Comparing Supplemental Poverty Measure Thresholds and Family Budgets: Rethinking Income to Poverty Ratios

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Introduction

In 1995, the National Academy of Sciences (NAS) Panel on Poverty and Family Assistance released a report (Citro and Michael, 1995) that evaluated the current method of poverty measurement in the United States and recommended changing the definition of both the poverty thresholds and the family resources that are compared with those thresholds to determine poverty status. One of the goals of the NAS panel was to produce a measure of poverty that explicitly accounted for government spending aimed at alleviating the hardship of low-income families. Thus, taking account of tax and transfer policies, such as the food stamp program and the earned income tax credit (EITC), the measure can show the effects of these policies on various targeted subgroups, for example, families with children. The current official measure, which does not explicitly take account of these benefits, yields poverty statistics that are unchanged regardless of policy changes.

In the fall of 2009, the Office of Management and Budget's Chief Statistician formed an Interagency Technical Working Group (ITWG) on Developing a Supplemental Poverty Measure. That group included representatives from the U.S. Census Bureau, Bureau of Labor Statistics (BLS), Economics and Statistics Administration, Council of Economic Advisers, U.S. Department

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of Health and Human Services, and Office of Management and Budget. The 2010 ITWG was charged with developing a set of initial starting points to permit the U.S. Census Bureau, in cooperation with the Bureau of Labor Statistics (BLS), to produce a Supplemental Poverty Measure (SPM).

The ITWG issued a series of suggestions to the Census Bureau and BLS on how to develop a new Supplemental Poverty Measure (see Observations from the Interagency Technical Working Group on Developing a Supplemental Poverty Measure, 2010). These suggestions drew on the recommendations of a 1995 National Academy of Sciences report and the extensive research on poverty measurement conducted over the past 15 years, at the Census Bureau and elsewhere. Some of their suggestions include:

- Poverty Thresholds The ITWG suggested that the poverty thresholds should represent a dollar amount for a basic set of goods that includes food, clothing, shelter and utilities (FCSU), and a small additional amount to allow for other needs (e.g., household supplies, personal care, non-work-related transportation). This threshold should be developed by the BLS with expenditure data for families with exactly two children using Consumer Expenditure Survey data, and it should be adjusted (using a specified equivalence scale) to reflect the needs of different family types and geographic differences in housing costs. Adjustments to thresholds should be made over time to reflect real growth in expenditures on this basic bundle of goods at the 33rd percentile of the expenditure distribution.

- Family Resources The ITWG suggested that family resources should be defined as the value of money income from all sources, plus the value of near-money benefits that are available to buy the basic bundle of goods, minus necessary expenses for critical goods and services not included in the thresholds. Near-money benefits include nutritional assistance, subsidized housing, and home energy assistance. Necessary expenses that must be subtracted include income taxes, Social Security payroll taxes, childcare and other work-related expenses, child support payments to another household, and contributions toward the cost of medical care and health insurance premiums, or medical out-of-pocket costs (MOOP).

Motivation

When the Census Bureau published estimates of the Supplemental Poverty Measure in November 2011 and November 2012, there was considerable interest in comparing the number of people with incomes between 100 and 200 percent of the poverty threshold to the number

of people with SPM resources at this level. While about 19 percent of people had incomes between 100 and 200 percent of the official thresholds, 31.8 percent of people had SPM resources in this category. While some work attempted to understand the differences in the two measures (Short and Smeeding, 2012) that resulted in this increase, it was difficult to characterize the economic condition of families and individuals whose SPM resources were at this level.

Over the last decade many analysts have been using 200 percent of the official poverty line as a measure of low income or income inadequacy. For example, a report released in January 2013 by the Working Poor Families Project (WFPP) defines low-income as those with incomes below 200 percent of the official poverty threshold. This usage is based, in part, on comparisons of the official poverty thresholds with standard budgets ("basic needs budgets," "family budgets," or the Self-Sufficiency Standard) that estimate the cost of a basic, "no-frills" standard of living. This has led some analysts to use the phrase "low-income" to refer to families or persons below the 200 percent level. As a consequence, many readers interpreted the increase in people between 100 and 200 percent of the SPM thresholds as a surge in the number of "low-income" families.

This paper is aimed at further understanding the relationship between the SPM thresholds and a budget-based standard. Specifically, should the population below 200 percent of the SPM threshold be equated to the population below 200 percent of the official threshold or below the family-budget needs standard? To do this we turn to examining budget standards.

Budget Standards and the Poverty Line

In their 1995 report, the NAS expert panel reviewed many approaches to measuring poverty. One approach they examined was the use of expert budgets (Citro and Michael 1995, p 32, 122). They noted that there are a variety of budget standards ranging from those that identify and price a detailed list of items and those that only specify a few item types and then employ a multiplier expressing that most families spend, for example, a percentage of their income on food, to arrive at a poverty line.

The development of a budget standard requires a large element of subjective judgment. In developing a budget, decisions must be made regarding which items to include in the budget and then how to specify the amounts of each item selected. The determination of budget items also relies on relative judgments. In specifying the items included in a budget, their quality and nature are influenced by current norms. These relative judgments are furthermore determined by current time and place and change depending upon the standings relative to some currently acceptable reference group. Standards are then defined based on some target level relative to that reference group such as a subsistence level or a level that allows achievement of such statuses as social inclusion, self-sufficiency or social acceptance.

Another way that budget standards vary is the level at which they are defined. A budget may be defined for individuals, based on age and gender, for example, and then aggregated to the family level by adding up across individuals. On the other hand, they may be specified for families of different sizes such as a food basket required for a single individual or a family with two children. These choices implicitly determine equivalence scales that account for different needs of different family types and for economies of scale. Aggregating across individual budgets for example will not account for economies of scale in that savings are achieved by sharing resources, such as housing and heating.

One aspect of budget standards is that they may not account for substitution across commodities and within commodity groups. For example, substitution might occur when a family can eat fish that they catch rather than steak purchased in a store. The broader the categories that are defined, the more opportunity for substitution might be allowed in a budget standard approach.

Once the items that are considered to be required to achieve a given standard of living are determined, the items included in the budget need to be priced in order to transform the list of items into a dollar amount that will serve as a poverty threshold. Determining prices of goods is a complex task as prices vary geographically and change over time.

Another approach to the pricing of budget items is to rely on expenditure data. This approach determines how much families of certain types are spending at the median, or some

other level, on each item or group of items, rather than specifying what precisely they need to buy to achieve a given standard of living. This approach is used to determine the SPM thresholds. The SPM that uses reported expenditures of families on food, clothing, shelter and utilities, without specifying exactly the commodities that families must choose. This approach avoids politically charged debate over which specific items to include, the quantities of these items and the pricing of each item.

Budgets also differ in the level of specificity by employing the use of multipliers. In general, the use of a multiplier can reduce the level of detail of specified needs. The value of the multiplier can also be determined by looking at expenditures. For example, Orshansky used a 1955 food consumption survey to show that on average families spent a third of income on food, and she applied a multiplier of three times the cost of food to construct her thresholds. Similarly, the NAS panel determined that families require additional items beyond food, clothing, and shelter and recommended that these other unspecified items would add an additional 15 to 25 percent of spending to a basic threshold.

The NAS panel recommended using expenditures to price needed goods and avoided specificity in listing needs to determine thresholds. In doing so they noted differences between various expert budgets and the use of expenditures on broad groups of commodities. They noted that budget standards are prescriptive, specified in an ex ante determination of need and, given a particular time and place, absolute in nature. On the other hand, using expenditures to set a level of need is descriptive, that is, rather than prescribing a particular set of items, it describes what is being spent ex post. As such, the specification of need is determined relative to the observed spending of a reference family type.

These deliberations about various approaches to poverty measurement led to the recommendation of the NAS panel that underlie the construction of the SPM thresholds. These thresholds are constructed using data on the expenditures of families with two children on food, clothing, shelter, and utilities plus a little bit more for other items at the 33rd percentile of this spending distribution.

