)	-0.1	-0.1	-0.1	-0.1
NSLP (school lunches)	-0.9	-0.6	-1.3	-0.9
SNAP (formerly the Food Stamp Program)	-2.9	-3.4	-3.3	-2.2
WIC	-0.3	-0.7	-0.2	-0.1
		Poverty-increasing components		
Subtractions (taxes and other nondiscretionary expenses)				
Federal income taxes	0.3	0.4	0.2	0.3
Payroll taxes	1.6	1.7	1.7	1.4
State income taxes	0.2	0.1	0.1	0.2
Child support paid	0.2	0.3	0.2	0.1
MOOP expenses	3.1	3.0	3.0	3.4
Work expenses	2.6	3.2	2.7	2.1
Combined effect of all SPM additions and subtractions[a]	-3.4	-3.8	-4.5	-2.1

SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTES: LIHEAP = Low-Income Home and Energy Assistance Program; MOOP = medical out-of-pocket; SNAP = Supplemental Nutrition Assistance Program; SPM = Supplemental Poverty Measure; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

a. Because of the interaction effects and rounding, the combined-effect values do not equal the sum of the individual changes.

poverty rate by smaller numbers of percentage points (1.4 and 0.4, also not shown).

Table 7 (top panel, columns 2–4) gives the percentage point decreases in the SPM poverty rates of children, by three age subgroups (0–5, 6–11, and 12–17), attributed to each of the noncash transfers and refundable tax credits. For refundable tax credits and SNAP, the poverty-rate effects are smallest for the oldest age subgroup. The poverty-rate effect of the NSLP is largest for the subgroup aged 6–11. As expected, the poverty-rate effect of WIC is largest for the youngest age subgroup.

Taxes and other nondiscretionary expenses. For each expense element, we compare SPM poverty with the poverty that results when we use SPM resources *plus* the expense-element amount as our resource measure, but continue to use the SPM thresholds and SPM units. The six expense items considered here are federal income taxes,[65] payroll taxes,[66] state income taxes,[67] child support paid, MOOP expenses, and work expenses. The bottom panel of Table 7 (column 1) gives the percentage point increases in the SPM poverty rate of the total population of children; those increases are attributed to each of the six expense items—three of which have substantial effects on the SPM poverty of children. MOOP expenses and work expenses have the largest effects. Subtracting MOOP expenses in calculating the resource measure increases the measured poverty rate by 3.1 percentage points.[68] The poverty-rate increases attributed to work expenses and payroll taxes are 2.6 and 1.6 percentage points.[69]

About 90 percent of SPM-poor children are members of SPM units with MOOP expenses. For those units, MOOP expenses can be quite high; for children in those units, their unit's MOOP expenses on average amount to 17 percent of their unit's SPM poverty threshold. About 70 percent of SPM-poor children are members of SPM units with work expenses, and another 70 percent are members of units with payroll tax liabilities; the comparable figure for federal income taxes is 14 percent. Recall that work expenses include childcare expenses. The sum of the six individual expense effects is 8.0 percentage points.

All resource elements. Here we compare SPM poverty with the poverty that results when we replace the SPM resource measure with the official resource measure, but use the SPM thresholds and SPM units. We find that the SPM poverty rate (18.1 percent) is less than the modified poverty rate by 3.4 percentage points (Table 7). In other words, using the SPM resource measure decreases the poverty rate by 3.4 points.

The combined effect on poverty of all the differences between the SPM resource measure and the official resource measure need not equal the sum of the effects of the 12 individual differences. There can be substantial interaction effects. For example, although including either SNAP benefits or a housing subsidy in the resource measure may not move a unit out of poverty, including both benefits may do so.[70]

The sum of the six poverty-reducing resource measure components (12.3 percentage points) exceeds the sum of the six poverty-increasing resource measure components (8.0 percentage points) by 4.3 points. Thus, the net interaction effect is 0.9 percentage points [-3.4 – (-4.3)].

The combined effect of resource-measure differences on poverty is largest for the subgroup aged 6–11 (a decrease of 4.5 percentage points) and smallest for the subgroup aged 12–17 (a decrease of 2.1 points).

Effects of Elements of the Threshold Measure

We now examine the effects of various elements of the SPM threshold measure; that is, housing-status adjustments, geographic adjustments, threshold level, and equivalence scales. In addition, we consider the combined effect of the various elements of the SPM threshold measure. Those effects on the SPM poverty rate among children are given in Table 8 (in percentage points).

Housing-status adjustments. The SPM thresholds depend on a unit's housing-tenure status. The groups in that category are owners with mortgages, owners without mortgages, and renters. All thresholds for units that have owners without mortgages are 14 percent lower than they would be if the thresholds did not depend on housing status. Correspondingly, thresholds for units that have owners with mortgages and renters are 3 percent and 1 percent higher than they would be if the thresholds did not depend on housing status.[71]

To estimate the effect of housing-status adjustments, we remove them from the SPM thresholds and compare SPM poverty with the poverty that results when we use the modified thresholds. We find that the housing-status adjustment *decreases* the poverty rate by 0.2 percentage points (Table 8).[72] About 15 percent of children who are poor in the absence of this adjustment reside in units that have owners without mortgages; the adjustment markedly lowers their thresholds and moves many of those children out of poverty. The adjustment decreases the poverty rate among children in units that have owners without mortgages by 5.3 percentage points.[73] For children in units that have owners with mortgages and those in units that have renters, there are small increases (0.6 percentage points and 0.7 points) in poverty rates. Among the age subgroups of children, the decreases in poverty rates that are due to the housing-status adjustments range from 0.1 to 0.2 percentage points.

