BRUCE D. MEYER
University of Chicago

JAMES X. SULLIVAN
University of Notre Dame

Winning the War: Poverty from the Great Society to the Great Recession

ABSTRACT We consider the long-run patterns of poverty in the United States from the early 1960s to 2010. Our results contradict previous studies that have argued that poverty has shown little improvement over time or that antipoverty efforts have been ineffective. We find that moving from traditional income-based measures of poverty to a consumption-based measure and, crucially, adjusting for bias in price indexes lead to the conclusion that the poverty rate declined by 26.4 percentage points between 1960 and 2010, 8.5 percentage points of which has occurred since 1980. Our consumption-based measure suggests considerably greater improvement than the income-based measures for single-parent families and the elderly, but relatively less for married-parent families. Changes in tax policy explain a substantial part of the decline in poverty; Social Security has also been important, but other transfer programs have played a small role. Changes in education have also contributed, but other demographic trends have had little impact. Measurement error in income likely explains some of the most noticeable differences between changes in income poverty and in consumption poverty, but saving and dissaving appear to play a modest role for most demographic groups.

Few measures of U.S. economic performance receive greater attention and scrutiny than the poverty rate. The official poverty rate, an absolute measure intended to capture the fraction of people below a threshold that is constant in real terms, suggests that deprivation has become more widespread over the past four decades: the rate in 2010 was 2.5 percentage points higher than in 1970 despite a doubling of real GDP per capita and trillions of dollars spent on antipoverty programs. Pundits and academics often rely on these numbers as the benchmark indicator of trends in poverty and draw

important conclusions from them. Notable examples include Gary Burtless and Timothy Smeeding (2001), Ron Haskins and Isabel Sawhill (2009), and Daniel Meyer and Geoffrey Wallace (2009).

Trends in official poverty inform the conventional wisdom that U.S. policy has made little progress in reducing poverty, that the panoply of income support programs, from food stamps to unemployment insurance, have been ineffective. In 1995, for example, then House Ways and Means Committee Chairman Bill Archer (R-TX) stated, "Government has spent $5.3 trillion on welfare since the war on poverty began, the most expensive war in the history of this country, and the Census Bureau tells us we have lost the war" (*Congressional Record,* 104th Cong., 1st sess., March 21, 1995). More concisely, President Ronald Reagan said, "The federal government declared war on poverty, and poverty won" (State of the Union Address, 1988). This line of argument has led to calls to abandon the safety net (Murray 1984, Tanner 2012).[1]

At the same time, a large literature has pointed out various flaws in the official poverty measure, including a too-narrow definition of income and a biased adjustment for price changes (Citro and Michael 1995, Jencks, Mayer, and Swingle 2004a). However, studies of poverty trends typically conclude that although these flaws may affect the level of poverty, they have little impact on trends (see, in particular, Hoynes, Page, and Stevens 2006, Lang 2007, U.S. Census, various years-b, 1995, Triest 1998, Short and others 1999, Dalaker 2005).

This paper examines changes in poverty from the early 1960s to 2010 after correcting shortcomings of the official measure. We present results for several measures of income poverty as well as for poverty based on consumption. Consumption better reflects the material circumstances of disadvantaged families not only because it more closely captures permanent income but also because it is measured with less error than income among this group, and studies have shown that consumption is a better predictor of well-being than income (Meyer and Sullivan 2003, 2011a, 2012). We examine the standard head count measure of poverty as well as other measures such as deep poverty and poverty gaps. Our results contradict previous studies that have argued that poverty has shown little improvement over time or that antipoverty efforts have been ineffective. We find

1. The mismeasurement of poverty creates other problems as well. For example, poverty rates are a key determinant of the allocation of federal funds to states and localities for use in education and other programs for the disadvantaged.

that consumption poverty, after adjusting for bias in price indexes, declined by 26.4 percentage points between 1960 and 2010, with 8.5 percentage points of that decline occurring since 1980. We also provide a different set of facts for researchers to explain regarding the time pattern of poverty and its differences across demographic groups.

We report several key results. First, we show that the well-known upward bias in the consumer price index (CPI-U), used to adjust official poverty thresholds for inflation, has an enormous effect on changes in poverty over long periods. A conventional money income–based poverty measure that accounts for the consensus estimate of the bias in the CPI-U declined by nearly 10 percentage points more than the official measure over the 1960s and 1970s.[2] Since 1980, an estimate that accounts for CPI bias has declined a further 2.9 percentage points while the official measure has risen 2.1 percentage points.

Second, conceptually better measures of resources available for consumption indicate an even steeper decline in poverty over time. The official measure does not reflect tax credits such as the earned income tax credit and the child credit and does not include food stamps, housing benefits, and other in-kind transfers. Such programs are an increasing share of the nation's antipoverty efforts. Accounting for taxes reduces poverty by an additional 2.4 percentage points over the 1960s and 1970s, and taxes and noncash benefits combined have reduced poverty by an additional 1.8 percentage points since 1980.

Third, measuring the consumption of families directly indicates an even greater decline in poverty. Since 1980, poverty measured by consumption has fallen an additional 3.8 percentage points beyond that indicated by after-tax income plus noncash benefits. These patterns are not uniform across family types: the decline in consumption poverty greatly exceeds that in income poverty for some groups, such as single parents and the elderly; differences across measures for married couples with children are much smaller. Strikingly, we show that the income and consumption measures of the poverty gap (the amount of money needed to raise all families up to the poverty line) have generally moved sharply in opposite directions in the last two decades, with the former rising and the latter falling. Our

2. These numbers are based on comparisons of official poverty with a measure using our adjusted CPI-U-RS price index and the National Academy of Sciences (NAS) equivalence scale. We show that moving from the official scale to the NAS scale has little impact on changes in poverty.

general finding of a decline in poverty is corroborated by other indicators of well-being for those with low income, such as the increased ownership of cars and other durables and improved housing conditions (Meyer and Sullivan 2011c).

Fourth, some government policies have played an important role in reducing the poverty rate over the last five decades. Changes in tax policy—specifically, the cuts in tax rates at the bottom in the 1960s and the expansion of tax credits, deductions, and exemptions starting in the mid-1980s—explain a substantial part of the decline in poverty, particularly for families with children. Rising Social Security benefits account for much of the decline, particularly in the late 1960s and early 1970s, but other cash and noncash government transfer programs have had only a small impact since 1980. We emphasize that although these results show that noncash benefits do not affect changes in poverty over time, these programs do play an important role in lifting people out of poverty at a point in time (Hoynes and others 2006, Ben-Shalom and others 2012). Although we find that rising educational attainment accounts for some of the decline in poverty over the past five decades, other changes in the demographic characteristics of the population account for only a small fraction of the overall improvement in well-being of the poor.

Finally, we consider possible explanations for the large differences between the income- and the consumption-based poverty patterns. We suspect that error in measuring income explains much of the difference, and that this difference is accentuated when one focuses, as the poverty gap does, on the distribution below the poverty line. Given the evidence on low asset holdings among the poor, particularly for single parents but also for some other groups, saving and dissaving are likely to explain only a small portion of the overall differences between the income and the consumption measures of poverty.

In the next section we highlight some of the goals of a poverty measure as it relates to capturing changes in well-being over time, and we summarize the key decisions entailed in the construction of such a measure. In section II we discuss the conceptual advantages of consumption-based measures of poverty. We describe our data and methods for constructing income- and consumption-based measures of poverty in section III. Section IV discusses concerns about underreporting and about changes in the quality of income and consumption data over time. We address inflation adjustments to poverty thresholds in section V. In section VI we present our results for changes in a number of different income- and consumption-based poverty measures over the past five decades. We also examine

poverty gaps and poverty trends for various family types. We consider a number of potential explanations for the changes in poverty and the differences across measures in section VII. In section VIII we examine the trends for some alternative measures of deprivation, including near and deep poverty and relative poverty. Section IX concludes.

I. Goals and Decisions When Measuring Changes in Poverty

Our main goal in examining changes in poverty is to assess how the level of material disadvantage among the least well off has changed over time. In looking at these changes, we seek indicators that will allow us to assess changes due to public policies and changes due to broad social and economic trends. Although we focus on single-dimensional measures—those based on a single indicator of well-being such as income or consumption—we present several of them and examine other indicators as well. We emphasize single-dimensional measures that are highly correlated with other indicators of well-being. A second goal of a poverty measure may be to assess changes over time in the case for public transfers to different groups. In standard social welfare analyses, the case for transfers depends both on the level of welfare of a group, which determines the emphasis put on their well-being, or their welfare weight, and the extent to which additional resources would increase that well-being, that is, their marginal utility of income. Depending on the nature of the changes over time and the preferences of individuals, these objectives may coincide or be distinct.

In Meyer and Sullivan (2012) we discuss eight choices that are essential to the construction of a single-dimensional poverty measure:

—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.

—Should poverty be measured annually, or over a shorter or longer period?

—Should the resource-sharing unit—the set of individuals that is pooling income and making joint purchases—be defined as a group of related family members, or otherwise, for example as a group of people sharing a residence?

—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 those below the threshold up to the threshold (a poverty gap measure)?

—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 typically sets the threshold at 60 percent of median income.

—Where should one draw the poverty threshold, recognizing that this essentially arbitrary choice will have a large effect on the estimated poverty rate?

—Should the poverty threshold be adjusted over time using the rise in the cost of living or the rise in average or median income, and should it be adjusted for geographic price differences or other factors?

—How should one account for differences among families in size or composition? In other words, how should the "equivalence scale" be determined?

We will discuss how some of these choices affect estimates of changes in poverty over time. Our main results focus on how different measures of resources and different price adjustments yield very different patterns for poverty. In addition, we will consider the impact on trends of using different resource-sharing units and equivalence scales, and we will examine both head count measures and poverty gaps, and both absolute and relative measures of poverty.

II. The Conceptual Advantages of Consumption Measures of Poverty

Throughout this paper we emphasize the differences between income- and consumption-based measures of poverty. Previous work has presented evidence that consumption provides a better measure of well-being than income for families with few resources (Meyer and Sullivan 2003, 2011a, 2012). Conceptual arguments as to whether income or consumption is a better measure of the material well-being of the poor almost always favor consumption. For example, consumption more closely reflects permanent income (for further discussion, see Cutler and Katz 1991, Poterba 1991, Slesnick 1993). Income measures fail to capture disparities in consumption that result from differences across families in the accumulation of assets or access to credit. Consumption measures will reflect the loss of housing service flows if homeownership falls, and the decline in consumption that a growing debt burden might require, both of which an income measure would miss. Consumption will also better reflect the insurance value of government programs and is more likely to capture private and government transfers. In addition to these reasons, available

consumption data are better suited than available income data for imputing some nonmoney resources, particularly those related to housing and vehicle ownership.[3]

The fact that consumption can be divided into meaningful categories, such as food and housing, provides several advantages over income. First, expenditures on categories such as food and housing are of interest in their own right, and second, they allow for a better accounting of relative price changes. Third, and even more important, subcategories of consumption such as nondurable consumption have been used extensively in past research. We will report results for what we call core consumption, a measure that approximates necessities and includes only items that are well measured over time. Fourth, we can examine the effects of excluding categories of consumption that may not directly increase well-being, such as work expenses and out-of-pocket medical expenses.

Meyer and Sullivan (2003, 2011a) provide evidence that consumption is a better predictor of well-being than income, by showing that other measures of material hardship or adverse family outcomes are worse for those with low consumption than for those with low income. In an even more direct evaluation of poverty measures, Meyer and Sullivan (2012) compare the characteristics of those added to and subtracted from the poverty head count when going from an income-based measure to a consumption-based measure, holding the poverty rate constant. Those added by the consumption-based measure are less likely to have health insurance and have less education, smaller and cheaper cars, and fewer household appliances and amenities, where these last indicators are measured before consumption spending and so are not part of that spending.

Some researchers have argued that income-based measures may have some conceptual advantages over those based on consumption.[4] One is that individuals can choose to have low consumption, whereas income reflects

3. For example, a better value of housing subsidies can be computed using Consumer Expenditure (CE) Survey data than the Current Population Survey (CPS) because the CE provides information on out-of-pocket rent and the characteristics of the living unit such as the total number of rooms, the number of bathrooms and bedrooms, and appliances such as a washer or dryer. These characteristics can be used to impute a total rental value as explained in the online appendix. In addition, for homeowners the CE provides self-reported values of the rental equivalent value of the home.

4. Blundell and Preston (1998) are sometimes characterized as finding such advantages. A more accurate summary is that some comparisons of consumption across cohorts or age will result in the wrong sign on the difference in utility, but income comparisons suffer from the same types of problems in the situations they consider.

access to resources that can be used for consumption and as such is not driven by consumption decisions (Atkinson 1991). However, individual choices, with respect to education, occupation, and labor supply, affect income as well. Furthermore, consumption is more likely than income to be affected by the ability to borrow and by access to public insurance programs. Thus, consumption will do a better job of capturing the effects of changes in access to credit or the government safety net. Another potential advantage of income is that current consumption fails to capture the welfare benefits of leaving bequests. Although this is an important concern, the effect of bequest motives on consumption is likely to be small for the poor.

In their evaluation of poverty measurement, the National Academy of Sciences (NAS) Panel on Poverty and Family Assistance stated that "on balance, many members of the panel find more compelling the arguments in favor of a consumption definition that attempts to assess actual levels of material well-being" (Citro and Michael 1995, p. 213). The panel's final recommendation, however, calls for an income-based measure because of concerns about adequate consumption data. One important concern is that small samples in existing consumption data sets make it difficult to construct poverty statistics at the subnational level, but this is less of an issue for the national statistics we report here. We discuss other concerns regarding data quality below.

III. Data and Methods

In this section we describe our data and methods for constructing income- and consumption-based measures of poverty.

III.A. Income Measures from the Current Population Survey

The official poverty measure in the United States is based on data from the Annual Social and Economic (ASEC) Supplement (formerly the Annual Demographic File, or ADF) to the Current Population Survey (CPS) for approximately 100,000 households annually (60,000 households before 2002). For the previous calendar year, respondents report their money income from each of a number of different sources; their sum is the money income measure used by the Census Bureau to determine official poverty statistics. In addition, the survey collects information on the dollar value of food stamps received by the household, as well as whether household members received other noncash benefits including housing and school lunch subsidies. Starting with the 1980 survey, the ASEC/ADF also provides imputed

values for these and other noncash benefits. Online appendix table 1 reports descriptive statistics for the full sample from the CPS.[5]

For our analyses of income poverty, we focus on three different measures of income. The first is money income as defined above. The second is after-tax money income, which adds to money income the value of tax credits such as the earned income tax credit and subtracts state and federal income taxes and payroll taxes paid. The third adds to after-tax money income the dollar values of food stamps and housing and school lunch subsidies, the fungible value of Medicaid and Medicare, the value of housing equity (converted into an annuity), and the value of employer health benefits. See the online appendix for more details.

III.B. Consumption Measures from the Consumer Expenditure Survey

Our consumption data come from the Consumer Expenditure (CE) Survey, which is the most comprehensive source of consumption data in the United States. We use the CE Interview Survey component for the years 1960–61, 1972–73, 1980–81, and 1984–2010 (see the online appendix for details). The CE provides annual or annualized data for 13,728 families in 1960–61 and 19,975 families in 1972–73. From 1980 to 2010 the survey uses a rotating panel that includes about 5,000 families each quarter between 1980 and 1998 and about 7,500 families thereafter. Each family, or what the CE refers to as the consumer unit, reports spending on a large number of expenditure categories for up to four consecutive quarters. Online appendix table 1 provides descriptive statistics for the full sample from the CE.

To convert reported expenditure into a measure of consumption, we make a number of adjustments. Although previous studies have made similar adjustments, our approach involves several important methodological improvements. First, we convert vehicle spending to a service flow equivalent. Instead of including the full purchase price, we calculate a flow intended to reflect the value that a consumer receives from owning a car during the period; that value is a function of a depreciation rate and the vehicle's current market value. To determine the latter for each car owned, we use detailed information on vehicles (including make, model, year, age, and other characteristics). This approach accounts for added features and quality improvements by capturing what purchasers are willing to pay. See the online appendix for more details.

5. Online appendixes and replication files for the papers in this volume may be accessed on the *Brookings Papers* website, www.brookings.edu/about/projects/bpea, under "Past Editions."

Second, to convert housing expenditure to housing consumption for homeowners, we substitute the homeowner-reported rental equivalent of the home for the sum of mortgage interest payments, property tax payments, spending on insurance, and maintenance and repairs. For respondents living in government or subsidized housing, we impute a rental value using detailed housing characteristics available in the survey including the number of rooms, number of bedrooms and bathrooms, and the presence of appliances such as a microwave, disposal, refrigerator, washer, and dryer.

Finally, we exclude spending that is better interpreted as investment, such as spending on education and health care and outlays for retirement including pensions and Social Security.[6] We exclude out-of-pocket medical expenses because high out-of-pocket expenses are arguably more likely to reflect substantial need or lack of good insurance rather than greater well-being. However, given the importance of health coverage and changes over time in public and private insurance, we report alternative consumption measures that include a value for public and private health insurance. The online appendix provides more details on our measure of consumption.

III.C. Constructing Poverty Measures

In the results that follow, we compare the official measure of poverty with several alternative measures. Official poverty in the United States is determined by comparing the before-tax money income of a family or an unrelated individual with specified poverty thresholds that vary by family size and composition. If the total money income of a family is less than the threshold for that family, all individuals in the family are designated as poor. The poverty thresholds were developed in 1964 and are adjusted for inflation annually using the CPI-U. For a detailed summary see Constance Citro and Robert Michael (1995) or Rebecca Blank (2008).