In its recommendations, the NAS panel chose a single method of measuring the level of poverty in the U.S. However, it was not intended to preclude the construction and use of budget standards, or other approaches, generally. Indeed, measuring the well-being of individuals and families is best achieved by employing many measures as each sheds light on this important status. Considering different measures shows that each approach answers a different set of questions and there are many questions about well being that should be asked and answered.

Other countries often employ a variety of measures to better understand family well-being. For example, Peter Saunders (1999) examined the differences between low-cost budget standard estimates for households in Sydney in 1997 and the Henderson poverty line, a measure used in Australia. Saunders addressed some of the differences in the two approaches, noting, similar to the findings of the NAS panel, that budgets are transparent and flexible (can be constructed at various levels of well-being, such as low cost or modest but adequate), can be calculated for individuals and added up to a household threshold or developed for one family type and extended to others using an equivalence scale. According to Saunders, the raison d'être for a budget standard is the normative specification of need. In contrast, examining expenditures as a measure of need incorporates actual behavior, choices, substitutions, and importantly, constraints that households or families are facing.

According to Saunders, a poverty measure has two important purposes: (1) to measure the prevalence of poverty over time and across groups, and (2) to measure the adequacy of low income transfers and other policies aimed at addressing deficiencies. In his study, comparing the two measures underscored the importance of having a measure that is based on current standards, circumstances, values and conditions and showed the problems inherent in the use of outdated measures. In this regard, ease of updating and adjusting to changes over time and place are important elements of any measure.

Canada is another example where several measures are available. Canada has three measures of poverty. These are (1) a set of low-income cutoffs, (2) a relative income poverty measure, and (3) a market basket measure or budget standard. These three measures differ in

their level of complexity, degree of international comparability, cost to produce and maintain, method of construction, and timeliness of updating. Zhang (2010) compared the three measures from 1976 to 2006 and examined how each measure changed over time. While the three measures tracked a similar pattern generally following business cycles, each measure shed light on identifying those individuals who were vulnerable at different periods of time and each measure missed different vulnerabilities. Understanding the different approaches taken by each measure and examining how each measure changes over time and across business cycles sheds light on our understanding of poverty and well-being in a way that no single measure can do.

While ideally one single measure could capture all aspects of well-being accurately over long periods of time, it is not likely. Economic well being is multidimensional and extremely complex, changes rapidly over time and varies widely by place, and is defined relative to current norms and values. Comparing the SPM to other types of measures improves our understanding of its usefulness, the scope of its ability to identify vulnerable families, and its weaknesses in doing so. Further, the cost and maintenance of measures in a period of few resources for statistical measurement is an important consideration in choosing a measure.

In this spirit, this paper examines two different approaches to measuring poverty in an effort to understand the SPM by comparing it to another measure, in this case a family budget standard. This exercise will illustrate how examining two different approaches to measuring a similar concept can help us appreciate the advantages and disadvantages of each.

Using Budget Standards to Understand the SPM

For this exercise, we will use the specific set of family budgets published by the Economic Policy Institute (EPI) as an example of a family budget calculation.[1] These Basic

[1] Other budgets are available. Dr. Diana Pearce at the University of Washington's School of Social Work has developed the Self-Sufficiency Standard for 37 states. Dr. Any Glasmeier at the Massachusetts Institute of Technology publishes a "living wage calculator" that provides more up-to-date estimates of the cost of living in different communities. (http://livingwage.mit.edu/) Glasmeier's calculator was modeled after the EPI family budgets and most recently updated in June 2012. Estimates for food, housing and other necessities in the most recent version of the calculator use 2010 estimates or data. (Unfortunately, the data for all geographic areas is not available from the living wage website).

Family Budgets were last published in 2008 for 2007 and are available on the EPI website (http://www.epi.org/resources/budget/). The 2008 EPI Family Budgets consist of seven individual components: rents, food, transportation, child care, health care, taxes, and other items of necessity. These components are valued according to accepted standards or guidelines for each broad component. Since there are no EPI budgets for years since 2007 and the first SPM thresholds were developed for 2009, we will update the three of the seven components of the EPI basic family budgets to 2011 levels in order to compare them to 2011 SPM thresholds.

The construction of the family budgets thresholds differ from the SPM thresholds in several ways. First, the SPM thresholds estimate the amount for food, clothing, shelter and utilities from Consumer Expenditure data on spending by consumer units with exactly two children. The family budgets estimate the cost of food using the USDA estimates of the Cost of Food at Home and the cost of shelter using HUD fair market rents.[2] The SPM thresholds add 20 percent for miscellaneous items while the family budgets add 24 percent for clothing and miscellaneous items. The SPM includes transportation not related to work in the miscellaneous category while the EPI budgets have a single transportation category that includes both work-related and other transportation. This results in important differences between the family budgets and the SPM for FCSU that would lead us to expect differences in values. These differences include assumptions about regarding housing, geographic differences, and equivalence scales.

Housing

The EPI family budgets estimate the amount of money needed for housing and utilities as the amount required to rent a certain size of home. In this way, the budget assumes that everyone is a renter. EPI rent calculations use the U.S. Department of Housing and Urban Development (HUD) data on Fair Market Rents (FMRs). FMRs are rent estimates for "privately owned, decent, and safe rental housing of a modest (nonluxury) nature with suitable amenities." Furthermore, FMRs are gross rent estimates, and thus include the costs of shelter rent plus utilities such as water, gas, and electricity, but not the cost of telephones, cable or satellite television service, or internet service. For most areas, the FMR represents the 40th

[2] The EPI budgets use the USDA low-cost food plan. USDA also publishes estimates of the cost of the thrifty plan, the moderate-cost plan and the liberal plan.

percentile of county-level rental market prices—the price at which 40% of rental housing falls below and 60% of rental housing lies above.

The use of FMRS to value housing in the EPI budgets assumes that everyone is a renter. On the other hand, the SPM uses reported expenditures on housing by tenure status. The SPM defines separate thresholds for renters, homeowners with mortgages, and homeowners without mortgages. Not surprisingly, this results in considerably lower thresholds for those homeowners who own their home free and clear.

Markets rents are a good approximation of the value of dwelling services for most rental housing. However, some households do not pay a market price for the accommodation that is consumed. These include households living in subsidized rental or rent-controlled units, and households living in owner-occupied dwellings without mortgages. Garner and Short (2010) have examined the approach when homeowners are treated as renters on the threshold side and show that it is appropriate to then add net rental income to the income side for these groups. The SPM approximates this flow of services of home ownership by lowering the threshold for homeowners without mortgages and in doing so captures the fact that homeowners who have no mortgage on their homes spend less for housing than those who do have mortgages. This difference in measurement suggests that using the budgets as a threshold would result in higher poverty rates for that group of homeowners that owns their home free and clear without a mortgage compared to poverty estimates using SPM thresholds.

Geography

The EPI Family Budget Calculator provides estimates of costs by state, city, metropolitan or rural area. The 521 distinct urban areas represented in the 2008 EPI Family Budgets include two classifications: *Metropolitan Statistical Areas (MSAs)* and *HUD Fair Market Rent Areas (HMFAs).* Both housing and transportation vary by geographical area in the EPI family budgets. The rent portion is based on HUD FMRs. The transportation portion relies on the average total miles driven by MSA size from the National Personal Transportation Survey

The geographic adjustments to the SPM thresholds are based on five-year ACS estimates of median gross rents for two-bedroom apartments with complete kitchen and plumbing facilities. Separate medians were estimated for each of the 309 MSAs large enough to be identified on the public use version of the CPS ASEC file.

Renwick compared geographic adjustment differences between FMRs and the ACS adjustments used for the SPM. A priori it is difficult to predict how these difference approaches will effect outcomes using the two thresholds.