Geographic adjustments. The SPM thresholds are adjusted to reflect geographic differences in living costs. The adjustment factors depend on housing-status group and area rent levels. Rent data for more

Table 8.
Percentage point changes in the SPM poverty rate attributed to individual features of the SPM threshold for children aged 0–17, by selected age groups, 2012

Threshold feature	Total (younger than 18)	0–5	6–11	12–17
Housing-status adjustment	-0.2	-0.2	-0.2	-0.1
Geographic adjustment	0.7	0.5	0.7	1.0
Threshold level	2.6	2.8	2.7	2.2
Equivalence scale	-0.7	-0.6	-1.1	-0.4
Combined effect of all SPM threshold features [a]	2.3	2.5	2.0	2.3

SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTE: SPM = Supplemental Poverty Measure.

a. Because of the interaction effects and rounding, the combined-effect values do not equal the sum of the individual changes.

than 300 areas are from the American Community Survey. For a given housing-status group, the geographic-adjustment factor is derived by multiplying an area's rent-index value by the group's share of housing expenditures (shelter *plus* utilities) in its threshold and adding that product to the group's nonhousing share. The rent index is the ratio of the area's rent to the national average rent.[74]

The rent-index values range from about 0.61 to 2.10. For units that have owners with mortgages, owners without mortgages, and renters, the shares of expenses for housing in the thresholds are .504, .402, and .514, respectively (Bureau of Labor Statistics 2013). For children, the geographic-adjustment factors average about 1.02 and range from 0.80 to 1.56.

We remove the geographic adjustments from the SPM thresholds and compare SPM poverty with the poverty that results when we use the modified thresholds.[75] The geographic adjustment *increases* the overall poverty rate of children by 0.7 percentage points (Table 8). The adjustment raises thresholds for children in higher-cost areas and thus moves 1.7 million of them into poverty; on the other hand, the adjustment lowers thresholds for children in lower-cost areas and thus moves 1.2 million of them out of poverty. It markedly increases poverty in two regions (the Northeast and West) and decreases poverty in the other two regions (the Midwest and South).[76] The adjustment decreases poverty substantially for children living outside of MSAs and increases it for children living inside MSAs.

Among the age subgroups of children, the increases in poverty rates that are due to the geographic adjustments increase with age, from 0.5 to 1.0 percentage points. The percentage of poor children living inside MSAs also increases with age.

Threshold level. With no housing-status adjustment and no geographic adjustment, the SPM threshold for the two-adult/two-child unit for 2012 would have been $24,959.[77] The two-adult/two-child official threshold for 2012 was $23,283. Thus, for this base unit, the official threshold is only 93.28 percent of the SPM threshold.

To estimate the effect of the threshold-level difference, we remove that difference by multiplying each unit's SPM threshold by .9328. We then compare SPM poverty with the poverty that results when we use the modified thresholds. This change *increases* the poverty rate for children by 2.6 percentage points (Table 8).

Equivalence scales. There are important differences between the official poverty measure and SPM equivalence scales. Both scales depend on unit size and number of unit children, but depend on those two factors in somewhat different ways, as we will show. The official scale also depends on the age of the unit head; one-person and two-person units with aged heads have lower scale values than corresponding units with nonaged heads.

The SPM three-parameter equivalence scale has the following properties:

- a child always costs less than an adult;
- the scale always exhibits economies of scale in consumption;
- the scale does not depend on the age of the unit head; and
- for one-person nonaged units, the SPM-scale value is rather different from the official-measure scale value.[78]

In estimating the total effect of using the SPM equivalence scale on poverty of children, we incorporate the official-measure equivalence scale into the SPM thresholds as follows. For each poverty measure, the equivalence-scale value is set equal to 1.00 for a nonaged two-adult/two-child unit. For each unit type, we compute the ratio of the official-measure scale value to the SPM-scale value, where unit type is defined by unit size, number of children, and whether the unit head is at least age 65. We next multiply each unit's SPM threshold by the ratio of scale values to obtain modified thresholds. We find that using the SPM equivalence scale *decreases* the poverty rate of children by 0.7 percentage points, a decrease of 0.5 million persons (Table 8).

For units for which the SPM-scale value is greater than the official-scale value, using the SPM scale increases thresholds and thus increases poverty. Correspondingly, using the SPM scale decreases poverty for units for which the SPM-scale value is less than the official-scale value. Table 9 shows the ratios of SPM-scale value to official-scale value for the various unit types. The ratio of the SPM-scale value to the official-scale value exceeds 1.00 for all units with three to eight persons and zero to two children, excluding units with four persons and two children; for those units, using the SPM scale increases the number of children in poverty by 0.4 million. The ratio of these scale values is less than 1.00 for all units with three to eight persons and three to seven children; for those units,

Table 9.
Ratio of the SPM equivalence-scale value to the official poverty measure equivalence-scale value, by unit size, age of the unit head, and number of children

Unit size and age of unit head [a]	Number of children						
	1	2	3	4	5	6	7
Two people							
Younger than age 65	1.03	. . .	. . .	. . .	. . .	. . .	. . .
Aged 65 or older	1.03	. . .	. . .	. . .	. . .	. . .	. . .
Three people	1.11	1.05	. . .	. . .	. . .	. . .	. . .
Four people	1.08	1.00	0.95	. . .	. . .	. . .	. . .
Five people	1.07	1.01	0.95	0.92	. . .	. . .	. . .
Six people	1.08	1.03	0.98	0.93	0.91	. . .	. . .
Seven people	1.05	1.02	0.97	0.94	0.90	0.91	. . .
Eight people	1.04	1.01	0.97	0.94	0.91	0.88	0.86

SOURCE: Authors' calculations.

NOTES: SPM = Supplemental Poverty Measure; . . . = not applicable.

a. Ratios for units with three or more people do not depend on the age of the unit head.

using the SPM scale reduces the number of children in poverty by 0.9 million.