We construct alternative measures of poverty that address well-known shortcomings in the official measure (Citro and Michael 1995). One of the most commonly criticized features of the official measure is that it defines resources as before-tax money income, thus failing to reflect other

6. We also exclude spending on charitable contributions and cash gifts to non–family members. This category is very small relative to total consumption. We considered subtracting estimated monetary work expenses from consumption. However, the expenses reported in the CE, such as child care and domestic services, on average tend to be very small relative to total spending. We have also examined the difference in transportation and clothing expenditures between those who work and those who do not as an estimate of additional work expenses, but again this estimate is small relative to total consumption. To account for how work affects consumption more generally, one may want to examine the consumption of leisure (Aguiar and Hurst 2007, Meyer and Sullivan 2008).

resources at a family's disposal including tax credits, food stamps, housing subsidies, and other in-kind transfers. These tax credits and in-kind transfers have greatly expanded in recent decades. Our alternative poverty measures are based on different measures of resources, including after-tax income, after-tax income plus noncash benefits, and consumption. Conceptually, these alternative measures more closely reflect the resources available for consumption.

In practice, alternative income measures of poverty that take into account taxes and benefits (disposable income measures) do not necessarily identify the disadvantaged more accurately than before-tax money income measures, given poor reporting of income and inaccurate tax and benefit imputations. For example, evidence from Meyer and Sullivan (2012) indicates that some alternative income measures that conceptually closely approximate resources available for consumption do a worse job of identifying the most disadvantaged families at a point in time. It is widely presumed that such disposable income measures better capture disadvantage over time, but this presumption is largely untested. Given how widely it is held, we emphasize such measures here and encourage future research into their validity.

When using these alternative measures, we do not simply adopt the official poverty thresholds to define who is poor; rather, for each alternative measure we specify the threshold in 1980 as the 13th percentile of the distribution of that measure (after adjusting for family size) in 1980. Consequently, all of our measures will have the same poverty rate in 1980 as the official measure (13 percent).[7] This anchoring of poverty rates facilitates comparisons of trends across the different measures. It allows us to examine the same point of the distribution in 1980 so that different measures do not diverge simply because of differing changes at different points in the distribution of resources.[8] To obtain thresholds for other years, the thresholds are adjusted for inflation using a price index.

Our alternative measures also differ from the official measure in how adjustments are made for family size and composition. The equivalence scale implicit in the official poverty thresholds does not exhibit diminishing marginal cost over the whole range of family sizes (Ruggles 1990). The National Academy of Sciences panel report cited above (Citro and Michael 1995) recommended an equivalence scale of the form $(A + PK)^F$, where A is the

7. In 1980 the 13th percentile of the distribution is actually quite similar across several of our different scale-adjusted measures of resources. For example, the ratio of the thresholds for after-tax money income to that of money income is 0.97, that for after-tax money income plus noncash benefits is 1.27, and that for consumption is 1.09 (0.97 excluding health insurance).

8. Triest (1998) and Joint Economic Committee Democrats (2004) use a similar approach.

number of adults in the family and K is the number of children. This scale allows for differences in costs between adults and children and exhibits diminishing marginal cost with each additional adult equivalent. For most of the results that follow we will use the NAS scale with P and F both set equal to 0.7.

Our consumption-based measures of poverty also differ from the official poverty measure in how the family unit is defined. The unit of analysis for the official measure includes only individuals within a housing unit who are related by blood or marriage. It excludes from family resources the resources of unrelated individuals, such as a cohabiting partner. Analytically, the unit should be based on those who share resources. However, in the CPS ASEC/ADF we do not observe whether the cohabitor is sharing resources with other family members. By contrast, the unit of observation in the CE, the consumer unit, includes all those related by blood and marriage as well as cohabitors who share responsibility for housing, food, or other living expenses, but excludes cohabitors who do not contribute to these expenses.

IV. Data Quality and Underreporting in the CPS and the CE

Evidence on the tendency of surveys to capture more accurate information on income or on consumption is split. For most families, income is easier to report, given administrative reporting by employers and other sources and the typically limited number of sources. Families with few resources, however, tend to have many, sporadic income sources, making reporting more difficult. Additionally, income is likely to be a more sensitive topic for survey respondents than consumption. The CPS has slightly lower survey nonresponse than the CE, but much higher item nonresponse on income questions than the CE has on expenditure questions. Taken together, the CPS has appreciably higher nonresponse than the CE (Meyer and Sullivan 2011a).

IV.A. Income Underreporting

Income in the CPS is substantially underreported, especially for categories of income important for those with few resources. Furthermore, the extent of underreporting has increased over time. Meyer and Sullivan (2003, 2011a) and Meyer, Wallace Mok, and Sullivan (2009) report comparisons of weighted micro data from the CPS with administrative aggregates for government transfers and tax credits. The ratios of the survey-based to administrative aggregates are substantially below 1 and have declined over time, to below 0.6 for food stamps and 0.5 for Temporary Assistance for Needy Families (TANF) in recent years. Comparisons of CPS micro data with administrative micro data for the same individuals corroborate the

severe underreporting of government transfers (Meyer and Goerge 2011). Nor are concerns about income underreporting limited to transfer income. Paul Davies and Lynn Fisher (2009) summarize evidence of underreporting in surveys of earnings among the least well off, again based on comparisons with administrative data. Consistent with these results, reported income is often far below consumption for those with few resources, even for those with little or no assets or debt (Meyer and Sullivan 2003, 2011a).

IV.B. Consumption Underreporting

There is also substantial evidence that aggregate consumption is underreported in the CE and that this underreporting has increased over time. Given that we generally find that consumption exceeds income among the poorest, and that in recent years consumption poverty has declined more than income poverty, the main findings of the paper are likely somewhat understated because of consumption underreporting. To assess the degree of underreporting, the CE data have been compared with data from many other sources, but the most extensive and heavily cited comparisons are with the personal consumption expenditures (PCE) data from the National Income and Product Accounts (NIPA). Focusing on comparable expenditure categories is important because past studies have indicated that half or more of the discrepancy between the two sources is due to definitional differences (Slesnick 1992, General Accounting Office 1996).

Adam Bee, Meyer, and Sullivan (forthcoming) survey and update these analyses, reporting separate results for the CE Interview Survey data rather than the published integrated data examined in the literature. Among the eight largest comparable categories of expenditures, six are reported at a high rate in the CE Interview Survey, and those rates have been roughly constant over time. These well-measured categories are the imputed rent on owner-occupied nonfarm housing, rent and utilities, food at home, gasoline and other energy goods, communication, and new motor vehicles. In 2010 the ratio of CE to PCE consumption is 0.95 or higher for imputed rent, rent and utilities, and new motor vehicles. It is 0.86 for food at home, 0.80 for communication, and 0.78 for gasoline and other energy goods. The largest poorly measured expenditure categories are food away from home with a ratio of 0.51, furniture and furnishings at 0.44, clothing at 0.32, and alcohol at 0.22.

However, these aggregate numbers likely overstate the weakness of the data for the typical person and even more so for the poor. John Sabelhaus and others (forthcoming) examine the representativeness of the CE Interview Survey by income. Matching CE respondent and nonrespondent house-

holds to income at the zip code level, they find modest underrepresentation of those from the top 4 or 5 percentiles of zip code–level income and no underrepresentation (maybe a slight overrepresentation) of the bottom percentiles. Much more important quantitatively, they find that the income reported in the survey, either because high-income people are missing or because income is underreported at the top, does not match well with other sources such as the Survey of Consumer Finances and tax records. Furthermore, reported spending relative to income is very low at the top. The finding that much of the underreporting of expenditure occurs at the very top of the income distribution means that the aggregate underreporting statistics likely overstate the weakness of the CE for a typical person.

Our measures of consumption also include the value of the flow of services from the ownership of durables such as houses and vehicles. Reporting ownership of these goods is very different from reporting the mostly small, discretionary purchases that are badly reported in the CE. Validation of these data suggests that ownership of these durables is reported reasonably well. (See sections B and D.3 in the online appendix, and Bee and others forthcoming).

IV.C. Core Consumption

Incorporating the lessons of the previous section, we construct an alternative, core consumption measure that includes only the best measured expenditures, ones that have reporting ratios that are high and constant or that decline slowly over time. This measure closely approximates necessities, consisting of food at home, rent plus utilities, transportation, gasoline, the value of owner-occupied housing, rental assistance, and the value of owned vehicles. Overall, our measure covers 73 percent of reported consumption, but 80 percent of consumption on average for those near the poverty line.

V. Price Indexes

Because the official poverty thresholds are adjusted over time using the CPI-U, bias in this price index will lead to bias in observed poverty trends. Although this bias can be substantial for changes over long periods, the implications of this point have received little attention in the poverty literature.[9] Four types of bias in the CPI-U have been emphasized: substitution bias, outlet bias, quality bias, and new product bias. Substitution bias occurs

9. Exceptions include Jencks, Mayer, and Swingle (2004a) and Broda, Leibtag, and Weinstein (2009).

when the index uses a fixed market basket and people substitute away from high-relative-price items. Outlet bias refers to inadequate accounting for the movement of purchases toward low-price discount or big-box stores. Quality bias refers to inadequate adjustments for quality improvements in products over time. New product bias refers to the omission or long delay in the incorporation of new products into the index. The report of the Boskin Commission (Advisory Commission to Study the Consumer Price Index 1996), a group of distinguished economists appointed by the Senate Finance Committee to study CPI bias, concluded that the annual bias in the CPI-U was 1.1 percentage points per year at the time of the report, but 1.3 percentage points before 1996 (the extra 0.2 percentage point was added inadvertently by a 1978 change in methodology that was later corrected).

The Bureau of Labor Statistics (BLS) has implemented several methodological improvements in calculating the CPI-U over the past 25 years (Johnson, Reed, and Stewart 2006). Although the BLS does not update the CPI-U retroactively, it does provide a consistent research series (CPI-U-RS) that incorporates many of the changes. However, the CPI-U-RS corrects for only about 0.4 percentage point on average of the 1.1- to 1.3-percentage-point annual bias in the CPI-U. Thus, our base price index, what we call the adjusted CPI-U-RS, subtracts 0.8 percentage point from the growth in the CPI-U-RS index each year from 1978 to 2010. Because the CPI-U-RS provides a consistent series only since 1978, we subtract the full 1.1 percentage points from changes in CPI-U inflation for earlier years.[10] We also base this adjustment on Robert Gordon (2006), who argues that even with recent alterations to the CPI-U methodology that make it and the CPI-U-RS essentially the same for recent years, a bias of 0.8 percentage point per year remains. Ernst Berndt (2006) reports that the bias remaining in 2000, as estimated by each of the individual Boskin Commission members, ranged from 0.73 to 0.9 percentage point per year.

This adjustment to the CPI-U-RS could be too big or too small. Gordon and Todd vanGoethem (2005) and Gordon (2006), for example, find that over some periods the CPI-U *understated* price increases for housing and clothing. The commission itself argued that its estimates tended to understate the bias (Advisory Commission 1996, section VI; Gordon 2006, p. 13), but that the truth could lie anywhere in a fairly wide band. Others, such as Jerry Hausman (2003), have also argued that the commission understated the bias. Dora Costa (2001) concludes that the CPI-U overstated inflation by 1.6 percentage points per year between 1972 and 1994.

10. Results using the CPI-U-RS are similar to those using the PCE deflator.

Bruce Hamilton (2001) uses a different data source and concludes that the CPI-U overstated inflation by 3.0 percentage points per year between 1972 and 1981 and by 1.0 percentage point per year between 1981 and 1991.[11]

An additional issue is whether the price adjustment for the poor should be the same as the adjustment for overall price changes, given that the market basket chosen by the poor is different, and that the poor may pay different prices than other consumers for the same items. The evidence for differences in price changes by income either suggests little difference or, when the difference is substantial, applies to a short time period or small share of expenditures (see section G of the online appendix). If anything, the evidence suggests slower price increases for the poor, which would tend to amplify our main finding of a reduction in poverty.

VI. Results

In this section we describe the main changes in income and consumption poverty over the past five decades. As discussed in section I, how one measures resources and how one adjusts thresholds over time for inflation are two essential components of any absolute measure of poverty. Here we first show that conceptually better measures of resources and more accurate inflation corrections tend to indicate a greater reduction in poverty over time than the official measure implies. We then discuss the patterns for poverty gaps and poverty by family type. In the following section we will examine potential explanations for these patterns.

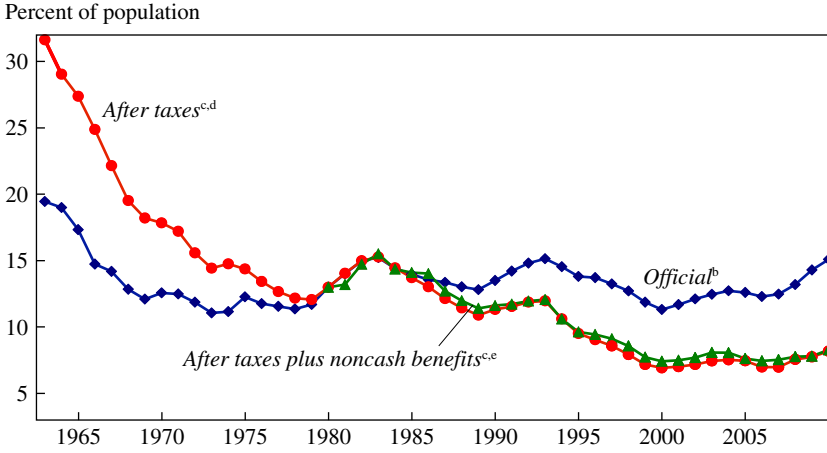
VI.A. Income- and Consumption-Based Measures of Poverty

Over the past five decades, the official poverty rate has fallen by only 4.4 percentage points, and it has actually risen by 2.5 percentage points since 1970 (figure 1). Citing this rise, many have concluded that the United States has lost the war on poverty (Tanner 2012). However, our results show that the pattern for an improved measure of poverty is dramatically different: a consumption-based poverty measure that corrects for bias in the CPI-U falls by 26.4 percentage points over the past five decades.

Figure 1 and the first four columns of table 1 report changes in poverty since 1963 for several income measures. Each measure is anchored as

11. The Boskin Commission and several other surveys have estimated CPI bias by assembling direct bias estimates for parts of the index from a variety of sources. Costa (2001) and Hamilton (2001) use an alternative approach that essentially determines how much CPI-U-adjusted income needs to be further adjusted so that spending patterns for a given inflation-adjusted income are unchanged over time.

Figure 1. Official and Alternative Income Poverty Rates, 1963–2010[a]



Source: Annual Social and Economic Supplement of the Current Population Survey (Annual Demographic Files before 2003; CPS ASEC/ADF) and authors' calculations.

a. Poverty status is determined at the family level and then weighted by the number of persons in the family.

b. Follows the Census definition of income poverty using official thresholds.

c. Threshold in 1980 is set equal to the value that yields a poverty rate equal to the official 1980 poverty rate and then adjusted over time for inflation using the adjusted CPI-U-RS, which subtracts 1.1 percentage points from the official CPI-U-RS each year from 1960 to 1977 and 0.8 percentage point each year from 1978 to 2010. Adjustments for family size and composition are made using the National Academy of Sciences equivalence scale. See the text and the online appendix for further details.

d. Income is money income after state and federal income and payroll taxes and credits and is calculated using the TAXSIM program developed by Daniel Feenberg at the National Bureau of Economic Research.

e. Income is defined as in note d but adds the value of food stamps and CPS-imputed measures of housing and school lunch subsidies, the fungible value of Medicare and Medicaid, employer health benefits, and the net return on housing equity. This series is unavailable before the 1980 CPS ASEC/ADF.

described above so that the poverty rate is the same as the official measure in 1980 (13.0 percent). In all of the series except the official measure, we use the adjusted CPI-U-RS to deflate prices and the NAS equivalence scale to adjust for family size and composition. Online appendix table 2 reports results using the unadjusted CPI-U-RS. Two main lessons emerge from these results. First, conceptually better resource measures give poverty rates that show greater improvement over time.[12] The measures in the first two columns of table 1 use different price indexes and equivalence scales.

12. Standard errors for changes in some of the key poverty measures and the differences between them are reported in online appendix tables 3 and 6. Changes and differences between poverty measures between 1980 and 2010 are typically significantly different from zero if they exceed 0.6 percentage point. When one groups years, much smaller changes are significant.

Table 1. Income and Consumption Poverty Rates, 1960–2010[a]

Percent of population except where stated otherwise

	Income measures				*Consumption measures*		
Year	*Official*	*Before-tax money income*	*After-tax money income*	*After-tax plus noncash benefits*	*Consumption*	*Consumption plus health insurance*	*Core*[b]
1960s[c]	19.5	29.2	31.6	n.a.	30.8	n.a.	n.a.
1972	11.9	15.1	15.6	n.a.	16.4	n.a.	22.0
1973	11.1	13.9	14.4	n.a.	14.1	n.a.	19.1
1980	13.0	13.0	13.0	13.0	13.0	13.0	13.0
1981	14.0	13.6	14.1	13.2	12.7	12.8	12.5
1982	15.0	14.5	15.0	14.7	n.a.	n.a.	n.a.
1983	15.2	14.8	15.3	15.5	n.a.	n.a.	n.a.
1984	14.4	13.8	14.5	14.4	13.3	n.a.	13.7
1985	14.0	13.3	13.7	14.1	13.0	n.a.	13.1
1986	13.6	12.7	13.0	14.0	12.7	n.a.	13.1
1987	13.4	12.3	12.1	12.7	11.6	n.a.	12.2
1988	13.0	11.7	11.4	12.0	11.2	11.3	12.1
1989	12.8	11.2	10.9	11.4	10.3	9.9	10.5
1990	13.5	11.7	11.3	11.6	10.8	10.2	11.3
1991	14.2	12.1	11.6	11.7	10.7	10.4	10.4
1992	14.8	12.5	11.9	12.0	10.7	10.3	10.4
1993	15.1	12.7	12.0	12.1	9.9	9.3	9.6
1994	14.5	11.9	10.6	10.6	9.1	8.8	8.9
1995	13.8	10.8	9.5	9.6	8.9	8.6	8.5
1996	13.7	10.5	9.0	9.4	8.5	8.4	7.7
1997	13.3	10.0	8.6	9.1	7.6	7.6	7.2
1998	12.7	9.3	7.9	8.6	6.7	6.9	6.4
1999	11.9	8.6	7.2	7.7	6.7	6.7	6.4

2000	11.3	8.1	6.9	7.4	6.2	6.1	6.0
2001	11.7	8.2	7.0	7.5	6.0	5.9	5.3
2002	12.1	8.5	7.2	7.7	5.5	5.4	5.0
2003	12.5	8.8	7.4	8.1	5.8	5.6	4.9
2004	12.7	9.0	7.5	8.1	5.0	4.8	3.9
2005	12.6	8.7	7.5	7.6	4.9	4.7	3.9
2006	12.3	8.4	7.0	7.4	4.4	4.0	3.5
2007	12.5	8.4	7.0	7.5	4.0	3.9	3.2
2008	13.2	9.0	7.6	7.8	3.6	3.5	2.7
2009	14.3	9.7	7.8	7.8	4.0	3.8	3.3
2010	15.1	10.1	8.2	8.3	4.5	4.3	3.6
Change (percentage points)							
1960–72[c]	−7.6	−14.1	−16.1	n.a.	−14.4	n.a.	n.a.
1972–80	1.1	−2.1	−2.6	n.a.	−3.4	n.a.	−9.0
1980–90	0.5	−1.3	−1.7	−1.4	−2.1	−2.8	−1.7
1990–2000	−2.2	−3.6	−4.4	−4.2	−4.6	−4.1	−5.2
2000–10	3.8	2.0	1.3	0.9	−1.8	−1.8	−2.4
1980–2010	2.1	−2.9	−4.8	−4.7	−8.5	−8.7	−9.4
1960–2010[c]	−4.4	−19.1	−23.5	n.a.	−26.4	n.a.	n.a.

