

## Five Decades of Consumption and Income Poverty\*

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### Abstract

Few measures of U.S. economic performance receive greater attention and scrutiny than the poverty rate. The official poverty rate in 2009 was nearly 2 percentage points higher than the rate in 1970 despite a doubling of real GDP per capita and trillions of dollars spent on anti-poverty programs. This paper considers the long run patterns of improved measures of poverty, examining the extent of material deprivation in the United States from the early 1960s to 2009. Our results contradict previous studies that have argued that poverty has shown little improvement over time, or that anti-poverty efforts have been ineffective. We show that trends for improved income and consumption based measures of poverty differ considerably from the official measure. We emphasize consumption based measures because they are theoretically a better measure of well-being and because evidence suggests consumption is better reported than income by families with few resources. A consumption based poverty measure that adjusts for bias in price indices declines by 13 percentage points between 1972 and 2009. In addition, the composition of the consumption poor is very different from that of the income poor with the consumption poor being noticeably worse off. Over the past few decades, married parent families with children have fared less well while the aged have done better than income data indicate. Our analyses of potential explanations for these patterns indicate that some policy changes have been effective at reducing poverty, but changes in demographics are less important. Changes in tax policy explain a substantial part of the decline in income poverty particularly for families with children. Other than social security, cash and noncash government transfer programs have only a small impact on changes in poverty. Measurement error in income is likely to explain some of the most noticeable differences between changes in income and consumption poverty, but saving and dissaving do not appear to play a large role for most demographic groups.

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## 1. Introduction

Few measures of U.S. economic performance receive greater attention and scrutiny than the poverty rate. The official poverty rate, which is an absolute measure that is intended to capture the fraction of people below a threshold that is constant in real terms, suggests deprivation has become more widespread over the past four decades. The rate in 2009 was nearly 2 percentage points higher than the rate in 1970 despite a doubling of real GDP per capita and trillions of dollars spent on anti-poverty programs. While these official estimates suffer from well-known flaws, pundits and academics alike repeatedly refer to these statistics without qualification. Even leading poverty scholars rely on the official poverty rate as the definitive indicator of trends in poverty and draw important conclusions based upon it. Notable examples include Burtless and Smeeding (2001), Haskins and Sawhill (2009), and Meyer and Wallace (2009).

The conventional wisdom that we have made little progress in reducing poverty has played a prominent role in policy debates. Many have presented official poverty trends as evidence that the panoply of income support programs, from food stamps to unemployment insurance, have been ineffective anti-poverty tools. In a typical year we spend over half a trillion dollars on such programs. In 1995 former House Ways and Means Committee Chairman Archer 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.” More concisely, President Reagan said “we fought a war on poverty, and poverty won.” This line of argument has led to calls to abandon the safety net such as in Murray (1984).<sup>1</sup>

A large literature has pointed out some of the flaws in the official poverty measure which include a narrow definition of income, an odd adjustment for family size, and a biased adjustment for price changes (Citro and Michael 1995; Besharov and Germanis 2004; Jencks, Mayer and Swingle 2004a). However, studies of poverty trends typically conclude that these flaws may affect the level of poverty, but they have little impact on trends. In their overview of poverty trends, Hoynes, Page, and Stevens (2006) report that “Although poverty can be

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<sup>1</sup> There are other problems created by the mis-measurement of poverty. 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.

measured in ways other than the official definition, our work, and the work of others, shows that most of these different ways will alter the level of poverty but not the trend.” Similarly, Lang (2007) states that “Although... there is considerable support for improving the poverty measure, doing so has only a small effect on recent trends.” Also see U.S. Census (various years-b, 1995), Triest (1998), Short et al. (1999), and Dalaker (2005).

This paper considers the long run patterns for improved measures of poverty. We examine changes in the extent of material deprivation in the United States from the early 1960s to 2009. We present results for improved measures of income poverty as well as 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 at the bottom. 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 anti-poverty efforts have been ineffective. We also provide a different set of facts about poverty for researchers to explain and show that how one measures poverty greatly affects the demographic composition of the poor and how poverty has changed within demographic groups.

Our results make a number of contributions to a large literature that examines alternative measures of poverty. We examine trends for improved income and consumption based measures of poverty over five decades, showing that the patterns for these improved measures differ considerably from the official measure. We take the literature on CPI bias seriously and draw out its implications. We improve upon consumption measures used in previous studies by calculating better measures of housing consumption for those living in public or subsidized housing and by imputing the flow value of vehicle ownership using detailed information on the cars a family owns. We also provide estimates of the value of public and private health insurance coverage that allow us to incorporate insurance coverage into some of our measures of poverty. And, we address concerns about increased under-reporting of consumption in survey data by constructing a measure of core consumption that relies on the components of consumption that are reported consistently well over time compared to the national income accounts.

We draw several important conclusions from these analyses. First, measures that improve upon the official measure often have very different trends. Disposable income measures have very different patterns than official poverty or other measures that are based on pre-tax money income. Although some previous studies have also documented differences,<sup>2</sup> the dominant view in the literature is that trends are quite similar across these measures, as discussed above. We show that an income poverty measure that incorporates taxes declines by about 2 percentage points more during the 1960s, and by another 1.2 percentage points more during the 1990s, than a pre-tax money income measure. In addition, we show that the patterns for consumption based poverty are quite different from those for even a disposable income measure of poverty.<sup>3</sup> Over the entire period, consumption poverty declines more than income poverty, but the reverse is true for some periods. Income based poverty falls more than consumption based poverty during the 1960s. The reverse is true for the 2000s, although in 2009 consumption poverty rises more than income poverty. The patterns are very different across family types, with consumption poverty falling much faster than income poverty since 1980 for the elderly, but more slowly for married couples with children. Income and consumption measures of the poverty gap have generally moved sharply in opposite directions in the last two decades with income based poverty gaps rising, but consumption based poverty gaps falling. Our general finding of declines in poverty is corroborated by other indicators of well-being for those with low income such as increased ownership of cars and other durables and improved housing conditions.

Second, we show that upward bias in the Consumer Price Index (CPI-U), the index used to adjust official poverty thresholds for inflation, has an enormous effect on changes in poverty over long periods. A consumption based poverty measure that accounts for the consensus estimate of the bias in the CPI-U declines by 13 percentage points between 1972 and 2009.

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<sup>2</sup> For example, Joint Economic Committee (2004) shows that adding the EITC to money income results in a noticeably greater decline in poverty during the 1990s. Jencks et al. (2004b) present similar findings for child poverty.

<sup>3</sup> Earlier work looking specifically at consumption based measures of poverty suggests that changes in these measures differ from income based poverty trends, but some recent work concludes otherwise. Cutler and Katz (1991) find that consumption poverty rose more than income poverty during the 1970s. Slesnick (2001) concludes that consumption poverty fell considerably more than income poverty from 1980 through 1995. Johnson (2004) also finds differences between consumption and income based poverty trends, while Bavier (2008) concludes they are similar.

Third, we show that how poverty is measured affects not only changes over time but also who is designated as poor. The composition of the consumption poor is very different from that of the income poor, and the former appear worse off. Compared to the income poor, the consumption poor are less educated, less likely to own a home, more likely to live in married parent families, and much less likely to be single individuals or elderly. The fraction of the consumption poor living in married parent families is 80 percent higher than the fraction of the income poor living in such families in recent years.

Fourth, we show that some policy changes have been effective at reducing poverty, but changes in demographics are less important. Changes in tax policy explain a substantial part of the decline in income poverty particularly for families with children. Rising social security benefits account for a decline in income poverty, particularly in the late 1960s and early 1970s, but other cash and noncash government transfer programs have only a small impact on changes in poverty. While we find that rising educational attainment accounts for some of the decline in poverty over the past five decades, in general, changing demographics account for only a small fraction of the overall improvement in well-being for the poor. We suspect that measurement error explains much of the large differences between income and consumption measures that focus on the distribution below the poverty line such as poverty gaps. Given the evidence on low asset holdings, particularly for groups such as single parents, saving and dissaving are likely to explain only a small portion of the differences between income and consumption measures of poverty.

In the next section 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 3. Section 4 discusses concerns about under-reporting and changes in income and consumption data quality over time. We address inflation adjustments to poverty thresholds in Section 5. In Section 6 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 changes in poverty and differences across measures in Section 7. In Section 8 we examine the trends for some alternative measures of deprivation including other measures of income and consumption poverty, near and deep poverty, and relative poverty. In Section 9 we conclude.

## 2. 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). 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 or the decline in consumption that might be required to repay debts, both of which would be missed by an income measure. 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 non-money resources, particularly those related to housing and vehicle ownership.<sup>4</sup>

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, one can better account for relative price changes. Even more importantly, subcategories of consumption such as nondurable consumption have been used extensively in past work. In this paper, we will report results for what we call core consumption, a measure that closely approximates essentials and only includes items that are well measured over time. Furthermore, 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. They show that other measures of material hardship or

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<sup>4</sup> 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 survey provides information on out of pocket rent and the characteristics of the living unit including the total number of rooms, the number of bathrooms and bedrooms, and appliances such as a washer, dryer, etc. These characteristics can be used to impute a total rental value as explained

adverse family outcomes are more severe for those with low consumption than for those with low income, indicating that consumption does a better job of capturing well-being for these families.

Some researchers have argued that income may have some conceptual advantages over consumption.<sup>5</sup> One reason is that individuals can choose to have low consumption, while income reflects access to resources that can be used for consumption, and as such is not driven by consumption decisions (Atkinson, 1991). However, individual choices affect the level of income as well through education, occupation and labor supply choices. 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 to income is that current consumption fails to capture the welfare benefits of leaving bequests. While 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 NAS panel concluded 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 consumption datasets 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.

### **3. Data and Methods**

#### **3.A. Income Measures from the Current Population Survey**

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in the Data Appendix. In addition, for homeowners the CE provides self-reported values of the rental equivalent of the home.

<sup>5</sup> Blundell and Preston (1998) is sometimes characterized as finding that income has advantages over consumption. A more accurate summary is that some comparisons of consumption across cohorts or age will not give the correct sign to the difference in utility, but income suffers from the same types of problems in the situations they consider.

The official poverty measure in the U.S. 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 prior to 2002).<sup>6</sup> For the previous calendar year, respondents report the income amounts for a number of different sources that are included in the money income measure used 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. Appendix Table 1 provides descriptive statistics for the full sample from the CPS.

For our analyses of income poverty, we focus on three different measures of income. First, we examine money income, which is the measure used by the Census to calculate official poverty statistics. Second, we examine after-tax money income, which adds to money income the value of tax credits such as the EITC, and subtracts state and federal income taxes and payroll taxes. Finally, we examine after-tax income plus 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 Data Appendix for more details.