On average, the total amount of the EPI budget for 2007 was more than twice the 2007 official poverty threshold for a family with two adults and two children but this varied by geography, ranging from 64 percent higher than the official thresholds in Marshall County, Mississippi to 236 percent higher for Nantucket-Dukes Counties in Massachusetts. These differences in geographic adjustments would introduce differences in estimated poverty rates by region or by residence.

Equivalence scales

Equivalence scales adjust thresholds according to assumptions about differences in need across individuals of different ages and across families of differing sizes depending upon economies of scale assumptions. The SPM thresholds adjust the thresholds for other family sizes using a three-parameter equivalence scale.[3] The family budgets adjust each element of the budget (in this case food, shelter and transportation) using an explicit assumptions about the economies of scale in the consumption of each item.

For example, the USDA cost of food at home builds a monthly food budget for each resource unit by adding up the specific food requirements of each member. These food requirements vary by gender and age. After the total food budget is calculated, economies of

[3] The three-parameter scale is calculated in the following way: for one and two adults, the scale = $(\text{adults})^{0.5}$; for single parents, the scale = $(\text{adults} + 0.8 * \text{first child} + 0.5 * \text{other children})^{0.7}$ and for all other families, the scale= $(\text{adults} + 0.5 * \text{children})^{0.7}$.

scale are taken into account by increasing the total for families with less than four persons and decreasing the total for larger families.[4]

Equivalence scales for the shelter portion depend on HUD estimates of the fair market rent for units with different numbers of bedrooms and the Census Bureau algorithm for assigning each household an "ideal" number of bedrooms.[5]

Other Differences Between the SPM and EPI Budgets

As noted above, EPI Family Budgets consist of seven individual components: rent, food, transportation, child care, health care, taxes, and other items of necessity. Transportation, child care, health care and taxes make up a large portion of the EPI budgets and like the FCSU portions are measured differently from the SPM. These elements represent, on average, about half the cost of the EPI family budgets but this proportion varies by geography, ranging from 33 percent of the budget in Wabasha County, MN to 55 percent of the budget in Orange County, CA. The most important difference is in the notion that, as Saunders stated, the budget standard is the normative specification of need while in contrast the SPM looks at actual spending as a measure of need and, as such, incorporates actual behavior, choices, substitutions, and importantly, constraints that households or families face. These elements are very different between the two measures. On average, these "normative" amounts far exceed the expenditures amounts reported by Current Population Survey Annual Social and Economic Supplement (CPS ASEC) respondents (see Table 3.) Since we have not updated the budget estimates for these other elements, the following analysis includes comparisons of the SPM to

[4] Specifically, USDA recommends the following adjustments: 1-person – add 20 percent; 2-person – add 10 percent; 3-person – add 5 percent; 4-person – no adjustment; 5- or 6-person – subtract 5 percent; 7-(or more) person – subtract 10 percent. (http://www.cnpp.usda.gov/Publications/FoodPlans/2011/CostofFoodJun2011.pdf)

[5] The bedroom imputation attempts to assign each household the number of bedrooms for which it would be eligible under the most common housing assistance program rules based on the composition of the primary family and related subfamilies. The head of the primary family is assigned one bedroom. One bedroom is assigned to every two children under the age of six of the same sex. If there is only one child under the age of six, the child shares a bedroom with any same sex person over six. If there is an odd number of children under the age of six (and more than one), the extra child is assigned his/her own bedroom. If there is an odd number of persons over the age of six, the extra person is assigned his/her own bedroom. Unrelated subfamilies are assigned one bedroom regardless of family size. A primary individual is assigned one bedroom while secondary individuals are assigned zero bedrooms. Source: Valuing Housing Subsidies in a Measure of Poverty in the Survey of Income and Program Participation Martina Shea, Mary Naifeh, and Kathleen Short, (August 1997)

the full EPI budget (using updated estimates for the FCSU elements but 2007 amounts for the remaining elements) as well as comparisons of the SPM to modified updated EPI family budgets that include only the FCSU elements.

Threshold Comparisons

Data from the U.S. Department of Housing and Urban Development (HUD), United States Department of Agriculture (USDA) and the Internal Revenue Service were used to update the food, shelter and transportation elements of the EPI family budgets to 2011 levels. Three budget elements (medical care, child care, and taxes) were not updated. The seventh element (miscellaneous) is calculated as 24 percent of the total for food and shelter.

Table 1 compares weighted average thresholds of these updated EPI budgets to the official poverty thresholds and the SPM thresholds for 2011 for each family type.6 Since the EPI budgets were constructed only for six specific family types, this analysis is limited to SPM resource units that fit into EPI's six categories. Note that of the approximately 122.7 million SPM resource units in the 2012 CPS ASEC, about 28 million (22.7 percent) fit into one of these six types. In constructing the updated EPI budgets, the child care element was added only to resource units that had reported on the CPS ASEC that they paid for child care for someone in the household. Work-related transportation costs were assigned only for the weeks in which an adult in the unit reported working outside the home. No medical out-of-pocket expenditures were assigned to resource units that included a person receiving Medicaid.[7] Also, the calculations reported here for all measures are based on the unit of analysis used by the SPM.

[6] The estimates in this paper are from the 2012 Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS). The estimates in this paper (which may be shown in text, figures, and tables) are based on responses from a sample of the population and may differ from actual values because of sampling variability or other factors. As a result, apparent differences between the estimates for two or more groups may not be statistically significant. All comparative statements have undergone statistical testing and are significant at the 90 percent confidence level unless otherwise noted. Standard errors were calculated using replicate weights. Further information about the source and accuracy of the estimates is available at <www.census.gov/hhes/www/p60_243sa.pdf>.

[7] These adjustments modify slightly the "normative" nature of the EPI family budgets. There may be some families with no reported child care expenditures who "should" be paying for child care. These families are not assigned any child care costs in our approach. In a similar vein, EPI family budgets use a weighted average for medical out-of-pocket expenditures. This analysis uses that weighted average for resource units with private insurance and resource units without insurance but assigns $0 premium for resource units reporting Medicaid participation.

This unit includes all family members as well as cohabitors and their relatives and foster children. While the analysis uses this unit definition, we refer to them as 'families' throughout.

The average EPI budgets were considerably higher than the official threshold and the SPM thresholds for all six family types. Overall, the ratio of the average EPI budget amount to the official thresholds was 1.9 while the ratio of the average EPI budget to the SPM threshold was 1.7.

The EPI budgets are designed to prescribe a level of annual family income needed "…to meet its basic needs and achieve a safe and decent standard of living "(Bernstein et al, 2000, p.3), or as noted earlier, to support a no-frills level of living or at a level designated as "low income." The table suggests that income below approximately 190 percent of the official thresholds would indicate a family falling short of this level. This suggests that the use of 200 percent of the official poverty threshold as a boundary for the "low income" designation may be reasonable.

Similarly, we might say that a family with resources below 170 percent of the SPM threshold would fall in this category. However, as described below, the comparison to the SPM threshold is somewhat more complex.