Sources: Annual Social and Economic Supplement of the Current Population Survey, Annual Demographic Files (CPS ASEC/ADF); Consumer Expenditure Survey (CE); and authors' calculations.

a. For all except the official measure, poverty thresholds are determined as described in figure 1, note c, and adjustment is made for differences in family size and composition using the NAS equivalence scale. Poverty status is determined at the family level and then weighted by the number of persons in the family. n.a. = not available.

b. Includes key components of consumption that are more consistent with NIPA data totals, including food at home, housing, utilities, transportation, and gasoline and motor oil.

c. Data from the 1960s refer to either 1960–61 (consumption) or 1963 (income).

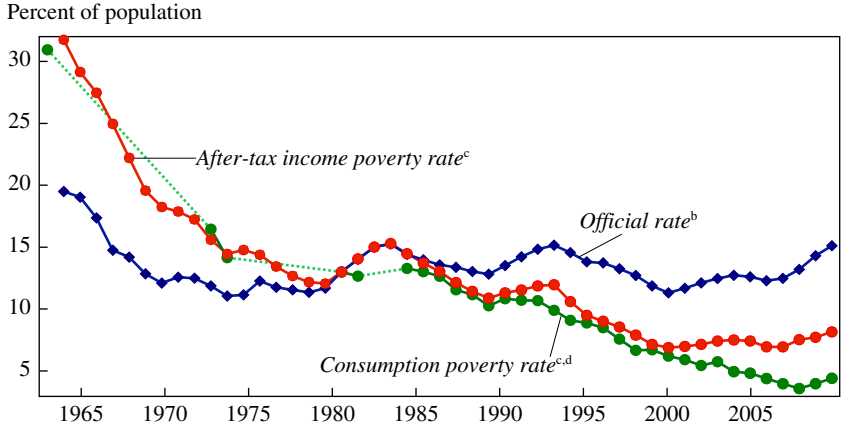
We address the importance of these differences below. A comparison of the second and third columns in table 1 or of the corresponding series in figure 1 shows the effects of accounting for income and payroll taxes and tax credits. In each decade the income poverty measure that incorporates taxes declines more (or rises less) than the before-tax money income measure. From 1960 to 1972, for example, after-tax income poverty fell by 16.1 percentage points while before-tax money income poverty fell by 14.1 percentage points.[13] During the 1990s, after-tax money income poverty declined by another 0.8 percentage point more than did the before-tax measure. After 1996 the relative movements of the two measures were small. Second, adding the value of noncash government benefits as calculated by the Census Bureau (fourth column in table 1) has negligible additional impact on changes in poverty except for small effects during short periods in the mid-1980s and mid-1990s. As we discuss later, this result may, in part, be due to a sharp rise in underreporting of noncash benefits in the CPS. Importantly, although these results show that noncash benefits do not affect changes in poverty over time, these programs do play an important role in lifting people out of poverty at a point in time (Hoynes and others 2006, Ben-Shalom and others 2012).

Consumption-based measures of poverty indicate greater overall improvement than do the income-based measures. As shown in figure 2 and the fifth column of table 1, over the past five decades our main measure of consumption poverty has fallen by 26.4 percentage points, and since 1980 it has declined by 8.5 percentage points. The patterns for consumption poverty and after-tax money income poverty were fairly similar in the 1970s, 1980s, and 1990s.[14] However, after-tax money income–based poverty fell more than consumption-based poverty (by 1.7 percentage points) during the 1960s, and these two poverty measures diverged in the 2000s,

13. Our finding that including taxes noticeably alters the patterns for income poverty contrasts with the conclusion of others that alternative income poverty measures have similar trends (Hoynes, Page, and Stevens 2006, Lang 2007). Their conclusions are based on Census reports such as Dalaker (2005), which show that a poverty measure based on before-tax money income and one based on after-tax money income plus noncash benefits have similar trends in recent years. However, this similarity is the result of offsetting effects: including taxes results in a greater decline in poverty whereas including the annuitized value of home equity leads to a smaller decline.

14. We compare consumption with income excluding noncash benefits here and in much of the discussion that follows because this income measure is available for all years since 1963. Also, as shown in figure 1, including noncash benefits does not, for the most part, noticeably affect changes in income poverty since 1980. Later we highlight a few cases where noncash benefits do affect the patterns.

Figure 2. Official and Alternative Income Poverty Rates and Consumption Poverty Rate, 1960–2010[a]



Sources: CPS ASEC/ADF; Consumer Expenditure (CE) Survey; authors' calculations.
a. Poverty status is defined as in figure 1, note a.
b. Defined as in figure 1, note b.
c. Defined as in figure 1, notes c and d.
d. Calculated using data from the CE; see the online appendix for further details. Dotted lines indicate periods for which CE data are unavailable.

with the income-based measure indicating greater deprivation while the consumption-based measure showed improvement.[15] Given the standard errors of these estimates, differences of this magnitude are strongly statistically significant. Even more pronounced differences between income and consumption poverty become evident when we examine trends by family type below.

The different patterns during the recent severe recession are of particular note. After-tax money income poverty rose in 2007 and 2008, while consumption poverty fell. Between 2008 and 2010, consumption poverty

15. This difference is consistent with findings from previous research. Cutler and Katz (1991) do not examine after-tax income poverty or a measure that incorporates noncash benefits. To facilitate comparison of our consumption results for this earlier period with those from table 13 of Cutler and Katz (1991), we recalculate our consumption poverty measure using their price index (the PCE deflator) and anchoring poverty in 1980 at 7.5 percent to match their consumption poverty rate for that year (results not shown). The change for this measure of consumption poverty is very close to that of Cutler and Katz over their full sample period (1960–61 to 1988), but some differences emerge for subperiods: our measure falls by about a percentage point less in the 1960s, and it does not reproduce their rise of about a percentage point in the 1970s. These differences arise from different approaches in calculating service flows from housing and vehicles in these early years.

rose by 0.9 percentage point (23 percent), while after-tax money income poverty rose by only 0.6 percentage point (8 percent). Although the recession officially began in late 2007, unemployment rates did not start to rise sharply until mid-2008, and the sharpest rise in unemployment occurred from November 2008 through October 2009, making it all the more surprising that after-tax money income poverty did not rise more during this period. In fact, our income poverty measure that includes noncash benefits (table 1) shows no change in poverty between 2008 and 2009, and a rise of only half a percentage point in 2010.

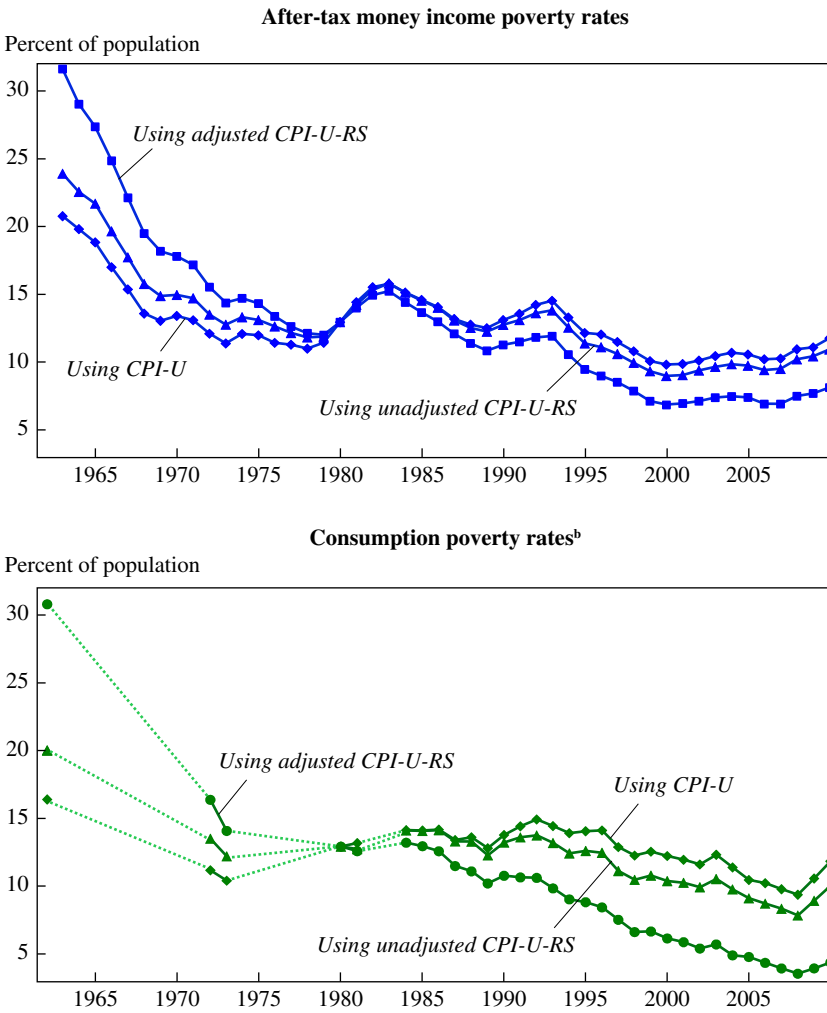
The pattern for other measures of consumption poverty is broadly similar to that of our main measure. For example, including the value of health insurance in consumption (sixth column in table 1) does not noticeably affect changes in poverty, although poverty by this measure fell a bit more in the 1980s. The changes in consumption poverty based on our measure of core consumption (last column), which includes only components that are reported consistently well over time compared with the NIPA, suggest greater improvement in poverty than when poverty is measured using consumption (the fifth column). Differences between these two measures of consumption poverty are most notable for the period between 1973 and 1980, when core consumption poverty fell considerably more than consumption poverty. The greater improvement in poverty seen with core consumption is not surprising given the increased underreporting of non–core consumption components discussed in section IV. This rise in underreporting over time suggests that true consumption poverty declined even more than is shown in table 1.

VI.B. The Importance of Price Adjustments

As one moves toward a price index that uses newer methods and comes closer to what past research suggests would be an unbiased measure of inflation, trends in poverty are considerably more favorable. This point is emphasized in figure 3 and online appendix table 4, which report changes in after-tax money income poverty and consumption poverty using three different price deflators: the CPI-U, CPI-U-RS, and our adjusted CPI-U-RS.[16] Between 1963 and 2010, moving from the CPI-U to the CPI-U-RS leads to a 3.9-percentage-point greater fall in after-tax income poverty, and

16. Results using the PCE deflator are similar to those using the CPI-U-RS, although poverty declines slightly more between 1995 and 2005 when thresholds are adjusted using the former.

Figure 3. Income and Consumption Poverty Rates under Alternative Price Adjustments, 1960–2010[a]



Sources: CPS ASEC/ADF, CE, and authors' calculations.

a. Series labeled "Using adjusted CPI-U-RS" in the top and bottom panels are taken from, respectively, figure 1 (series labeled "After taxes") and figure 2 ("Consumption poverty rate"). The other series use the same income or consumption definition but different deflators as indicated. All series are anchored at 1980 as described in figure 1, note c, and adjusted using the specified price index. Poverty status is determined at the family level and then person weighted

b. Dotted lines indicate periods for which CE data are unavailable.

moving from the CPI-U to the adjusted CPI-U-RS leads to a 14.5-percentage-point greater fall in poverty.

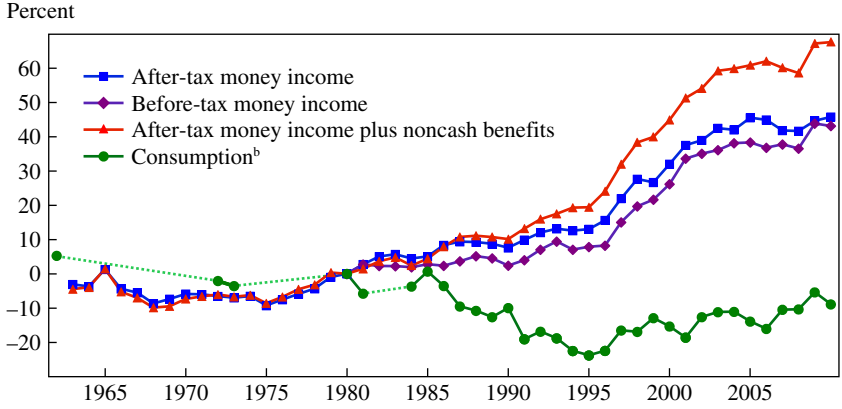
Price deflators that better approximate the change in the cost of living have an even greater effect on changes in consumption poverty because the consumption distribution is less dispersed than that of income. Thus, a given reduction in the thresholds will move a larger share of the consumption distribution above the poverty line. Between the early 1960s and 2010, moving from the CPI-U to the unadjusted CPI-U-RS leads to a 5.4-percentage-point greater fall in poverty, and moving from the CPI-U to the adjusted CPI-U-RS leads to a 21.8-percentage-point greater fall. In terms of percent rather than percentage-point changes, between the early 1960s and 2010, CPI-U consumption poverty fell by 28 percent while adjusted CPI-U-RS consumption poverty fell by 86 percent.

VI.C. Poverty Gaps

The results presented thus far are for the ubiquitous, but narrow, head count measures of poverty. In statistical terms, such measures capture the cumulative distribution function at a single point. To provide broader evidence on changes in deprivation, we also examine the poverty gap, which is often thought to be a better measure of deprivation than head-count measures (Dasgupta 1993, Deaton 1997). The total poverty gap for a given poverty measure is the sum of the difference between the poverty threshold and family resources across all families in poverty. We calculate the average poverty gap—the total gap divided by the total number of people in poverty—using the same income and consumption measures as above. We report the change in the average poverty gap in figure 4 and both the level and the change in the average gap in online appendix table 5. These results show that the income- and consumption-based poverty gaps followed a similar pattern in the 1960s and 1970s but moved in opposite directions between 1980 and 2010, when the gap based on after-tax money income rose by 68 percent while the consumption-based gap fell by 9 percent. Including noncash benefits in the income-based measure dampens the rise in the gap somewhat, but the pattern still diverges sharply from that based on consumption during the 1990s and 2000s.

This difference in recent changes in the poverty gap has important implications for interpreting recent changes in poverty. For example, the income-based gaps suggest that although poverty fell between 1980 and 2010, those who remained in poverty were more likely to be severely deprived. By contrast, the pattern for the consumption-based gaps suggests

Figure 4. Change in the Average Poverty Gap Relative to 1980 for Poor Families for Income and Consumption Measures, 1960–2010[a]



Source: CPS ASEC/ADF, CE, and authors' calculations.

a. The average poverty gap (reported in online appendix table 6) is calculated as the sum of the differences between income or consumption and the poverty threshold for all families in poverty, divided by the total number of poor individuals. Income and consumption concepts correspond to those in the second through fifth columns in table 1. All income and consumption measures are deflated using the adjusted CPI-R-US (figure 1, note c).

b. Dotted lines indicate periods for which CE data are unavailable.

that as overall poverty fell during this period, the degree to which families were severely deprived also fell.

VI.D. Poverty within Demographic Groups

Some of the most striking differences in trends across measures of poverty are evident within family types. We calculate after-tax income and consumption poverty rates for five mutually exclusive and exhaustive groups defined by marriage, children, and age: nonelderly single-parent families, nonelderly married-parent families, nonelderly single individuals without children, nonelderly married couples without children, and all elderly households (those with a head 65 or older). Table 2 reports poverty rates for these groups, again from 1960 to 2010 (see online appendix table 6 for results for poverty based on consumption and on after-tax income plus noncash benefits starting in 1980, and the corresponding standard errors).