### **3.B. Consumption Measures from the Consumer Expenditure Survey**

Our consumption data come from the Consumer Expenditure Survey (CE), which is the most comprehensive source of consumption data in the U.S. We use the CE Interview Survey component for the years 1960-1961, 1972-1973, 1980-1981 and 1984-2009 (see Data Appendix for details). The CE provides annual or annualized data for 13,728 families in 1960-1961 and 19,975 families in 1972-1973. From 1980-2009 the survey is a rotating panel that includes about 5,000 families each quarter between 1980 and 1998 and about 7,500 families thereafter. Each consumer unit, or family, in the survey reports spending on a large number of expenditure categories for up to four consecutive quarters. Appendix Table 1 provides descriptive statistics for the full sample from the CE.

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<sup>6</sup> The ASEC is currently administered to the March sample of the CPS as well as a subsample of the respondents in the February and April CPS. Prior to 2003 survey year, the supplement was only included in the March survey.

To convert reported expenditures into a measure of consumption, we make a number of adjustments. While 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 of a vehicle, we calculate a flow that reflects the value that a consumer receives from owning a car during the period that is a function of a depreciation rate and the current market value of the vehicle. To determine the current market value of each car owned, we use detailed information on vehicles (including make, model, year, age, and other characteristics). This approach accounts for features and quality improvements through what purchasers are willing to pay.

Second, to convert housing expenditures to housing consumption for homeowners, we substitute the reported rental equivalent of the home for the sum of mortgage interest payments, property tax payments, spending on insurance, and maintenance and repairs. Third, 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, 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 an investment such as spending on education and health care, and outlays for retirement including pensions and social security.<sup>7</sup> 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 (more details of our use of the CE to measure consumption are in the Data Appendix).

### **3.C. Constructing Poverty Measures**

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<sup>7</sup> We also exclude spending on charitable contributions and spending on 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, work related expenses that are 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 for 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

In the results that follow, we compare official poverty to several alternative measures of poverty. Official poverty in the U.S. is determined by comparing the pre-tax money income of a family or an unrelated individual to 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 original poverty thresholds were developed in 1964. These thresholds are adjusted for inflation annually using the CPI-U. For a detailed summary see Citro and Michael (1995) or Blank (2007).

We construct alternative measures of poverty that address well-known shortcomings in the official measure.<sup>8</sup> One of the most commonly criticized features of the official measure is that it defines resources as pre-tax money income, failing to reflect other 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 non-cash benefits, and consumption.

Rather than using the official poverty thresholds, for these alternative measures we specify thresholds that equate poverty in the baseline year (1980). This anchoring of poverty rates in 1980 facilitates comparisons of trends across different measures of poverty. Specifically, for each alternative poverty measure we find thresholds such that the poverty rate for that equivalence scale-adjusted measure is equal to that of the official poverty rate in 1980 (13.0 percent).<sup>9</sup> Anchoring our alternative measures to the official measure allows us to examine the same point of the distribution in 1980 so that different measures do not diverge simply because of differential changes at different points in the distribution.<sup>10</sup> 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

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consumption more generally, one may want to examine the consumption of leisure (Aguiar and Hurst 2007, Meyer and Sullivan 2008).

<sup>8</sup> The National Academy of Sciences (NAS) panel, which was appointed to review the official measure, offers a discussion of the shortcomings and recommended improvements. See Citro and Michael (1995).

<sup>9</sup> In 1980, the 13.0 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; for after-tax money income plus noncash benefits, 1.27; and for consumption, 1.09 or 0.97 excluding health insurance.

<sup>10</sup> Triest (1998) and Joint Economic Committee Democrats (2004) use a similar approach.

thresholds does not exhibit diminishing marginal cost over the whole range of family sizes (Ruggles 1990), and the thresholds imply that children are more costly than adults in some cases. A number of alternative scales have been proposed.<sup>11</sup> The NAS panel (Citro and Michael, 1995) recommends an equivalence scale of the form:  $(A + PK)^F$ , where A is the 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. The panel recommends that the child proportion of an adult, P, be equal to 0.7 and that the economies of scale factor, F, fall in the range 0.65 to 0.75. For most of the results that follow we will use the NAS scale with P and F equal to 0.7.

Our consumption-based measures of poverty also differ from official poverty in how the family unit is defined. The unit of analysis for the official measure of poverty includes only individuals within a housing unit who are related by blood or marriage. This measure excludes from family resources the resources of unrelated individuals, such as a cohabiting partner. Citro and Michael (1995) and others argue that cohabitators should be included in the family unit. Analytically, the unit should be based on those who share resources. However, in the CPS ADF/ASEC 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 cohabitators who share responsibility for housing, food, or other living expenses, but excludes cohabitators who do not contribute to these expenses. Different units of analyses may affect trends if there are significant changes in cohabitation over time, as suggested by Bumpass and Lu (2000). Haider and McGarry (2006) show that the share of household income coming from household members outside the nuclear family increased noticeably during the 1990s. For the income poverty results from the CPS, we follow the official measure, designating the family as the resource sharing units.

#### **4. Data Quality and Under-reporting in the CPS and CE**

Evidence on the tendency of surveys to capture more accurate information on income or consumption is split. For most people, income is easier to report given administrative reporting

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<sup>11</sup> For example, Slesnick (1993, 2001) uses expenditure data to construct equivalence scales that are determined by household specific spending on all goods and services, not just food.

and a small number of sources of income. However, for analyses of families with few resources this argument is less valid, as these families tend to have many, sporadic income sources. Additionally, while income may be easier to report, it is likely to be a more sensitive topic for survey respondents than consumption. The CPS has slightly lower survey non-response than the CE, but much higher item non-response 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).

#### **4.A. Income Under-Reporting**

Income in the CPS appears to be substantially under-reported, especially for categories of income important for those with few resources. Furthermore, the extent of under-reporting appears to have changed over time. Meyer and Sullivan (2003, 2011a) and Meyer, Mok and Sullivan (2009) report comparisons of weighted micro-data from the CPS to administrative aggregates for government transfers and tax credits. These ratios are substantially below one and have declined over time, falling to below 0.6 for Food Stamps and 0.5 for Temporary Assistance for Needy Families (TANF) in recent years. Comparisons of survey micro-data to administrative micro-data for the same individuals also indicate severe under-reporting of government transfers (Meyer and Goerge 2011). Concerns about income under-reporting are not limited to transfer income. Davies and Fisher (2009) summarize evidence finding under-reporting in surveys of earnings at the bottom of the distribution based on comparisons of survey and administrative data. Consistent with these results, income is often far below consumption for those with few resources, even for those with little or no assets or debts (Meyer and Sullivan 2003, 2011a).

#### **4.B. Consumption Under-Reporting**

There is also substantial evidence that consumption is under-reported in the CE and that the under-reporting has increased over time. Given that we generally find that consumption exceeds income at the bottom, and that in recent years consumption poverty declines more than income poverty, the main findings of the paper are likely somewhat understated by consumption under-reporting. Past research (Gieseman 1987, Slesnick 1992, Garner et al. 2006 and 2009, Attanasio et al. 2006) has emphasized a discrepancy between CE aggregates and Personal Consumption Expenditure (PCE) data from the National Income and Product Accounts (NIPA).

In comparing these sources it is important to recognize conceptual incompatibilities between expenditure data from the CE and PCE aggregates. PCE coverage is wider. The CE is not designed to capture some spending included in the PCE such as purchases by those in institutions such as prisons and nursing homes. The Bureau of Economic Analysis reported that in 1992 more than half of the difference between PCE and CE consumer spending was due to coverage and definitional differences (summarized in GAO 1996). See Data Appendix B for more details on issues concerning CE-PCE comparisons.

Recognizing that not all non-comparabilities can be removed, we examine the ratio of CE Interview Survey values weighted by population to corresponding categories of PCE data. We have followed the approach of Garner et al. (2006, 2009) who select categories in the PCE and CE that are most comparable based on concepts and comprehensiveness. In Appendix Table 2, we report CE/PCE ratios for ten categories of expenditures, including the three largest: housing, food, and transportation.<sup>12</sup> The ratios are fairly steady for expenditures on food at home and rent plus utilities.<sup>13</sup> For food at home, on average the CE/PCE ratio is over 0.85 and for rent plus utilities the ratio is nearly 1.00. The ratio for food away from home does decline noticeably over time, resulting in a decline in overall food. Since food away is a much smaller share of consumption for the poor, a share weighted ratio for total food expenditures for the poor would fall much less over time. Since food plus housing account for 70 percent of consumption near the poverty line in 2004, we expect that consumption is understated somewhat on average for the poor, but less so than for other groups.

Appendix Table 2 also reveals the types of goods that are badly reported—those that are discretionary and purchased at irregular intervals. Taking the PCE data as truth, the numbers suggest that just over half of food away from home is reported in the CE Interview Survey in recent years. The ratios for most other reported components of nondurable consumption are well under one-half. In the recent data, the ratio is under forty percent for clothing and tobacco, and less than fifty percent for alcoholic beverages, but over seventy-five percent for audio, video and computers. This result is consistent with the general conclusion from Garner et al. (2006, 2009) that nondurable goods and non-housing services are not well-captured in the CE data.

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<sup>12</sup> To improve comparability, we combine rent with utilities since rent often includes some utilities and space rent (exclusive of utilities) cannot be obtained in the CE.

Our measures of consumption also include the value of the flow from the ownership of durables such as houses and cars. Reporting ownership of houses and vehicles is very different from reporting the small, discretionary purchases that are badly reported in the CE. In fact, comparisons to administrative records and to other surveys indicate that ownership of these durables is reported reasonably well in the CE, and there is little evidence of a decline in reporting over time. In addition, other research and our own validations suggest that estimates of the value of the flow from these durables are less likely to be under-reported or exhibit increased under-reporting over time than other spending components in the CE. See Data Appendix Sections B and D.3.

#### **4.C. Core Consumption**

Incorporating the lessons of the previous section, we construct a measure of core consumption that includes spending components that are primarily non-discretionary and have reporting ratios that are high and decline slowly over time. This core consumption measure consists of food at home, rent plus utilities, transportation, gasoline, the value of owner-occupied housing, rental assistance, and the value of owned vehicles. This measure arguably approximates essential consumption spending. Food away from home is omitted, but that is largely a discretionary expenditure. Other omitted categories include clothing and personal care items that have both an essential and discretionary component. We could add health care to this measure, but there is less agreement about how to measure the value of health insurance than there is about measuring any other category of consumption. Overall, our core consumption measure is 73 percent of total consumption, but is on average 80 percent of consumption for those near the poverty line.<sup>14</sup> The results in Appendix Table 2 indicate that the components of core consumption are reported well. For food at home, rent plus utilities, transportation, and gasoline and motor oil, the reporting rates are high and there is only a slow decline in these ratios over time except for gasoline and motor oil. In 2008, the reporting ratio for the sum of these four components is 0.893 with the ratios for the individual components ranging from 0.837 and 0.967.

