

Identifying the Disadvantaged: Official Poverty, Consumption Poverty, and the New Supplemental Poverty Measure[†]

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Few economic indicators are more closely watched or more important for policy than the official poverty rate. It is used to gauge the extent of deprivation in the United States and to determine how economic well-being has changed over time. The poverty rate is often cited by policymakers, researchers, and advocates who are evaluating social programs that account for more than half a trillion dollars in government spending. Eligibility for some means-tested transfer programs is determined based on the poverty thresholds, and local poverty rates affect the allocation of billions of dollars in federal funds.

The methods for calculating the current poverty measure, largely unchanged since the 1960s, have been criticized by many researchers. In response, the Census Bureau has led a two-decade process of research and discussion of poverty measurement with an eye to revising the official measure. The process has involved hundreds of papers, dozens of official Census Bureau publications (U.S. Census 2010), and two National Academy of Sciences reports (Citro and Michael 1995; Iceland 2005). We will not summarize this vast literature here. Rather, we will examine the properties of three measures of poverty: the official U.S. poverty rate; the new Supplemental Poverty Measure first released by the U.S. Census Bureau in fall 2011; and a consumption-based measure of poverty. We will focus on two fundamental goals of these measures: to identify the most disadvantaged and to assess changes

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over time in disadvantage. These goals accord very closely with those stated in the National Academy of Sciences report *Measuring Poverty*: “The panel proposes a new measure that will more accurately identify the poor population today. . . . Equally important, the proposed measure will more accurately describe changes in the extent of poverty over time that result from new public policies and further social and economic change” (Citro and Michael 1995, pp. 1–2).

We start by describing these three approaches to measuring poverty. We then compare these measures of poverty by looking at the demographic and material circumstances of who they define as poor. A measure of poverty can, of course, produce a higher or lower poverty rate depending on how high the cutoffs that define poverty are set. However, two different measures of poverty that include the same overall number of poor people will be made up of overlapping but different groups. By looking at the characteristics of those who a given poverty measure would include, or would leave out, we can provide evidence on whether that measure does a better job of capturing the disadvantaged. For example, we find that, compared to the official poverty measure, the Supplemental Poverty Measure adds to poverty individuals who are more likely to be college graduates, own a home and a car, live in a larger housing unit, have air conditioning, health insurance, and substantial assets, and have other favorable characteristics than those who are dropped from poverty. On the other hand, we find that a consumption measure, compared to the official measure or the Supplemental Poverty Measure, adds to the poverty rolls individuals who appear worse-off. We then examine how each of the poverty measures assesses changes in disadvantage over time. The Supplemental Poverty Measure uses a complex and convoluted way of determining changes in poverty over time that we argue makes it difficult to interpret.

Our results present strong evidence that a consumption-based poverty measure is preferable to both the official income-based poverty measure and to the Supplemental Poverty Measure for determining who are the most disadvantaged. Our findings also raise the question as to whether a flawed measure of income, even when modified to be conceptually closer to consumption, can reliably be used to measure poverty.

Three Ways of Measuring Poverty

The broader literature on measuring poverty proposes a wide variety of approaches for identifying who is poor. Some approaches are multidimensional, emphasizing functional capabilities, social inclusion, relationships, the environment, and other components of well-being (Atkinson, Cantillon, Marlier, and Nolan 2002; Stiglitz, Sen, and Fitoussi 2009). In this article, we will focus on three single-dimensional, resource-based poverty measures.

Single-dimensional poverty measures are typically constructed by making a set of eight choices: 1) How should the resources available to people be defined? Typically, resources are measured using income or consumption, but there is debate

about how to define income and consumption. 2) Is an annual measure about right for measuring poverty, or should poverty be measured over shorter or longer time periods? 3) Should the resource-sharing unit that is pooling income and making joint purchases be a group of related family members or another unit such as a group of people sharing a residence? 4) Should the measure count the number of people with resources below a cutoff or threshold (a head count measure), or should it specify the total resources needed to raise all of the poor up to the poverty threshold (a poverty gap measure)? 5) Should the poverty threshold be set as an absolute level of resources or relative to some standard, such as the median level of income? For example, the European Union focuses on a measure of poverty defined as the fraction below 60 percent of median income. 6) Where should the poverty line, or thresholds, be drawn, recognizing that this essentially arbitrary choice will have a large effect on the estimated poverty rate? 7) Should poverty thresholds be adjusted over time using the rise in the cost of living or the rise in income levels, and should they be adjusted for geographic price differences or other factors? 8) How should the “equivalence scale” be determined to set poverty thresholds for families that differ in size or composition? In describing the three poverty measures, we will touch upon each of these issues, although we will leave a full discussion of the adjustment of the thresholds over time until later. For now, we focus on the determinants of poverty at a point in time.

The Official Poverty Measure

The official poverty rate in the United States is determined by comparing the pretax money income of a family or a single unrelated individual to poverty thresholds that vary by family size and composition. For example, in 2011, the poverty threshold for a one-parent, two-child family was \$18,106 (for current and past poverty thresholds, see the U.S. Census Bureau data at <http://www.census.gov/hhes/www/poverty/data/threshld/index.html>). The underlying data on pretax money income come from the Current Population Survey Annual Social and Economic Supplement. If a family has income below the poverty threshold for that size family, all family members are classified as poor. In terms of the eight choices needed to define a poverty measure, the resources are pretax money income, the time period is one year, and the resource sharing unit is the family (or those related by blood or marriage). Official poverty is a discrete, head count measure. The original thresholds were based on the cost of a food plan—a nutritionally balanced, low-cost diet for families of different size and composition. For most families, the cost of the food plan was multiplied by three because 1955 survey data on expenditures (the data available when this poverty line was first defined in the early 1960s) suggested that the average family of three or more people allocated about a third of their after-tax income for food. Variation in the cost of the plan by family size and composition provided an implicit equivalence scale that accounts for different food needs across these families. Except for a few minor changes, the only adjustment to these thresholds over the past five decades has been for inflation, using the Consumer Price Index for all Urban Consumers. There is no geographic adjustment. For a more detailed summary, see Citro and Michael (1995), Blank (2008), and Blank and Greenberg (2008).

The official poverty measure has a number of widely recognized flaws. Here, we focus on two of them. First, it defines resources as pretax money income, failing to reflect the full resources at a family's disposal. Pretax money income does not subtract tax liabilities (even poor workers must pay payroll taxes for Social Security and Medicare), nor does it include the Earned Income Tax Credit and other tax credits or noncash benefits such as food stamps, housing or school lunch subsidies, or public health insurance. Thus, many of the major antipoverty initiatives of the last few decades are not reflected in the poverty rate, because policies like a rise in the Earned Income Tax Credit, a more generous Child Tax Credit, and expansions of Medicaid and food stamps do not show up as pretax money income.

Second, the equivalence scale implicit in the official poverty thresholds—that is, the relationship between poverty thresholds for families with different numbers and ages of people—has been criticized. These thresholds reflect the economies of scale in food, but not in other goods. In addition, the scale implicit in the official poverty thresholds suggests children are more costly than adults in some cases and does not exhibit diminishing marginal increments for additional individuals over the whole range of family sizes (Ruggles 1990). For example, the second child in a two-parent family adds much more to the poverty thresholds than the first or third child.