As emphasized earlier, income poverty fell more than consumption poverty during the 1960s. The results in table 2 show that this is true within each family type except single-parent families, for whom consumption poverty fell more. These measures continued to diverge considerably

Table 2. Income and Consumption Poverty Rates by Family Type, 1960–2010[a]

Percent of population except where stated otherwise

	Single-parent families		*Married-parent families*		*Single individuals*		*Married couples without children*		*Head 65 or older*	
Year	*After-tax income*[b]	*Consumption*[c]	*After-tax income*	*Consumption*	*After-tax income*	*Consumption*	*After-tax income*	*Consumption*	*After-tax income*	*Consumption*
1960s[d]	65.3	60.2	28.8	29.7	34.3	23.0	16.8	14.9	49.4	47.3
1972	51.4	41.3	10.9	14.6	19.9	12.9	5.7	7.2	26.6	26.6
1973	49.0	41.5	9.7	11.2	18.3	12.4	5.3	4.8	23.9	25.1
1980	42.0	36.9	9.3	10.0	14.3	13.6	3.9	4.1	15.7	19.1
1981	43.3	35.0	10.5	10.4	16.1	12.7	4.8	4.0	14.9	17.7
1982	47.3	n.a.	11.9	n.a.	15.9	n.a.	5.3	n.a.	13.9	n.a.
1983	47.1	n.a.	12.3	n.a.	17.0	n.a.	5.4	n.a.	13.4	n.a.
1984	44.8	34.3	11.7	12.5	15.3	13.3	5.2	3.7	11.9	13.5
1985	43.8	31.6	10.6	11.7	14.6	12.6	5.1	4.5	11.3	15.3
1986	44.2	35.2	9.3	11.0	14.5	11.2	4.3	4.0	11.1	13.1
1987	41.7	33.6	8.4	9.9	13.1	9.9	3.7	3.3	11.1	11.7
1988	40.8	34.8	7.4	9.5	13.1	8.0	3.8	2.1	9.6	11.5
1989	38.7	29.6	7.1	9.4	12.4	6.9	3.5	2.7	8.9	10.3
1990	39.5	28.3	7.6	9.9	12.2	9.7	3.5	3.0	9.0	10.4
1991	40.2	29.6	7.7	10.2	12.9	9.1	3.4	3.0	8.5	8.7
1992	40.0	27.7	7.7	10.0	13.2	9.2	3.6	2.5	9.3	8.5
1993	39.5	26.5	7.9	9.3	13.6	8.1	3.9	2.3	8.7	8.2
1994	35.2	23.4	6.6	8.1	12.9	7.7	3.5	3.6	7.6	7.3
1995	30.9	22.9	5.6	8.6	12.2	7.3	3.3	1.9	6.5	6.9
1996	29.8	22.9	5.2	7.8	11.0	7.2	3.3	2.4	6.7	5.9
1997	28.3	20.4	4.7	6.9	11.3	7.2	2.9	2.1	6.6	4.8
1998	25.1	17.5	4.4	6.4	10.7	6.7	2.9	1.9	6.2	4.3
1999	23.3	16.1	3.6	6.3	10.6	7.5	2.9	1.9	5.3	4.9

2000	21.1	15.1	3.7	5.9	10.2	6.6	3.1	1.8	5.2	4.5
2001	21.1	14.9	3.5	5.6	10.6	6.7	3.3	1.6	5.3	3.4
2002	20.7	13.3	3.6	4.7	11.4	6.8	3.2	1.4	5.8	4.0
2003	22.6	14.3	3.6	5.2	11.6	6.4	3.2	1.9	5.4	3.9
2004	21.8	11.4	3.5	4.9	11.8	5.3	3.5	1.7	6.2	3.6
2005	22.4	11.0	3.6	4.5	11.8	5.9	3.0	1.5	5.5	3.5
2006	21.1	9.9	3.2	4.0	11.1	4.8	2.9	1.6	5.3	3.8
2007	21.2	9.5	3.4	3.7	10.7	4.6	2.4	1.3	5.1	3.0
2008	22.0	9.3	3.9	3.1	11.6	4.9	3.2	1.0	5.4	2.1
2009	21.9	9.3	4.1	3.8	12.8	5.5	2.9	1.3	4.6	2.0
2010	23.6	8.7	4.2	4.5	13.0	5.5	3.1	1.4	4.8	3.2
Change (percentage points)										
1960–72[d]	−13.9	−18.9	−17.9	−15.1	−14.4	−10.0	−11.0	−7.7	−22.8	−20.7
1972–80	−9.4	−4.4	−1.6	−4.6	−5.6	0.6	−1.8	−3.1	−10.9	−7.4
1980–90	−2.6	−8.6	−1.7	−0.1	−2.0	−3.9	−0.4	−1.1	−6.8	−8.7
1990–2000	−18.4	−13.2	−4.0	−4.0	−2.1	−3.1	−0.4	−1.2	−3.7	−5.9
2000–10	2.4	−6.4	0.5	−1.4	2.8	−1.1	−0.0	−0.5	−0.5	−1.3
1980–2010	−18.5	−28.2	−5.1	−5.5	−1.3	−8.0	−0.8	−2.8	−11.0	−15.9
1960–2010[d]	−41.7	−51.5	−24.7	−25.2	−21.3	−17.4	−13.7	−13.5	−44.7	−44.1

Sources: CPS ASEC/ADF, CE, and authors' calculations.

a. Poverty thresholds are determined as described in figure 1, note c, for the full sample rather than for each family type, and are adjusted over time using the adjusted CPI-U-RS; adjustment is made for differences in family size and composition using the NAS equivalence scale. All columns except the last two exclude families with a head aged 65 or older. See the text and the online appendix for further details. n.a. = not available.

b. After-tax money income as defined in figure 1, note d.

c. Same concept as in figure 2 and in the fifth column of table 1.

d. Data from the 1960s refer to either 1960–61 (consumption) or 1963 (income).

for single-parent families after the 1960s as income and consumption poverty did not closely track each other. In the 2000s the measures moved sharply in opposite directions, as income poverty rose by 2.4 percentage points but consumption poverty fell by 6.4 percentage points.

For married couples with children—the largest of our family types, accounting for about 40 percent of the entire sample and between 25 and 40 percent of poor individuals in recent years—income poverty fell by more than consumption poverty in the 1960s and 1980s. However, the reverse was true for the 1970s, so that the changes in income and consumption poverty over the whole of the past five decades are similar. For childless single individuals, income poverty fell more than consumption poverty in the 1960s and 1970s, but after 1980 income poverty fell 1.3 percentage points while consumption poverty fell 8 percentage points. Married couples without children saw a decline in income poverty of more than 60 percent during the 1960s compared with a 52 percent decline for consumption poverty. In more recent years this group has seen little change in its (low) poverty rates whether measured by income or consumption.

Over the entire five-decade period, the changes in income and consumption poverty were similar for those families with a head 65 or older. However, the patterns differed considerably before and after 1980. In the 1960s and 1970s income poverty fell considerably more than consumption poverty, but the reverse was true after 1980. Between 1980 and 2010 consumption poverty fell by 15.9 percentage points (83 percent), while income poverty fell by 11 percentage points (70 percent). In separate analyses we examine income- and consumption-based poverty gaps within family types (online appendix table 7). These results show that for all groups except single individuals, the two poverty gaps moved sharply in opposite directions.

Although the focus of this paper is on changes in poverty over time, related work (Meyer and Sullivan 2012) has shown that who is designated as poor at a point in time differs considerably depending on whether poverty is defined using income or consumption. In particular, the consumption poor look much worse off than the income poor. The consumption poor are less likely to have health insurance or own a home, they have smaller houses that are less likely to have air conditioning and other amenities, and they have worse cars and less education. These results reinforce the argument in section II, and the evidence from Meyer and Sullivan (2003, 2011a), that consumption is a better predictor of well-being than income for families with limited resources.

VII. Explanations for Poverty Trends and Differences between Income and Consumption Poverty

We now turn to possible explanations for the changes in poverty over time and for the differences between the changes in income and consumption poverty measures. Hoynes and others (2006) provide a good summary of the evidence on explanations for changes in official poverty for the nonelderly. They examine the role of four factors: macroeconomic conditions and the employment of women, family structure changes, government tax and transfer programs, and immigration. The authors begin by estimating the effect of the macroeconomy and employment of women on poverty using region × year regressions. They then use these coefficient estimates to predict the aggregate poverty rate. They find that this factor predicts a decrease in the official nonelderly poverty rate of only about 1.0 percentage point between 1980 and 2003.[17] Even this small magnitude would be approximately halved if the estimated relationship between macroeconomic changes after 1980 were used for the predictions rather than the much stronger relationship of the 1970s. When the changing employment of women is incorporated, Hoynes and her coauthors predict that poverty will rise slightly over the period rather than fall. Their results indicate that family structure changes, such as the falling share of married-couple families, predict a substantial increase in poverty. Antipoverty programs and immigration are found to play an unimportant role in changes over time.

Whereas Hoynes and coauthors focus on explaining changes in official poverty, we examine changes for our alternative income measures, which allow us to consider the role of taxes and noncash benefits over time. Hoynes and others also look at the impact of taxes and noncash transfers but focus on results for a single year. We also examine the entire population rather than the nonelderly alone. Most important, we analyze these issues for consumption as well as income poverty and in the process begin to explain the new set of facts that our results provide.

17. A large literature examines the relationship between macroeconomic conditions and income poverty, finding in general that the two are correlated, but that the relationship is quite weak for some periods such as the 1980s. For more recent discussions see Blank (2000) and Gundersen and Ziliak (2004). Meyer and Sullivan (2011b) show that both income and consumption poverty are sensitive to macroeconomic conditions and report mixed evidence on whether income poverty is more responsive to the business cycle than consumption poverty.

VII.A. Changes in Demographics

We analyze the role of demographics, including family type, employment, race, region, and education, on the changes in income and consumption poverty rates over time. One might expect that the decline in overall employment, the increasing numbers of single-parent families and single individuals, and the changes in the population by region and race would have led to higher poverty rates over time. On the other hand, one might expect the increase in educational attainment over time, particularly the decline in the share of the population without a high school diploma, to have led to lower poverty rates. We calculate the changes in poverty that one would predict if poverty rates within demographic groups had remained fixed at the level in a base year and only the shares of family types and other demographics had changed. These results are reported in table 3 using the same five mutually exclusive and exhaustive family types discussed in section VI.D and using 1980 as the base year. See online appendix table 8 for results with alternative base years (1972 and 2010). We divide the full time period into three parts: 1963–72, 1972–80, and 1980–2010. We examine the effect of demographics on both consumption poverty (top panel of table 3) and income poverty (bottom panel).[18]

In general, demographic changes other than increased education explain only a small share of the changes in poverty since the 1960s. Changes in family type typically predict increasing poverty and thus cannot explain the fall over time in both income and consumption poverty. Changes in employment and in regional population shares are predicted to have small effects on poverty rates in all periods, and changes in the racial makeup of the population predict increasing poverty. Increasing educational attainment is predicted to reduce both consumption and income poverty substantially. Between 1980 and 2010, consumption poverty fell 8.5 percentage points, and education changes predict a fall of 2.2 percentage points when combined with family type. During this same period, income poverty fell 4.8 percentage points, and education changes combined with changes in family type predict a 2.2-percentage-point decline as well.

VII.B. Changes in Tax and Transfer Policy

We turn next to the impact of tax and transfer policy on poverty by comparing poverty trends for before- and after-tax measures of poverty as well

18. We also examined the effects of demographics on our measure of income poverty that includes noncash benefits for the years 1980 to 2010. These results (not reported) are very similar to those reported in the bottom panel of table 3.

Table 3. Effects of Demographic Characteristics on Poverty Rates, 1960–2010
Percent of population except where stated otherwise

	Poverty rate						*Change in poverty rate (percentage points)*		
	1960–61 or 1963[a]	*1972*	*1980*	*1990*	*2000*	*2010*	*1960s–72*	*1972–80*	*1980–2010*
Consumption poverty									
Actual[b]	30.8	16.4	13.0	10.8	6.2	4.5	−14.4	−3.4	−8.5
Predicted holding within-group poverty at 1980 rate[c]									
Grouped by family type	11.7	12.1	13.0	13.8	14.1	14.4	0.4	0.9	1.4
Grouped by family type and education	15.9	14.2	13.0	12.1	10.9	10.8	−1.7	−1.3	−2.2
Grouped by family type and race	n.a.	n.a.	13.0	14.0	15.2	16.7	n.a.	n.a.	3.7
Grouped by family type and region	11.9	11.9	13.0	13.4	13.6	13.7	0.0	1.1	0.7
Grouped by family type, education, and employment	16.3	14.1	13.0	12.2	11.0	11.8	−2.2	−1.1	−1.2
Income poverty									
Actual[d]	31.6	15.6	13.0	11.3	6.9	8.2	−16.1	−2.6	−4.8
Predicted holding within-group poverty at 1980 rate[c]									
Grouped by family type	11.2	12.0	13.0	13.6	14.0	14.5	0.8	1.0	1.5
Grouped by family type and education	14.8	13.7	13.0	12.1	11.3	10.8	−1.1	−0.7	−2.2
Grouped by family type and race	10.2	11.8	13.0	14.1	15.1	16.1	1.5	1.2	3.1
Grouped by family type and region	11.0	11.8	13.0	13.7	14.0	14.6	0.8	1.2	1.6
Grouped by family type, education, and employment	14.4	13.1	13.0	12.2	11.6	12.6	−1.3	−0.1	−0.4

Sources: CE and authors' calculations.
a. Data are for 1961–62 for consumption, 1963 for income.
b. From table 1, fifth column (consumption).
c. Weighted average of the poverty rates for each group in the base year (1980), using as weights the distribution across groups in the year indicated in the column heading. Thus, for example, the 14.4 percent rate for consumption poverty in 2010 is an estimate of what the rate would be in that year, given the composition of family types in 2010, but assuming that the poverty rate in 1980 for each of the five family types prevailed in 2010.
d. From table 1, third column (after-tax money income).

as for measures that include and exclude transfers. In such an analysis, one must keep in mind that changes in taxes and transfers may alter incomes before taxes and transfers as well as after. A full analysis of the behavioral effects of these programs is beyond the scope of this paper. However, an analysis that ignores the behavioral responses is likely to understate the effects of tax changes (such as the expansions of the earned income tax credit, or EITC) on employment and earnings, given the evidence in the literature (for summaries see Hotz and Scholz 2003, Eissa and Hoynes 2006, and Meyer 2010). On the other hand, transfer programs likely reduce before-transfer earnings, suggesting that any estimate of the direct poverty-reducing effects of these programs would overstate the effects incorporating behavioral responses (Danziger, Haveman, and Plotznick 1981, Moffitt 1992, Krueger and Meyer 2002). Yonaton Ben-Shalom, Robert Moffitt, and John Karl Scholz (2012) conclude that the overall effect of transfer programs on before-transfer incomes is small relative to their mechanical poverty reduction effects. Thus, they would argue that the estimates we provide are a good guide to what we would find if we accounted for behavioral effects.

Tax policy has had a substantial impact on poverty rates, although the impact is not steady or even in the same direction over time. The effect of income and payroll taxes can be seen by comparing before- and after-tax money income poverty rates as in figure 1 and table 1. Subtracting taxes from and adding tax credits to money income substantially accelerates the decline in poverty in the 1960s but adds to the increase in poverty in the early 1980s. Between 1986 and 1996, accounting for taxes and tax credits adds nearly 2 percentage points to the decline in poverty.

These changes in poverty can be traced to specific changes in tax provisions. In 1964 and 1965 marginal tax rates for the lowest tax bracket fell, and in 1970 the standard deduction was sharply increased for those with incomes near the poverty line. In the early 1970s the personal exemption was increased, although not by enough to quite make up for inflation over this period. Overall, the result is that after-tax income poverty declines more than before-tax income poverty during the 1960s. Although the Economic Recovery Tax Act of 1981 cut tax rates and indexed tax brackets for the vast majority of taxpayers, the standard deduction and the personal exemption (which together determine the income at which low-income taxpayers begin paying income tax) were not indexed for inflation until after 1984. The high inflation of this period moved an increasing number of low-income families into the range where their income was taxable. Thus, poverty after accounting for taxes increased relative to before-tax money

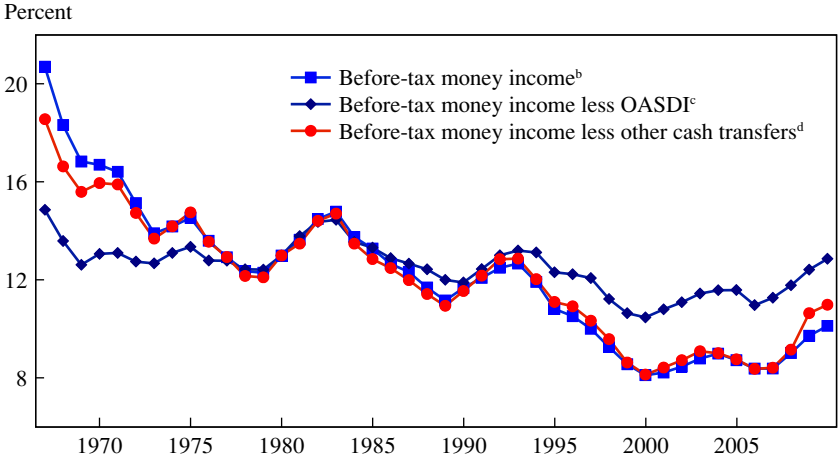
income poverty over this period. With the Tax Reform Act of 1986, the situation reversed. After-tax money income poverty fell sharply relative to before-tax money income poverty between 1986 and 1988, the first period during which the EITC was expanded (the personal exemption and the standard deduction were also increased). The effect of the EITC is even more noticeable between 1990 and 1996, when after-tax money income poverty fell by 1.2 percentage points more than the before-tax poverty rate. This growing gap coincides with the period of greatest expansion of the EITC, under the 1990 and 1993 budget acts.[19] Between 1996, when these expansions were fully phased in, and 2008, the difference between these two measures of poverty changed little. Between 2008 and 2009, however, before-tax money income poverty rose noticeably more than after-tax money income poverty, reflecting provisions in the American Recovery and Reinvestment Act of 2009 that expanded or added several tax credits, including the EITC, the child and additional child tax credits, and the Making Work Pay tax credit.

The pattern of changes in poverty by family type reinforces the evidence on the effect of tax credits (results not reported). Single-parent families are by far the most likely to receive the EITC, followed by married-parent families. Bearing this out, the post-1986 difference between before- and after-tax money income poverty is most pronounced for single-parent and to a lesser extent married-parent families. The changes in the two measures over time are almost the same for single individuals and for elderly families.

We conduct similar analyses to examine the importance of government cash and noncash transfers for changes in income poverty. An important caveat here is that the role of transfers is likely understated because of the underreporting of government transfers described in section IV.A. Figure 5 reports poverty rates for before-tax money income poverty and two other income-based measures: before-tax money income excluding Social Security old-age and disability income (OASDI) and before-tax money income excluding cash transfers other than OASDI; these include unemployment insurance, workers' compensation, veterans payments, Supplemental Security Income, and TANF (Aid to Families with Dependent Children before

19. This difference between before- and after-tax money income poverty is partly mechanical given the implicit assumption of complete take-up in the imputation of tax credits using TAXSIM (Feenberg and Coutts 1993). However, the imputation does not overstate EITC dollars received, since the imputed amounts fall far short of those actually received (Meyer, Mok, and Sullivan 2009).