Among the age subgroups of children, there are decreases in poverty rates that result from using the SPM equivalence scale for all three of the subgroups (Table 8). The largest decrease (1.1 percentage points) is for the subgroup aged 6–11. This subgroup has the lowest proportion of poor children in units with three to eight persons and zero to two children and the highest proportion of poor children in units with three to eight persons and three to seven children.

All threshold elements. We now examine the combined effect of adjustments for housing and geographic area, threshold level, and equivalence scale on the poverty of children. For each SPM unit, we replace the SPM threshold with the official-measure threshold. The official thresholds depend on SPM unit size, number of unit children, and whether the unit head is at least age 65. We then compare SPM poverty with the poverty that results when we use the modified thresholds, but continue to use the SPM resource measure and SPM units.

We find that using the SPM thresholds increases the poverty rate of children by 2.3 percentage points (Table 8). The sum of the four individual threshold-element effects—housing adjustment (decreases the poverty rate by 0.2 percentage points), geographic adjustment (increases the rate by 0.7 points), threshold level (increases the rate by of 2.6 points), and equivalence scale (decreases the rate by 0.7 points)—yields a poverty-rate increase of 2.4 percentage points. Thus, the interaction effect is a poverty rate decrease of 0.1 percentage points (2.3 – 2.4).

Among the age subgroups of children, the increase in the poverty rate that results from the combination of all the threshold changes is smallest for the age 6–11 subgroup, at 2.0 percentage points.

Effects of Unit Definition

We now compare the official-measure poverty of children (younger than age 18) with the poverty that results when we use the SPM unit, but use the official resource and thresholds concepts.[79] We find that replacing the official unit with the SPM unit *reduces* the poverty rate of children by 2.2 percentage points (Table 10).

The majority of children stay in the same unit; that is, their SPM unit is the same as their official-measure unit. However, about 10 percent of them end up in a new unit; that is, in a SPM unit that differs from their official unit. Approximately 95 percent of these new-unit children end up in larger SPM units.[80] Replacing the official unit with the SPM unit moves about a fourth of these new-unit children out of poverty; a small proportion moves into poverty. In larger units, there is more resource sharing and more economies of scale that tend to reduce the number of people in poverty.

Among the age subgroups of children, the decrease in poverty rates that are due to the change in unit declines with age, from 3.0 percentage points for the subgroup aged 0–5 to 1.5 percentage points for the subgroup aged 12–17 (Table 10). The percentage

Table 10.
Percentage point changes in the SPM poverty rate attributed to features of the SPM for children aged 0–17, by selected age groups, 2012

SPM element	Total (younger than 18)	0–5	6–11	12–17
All resource features	-3.4	-3.8	-4.5	-2.1
All threshold features	2.3	2.5	2.0	2.3
Unit	-2.2	-3.0	-2.2	-1.5
Combined effect of all features[a]	-4.2	-5.2	-5.3	-2.2

SOURCE: The public-use version of the 2013 Current Population Survey's Annual Social and Economic Supplement.

NOTE: SPM = Supplemental Poverty Measure.

a. Because of the interaction effects and rounding, the combined-effect values do not equal the sum of the individual changes.

of children ending up in new units decreases with age, from 13 percent for the subgroup aged 0–5 to 7 percent for the subgroup aged 12–17 (not shown).

Effect of All Elements of the SPM

For children, the SPM poverty rate is lower than the official-measure rate by 4.2 percentage points. The combined effect of all changes (from the official measure to the SPM) in the resource measure reduces the poverty rate by 3.4 percentage points. The combined effect of all changes in the threshold measure increases the poverty rate by 2.3 points. Replacing the official unit with the SPM unit reduces the poverty rate by 2.2 points. The sum of the resource, threshold, and unit effects (-3.4, 2.3, and -2.2) is -3.4 points. Thus, the interaction effect in this case is -0.8 percentage points [-4.2 – (-3.4)].

Summary of Empirical Findings

First, we provide an overview of our comparisons of official poverty measure and SPM estimates. Then, we summarize our analysis of the effects of the various features of the SPM on the poverty of children.

Comparison of Official Poverty Measure and SPM Estimates

For the total population, the SPM poverty rate (16.0 percent) exceeds the official rate (15.1 percent). For broad age groups, the SPM and official measures give quite different results. Compared with the official measure, the SPM shows substantially less poverty for children (a decrease from 22.3 percent to 18.1 percent) and much more poverty for aged adults (65 or older)—an increase from 9.1 percent to 14.8 percent. For nonaged adults (18–64), the SPM poverty rate (15.5 percent) exceeds the official rate (13.7 percent). Compared with the official measure, the SPM shows much smaller age-group differences in poverty rates. Among children, we also observe that for all three of the detailed age subgroups (0–5, 6–11, and 12–17), the SPM rates are lower than the official-measure rates.

For the total population, the SPM deep poverty rate (5.2 percent) is lower than the official-measure deep poverty rate (6.7 percent). For broad age groups, the SPM and official measure give quite different results for deep poverty. Compared with the official measure, the SPM shows a much lower rate for deep poverty among children (a decrease from 10.3 percent to 4.8 percent) and a much higher rate for aged adults (an increase from 2.7 percent to 4.7 percent). For nonaged adults, the SPM deep poverty rate (5.4 percent) is a bit lower than the official deep poverty rate (6.2 percent).

Switching to the SPM moves about 3.4 percent of children into poverty and about 7.6 percent out of poverty. Much of this movement into and out of poverty occurs near the poverty line.

We examine the poverty of children for various demographic and socioeconomic groups. Most groups of children have a decrease in poverty. Among the groups with the largest percentage decreases in poverty are children residing outside MSAs, those in units that have a homeowner without a mortgage, and those living in the Midwest. A few groups (including children living in the West, those in units that have an owner with a mortgage, and those in units headed by a person with a bachelor's degree) have very small changes in poverty. Two groups of children (Asians and those with private health insurance) have substantial increases in poverty.