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<sup>13</sup> In a comprehensive study of survey data on food spending, Browning et al. (2003) conclude that, in general, respondents are “remarkably good” at reporting food at home.

<sup>14</sup> Non-medical core consumption is on average 80 percent of total non-medical consumption in the early 1980s, and a higher share in recent years due to the decline in reporting of other components of consumption.

Over time, the reporting ratio for the average of the components ranges from 0.867 to 1.030 (see core consumption excluding flows in Appendix Table 2).

## 5. Price Indices

Because the official poverty thresholds are adjusted over time using the CPI-U, bias in this price index will lead to bias in poverty trends. Although this bias can be very substantial for changes over long time periods, this criticism has received little attention in the poverty literature.<sup>15</sup> The 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.<sup>16</sup> As we will show, these two price indices yield very different patterns for poverty changes over longer periods. Between 1960 and 2009 the CPI-U grew on average by about 0.4 percentage points per year faster than the CPI-U-RS, with nearly all of this difference occurring between 1978 and 1998. However, a consensus view among economists is that the CPI-U-RS does not make sufficient adjustment for the biases in the CPI-U. Unfortunately, there is no clear consensus on the exact amount of the bias over time.

There are four types of biases in the CPI-U that have been emphasized: substitution bias, outlet bias, quality bias, and new product bias. Substitution bias refers to the bias in the use of a fixed market basket when people substitute away from high relative price items. Outlet bias refers to the inadequate accounting for the movement of purchases toward low price discount or big box stores. Quality bias refers to inadequate adjustments for the quality improvements in products over time, while new product bias refers to the omission or long delay in the incorporation of new products into the CPI. The Boskin Commission (Boskin et al. 1996), a group of distinguished economists appointed by the Senate Finance Committee, provides an authoritative source on the extent of these biases. They 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

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<sup>15</sup> Exceptions to this rule include Jencks, Mayer and Swingle (2004a) and Broda, Leibtag and Weinstein (2009).

<sup>16</sup> The BLS provides a consistent series going back to 1978. The CPI-U-RS is extended to years prior to 1978 by applying the 1978 CPI-U-RS-to-CPI-U ratio to the actual CPI-U. The CPI-U-RS does not incorporate all of the methodological improvements to the CPI-U. See Stewart and Reed (1999) for more details.

prior to 1996 (the extra 0.2 percentage points was due to an inadvertent bias added by a 1978 change that was later corrected).

In the analyses that follow, we use the CPI-U-RS as our base price adjustment.<sup>17</sup> However, given the estimated bias in the CPI-U of greater than one percentage point per year, the CPI-U-RS will not fully correct the problem. Thus, we report results using an adjusted CPI-U-RS that subtracts 0.8 percentage points from the growth in the CPI-U-RS index each year. We also base this adjustment on 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 points per year remains. Berndt (2006) reports that the bias remaining in 2000 as estimated by each of the individual Boskin Committee members ranged from 0.73 to 0.9 percentage points per year.

This adjustment to the CPI-U-RS could be too big or too small. The Commission itself argued that the estimates were on the “conservative” side and tended to understate the bias (Boskin et al. 1996 Section VI, Gordon 2006 p. 13). Gordon and vanGoethem (2005) and Gordon (2006) find that over some periods the CPI-U understated price increases for housing and clothing. Others have argued that the bias is greater than that implied by our price adjustment. Hausman (2003) suggests that the commission understated the bias.<sup>18</sup> Costa (2001) concludes that the CPI-U overstated inflation by 1.6 percentage points per year between 1972 and 1994. 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.

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 the poor may pay different prices. The evidence for differences in price changes by income either suggests little difference or, when the difference is substantial, it applies to a short time period or small share of expenditures (see Section G of the Data Appendix). If anything, the

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<sup>17</sup> We use the CPI-U-RS index released by the BLS in 2006. We also compare our results to those using the PCE deflator.

<sup>18</sup> 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 at inflation adjusted income are unchanged over time.

evidence suggests slower price increases for the poor, which would tend to amplify our main findings of a reduction in poverty.

## **6. Results**

In this section we describe the main changes in income and consumption poverty over the past five decades. We first show results for alternative definitions of resources, and second for different inflation adjustments. We then discuss poverty gaps and poverty by family type. In the following section we will examine potential explanations for these patterns.

### **6.A. Income and Consumption Based Measures of Poverty**

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 described above so that the poverty rate is the same as the official measure in 1980 (13.0%). In all of the series besides the official measure, we use the CPI-U-RS price adjustment and the NAS equivalence scale. We discuss the effect of the price adjustment in the next section. There are two main lessons to take from these results. First, how resources are measured has an important effect on income poverty measures.<sup>19</sup> A comparison of columns 2 and 3 or the corresponding series in Figure 1 shows the effects of accounting for income and payroll taxes and tax credits. An income poverty measure that incorporates taxes declines by about 2 percentage points more during the 1960s than a pre-tax money income measure. In a temporary reversal of trend, during the early 1980s, after-tax income poverty increases relative to pre-tax income poverty. Continuing the earlier pattern, after-tax income poverty declines by another 1.2 percentage points more during the 1990s, than a pre-tax money income measure. After 1996, the relative movements of the two measures are small, except in 2009 when pre-tax income poverty rises relative to after-tax income poverty. Second, adding the value of noncash government benefits (column 4) has little additional impact on changes in poverty except for a short period in the mid-1980s and mid-1990s. It is

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<sup>19</sup> Standard errors for changes in some of the key poverty measures and the differences between them are reported in Appendix Table 3. Changes and differences between poverty measures between 1980 and 2009 are typically significantly different from zero if they exceed 0.6 percentage points. In one groups years, much smaller changes are significant.

straightforward to show that these differences can be accounted for by the inclusion of the annuitized value of home equity, which is very sensitive to changes in interest rates.<sup>20</sup>

For consumption based measures of poverty, we find patterns similar to those for income for some periods, but very different patterns for other periods. As shown in Figure 2 and columns 5 to 8 of Table 1, the patterns for consumption poverty (column 5) and after-tax money income poverty (column 3) are fairly similar in the 1970s, 1980s, and 1990s.<sup>21</sup> However, after-tax money income based poverty falls more than consumption based poverty (by more than five percentage points) during the 1960s, and these two poverty measures diverge in the 2000s.<sup>22,23</sup> Even more pronounced differences between income and consumption poverty are evident when we examine trends by family type, which we discuss below.

The different patterns during the recent, rather severe, recession are of particular note. After-tax money income poverty rises in 2007 and 2008, while consumption poverty falls. In 2009, consumption poverty rises by a full percentage point, while after-tax money income poverty rises by only 0.2 percentage points.<sup>24</sup> Although the recession officially begins in 2007, unemployment rates do not start to rise sharply until mid-2008 and the sharpest rise in unemployment occurs from November 2008 through January 2010, making it all the more surprising that after-tax money income poverty does not rise more in 2009. In fact, if noncash

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<sup>20</sup> For example, poverty based on a measure that includes the value of home equity remains unchanged between 1984 and 1986—a period of significantly declining interest rates—while all other income based measures fall by approximately a percentage point. Dalaker (2005) suggests that the similarity in trends between a poverty measure based on pre-tax money income and one based on after-tax money income plus noncash benefits indicates that poverty trends are similar for different measures of resources. However, if the return on home equity is excluded from resources, one can see that taxes do have an important effect on changes in poverty, particularly for certain periods, as shown in Figure 1.

<sup>21</sup> We compare consumption to 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, for the most part, including noncash benefits does not noticeably affect changes in income poverty since 1980. We highlight a few cases where noncash benefits affect the patterns for poverty in the discussion below.

<sup>22</sup> 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 comparisons of our consumption results for this earlier period to those from Table 13 of Cutler and Katz (1991), we recalculate our consumption poverty measure using their price index (PCE) and anchoring poverty in 1980 at 7.5 percent to match their consumption poverty rate for that year. The change for this measure of consumption poverty is very close to that of Cutler and Katz over their full 1960-1961 to 1988 period, although there are some differences for sub-periods; our measure of consumption poverty falls by about a percentage point less in the 1960s and it does not show their rise of about a percentage point in the 1970s. These differences arise due to different approaches in calculating service flows from housing and vehicles in these early years.

<sup>23</sup> Given the standard errors of these estimates, differences of this magnitude between income and consumption poverty changes are strongly statistically significant.

benefits are also included (column 4 of Table 1), there is no change in poverty between 2008 and 2009.

The pattern for other measures of consumption poverty does not differ noticeably from that of our main measure. For example, including the value of health insurance (column 6) does not noticeably affect changes in poverty, although poverty falls a bit more in the 1980s.<sup>25</sup> The changes in consumption poverty based on our measure of core consumption (column 7), which includes components that are reported consistently well over time compared to national income accounts, suggest greater improvement in poverty than with total consumption. Differences between these two measures of consumption poverty are most notable for the period between 1973 and 1980 when core consumption poverty falls while consumption poverty rises. Between 1980 and 2009, poverty based on core consumption declines about 1.9 percentage points more than poverty based on total consumption. The greater improvement in poverty seen with core consumption is not surprising given the increased under-reporting of non-core consumption components discussed in Section 4.

## **6.B. The Importance of Price Adjustments**

How one adjusts for changes in prices has an enormous effect on changes in poverty. This point is emphasized in Figure 3 and 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.<sup>26</sup> Between 1963 and 2009, moving from the CPI-U to the CPI-U-RS leads to a 4.9 percentage point greater fall in poverty, and moving from the CPI-U to the adjusted CPI-U-RS leads to a 13.5 percentage point greater fall in poverty. As shown in Figure 3, the effect of the move to the CPI-U-RS is most evident in the late 1970s. Between 1976 and 1980 income poverty increases by nearly a percentage point when thresholds are adjusted by the CPI-U, while poverty falls by more than a percentage point when adjusted by the CPI-U-RS.<sup>27</sup> This difference primarily results from how prices for owner-occupied housing

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<sup>24</sup> Using estimates based on the historical relationship between the unemployment rate and poverty from Meyer and Sullivan (2011b), one would predict that both income and consumption poverty would rise considerably in 2010.

<sup>25</sup> Poverty rates based on consumption including health insurance are not provided for 1984-1987 and before 1980 because information on health insurance coverage is not available in the CE for these years.

<sup>26</sup> 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 PCE rather than the CPI-U-RS.

<sup>27</sup> These results are similar to those reported in Burtless and Smeeding (2001).

were determined prior to 1983 when the BLS shifted from using the purchase price of residential homes to a rental equivalent value of the home (Stewart and Reed 1999).