Figure 5. Income Poverty Rates with and without Government Cash Transfers, 1967–2010[a]



Source: CPS ASEC/ADF, CE, and authors' calculations.

a. For all series, money income is before taxes, and the thresholds are adjusted for inflation using the adjusted CPI-U-RS and resources for family size and composition using the NAS scale. Poverty status is determined at the family level and then weighted by the number of persons in the family.

b. From the second column of table 1.

c. OASDI includes payments from the Social Security old-age and survivors insurance and disability insurance trust funds and the railroad retirement trust fund. Social Security income cannot be identified separately from other income in the CPS before 1967.

d. Other cash transfers includes unemployment insurance, workers' compensation, payments to veterans, Supplemental Security Income (SSI), and Temporary Assistance to Needy Families (Aid to Families with Dependent Children until 1997). Data on SSI payments are unavailable in the CPS before 1976.

1997).[20] We report poverty rates going back only to 1967 because government cash transfers cannot be separated from other income in earlier years of the CPS. We examine OASDI separately from other government cash transfers because it accounts for the lion's share of these transfers (about three-quarters in 2009) for those in the bottom income quintile. In general, these results show that OASDI has a very noticeable impact on changes in poverty, but the impact of other cash transfers is small. The importance of OASDI relative to other transfer programs is also evident when observed at a point in time, as Ben-Shalom, Moffitt, and Scholz (2012) have emphasized.

20. The CPS reports Social Security old-age and disability insurance benefits together. Before survey year 1988, Social Security income was reported together with railroad retirement income. For consistency, our measure of OASDI also includes these railroad retirement benefits for all years.

Between 1967 and 2010, poverty based on money income including OASDI declined by 8.6 percentage points more than the measure that excludes OASDI. The most noticeable difference in the patterns for these two measures was evident for the 1967–77 period, when average reported OASDI benefits received by those in the bottom income quintile in the CPS grew by 39 percent in real terms.[21] This substantial increase was due to both a rise in initial benefits for new retirees and increased benefits for existing recipients. During this period, initial benefits rose because of both wage growth and cost-of-living adjustments (COLAs), such that the replacement rate for an individual retiring at age 65 with an average earnings history rose from about 30 percent in 1967 to 45 percent in 1977.[22] Replacement rates continued to rise sharply for cohorts reaching normal retirement age in the early 1980s, but the effect of these more generous benefits on poverty was offset by a noticeable decline in disability rolls as a result of eligibility reviews that the Social Security Administration was required to conduct in the early 1980s.

Starting in 1979, in its calculations of initial benefits, the Social Security Administration began indexing lifetime earnings by the growth in average earnings in the economy. After this change was phased in, replacement rates fell back toward 40 percent for those retiring at 65. In addition to the growth in initial benefits, OASDI payments grew by 89 percent between 1968 and 1974 (compared with a 42 percent rise in the CPI) as a result of legislated COLAs for existing retirees. Benefits after retirement were indexed to the CPI starting in 1975. The real value of Social Security benefits continued to rise over the next three decades because, as discussed above, the CPI overstates inflation, and because rising real wages continued to lead to real increases in initial benefits.

Reported government cash transfers other than OASDI have had a much less noticeable impact on poverty patterns: excluding these transfers affects the change in poverty between 1970 and 2010 by less than a percentage point. However, related research has shown that these programs do lift a significant number of people out of poverty when considered at a point in time (Hoynes and others 2006, Ben-Shalom and others 2012). In addition, these cash transfers appear to smooth income over the business cycle: the

21. This statistic is based on analyses, available from the authors, that use the CPS to examine receipt rates and average benefit amounts conditional on receipt for OASDI and other cash transfers for those in the bottom income quintile as well as those between the 5th and the 15th percentiles.

22. See Social Security Administration, "Social Security History" (www.ssa.gov/history/notchfile1.html).

poverty rate for the measure excluding other cash transfers tends to rise more when the economy is contracting, and to fall more when the economy is expanding. For example, between 1983 and 1988 and between 1995 and 2000—two periods of economic growth—poverty based on income excluding these other cash transfers fell by 0.3 percentage point more than poverty based on income including these transfers. As the economy contracted considerably between 2007 and 2010, the first of these measures rose by nearly 1 percentage point more than the second. Much of this difference can be accounted for by rising unemployment benefits, which expanded considerably during this period as unemployment grew and benefits were extended for the long-term unemployed starting in 2008. Among the bottom 20 percent of the income distribution, the fraction reporting receipt of unemployment benefits increased by 150 percent between 2007 and 2009, and average benefits received among those receiving benefits almost doubled.

The effects of noncash transfers (food stamps, housing and school lunch subsidies, Medicaid, Medicare, employer health benefits, and the net return on housing equity) on changes in poverty rates over time can be seen by comparing after-tax money income poverty with and without noncash transfers, as reported in figure 1 and table 1. For the full population, the role of noncash transfers is not pronounced, as the two series align closely.[23] Even within demographic groups such as single-parent families—for whom these transfers account for a larger fraction of reported family income—we find little evidence that noncash transfers affect changes in poverty (see table 2 and online appendix table 6). Again, we note two important caveats: the role of these transfers is likely understated because of the rising underreporting of noncash transfers, and even though reported noncash transfers have little effect on the change in poverty, they have been shown to reduce the extent of poverty at a point in time (Hoynes and others 2006, Ben-Shalom and others 2012).

VII.C. Explaining Consumption and Income Poverty Differences

The two most plausible explanations for the differences between the changes in income and consumption poverty are measurement error and saving or dissaving. There is considerable evidence that changes in measurement error are important for families with few resources. First, transfer

23. There is evidence that some of these programs affect changes in poverty for some periods. For example, between 2000 and 2010, a poverty measure that includes food stamps rose 0.7 percentage point less than the same measure excluding food stamps.

income, which is particularly relevant for these families, is significantly underreported in surveys, and the extent of this underreporting has grown over time. Meyer and others (2009) find that nearly half of food stamp benefits and TANF dollars are not reported in the CPS in recent years. Second, reported expenditure exceeds reported income among families with few resources (Meyer and Sullivan 2011a). For all families, the 5th percentile of the CE expenditure distribution is 44 percent higher than the 5th percentile of the CPS income distribution in recent years. For families headed by single mothers, expenditure exceeds income by 50 percent when one compares 5th percentiles, and by 25 percent when one compares 20th percentiles.[24]

This evidence strongly suggests that income underreporting is especially pronounced among the poorest and that measurement error is a likely candidate for the large differences in poverty measures that focus on the distribution below the poverty line such as the poverty gap. We have shown that income- and consumption-based measures of the gap diverged sharply after 1985: between 1985 and 2010 the income poverty gap grew by $32 billion in nominal terms, while the consumption poverty gap fell by $23 billion. During this same period the amount of food stamp dollars that went unreported in the CPS grew by $26 billion, suggesting that underreporting of food stamps alone can account for nearly half of the rise in the difference between the income and consumption poverty gaps.

A second possible explanation for differences between income and consumption poverty is that consuming out of past saving, or borrowing against future income, allows some groups to spend more than their income, and that this saving or borrowing has changed over time. To address this possibility, we examine changes over time in various percentiles of the financial asset and nonmortgage, nonvehicle debt distributions in the CE for the entire population as well as for the income poor, the consumption poor, and different family types. We also examine various percentiles of the 1-year change in financial assets for these same groups.[25] Table 4 summarizes

24. Meyer and Sullivan (2006) find that, after accounting for the underreporting of food stamp and TANF dollars, changes in the income and consumption distributions between 1993 and 2000 are similar for single mothers. We consider alternative ways of allocating underreported dollars, but without knowing explicitly who is not reporting, the evidence is inconclusive.

25. There is evidence that assets are underreported in the CE. For example, a comparison of the distribution of financial assets for the Panel Study of Income Dynamics (PSID) and the CE for 1994 and 1999 indicates that the median and the 75th percentile for the distribution in the CE are 30 to 50 percent lower than the respective percentiles in the PSID. However, the fraction of families with positive financial assets is very similar across surveys.

Table 4. Asset Ownership and Indebtedness of Consumption- and Income-Poor Families, 1960–2010[a]

	Consumption-poor[b]					*Income-poor*[c]					*Income-poor but not consumption-poor*				
Characteristic	*1960–61*	*1972–73*	*1980–89*	*1990–99*	*2000–10*	*1960–61*	*1972–73*	*1980–89*	*1990–99*	*2000–10*	*1960–61*	*1972–73*	*1980–89*	*1990–99*	*2000–10*
Percent homeowners	44.0	40.0	32.2	27.4	25.6	42.1	39.0	39.9	35.7	37.9	71.9	46.0	53.4	45.1	44.4
Percent owning a car	65.4	58.9	59.3	62.4	60.9	58.0	60.3	64.0	66.0	67.2	76.1	73.6	78.7	75.4	73.0
Average family size	5.1	5.0	4.4	4.4	4.4	5.1	5.0	3.9	3.8	3.5	3.7	3.9	3.4	3.4	3.3
N	4,075	2,716	13,280	11,528	9,721	2,921	1,619	16,644	17,201	18,157	431	682	9,553	11,568	14,033
Total financial assets (2010 dollars)															
Median	n.a.[d]	0	0	0	0	n.a.	0	0	0	0	n.a.	33	72	27	0
75th %ile	n.a.	686	167	122	103	n.a.	326	326	277	337	n.a.	1,399	1,207	1,076	706
85th %ile	n.a.	2,607	734	608	459	n.a.	1,212	1,193	1,345	1,500	n.a.	4,321	3,221	4,019	2,520
90th %ile	n.a.	5,142	1,589	1,313	1,138	n.a.	3,259	2,542	3,424	3,290	n.a.	7,884	8,183	11,418	5,995
95th %ile	n.a.	15,162	4,602	3,096	2,792	n.a.	9,598	8,898	15,600	11,528	n.a.	22,813	23,835	43,654	25,150

Annual change in total financial assets (2010 dollars)															
5th %ile	−2,084	−2,057	−698	−269	−110	−4,168	−3,171	−1,573	−734	−1,122	−18,611	−6,856	−4,719	−2,211	−2,202
10th %ile	−812	−686	−18	0	0	−1,481	−815	−159	0	−28	−10,593	−3,357	−1,193	−257	−301
15th %ile	−333	−261	0	0	0	−631	−326	0	0	0	−7,919	−1,371	−326	0	0
N (asset sample)[e]	4,075	2,716	2,941	2,369	2,014	2,921	1,619	3,209	3,171	3,496	431	682	1,658	2,056	2,611
Debt[f] (2010 dollars)															
Median	n.a.	n.a.	0	0	0	n.a.	n.a.	0	0	0	n.a.	n.a.	0	0	0
75th %ile	n.a.	n.a.	432	159	0	n.a.	n.a.	518	322	0	n.a.	n.a.	997	813	249
85th %ile	n.a.	n.a.	1,440	1,216	314	n.a.	n.a.	1,631	1,506	1,289	n.a.	n.a.	2,608	2,273	2,163
90th %ile	n.a.	n.a.	2,360	2,488	1,144	n.a.	n.a.	2,924	2,959	3,366	n.a.	n.a.	4,270	4,008	4,833
95th %ile	n.a.	n.a.	4,147	5,040	4,402	n.a.	n.a.	5,609	6,653	10,080	n.a.	n.a.	8,640	8,841	11,561
N (debt sample)[g]	n.a.	n.a.	6,567	5,738	4,783	n.a.	n.a.	8,081	8,409	9,065	n.a.	n.a.	4,616	5,639	7,022

Sources: CE and authors' calculations.

a. Unless stated otherwise, figures are averages of yearly values over the indicated period. Samples are restricted to families designated as "complete income reporters" (those who reported values for the major sources of income). All estimates are person-weighted. Poverty thresholds are calculated as in figure 1, note c, and adjustment is made for inflation using the adjusted CPI-U-RS and for differences in family size and composition using the NAS equivalence scale. n.a. = not available.

b. Consumption poverty is determined using the same concept of consumption as in figure 2 and in the fifth column of table 1.

c. Income poverty is determined using after-tax money income as defined in figure 1, note d.

d. The 1960–61 survey collected data on the change in a family's financial assets only, not on their stock of financial assets.

e. Samples consist of families in their fifth CE interview.

f. Includes all nonmortgage, nonvehicle debt.

g. Samples consist of families in either their second or their fifth CE interview.

these numbers for the income and the consumption poor. Additional evidence for these groups and for the full sample is available in online appendix table 9. Financial assets at the 85th percentile of the distribution for the income poor were just over $1,200 in 1972–73 and rose only slightly thereafter, which suggests limited opportunities among the income poor to support consumption in excess of income.[26] Looking at the bottom of the distribution of the change in assets for the income poor (to focus on those who may be dissaving), we find some evidence of dissaving for a small fraction of this group in the 1960s and 1970s, but the change in assets at the 15th percentile was zero in more recent years, providing little evidence of overall dissaving. If dissaving were to explain why consumption poverty fell more than income poverty in the 2000s, one would expect to see sizable declines in financial assets for the income poor during this period. We see little evidence to support this explanation. Similarly, the fraction of the income poor with substantial debt is small, and there is little evidence of increased borrowing over time for this group. Even if, because of underreporting, the true levels and changes in assets were two or three times the reported amounts, the role of dissaving overall would still be small.

Although dissaving thus does not seem to be the dominant explanation for differences between income and consumption poverty, for some families, such as those with an elderly head, dissaving is likely to be an important factor.[27] We report asset and debt information for the income poor by family type and by consumption poverty status in online appendix tables 10 and 11, respectively. For income-poor families with a head 65 or older, financial assets are substantial at and above the 85th percentile. After 1990, 10 percent of the elderly income poor had financial assets over

26. To examine assets for the income poor (table 4 and online appendix tables 9, 10, and 11), we use data from the CE because asset information is not available in the CPS. For these tables we restrict the CE sample to those with complete income information, as explained in the online appendix. Because the CE did not impute missing values for income before 2004, income is lower (and consequently poverty is higher) than in the CPS sample, even after restricting the sample to complete income respondents. However, changes in income poverty based on CE data are very similar to changes in income poverty based on CPS data for the years before and after 2004.

27. Several studies, summarized in Hurd (1990), have found that the elderly as a group dissaved even back in the 1970s. Venti and Wise (2004) find that it is uncommon for the elderly to draw down housing equity to support consumption, although they find that housing equity is consumed when negative shocks occur, such as nursing home entry or the death of a spouse. However, these papers do not specifically examine the poor or show how the distribution of dissaving rates or amounts for the elderly has changed over time.

$28,000, and 5 percent had assets over $132,000. For those elderly income poor who are not consumption poor (online appendix table 11, panel A), a group that includes most of the elderly income poor in recent years, assets were even higher: about $37,000 at the 85th percentile during the 1990s and about $20,000 during the 2000s. Some dissaving is also suggested by the change in assets distribution, which shows that at least 5 percent of the elderly who were income poor but not consumption poor drew down their assets by more than $8,000 in the past year. In contrast, after the 1980s, assets at the 90th percentile of the elderly who were both income poor and consumption poor (online appendix table 11, panel B) were under $1,100, and the 5th percentile of the change in assets was zero. Married-couple families, especially those without children, also tended to have substantial assets if they were income poor but not consumption poor.

For income-poor single-parent families, on the other hand, reliance on savings was rare. The 95th percentile of assets was below $1,400 for all periods, and the 5th percentile of the change in assets was essentially zero for the 1990s and 2000s (online appendix table 10). Even for single-parent families who were income poor but not consumption poor, the 90th percentile of the distribution of financial assets was only $1,054 in the 1990s and $620 in the 2000s, and at the 5th percentile of the change in assets distribution, assets fell by only a few hundred dollars after 1990 (online appendix table 11, panel A). Nonmortgage, nonvehicle debt for single-parent families who were income but not consumption poor was under $4,000 at the 90th percentile. These patterns indicate essentially no consumption out of wealth or borrowing by some groups (single-parent families) and suggest dissaving by a small share of some other groups (the elderly and married couples without children).

We have also examined several other possible explanations for the differences we find between consumption and income poverty. We are able to rule out the hypothesis that the use of consumption flows rather than expenditure is a key explanation for differences in trends, although who is poor differs noticeably depending on whether poverty is defined using consumption or expenditure. We also find that educational spending (which is excluded from consumption) does not explain the differences between changes in income and consumption poverty for couples with children.

One potential driving force behind the fall in consumption poverty in the past two decades is the sharp rise in housing prices, particularly since the late 1990s. To determine the importance of housing, we examine poverty based on nonhousing consumption. We do not emphasize this

measure for several reasons. First, housing is the largest component of consumption for the poor, so excluding it could give a distorted picture of well-being for those with few resources. Second, nonhousing consumption overweights the components of consumption that are measured poorly and have seen declining reporting in recent years. Our results show that nonhousing consumption poverty fell noticeably less than a measure that includes housing between 1998 and 2006—the period when real housing prices were rising fastest (online appendix table 12). However, the discrepancy between total consumption and nonhousing consumption poverty appeared in the late 1980s and grew steadily thereafter, implying that the differences were not solely due to the sharp rise in housing prices in the early 2000s. Also, both total consumption and nonhousing consumption poverty rose sharply between 2008 and 2010, suggesting that this change was not driven by declining housing prices in recent years.