Effects of SPM Features on the Poverty of Children

For children, the SPM poverty rate (18.1 percent) is lower than the official rate (22.3 percent) by 4.2 percentage points. The combined effect of all changes (from the official measure to the SPM) in the resource measure is to *decrease* the poverty rate by 3.4 percentage points. Among the six poverty-reducing resource elements (that is, refundable tax credits and noncash transfers), refundable tax credits and SNAP benefits produce the largest decreases in the poverty rate—by 6.7 and 2.9 percentage points. Among the six poverty-increasing resource elements (that is, taxes and other nondiscretionary expenses), MOOP expenses, work expenses, and payroll taxes produce the largest increases in the poverty rate—by 3.1, 2.6 , and 1.6 percentage points, respectively.

The combined effect of all the changes in the threshold measure is to *raise* the poverty rate by 2.3 percentage points. Raising the threshold level increases the poverty rate by 2.6 percentage points and is by far the largest of the individual threshold-element effects. Replacing the official-measure unit with the SPM unit *reduces* the poverty rate by 2.2 percentage points.

Concluding Comments

The impact of taxes (payroll taxes, refundable tax credits, and income taxes) and government noncash benefit programs (food stamps, housing subsidies, and so forth) are directly reflected in SPM estimates, but not in official-measure poverty estimates.

We could benefit from research evaluating the SPM and testing alternative methods of improving it. Additional research is needed on elements of both the resource and threshold measures. Further investigation of the valuation of work expenses, adjustments for underreporting of income and expenses, and geographic adjustments of thresholds should be of high priority. Finally, more in-depth research on how and why the SPM and official poverty measure estimates differ should prove worthwhile.

Appendix A: Evolution of the SPM

What ultimately became the official poverty measure was developed in the 1963–1964 period by Mollie Orshansky (1963, 1965a, 1965b) of SSA. In May 1965, the Office of Economic Opportunity—newly established as part of the Johnson administration's War on Poverty—adopted the Orshansky measure as a working or quasi-official definition of poverty.[81] In August 1969, the Orshansky measure was designated as the federal government's official statistical definition of poverty (Fisher 1992). Only a few minor changes in the measure have been made since 1969.

Over time, concerns about the adequacy of the official poverty measure increased. As a result, in the early 1990s at the request of Congress, the National Academy of Sciences (NAS) undertook an independent scientific study of the concepts, measurement methods, and information needs for a poverty measure. For that purpose, NAS established the Panel on Poverty and Family Assistance, which released its 1995 report, *Measuring Poverty: a New Approach* (Citro and Michael 1995). Based on its assessment of the weaknesses of the official poverty measure, the NAS panel recommended a considerably different poverty measure that it believed would much better reflect contemporary government policy and economic and social realities.

Over the next 15 years or so, numerous government and nongovernment studies examined alternative poverty measures. For example, the Census Bureau released studies that presented a set of experimental poverty measures based on the recommendations of the NAS panel (Short and others 1999; Short 2001). Those studies suggested that the new measures would identify as poor a rather different population than that identified by the official poverty measure.

In 2009, the Office of Management and Budget formed a working group of representatives from a number of government agencies to consider improving the measurement of poverty. That working group was asked to develop a set of initial starting points to permit the Census Bureau, in cooperation with the Bureau of Labor Statistics, to produce a supplemental poverty measure. The Interagency Technical Working Group on Developing a Supplemental Poverty Measure (ITWG) issued its report in 2010.[82]

The Census Bureau released its first report on the SPM in 2011 (Short 2011). That report described the new measure in some detail and presented estimates of SPM-based poverty for 2009 and 2010. The second, third, and fourth annual SPM reports presented estimates for 2011, 2012, and 2013, respectively (Short 2012, 2013, 2014). The recently released SPM is largely based on the recommendations of the NAS panel; deviations from the panel's recommendations reflect suggestions from the ITWG and more current research.

Appendix B: CPS Data for Components of the SPM Resource Measure

In this section, we provide information on the sources of the dollar values for the various in-kind benefits, taxes and refundable tax credits, and other nondiscretionary expense items given in the CPS/ASEC data file. We begin by discussing in-kind benefits and taxes and refundable tax credits.

Housing subsidies. The CPS/ASEC collects information on recipiency, but not on amounts received. To estimate amounts of such assistance, the Department of Housing and Urban Development program rules are applied to CPS households.

Low-Income Home Energy Assistance Program (LIHEAP). The CPS/ASEC collects information on amounts received.

National School Lunch Program (NSLP). The CPS/ASEC collects information on recipiency, but not on amounts received. To value benefits, the Census Bureau uses the amount of the cost per lunch from the Department of Agriculture's Food and Nutrition Service.

Supplemental Nutrition Assistance Program (SNAP). The CPS/ASEC collects information on amounts received.

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The CPS/ASEC collects information on recipiency, but not on amounts received. To value the benefits, the Census Bureau uses program information from the Department of Agriculture.

Taxes and refundable tax credits. The CPS/ASEC does not collect information on taxes and refundable tax credits, but relies on a tax-calculating computer program that incorporates the main features of federal and state tax laws. These simulations also use a statistical match of the CPS/ASEC to the Internal Revenue Service's Statistics of Income microdata file of tax returns.

We conclude by discussing other necessary expenses that are subtracted from resources.

Child support paid. The CPS/ASEC collects information on amounts paid.

Medical out-of-pocket (MOOP) expenses. The CPS/ASEC collects information on amounts paid for (1) health insurance premiums; (2) over-the-counter, health-related products; and (3) medical care (hospital visits, medical providers, dental services, prescription medicine, vision aids, and medical supplies). Caswell and O'Hara (2010) conclude that CPS/ASEC estimates of MOOP expenditures compare favorably to estimates from the Medical Expenditure Panel Survey (MEPS) and the Survey of Income and Program Participation (SIPP). The MEPS, in particular, devotes considerably more effort to collecting MOOP expenditures than does the CPS/ASEC.