The Supplemental Poverty Measure

In November 2011, the U.S. Census Bureau released the Supplemental Poverty Measure for the first time. It indicated a poverty rate of 16.0 percent for 2010, instead of the 15.1 percent estimated by the official poverty measure. However, as noted earlier, the selection of a poverty cutoff is inherently arbitrary, so the finding that the poverty rate as calculated by the Supplemental Poverty Measure exceeds the official rate is a subjective or political decision, not a scientific one. The release of this new poverty measure reflects the culmination of more than three decades of research on poverty measurement; in particular, this measure is largely based on a 1995 National Academy of Sciences report (Citro and Michael 1995) and follow-up workshop (Iceland 2005). According to the Census Bureau, the Supplemental Poverty Measure is intended to “be an additional macroeconomic statistic providing further understanding of economic conditions and trends” (Short 2011, p. 3). It is designed to complement the current official measure, not to replace it, and it will be published in the future alongside the official rate, funding permitted. There has been a parallel effort to produce poverty measures similar to the Supplemental Poverty Measure for certain states and localities.¹

¹ These efforts include New York City estimates from researchers at the Center for Economic Opportunity, Minnesota estimates from the Urban Institute, Wisconsin estimates from researchers at the University of Wisconsin, and estimates for other states (Levitan, D’Onofrio, Krampner, Scheer, and Seidel 2010; Zedlewski, Giannarelli, Wheaton, and Morton 2010; Chung, Isaacs, Smeeding, and Thornton 2012). While these studies calculate alternative poverty rates using procedures similar to those for the Supplemental Poverty Measure, some differences do exist. For example, the state-level studies do not use income data from the Current Population Survey. Instead, to obtain a large sample, they employ the American Community Survey which lacks information on certain income sources such as food stamp amounts and receipt of housing subsidies.

The Supplemental Poverty Measure differs from the official poverty measure in a number of ways. Perhaps most important, it uses a definition of income that is conceptually closer to resources available for consumption. In addition, it includes a more defensible adjustment for family size and composition, and an expanded definition of the family unit that includes cohabitators.

Recall that the official poverty measure is based on pretax money income. The Supplemental Poverty Measure resource definition includes not only money income, but also tax credits like the Earned Income Tax Credit and the Child Tax Credit, as well as the value of some noncash benefits. In addition, the measure of resources subtracts several categories of expenses from income, including tax liabilities, payments for child support, child care and other work expenses, and out-of-pocket medical expenses.² Thus, this measure of resources more closely approximates resources available for consumption than does pretax money income. Also, by including tax credits and in-kind transfers, the Supplemental Poverty Measure is intended to gauge more accurately the effectiveness of antipoverty efforts.

The official poverty measure treats the resource-sharing unit as those related by family ties; in contrast, the sharing unit in the Supplemental Poverty Measure also includes cohabitators and their children, who are treated in the official measure as a separate family unit within the household even though they live together and may share resources. Analytically, the sharing unit should be, well, those who share resources. Information on resource sharing across cohabitators is not collected in the Current Population Survey, although resources or cost-sharing provided to a family by cohabitators may be substantial. The treatment of cohabitators has become more important in recent years as the fraction of households with cohabitators present has risen.

The Supplemental Poverty Measure thresholds are based on expenditure data for food, clothing, shelter, and utilities from the Consumer Expenditure Interview Survey.³ To arrive at the thresholds, the first step is to pool all consumer units with exactly two children from the past five years of data. Because these families will differ in the number of adults in the unit, a three-parameter equivalence scale is used to convert spending for these families into spending for the reference family of two adults and two children. The overall three-parameter equivalence scale is of the following form (A is the number of adults and C is the number of children): $A^{0.5}$ for one- and two-adult units; $[A + 0.8 + 0.5(C - 1)]^{0.7}$ for single-parent families; and $[A + 0.5C]^{0.7}$ for all other families. The parameter in front of C represents the child proportion of an adult, the exponent is the economies of scale factor, and 0.8 allows for a separate adjustment for single-parent families to reflect the fact that the first child in such families consumes less in total resources than an adult but more than the first child in two-parent families.

² The Current Population Survey recently added questions so that it could estimate these expenses subtracted from income, but this information is not available historically.

³ The thresholds for the Supplemental Poverty Measure are provided to the Census Bureau by the Bureau of Labor Statistics. See Garner and Hokayem (2011) and Garner (2010) for more details on these thresholds.

To specify the threshold levels, the Supplemental Poverty Measure then focuses on consumer units who are between the 30th and 36th percentiles of equivalence-scale-adjusted spending on food, clothing, shelter, and utilities (FCSU) for this pooled two-child sample. The measure relies on a moving average of spending over five years, with the data for different years indexed using the Consumer Price Index. Separate poverty thresholds are calculated for three different housing status groups: renters, homeowners with a mortgage, and homeowners without a mortgage (those in public housing are included in this last group). Mean overall shelter and utility expenses are subtracted from the mean FCSU spending for each housing status group, and then the mean shelter and utility expenses within each of these groups is added back. The resulting adjusted mean is then multiplied by 1.2 (to account for “additional basic needs”) to determine the reference threshold for each housing status group.

The thresholds for other size families are then calculated from these reference thresholds for the three groups of families using the three-parameter equivalence scale. This equivalence scale offers several important improvements over the scale implicit in the official thresholds. In particular, it is a more transparent and consistent adjustment for differences in needs across families of different sizes and composition. Unlike the scale adjustment in the official measure, it exhibits diminishing marginal cost with each additional child or adult.

Finally, the Supplemental Poverty Measure makes an additional adjustment to the poverty thresholds to reflect geographic variation in the cost of living. This adjustment is based on American Community Survey estimates over five years of median gross rent for a typical apartment for the 264 metropolitan statistical areas observed in the Current Population Survey. For those outside of metropolitan statistical areas, state-level medians for nonmetropolitan areas are estimated. There is considerable geographic price variation in housing. This adjustment is controversial. Rents vary across locations, but at least part of this variation reflects geographical differences in amenities and wages.⁴

Consumption-Based Poverty Measures

Both the official poverty measure and the Supplemental Poverty Measure use income as the measure of resources. However, annual income will not capture the standard of living of individuals who smooth consumption by drawing upon savings. Also, income-based measures of well-being will not capture differences over time or across households in wealth accumulation, ownership of durable goods such as houses and cars, or access to credit. In addition, many antipoverty programs provide an insurance value to households that will not be reflected in their income. These conceptual limitations have influenced a large literature that looks at consumption-based measures

⁴ While most of the features of the Supplemental Poverty Measure follow the recommendations of the 1995 National Academy of Sciences report, there are differences. For example, the Supplemental Poverty Measure uses a different equivalence scale than recommended in the 1995 report; it specifies thresholds that vary by housing status; and it determines thresholds using a five-year moving average of expenditures. Hutto, Waldfogel, Kaushal, and Garfinkel (2011) provide more details on this point.

of well-being and discusses their advantages (Cutler and Katz 1991; Poterba 1991; Slesnick 1993, 2001; Meyer and Sullivan 2003, 2011, 2012).

Another advantage of consumption is that it appears to be a better predictor of deprivation than income; in particular, material hardship and other adverse family outcomes are more severe for those with low consumption than for those with low income (Meyer and Sullivan 2003, 2011).