Price deflators that better approximate the change in the cost of living have an even greater effect on changes in consumption poverty because consumption is less dispersed than 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 2009, moving from the CPI-U to the CPI-U-RS leads to a 6.6 percentage point difference in the change in poverty, while the adjusted CPI-U-RS leads to a 19.6 percentage point greater fall in poverty than that based on the CPI-U. In terms of percent rather than percentage point changes, between the early 1960s and 2009, CPI-U consumption poverty falls by 33 percent, while adjusted CPI-U-RS consumption poverty falls by 86 percent.

### **6.C. Poverty Gaps**

The results presented thus far are for the ubiquitous, but narrow, head count measures of poverty. In statistical terms, this measure reflects 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 poverty gap for a given poverty measure is the average of the difference between the poverty threshold and family resources across all families in poverty. As shown in Figure 4 and Appendix Table 5, income and consumption poverty gaps follow a similar pattern in the 1960s and 1970s. From the early 1960s to 1980 after-tax money income and consumption based poverty gaps decline sharply, by 16 and 18 percent respectively. Between 1980 and 2009 income and consumption based gaps move in opposite directions. The gap based on after-tax money income rises by 20 percent between 1980 and 2009. During this same period the consumption based gap falls by 9 percent. Including noncash benefits in an 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 (compare columns 4 and 6).

The difference in recent changes in the poverty gap has important implications for interpreting recent changes in poverty. For example, income based gaps suggest that while poverty falls between 1980 and 2009, those who remain in poverty are more likely to be severely

deprived. By contrast, the pattern for consumption based gaps suggests that as overall poverty falls during this period the degree to which families are severely deprived also falls.

#### **6.D. Poverty within Demographic Groups**

Some of the most striking differences in trends across measures of poverty are evident within family types. We calculate income and consumption poverty rates for five mutually exclusive and exhaustive groups defined by marriage, children, and age: single parent families, married parent families, single individuals without children, married couples without children, and households with a head 65 or older.<sup>28</sup> We report poverty rates for these groups in Table 2.<sup>29</sup>

As emphasized earlier, income poverty falls more than consumption poverty during the 1960s. The results in Table 2 show that this is true within each family type except single parents, where the decline is similar for income and consumption (in percentage terms). After the 1960s, these measures diverge considerably for single parents. In the 1970s and 1990s, income poverty falls more than consumption poverty, while the reverse is true in the 1980s and 2000s. In the 2000s, the measures move sharply in opposite directions, with income poverty rising more than 3 percentage points, but consumption poverty falling by a similar magnitude.

Quite strikingly, 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—a very different pattern is evident. For these families income poverty falls by more than consumption poverty for much of the past 5 decades. The difference is most noticeable in the 1960s when income poverty falls by 12.6 percentage points (57 percent) while consumption poverty falls by 6.5 percentage points (34 percent). Between 1980 and 2000 income poverty falls by 4.1 percentage points, while consumption poverty remains unchanged. For single individuals we again see a decline in consumption poverty since 1980, while income poverty rises slightly. Married couples without children see a decline in income poverty of more than 60 percent during the 1960s as compared to a 33 percent decline for consumption poverty.

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<sup>28</sup> Those households with a head 65 or older are included in this last category regardless of marriage or the presence of children.

<sup>29</sup> Standard errors for changes in some of the key poverty measures and differences between them can be seen in Appendix Table 6. In Table 2 we report poverty rates based on after-tax income and consumption excluding health insurance because these measures are available for the 1960s and 1970s. The patterns for measures based on after-tax income plus noncash benefits and consumption including health insurance reported in Appendix Table 6 are qualitatively similar to the patterns presented in Table 2.

In more recent years, this group has seen little change in their (low) poverty rates measured with either income or consumption.

Income and consumption poverty also diverge for those with a head 65 or older. In the 1960s and 1970s income poverty falls considerably more than consumption poverty. Between 1980 and 2009, consumption poverty falls by 13.5 percentage points (71 percent), while income poverty falls by 8.1 percentage points (52 percent).

The sharp contrast between changes in income and consumption based poverty gaps is even more evident within family types (Table 3). In the 1960s, the income based gap falls much more than the consumption based gap for single parent families and those with a head 65 or older, while the reverse is true for married couples with and without children. Income and consumption gaps continue to diverge sharply within group in more recent years. For single parent families, we see large increases in income based gaps and large decreases in consumption based gaps between 1980 and 2009. This result accords well with other income and consumption based measures of well-being reported in Meyer and Sullivan (2008). For families with a head 65 or older, we see an increase in the income based poverty gap of 53 percent between 1980 and 2009, while the consumption based poverty gap falls by 26 percent.<sup>30</sup> During this period the income poverty gap for single individuals rises considerably (30 percent) while the consumption poverty gap falls slightly (3 percent). It is clear from these results that consumption and income poverty provide very different information about which groups have the highest levels of deprivation and where the economy and public policies have had their greatest effects.

#### **6.E. Characteristics of the Income and Consumption Poor**

The characteristics of the poor differs sharply depending on how poverty is defined. As shown in Table 4, the consumption poor are more likely to be families with children and less likely to be elderly or single individuals. In addition, based on a number of other observable characteristics, the consumption poor appear to be worse off than the income poor, whether the sample for the income poor is from the CPS (Table 4) or the CE (Table 6). The consumption poor are less educated (Table 4), less likely to own a home, more likely to live in a mobile home

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<sup>30</sup> When noncash benefits are included in income (not reported), the rise in the gap is less pronounced for all groups, but the distinct differences from the patterns for consumption based gaps remain.

if they do own their home, less likely to own a car, and have smaller living units that are less likely to be air conditioned or include a washer and dryer (Table 6).<sup>31</sup> These results reinforce the discussion in Section 2, 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. Note that the differences we find are not due to consumption being a more restrictive definition of poverty than income, as income and consumption poverty rates are similar in the 1970s, 1980s and 1990s.

The characteristics of the income and consumption poor—in particular, race, homeownership, and family type—become more different over time. We also see some changes in the characteristics of the poor over time that are evident regardless of how poverty is defined. For example, the poor in the 2000s are more educated and more likely to be neither black nor white than the poor in earlier years. Also, the poor in the 2000s are more likely to be single individuals, a group that includes some cohabiting adults. One should note that over a third of the income poor are homeowners, underscoring the need to account for the flow of housing services in resource measures.<sup>32</sup>

## **7. Explanations for Poverty Trends and Differences between Income and Consumption**

We now turn to possible explanations for the changes over time and for the differences between changes in income and consumption poverty measures. Hoynes et al. (2006) provides a nice summary of the evidence on explanations for changes in official poverty for the non-elderly. The paper examines the role of four factors: macroeconomic conditions and the employment of women, family structure changes, government tax and transfer programs, and immigration. The authors estimate the effect of macroeconomic variables and the employment of women on

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<sup>31</sup> For the 1980-2009 period, the demographic characteristics of the income poor using the measure that includes noncash benefits (not reported) are very similar to those of the after-tax income poor reported in Table 4 with a few notable exceptions. The after-tax income plus noncash benefit poor are less likely to own a home and to live in a single parent family or a family with a head 65 or older, and they are more likely to live in a married parent family. In some cases this implies that those defined as poor using an income measure that includes noncash benefits look more like the consumption poor (i.e. homeownership), but in other cases the reverse is true (i.e. the fraction with a head 65 or older in the 1980s and 1990s).

<sup>32</sup> The differences between the characteristics of the consumption and income poor do not appear to be the result of differences between the surveys, as the demographic characteristics of the full samples (Appendix Table 1) are very similar across surveys.

poverty using region by year regressions. They then use these coefficient estimates to predict the aggregate poverty rate. They find that macroeconomic conditions and employment are predicted to decrease the official poverty rate (for the nonelderly) by only 1.0 percentage point between 1980 and 2003.<sup>33</sup> 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. If the changing employment of women is incorporated, Hoynes et al. predict that poverty will rise slightly over the period, rather than fall. Their results indicate that demographic changes, such as the falling share of married couple families, predict a substantial increase in poverty. Anti-poverty programs and immigration are found to play an unimportant role in changes over time.

While Hoynes et al. focus on explaining changes in official poverty, we examine changes for alternative income measures that allow us to consider the role of taxes and noncash benefits over time (rather than the point in time analysis in Hoynes et al.). We also examine the entire population, rather than the non-elderly. Most importantly, we analyze these issues for consumption as well as income poverty.

### **7.A. Changes in Demographics and Poverty**

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. We might expect that the decline in overall employment, the increase in single parent families and single individuals, and the changes in the population by region and race, would lead to higher poverty over time. On the other hand, we might expect the increase in education over time, particularly the decline in the share of those without a high school degree, would lead to lower poverty rates. We calculate the predicted changes in poverty over time if poverty rates within demographic groups remained fixed at the level in a base year, but only the shares of family types and other demographics changed. These results are reported in Table 5, using the five mutually exclusive

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<sup>33</sup> There is a large literature examining the relationship between macroeconomic conditions and income poverty. In general, this literature finds that poverty and the macroeconomy are correlated, but that this 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 the evidence on whether income poverty is more responsive to the business cycle than consumption poverty is mixed.

and exhaustive family types discussed in Section 6.D. We perform these calculations using the poverty rates in several alternative base years (1972, 1980 and 2009). We have divided the full time period into three parts: the early 1960s-1972, 1972-1980 and 1980-2009. We examine the effect of demographics on both consumption poverty (panel A) and income poverty (panel B).<sup>34</sup>

Table 5 indicates several patterns. Changes in family type typically predict increasing poverty regardless of which rates are used as the base, although the predicted rise is smaller using the 2009 rates. Thus, family type changes cannot explain the fall over time in income or consumption poverty. Changes in employment, race and region are predicted to have small effects on poverty rates in all periods.

Education is predicted to have a large poverty reduction effect for consumption, and a smaller poverty reduction effect for income. Between 1980 and 2009, consumption poverty falls 4.2 percentage points, while education changes predict a 2.7 percentage point fall when combined with family type and employment using the 2009 poverty rates as the base (1.8 percentage points with 1980 base poverty rates). On the other hand, income poverty falls 2.6 percentage points, but education combined with family type and employment predicts a 0.2 percentage point rise using 2009 base rates (0.5 percentage point decline with 1980 base rates). This difference reflects the fact that low education is more closely associated with consumption poverty than income poverty, reflecting the more permanent, long-term nature of consumption poverty. In general, demographic changes other than increased education explain only a small share of changes in poverty since the 1960s.