Work-related expenses (excludes childcare expenses). The CPS/ASEC does not collect information on work-related expenses (travel to work, tools, uniforms, and so forth). Information on amounts of work expenses from the most recent SIPP is used to estimate those expenses for workers in the CPS/ASEC.

Childcare expenses. The CPS/ASEC collects information on amounts of such expenses (any type of childcare while parents are at work).

Notes

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[1] In previously published articles (Bridges and Gesumaria 2013, 2015), we focused on the measurement of poverty among the aged population (65 or older) and the nonaged adult population (18–64).

[2] There are two slightly different versions of the official poverty measure: (1) poverty thresholds, which are more detailed and primarily used for statistical purposes; and (2) poverty guidelines, which are a simplified version of the thresholds, primarily used for administrative purposes. In this article, we use the term "official poverty measure" to denote the poverty threshold measure. For a discussion of the two measures, see the Institute for Research on Poverty (2013).

[3] All members of a family unit are assigned the same poverty status; that is, poor or not poor.

[4] The share of food in expenditures has decreased markedly over time.

[5] An extensive discussion of such criticisms appears in Citro and Michael (1995).

[6] Subsequently, the Census Bureau released SPM reports in November 2012, November 2013, and October 2014 (Short 2012, 2013, 2014).

[7] For a discussion of the evolution of the SPM, see Appendix A.

[8] The poverty rate is the percentage of people in a group who are classified as poor.

[9] Throughout the article, changes in poverty that are due to changes in the poverty measure used are the changes in poverty that result from switching from the official poverty measure to the SPM.

[10] Including refundable tax credits and Supplemental Nutrition Assistance Program (SNAP) benefits in the SPM resource measure decrease the poverty rate by 6.7 and 2.9 percentage points.

[11] This section draws heavily on Short (2013).

[12] The March 2013 CPS/ASEC is a household sample survey of the U.S. civilian noninstitutionalized population; it also includes military personnel who live in a household with at least one civilian adult. The number of interviewed households was about 75,000. Approximately 8,000 households were not interviewed because there were no available participants.

[13] For a detailed discussion of the SPM and official unit measures, see Provencher (2011).

[14] Money income in the CPS/ASEC consists of (1) earnings; (2) unemployment compensation; (3) workers' compensation; (4) Social Security (OASDI) benefits; (5) Supplemental Security Income (SSI) payments; (6) public assistance (Temporary Assistance for Needy Families (TANF) and general assistance); (7) veterans' payments; (8) survivor benefits; (9) disability benefits; (10) pension or retirement income; (11) interest; (12) dividends; (13) rents, royalties, and estates and trusts; (14) educational assistance; (15) alimony; (16) child support; (17) financial assistance from outside of the household; and (18) other income.

[15] For a critique of the resource-based SPM, see Meyer and Sullivan (2012). Those authors favor a consumption-based poverty measure.

[16] Some of these are large. For example, fiscal year 2011 federal outlays for the Supplemental Nutrition Assistance Program or SNAP (formerly known as the Food Stamp Program) amounted to about $80 billion or 2.1 percent of all federal outlays. Federal expenditures for refundable tax credits and for housing subsidies were about $80 billion and $40 billion (Falk 2012). All three of these programs are designed to assist the low-income population. Federal outlays for Supplemental Security Income (SSI) and Temporary Assistance for Needy Families (TANF) were about $56 billion and $17 billion; both of these *cash* benefit programs are also designed to assist the low-income population.

[17] More than 80 percent of people are members of SPM units with work expenses. For those units, such expenses can be substantial; unit work expenses on average amount to 15 percent of SPM poverty thresholds.

[18] More than 95 percent of people are members of SPM units with MOOP expenses. For those units, MOOP expenses can be large; unit MOOP expenses on average amount to 21 percent of SPM poverty thresholds. In addition, there is great dispersion around this average; a minority of units have very high MOOP expenses relative to their poverty thresholds.

[19] For programs 1, 3, and 5, the CPS/ASEC collects information on recipiency, but not on amounts received. In estimating the amounts of those benefits, the Census Bureau uses information from other government agencies. The sources of the dollar values for the various in-kind benefits, taxes, and other nondiscretionary expense items given on the CPS/ASEC data file are discussed in Appendix B. For more details, see Short (2013) and references cited therein.

[20] The CPS/ASEC does not collect information on taxes, refundable tax credits, or work expenses. The Census Bureau applies a tax-calculating computer program to the CPS/ASEC to simulate taxes and tax credits. The Census Bureau uses information from another household survey to estimate work expenses. Refer to note 19.

[21] Respondents reported amounts of premium and nonpremium MOOP expenses in the March 2013 CPS/ASEC.

[22] For families of three or more persons, the multiplier is 3. However, for families of two persons, the multiplier is 3.7. Without using a food plan and a multiplier, the thresholds for unrelated individuals were set at 80 percent of the corresponding thresholds for two-person families.

[23] In 2012, food expenditures accounted for about 30 percent of the bundle of necessary expenditures that form the basis of the SPM thresholds.

[24] In determining SPM thresholds for 2012, the expenditure needs of units that have owners with mortgages are estimated to be 20 percent larger than those of units that have owners without mortgages.

[25] For 2012, the geographic-adjustment factors used in the SPM ranged from 0.80 for the lowest-cost area to 1.56 for the highest-cost area.

[26] To be more precise, "expenditures around the 33rd percentile" is the average of expenditures within the 30th to 36th percentile portion of the expenditure distribution.

[27] In this article, the terms "adults" and "children" are used in two slightly different ways.

In calculating equivalence-scale values and thresholds values, all persons younger than age 15 and dependent persons aged 15–17 are counted as children; all persons aged 18 or older and nondependent persons aged 15–17 are counted as adults.