Table 1: Comparing EPI Family Budget to Official and SPM Poverty Thresohlds: 2011 by Family Type

Official vs Family Budgets	**Official**	**SE**	**Family Budgets**	**SE**	**DIFF**	**SE**	**SIG ?**	**Ratio**	**SE**
Average for Six Family Types	20,248	30	39,202	83	18,954	72	*	1.94	0.004
One parent, one child	15,465	10	29,119	171	13,654	171	*	1.88	0.011
One parent, two children	18,095	11	34,767	256	16,672	257	*	1.92	0.014
One parent, three children	22,837	30	42,683	511	19,846	508	*	1.87	0.022
Two parents, one child	17,655	19	36,236	110	18,581	106	*	2.05	0.006
Two parents, two children	22,324	23	42,511	122	20,187	120	*	1.90	0.005
Two parents, three children	26,300	44	48,950	246	22,650	239	*	1.86	0.009
SPM vs Family Budgets	**SPM**	**SE**	**Family Budgets**	**SE**	**DIFF**	**SE**	**SIG ?**	**Ratio**	**SE**
Average for Six Family Types	23,481	39	39,202	83	15,721	60	*	1.67	0.002
One parent, one child	17,389	56	29,119	171	11,730	140	*	1.67	0.007
One parent, two children	20,655	82	34,767	256	14,112	218	*	1.68	0.010
One parent, three children	23,744	163	42,683	511	18,938	425	*	1.80	0.017
Two parents, one child	22,340	52	36,236	110	13,896	82	*	1.62	0.003
Two parents, two children	25,527	55	42,511	122	16,983	96	*	1.67	0.004
Two parents, three children	28,178	88	48,950	246	20,773	208	*	1.74	0.007

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

Modified EPI Family Budgets

While the official threshold is designed to be compared to total income, the SPM thresholds conceptually only estimate the cost of food, clothing, shelter, utilities and miscellaneous expenditures. Therefore, a more appropriate comparison between the SPM thresholds and the EPI family budgets would be to include in the family budgets only the items included in the SPM threshold concept. To do this, we divided the transportation amount in the EPI family budgets between work-related and other transportation.[8] Other transportation is included in the SPM's miscellaneous expenditures while work-related transportation costs are subtracted from the resource side.

Table 2 compares the 2011 SPM thresholds to this modified EPI family budget for these same six family types. The modified budget consists of four elements: food, shelter, transportation that is not work-related, and miscellaneous. The modified budgets are therefore comparable to the SPM thresholds that are derived from actual expenditures on food, clothing shelter and utilities plus miscellaneous.

Table 2: Comparing Modified EPI Family Budget to SPM Poverty Thresohlds: 2011 by Family Type

SPM vs Modified Family Budgets	SPM	SE	Modified Family Budgets	SE	DIFF	SE	SIG ?	Ratio	SE
Average for Six Family Types	23,481	39	27,666	50	4,185	29	*	1.18	0.001
One parent, one child	17,389	56	21,741	101	4,352	64	*	1.25	0.003
One parent, two children	20,655	82	26,059	141	5,404	100	*	1.26	0.005
One parent, three children	23,744	163	30,742	295	6,997	161	*	1.29	0.006
Two parents, one child	22,340	52	25,589	72	3,248	43	*	1.15	0.002
Two parents, two children	25,527	55	29,509	78	3,981	51	*	1.16	0.002
Two parents, three children	28,178	88	33,623	124	5,445	80	*	1.19	0.003

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

The modified EPI budgets are larger than the SPM thresholds for all six family types. On average, the modified EPI family budgets are about 20 percent higher than the SPM thresholds. For one-parent families, the modified EPI family budgets are between 20 and 30 percent higher than the SPM thresholds. For two-parent families the EPI family budgets are between 10 and 20 percent higher. This is expected as the budgets represent a normative value of need whereas the SPM thresholds are based on actual expenditures.

[8] The EPI budgets are constructed by multiplying total miles driven by the IRS cost-per-mile rates. Using data from the National Personal Transportation Survey they estimate that 69 percent of total transportation costs should be included in the budget for single-parent families in order to exclude transportation costs for social or recreational purposes. In two-parent families transportation costs for work trips (28 percent) are included for the second adult. These shares are used to prorate the total transportation amount in the EPI budget across the two purposes.

Table 3a compares the SPM and EPI average amounts for individual elements for each of the six family types covered by the EPI family budgets and allows us to examine which items differ between the two approaches. We collapse clothing costs and other transportation costs into the "other" category in order to facilitate comparison across the two measures.[9] While all item categories are significantly higher under the family budgets, and although differences between the budget and the SPM thresholds vary by family type, an important part of the difference between the two thresholds arises from the miscellaneous category.

Table 3a: Comparing EPI Family Budget Elements to SPM Elements: 2011 by Family Type

	SPM	SE	Family Budget	SE	DIFF	SE	SIG?	RATIO
Food								
Average for Six Family Types	6,869	7	8,150	14	(1,281)	8	*	1.2
One parent, one child	5,181	1	5,030	12	151	12	*	1.0
One parent, two children	6,151	1	7,067	22	(916)	22	*	1.1
One parent, three children	7,059	0	8,836	43	(1,777)	43	*	1.3
Two parents, one child	6,520	0	7,381	7	(861)	7	*	1.1
Two parents, two children	7,408	0	9,159	10	(1,751)	10	*	1.2
Two parents, three children	8,252	1	10,751	19	(2,499)	19	*	1.3
Housing								
Average for Six Family Types	11,725	33	12,174	34	(449)	23	*	1.0
One parent, one child	8,519	56	10,505	80	(1,986)	45	*	1.2
One parent, two children	10,125	82	11,951	110	(1,826)	73	*	1.2
One parent, three children	11,659	163	13,965	234	(2,305)	106	*	1.2
Two parents, one child	11,181	52	11,269	60	(88)	34	*	1.0
Two parents, two children	12,850	55	12,654	61	196	39	*	1.0
Two parents, three children	14,055	88	14,380	99	(326)	62	*	1.0
Other including clothing and other transportation								
Average for Six Family Types	4,890	5	7,342	9	(2,452)	8	*	1.5
One parent, one child	3,688	1	6,206	19	(2,518)	19	*	1.7
One parent, two children	4,379	1	7,041	26	(2,662)	26	*	1.6
One parent, three children	5,025	1	7,941	52	(2,916)	52	*	1.6
Two parents, one child	4,642	1	6,938	13	(2,296)	13	*	1.5
Two parents, two children	5,274	1	7,695	14	(2,421)	14	*	1.5
Two parents, three children	5,875	1	8,491	23	(2,617)	23	*	1.4

*Statistically different from zero at the 90 percent confidence level.
Source: Current Population Survey Annual Social and Economic Supplement, 2012

[9] Clothing is included as part of the miscellaneous category in the EPI family budgets while other transportation is included as part of miscellaneous in the SPM thresholds included in the threshold as a 20 percent multiplier of FCSU spending.

Table 3b examines the differences in the housing portion of the thresholds by tenure type. The housing portion of the family budgets for owners without a mortgage is $3,700 greater than the housing portion of the SPM threshold.

Table 3b Housing Portions of Thresholds by Tenure Type

	SPM		Family Budget		Difference		
	Estimate	SE	Estimate	SE	Estimate	SE	
Overall	11,725	33	12,174	34	(449)	23	*
Owners with a Mortgage	12,791	40	12,308	48	483	27	*
Owners without a Mortgage	7,464	46	11,172	84	(3,708)	53	*
Renters	11,899	54	12,354	68	(455)	35	*

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

The modified EPI budgets are closer to the SPM thresholds than the full EPI budgets because of the differential treatment of the three elements subtracted from resources in the SPM calculation: work-related transportation, medical out of pocket expenses and childcare.[10] Table 3c compares EPI and SPM weighted average amounts for these items for the six family types. Note that the SPM weighted average amounts are from the 2012 CPS ASEC and represent expenditures for 2011 while the EPI budget elements for medical out of pocket and child care are values that were selected for 2007. Examining the three items individually suggests that differences between reported child care expenditures in the CPS and prescribed values in the budgets figure importantly in the difference between the two thresholds. Very likely, this difference stems from the values selected as a normatively prescribed need and reported expenses by families who may be constrained in their ability to pay for childcare or are able to obtain childcare at lower expense that may stem from employing the services of family or friends or receiving subsidies that lower the cost of child care for them.