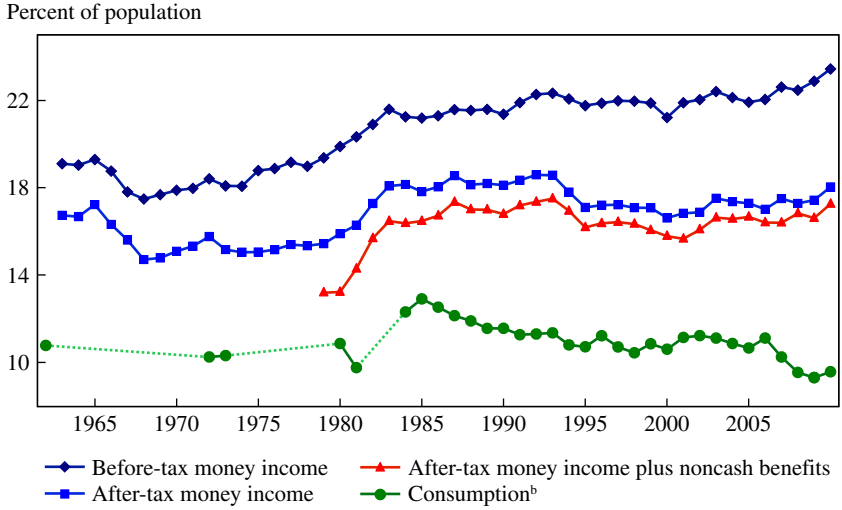
VIII. Other Poverty Measures and Robustness

The online appendix examines changes in income and consumption poverty at other points in the distribution by looking at deep poverty (the fraction of the population with income or consumption below half the thresholds we use to calculate the poverty rates reported in table 1) and near poverty (the fraction below 1½ times these thresholds) in online appendix table 13. Deep poverty based on consumption shows a much more favorable trend than that based on income, particularly in recent years. Near poverty shows changes for consumption-based measures that are more similar to those based on after-tax income plus noncash benefits.[28]

The emphasis of this paper is on absolute poverty measures, those that rely on an unchanging absolute standard to gauge the change over time in material deprivation. Relative poverty measures provide another way of characterizing the extent of deprivation. The most common type of relative poverty measure, which is essentially an inequality measure, sets the poverty threshold as a given percentage of median income or consumption. Following the most common international standard, we examine the

28. Because of the lower dispersion of consumption, the level of consumption poverty is higher than that of income poverty at this higher cutoff even though the original thresholds are very similar.

Figure 6. Income and Consumption Relative Poverty Rates, 1960–2010[a]



Source: CPS ASEC/ADF, CE, and authors' calculations.

a. An individual is designated as poor if his or her income (or consumption) is below half of that at the median of the individual-weighted, NAS scale-adjusted distribution for the same measure. Income and consumption concepts correspond to those in the second through fifth columns in table 1.

b. Dotted lines indicate periods for which CE data are unavailable.

share of the population living in families with resources below half of the median value (Smeeding 2006).[29] Figure 6 presents relative poverty trends for several income and consumption poverty measures. In general, consumption relative poverty is much lower than income relative poverty because of the lower dispersion of consumption. Unlike absolute poverty, which fell noticeably during the 1960s, relative poverty remained flat for both income- and consumption-based measures. Relative poverty for both measures changed very little in the 1970s as well, but both rose in the early 1980s. After-tax income relative poverty trended downward slightly in the 1990s but rose after 2000. That it did not rise more is consistent with work on income inequality showing that inequality for the bottom half of the distribution has risen much less than

29. An important limitation of such a measure is that the standard for overcoming poverty changes, making understanding what it captures much more difficult. This issue is particularly problematic for evaluating policy. Antipoverty policies that affect incomes around the median as well as at the bottom might very well reduce the extent of deprivation but have no impact on a relative poverty measure.

that for the top half in recent years (Meyer and Sullivan 2010). Consumption relative poverty has trended downward since the mid-1980s.[30] See online appendix table 14 for relative poverty rates by family type over the past five decades.

The results in online appendix table 15 verify that our general findings for changes in poverty are not very sensitive to how we adjust for differences in family size. There is little difference in the change in poverty between official poverty and income poverty calculated using the NAS equivalence scale for the years 1963 through 2010. The choice of resource-sharing unit does matter noticeably, as income poverty rates fell 2 percentage points more over the period from 1963 to 2010 when resources are measured at the household rather than the family level.

IX. Conclusions

Citing official poverty statistics, many have concluded that the United States has made little progress in reducing poverty over the last several decades. Indeed, trends in official poverty have led some to argue that we have lost the war on poverty—that the panoply of income support programs from food stamps to unemployment insurance have been ineffective antipoverty tools. Although much previous research has examined the deficiencies in the official poverty measure, most poverty scholars still rely on it as the definitive measure of trends in poverty and draw important conclusions based on it.

The results in this paper contradict the claim that poverty has shown little improvement over time and that antipoverty efforts have been ineffective. We show that moving from traditional income-based measures of poverty to a consumption-based measure, which is arguably superior on both theoretical and practical grounds—and, crucially, accounting for bias in the cost-of-living adjustment—leads to the conclusion that the poverty rate declined by 26.4 percentage points between 1960 and 2010, with 8.5 percentage points of that decline occurring since 1980.

30. Although the fall in consumption reporting may be less important at the bottom, the poorly reported items are a larger share at the median, which might lead to substantial bias at that point. Thus, core consumption relative poverty may be the most appropriate relative measure, and it has fallen since the mid-1980s. Its pattern (not shown here) mirrors the patterns for consumption relative poverty reported in figure 6.

These improvements have several explanations. Poverty has been sharply reduced through tax rate cuts and tax credits. Increases in Social Security benefits have also played a large role, but other transfers have played only a small role. Rising educational attainment also accounts for some of the decline. Saving and dissaving by households is not the main reason that income and consumption differ near the poverty line. A great deal of evidence suggests that underreporting of income is a likely source of these differences, but this explanation merits further examination.

Our results for consumption-based and improved income-based measures of poverty have different implications than past findings based on official and alternative income poverty measures, both for policy and for the agenda for further poverty research. Who has benefited from economic growth and from redistributive policies and who would benefit from additional targeted policies depend critically on whether one examines consumption or income. Our consumption poverty results for the period since 1980 suggest much greater improvement than for income poverty for single-parent families and the aged. However, the same results find little additional improvement in poverty for married-parent families, suggesting that additional antipoverty efforts for this group merit further investigation.

Despite repeated claims of a failed war on poverty, our results show that the combination of targeted economic policies and policies that support growth has had a significant impact on poverty. Better standard head count measures of poverty show a sharp improvement in recent decades. Beyond the traditional head count poverty measures, measures of deep poverty and the poverty gap show even greater improvement, implying considerable progress at reducing severe deprivation. Noticeable improvements have been made in the last decade; although not as big as the improvements in some earlier decades, they are comparable to or better than the progress made in the 1980s. We may not yet have won the war on poverty, but we are certainly winning.

ACKNOWLEDGMENTS We thank the Annie E. Casey Foundation, the Earhart Foundation, and the National Poverty Center for support and Cristobal Gacitua, Matt Gunden, Tom Murray, Vladimir Sokolov, Laura Wherry, and April Wu for excellent research assistance. We have also benefited from the comments of Steven Haider, Hilary Hoynes, Erik Hurst, Christopher Jencks, Steve Landefeld, Kathleen McGarry, Doug McKee, Tim Smeeding, the editors, and seminar participants at the Brookings Institution; Colby

College; Harvard University; the Higher School of Economics at the National Research University, Moscow; the Institute for Research on Poverty at the University of Wisconsin; the National Bureau of Economic Research; the University of California, Davis; the University of California, Los Angeles; the University of California, Santa Cruz; the University of Chicago; the University of Florida; the University of Notre Dame; and the W. E. Upjohn Institute for Employment Research. This paper supersedes earlier papers titled "Dimensions of Progress: Poverty from the Great Society to the Great Recession," "Five Decades of Consumption and Income Poverty," and "Three Decades of Consumption and Income Poverty."

References

Advisory Commission to Study the Consumer Price Index. 1996. *Toward a More Accurate Measure of the Cost of Living.* Final Report to the Senate Finance Committee. Washington.

Aguiar, Mark, and Erik Hurst. 2007. "Measuring Trends in Leisure." *Quarterly Journal of Economics* 122, no. 3: 969–1006.

Atkinson, Anthony. 1991. "Comparing Poverty Rates Internationally: Lessons from Recent Studies in Developed Countries." *World Bank Economic Review* 5, no. 1: 3–21.

Bakija, Jon. 2008. "Documentation for a Comprehensive Historical U.S. Federal and State Income Tax Calculator Program." Working paper. Williams College (January).

Battistin, E. 2003. "Errors in Survey Reports of Consumption Expenditures." Working paper no. 0307. London: Institute for Fiscal Studies.

Bee, Adam, Bruce D. Meyer, and James X. Sullivan. Forthcoming. "Micro and Macro Validation of the Consumer Expenditure Survey." In *Improving the Measurement of Consumer Expenditures,* edited by Christopher Carroll, Thomas Crossley, and John Sabelhaus. University of Chicago Press.

Ben-Shalom, Yonaton, Robert A. Moffitt, and John Karl Scholz. 2012. "An Assessment of the Effectiveness of Anti-Poverty Programs in the United States." In *The Oxford Handbook of the Economics of Poverty,* edited by Philip N. Jefferson. Oxford University Press.

Berndt, Ernst R. 2006. "The Boskin Commission Report after a Decade: After-Life or Requiem?" *International Productivity Monitor* 12: 61–73.

Blank, Rebecca. 2000. "Fighting Poverty: Lessons from Recent U.S. History." *Journal of Economic Perspectives* 14, no. 2: 3–19.

———. 2008. "How to Improve Poverty Measurement in the United States." *Journal of Policy Analysis and Management* 27, no. 2: 233–54.

Blundell, Richard, and Ian Preston. 1998. "Consumption Inequality and Income Uncertainty." *Quarterly Journal of Economics* 103: 603–40.

Broda, Christian, Ephraim Leibtag, and David E. Weinstein. 2009. "The Role of Prices in Measuring the Poor's Living Standards." *Journal of Economic Perspectives* 23: 77–97.

Browning, Martin, Thomas Crossley, and Guglielmo Weber. 2003. "Asking Consumption Questions in General Purpose Surveys." *Economic Journal* 113, no. 491: F540–F567.

Bucks, Brian, and Karen Pence. 2006. "Do Homeowners Know Their House Values and Mortgage Terms?" Working paper. Washington: Board of Governors of the Federal Reserve.

Burtless, Gary, and Timothy Smeeding. 2001. "The Level, Trend, and Composition of Poverty." In *Understanding Poverty,* edited by Sheldon Danziger and Robert Haveman. Harvard University Press.

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

Costa, Dora. 2001. "Estimating Real Income in the United States from 1988 to 1994: Correcting CPI Bias Using Engel Curves." *Journal of Political Economy* 109: 1288–1310.

Cutler, David M., and Lawrence F. Katz. 1991. "Macroeconomic Performance and the Disadvantaged." *BPEA,* no. 2: 1–74.

Dalaker, Joe. 2005. *Alternative Poverty Estimates in the United States: 2003.* Current Population Reports P60-227. Washington: U.S. Census Bureau.

Danziger, Sheldon, Robert Haveman, and Robert Plotnick. 1981. "How Income Transfer Programs Affect Work, Savings, and the Income Distribution: A Critical Review." *Journal of Economic Literature* 19: 975–1028.

Dasgupta, Partha. 1993. *An Inquiry into Well-Being and Destitution.* Oxford University Press.

Davies, Paul S., and T. Lynn Fisher. 2009. "Measurement Issues Associated with Using Survey Data Matched with Administrative Data from the Social Security Administration." *Social Security Bulletin* 69: 1–12.

Deaton, Angus. 1997. *The Analysis of Household Surveys.* Johns Hopkins Press.

Eissa, Nada, and Hilary Hoynes. 2006. "Behavioral Responses to Taxes: Lessons from the EITC and Labor Supply." In *Tax Policy and the Economy,* vol. 20, edited by James M. Poterba, 163–92. Cambridge, Mass.: National Bureau of Economic Research.

Feenberg, Daniel, and Elisabeth Coutts. 1993. "An Introduction to the TAXSIM Model." *Journal of Policy Analysis and Management* 12, no. 1: 189–94.

General Accounting Office. 1996. "Alternative Poverty Measures." GAO/GGD-96-183R. Washington: Government Printing Office.

Gordon, Robert J. 2006. "The Boskin Commission Report: A Retrospective One Decade Later." Working Paper no. 12311. Cambridge, Mass.: National Bureau of Economic Research.

Gordon, Robert J., and Todd vanGoethem. 2005. "A Century of Housing Shelter Prices: Is There a Downward Bias in the CPI?" Working Paper no. 11776. Cambridge, Mass.: National Bureau of Economic Research.

Gundersen, Craig, and James Ziliak. 2004. "Poverty and Macroeconomic Performance across Space, Race, and Family Structure." *Demography* 41, no. 1: 61–86.

Hamilton, Bruce W. 2001. "Using Engel's Law to Estimate CPI Bias." *American Economic Review* 91: 619–30.

Haskins, Ron, and Isabel Sawhill. 2009. *Creating an Opportunity Society.* Brookings.

Hausman, Jerry. 2003. "Sources of Bias and Solutions to Bias in the Consumer Price Index." *Journal of Economic Perspectives* 17: 23–44.

Hausman, Jerry, and Ephraim Leibtag. 2005. "Consumer Benefits from Increased Competition in Shopping Outlets: Measuring the Effect of Wal-Mart." Working Paper no. 11809. Cambridge, Mass.: National Bureau of Economic Research.

Hotz, V. Joseph, and John Karl Scholz. 2003. "The Earned Income Tax Credit." In *Means-Tested Transfer Programs in the United States,* edited by Robert A. Moffitt. University of Chicago Press.

Hoynes, Hilary W., Marianne E. Page, and Ann Huff Stevens. 2006. "Poverty in America: Trends and Explanations." *Journal of Economic Perspectives* 20: 47–68.

Hurd, Michael D. 1990. "Research on the Elderly: Economic Status, Retirement, and Consumption and Saving." *Journal of Economic Literature* 28: 565–637.

Jencks, Christopher, Susan E. Mayer, and Joseph Swingle. 2004a. "Can We Fix the Federal Poverty Measure So It Provides Reliable Information about Changes in Children's Living Conditions?" Working paper. Harvard University.

———. 2004b. "Who Has Benefitted from Economic Growth in the United States since 1969? The Case of Children." In *What Has Happened to the Quality of Life in the Advanced Industrial Nations?* edited by Edward N. Wolff. Cheltenham, U.K.: Edward Elgar.

Johnson, David S. 2004. "Measuring Consumption and Consumption Poverty: Possibilities and Issues." Paper prepared for a seminar on "Reconsidering the Federal Poverty Measure," sponsored by the American Enterprise Institute, Washington, November 18.

Johnson, David S., Stephen B. Reed, and Kenneth J. Stewart. 2006. "Price Measurement in the United States: A Decade after the Boskin Report." *Monthly Labor Review* 10–19.

Joint Economic Committee Democrats (JEC). 2004. "Reduction in Poverty Significantly Greater in the 1990s than Official Estimates Suggest." Economic Policy Brief (August). Washington.

Krueger, Alan B., and Bruce D. Meyer. 2002. "Labor Supply Effects of Social Insurance." In *Handbook of Public Economics,* vol. 4, edited by Alan Auerbach and Martin Feldstein. Amsterdam: North-Holland.

Lang, Kevin. 2007. *Poverty and Discrimination.* Princeton University Press.

McGranahan, Leslie, and Anna Paulson. 2006. "Constructing the Chicago Fed Income Based Economic Index–Consumer Price Index: Inflation." Working Paper no. 20 (revised). Federal Reserve Bank of Chicago.

Meyer, Bruce D. 2010. "The Effects of the Earned Income Tax Credit and Recent Reforms." In *Tax Policy and the Economy,* vol. 24, edited by Jeffrey Brown. MIT Press.

Meyer, Bruce D., and Robert M. Goerge. 2011. "The Analysis of Food Stamp Program Participation with Matched Administrative and Survey Data." Working paper. University of Chicago.

Meyer, Bruce D., and James X. Sullivan. 2003. "Measuring the Well-Being of the Poor Using Income and Consumption." *Journal of Human Resources* 38S: 1180–1220.

———. 2006. "Consumption, Income, and Material Well-Being after Welfare Reform." Working Paper no. 11976. Cambridge, Mass.: National Bureau of Economic Research.

———. 2008. "Changes in the Consumption, Income, and Well-Being of Single Mother Headed Families." *American Economic Review* 98, no. 5: 2221–41.

———. 2010. "Consumption and Income Inequality in the U.S.: 1960–2010." Working paper. University of Notre Dame.

———. 2011a. "Viewpoint: Further Results on Measuring the Well-Being of the Poor Using Income and Consumption." *Canadian Journal of Economics* 44, no. 1: 52–87.

———. 2011b. "Consumption and Income Poverty over the Business Cycle." *Research in Labor Economics* 32: 51–81.

———. 2011c. "The Material Well-Being of the Poor and the Middle Class since 1980." Working paper. University of Notre Dame.

———. 2012. "Identifying the Disadvantaged: Official Poverty, Consumption Poverty, and the New Supplemental Poverty Measure." *Journal of Economic Perspectives* 26, no. 3: 1–27.

Meyer, Bruce D., Wallace K. C. Mok, and James X. Sullivan. 2009. "The Under-Reporting of Transfers in Household Surveys: Its Nature and Consequences." Working Paper no. 15181. Cambridge, Mass.: National Bureau of Economic Research (July).

Meyer, Daniel R., and Geoffrey Wallace. 2009. "Poverty Levels and Trends in Comparative Perspective." In *Changing Poverty, Changing Policies,* edited by Maria Cancian and Sheldon Danziger. Harvard University Press.

Moffitt, Robert. 1992. "Incentive Effects of the U.S. Welfare System: A Review." *Journal of Economic Literature* 30: 1–61.

Murray, Charles. 1984. *Losing Ground: American Social Policy, 1950–1980.* Basic Books.

Poterba, James M. 1991. "Is the Gasoline Tax Regressive?" In *Tax Policy and the Economy,* vol. 5, edited by David Bradford. MIT Press.

Ruggles, Patricia. 1990. *Drawing the Line—Alternative Poverty Measures and Their Implications for Public Policy.* Washington: Urban Institute Press.