## **7.B. Changes in Tax and Transfer Policy and Poverty**

We next turn to the impact of tax and transfer policy on poverty by comparing poverty trends for pre- and post-tax measures of poverty as well as those that include and exclude transfers. In interpreting changes in poverty due to tax and transfer programs, one must keep in mind that changes in taxes and transfers may alter pre-tax and transfer incomes. A full analysis of the behavioral effects of these programs is beyond the scope of this paper. However, the mechanical effects of the tax changes on poverty indicated here are likely to understate the effects of the tax changes (principally the EITC) on employment and earnings given the evidence

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<sup>34</sup> We also examined the effect of demographics on a measure of income poverty that includes noncash benefits for the years 1980 to 2009. These results are very similar to those reported in Panel B of Table 5.

in the literature (for summaries see Hotz and Scholz 2003, Eissa and Hoynes 2006, Meyer 2008). On the other hand, transfer programs likely reduce pre-transfer earnings, suggesting that any direct poverty reducing effects of these programs would overstate the effects incorporating behavioral responses (Danziger et al. 1981, Moffitt 1992, Krueger and Meyer 2002). Ben-Shalom, Moffitt, and Scholz (2011) conclude that the overall effect of transfer programs on pre-transfer incomes is small relative to their mechanical poverty reduction effects. Given our focus on changes over time this caveat may be even less of an issue.

Tax policy has had a substantial impact on poverty rates though 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 money income to after-tax money income in Figure 1 and Table 1. Subtracting taxes 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 more than two 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, while in 1970 the standard deduction was sharply increased for those with incomes near the poverty line. In the early 1970s the personal exemption was also increased, but the increases do not quite make up for inflation over this period. As a result, after-tax income poverty declines more than pre-tax income poverty during the 1960s. While the Economic Recovery Tax Act of 1981 (ERTA) cut rates and indexed tax brackets for the vast majority of people, the standard deduction and personal exemption (that together determine the zero tax bracket amount) were not indexed until after 1984. The high inflation of this period moved more and more low-income families into the range where their income was taxable. Thus, poverty accounting for taxes increased relative to pre-tax money income poverty over this period. After 1986, the situation reverses due to the Tax Reform Act of 1986. There is a large decline in after-tax money income poverty relative to money income poverty between 1986 and 1988, the first period during which the EITC was expanded (and the personal exemption and standard deduction were increased). The effect of the EITC is even more noticeable between 1990 and 1996, when after-tax money income poverty fell by 1.3 percentage points more than the rate for money income poverty. This growing gap coincides

with the period of greatest expansion of the EITC under the 1990 and 1993 budget acts.<sup>35</sup> Between 1996, when these expansions were fully phased in, and 2008 there is little change in the difference between these two measures of poverty. Between 2008 and 2009, however, pre-tax income poverty rises noticeably more than after-tax income poverty, reflecting provisions in the American Recovery and Reinvestment Act of 2009 that expanded 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 parents are by far the most likely group to receive the EITC, followed by married parents. Bearing this out, the post-1986 difference between pre- and post-tax money income is most pronounced for single parents and to a lesser extent married parents. The changes in the two measures over time are almost the same for single individuals and families headed by someone 65 or older.

We conduct similar analyses to examine the importance of government cash and non-cash transfers for changes in income poverty. An important caveat to these analyses is that the role of transfers is likely understated due to the under-reporting of government transfers that we described in Section 4.A. In Figure 5 we report poverty rates for money income poverty and two other income based measures: one based on pre-tax money income excluding social security and disability income (OASDI) and another based on pre-tax money income excluding cash transfers other than OASDI: UI, workers compensation, veterans' payments, SSI, and AFDC/TANF.<sup>36</sup> We only report poverty rates going back 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 government cash 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, while the impact of other cash transfers is small. The importance of OASDI relative to other transfer programs is also evident at a point in time as has been emphasized by Ben-Shalom, Moffitt and Scholz (2011).

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<sup>35</sup> This difference between money income and after-tax income is partly mechanical given the implicit assumption of complete takeup in the imputation of tax credits using TAXSIM. 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).

Over the past four decades poverty based on money income including OASDI declined by 6 percentage points more than the poverty measure that excludes OASDI. The most noticeable difference in the patterns for these two measures is evident for the period from 1967 to 1977. During this period average reported OASDI benefits received by those in the bottom income quintile in the CPS grew by 39 percent in real terms.<sup>37</sup> This substantial increase was due to both a rise in initial benefits for new retirees and increased benefits for existing recipients. The increase in the former resulted from the fact that, during this period, initial benefits rose due to both wage growth and cost-of-living adjustments (COLAs). Consequently, the replacement rate for an individual retiring at age 65 with an average earnings history grew from about 30 percent in 1967 to 45 percent in 1977.<sup>38</sup> 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 DI roles as a result of eligibility reviews that the SSA was required to conduct in the early 1980s. Starting in 1979, 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 towards 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 to 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 has continued to rise over the past three decades because the CPI, which is now used to adjust benefits after retirement, overstates inflation, and because a rise in real wages has continued to lead to real increases in initial benefits.

Government cash transfers other than OASDI have a much less noticeable impact on poverty patterns—excluding these other cash transfers affects the change in poverty between 1970 and 2009 by less than a percentage point. However, these cash transfers appear to smooth income over the business cycle, with the poverty rate for the measure excluding other cash

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<sup>36</sup> The CPS reports OASI and SSDI together. Prior to 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.

<sup>37</sup> This statistic is based on analyses, which are 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 5<sup>th</sup> and 15<sup>th</sup> percentiles.

<sup>38</sup> See “Social Security History,” <http://www.ssa.gov/history/notchfile1.html>.

transfers rising more when the economy is contracting, and falling 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 0.5 percentage points more than the rate based on income including these transfers. As the economy contracted considerably between 2007 and 2009, the poverty rate based on income excluding other cash transfers rose by 1 percentage point more than money income poverty. Much of this difference can be accounted for by rising UI benefits which expanded considerably during this period as the number of unemployed grew and benefits were extended for the long term unemployed starting in 2008. For those in the bottom 20 percent of the income distribution, the fraction reporting receipt of unemployment benefits increased by 150 percent between 2007 and 2009, and the average amount of benefits received among those receiving benefits almost doubled.

The effects of non-cash 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 to after-tax money income plus non-cash transfers, as reported in Figure 1 and Table 1. For the full population, the role of non-cash transfers is not pronounced as the two series align closely. However, non-cash transfers have a large effect for single parents and a noticeable effect for aged households, but much smaller effects for the changes over time for other groups (see Table 2 and Appendix Table 6). The role of noncash benefits is odd for single parents in that accounting for them reduces the fall in income poverty, making it less similar to the consumption poverty change over the full period. However, the conventional pattern holds for single parents over the 1990s; when food stamp receipt fell, accounting for non-cash transfers makes income closer to consumption. The surprising pattern also appears for the aged; accounting for non-cash transfers reduces the fall in income poverty over time, making it less similar to the pattern for consumption.

### **7.C. Explaining Consumption Income 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 income, which is particularly relevant for these families, is significantly under-reported

in surveys and the extent of under-reporting has grown over time. Meyer, Mok and Sullivan (2009) find that nearly half of food stamp benefits and TANF dollars are not reported in the CPS in recent years. Second, reported expenditures exceed reported income at the bottom (Meyer and Sullivan 2011a). For all families, the 5<sup>th</sup> percentile of CE expenditures distribution is 44 percent higher than the 5<sup>th</sup> percentile of the CPS income distribution in recent years. For single mothers, expenditures exceed income by 50 percent when comparing the 5<sup>th</sup> percentiles of the two distributions and by 25 percent when comparing the 20<sup>th</sup> percentiles.<sup>39</sup> This evidence strongly suggests that under-reporting is especially pronounced at the very bottom 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. For this measure we saw particularly sharp differences between income and consumption based measures, with the two often moving in opposite directions.

A second explanation for differences between income and consumption is that consuming out of past saving or borrowing against future income allows some groups to spend more than their income, and 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 non-mortgage, non-vehicle debt distributions in the CE for the entire population as well as for the income poor, the consumption poor, and for different family types. We also examine various percentiles of the one year change in financial assets for these same groups.<sup>40</sup> A summary of these numbers is reported in Table 6. The 85<sup>th</sup> percentile of the financial asset distribution for the income poor is just over \$1,500 in 1972-1973 and it declines slightly over time, which suggests limited opportunities among the income poor to support consumption in excess of income.<sup>41</sup> Looking at

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<sup>39</sup> Meyer and Sullivan (2006) find that, after accounting for the under-reporting of Food Stamp and TANF dollars, changes in income and consumption distributions between 1993 and 2000 are similar for single mothers. We consider alternative ways of allocating under-reported dollars, but, without knowing explicitly who is not reporting, the evidence is inconclusive.

<sup>40</sup> There is evidence that assets are under-reported in the CE. For example, a comparison of the distribution of financial assets for the PSID and CE for 1994 and 1999 indicate that the median and 75<sup>th</sup> percentiles 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.

<sup>41</sup> To examine assets for the income poor (Table 6 and Appendix Tables 7 and 8) 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 Data Appendix. Because the CE did not impute missing values for income prior to 2004, the level of income is lower (and consequently the level of poverty is higher) than that from the CPS, 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.

the bottom of the distribution of the change in assets for the income poor (to focus on those who may be dissaving), there is some evidence of dissaving for a small fraction of the income poor in the 1960s and 1970s, but the 15th percentile is zero in more recent years, providing little evidence of overall dissaving. If dissaving were to explain why consumption poverty falls more than income poverty in the 2000s, we would expect to see sizeable declines in financial assets for the income poor during this period. But, we see little evidence to support this explanation. Similarly, the fraction of the income poor with substantial debt is small and there is no evidence of increased borrowing over time for this group. Even if, due to under-reporting, the true levels and changes in assets were two or three times the reported amounts, the role of dissaving overall would be small.

While dissaving does not seem to be the dominant explanation for differences between income and consumption poverty, for some family types a small but important part of the difference between consumption and income is likely dissaving. We report asset and debt information by family type for the income poor (Appendix Table 7) and for the income poor by consumption poverty status (Appendix Table 8). Financial assets are substantial at the 85<sup>th</sup> and 90<sup>th</sup> percentiles for income poor families with a head 65 or older. After 1990, more than ten percent of the aged income poor have financial assets over \$23,000, and more than five percent have assets over \$118,000. For those aged income poor who are not consumption poor (Appendix Table 8, panel A), which is most of the aged income poor in recent years, assets are even higher—about \$44,000 at the 85<sup>th</sup> percentile during the 1990s and about \$26,000 during the 2000s. Some dissaving is also suggested by the change in asset distribution, which shows that at least five percent of the aged income poor, but not consumption poor have drawn down their assets by more than \$3000 over the year. In contrast, after the 1980s the aged who are both income poor and consumption poor (Appendix Table 8, panel B) have assets under a couple thousand dollars at the 90<sup>th</sup> percentile, and the change in assets at the 5th percentile is zero. Married couple families, especially those without children, also have substantial assets if they are income poor, but not consumption poor.