Since we are building the modified EPI budgets for 2011 from revised data, we are able to build these budgets for other family types. Table 4 compares the modified EPI budgets to the SPM thresholds by family size and housing tenure status for the entire sample. When using the entire sample, the modified EPI budgets are on average about 24 percent higher than the SPM thresholds. The modified EPI budgets are larger than the SPM thresholds for all tenure

[10] The SPM also subtracts child support paid from resources before estimating poverty status. This element is not included in the EPI family budgets. In addition, the SPM caps work-related expenses including child care to not exceed reported earnings of the lowest earner in the family. The average amounts compared here are before the cap is applied.

types but the largest difference is for owners without a mortgage for whom the EPI budget amount is $6,698 greater than the average SPM threshold. [11] The SPM thresholds account for the fact that homeowners without mortgages have lower housing expenditures that do not include the payment of mortgage interest and principal.

Table 4 also provides insight into differences in assumptions about economies of scale across families of different sizes. This can be seen by examining changes in the thresholds as the number of members per unit increases. For example, the difference between the two thresholds for one member is $4,970 and that for 9+members is $2,159. This suggests that the budgets assume greater economies of scale than the SPM thresholds across the various items that make up the thresholds. A further examination of these differences could shed light on the effect that assumptions about economies of scale may have on poverty estimates between the two measures.

[11] The modified EPI budgets are not statistically different from the SPM thresholds for owners with a mortgage with nine or more persons. The ratio of the EPI budget to the SPM threshold is equal to 1.

Table 4. Comparison of SPM and Family Budget Thresholds by Tenure Status and Family Size, 2011

	SPM	SE	Family Budget	SE	Difference	SE		Ratio
Overall	18,313	32	22,798	34	(4,485)	21	*	1.24
Owners with Mortgage	21,315	51	24,579	53	(3,264)	26	*	1.15
Owners without a Mortgage	14,340	42	21,038	51	(6,698)	26	*	1.47
Renters	18,127	66	22,223	81	(4,096)	41	*	1.23
Size of Resource Unit								
1	11,442	18	16,411	45	(4,970)	44	*	1.43
2	15,852	22	20,899	31	(5,046)	22	*	1.32
3	23,056	46	26,001	52	(2,945)	41	*	1.13
4	26,829	52	30,405	63	(3,576)	41	*	1.13
5	30,268	90	34,769	104	(4,501)	73	*	1.15
6	34,161	178	39,269	199	(5,108)	124	*	1.15
7	38,225	318	42,434	330	(4,209)	216	*	1.11
8	42,289	549	45,317	493	(3,029)	371	*	1.07
9+	48,100	892	50,259	746	(2,159)	466	*	1.04
Owners with a Mortgage								
1	12,121	27	16,472	77	(4,352)	67	*	1.36
2	16,977	31	20,830	47	(3,852)	27	*	1.23
3	24,327	55	26,039	65	(1,712)	49	*	1.07
4	27,797	68	30,333	89	(2,535)	55	*	1.09
5	31,452	107	34,781	131	(3,329)	80	*	1.11
6	35,569	240	39,472	270	(3,904)	166	*	1.11
7	39,875	495	42,669	500	(2,794)	294	*	1.07
8	43,785	727	45,749	661	(1,964)	484	*	1.04
9+	50,746	1,217	50,747	993	(1)	619		1.00
Owners without a Mortgage								
1	9,715	16	16,574	59	(6,859)	49	*	1.71
2	13,653	21	20,240	50	(6,587)	33	*	1.48
3	19,801	60	25,305	97	(5,503)	65	*	1.28
4	22,752	93	29,872	162	(7,120)	112	*	1.31
5	25,322	156	33,550	257	(8,227)	161	*	1.32
6	28,652	291	37,873	465	(9,221)	295	*	1.32
7	32,709	639	41,571	893	(8,863)	495	*	1.27
8	34,295	833	43,103	1,200	(8,808)	678	*	1.26
9+	37,830	1,588	46,742	1,670	(8,912)	718	*	1.24
Renters								
1	12,144	27	16,285	82	(4,141)	76	*	1.34
2	17,262	35	21,949	68	(4,687)	42	*	1.27
3	23,320	75	26,391	109	(3,072)	71	*	1.13
4	27,220	92	30,845	131	(3,626)	82	*	1.13
5	30,787	163	35,372	212	(4,585)	126	*	1.15
6	34,569	284	39,597	355	(5,028)	222	*	1.15
7	38,401	565	42,492	621	(4,091)	338	*	1.11
8	43,477	894	45,626	828	(2,149)	534	*	1.05
9+	48,697	1,191	50,985	1,120	(2,287)	527	*	1.05

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

Poverty Rate Comparisons

For the six family types included in the EPI family budgets, we can compare 2011 poverty rates using the EPI family budgets and the SPM thresholds. For this comparison, the modified EPI family budget thresholds are compared to a resource measure that is identical to the SPM resource measure except that EPI estimates for work-related transportation, child care and medical out of pocket expenditures are substituted for the SPM estimates for these items. SPM estimates for taxes and child support paid are used for both estimates. The poverty rates using the EPI budgets are more than 30 percent higher than the poverty rates using the official measure and 55 percent higher than the poverty rates using the SPM measure overall. Note that while the SPM rate is generally higher than the official poverty rates, it is lower for children. This is a result of capturing the effects of in-kind benefits in the SPM that are not included in the official poverty measure. Thus, for the family types shown here that include children, the SPM rate is below that of the official measure.

Table 5: Comparing 2011 Poverty Rates: Full EPI Family Budget Elements to SPM by Family Type

	EPI Family Budget	SE	Official	SE	DIFF	SE	SIG?	SPM	SE	DIFF	SE	SIG?	Ratio EPI to Official	Ratio EPI to SPM
All Six Family Types	24.2	0.3	18	0.3	-6.18	0.3	*	15.6	0.3	-8.6	0.2	*	1.3	1.6
One parent, one child	45.7	1.2	31.8	1.1	-13.83	0.9	*	30.8	1.1	-14.85	0.8	*	1.4	1.5
One parent, two children	51.5	1.4	39.4	1.4	-12.11	1.5	*	29.9	1.4	-21.59	1.2	*	1.3	1.7
One parent, three children	64.4	2.3	55.4	2.4	-9.01	2.3	*	37.4	2.2	-27.04	2.0	*	1.2	1.7
Two parents, one child	17.7	0.6	12.6	0.5	-5.12	0.5	*	13.1	0.5	-4.67	0.4	*	1.4	1.4
Two parents, two children	17.1	0.5	12.3	0.5	-4.76	0.4	*	11.1	0.5	-5.93	0.4	*	1.4	1.5
Two parents, three children	23	0.8	17.8	0.7	-5.19	0.7	*	13.6	0.7	-9.36	0.6	*	1.3	1.7

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

Table 6 compares the poverty rates for these same family types using the modified EPI family budgets and the SPM poverty thresholds but the SPM resource measure for both approaches. That is, both estimates use the reported amounts for childcare and medical out of pocket expenditures from the 2012 CPS ASEC and the SPM work-related transportation amount. Like the threshold comparisons, the poverty rates using the modified EPI budgets are higher than the SPM poverty rates but closer to the SPM poverty rates than the poverty rates using the full EPI budget amount, again reflecting differences in reported expenses compared to the normative values in the budgets.

Table 6: Comparing 2011 Poverty Rates: Modified EPI Family Budget Elements to SPM by Family Type

	EPI Family Budget	SE	Official	SE	DIFF	SE	SIG?	SPM	SE	DIFF	SE	SIG?	Ratio EPI to Official	Ratio EPI to SPM
All Six Family Types	22.1	0.3	18	0.3	-4.12	0.3	*	15.6	0.3	-6.55	0.2	*	1.2	1.4
One parent, one child	43.3	1.1	31.8	1.1	-11.49	0.9	*	30.8	1.1	-12.51	0.7	*	1.4	1.4
One parent, two children	46.4	1.5	39.4	1.4	-7	1.3	*	29.9	1.4	-16.48	1.1	*	1.2	1.6
One parent, three children	55.9	2.2	55.4	2.4	-0.52	1.9		37.4	2.2	-18.55	1.8	*	1.0	1.5
Two parents, one child	17.4	0.5	12.6	0.5	-4.73	0.5	*	13.1	0.5	-4.29	0.3	*	1.4	1.3
Two parents, two children	15.5	0.5	12.3	0.5	-3.17	0.4	*	11.1	0.5	-4.34	0.3	*	1.3	1.4
Two parents, three children	19.9	0.8	17.8	0.7	-2.17	0.7	*	13.6	0.7	-6.35	0.5	*	1.1	1.5

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

The next set of tables extends this comparison to the full data set. These tables compare the SPM rate to the poverty rate using the updated modified EPI family budget. Both estimates use the SPM resource measure, as in Table 6. This comparison employs prescribed norms for food, clothing, shelter, utilities and miscellaneous, but reported expenditures for work-related expenses including child care and medical out of pocket costs in the modified budget figures. Using these concepts allows us to examine the percentages of the SPM thresholds that correspond to the percent with resources below the modified budget. Table 7 shows this comparison.