Yet another advantage is that consumption appears to be more accurately reported than income for the most disadvantaged families. Income in the Current Population Survey appears to be substantially underreported, especially for categories of income important for those with few resources, and the extent of underreporting has worsened over time. For example, the share of dollars received from means-tested transfer programs that are reported in the Current Population Survey is low and declining (Meyer, Mok, and Sullivan 2009; Meyer and Goerge 2011). The shares reported have fallen below 0.6 for food stamps and 0.5 for Temporary Assistance for Needy Families in recent years. In the most recent Current Population Survey data for 2010, only 36 percent of food stamp dollars paid out to families are directly reported in the survey. Another 20 percent of the dollars paid out are imputed to those who did not report receiving food stamps, leaving 44 percent neither reported nor imputed.⁵ Comparisons of survey microdata to administrative microdata for the same individuals also indicate severe underreporting of government transfers in other household surveys such as the American Community Survey (which has been used to implement state and local versions of the Supplemental Poverty Measure).

Comparisons of income and consumption at the bottom of the distribution provide additional evidence that income is underreported. Reported consumption exceeds reported income at the bottom of the distribution, even for those with little or no assets or debts (Meyer and Sullivan 2003, 2011). For recent years, the 5th percentile of the expenditures distribution in the Consumer Expenditure Survey is more than 40 percent higher than the 5th percentile of the income distribution in the Current Population Survey. For families in the Consumer Expenditure Survey in the bottom 5 percent of the income distribution, expenditures exceed income by more than a factor of seven (Meyer and Sullivan 2011).⁶

⁵The Current Population Survey, in its current form, also lacks important information for imputing some in-kind benefits. For example, the value of housing subsidies is imputed for each household in the survey that reports receipt of such subsidies. However, because the size of the housing unit is not observed in the Current Population Survey, this must be imputed based on family composition. A reasonable estimate of housing subsidies can be computed using the Consumer Expenditure Survey because the survey provides information on out-of-pocket rent and the characteristics of the housing unit, including the number of rooms, bathrooms and bedrooms, and appliances such as a washer and dryer.

⁶While comparisons of survey data on aggregate expenditures to National Income and Product Accounts (NIPA) consumption indicate underreporting of expenditures as well, the poor consume a different bundle of goods than the general public, so that the typical comparisons do not reflect the composition of consumption for the poor. In fact, key components of spending match up well with national income and product account (NIPA) aggregates, and these components account for a large fraction of total spending for the poor—about 70 percent of consumption for those near the poverty line (Meyer and Sullivan 2012). For food at home, on average the Consumer Expenditure Survey/NIPA ratio is over 0.85, and for rent plus utilities, the ratio is nearly 1.00 (Bee, Meyer, and Sullivan forthcoming).

In terms of the choices at the beginning of this section, we construct a consumption measure of poverty in the following way. Our resource measure is expenditures, excluding human capital investments such as educational and medical expenses. We also exclude purchases of vehicles and mortgage and property tax payments by homeowners, which we replace with a flow value of car- and homeownership. We annualize expenditures, which are reported for a three-month period in the survey. The underlying source of our data is the Consumer Expenditure Interview Survey, which asks respondents if they share resources and uses that information to define the unit of analysis. We use a headcount measure of poverty, as does the official measure and the Supplemental Poverty Measure. We also use the same three-parameter equivalence scale as the Supplemental Poverty Measure. We set the poverty thresholds so that the same share of people is below the poverty line as with the other poverty measures. For more detail, see Meyer and Sullivan (2012).

Who Do the Poverty Measures Identify as Poor?

While many alternative poverty measures have been proposed, surprisingly little research has been done to assess how well these measures identify the disadvantaged. The 1995 National Academy of Sciences Report *Measuring Poverty* includes a table of mean demographic characteristics of those who are poor under the official definition and the proposed alternative measure. A similar table can be found in Short (2011). Both sources do not venture much beyond this analysis. Choices about an appropriate poverty measure are rarely decided by empirical tests of their implications for the characteristics of the poor. In this section, we seek to place the choice of a poverty measure on a firmer footing by presenting empirical evidence on how well different poverty measures capture deprivation.

A typical comparison of the poor under alternative definitions can be seen in Table 1, which reports mean characteristics of the poor in 2010 for three different measures: official poverty, the Supplemental Poverty Measure, and consumption poverty. To ensure that differences in mean characteristics are not simply the result of looking at different cutoffs in the distribution of resources, we keep the baseline poverty rate constant at the estimated Supplemental Poverty Measure rate in 2010 in the Consumer Expenditure Survey (16.5 percent).⁷ Thus, each of the three measures of poverty in Table 1 designates the same number of people as poor, but as Table 1 clearly shows, the three poverty measures differ considerably in who is designated as poor. Those categorized as “poor” by the Supplemental Poverty Measure appear less disadvantaged than the official poor: they have higher consumption, are much more likely to have private health insurance, are more likely to own a home and various appliances, are slightly more educated, and have accumulated more assets.

⁷ For example, for the official measure, we find the 16.5 percentile of the distribution of the official income-to-poverty threshold ratio and then report mean characteristics for those with a ratio below that percentile.

Table 1

Mean Characteristics of the Official, Supplemental Poverty Measure (SPM), and Consumption Poor, Consumer Expenditure Survey, 2010

	<i>Official income poor (1)</i>	<i>SPM poor (2)</i>	<i>Consumption poor (3)</i>
Consumption	\$26,886	\$29,140	\$18,000
Head employed	48%	47%	57%
Number of earners	.91	.97	1.50
Any health insurance	62%	63%	57%
Private health insurance	27%	34%	27%
Homeowner	37%	41%	35%
Single family home	27%	32%	26%
Own a car	73%	75%	74%
Service flows from vehicles	\$398	\$502	\$277
Service flows from owned homes	\$1,998	\$2,442	\$1,012
Total service flows	\$2,395	\$2,944	\$1,289
Family size	3.72	3.51	4.51
# of children	1.70	1.37	1.88
# over 64	0.19	0.26	0.21
# of rooms	6.06	6.34	5.08
# of bedrooms	3.02	3.13	2.60
# of bathrooms	1.64	1.73	1.33
Appliances and amenities			
Microwave	92%	93%	91%
Disposal	33%	35%	30%
Dishwasher	41%	44%	36%
Any air conditioning	74%	75%	72%
Central air conditioning	48%	49%	45%
Washer	70%	73%	71%
Dryer	63%	66%	61%
Television	96%	96%	94%
Computer	63%	64%	61%
Education of head			
Less than high school	34%	33%	40%
High school degree	32%	31%	32%
Some college	26%	26%	21%
College graduate	9%	10%	7%
Race of head			
White	72%	73%	73%
Black	22%	21%	21%
Asian	4%	4%	4%
Other	2%	3%	3%
Hispanic origin	27%	24%	33%
Family type			
Single parent families	31%	28%	29%
Married parent families	32%	25%	38%
Single individuals	20%	22%	14%
Married without children	6%	9%	8%
Head 65 and over	12%	16%	10%
Total financial assets			
75th percentile	\$260	\$500	\$300
90th percentile	\$2,400	\$4,000	\$2,502
Unweighted number of families	4,893	5,085	3,704

Notes: The official income and consumption poverty measures are anchored to the SPM poverty rate for this sample, or 16.5 percent. Consumption poverty is calculated using the three-parameter equivalence scale. Financial asset statistics come from samples of families in their fifth Consumer Expenditure Survey interview. Rooms and total consumption are equivalence-scale adjusted and set equal to a family with two adults and two children. All characteristics are for the family but are weighted by family size.