On the other hand, for income poor single parents (Appendix Table 7), the 95<sup>th</sup> percentile of assets is below \$1400 for all time periods and the 5<sup>th</sup> percentile of the change in assets is essentially zero for the 1990s and 2000s. Even for single parent families who are income poor, but not consumption poor (Appendix Table 8, panel A), the 90<sup>th</sup> percentile of the distribution of

financial assets is only \$1,054 for the 1990s and \$652 for the 2000s, and the 5<sup>th</sup> percentile of the change in assets is fall of only a few hundred dollars after 1990. Non-mortgage, non-vehicle debt for those who are income, but not consumption poor is under \$4,000 at the 90<sup>th</sup> percentile for single parents. These patterns indicate essentially no consumption out of wealth or borrowing by some groups (single parents) and suggest dissaving for a small share in some other groups (the elderly and married couples without children).

Several studies, summarized in Hurd (1990) have found that the elderly as a whole dissaved even back in the 1970s. However, this literature does not show how the distribution of dissaving rates or amounts for the elderly has changed over time. Nor does it specifically examine the poor. There is also the possibility that the aged in recent years may be more able to consume housing wealth by borrowing against their homes. Venti and Wise (2004) find that it is uncommon for the aged to draw down housing equity to support consumption, although they find that housing equity is consumed in the case of negative shocks, such as nursing home entry or the death of a spouse. These studies do not provide evidence on whether those near the bottom of the income distribution are more likely to draw down equity than in the past.

Another possible source of the differences between income and consumption is the ownership of houses and cars that provide a flow of consumption services to their owners. If ownership rates have changed over time, they could explain some of the differences between income and consumption changes. We find substantial changes in house and car ownership for single parents and families with a head 65 or older who are income poor. Between the 1980s and the 2000s, homeownership by single parents rises by more than 3 percentage points, while car ownership rises by nearly 17 percentage points (see Appendix Table 7). Car ownership also rises for the aged poor, but homeownership rises in the 1960s and then does not change noticeably. It is unclear whether these changes are big enough to explain much of the income consumption difference.

Focusing on the difference between expenditure based poverty and consumption based poverty provides evidence on the effects of excluding consumption flows from houses and cars. In results not reported, we find that consumption and expenditure based poverty measures follow a similar pattern. Changes between 1980 and 2009 are very comparable, although expenditure poverty rises while consumption poverty falls between 1973 and 1980. Although the patterns are similar, who is poor differs noticeably depending on whether poverty is defined using

consumption or expenditures. For example, compared to the consumption poor, the expenditure poor are less likely to be from married parent families and more likely to be from families with a head 65 and older. For those with a head 65 and over expenditure poverty is about fifty percent higher than consumption poverty in a typical year, making comparing changes in the two difficult. Although the percentage point fall in expenditure poverty exceeds that for consumption poverty for this group, in percentage terms the declines are comparable. Overall, it appears that changes in the flow of services from houses and cars are not a large part of the difference between income and consumption poverty changes.

One possible explanation for why consumption poverty falls less than income poverty for couples with children is that educational spending (which is excluded from consumption) might be increasing for this group. To test this possibility, we examined poverty trends for a measure of consumption that includes educational spending. Patterns for this measure do not differ from the patterns of consumption poverty reported earlier, which is not surprising given that on average educational spending is very small relative to total consumption, even for married parents.

## **8. Robustness and Other Poverty Measures**

In this section we discuss results for other measures poverty including measures that use different equivalence scale adjustments or a different resource sharing unit, and a measure of consumption poverty that excludes housing consumption. We also examine the patterns of income and consumption poverty at other points in the distribution by looking at deep poverty (the fraction below 0.5 times the original thresholds) and near poverty (the fraction below 1.5 times the original thresholds). Finally, we present the patterns for relative poverty.

The results in Appendix Table 9 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 2009 (see Appendix Table 9).<sup>42</sup> The patterns are

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<sup>42</sup> Citro and Michael (1995) show that their recommended equivalence scale does not have a significant effect on changes in poverty between 1979 and 1992 for economies of scale parameters 0.65 and 0.75 (Table 5-11). In contrast, Triest (1998) finds that poverty rates rise faster during the 1970s and early 1980s for measures adjusted by

not sensitive to small changes in F or P, nor do they change appreciably using a common 3-parameter equivalence scale.<sup>43</sup> Income poverty rates fall slightly more when resources are measured at the household level instead of the family level (Appendix Table 9) but this difference is only 2 percentage points over the period from 1963 to 2009.

One potential driving force behind declines in consumption poverty in the past two decades is the sharp rise in housing prices, particularly since the late 1990s. To see the importance of housing we examine poverty based on non-housing 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, non-housing consumption over-weights the components of consumption that are measured poorly and have seen declining reporting in recent years—in other words, it does the opposite of core consumption. Comparing columns 5 and 6 of Appendix Table 9 we see that non-housing consumption poverty falls noticeably less than a measure that includes housing between 1998 and 2006—the period when real housing prices were rising fastest.<sup>44</sup> However, the discrepancy between total consumption and non-housing consumption appears in the late 1980s and grows steadily, implying that differences are not solely due to the sharp rise in housing prices in the early 2000s. Also, both consumption poverty and non-housing consumption poverty rise sharply in 2009, suggesting that this change is not driven by changes in declining housing prices in recent years.

Our results for deep poverty and near poverty that are reported in Appendix Table 10, reveal other important differences in the patterns for income and consumption based measures of well-being. Sharply distinct differences are evident between the income and consumption based measures of deep poverty, particularly in recent years. Between 1980 and 2009, deep poverty based on after-tax income plus noncash benefits (column 3) rises by 0.8 percentage points—an

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the NAS scale than for a modified measure of official poverty. While our analyses of different equivalent scales are consistent with results in Citro and Michael, efforts to replicate Triest have been unsuccessful.

<sup>43</sup> We find that changes in poverty between 1972 and 2005 are remarkably similar for values of F between 0.65 and 0.75, for values of P between 0.7 and 1, or using the 3-parameter scales reported in Short et al. (1999) and Betson (1996). Poverty rates increase significantly more during this period if economies of scale are considered to be large (i.e.  $F = 0.25$ ).

<sup>44</sup> To calculate non-housing consumption we subtract from total consumption spending on rent for renters, the rental equivalent of the home for homeowners, and the imputed rent for those in public or subsidized housing.

increase of 26 percent.<sup>45</sup> By contrast, the consumption based deep poverty rate in column 7 falls by 1 percentage point during this period—a drop of 58 percent. At 150 percent of our original thresholds (columns 8 through 14) changes for consumption based measures of poverty are more similar to those that are based on after-tax income plus noncash benefits.<sup>46</sup>

The emphasis of this paper is on absolute poverty measures 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 thresholds as a given percentage of median income or consumption. Following the most common international standard, we examine the share of the population living in families with resources below half of the median value (Smeeding 2006).<sup>47</sup> Appendix Figure 1 presents relative poverty trends for several income and consumption measures. In general, the level of consumption relative poverty is much lower than that of income relative poverty due to the lower dispersion of consumption. Unlike absolute poverty, which falls noticeably during the 1960s, relative poverty remains flat for both income and consumption based measures. Relative poverty also changes very little in the 1970s. Since then the trends are not pronounced: money income poverty has moved upward slightly, while after-tax income poverty has trended downward slightly. Consumption relative poverty has also trended downward slightly since the mid 1980s, though the measure including health insurance has been rising slowly since 2000.<sup>48</sup>

The small movements in overall income and consumption relative poverty over the last three decades hide some striking changes within family types and differences between income and consumption. In Appendix Table 11 we report relative poverty for our five family types.

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<sup>45</sup> Unlike the results reported in Table 1, incorporating taxes in an income based poverty measure (not reported) does not have a noticeable effect on changes in deep poverty. This is not surprising given that for those with income near 50 percent of the poverty line tax liabilities and credits are typically small.

<sup>46</sup> Due to the less dispersed distribution for 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.

<sup>47</sup> An important limitation with such a measure is that the standard for overcoming poverty changes, making understanding what it captures much more difficult. This 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.

<sup>48</sup> While the fall in consumption reporting may be less important at the bottom, the poorly reported items are a higher 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. The pattern for core consumption relative poverty (not reported) mirrors the patterns for consumption relative poverty reported in Appendix Figure 1.

Between 1972 and 2009 relative poverty declined sharply for those living in single parent families or with a head 65 or older, but remained flat or even rose slightly for those in married parent families. Between 1980 and 2009, for those in single parent families, consumption relative poverty falls by nearly twice as much as income relative poverty in percentage terms. For single childless individuals, income relative poverty rises significantly between 1980 and 2009 while consumption relative poverty falls slightly. For those in families with a head 65 and over, income relative poverty falls noticeably more than consumption relative poverty in the 1970s, but the reverse is true between 1980 and 2009.

## **9. Conclusions**

Consumption provides a measure of household well-being that is theoretically preferred to income given the expected and unexpected variation in income that households face and an ability to borrow and save. Moreover, the evidence suggests consumption is better reported than income for families with few resources. Thus, there are reasons to think poverty measured using consumption may give us a different picture of who is poor and how poverty changes over time. In this paper we have examined how our understanding of how and why poverty has changed over the past five decades differs when we use more theoretically based concepts that are better measured.

Consumption based poverty measures and improved income measures—ones that account for taxes and noncash benefits and reflect consensus estimates of bias in price indices—provide a different set of facts to explain. Official poverty statistics suggest that poverty has increased over the past forty years. This claim is inconsistent with our results which show substantial improvements in income based poverty over the past forty years and even larger improvements in consumption based poverty, especially in the last decade. These poverty results are corroborated by other indicators of well-being for those with low income such as increases in car ownership and evidence of improved living conditions including larger living units that are more likely to have air conditioning and other features. While many scholars and pundits recognize the deficiencies in the official poverty measure, most poverty scholars still rely on the official measure as the definitive measure of trends in poverty and draw important conclusions based upon it.

Our results for consumption and improved income based measures of poverty have different policy implications and they sharply alter what needs to be explained by researchers. Who has benefitted from economic growth or redistributive policies and who would benefit from additional targeted policies depends critically on whether one examines consumption or income. Since 1980, married parent families with children have fared less well while the aged have done better than income data indicate. The results suggest that we should focus more on families with children in future anti-poverty efforts. We also show that the composition of the consumption poor is very different from that of the income poor—the former are less educated, less likely to own a home, much more likely to live in married parent families, and much less likely to be a single individual or elderly.