The overall poverty rate using the updated modified family budget thresholds was 23.5 percent, about 7.4 percentage points higher than the 16.1 percent SPM rate. While statistically significant, the difference between the Family Budget poverty rate and the percent of the population below 125 percent of the SPM threshold was only 1.2 percentage points. The percent of the population below 200 percent of the SPM thresholds (48.1 percent) was almost twice as large as the percent of the population below the family budget threshold (24.6 percent). This suggests that families with resources below approximately 125 percent of the SPM threshold might possibly be characterized as not able to meet their basic needs and achieve a safe and decent standard of living, or as families with low income.

Table 7. Comparing Budget-Based Poverty Estimates to SPM Estimates by Resource to Threshold Ratio

	SPM		Modified Family Budget - Full Sample				
	Percent below Resource to Threshold Ratio		Percent Below Family Budget Threshold		Difference		
	Estimate	SE	Estimate	SE	Estimate	SE	
100 percent	16.1	0.2	23.5	0.2	-7.4	0.1	*
105 percent	17.7	0.2	23.5	0.2	-5.8	0.1	*
110 percent	19.3	0.2	23.5	0.2	-4.2	0.1	*
125 percent	24.7	0.2	23.5	0.2	1.2	0.1	*
150 percent	33.1	0.2	23.5	0.2	9.6	0.2	*
200 percent	48.1	0.2	23.5	0.2	24.6	0.2	*

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

In 2011, there were 72.5 million poor using the family budget definition of poverty, 22.8 million more than the 49.7 million using the SPM definition. For all the groups examined in Table 8, family-budget poverty rates were higher than SPM poverty rates. Percentage increases in the number of people in poverty using the family budgets were large for persons aged 65 and older and homeowners without a mortgage (97 percent and 87 percent). Other groups with increases in the number of people living in poverty greater than 50 percent include: people in

male householder units, people in the Northeast, people living outside a metropolitan statistical area, people with private health insurance and people working full-time, year-round.[12]

[12] People in male householder units not statistically different from people in Northeast, people living outside MSA, people with private Health Insurance; also not statistically different are people who live in Northeast and those living outside MSA; Northeast vs Private Health Insurance; and Outside MSA vs Private Health Insurance.

Table 8: Comparing 2011 Poverty Rates: Modified EPI Family Budget Elements to SPM by Selected Demographic Characteristics

		SPM				Family Budget				Difference			
	total	Number	SE	Percent	SE	Number	SE	Percent	SE		Number		Percentage Point	Percent Change
All People	308,827	49,695	550	16.1	0.2	72,477	622	23.5	0.2	*	22,782	*	7.4	**46%**
Sex														
Male	151,175	23,112	288	15.3	0.2	33,158	337	21.9	0.2	*	10,045	*	6.6	43%
Female	157,653	26,583	306	16.9	0.2	39,320	343	24.9	0.2	*	12,737	*	8.1	48%
Age														
Under 18	74,108	13,429	232	18.1	0.3	18,992	235	25.6	0.3	*	5,563	*	7.5	41%
18 to 64	193,213	30,020	351	15.5	0.2	41,182	422	21.3	0.2	*	11,162	*	5.8	37%
65 and older	41,507	6,247	139	15.1	0.3	12,304	180	29.6	0.4	*	6,056	*	14.6	97%
Type of Unit														
Married Couple	186,235	18,576	384	10.0	0.2	27,168	458	14.6	0.2	*	8,592	*	4.6	46%
Male hhldr	32,307	7,071	190	21.9	0.5	10,936	214	33.9	0.6	*	3,866	*	12.0	55%
Female hhldr	63,347	18,996	313	30.0	0.4	28,683	390	45.3	0.5	*	9,687	*	15.3	51%
New SPM unit	26,939	5,052	184	18.8	0.6	5,690	208	21.1	0.7	*	638	*	2.4	13%
Race and Hispanic Origin														
White	241,586	34,427	443	14.3	0.2	50,892	504	21.1	0.2	*	16,465	*	6.8	48%
Black	39,696	10,214	249	25.7	0.6	14,548	274	36.6	0.7	*	4,334	*	10.9	42%
Asian	16,094	2,719	131	16.9	0.8	3,791	139	23.6	0.8	*	1,072	*	6.7	39%
Other	11,452	2,336	119	20.4	1.0	3,247	125	28.4	1.0	*	911	*	8.0	39%
Not Hispanic	256,469	35,025	457	13.7	0.2	52,062	543	20.3	0.2	*	17,037	*	6.6	49%
Hispanic	52,358	14,670	306	28.0	0.6	20,415	321	39.0	0.6	*	5,745	*	11.0	39%
Nativity														
Native Born	268,851	39,368	460	14.6	0.2	58,439	535	21.7	0.2	*	19,071	*	7.1	48%
Foreign Born	39,976	10,327	234	25.8	0.5	14,038	258	35.1	0.6	*	3,711	*	9.3	36%
Naturalized Citizen	17,934	3,286	112	18.3	0.6	5,033	135	28.1	0.7	*	1,747	*	9.7	53%
Not a Citizen	22,042	7,041	200	31.9	0.8	9,005	213	40.9	0.8	*	1,965	*	8.9	28%
Region														
Northeast	55,035	8,262	205	15.0	0.4	13,059	263	23.7	0.5	*	4,797	*	8.7	58%
Midwest	66,115	8,454	212	12.8	0.3	12,178	251	18.4	0.4	*	3,724	*	5.6	44%
South	115,068	18,432	395	16.0	0.3	26,925	431	23.4	0.4	*	8,493	*	7.4	46%
West	72,610	14,547	311	20.0	0.4	20,316	335	28.0	0.5	*	5,768	*	7.9	40%
Residence														
Inside principal city	100,302	21,748	438	21.7	0.4	30,341	538	30.2	0.4	*	8,593	*	8.6	40%
Outside principal city	161,153	21,574	426	13.4	0.2	32,008	540	19.9	0.3	*	10,434	*	6.5	48%
Outside MSA	47,372	6,373	299	13.5	0.5	10,128	414	21.4	0.5	*	3,755	*	7.9	59%
Tenure														
Owner with mortgage	136,699	11,138	292	8.1	0.2	15,052	322	11.0	0.2	*	3,915	*	2.9	35%
Owner without a mortgage	73,418	9,592	243	13.1	0.3	17,938	328	24.4	0.4	*	8,346	*	11.4	87%
Renter	98,710	28,966	450	29.3	0.4	39,487	503	40.0	0.4	*	10,521	*	10.7	36%
Health Insurance Coverage														
Not insured	48,613	15,008	274	30.9	0.5	19,472	315	40.1	0.5	*	4,464	*	9.2	30%
With private insurance	197,323	15,010	289	7.6	0.1	23,729	353	12.0	0.2	*	8,719	*	4.4	58%
With public, no private	62,891	19,677	298	31.3	0.4	29,276	329	46.6	0.4	*	9,600	*	15.3	49%
Work Experience														
Full time year round	97,443	4,983	108	5.1	0.1	8,690	150	8.9	0.2	*	3,706	*	3.8	74%
Less than full time year round	46,720	8,628	169	18.5	0.3	11,597	197	24.8	0.4	*	2,970	*	6.4	34%
Did not work	49,049	16,409	243	33.5	0.4	20,895	260	42.6	0.4	*	4,487	*	9.2	27%
Disability Status														
With a disability	14,968	4,133	113	27.6	0.6	5,975	142	39.9	0.7	*	1,842	*	12.3	45%
With no disability	177,309	25,795	320	14.5	0.2	35,097	388	19.8	0.2	*	9,302	*	5.3	36%

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

Table 9 compares modified family-budget poverty rates to the percent of people with resources below 122 percent of the SPM thresholds. At this multiple of the SPM threshold, poverty rates are not different between the two measures. While the overall rates are not statistically different from zero, rates for specific demographic groups vary considerably. The percent of people below 122 percent of the SPM is lower than the percent of people below the family budget thresholds for several groups, among them those aged 65 and over and those without a mortgage, likely the same individuals as many of the elderly own their homes free and clear.