In all other parts of the article, the term "children" signifies persons younger than age 18 and the term "adults" denotes persons aged 18 or older. The term "nonaged adults" denotes persons aged 18–64.

[28] The Census Bureau's report on official poverty shows a poverty rate of 15.0 percent for 2012 (DeNavas-Walt, Proctor, and Smith 2013). That report excludes all unrelated individuals younger than age 15 from the universe of official poverty calculations.

In the Census Bureau's report on SPM poverty (Short 2013) and in this article, these unrelated individuals are included in the universe for official poverty measure and SPM calculations. In the official poverty calculations, all of these unrelated individuals are counted as poor. In the SPM

poverty calculations, unrelated individuals are assumed to share the resources of their SPM unit.

[29] The SPM thresholds incorporate adjustments for geographic differences in housing costs. Because of confidentiality restrictions, the geographic information available for use in calculating the SPM thresholds on the public-use data file is slightly more limited than that available for use in calculating the SPM thresholds on the Census Bureau's internal data file. Thus, this article's SPM poverty estimates differ slightly from those in Short (2013).

For confidentiality reasons, the public-use data file uses a method of top-coding income amounts that swaps values between sample members having income amounts from specific sources above predetermined top-code amounts. This top-coding has very small effects on SPM and official poverty measure estimates.

[30] See Short (2013).

[31] For children, the percentage distribution among the three age classes (0–5, 6–11, and 12–17) of the poor under the SPM is similar to that for the poor under the official measure.

[32] Bridges and Gesumaria (2013) explore in depth the extent to which various features of the SPM affect the poverty of the aged population.

[33] Bridges and Gesumaria (2015) explore in depth the extent to which various features of the SPM affect the poverty of the nonaged adult population.

[34] For nonaged adults, the average welfare ratio is higher for those poor under the SPM (.542) than for those poor under the official measure (.488).

[35] For official-measure deep poverty, before-tax cash income is the resource measure.

[36] Nondiscretionary expenses of the aged population cause the average welfare ratio of the SPM poor to be negative.

[37] For nonaged adults, the average welfare ratio is lower for those in deep poverty under the SPM (.091) than for those in deep poverty under the official measure (.163).

[38] For the official poverty measure, before-tax cash income is the resource measure.

[39] This terminology is somewhat different from that ordinarily used in the poverty literature, in which movements into and out of poverty are attributable to changes in a unit's financial resources.

[40] Wimer (2013) focuses on the differences in resources and expenses of these three groups of children (those who exit poverty, those who stay in poverty, and those who enter poverty). The author's estimates are for 2010.

[41] To be more precise, "1.00–1.49" means equal to or greater than 1.00, but less than 1.50. Correspondingly, "0.50–0.99" means equal to or greater than 0.50, but less than 1.00.

[42] About 60 percent of poor Hispanic children are in units with a foreign-born head.

[43] About 80 percent of poor children in units with a foreign-born head are Hispanic.

[44] For SPM-poor Hispanic and non-Hispanic children, the average geographic-adjustment factors for cost-of-living differences are 1.09 and 1.01. The average geographic-adjustment factors for foreign-born and native-born children poor under the SPM are 1.11 and 1.00.

[45] Fifty-six percent of native-born, SPM-poor children are in units that receive SNAP benefits; for those units, the average ratio of the SNAP payment to the SPM threshold is 0.20. For foreign-born, SPM-poor children, the corresponding figures are 41 percent and 0.14.

[46] For SPM-poor Asian, white, and black children, the respective average geographic-adjustment factors for cost-of-living differences are 1.13, 1.04, and 1.02.

[47] Thirty-one percent of Asian SPM-poor children are in units that receive SNAP benefits; for those units, the average ratio of the SNAP benefit to the SPM threshold is 0.15. For white SPM-poor children, the corresponding figures are 46 percent and 0.17. For black SPM-poor children, the corresponding figures are 67 percent and 0.20.

[48] About 40 percent of poor children in units with nonworking heads are in units with payroll tax liability.

[49] About 20 percent of poor children in units with payroll tax liability are in units with nonworking heads.

[50] To identify persons with a disability, we use the variable "*prdisflg*." A person with a disability must have one or more of the following conditions: (1) deafness or serious difficulty hearing; (2) blindness or serious difficulty seeing; (3) serious difficulty concentrating, remembering, or making decisions; (4) serious difficulty walking or climbing stairs; (5) difficulty dressing or bathing; (6) difficulty doing errands, such as visiting a doctor's office or shopping. This definition of disability differs from the statutory definition of disability used by SSA to administer the Social Security Disability Insurance and SSI programs. In addition, the definition of disability used in this article does not indicate whether the disability limits or prevents work.

[51] About half of poor children in units with a disabled head are in units that receive Social Security benefits and/or SSI payments.

[52] Sixty-five percent of SPM-poor children in units with nondisabled heads are in units that receive refundable tax credits; for those units, the average ratio of the refundable credit to the SPM threshold is 0.17. For SPM-poor children in units with disabled heads, the corresponding figures are 36 percent and 0.11.

[53] About 55 percent of poor children in units with a nondisabled head have a working head. By contrast, only about 25 percent of poor children in units with a disabled head have a working head.

[54] About 30 percent of poor children in units that receive Social Security benefits and/or SSI payments are in units with a disabled head.

[55] About 60 percent of poor children in units with neither Social Security benefits nor SSI payments have a working head. By contrast, less than 25 percent of poor children in units that receive Social Security and/or SSI have a working head.

[56] About 30 percent of poor children with private health insurance also have public health insurance coverage.

[57] Among poor children with only public health insurance coverage, about 95 percent have Medicaid coverage.