Sabelhaus, John, David Johnson, Stephen Ash, David Swanson, Thesia Garner, John Greenlees, and Steve Henderson. Forthcoming. "Is the Consumer Expenditure Survey Representative by Income?" In *Improving the Measurement of Consumer Expenditures,* edited by Christopher Carroll, Thomas Crossley, and John Sabelhaus. University of Chicago Press.

Sawhill, Isabel. 1988. "Poverty in the U.S.: Why Is It So Persistent?" *Journal of Economic Literature* 26 (September): 1073–1119.

Scholz, John Karl, and Kara Levine. 2001. "The Evolution of Income Support Policy in Recent Decades." In *Understanding Poverty,* edited by Sheldon Danziger and Robert Haveman. Harvard University Press.

Short, Kathleen, Thesia Garner, David Johnson, and Patricia Doyle. 1999. "Experimental Poverty Measures: 1990 to 1997." Current Population Reports no. P60-205, U.S. Census Bureau. Washington: U.S. Government Printing Office.

Slesnick, Daniel T. 1992. "Aggregate Consumption and Savings in the Postwar United States." *Review of Economics and Statistics* 74, no. 4: 585–97.

———. 1993. "Gaining Ground: Poverty in the Postwar United States." *Journal of Political Economy* 101, no. 1: 1–38.

Smeeding, Timothy. 2006. "Government Programs and Social Outcomes: Comparisons of the United States with Other Rich Nations." In *Public Policy and the Income Distribution,* edited by Alan J. Auerbach, David Card, and John M. Quigley. New York: Russell Sage Foundation.

Tanner, Michael. 2012. "The American Welfare State: How We Spend Nearly $1 Trillion a Year Fighting Poverty—and Fail." Policy Analysis no. 694. Washington: Cato Institute (April 11).

Triest, Robert. 1998. "Has Poverty Gotten Worse?" *Journal of Economic Perspectives* 12, no. 1: 97–114.

U.S. Bureau of Labor Statistics. 1997. "Consumer Expenditures and Income." In *BLS Handbook of Methods.* Washington: U.S. Department of Labor.

———. 2005. "Expenditures on Food from the Consumer Expenditure Survey." Washington: U.S. Department of Labor.

U.S. Census Bureau. 1995. "Income, Poverty, and Valuation of Noncash Benefits: 1993." Current Population Report no. P-60-188. Washington: U.S. Department of Commerce.

———. Various years-a. "Estimates of Poverty Including the Value of Noncash Benefits." Current Population Reports. Washington: U.S. Department of Commerce.

———. Various years-b. "Measuring the Effects of Benefits and Taxes on Income and Poverty." Current Population Reports. Washington: U.S. Department of Commerce.

U.S. Census Bureau, Administrative and Customer Services Division, Statistical Compendia Branch. 2004. *Statistical Abstract of the United States,* 2004–2005 edition. Washington.

U.S. Census Bureau, Housing and Household Economic Statistics Division. 2006. "The Effects of Government Taxes and Transfers on Income and Poverty: 2004." Washington (February 8).

Venti, Steven F., and David A. Wise. 2004. "Aging and Housing Equity: Another Look." In *Perspectives on the Economics of Aging,* edited by David A. Wise. University of Chicago Press.

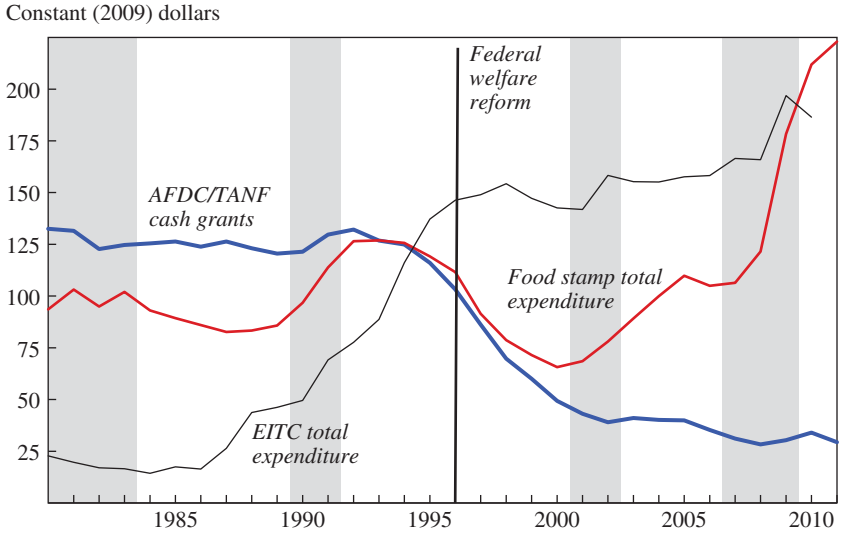
Comments and Discussion

COMMENT BY

HILARY W. HOYNES This paper by Bruce Meyer and James Sullivan provides a comprehensive and informative analysis of poverty in the United States. Their analysis compares alternative measures of poverty over the more than five decades that poverty has been measured in this country. They compare official ("money income") poverty with alternative income-based measures as well as with consumption-based poverty measures. The focus in the paper is on the trend in poverty, motivated by whether one can conclude that the war on poverty has been won or lost. Meyer and Sullivan conclude that their preferred, consumption-based poverty measure shows significant improvement since the mid-1980s while income-based poverty shows little improvement. They argue that consumption-based poverty measures are preferred over income-based measures because the latter are biased by the underreporting of government transfers, which appears to have worsened over time. Additionally, they argue that consumption is preferable because it is closer to permanent income, and those classified as being consumption-poor appear more disadvantaged than those classified as income-poor.

As can be expected from these authors, the paper provides a detailed and serious analysis of a centrally important national statistic. The paper makes two central contributions. First, although consumption poverty is a well-identified alternative to income poverty, in practice consumption poverty measures have been used mainly in the developing-country setting. Meyer and Sullivan, here and in earlier work, have applied these principles to the United States. Additionally, many European countries include expenditure data—the basis for consumption poverty measurement—as part of their standard labor force surveys. In the United States the best source for expenditure data is the Current Expenditure (CE) Survey, which

Figure 1. Real Expenditure per Capita on Cash and Near-Cash Safety Net Programs, 1980–2011



Source: Bitler and Hoynes (2010, p. 96), with updates for 2010 and 2011.
a. Shading indicates years of labor market contraction. See the appendix to Bitler and Hoynes (2010) for details.

uses a much smaller sample than its labor survey counterpart the Current Population Survey. Notably, the public-use CE data do not allow for the identification of state of residence. Meyer and Sullivan's work is drawing more attention to data needs in this area.

Second, throughout the more than 50 years of poverty measurement in the United States, tremendous attention has been given to the official poverty measure and its problems. The National Academy of Sciences (NAS) panel on poverty measurement recommended several alternatives (Citro and Michael 1995). Central in their recommendations were moving away from a money income measure and incorporating taxes and noncash benefits in the family resource measure. My figure 1, which updates figure 5 in my Brookings Paper with Marianne Bitler (Bitler and Hoynes 2010), illustrates the potential importance of this change. The figure plots real expenditure per capita from 1980 to 2012 for the three main cash or near-cash programs for low-income families: the earned income tax credit (EITC), Temporary Assistance for Needy Families (TANF, the successor to Aid to Families with Dependent Children, AIDC), and food stamps (now called

the Supplemental Nutrition Assistance Program).[1] During this period the combination of welfare reform, the expansion of the EITC, and the recent growth of the food stamp program have led to a dramatic change in the sources of government assistance for lower-income families. Because the official poverty measure counts only cash income, additional spending on tax-based assistance (through the EITC) or near-cash government assistance (through food stamps) has no effect on measured poverty.

In response to the NAS report, the Census Bureau implemented several "experimental" poverty measures, which are available for 1999 through 2010. More recently, the Census Bureau announced the Supplemental Poverty Measure (SPM) based on the NAS recommendations (Short 2011). Subject to funding, the bureau has committed to release the SPM each year. Many studies have followed and analyzed these changes (and many others not discussed here). Thus, much is known about the validity of different measures and how they perform over time. Meyer and Sullivan make a significant contribution by presenting additional poverty measures and (as no one had done previously) estimating a consistent series back to 1960.[2]

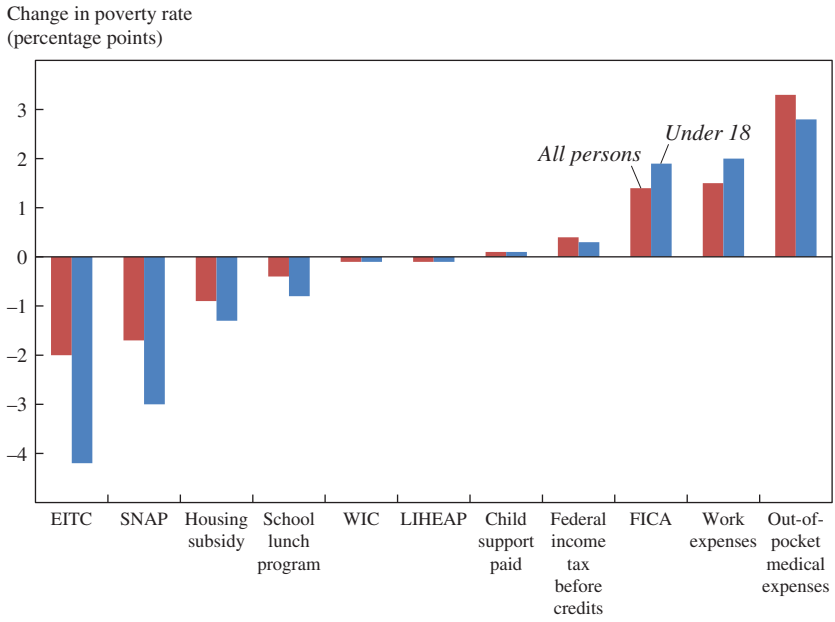
The lens that the authors use to compare the alternative measures is the change in poverty over the entire 50-year period of poverty measurement, as well as over particular decades of interest. This is important for (at least) two reasons. First, it is important to analyze whether poverty has evolved alongside the gains in economic growth that took place during this period. Second, it is important to evaluate what influence government tax and spending policies have had on the trends in poverty. The authors conclude that "changes in tax policy explain a substantial part of the decline in poverty; Social Security has also been important, but other transfer programs have played a small role."

A related but distinct question of interest is how the government safety net affects poverty. In particular, if one or more tax or transfer programs were eliminated, how many persons or families would become poor? This is a central issue for evaluating the efficacy of government policies, yet it is not addressed in this paper. More important, it is not one that can be analyzed in a straightforward way with a consumption-based poverty measure. In the remainder of my comment, I discuss this issue.

1. We constructed an annual series for contractions based on the official monthly dates, augmented by examination of the peaks and troughs in the national unemployment rate. See Bitler and Hoynes (2010) for more information on the annual dating.

2. Given that the Census Bureau has adopted the SPM as "the" alternative poverty measure, it would be useful for Meyer and Sullivan in future work to discuss how their alternative income-based poverty measures differ from the SPM, and either include the SPM in their analysis or explain its omission.

Figure 2. Effect of Excluding Tax Provisions and Noncash Government Transfers on Poverty Using the Supplemental Poverty Measure, 2009



Source: Author's calculations using data from Short (2011, table 3b).

a. SNAP = Supplemental Nutrition Assistance Program; WIC = Women, Infants, and Children program; LIHEAP = Low Income Home Energy Assistance Program; FICA = Federal Insurance Contributions Act (payroll tax).

To begin, first consider how an income-based poverty measure is used to determine poverty status or the poverty gap. The basic approach consists of four steps. First, the "family unit" is defined. Second, family resources are calculated, summing all cash income sources plus the value of noncash government assistance, less taxes owed. Third, poverty thresholds are constructed, which should vary with family size. Finally, a family (and everyone in it) is then deemed poor if its resources are below the threshold. The poverty gap for that family is the difference between the threshold and the family's resources.

Within this approach, to evaluate the antipoverty effectiveness of a given policy, one simply zeroes out its contribution to income and recalculates the number of poor families. This can be done one policy at a time (for example, the EITC), or one can group policies together (for example, all federal taxes). To illustrate, my figure 2 presents data based on work by

Kathleen Short (2011) using the SPM. The figure shows the changes in 2009 poverty rates that result, for all persons and for children only, from excluding each of several important government tax and noncash transfer policies one at a time. (The figure does not address government *cash* transfer policies, the most important of which is Social Security old-age and survivors insurance.) What emerges is that two of the most important antipoverty programs are the EITC and food stamps. For example, food stamps reduce poverty by 3 percentage points for children and 1.9 percentage points for all persons. This translates into raising 5.2 million persons or 2.2 million children from poverty.

If, as figure 2 indicates, food stamps are so effective against poverty, how is it that Meyer and Sullivan find the program has a minimal role ("the roles of other transfer programs have been small")? The answer is that they focus only on *trends* in poverty. Although important, this misses the counterfactual calculation of interest: how does combined spending on all tax and transfer programs affect poverty? How much does this spending reduce the incidence of poverty or the poverty gap? I chose food stamps in particular to illustrate this point. Unlike the EITC and cash welfare (TANF and its predecessor, AFDC), the food stamp program has not been the object of reform or expansion in the past 20 years. Thus, a focus on explaining the *trends* in poverty will find the food stamp program not to be very important, even though the program clearly is a central component of U.S. antipoverty policy. Meyer and Sullivan understand this difference, but it is likely that the casual reader of the paper will not.

It is important to point out that the calculation just described is a static one: it simply zeroes out the government tax or transfer without taking into account any behavioral adjustment. If food stamps were eliminated, for example, families might adjust by increasing earnings. This represents the standard trade-off central to redistribution programs: protection versus distortion. In this setting the major behavioral adjustment is to labor supply. If desired, one can adjust the poverty calculation by taking into account the responsiveness of labor supply, a parameter that has been the object of much attention over the past decades. Yonatan Ben-Shalom, Robert Moffitt, and John Karl Scholz (2011) conclude that ignoring the behavioral adjustment does not substantially change the conclusions about the antipoverty effectiveness of U.S. policies.

Now suppose one wants to prepare a similar calculation for consumption poverty. It is not clear how to proceed. Importantly, there is no way to "zero out" income with the consumption measure. Meyer and Sullivan do not discuss this. In fact, although they present poverty rates with and

without cash transfers in figure 5, this is done for income poverty only and not consumption poverty. There are certainly ways one could approach this problem. One alternative is to subtract the value of the tax or transfer from expenditure (rather than income). This approach is static as well: it assumes a dollar-for-dollar reduction in consumption, with no behavioral change. Yet much less is known about how household expenditure might change in this context than about how labor supply responds to a change in policy.

Given the evidence and arguments raised in Meyer and Sullivan's paper, and given the discussion here, what is the agenda going forward? Should the standard income-based measures of poverty be replaced with consumption-based measures? Should the statistical agencies continue to invest in measuring income-based poverty? Consumption poverty is a useful concept and may better approximate permanent income. But income poverty is also valuable and in my view is the measure better suited to analyzing the antipoverty effectiveness of government policies.

REFERENCES FOR THE HOYNES COMMENT

Ben-Shalom, Yonatan, Robert Moffitt, and John Karl Scholz. 2012. "An Assessment of the Effectiveness of Anti-Poverty Programs in the United States." In *Oxford Handbook of Economics of Poverty,* edited by Philip Jefferson. Oxford University Press.

Bitler, Marianne P., and Hilary W. Hoynes. 2010. "The State of the Safety Net in the Post-Welfare Reform Era." *BPEA* (Fall): 71–127.

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

Short, Kathleen. 2011. "The Research Supplemental Poverty Measure: 2010." Current Population Reports no. P60-241. Washington: U.S. Bureau of the Census.

COMMENT BY

ERIK HURST This paper is part of a very mature research agenda by Bruce Meyer and James Sullivan, who have written a dozen or so papers over the last decade addressing similar themes. The goal of these papers is to assess the measurement of well-being for certain subpopulations within the economy. In this paper their focus is on the poor, whereas in some of their older papers it was on the elderly and on single mothers. My comments are designed to provide some perspective on this broad research agenda.

At the heart of this paper is the question of how one should measure poverty. Should one use measures based on gross income, or measures based on disposable income after taxes and transfers? If the latter, should the measure include in-kind transfers? Or should one use measures based on consumption rather than on income? Current official measures of the poverty rate are based on money income excluding taxes and noncash benefits such as food stamps and housing subsidies.

The argument for using consumption rather than income to measure poverty is that consumption comes closer to what matters for well-being. Nearly all economic models assume that households receive utility from consumption, not from income, or at least not current-period income. That said, there is a link between consumption and current income through the intertemporal budget constraint:

$$\sum_{t=0}^{T} \frac{c_t}{(1+r)^t} = \sum_{t=0}^{T} \frac{y_t^d}{(1+r)^t} + W_0 + \text{other transfers},$$

where c_t is household consumption in period t, y_t^d is household disposable income (income after all taxes paid and all transfers received) in period t, T is the length of life, W_0 is the household's wealth at the beginning of life, and r is the interest rate. "Other transfers" is simply a measure of the present discounted value of all other transfers flowing into the household (on net) that do not show up in the household's measure of disposable income. These transfers, for instance, can originate from family and friends. If household wealth is close to zero in all periods and "other transfers" are a small part of the household's lifetime resources, then $c_t \approx y_t^d$ for all t.[1] In other words, if households are not able to self-insure, then, conceptually, calculating poverty based on measures of disposable income will be roughly equivalent to calculating poverty based on measures of consumption. The conceptual equivalence will break down only if households have nontrivial savings such that self-insurance is possible, or there are large changes in the extent to which liquidity constraints bind, or "other transfers" are a nontrivial component of a household's resources per period.

My own assessment is that in most periods it will matter little from a conceptual standpoint whether one uses a measure of disposable income

1. This relationship holds for consumption outlays. If durables are an important component of household consumption, the service flow from consumption can deviate from disposable income even if household wealth is close to zero and family transfers are a small part of household lifetime resources.