Table 9: Comparing 2011 Poverty Rates: Modified EPI Family Budget Elements to 122 percent of the SPM by Selected Demographic Characteristics

	122 Percent of SPM				Family Budget				Difference			
	total	Number	SE	Percent	SE	Number	SE	Percent	SE		Number	Percentage Point
All People	308,827	72,944	629	23.6	0.2	72,477	622	23.5	0.2		-466	-0.2
Sex												
Male	151,175	33,937	342	22.4	0.2	33,158	337	21.9	0.2	*	-780 *	-0.5
Female	157,653	39,006	344	24.7	0.2	39,320	343	24.9	0.2		314	0.2
Age												
Under 18	74,108	20,188	262	27.2	0.4	18,992	235	25.6	0.3	*	-1,196 *	-1.6
18 to 64	193,213	42,935	409	22.2	0.2	41,182	422	21.3	0.2	*	-1,753 *	-0.9
65 and older	41,507	9,821	170	23.7	0.4	12,304	180	29.6	0.4	*	2,482 *	6.0
Type of Unit												
Married Couple	186,235	29,694	523	15.9	0.3	27,168	458	14.6	0.2	*	-2,526 *	-1.4
Male hhldr	32,307	9,757	212	30.2	0.6	10,936	214	33.9	0.6	*	1,179 *	3.7
Female hhldr	63,347	26,138	368	41.3	0.5	28,683	390	45.3	0.5	*	2,545 *	4.0
New SPM unit	26,939	7,355	236	27.3	0.7	5,690	208	21.1	0.7	*	-1,665 *	-6.2
Race and Hispanic Origin												
White	241,586	51,077	516	21.1	0.2	50,892	504	21.1	0.2		-185	-0.1
Black	39,696	14,455	266	36.4	0.7	14,548	274	36.6	0.7		93	0.2
Asian	16,094	4,041	141	25.1	0.8	3,791	139	23.6	0.8	*	-250 *	-1.6
Other	11,452	3,371	126	29.4	1.0	3,247	125	28.4	1.0	*	-125 *	-1.1
Not Hispanic	256,469	51,307	523	20	0.2	52,062	543	20.3	0.2	*	755 *	0.3
Hispanic	52,358	21,636	335	41.3	0.6	20,415	321	39	0.6	*	-1,221 *	-2.3
Nativity												
Native Born	268,851	58,122	529	21.6	0.2	58,439	535	21.7	0.2		318	0.1
Foreign Born	39,976	14,822	271	37.1	0.6	14,038	258	35.1	0.6	*	-784 *	-2.0
Naturalized Citizen	17,934	5,065	137	28.2	0.6	5,033	135	28.1	0.7		-32	-0.2
Not a Citizen	22,042	9,757	229	44.3	0.8	9,005	213	40.9	0.8	*	-752 *	-3.4
Region												
Northeast	55,035	12,434	251	22.6	0.5	13,059	263	23.7	0.5	*	625 *	1.1
Midwest	66,115	12,870	288	19.5	0.4	12,178	251	18.4	0.4	*	-692 *	-1.1
South	115,068	26,997	461	23.5	0.4	26,925	431	23.4	0.4		-73	-0.1
West	72,610	20,642	337	28.4	0.5	20,316	335	28	0.5	*	-327 *	-0.5
Residence												
Inside principal city	100,302	30,834	547	30.7	0.5	30,341	538	30.2	0.4	*	-493 *	-0.5
Outside principal city	161,153	32,525	543	20.2	0.3	32,008	540	19.9	0.3	*	-517 *	-0.3
Outside MSA	47,372	9,584	417	20.2	0.6	10,128	414	21.4	0.5	*	543 *	1.2
Tenure												
Owner with mortgage	136,699	17,636	358	12.9	0.3	15,052	322	11	0.2	*	-2,583 *	-1.9
Owner without a mortgage	73,418	13,636	297	18.6	0.4	17,938	328	24.4	0.4	*	4,303 *	5.9
Renter	98,710	41,672	499	42.2	0.4	39,487	503	40	0.4	*	-2,186 *	-2.2
Health Insurance Coverage												
Not insured	48,613	20,498	321	42.2	0.6	19,472	315	40.1	0.5	*	-1,026 *	-2.1
With private insurance	197,323	23,550	355	11.9	0.2	23,729	353	12	0.2		179	0.1
With public, no private	62,891	28,896	344	45.9	0.4	29,276	329	46.6	0.4	*	381 *	0.6
Work Experience												
Full time year round	97,443	9,129	155	9.4	0.2	8,690	150	8.9	0.2	*	-440 *	-0.5
Less than full time year round	46,720	12,302	194	26.3	0.4	11,597	197	24.8	0.4	*	-705 *	-1.5
Did not work	49,049	21,503	258	43.8	0.4	20,895	260	42.6	0.4	*	-608 *	-1.2
Disability Status												
With a disability	14,968	5,858	140	39.1	0.7	5,975	142	39.9	0.7	*	117 *	0.8
With no disability	177,309	36,950	381	20.8	0.2	35,097	388	19.8	0.2	*	-1,853 *	-1.0

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

Table 10 compares the distribution of people in the total population across selected groups to the distribution of people classified as poor using the two measures. Examining differences in shares of the poor is an easier way to understand differences in the two measures. As expected, the family budget measure results in higher shares of the poor who are 65 and older and owners without a mortgage. areas Also showing higher shares using the family budget measure are residents of the Northeast, people living inside metropolitan statistical areas but outside principal cities, and people living outside metropolitan statistical areas (need footnote about South). For people living in the Midwest and South, the difference in the shares is not statistically significant. For the other groups, the shares are higher using the SPM measure. Differences by residence or by region may reflect differences in the geographic adjustments between the two measures. Non-work transportation costs vary by geographic area in the budgets, but not in the SPM thresholds and housing cost differences are adjusted by different methods. Differences by housing tenure status across regions and residence areas may also affect these shares.