Conversely, those categorized as “poor” by the consumption measure appear more disadvantaged than the official poor: they have much lower consumption, are less likely to have health insurance, are less likely to own most appliances, and are less educated.

The means for those in poverty reported in Table 1 mask some important differences across these measures. A comparison of mean characteristics of the poor under different definitions does not distinguish between those added and subtracted from poverty. The means are also silent on how many people have their poverty status altered by the change of measure. In comparing any two measures of poverty, there will be some people identified as poor under both measures, some poor under neither measure, and some that are poor under one measure but not the other. Thus, a useful way to compare two measures of poverty is to focus on the characteristics of those whose poverty status is altered in moving from one measure to another. A poverty measure that more accurately identifies the disadvantaged would add to poverty individuals who are worse off in other dimensions than those who are subtracted. We attempt to look at all measures of well-being that are available in the datasets we use. One can think of the process as determining which single measure of material well-being is most correlated with other measures of well-being.⁸

The analyses that follow rely on data from the Consumer Expenditure Survey. These data include both income and consumption, as well as information on ownership of durables and assets that is not available in the Current Population Survey. Another advantage of the Consumer Expenditure Survey data is that information is available to calculate a historical series for a Supplemental Poverty Measure. Such calculations cannot be made using the Current Population Survey data because many of the expenses subtracted from income are only available in recent years. Our results are not sensitive to our choice of dataset. In fact, for variables available in both surveys, our analyses line up very closely. For example, our estimate of the Supplemental Poverty Measure poverty rate for 2010 using the Consumer Expenditure Survey, 16.5 percent, is very close to Census estimates of the Supplemental Poverty Measure poverty rate using Current Population Survey data, 16.0 percent.⁹ In what follows, we hold the poverty rate constant across measures, as we did in Table 1.

⁸ This process draws from the social indicator literature. A version of this line of work looks at “social inclusion” (Atkinson, Cantillon, Marlier, and Nolan 2002), which, in practice, is taken to include material well-being, education, health, housing, labor market outcomes, and the ability to participate in society. An even broader set of measures is argued for in Stiglitz, Sen, and Fitoussi (2009), which includes social connections and relationships, the environment, and physical and economic insecurity. While these multidimensional approaches offer certain advantages, an evaluation of this much broader set of indicators is beyond the scope of this paper.

⁹ The estimates of the Supplemental Poverty Measure differ due to small definitional differences. For example, the estimate based on the Consumer Expenditure Survey does not include some noncash benefits—WIC (the Special Supplemental Nutrition Program for Women, Infants and Children), school lunch subsidies, and energy assistance—because receipt of these benefits is not observed in this survey.

Table 2

**Mean Characteristics of the Official and Supplemental Poverty Measure (SPM)
Poor by Poverty Status, Consumer Expenditure Survey, 2010**

	<i>Both SPM poor and official poor (1)</i>	<i>SPM poor only (2)</i>	<i>Official poor only (3)</i>	<i>Neither SPM nor official poor (4)</i>	<i>+ favors SPM</i>
Consumption	\$27,159	\$37,030	\$25,799	\$51,699	–
Any health insurance	61%	68%	65%	78%	–
Private health insurance	28%	55%	20%	70%	–
Homeowner	37%	55%	36%	76%	–
Single family home	28%	46%	24%	66%	–
Own a car	71%	89%	78%	94%	–
Service flows from vehicles	\$415	\$849	\$330	\$1,363	–
Service flows from owned homes	\$2,099	\$3,809	\$1,594	\$6,380	–
Total service flows	\$2,514	\$4,658	\$1,924	\$7,743	–
Family size	3.582	3.205	4.268	3.387	–
# of rooms	6.19	6.92	5.57	7.58	–
# of bedrooms	3.08	3.31	2.76	3.59	–
# of bathrooms	1.68	1.94	1.48	2.15	–
Appliances and amenities					
Microwave	92%	95%	93%	97%	–
Disposal	33%	44%	33%	57%	–
Dishwasher	40%	57%	42%	75%	–
Any air conditioning	73%	82%	77%	83%	–
Central air conditioning	47%	58%	51%	67%	–
Washer	70%	82%	70%	90%	–
Dryer	63%	79%	62%	88%	–
Television	96%	97%	95%	98%	–
Computer	63%	69%	63%	88%	–
Head is a college graduate	9%	14%	7%	34%	–
Total financial assets					
75th percentile	\$300	\$3,000	\$200	\$14,000	–
90th percentile	\$2,502	\$20,000	\$1,400	\$97,000	–
Share of people	13%	3%	3%	80%	
Unweighted number of families	4,085	1,000	808	22,322	

Notes: Official income poverty is anchored at the SPM poverty rate for this sample, 16.5 percent. Official poverty is calculated using the official scale and pretax money income. The sample includes all families in the Consumer Expenditure Survey. Rooms and total consumption are equivalence-scale adjusted and set equal to a family with two adults and two children. All characteristics are for the family but are weighted by family size. Financial asset statistics come from samples of families in their fifth Consumer Expenditure Survey interview.

Comparing Characteristics of Those Added to or Removed from Poverty across Measures

In Table 2, we examine 25 indicators of well-being including consumption, health insurance coverage, home and car ownership, housing characteristics such as number of rooms, number of bathrooms, air conditioning, appliance ownership, education of head, and percentiles of total financial assets. The first column shows the characteristics for those identified as “poor” by both the official poverty measure and the Supplemental Poverty Measure. The second column shows characteristics of

those who would be added to poverty by using the Supplemental Poverty Measure, but who would not be counted as “poor” under the official measure. The third column shows the reverse: that is, the characteristics of those who would be counted as poor by the official measure, but not by the Supplemental Poverty Measure. Finally, the fourth column shows the characteristics of those who are not poor by either the official measure or the Supplemental Poverty Measure.

When comparing the Supplemental Poverty Measure and the official poverty measure, poverty status is classified differently for 6 percent of individuals. Quite strikingly, those added to poverty by the Supplemental Poverty Measure (column 2) appear to be better off than those removed (column 3) according to all 25 indicators. For example, those added to poverty are: consuming nearly 50 percent more; 3 percentage points more likely to be covered by health insurance and 34 percentage points more likely to be covered by private health insurance; 19 percentage points more likely to be a homeowner; 11 percentage points more likely to own a car; living in a house or apartment with nearly 1.4 more rooms; twice as likely to be in a family headed by a college graduate; and wealthier, with more than ten times the assets at the 75th or 90th percentiles (assets are generally zero at lower percentiles). All nine types of appliances or amenities we consider are more common among those added to poverty, even though these families are on average much smaller. In an online Appendix available with this paper at (<http://e-jep.org>), we present results from the Current Population Survey that are very similar to the results from the Consumer Expenditure Survey reported in Table 2.¹⁰