(including the value of noncash transfers) or a measure of consumption to calculate poverty statistics. The reason is that nearly all households who are at risk for poverty hold very little in the way of assets, making self-insurance impossible.[2] Additionally, I do not believe that "other transfers" are large enough to cause the link between consumption and disposable income to break down (to a first approximation). It is possible that the link could break down during periods when liquidity constraints change. For example, when a large amount of credit is extended to a household at risk of poverty, its consumption could exceed its current disposable income. Because of the intertemporal budget constraint, however, such deviations cannot be permanent. At some point the household will have to either pay back the loan or default on its obligations. I will return to this potential role of credit expansion to explain why poverty measures based on consumption and poverty measures based on disposable income diverged during the 2000s.

Despite my doubt that there are meaningful conceptual differences between poverty measures based on consumption and poverty measures based on disposable income, Meyer and Sullivan in their other work have convinced me that measurement issues make the poverty measure based on consumption data more appropriate. The reason is that incomes for households at risk of poverty are substantially underreported. In particular, Meyer and Sullivan have shown that transfer income is significantly underreported to household surveys and that this underreporting has been increasing over time.

These points were made forcefully in Meyer, Wallace Mok, and Sullivan (2009), where the authors compared the total income reported by recipients for a given transfer program with aggregate statistics from administrative data on transfer income paid by that program. Performing this calculation year by year for a variety of transfer programs in multiple household surveys, they found substantial, and increasingly large, discrepancies. For example, in the 1984 Current Population Survey (CPS) only 75 percent of AFDC/TANF dollars were reported, and by 2004 this figure had fallen to 49 percent. The corresponding figures for food stamp benefits were 71 percent and 57 percent, respectively. The patterns documented in the CPS were also found in the Panel Study of Income Dynamics (PSID) and in the Consumer Expenditure (CE) Survey. Given that a large fraction of income for individuals at risk of poverty comes from transfer programs,

2. See, for example, Hurst and Ziliak (2006) for evidence that those at risk of poverty hold essentially zero assets.

this underreporting of transfer income results in reported income being lower than actual income.

Whether poverty measures should be based on consumption measures or income measures will depend on whether the mismeasurement of household income is more severe than the mismeasurement of consumption for low-income households. A large literature shows that consumption data in the CE have deteriorated relative to the aggregates reported in the national income and product accounts. However, as John Sabelhaus and others (forthcoming) and Mark Aguiar and Mark Bils (2011) have shown, most of the deterioration has resulted from the declining quality of consumption data for richer households. For low-income households, the CE does a relatively good job of measuring consumption. This finding should lead one to prefer poverty measures based on consumption.

Given these facts, I draw three conclusions from the Meyer and Sullivan paper. First, even though the conceptual distinctions are small between measuring poverty using consumption data and measuring it using disposable income data (inclusive of food stamps and noncash benefits) given that few households at risk of poverty self-insure, the underreporting of transfer income strongly argues for measuring poverty with consumption data.

Second, in practice it does not really matter whether one uses consumption or a complete measure of disposable income to measure poverty, at least through 2000. As figure 2 of the paper shows, the poverty rate using consumption data and that using after-tax money income data tracked each other nearly identically. The only deviation between the two series occurred during the 2000s, when the consumption-based poverty rate declined sharply while the after-tax money income-based poverty rate was relatively flat. Both measures increased slightly after the 2008 recession, and the gap between the two narrowed slightly. What could have caused the two series to deviate during the 2000s? One possible answer is that the widespread extension of credit to low-income households during the decade allowed consumption to exceed income for many. My sense, however, is that this is not the sole factor driving the deviation, because most households at risk of poverty were not the beneficiaries of increased credit during this period. The results in table 4 of the paper and in online appendix table 10 show that only a small fraction of the income-poor have sizable debts today, in the wake of the credit boom, and that except at the very top of the debt distribution, there was no increase in their aggregate debt during the 2000s. A second possible explanation is that the underreporting of transfer income increased during this period. If that is the case, the consumption measure is probably more representative of the truth.

My third conclusion from the paper is that it matters a tremendous amount for the time-series trends in the poverty gap whether consumption or after-tax money income is used to measure the gap. This can be seen from figure 4 of the paper, which shows that after the early 1980s, the poverty gap declined slightly according to the consumption-based measure but increased significantly according to the after-tax money income measure. My interpretation of this result again hinges on the fact that the measurement of transfer income deteriorated sharply during this period, making it appear that those at risk for poverty had less disposable income than they actually had.

Overall, I think this paper is important in that it builds on the authors' previous work showing that transfer income is notoriously poorly measured in household surveys, and has become increasingly so over time. Given that, the authors show that poverty measures based on after-tax money income will likely be biased upward and the extent of the bias will be increasing over time. By looking at poverty measures based on consumption, the authors show that they can get around this problem. I come away from their analysis believing that measuring poverty based on the consumption data is probably more appropriate.

REFERENCES FOR THE HURST COMMENT

Aguiar, Mark, and Mark Bils. 2011. "Has Consumption Inequality Mirrored Income Inequality?" Working Paper no. 16807. Cambridge, Mass.: National Bureau of Economic Research.

Hurst, Erik, and James P. Ziliak. 2006. "Do Welfare Asset Limits Affect Household Saving? Evidence from Welfare Reform." *Journal of Human Resources* 41, no. 1: 46–71.

Meyer, Bruce, Wallace Mok, and James Sullivan. 2009. "The Under-Reporting of Transfers in Household Surveys: Its Nature and Consequences." Working Paper no. 15181. Cambridge, Mass.: National Bureau of Economic Research.

Sabelhaus, John, David Johnson, Stephen Ash, David Swanson, Thesia Garner, John Greenlees, and Steve Henderson. Forthcoming. "Is the Consumer Expenditure Survey Representative by Income?" In *Improving the Measurement of Consumer Expenditures,* edited by Christopher Carroll, Thomas Crossley, and John Sabelhaus. University of Chicago Press.

GENERAL DISCUSSION Christopher Carroll offered another piece of evidence that the official data on the incomes of the poor were subject to measurement error on a massive scale. Successive waves of the Survey

of Consumer Finances show that people in the bottom part of the wealth distribution have essentially no wealth and neither accumulate nor decumulate wealth from survey to survey. That implies that they spend virtually all their income over the course of a few years and hence are not saving part of it to smooth consumption. Thus, the discrepancy between the income and the consumption data cannot be explained by consumption smoothing. However, Carroll questioned the view that what is needed is further study of the income data to identify ways to adjust those data properly. On the contrary, he argued, what is needed is further work toward more and better consumption data. Literally dozens of surveys already measure income in one way or another, he said, but only one comprehensive survey of consumption is available.

Karen Dynan suggested that the democratization of credit—the fact that, especially for lower-income households, credit has become easier to obtain over the last several decades—might explain a lot of the downtrend in consumption poverty relative to income poverty. She noted that the balance sheet data in the Consumer Expenditure Survey match neither the aggregates nor the figures reported in the Survey of Consumer Finances and are in any case very limited, failing, for example, to capture alternative financial services such as payday lending and pawnshops. Dynan also called attention to the potential effects of changes in household formation in measuring poverty. Recent years have seen a consolidation of households, largely due to recent college graduates and other young adults moving back in with their parents: today 1 in 7 Americans aged 25 to 34 live with their parents, versus 1 in 10 a decade ago. Dynan acknowledged that the authors may have partly adjusted by controlling for household size, but she wondered whether they controlled for the disutility to the parents of having the kids living in the garage.

Robert Moffitt remarked that the standard poverty line measure is an inherently arbitrary construct, with the important deficiency that a relatively small increase in income among those just below the line can sharply lower the poverty rate while leaving most of the poor no better off than before. He pointed out that two of the most important federal antipoverty policies, the earned income tax credit and food stamps, tend to do exactly that: because people with no earnings do not qualify for the EITC, most of the credit goes to people not far above or not far below the poverty line. Food stamps are not subject to a work requirement, and thus do reach people near the bottom, but many people higher in the distribution also qualify and receive just as much. Moffitt believed the poverty gap was a more useful measure of poverty, but he also thought that much insight

could be gained by considering the distribution of income above and below the poverty line.

Moffitt sided with those who advocated investing more resources in the income surveys as opposed to the consumption surveys, because even if one believes that consumption is what ultimately matters, it is vital to know whether a given government program that raises income also raises consumption. It was not obvious at present that it did.

Henry Aaron wondered whether the authors' data could shed light on the true relative poverty status of children versus the elderly. By the conventional poverty line measure, the elderly population is on average much better off than the child population, but by the National Academy of Sciences' alternative measure, which excludes out-of-pocket medical spending, the poverty rates of the two groups are almost the same. Better data on this question, Aaron thought, could help inform the current debate over whether the nation is shortchanging its younger generations in favor of the elderly.

Robert Gordon argued that besides the problems with their measurement, the income measures of poverty failed to take into account that it is permanent income, not transitory income, that matters. He thought it would be useful to have panel data that allowed one to measure poverty as the share of households whose income remained below some threshold for, say, five consecutive years. The fact that the poor have few or no liquid assets to allow smoothing of consumption over that long a period does not matter, Gordon said, because much consumption, at all levels of income, is consumption of durable goods—within which he would include clothing, although it is classified as nondurable—so that poor households experiencing a year or two of hard times can largely sustain their consumption by drawing on these stocks of durables.

Gordon expressed surprise that in their discussion of CPI bias the authors compared only the CPI-U and the CPI-U-RS, when another, arguably superior measure of inflation is available: the PCE deflator not only incorporates the same improved measurement of the value of housing that the CPI-U-RS does, but also deals with substitution bias by changing the weights of the items in the consumption basket each period. None of these inflation measures, Gordon conceded, adequately address the other well-known types of bias—outlet substitution bias, new product bias, and quality change bias—but he noted that some of these biases were more important than others in evaluating the well-being of the poor. For example, many poor households really do shop at Walmart, and there is evidence of substantial savings from such outlet substitution: research has

shown that food prices in a community fall by 25 percent when a Walmart opens there.

Martin Feldstein argued that the method currently used to incorporate Medicaid benefits into the income measure of poverty tends to understate those benefits. It calculates the so-called fungible value of Medicaid, which is the amount of cash that Medicaid eligibility frees up for the eligible household to spend on other things. The problem, Feldstein pointed out, is that very poor households have little cash to free up, so that the calculation results in Medicaid appearing to have little value for them. If one included the true value of Medicaid benefits in the income of such households, it would raise their total income considerably, because the budget for Medicaid far exceeds the value of the EITC, the child credit, and food stamps combined.

Feldstein sided with those who advocated for devoting more resources to measuring consumption. A further problem with the income measures, he suggested, was that poor households tend to underreport not only the government transfers they receive, but also any income they obtain from work in the underground economy or as transfers from family or friends. Feldstein also thought that zeroing out individual antipoverty programs to estimate the impact of each on poverty would not be as difficult as some have suggested, because as others had noted, poor households have little wealth and therefore their consumption closely tracks their income.

Isabel Sawhill agreed with Feldstein that the valuation of health benefits was an important issue, not just for poverty but for understanding trends in income more generally, and that these benefits were seriously mismeasured. She noted that the Congressional Budget Office uses a hybrid measure of fungibility that attempts to get at the problem, and she cited work by Gary Burtless demonstrating that using a realistic value of health benefits changes the income picture dramatically.

Sawhill also addressed the question of whether measures of absolute or relative poverty were more useful. The concept of relative poverty, which defines the poor as those below some percentile of the income or consumption distribution, is widely used in Europe, she noted, and the supplemental poverty measure that Hilary Hoynes had discussed was a move in that direction. One feature of an absolute poverty threshold, Sawhill said, was that as long as the distribution of income stays constant, economic growth alone moves people above the threshold even without government intervention.

Finally, Sawhill observed that the unit of time over which poverty is measured also matters. Because many people are poor for only a relatively

short time—for example, because of temporary job loss—the standard survey, which refers to a single year, finds much higher income poverty rates than one that defines poverty as having income below the threshold for a full two years: the poverty rate under the latter definition is around 5 percent, versus 15 percent for the standard survey.

Robert Hall thought the paper seriously understated its case that poverty has fallen more in recent decades than the official statistics indicate. For one thing, its findings do not take into account the fact that the elasticity of household formation to permanent income is remarkably high—witness, on the one hand, the rise in the divorce rate observed in the negative income tax experiment in the 1970s, and, in the opposite direction, the recent trend mentioned by Dynan of children moving back in with their parents. Thus, the paper missed the consumption benefits that come from living in separate households.

Hall disputed Gordon's assertion that the PCE deflator measured the value of owner-occupied housing better than the CPI. He had recently found that the rental income imputed to homeowners was insufficient, after interest and maintenance costs, to generate a positive return to the invested capital, a clear sign that the weight of housing in the PCE deflator is too low. It might be, Hall conjectured, that the Consumer Expenditure Survey, whatever its other defects, comes closer to getting the weight for housing correct, possibly by accident.

Finally, Hall questioned Hoynes's claim that an advantage of income-based over consumption-based measures of poverty is that the former do not require adjustments for behavioral responses when one tries to zero out the impact of individual programs. Hall observed that the income from a typical antipoverty program, which consists of a lump-sum benefit and imposes a positive effective marginal income tax rate as it phases out, has significant behavioral effects. He therefore agreed with the authors—and with the conventional wisdom going back to Irving Fisher and Milton Friedman—that the consumption approach gives a clearer picture of changes in the distribution of well-being.

Kristin Forbes proposed another possible explanation for the widening discrepancy between the consumption- and income-based poverty measures, namely, that the number of people working in the underground economy has grown. The same explanation, she thought, might also help account for the declining employment-population ratio that presented such a puzzle in Robert Moffitt's paper. Forbes asked whether the labor economists on the Panel knew of any recent data on growth in the underground worker population.

Benjamin Kay cited recent work by several authors that combined historical GDP data with historical gross domestic income data to generate better output forecasts, and wondered whether one could get a better measure of the poverty rate by similarly combining the estimates from the consumption and income measures. If there is noise in each measure that is uncorrelated between them, a weighted average of the two might result in better signal extraction.

Valerie Ramey found the paper's evidence persuasive but cited two factors that might work against the finding that poverty has fallen. One of these was home production. In earlier decades most of the poor were rural poor, for whom production at home accounted for a large share of consumption, and even many poor urban households in those days had stay-at-home mothers who also engaged in much home production. Given the shift in more recent decades of the poor population to the cities, and of women into the workplace, Ramey wondered to what extent the authors had accounted for the resulting decline in home production.

The second factor, Ramey suggested, was a decline in consumption of public goods, and of education in particular. A decline in the quality of much primary and secondary education, she argued, has effectively reduced consumption of education at those levels. And in states like California, where it used to be that even the poorest person could attend the best public universities for free, a public college education is today beyond the financial reach of many. This decline, she noted, has implications not only for present levels of poverty but also for people's ability to escape poverty.

Robert Pozen sought clarification of the authors' statement that the situation with respect to Social Security disability insurance had improved. Did they mean that more resources are reaching the poor through disability insurance? Or that the program was doing a better job of identifying who was actually disabled? The question, he thought, was particularly relevant given that in times of high unemployment, like today, the number of workers receiving disability benefits rises sharply.

Scott Winship encouraged the authors to consider extending their research to include some intergenerational analysis. He described the Pew Economic Mobility Project's analyses of mobility between generations that paired parents and their adult children and then divided the income distributions of both groups into quintiles. They found that the 20th percentile of the children's generation, as of the early 2000s, was almost as rich as the 60th percentile of the parents' generation had been in 1970.

Bradford DeLong forecast that without unprecedented cutbacks, two decades hence the combination of federal programs that help the poor—from food stamps to Social Security to Medicare and Medicaid—will alone provide to every low-income household a package of benefits worth more in real terms than the Orshansky poverty line, no matter what reasonable discount one applies to account for the nonfungibility of Medicaid benefits. But, DeLong thought, although the war on poverty will in that sense have been won, it is doubtful that poverty will then be viewed as having been eradicated. He therefore called for a rebasing of the poverty threshold. The new threshold, he thought, should be an absolute rather than a relative threshold. The threshold he had in mind was one that calibrated Meyer and Sullivan's measure so as to define the bottom one-fifth of the 2012 population as poor, and to take that absolute level of real income as the post-Orshansky poverty line going forward.

Responding to the discussion, Bruce Meyer began by clarifying that his and Sullivan's position was not that income-based poverty measures were of no value, but rather that there was currently a severe imbalance in emphasis, as Carroll had observed. Although he and Sullivan did indeed believe that more work was needed to improve the consumption data, in fact they were presently collaborating with the Census Bureau to improve the income data—and finding the problems daunting. For example, whereas the Current Population Survey only a couple of years ago still captured half of food stamp receipts, today it captures little more than a third, and another 20 percent is imputed. Meyer also expressed concern that the Survey of Income and Program Participation, currently the best survey for capturing transfer income, was about to be replaced with an inferior version. He called on those who advocated improving the income data to get involved in that undertaking, as he and Sullivan were already doing.

On the question of whether income- or consumption-based measures are better for studying the effects of government programs, Meyer pointed out that one can always zero out the value of a program, but one then realizes that there will be behavioral responses in consumption to such a change, which suggests that one should be looking at consumption in the first place.

On the suggestion that he and Sullivan look at the new supplemental poverty measure, Meyer noted that they had a forthcoming paper in the *Journal of Economic Perspectives* that did just that, and that also addressed Henry Aaron's question about the relative well-being of children and the elderly. Replying to Gordon's proposal to use the PCE deflator instead of the CPI-U-RS, Meyer reported that the two track each other fairly

closely over the period he and Sullivan studied, and both dramatically overstate actual inflation. So he saw little value in using the PCE deflator as an alternative.

Finally, James Sullivan acknowledged that, comparing aggregates with aggregates, the discrepancies between the Consumer Expenditure Survey and the National Income and Product Accounts data did seem to be worsening. But when one narrows the focus to those components of consumption that matter most to low-income households, such as food and housing, those components match the NIPA data fairly well and show no widening of any discrepancies over time. That suggested that the Consumer Expenditure Survey remains a valid measure for purposes of his and Meyer's research. In addition, he and Meyer had constructed a consumption measure using only those components that were well matched in the NIPA data, and the results were qualitatively similar to those reported in the paper.