Table 10. Poverty Shares: Comparing SPM to the Family Budget

	Total		SPM		Family Budget			Difference	
	Percent	SE	Percent	SE	Percent	SE		Percent	SE
Location									
Inside principal cities	32.5	0.37	43.8	0.7	41.9	0.6	*	1.9	0.3
Outside principal cities	52.2	0.48	43.4	0.7	44.2	0.6	*	-0.8	0.3
Outside metropolitan statistical	15.3	0.52	12.8	0.6	14	0.6	*	-1.2	0.2
Region									
Northeast	17.8	0.03	16.6	0.4	18	0.3	*	-1.4	0.2
Midwest	21.4	0.04	17	0.4	16.8	0.3		0.2	0.2
South	37.3	0.05	37.1	0.6	37.1	0.5		-0.1	0.3
West	23.5	0.03	29.3	0.5	28	0.4	*	1.2	0.3
Tenure									
Owner with a mortgage	44.3	0.25	22.4	0.5	20.8	0.4	*	1.6	0.3
Owner/No mortgage	23.8	0.22	19.3	0.5	24.8	0.4	*	-5.5	0.3
Renter	32	0.25	58.3	0.6	54.5	0.5	*	3.8	0.3
Age									
Under 18	24	0.03	27	0.3	26.2	0.2	*	0.8	0.2
18 to 64	62.6	0.05	60.4	0.3	56.8	0.3	*	3.6	0.2
65 and older	13.4	0.03	12.6	0.3	17	0.2	*	-4.4	0.2

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

Source: Current Population Survey Annual Social and Economic Supplement, 2012

Discussion

As noted in the introduction, when comparing the number of people with incomes between 100 and 200 percent of the poverty threshold to the number of people with SPM resources at this level we find big differences. While about 19 percent of people had incomes between 100 and 200 percent of the official thresholds, 31.8 percent of people had SPM resources in this category. Since some have been using 200 percent of the official poverty line as a measure of low income or income inadequacy, many readers interpreted the increase in people between 100 and 200 percent of the SPM thresholds as a surge in the number of "low-income" families. This paper examined the relationship between the SPM thresholds and a set of thresholds derived from a budget-based standard to characterize the population below 200 percent of the SPM threshold relative to the family-budget needs standard.

For this exercise, we used a set of family budgets published by the Economic Policy Institute (EPI) as an example of a family budget calculation. The construction of poverty thresholds based on the family budgets allowed comparison to the SPM thresholds. The process showed important measurement differences between the budgets and the SPM that would lead us to expect differences in poverty rates. These included the treatment of housing, geographic differences, and equivalence scales.

Many of the differences between the SPM poverty rates and the EPI family budget poverty rates are driven by the fact that the EPI family budgets treat all resource units as renters while the SPM poverty thresholds are lower for owners without a mortgage. Other important differences between the two thresholds that led to differences in poverty rates included the equivalence scales and assumptions about non-work related transportation.

Table 11 provides summary statistics on the sensitivity of overall poverty rates to each of these three elements (housing costs for owners without a mortgage, equivalence scale and level of other expenditures) and the impact of changing all three elements. Since owners without a mortgage may be expected to have lower out of pocket housing expenditures than owners with a mortgage or renters, the family budget thresholds were modified to reduce the

housing cost estimates for owners without a mortgage by 67 percent.[13] The "Equivalence Scales" estimates adjust the two adult, two child family budget using the three-parameter equivalence scale used for the SPM thresholds. The "Other Expenditures" adjustment replaces the family budget estimate for other expenditures with the SPM estimate for other expenditures. The "Combination" estimate makes all three changes. While still higher than the SPM estimate, when all three changes are made, the family budget estimate is only 3 percent higher than the SPM estimate.

Table 11: Impact of Specific Elements on the Difference between Family Budgets and SPM Poverty Rates

	Family Budget		SPM		Difference					
	Percent below Family Budget	SE	Percent below SPM	SE		Percentage Point Change	SE		Percent Change	SE
Family Budget	23.5	0.2	16.1	0.2	*	7.38	0.1	*	46.0%	1.0%
Housing Adjustment	21.9	0.2	16.1	0.2	*	5.78	0.1	*	36.0%	0.8%
Equivalence Scales	20.6	0.2	16.1	0.2	*	4.51	0.1	*	28.0%	0.7%
Other expenditures	19.3	0.2	16.1	0.2	*	3.17	0.1	*	20.0%	0.7%
Combination of all three changes	16.5	0.2	16.1	0.2	*	0.46	0.1	*	3.0%	0.9%
*Statistically different from zero at the 90 percent confidence level.										
Source: Current Population Survey Annual Social and Economic Supplement, 2012										

The calculation of poverty rates using the two constructed thresholds suggested families with resources below 200 percent of the SPM threshold should not be equated to the population below 200 percent of the official threshold or below the family-budget needs standard. Given the calculations shown here families with resources below approximately 125 percent of the SPM threshold would more appropriately be characterized as low income or as not able "…to meet its basic needs and achieve a safe and decent standard of living."

Additionally, this work suggests avenues of future research. Important differences in the two measures included the cost of non-work-related transportation expenses and the differences in such costs by geographic area. Further work on geographic adjustments for the

[13] Since the average housing portion of the SPM threshold for owners without a mortgage is about 67% of the average housing portion of the SPM thresholds for owners with a mortgage, this exercise reduces the housing portion of the modified EPI family budgets for owners without a mortgage by 67%.

SPM thresholds should take this into consideration. Assumptions about equivalence scales explicit in the SPM thresholds and implicit in the construction of the budget standards could lead to additional investigation into the equivalence scale now used for the SPM. Finally, notable differences between values for work-related childcare costs indicate the importance of understanding the accuracy and meaning of reports of such costs in the CPS ASEC that are used in the construction of the SPM.

References

Bureau of Labor Statistics (BLS). "2011 Supplemental Poverty Measure Thresholds Based on Consumer Expenditure Survey Data," Washington, DC, September 25, 2012. Available at: http://www.bls.gov/pir/spm/spm_thresholds_2011.htm

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

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica C. Smith. *Income, Poverty, and Health Insurance Coverage in the United States: 2011.* U.S. Census Bureau, Current Population Reports, P60-243, U.S. Government Printing Office, Washington DC, September 2012.

Garner, Thesia I. and Kathleen S. Short, Accounting for Owner-Occupied Dwelling Services: Aggregates and Distributions, *Journal of Housing Economics*, 18(3), 233-248, September, 2009.

Glasmeier, Amy K. "About the Living Wage Calculator, "Poverty in America Living Wage Calculator," January 2013. http://livingwage.mit.edu/pages/about

Lin, James and Jared Bernstein, "*2008 Economic Policy Institute Family Budgets Technical Documentation*", Economic Policy Institute, http://www.epi.org/page/-/old/datazone/fambud/2008_epi_family_budgets_tech_doc.pdf

Renwick, Trudi. "Geographic Adjustments of Supplemental Poverty Measure Thresholds: Using the American Community Survey Five-Year Data on Housing Costs," SEHSD Working Paper Number 2011-21.U.S. Census Bureau. 2011.

Renwick, Trudi. "Alternative Adjustments of US Poverty Thresholds: Impact on State Poverty Rates", Paper presented at the Annual Meeting of the American Statistical Association Section on Social Statistics, Washington, DC. August 2009.

Roberts, Brandon, Deborah Povich and Mark Mather. *"Low-Income Working Families: The Growing Economic Gap."* Working Poor Families Project, Winter 2012-2013. www.workingfamilies.org

Saunders, Peter, "Budget Standards and the Poverty Line," The Australian Economic Review, Vol.32, No. 1, pp. 43-61, March 1999.

Short, Kathleen. *The Research Supplemental Poverty Measure: 2010*, U.S. Census Bureau, *Current Population Reports*, P60-241, November 2011.

Short, Kathleen. *The Research Supplemental Poverty Measure: 2011*, U.S. Census Bureau, *Current Population Reports*, P60-244, November 2012.

Short, Kathleen and Timothy Smeeding. Understanding Income-to-Threshold Ratios Using the Supplemental Poverty Measure , SEHSD Working Paper Number 2012-18, August 2012.

U.S. Department of Agriculture, "*Official USDA Food Plans: Cost of Food at Home at Four Levels, U.S. Average, June 2010 and June 2011*". Center for Nutrition Policy and Promotion, Issued July 2010 and July 2011. http://www.cnpp.usda.gov

U.S. Department of Housing and Urban Development, Fair Market Rents FY2010 and FY2011, available at http://www.huduser.org/portal/datasets/fmr.html

Zhang, Xuelin, "Low Income Measurement in Canada: What Do Different Lines and Indexes Tell Us?," Income Research Paper Series, Statistic Canada, May 2010.