In the same spirit, Table 3 compares consumption poverty to the official poverty measure by looking at who it adds to and removes from poverty in 2010. For this comparison, a much larger fraction of individuals, 16 percent, are classified differently. Those added to poverty by switching to a consumption measure appear to be worse off than those removed for 21 out of 25 indicators. For example, compared to those subtracted from poverty, those added to poverty are: consuming about half as much; 10 percentage points less likely to be covered by health insurance, but slightly more likely to be covered by private health insurance; 3 percentage points less likely to be a homeowner; owning cars with half the value (though slightly more likely to own a car at all); living in homes with about two fewer rooms; 3 percentage points less likely to be in a family headed by a college graduate; and similar in terms of financial assets. Eight of the nine types of appliances or amenities we assess are less common among those added to poverty even though these families are on average much bigger. While the consumption poor will have lower consumption by construction, the full set of indicators overwhelmingly show that the consumption poor are

¹⁰ The similarity of the results across these two data sources is striking, especially given that we are looking at a subtle feature of the data that we can only examine after cross-tabulating poverty calculated two different ways in the different datasets. Among the 17 indicators available in both datasets, only two indicators in the Current Population Survey have a different sign for the difference between those added and subtracted from poverty than in the Consumer Expenditure Survey. Most of the magnitudes are similar as well. These results confirm that our main results are unlikely to be due to something unique to the Consumer Expenditure Survey.

Table 3

Mean Characteristics of the Official and Consumption Poor by Poverty Status, Consumer Expenditure Survey, 2010

	<i>Both consumption poor and official poor (1)</i>	<i>Consumption poor only (2)</i>	<i>Official poor only (3)</i>	<i>Neither consumption nor official poor (4)</i>	<i>+ favors consumption measure</i>
Consumption	\$17,068	\$18,956	\$36,959	\$54,593	+
Any health insurance	59%	55%	65%	80%	+
Private health insurance	20%	35%	34%	73%	-
Homeowner	26%	45%	48%	78%	+
Single family home	17%	36%	38%	68%	+
Own a car	65%	83%	80%	95%	-
Service flows from vehicles	\$194	\$362	\$607	\$1,449	+
Service flows from owned homes	\$666	\$1,368	\$3,364	\$6,808	+
Total service flows	\$859	\$1,730	\$3,971	\$8,257	+
Family size	4.320	4.696	3.103	3.237	+
# of rooms	5.08	5.09	7.04	7.82	+
# of bedrooms	2.61	2.58	3.41	3.69	+
# of bathrooms	1.31	1.36	1.96	2.23	+
Appliances and amenities					
Microwave	90%	92%	95%	98%	+
Disposal	26%	35%	40%	58%	+
Dishwasher	31%	40%	50%	78%	+
Any air conditioning	71%	73%	77%	84%	+
Central air conditioning	42%	48%	53%	69%	+
Washer	65%	77%	75%	91%	-
Dryer	55%	68%	72%	90%	+
Television	95%	94%	97%	99%	+
Computer	56%	66%	70%	90%	+
Head is a college graduate	4%	10%	13%	36%	+
Total financial assets					
75th percentile	\$100	\$800	\$700	\$16,025	-
90th percentile	\$800	\$3,600	\$4,200	\$109,000	+
Share of people	8%	8%	8%	75%	
Unweighted number of families	2,072	1,632	2,821	21,690	

Notes: Both measures are anchored at the Supplementary Poverty Measure (SPM) poverty rate for this sample, 16.5 percent. Consumption poverty is calculated using the three-parameter equivalence scale. Official poverty is calculated using the official scale and pretax money income. The sample includes all families in the Consumer Expenditure Survey. Rooms and total consumption are equivalence-scale adjusted and set equal to a family with two adults and two children. All characteristics are for the family but are weighted by family size. Financial asset statistics come from samples of families in their fifth Consumer Expenditure Survey interview.

worse off along many dimensions than the official poor as defined by income.¹¹ Fisher, Johnson, Marchand, Smeeding, and Torrey (2009) find a similar result

¹¹ We verify that the results in Tables 2 and 3 are not unique to 2010. In the online Appendix we provide versions of Tables 2 and 3 for a pooled sample from 2004–2010. The results for this much larger sample are very similar to those reported here.

for the assets of the elderly—comparing consumption poverty to income poverty for people age 65 to 74, they show that median assets for those who are income-poor but not consumption-poor are nearly nine times greater than median assets for the consumption-poor but not income-poor.

We also examine how the characteristics of those in deep poverty—having resources below half the poverty line—differ across our three poverty measures. Specifically, we conducted analyses similar to those in Tables 1, 2, and 3, but fix the poverty rates at 5.4 percent rather than 16.5 percent. We chose 5.4 percent because that is the Supplemental Poverty Measure deep poverty rate in 2010 based on Consumer Expenditure Survey data. In general, the results for deep poverty, which are in an online Appendix available with this paper at (<http://e-jep.org>), are very similar to those discussed above: compared to the official measure, individuals added to deep poverty by the Supplemental Poverty Measure appear better off than those subtracted based on all 25 indicators—consumption for those added to deep poverty is nearly double that for those subtracted from deep poverty. In addition, compared to the official measure, those added to deep poverty by a consumption-based measure appear worse off than those subtracted for all but three indicators. In fact, using the Supplemental Poverty Measure, those below 50 percent of the poverty line appear better off than the larger group below 100 percent of the poverty line. This finding is consistent with other research that has shown that many families with extremely low reported income in surveys are actually well off in consumption terms, suggesting significant underreporting of income for these families (Meyer and Sullivan 2011).

Decomposing Differences between the Measures

Table 4 decomposes differences between measures to isolate the effects of the components of the change from one poverty measure to another. The decomposition allows us to isolate the extent to which the differences in characteristics reported above are a result of changing the equivalence scale or the resource measure, or varying the thresholds by housing status.

Row 1 reports average consumption, education of the head of the family, share of family covered by health insurance, and number of rooms in home for those classified as “poor” based on the official measure of poverty (using pretax money income, the official poverty thresholds, and the equivalence scale implicit in these thresholds), but fixing the baseline poverty rate at the estimated Supplemental Poverty Measure rate in 2010 in the Consumer Expenditure Survey (16.5 percent). As in Tables 1–3, for all the poverty measures reported in Table 4, we fix the poverty rate at 16.5 percent so the same number of people are considered poor regardless of how poverty is measured. The means in row 1 are also reported in Table 1.

Row 1a of Table 4 indicates how the switch from the (implicit) equivalence scale used in the official poverty measure to the three-parameter equivalence scale used in the Supplemental Poverty Measure affects the mean characteristics of those designated as poor. For example, mean consumption is \$287 lower for those labeled as poor using the three-parameter equivalence scale in the Supplemental Poverty

Table 4

Decomposition of Differences in Poverty Measures as Captured by their Effects on the Mean Characteristics of the Poor in 2010