[58] Ninety-seven percent of SPM-poor children with private health insurance are in units that have MOOP expenses; for those units, the average ratio of the MOOP expense to the SPM threshold is 0.33. For SPM-poor children with only public health insurance, the corresponding figures are 87 percent and 0.07. For SPM-poor children with no health insurance, the corresponding figures are 89 percent and 0.14.

[59] For example, we compute the effect on the SPM poverty rate of adding refundable tax credits to the SPM resource measure in the following way:

1. We subtract the value of each SPM unit's refundable tax credits from its SPM resource measure.
2. For each unit, we then compare that modified resource measure to the unit's SPM threshold to determine the modified poverty status of its members.
3. We then calculate the percentage of children whose modified poverty status is poor; that is, we calculate the modified poverty rate. For this case, the modified poverty rate is 24.8 percent.
4. Finally, we compare the modified poverty rate with the SPM poverty rate. For children, the SPM poverty rate is 18.1 percent.

The inclusion of refundable tax credits in the resource measure reduces the poverty rate by 6.7 percentage points (18.1 – 24.8).

[60] These program benefit amounts usually incorporate behavioral and interprogram effects.

[61] An interprogram effect exists when program rules specify that the benefit amount of one program affects the benefit amount of another program.

[62] The federal earned income tax credit *plus* the refundable portion of the federal child tax credit *plus* other refundable federal credits.

[63] Over 60 percent of SPM-poor children are in SPM units that receive refundable federal tax credits.

[64] Other government cash transfers included as resources by both the SPM and official poverty measure are (1) unemployment insurance, (2) workers' compensation, and (3) Temporary Assistance for Needy Families (TANF) and general assistance.

[65] Federal individual income tax after subtracting nonrefundable tax credits.

[66] Contributions by employees and the self-employed to the Old-Age, Survivors, Disability, and Health Insurance program *plus* retirement contributions by federal employees.

[67] These amounts represent state income taxes after credits. Some amounts are negative.

[68] For persons with only public health insurance, this MOOP subtraction increases the poverty rate by 3.2 percentage points. For persons with private health insurance and no health insurance, the corresponding figures are 3.1 percentage points and 3.0 points.

[69] Subtracting payroll taxes from the official resource measure increases the official-measure poverty rate by 1.2 percentage points.

[70] The interaction effect is not the same as the interprogram effect discussed earlier (refer to note 61).

[71] With no geographic adjustment, basic thresholds for two-adult/two-child units are $25,784 for owners with mortgages; $21,400 for owners without mortgages; and $25,105 for renters. With no geographic adjustment and no housing-status adjustment, the threshold for the two-adult/two-child unit would be 1.2($20,799) or $24,959: $25,784, $21,400, and $25,105 are 103 percent, 86 percent, and 101 percent, respectively, of $24,959. See the Bureau of Labor Statistics (2013).

[72] Preliminary thresholds are multiplied by geographic-adjustment factors to obtain final thresholds. Those factors depend on housing-status group and on area rent. The inclusion of housing-status group in the calculation of geographic-adjustment factors increases the poverty rate for children by 0.1 percentage points. We include this effect as part of the effects of the geographic-adjustment factors and not as part of the effects of the housing-status adjustment.

[73] Not shown in the article's tables.

[74] The adjustment factors are calculated using the following formula:

$\text{Factor}_{ah} = \text{HousingShare}_h \times (\text{Rent}_a / \text{Rent}_n) + (1 - \text{HousingShare}_h)$, where *a* denotes geographic area, *h* denotes housing-status group, and *n* denotes national. See Renwick (2011).

[75] Renwick (2011) made those comparisons for an earlier year.

[76] Not shown in the article's tables.

[77] Derived from the Bureau of Labor Statistics (2013).

[78] The three-parameter scale values are calculated as follows:

1. SPM unit with one or two adults and no children—unadjusted-scale value = $[\text{number of adults}]^{0.5}$

2. SPM unit with one adult and one or more children (mostly single-parent units)—
   unadjusted-scale value = [1 + 0.8 + 0.5(number of children – 1)]$^{0.7}$
3. All other SPM units—
   unadjusted-scale value = [number of adults + 0.5(number of children)]$^{0.7}$

In calculating equivalence-scale values, all persons aged 18 or older and nondependent persons aged 15–17 are counted as adults; all persons younger than age 15 and dependent persons aged 15–17 are counted as children.

In equation 2, the first child is treated as 80 percent of an adult; each additional child is treated as 50 percent of an adult. In equation 3, each child is treated as 50 percent of an adult. The numbers of adult equivalents are given by the expressions inside the brackets. For example, for a two-adult/two-child unit, equation 3 shows that the number of adult equivalents is three.

Economies of scale require that whenever an additional equivalent adult is added to an SPM unit, the unit's equivalence-scale value divided by the number of adult equivalents decreases. The exponents outside the brackets are the economy-of-scale factors. The smaller exponent (0.5) exhibits greater economies of scale than does the larger exponent (0.7).

The Census Bureau then adjusts all unadjusted-scale values proportionally so that the adjusted-scale value for the two-adult/two-child unit equals 1. The base threshold level for the two-adult/two-child unit is then multiplied by the adjusted-scale values in deriving threshold values for the other unit types.

[79] Note that here, we compare official-measure poverty with the poverty that results when we change a specified feature of the official measure. In all of our previous estimates of poverty effects, we compare SPM poverty with the poverty that results when we change a specified feature of the SPM. For the case of unit definition, the approach used here is considerably easier to implement than our usual approach.

[80] For the remaining children whose SPM unit changes, their SPM unit and their official unit are of the same size, but differ in membership.

[81] In its 1964 report, the president's Council of Economic Advisors (CEA) set forth a poverty threshold of $3,000 (in 1962 dollars) for all families of two or more persons and a threshold of $1,500 for unrelated individuals. The Orshansky set of thresholds, in which the thresholds increase with family size, was clearly superior to the CEA alternative.

[82] See ITWG (2010).