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 headcount measures of poverty show sharp improvement in recent decades. Going beyond traditional headcount poverty measures, deep poverty and poverty gaps show even greater improvement, implying that considerable progress has been made at reducing severe deprivation. There have been noticeable improvements in the last decade, though they are not as big as the improvements in some prior decades, (but comparable or better than the progress in the 1980s). We may not have won the war on poverty, but we are certainly winning. There are several explanations for these improvements in poverty. Income poverty has been sharply reduced through tax rate cuts and credits. The difference between changes in pre-and post-tax poverty are particularly noticeable in the 1960s, 1980s, and 1990s. On the spending side, increases in social security have played a big role in reducing poverty, but other transfers have played only a small role. The use of a biased price index in official poverty statistics leads to a sharply understated view of progress in reducing poverty. While we find that rising educational attainment accounts for some of the decline in poverty over the past five decades, in general, changing demographics account for only a small fraction of the overall improvement in well-being for the poor. Saving and dissaving by households is not the main reason income and consumption differ near the poverty line. A great deal of evidence suggests that under-reporting of income is a likely source of differences, but this explanation merits further examination to fully determine its importance.

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## Data Appendix

### A. CE and CPS ASEC/ADF Samples

Income data primarily come from the ASEC/ADF Supplement to the Current Population Survey (CPS), which is the source for official measures of poverty in the U.S. We use data from the 1964-2010 surveys which provide data on income for the previous calendar year. Our samples exclude individuals under the age of 15 who are not related to any other member in the household, because these “secondary individuals” are not included in the official poverty count.

All expenditure and consumption data come from the Interview component of the Consumer Expenditure (CE) Survey. We use data from the 1960-1961 and 1972-1973 surveys and all quarterly waves from the first quarter of 1980 through the third quarter of 1981 and from 1984 through 2009 (some of the fourth quarter of 2009 data comes from surveys conducted in the first quarter of 2010). The 1960-1961 surveys provide data on annual expenditures collected in a single interview, while the 1972-1973 surveys provide data on annualized expenditures collected from quarterly interviews. Since 1980, quarterly data are available that include expenditures for the 3 months prior to the interview month. To obtain annual measures we multiply these quarterly measures by four. We do not use the data from the fourth quarter of 1981 through the fourth quarter of 1983 because the surveys for these quarters only include respondents from urban areas.<sup>49</sup> We report a single poverty rate for the 1960-1961 period because the data are only representative of the full population when the samples from these two years are combined. CE data include 13,728 observations from 1960-1961, 19,975 from 1972-1973, and 680,859 from 1980-2009. For this latter period we drop 116 observations due to missing member file information, 218 observations due to missing information on the rental equivalent value of owned homes, and 1,607 observations due to missing information on public or private health insurance enrollment, yielding a final sample of 678,918 for the years from 1980-2009. For analyses using income from the CE (Table 6 and Appendix Tables 7, and 8) we restrict the sample to those designated as complete income respondents, and exclude families whose head or spouse responds “don’t know” to questions on wage and salary income or refuses to respond to these questions. This yields a sample of 13,728 observations from 1960-1961, 18,903 from 1972-1973, and 533,701 from 1980-2009.

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<sup>49</sup> By excluding observations from the fourth quarter of 1981, and the first quarter of 1982 if the reference period falls in 1981, our poverty statistics for 1981 will be biased due to seasonal spending patterns. To determine the extent of this bias, we calculate an alternative poverty rate for 1981 that uses the urban families from the fourth quarter of 1981. This sample while non-representative captures the bulk of the population since in the first three quarters of 1981 about 88 percent of the sample was designated as “urban”. We calculate this alternative poverty rate as the weighted average of the poverty rates of the fully representative sample from the first three quarters of 1981 and the non-representative sample from the fourth quarter. The poverty rate for the non-representative sample is scaled up by the ratio of overall poverty to urban poverty in the first three quarters of 1981, and the weight for the non-representative sample is scaled up by the ratio of the sum of the weights for the full sample to the sum for the urban sample in the first three quarters of 1981. Note that this approach assumes that the poverty rate of urban families relative to rural families does not change between the first three quarters and the final quarter of 1981. Using this approach, the poverty rate for 1981 is 12.90 percent, which is 0.09 percentage points below the rate calculated by simply excluding observations from the fourth quarter of 1981, suggesting a small downward bias in the poverty rate we report for 1981. Based on this result, we suspect that the bias in other poverty measures for this year is small.

## **B. Measures of Consumption from the CE**

**Expenditures:** This summary measure includes all expenditures reported in the CE Interview Survey except miscellaneous expenditures and cash contributions because some of these expenditures are not collected in all interviews. Since 1980 a subset of miscellaneous expenditures has been collected only in the fifth interview, and cash contributions are only collected in the fifth interview for surveys conducted from the first quarter of 1980 through the first quarter of 2001.

**Consumption:** Consumption includes all spending in our measure of total expenditures less spending on out of pocket health care expenses, education, and payments to retirement accounts, pension plans, and social security. In addition, housing and vehicle expenditures are converted to service flows. For homeowners we subtract spending on mortgage interest, property taxes, maintenance, repairs, insurance, and other expenses, and add the reported rental equivalent of the home. For years when the rental equivalent is not reported, (1960-1961 and 1980-1981 surveys), we impute a rental equivalent using the reported market value of the home. One approach would be to impute a rental equivalent using home values for all years. This approach has the advantage of using a comparable method over time (Cutler and Katz 1991). Because we are particularly interested in the period since 1984 when a rental equivalent is always available and we expect that these reported values will be better than our imputations, we only impute for the two missing surveys rather than all years. For those in public or subsidized housing, we impute a rental value using the procedure outlined in part E of this appendix. For vehicle owners we subtract spending on recent purchases of new and used vehicles as well vehicle finance charges. We then added the service flow value of all vehicles owned by the family, as described in part D of this appendix. Consumption data are available at [www.nd.edu/~jsulliv4/data.html](http://www.nd.edu/~jsulliv4/data.html).

### **Comparability over Time:**

We make two minor adjustments to the measure of total expenditures provided in the CE to maintain a comparable definition of expenditures across our sample period. First, we add in insurance payments and retirement contributions for the 1960-1961 and 1972-1973 surveys because these categories were not treated as expenditures in these years. This adjustment does not affect consumption measures because these categories are excluded from consumption. Second, the wording for the question regarding spending on food at home in surveys conducted between 1982 and 1987 differed from other years. Several studies have noted that this wording change resulted in a decrease in reported spending on food at home (Battistin 2003; Browning et al. 2003). To correct for the effect of this change in the questionnaire, for the years 1984-1987 we multiply spending on food at home by an adjustment factor which is equal to the ratio of average spending on food at home from 1988 through 1990 to average spending on food at home from 1984 through 1987. These adjustment factors, which we estimate separately for different family types, range from 1.12 to 1.30. Starting with the second quarter of 2007, the question on food away from home changed from a query about usual monthly spending to usual weekly spending. This change resulted in a noticeable increase in reported food away spending. We estimate the effect of the question change by regressing food away spending on a new question indicator, controlling for interview month and reference month (respondents report spending for the previous three months) for survey years 2005 through 2007. Based on these estimates we

adjust spending on food away down by 55 percent for the most recent years. Food away averaged about 3 percent of total consumption for those near the poverty line for these years.

Additional adjustments are necessary to maintain a consistent definition of consumption across our sample period. Because a rental equivalent is not reported in the 1960-1961 and 1980-1981 surveys, we impute a rental equivalent for these years. Using data from the 1984 survey, we regress log reported rental equivalent on the log market value of the home, log total non-housing expenditures, family size, and the sex and marital status of the family head. Estimates from these regressions are used to impute a value of the rental equivalent for respondents in the 1980-1981 surveys. A similar approach is used to impute a rental equivalent value for the 1960-1961 surveys using data from the 1972-1973 surveys. In addition, the reported rental equivalent is top coded, and the threshold value of this top code changes over time. In each year, we top code the reported rental equivalent at the real value of the most restrictive of these top code thresholds (\$1000 per month in 1988). Also, we do not observe whether a consumer unit resides in public or subsidized housing prior to 1982, so a rental equivalent value for those in such housing is not included in consumption prior to 1982. Estimates of the rental equivalent for those in public or subsidized housing in the mid 1980s are small relative to total consumption, suggesting that this exclusion is not likely to significantly bias our estimates for changes in poverty. Finally, the availability of information on vehicles also changes during our sample period. See Section D below for more details.

**Consumption Under-reporting:** Past research (Gieseman 1987, Slesnick 1992, Garner et al. 2006, Attanasio et al. 2006) has emphasized a discrepancy between CE aggregates and Personal Consumption Expenditure (PCE) data from the National Income and Product Accounts (NIPA). Some of this research has sharply overstated the discrepancy by comparing noncomparable categories of CE and NIPA consumption and ignoring definitional differences. For example, many published comparisons are based on the integrated data that combine CE Diary and CE Interview data rather than the CE Interview data used exclusively here. For some important categories, the CE Diary Survey appears to have greater downward bias. Between 1998 and 2003, average spending on food at home in the CE Interview Survey exceeded the average from the CE Diary Survey by more than 20 percent (BLS 2005).<sup>50</sup>

Second, unlike comparisons of income components to administrative aggregates, there are important conceptual incompatibilities between expenditure data from the CE and PCE aggregates. PCE coverage is wider, including purchases by nonprofits, purchases by those abroad, on military bases and in institutions, free financial services, and employer-paid insurance—all categories not included in CE expenditures. In recent years, medical care is over

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<sup>50</sup> There is some disagreement over why food at home spending from recall surveys exceeds that from diary surveys. Recall data on food at home may be over-reported if respondents include in this category non-food items purchased at a grocery store (Battistin 2003). However, evidence from Dubreuil et al. (2011) suggests that food at home from recall surveys is reported more accurately. This evidence is based on two versions of the Canadian Survey of Household Spending in 2009 that were conducted in parallel—one was a 12-month recall interview survey, while the other was a two-week diary. The interview spending on average exceeds the diary spending for comparable categories by 9 percent for frequent expenses and by 14 percent for less frequent expenses. The authors suggest that one possible explanation for the difference is that insufficient motivation may lead diary respondents to omit many items to reduce the burden of the process.