	<i>Mean for the poor</i>			
	<i>Consumption</i>	<i>Education of head at least a high school degree (percent)</i>	<i>Share covered by health insurance (percent)</i>	<i>Number of rooms in home</i>
1) Official poverty: official scale and resources, single tenure threshold	\$26,886	65.7	61.9	6.1
1.a Official scale to 3-parameter SPM Scale	-\$287	-0.8	-0.2	-0.1
1.b Official resources (pretax money income) to SPM Resources	\$2,844	2.2	1.5	0.5
1.b.i Pretax to after-tax income	\$531	0.1	-0.4	0.2
1.b.ii Add non-cash benefits to income	\$356	0.2	-1.4	0.1
1.b.iii Subtract from income child care, work expenses, and child support paid	-\$25	0.7	-0.6	-0.1
1.b.iv Subtract from income medical out-of-pocket spending	\$1,982	1.2	3.9	0.4
1.c Single threshold to ones that vary by housing tenure	-\$303	0.3	-0.7	-0.1
2) SPM poverty: SPM scale and resources, thresholds vary with tenure	\$29,140	67.3	62.5	6.3
2.a Thresholds that vary by housing tenure to single threshold	\$303	-0.3	0.7	0.1
2.b SPM resources to consumption as resources	-\$11,444	-7.5	-6.1	-1.4
3) Consumption poverty: SPM scale, consumption as resources	\$18,000	59.5	57.1	5.1
4) SPM poverty – Official poverty	\$2,254	1.7	0.6	0.3
5) SPM poverty – Consumption poverty	\$11,141	7.8	5.5	1.3
6) Consumption poverty – Official poverty	-\$8,886	-6.1	-4.9	-1.0

Notes: All data are from the Consumer Expenditure Survey. Bolded rows are from Table 1. The other rows denote how much the mean for each characteristic for the poor changes as a result of changing one component of a poverty measure. For example, \$2,844 in the first column indicates that mean consumption is \$2,844 higher for those labeled as poor using the SPM definition of resources as compared to those labeled as poor using the official poverty measure's definition of resources. All poverty measures are anchored to the SPM rate in 2010, so that the fraction poor for each measure is 16.5 percent.

Measure as compared to the poor using the scale implicit in the official measure. All of the changes in row 1a are negative, which indicates that using the three-parameter equivalence scale results in those classified as poor being more deprived, suggesting that this step leads to a more accurate identification of the disadvantaged.

Row 1b shows how changing from the measure of income used for official poverty (pretax money income) to the measure of income used in the Supplemental Poverty Measure affects the average characteristics of those designated as poor. For example, mean consumption is \$2,844 higher for those labeled as poor using the Supplemental Poverty Measure definition of resources as compared to those designated as poor using the official poverty measure's definition of resources. Overall, the Supplemental Poverty Measure resource definition does poorly—all entries in row 1b are positive and most are substantial. The change in the resource definition leads the average poor person to have more than 10 percent higher consumption, to live with a head who is 2 percentage points more likely to have a high school degree, and to live in a home with 0.5 more rooms. This happens despite a small share of the population having their classification changed.

To determine why the Supplemental Poverty Measure resource definition does so poorly, we look at how mean characteristics of the poor change as we move, in steps, from the official poverty measure's definition of resources to the Supplemental Poverty Measure definition of resources. This breakdown shows that the change from pretax to after-tax income and the addition of noncash benefits to income have counterproductive or mixed effects as seen by the mostly positive signs in rows 1bi and 1bii. Accounting for child care, work expenses, and child support payments has the desired (but small) effect as indicated by the mostly negative entries in row 1biii. The biggest impact comes from the subtraction of out-of-pocket medical spending from income (row 1biv). This subtraction raises average consumption among the poor by \$1,982, accounting for more than two-thirds of the rise in mean consumption of the poor when moving from the official poverty measure's definition of resources to the Supplemental Poverty Measure definition of resources.

It is troubling that this change has such a large impact, because subtracting out-of-pocket medical spending is probably the most controversial of these adjustments on a priori grounds. On the one hand, large out-of-pocket medical expenses resulting from poor health can drain family resources. On the other hand, these expenses can arise because families choose to allocate resources towards health, purchasing expensive health insurance or electing to have procedures that are not fully covered by insurance. It is difficult a priori to determine whether most out-of-pocket medical spending reflects those with lower health status or those who have greater resources and make choices to spend more on out-of-pocket health care costs. While our analysis does not directly address the connection between health status and health spending, our findings point out that when out-of-pocket medical expenses are subtracted from income to calculate poverty, those identified as "poor" have higher consumption, more education, more rooms in their home and are more likely to be covered by health insurance. This pattern is consistent with a belief that many families with large medical out-of-pocket expenses have the resources to support such spending, and they are making a choice to spend as much as they do on medical care. The importance of this issue, and its substantial impact on who is defined as poor, suggests a need for more research on the relationship between health spending and health status.

Another perhaps surprising result that runs contrary to long-held beliefs among poverty researchers is that when the Supplemental Poverty Measure accounts for noncash benefits and taxes, it is designating a better-off group as poor. Conceptually, in a world without defects in data and measurement, there is a strong argument for including noncash benefits and taxes in the measure of income. However, as already noted, one of the largest noncash benefits, food stamps, is more likely to be omitted than reported by a recipient in the Current Population Survey. In addition, taxes are typically imputed in surveys.¹² In the Current Population Survey, even when 100 percent take-up of the Earned Income Tax Credit is assumed, the imputed dollars amount to only two-thirds of what the IRS actually pays out to the working poor for some large demographic groups such as single parents. Given that those most likely to take up government benefits such as food stamps and Temporary Assistance for Needy Families are those who are in greatest need (Blank and Ruggles 1996) and those most likely to report them are the worst-off recipients (Meyer and Goerge 2011), it may be that accounting for the benefits may remove from the poverty count those who are among the worst off, distorting the ability of the measure to identify the disadvantaged. Similarly, tax credits may be particularly well targeted to the disadvantaged, leading to a situation where the credits are accounted for but other sources of income are not, so that those raised above the poverty line by tax credits are in fact more needy than those who are left behind. Providing firmer answers to the puzzle of why the after-tax and noncash transfer income adjustment performs so poorly should be a high priority.

A fundamental problem with income-based poverty measures is that income misses the rental value of homeownership. Someone who owns a home outright receives a flow of services and does not have to pay high housing expenses. Shelter expenses are by far the largest expenditure for most families, and this share has been rising over time—in 2008 they accounted for about 36 percent of expenditures in the bottom income quintile, up from about 28 percent in 1980. The Supplemental Poverty Measure attempts to address this problem by setting different thresholds by three housing status groups: homeowners with a mortgage, homeowners without a mortgage, and renters. Row 1c shows the effect of specifying different thresholds by housing status. The change in characteristics supports this step; adjusting thresholds by housing status results in a group designated as “poor” that has slightly lower consumption and is slightly less likely to be covered by health insurance. However, this adjustment is only a partial solution to the problem that income misses the value of homeownership. The split of households by housing status only accounts for about 25 percent of the actual variation in housing costs, based on our own regressions of housing expenses on indicators for housing status. The Supplemental Poverty Measure treats as the same a small mortgage payment on a loan taken out 25 years ago and a large payment on one taken out in the last year.

¹² Taxes are imputed in the Current Population Survey. We impute taxes when using the Consumer Expenditure Survey because the tax information that is collected appears to be significantly underreported.

This last step completes the transition from the official poverty measure to the Supplemental Poverty Measure. Taken together the Supplemental Poverty Measure performs worse than the official measure, in the sense that all four indicators have higher values for the Supplemental Poverty Measure than official poverty (as shown in row 4).