References

Bridges, Benjamin, and Robert V. Gesumaria. 2013. "The Supplemental Poverty Measure (SPM) and the Aged: How and Why the SPM and Official Poverty Estimates Differ." *Social Security Bulletin* 73(4): 49–69. http://www.socialsecurity.gov/policy/docs/ssb/v73n4/v73n4p49.html.

———. 2015. "The Supplemental Poverty Measure (SPM) and Nonaged Adults: How and Why the SPM and Official Poverty Estimates Differ." *Social Security Bulletin* 75(2): 57–82. http://www.socialsecurity.gov/policy/docs/ssb/v75n2/v75n2p57.html.

Bureau of Labor Statistics. 2013. *Supplemental Poverty Measure (SPM) Thresholds*. Washington, DC: Department of Labor. http://www.bls.gov/pir/spmhome.htm.

Caswell, Kyle J., and Brett O'Hara. 2010. "Medical Out-of-Pocket Expenses, Poverty, and the Uninsured." SEHSD Working Paper No. 2010-17. Washington, DC: Census Bureau, Social, Economic, and Housing Statistics Division.

Citro, Constance F., and Robert T. Michael (eds.). 1995. *Measuring Poverty: A New Approach.,* Washington, DC: National Academy Press.

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica C. Smith. 2013. *Income, Poverty, and Health Insurance Coverage in the United States: 2012*. Census Bureau, Current Population Reports, P60-245. Washington, DC: Government Printing Office (September). http://www.census.gov/prod/2013pubs/p60-245.pdf.

Falk, Gene. 2012. *Low-Income Assistance Programs: Trends in Federal Spending.* CRS Report for Congress, R41823. Washington, DC: Congressional Research Service (June 13).

Fisher, Gordon M. 1992. "The Development and History of the Poverty Thresholds." *Social Security Bulletin* 55(4): 3–14. http://www.socialsecurity.gov/policy/docs/ssb/v55n4/v55n4p3.pdf.

Institute for Research on Poverty. 2013. *What are Poverty Thresholds and Poverty Guidelines?* Madison, WI: University of Wisconsin-Madison (September). http://www.irp.wisc.edu/faqs/faq1.htm.

[ITWG] Interagency Technical Working Group on Developing a Supplemental Poverty Measure. 2010. *Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure.* Washington, DC: Census Bureau (March). http://www.census.gov/hhes/www/poverty/SPM_TWGObservations.pdf.

Meyer, Bruce D., and James X. Sullivan. 2012. "Identifying the Disadvantaged: Official Poverty, Consumption Poverty, and the New Supplemental Poverty Measure." *Journal of Economic Perspectives* 26(3): 111–135.

Orshansky, Mollie. 1963. "Children of the Poor." *Social Security Bulletin* 26(7): 3–13. http://www.socialsecurity.gov/policy/docs/ssb/v26n7/v26n7p3.pdf.

———. 1965a. "Counting the Poor: Another Look at the Poverty Profile." *Social Security Bulletin* 28(1): 3–29. http://www.socialsecurity.gov/policy/docs/ssb/v28n1/v28n1p3.pdf.

———. 1965b. "Who's Who Among the Poor: A Demographic View of Poverty." *Social Security Bulletin* 28(7): 3–32. http://www.socialsecurity.gov/policy/docs/ssb/v28n7/v28n7p3.pdf.

Provencher, Ashley J. 2011. "Unit of Analysis for Poverty Measurement: A Comparison of the Supplemental Poverty Measure and the Official Poverty Measure." SEHSD Working Paper No. 2011-22. Washington, DC: Census Bureau, Social, Economic, and Housing Statistics Division.

Renwick, Trudi. 2011. "Geographic Adjustments of Supplemental Poverty Measure Thresholds: Using the American Community Survey Five-Year Data on Housing Costs." SEHSD Working Paper No. 2011-21. Washington, DC: Census Bureau, Social, Economic, and Housing Statistics Division.

Short, Kathleen. 2001. *Experimental Poverty Measures: 1999.* Census Bureau, Current Population Reports, Consumer Income, P60-216. Washington, DC: Government Printing Office (October). http://www.census.gov/prod/2001pubs/p60-216.pdf.

———. 2011. *The Research Supplemental Poverty Measure: 2010.* Census Bureau, Current Population Reports, P60-241. Washington, DC: Government Printing Office (November), http://www.census.gov/prod/2011pubs/p60-241.pdf.

———. 2012. *The Research Supplemental Poverty Measure: 2011.* Census Bureau, Current Population Reports, P60-244. Washington, DC: Government Printing Office (November). http://www.census.gov/prod/2012pubs/p60-244.pdf.

———. 2013. *The Research Supplemental Poverty Measure: 2012.* Census Bureau, Current Population Reports, P60-247. Washington, DC: Government Printing Office (November). http://www.census.gov/prod/2013pubs/p60-247.pdf.

———. 2014. *The Supplemental Poverty Measure: 2013.* Census Bureau, Current Population Reports, P60-251. Washington, DC: Government Printing Office (October). http://www.census.gov/content/dam/Census/library/publications/2014/demo/p60-251.pdf.

Short, Kathleen, Thesia Garner, David Johnson, and Patricia Doyle. 1999. *Experimental Poverty Measures: 1990 to 1997.* Census Bureau, Current Population Reports, Consumer Income, P60-205. Washington, DC: Government Printing Office (June). http://www.census.gov/prod/99pubs/p60-205.pdf.

Wimer, Christopher. 2013. "America's Children in Poverty: A New Look at Who's Poor Under the Supplemental Poverty Measure." ASPE Research Brief. Washington, DC: Department of Health and Human Services, Office of the Assistant Secretary of Planning and Evaluation (December). http://aspe.hhs.gov/hsp/14/AmericaChildPoverty/rb_amerchildpoverty.pdf.