Two important components of the Supplemental Poverty Measure are not addressed in Table 4: the effect of changing from a resource-sharing unit based on those related by blood or marriage to one that includes cohabitators and other individuals who may be sharing resources; and the effect of adjusting thresholds for geographic variation in prices. In separate analyses, we examine the impact of these two changes using the Current Population Survey, which has a more limited set of indicators of well-being. These results, which are in an online Appendix available with this paper at (<http://e-jep.org>), are mixed. For example, moving to the Supplemental Poverty Measure unit slightly increases the likelihood that the poor are covered by health insurance while it slightly decreases the fraction living with heads with at least a high school degree. Adjusting the thresholds for geographic price variation decreases the likelihood that the poor are covered by health insurance and the fraction living with heads with at least a high school degree, but both of these changes are small.

The remaining part of Table 4 takes us from the Supplemental Poverty Measure to our consumption-based measure of poverty in two steps. First, we undo the step that adjusts the thresholds by housing status. We then shift from the income-based measure of resources used in the Supplemental Poverty Measure to a consumption-based measure. This change lowers the average characteristics of those designated as poor significantly (row 2b). Not surprisingly, average consumption is substantially lower (39 percent) for the consumption poor. But the other characteristics also indicate greater deprivation for the consumption poor: the family head is 7.5 percentage points less likely to have a high school degree; the family is 6.1 percentage points less likely to be covered by health insurance; and their homes have 1.4 fewer rooms.

Capturing Differences in Well-Being across Age Groups

One of the most noticeable differences between the Supplemental Poverty Measure and the official measure is that poverty rates by age change sharply. In 2010, the official poverty rate for children was 22.5 percent while the Supplemental Poverty Measure rate was 18.2 percent. For those 65 or older, the official poverty rate was 9 percent while the Supplemental Poverty Measure rate was 15.9 percent. A range of other evidence shows that the economic circumstances of the elderly are better (and the poverty rate is much lower) than that of other groups, which is inconsistent with the estimates of who is poor from the Supplemental Poverty Measure.

The major reason for these differences by age traces back to the subtraction of medical out-of-pocket expenses from income when calculating the Supplemental Poverty Measure. Short (2011) reports that subtracting medical out-of-pocket

expenses raises overall poverty by 3.3 percentage points, while no other incremental change has more than a 1.9 percentage point effect. This adjustment disproportionately affects the elderly; subtracting medical out-of-pocket expenses raises their poverty rate from 8.5 percent to 15.5 percent, nearly doubling it.

Further complicating income-based poverty measures for the elderly is the fact that these measures will understate the well-being of elderly Americans, because older Americans are more likely to be spending out of savings and using assets (like homes and cars) that they own. In the 2000s, two-thirds of those in the bottom income quintile of the elderly owned a home; conversely, for the bottom income quintile of children, 35 percent lived in an owned home. The elderly as a group also have considerably more assets than those in the bottom income quintile for other groups. In recent years, the financial assets of the low-income elderly were 19 times greater than those for children in low-income families, and 3.5 times greater than those of low-income nonelderly adults. Income surveys such as the Current Population Survey also seem to have difficulty in capturing retirement income sources. For example, in 2006, of \$125 billion in taxable IRA withdrawals, \$6 billion was reported in the Current Population Survey (Investment Company Institute 2009).

Our own calculations, using a consumption-based measure of poverty, find that those 65 and older have much lower poverty rates than most other demographic groups and that these rates have fallen sharply over time: over the past three decades elderly poverty has fallen by more than 60 percent, while child poverty has fallen by about 25 percent (Meyer and Sullivan 2012). Aguiar and Hurst (2005) argue that even consumption may understate the well-being of the aged, because the prices that the elderly pay are lower than what others pay. In addition, while our consumption measures capture the largest durables (vehicles and homes), the stock of other durables such as furniture and appliances owned by the elderly is greater than that of others, providing a flow of resources that exceeds that of other age groups.

To examine the possible effects of age on poverty measures, we re-did the calculations behind Tables 1–4 separately for children, nonelderly adults, and the elderly. Our general results continue to hold: that is, when classifying by age group the Supplemental Poverty Measure typically identifies as “poor” people who are better off by the characteristics we look at compared to the official poverty measure, while a consumption-based poverty measure typically identifies as “poor,” people who are worse off by the characteristics we look at compared to the official poverty measure. Again, the detailed results are available in an online Appendix available with this paper at <http://e-jep.org>.

Changes in Measures of Poverty over Time

How one adjusts poverty thresholds over time will determine how a poverty measure assesses changes in disadvantage over time. Recall that assessing changes in poverty over time was one of two main goals for a poverty measure. One needs to decide whether the poverty thresholds should be absolute cutoffs or be relative

to some standard. With an absolute poverty measure the thresholds are adjusted for inflation, so that the real value of the thresholds remains unchanged over time. With a relative poverty measure, the real value of the thresholds can rise or fall over time. An absolute measure of poverty is particularly useful for understanding changes in the material circumstances of the population or for evaluating policy changes that aim to reduce the number of people with very few resources. However, an important concern with an absolute measure is that societal views on what it means to be poor change, particularly over longer periods. Goods that are viewed as luxuries for one generation, such as televisions or cars, may be viewed as necessities by future generations. Even some of those involved in President Johnson's War on Poverty who advocated an absolute measure of poverty acknowledged that antipoverty goals should be updated, albeit infrequently, to reflect rising living standards (Lampman 1971).

Relative poverty measures provide another way of characterizing the extent of deprivation in a population. The most common type of relative poverty measure sets the thresholds as a given percentage of median income or consumption. For example, the European Union focuses on a measure of poverty defined as the fraction of the population below 60 percent of median income. However, relative poverty measures have a number of important limitations. A relative measure keeps adjusting the standard for overcoming poverty, which makes understanding what the poverty measure captures much more difficult. This characteristic is particularly problematic for evaluating policy. Antipoverty policies that affect incomes around the median as well as at the bottom might reduce the extent of deprivation but have no impact on a poverty measure defined relative to median income. As one example, Ireland grew rapidly in recent years with real growth in incomes throughout the income distribution, including the bottom. However, because the middle grew a bit faster than the bottom, a relative poverty measure shows an increase in poverty while an absolute measure shows a sharp decrease in poverty (Nolan, Munzi, and Smeeding 2005). Another troubling example occurs during a recession in which median income or consumption falls. With a recent period of falling officially measured median income in the United States, we could have relative poverty falling despite a decline in incomes at low percentiles.

How Well Do the Three Poverty Measures Assess Changes in Disadvantage over Time?

The official measure of poverty is often advertised as an absolute measure, but this characterization is not quite right, because the poverty lines are adjusted upwards over time to account for inflation using the Consumer Price Index, which overstates the true rise in the cost of living. The price index has this bias because it does not take into account sufficiently the arrival of new goods in the market, quality improvements in existing goods, and possibilities for substitution between goods. In Meyer and Sullivan (2012), we provide an extensive discussion of the

evidence for and implications of the overstatement of inflation in setting the official poverty thresholds.

This bias has a considerable effect on changes in the poverty rate over time. Between 1980 and 2010, the official poverty rate rose by 2 percentage points. If one corrects for the overstatement in inflation, however, the poverty rate would have fallen by more than 2 percentage points. If, in addition, poverty is calculated using income that more closely approximates resources available for consumption, then the poverty rate would have fallen by more than 5 percentage points over the past three decades. If a consumption-based measure of poverty was used, the decline would have been more than 8 percentage points.¹³ Clearly, how one measures poverty has a considerable impact on our understanding of how poverty has changed over time.

The Supplemental Poverty measure is not a pure absolute measure of poverty, because the value of the poverty thresholds will change in real terms over time. It is also not a pure relative measure of poverty, because the value of the poverty thresholds do not change one-for-one with a change in a point in the distribution of income (like the median). As a result, interpreting changes in the poverty rate as calculated by the Supplemental Poverty Measure will be challenging.

For example, in a deep recession during which the 30th to 36th percentiles of spending on food, clothing, shelter and utilities fall, the poverty rate as calculated by the Supplemental Poverty Measure indicate estimate that poverty fell, even at a time when absolute deprivation rose. Likewise, if we were to expand programs that provide for those around the 33rd percentile of the distribution of spending (or cut the rates in the lowest income tax brackets), then the rise in incomes for those around the 33rd percentile would lead to higher poverty thresholds—and likely lead to a conclusion that these policies raised the poverty rate. It will be unclear whether changes in the poverty rate generated by the Supplemental Poverty Measure are due to family incomes changing or the thresholds changing, making it difficult to determine whether antipoverty policies are effective at reducing deprivation.

As an illustration of this point, we use data from the Consumer Expenditure Survey, along with the Supplemental Poverty Measure definition of poverty, to create a data series of what the changes in poverty thresholds would have looked like. In Table 5, we report the level and decadal changes, adjusted for inflation, in the Supplemental Poverty Measure thresholds along with several benchmark series. We find that the changes in the Supplemental Poverty Measure thresholds have been very different than the changes in other benchmarks of well-being like changes in median consumption, expenditures, or after-tax and transfer income. For example, in the 1980s, the Supplemental Poverty Measure thresholds would have risen by

¹³ These results are from Meyer and Sullivan (2012). The income poverty measures are constructed using Current Population Survey data. The income measure that more closely reflects resources available for consumption is similar to Supplemental Poverty Measure resources, but it does not subtract child care, medical out-of-pocket, and other expenses because information on these expenses were not collected in the Current Population Survey before 2010.

Table 5

Official and Supplemental Poverty Measure Thresholds and Median Consumption and Income, 1980–2010

	<i>Official poverty thresholds</i> (1)	<i>SPM thresholds</i> (2)	<i>Median consumption</i> (3)	<i>Median expenditures</i> (4)	<i>Median after-tax income plus noncash benefits</i> (5)
1980	\$16,567	\$16,793	\$30,218	\$31,399	\$40,129
1985	\$17,328	\$16,879	\$32,139	\$34,299	\$42,620
1990	\$18,327	\$18,095	\$33,260	\$35,861	\$47,014
1995	\$19,519	\$19,139	\$34,420	\$37,180	\$49,050
2000	\$20,441	\$20,725	\$37,887	\$39,830	\$57,793
2005	\$21,268	\$22,202	\$41,288	\$44,418	\$58,005
2010	\$22,113	\$24,457	\$39,993	\$43,197	\$54,540
% Change: 1980–1990	10.6%	7.8%	10.1%	14.2%	17.2%
% Change: 1990–2000	11.5%	14.5%	13.9%	11.1%	22.9%
% Change: 2000–2010	10.0%	18.0%	5.6%	8.5%	–5.6%
% Change: 1980–2010	35.8%	45.6%	32.3%	37.6%	35.9%

Notes: All numbers are in 2010 dollars using the adjusted CPI-U-RS price index from Meyer and Sullivan (2012). Official thresholds are those reported by the U.S. Census Bureau for a family with two adults and two children. The Supplemental Poverty Measure (SPM) thresholds are for a family with two adults and two children. Consumption and income are equivalence-scale adjusted using the three-parameter scale, and set equal to a family with two adults and two children. Columns 2–4 are calculated using Consumer Expenditure Survey data, while column 5 is calculated using the Current Population Survey. Resources are measured at the family level but individual weighted. Income includes all money income less tax liabilities plus tax credits, food stamps, and CPS-imputed measures of housing and school lunch subsidies.

7.8 percent, while median after-tax income plus noncash benefits rose 17.2 percent. In the 2000s, on the other hand, while the Supplemental Poverty Measure thresholds would have risen 18 percent, median after-tax income plus noncash benefits fell by 5.6 percent. In short, it is difficult to get an intuitive sense of exactly what any change in the Supplemental Poverty Measure would capture.

Conclusion: Goals for a Poverty Measure

Constructing a measure of deprivation is inherently difficult. The Census Bureau's new Supplemental Poverty Measure, released for the first time last fall, has some conceptual advantages over the official poverty measure, including a more defensible adjustment for family size and composition, an expanded definition of the family unit that includes cohabitators, and a definition of income that is conceptually closer to resources available for consumption. However, when we compare those added to and dropped from the poverty rolls by the alternatives to the current official measure, we find that the Supplemental Poverty Measure adds to poverty

individuals who have higher consumption levels and are more likely to be college graduates; to own a home and a car; to live in a larger housing unit; and to have other more favorable characteristics than those who are dropped from poverty. On the other hand, we find that a consumption-based poverty measure compared to either official poverty or the Supplemental Poverty Measure adds to the poverty rolls individuals who are more disadvantaged than those who are dropped. Even if the Supplemental Poverty Measure did not subtract out-of-pocket medical spending from income, it would perform slightly worse than the official measure, and much worse than a consumption-based measure of poverty, in terms of identifying the disadvantaged. Our results present strong evidence that a well-constructed consumption-based poverty measure would be preferable to income-based measures of poverty, like the official income measure and the Supplemental Poverty Measure, for determining the most disadvantaged.

We have also discussed how a poverty measure captures changes in disadvantage over time due to public policies and social and economic change. The official poverty resource measure that misses taxes and in-kind transfers is clearly ill-suited to analyze program effects. However, the Supplemental Poverty Measure resource measure may not perform well, either. Of particular concern is the high and sharply increasing rate of underreporting of government transfers in the Current Population Survey. Furthermore, because the Supplemental Poverty Measure poverty thresholds change in an opaque and unintuitive way over time, it will be hard to determine if changes in poverty are due to changes in income or changes in thresholds. In comparison, consumption-based poverty measures with thresholds that are periodically revised in real terms could have many of the advantages of the Supplemental Poverty Measure, but fewer disadvantages.

We have focused in this paper on the use of a poverty measure to determine who is disadvantaged at a point in time and over time, but there are other uses for a poverty measure. Given the limits on data, a consumption-based measure of poverty will work better for some of these uses than others. For example, the current sample sizes in the Consumer Expenditure Survey are not sufficient for useful comparisons across states or localities. Also, while a consumption-based measure of poverty may be used to set overall standards for program eligibility, individual consumption data are not suitable for determining eligibility for antipoverty programs. Given that at least some components of income, such as formal earnings and transfer income, are easier to collect and validate, income will typically be more appropriate for determining program eligibility for individuals or families.

Our results raise the question as to whether income, even when modified to be conceptually closer to consumption, can reliably be used to measure well-being for the most disadvantaged. Our results also suggest that some largely untested but common presumptions may turn out to be wrong. For example, many researchers have argued that income after accounting for taxes and noncash benefits more closely reflects material well-being than pretax money income. While this may be true conceptually, in practice accounting for taxes and noncash benefits may not help if they are imprecisely measured in income data sources.

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