20 percent of the PCE, but much of this is not the out of pocket spending captured by the CE. The Bureau of Economic Analysis reported that in 1992 more than half of the difference between PCE and CE consumer spending was due to coverage and definitional differences (summarized in GAO 1996). Third, the PCE numbers are the product of a great deal of estimation and imputation that is subject to error.<sup>51</sup>

Reporting ownership of houses and vehicles is very different from reporting the small, discretionary purchases that seem to be badly reported in the CE. Estimates of homeownership rates in the CE match up very closely with those from the CPS (see Appendix Table 1). For automobiles, we have compared reported cars and truck ownership to administrative data on motor vehicle registrations. Ratios of cars and trucks in the CE to those in the administrative records are about 90 percent despite the fact that vehicle registrations include commercially owned cars that are not captured in the survey data. These ratios have not fallen noticeably over time. We have also examined the validity of estimates of the value of the flow from these durables conditional on ownership. We know from past work that respondents seem to report house values fairly accurately in household surveys (Kiel and Zabel 1999; Bucks and Pence 2006). We have compared the reported rental equivalent of homes to the reported house values. The rental equivalent and home value are highly correlated, at around 0.6 in a typical year. The ratio of the rental equivalent to home value has been fairly stable, though it declined appreciably in the mid 2000s, as one might expect during a period of rising home prices. We have also verified that the purchase price of vehicles in the CE is reported fairly well. We find a high correlation between the reported purchase prices of cars and blue book prices (see the Data Appendix, Section D.3). Furthermore, Garner et al. (2006) note that there has not been deterioration in the reporting of new car purchases. Thus, these flows seem less likely to be under-reported or exhibit increased under-reporting over time than other spending components in the CE.

### C. Measures of Income in the CPS ASEC/ADF

ASEC/ADF respondents report annual measures of money income for the previous calendar year. Respondents also report the dollar value of food stamps received by the household, as well as whether household members received other noncash benefits including housing subsidies and subsidies for reduced or free school lunch. Starting with the 1980 survey, the Census also provides imputed values for these and other noncash benefits. For more details see U.S. Census (various years-a,b), Appendices B and C.

**Money Income:** The Census definition of money income that is used to measure poverty. As reported in the ASEC codebook, this measure includes: earnings; net income from self employment; Social Security, pension, and retirement income; public transfer income including Supplemental Security Income, welfare payments, veterans' payment or unemployment and

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<sup>51</sup> The PCE estimates come from business records reported on the economic censuses and other Census Bureau Surveys. These business surveys are subject to a number of sources of error and are adjusted using input-output tables to add imports and subtract sales that do not go to domestic households. These totals are then balanced to control totals for incomes earned, retail sales, and other benchmark data. One indicator of the potential error in the PCE is the revisions that are made from time to time (Slesnick 1992).

workmen's compensation; interest and investment income; rental income; and alimony or child support, regular contributions from persons outside the household, and other periodic income.

**After-Tax Money Income:** adds to money income the value of tax credits such as the EITC, and subtracts state and federal income taxes and payroll taxes. Federal income tax liabilities and credits and FICA taxes are calculated for all years using TAXSIM (Feenberg and Coutts 1993). State taxes and credits are also calculated using TAXSIM for the years 1977-2005. Prior to 1977 we calculate state taxes using IncTaxCalc (Bakija, 2008). We confirm that in 1977 net state tax liabilities generated using IncTaxCalc match very closely those generated using TAXSIM.

**After-tax Money Income Plus Noncash Benefits:** this adds to After-Tax Money Income the cash value of food stamps, and imputed values for housing subsidies, school lunch programs, Medicaid and Medicare, employer health benefits, and the net return on housing equity.

**Face Value of Food Stamps:** The value of food stamps for each family is determined by the Census using reported information on the number of persons receiving food stamps in the household and the reported total value of food stamps received.

**Income Value of School Lunch Program:** The Census imputes a value for lunch subsidies for families that report having children who receive free or reduced price school lunch. The value is determined using information on the dollar amount of subsidy per meal as reported by the USDA. If a child participates in school lunch, it is assumed that the child receives that subsidy type (reduced price or free) for the entire year.

**Fungible Values of Medicaid and Medicare:** The Census imputes a “fungible” value of Medicaid or Medicare for families that include an individual who is reported to be covered by Medicaid or Medicare. Fungible means that “Medicare and Medicaid benefits are counted as income to the extent that they free up resources that could have been spent on medical care” (U.S. Census various years-b). Thus, these programs have no income value if the family does not have resources (the sum of money income, food stamps, and housing subsidies) that exceed basic needs, which surely understates the value of public health insurance for this group.<sup>52</sup> If these resources do exceed basic needs, then the fungible value of medical benefits is equal to the smaller of: a) the market value of these benefits and b) the value of resources less basic needs. The market value of Medicaid is equal to mean government outlays for families in a given state and risk class. The four risk classes are: 65 and over, blind and disabled, 21-64 nondisabled, and less than 21 nondisabled. The market value of Medicare is equal to mean government outlays for families in a given state and risk class. The two risk classes are: 65 and over and blind and disabled.

**Housing Subsidies:** The Census imputes a value of housing subsidies for households that report living in public housing or receiving a public rent subsidy. The value of the subsidy is calculated as follows. Using data from the 1985 American Housing Survey (AHS), reported rent for unsubsidized two-bedroom housing units is regressed on housing characteristics. Separate

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<sup>52</sup> See Citro and Michael (1995), p. 223-237 for a discussion of the inclusion of health insurance and health expenditures in a measure of poverty.

regressions are estimated for each of four regions, and the coefficients from these models are used to predict rent for those living in subsidized units in the AHS. The subsidy for those in subsidized housing in the AHS sample is then calculated as the difference between out of pocket rent and imputed total rent. Region-specific adjustment factors for smaller and larger units are estimated using data on rent for units with different numbers of bedrooms in the 1985 AHS. Thirty-six different subsidy values are calculated which vary by four regions, three income brackets, and three different unit sizes. Because unit size is not observed in the ASEC/ADF, this is imputed from family composition. Subsidy values for each year are based on estimates using the 1985 data, but are updated to reflect changes in shelter costs using the CPI residential rent index. Before 1985 housing subsidies in the ASEC/ADF were imputed using the 1979 or 1981 Annual Housing Survey.

**Employer Contributions to Health Insurance:** The Census imputes a value of health insurance for persons who were covered by an employer health insurance plan. Using data from the 1977 National Medical Care Expenditures Survey, the value of the employer contribution was imputed as a function of observable characteristics including earnings, full-time/part-time, industry, occupation, sector, public/private, residence, and personal characteristics of the worker such as age, race, marital status, and education, and information on whether the employer paid all, part, or none of the cost of health insurance as reported in the supplement.

**Net Return on Home Equity (annuitized value):** Using data from the 1985 or 1989 AHS, a value of home equity is imputed for each ASEC/ADF household by statistically matching the two surveys on observable characteristics including geographic location, income, household size, number of living quarters, and the age, race, sex, and education of the household head. The equity value of the home and property taxes for homeowners in the ASEC/ADF are determined by using these values from a household with similar characteristics in the AHS. This equity is converted to an annuity using a rate of return based on high grade municipal bonds from the Standard & Poor's series. The value of home equity is net of imputed property taxes. Poverty rates based on an income measure that includes this net return on home equity are highly sensitive to changes in the municipal bond rate. When the bond rate rises, poverty will fall even if disposable income or consumption does not change.

#### **D. Estimating Vehicle Service Flows**

Our measure of consumption replaces the purchase price of vehicles and vehicle maintenance costs with the service flow value from owned vehicles. We improve upon previous studies in how we calculate a flow that reflects the value that a consumer receives from owning a car during the period. Previous studies have imputed flows based only on recent spending on vehicles and descriptive characteristics of the family (Cutler and Katz 1991), recent spending on vehicles, vehicle age, and descriptive characteristics of the family (Meyer and Sullivan 2003, 2004), or reported purchase prices and vehicle age (Slesnick 1993). Our approach provides two important improvements upon previous work. First, in addition to vehicle age, our approach uses detailed information for each vehicle (such as make, model, year, automatic transmission, and other characteristics) to determine the market price. Second, we estimate depreciation rates by comparing the reported purchase prices for similar vehicles of different ages. We use the detailed expenditure data for owned vehicles from the 1980-2009 CE. A detailed explanation of

the procedure used to estimate these service flows along with the data are available at [www.nd.edu/~jsulliv4/data.html](http://www.nd.edu/~jsulliv4/data.html).

## D.1 Calculating the Market Price of a Vehicle

We determine a current market price for each of the 1.3 million vehicles in the data from 1980-2009 in one of three ways. First, for vehicles that were purchased within twelve months of the interview and that have a reported purchase price (the estimation sample), we take the current market price to be the reported purchase price. This estimation sample accounts for about 14 percent of all vehicles in the 1980-2009 surveys. Second, for vehicles that were purchased more than twelve months prior to the interview and that have a reported purchase price (about 15 percent of all vehicles), we specify the current market price as a function of the reported purchase price and an estimated depreciation rate as explained below.

Finally, for the remaining 71 percent of vehicles, we impute a current market price because the purchase price is not reported. Using the estimation sample, we regress the log real purchase price on a cubic in vehicle age, vehicle characteristics, family characteristics, and make-model-year fixed effects.<sup>53</sup> The vehicle characteristics include indicators for whether the vehicle has automatic transmission, power brakes, power steering, air conditioning, a diesel engine, a sunroof, four-wheel drive, or is turbo charged. Family characteristics include log real expenditures (excluding vehicles and health), family size, region, and the age and education of the family head. Coefficient estimates from this regression are then used to calculate a predicted log real purchase price for the  $i^{\text{th}}$  vehicle ( $x_i \hat{\beta}$ ). The predicted current market value for each vehicle without a reported purchase price is then equal to  $\hat{\alpha} * \exp(x_i \hat{\beta})$ , where  $\hat{\alpha}$  is the coefficient on  $\exp(x_i \hat{\beta})$  in a regression of  $y_i$  on  $\exp(x_i \hat{\beta})$  without a constant term.<sup>54</sup>

## D.2 Estimating a Depreciation Rate and Service Flows

To estimate a depreciation rate for vehicles, we compare prices across vehicles of different age, but with the same make, model, and year. In particular, from the estimation sample we construct a subsample of vehicles that are in a make-model-year cell with at least two vehicles that are not the same age. Using this sample, we regress the log real purchase price of the vehicle on vehicle age and make-model-year fixed effects.<sup>55</sup> From the coefficient on vehicle

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<sup>53</sup> 75 percent of the vehicles without a reported purchase price can be matched to at least one vehicle in the estimation sample with the same make, model, and year. About three-fourths of the remaining 25 percent do not have a match because they are not a car, truck, or van so make and model are not observed. Starting in 2006, vehicles can be matched on make, but not model, because the CE stopped providing information on vehicle model after 2005. For those vehicles without a reported purchase price that do not have the same make, model, and year as at least one vehicle in the estimation sample, but do have the same make and year as a vehicle in the estimation sample, a separate regression is estimated that includes make-year fixed effects instead of make-model-year fixed effects.

<sup>54</sup> This adjustment is made because  $\exp(x_i \hat{\beta})$  will tend to underestimate  $y_i$ .

<sup>55</sup> The distribution of service flows does not differ noticeably when alternative specifications for depreciation are estimated. For example, specifications that allow the depreciation rate to vary by age of the vehicle (by including a cubic in vehicle age in the regression) yield similar results.

age ( $\beta$ ), we calculate the depreciation rate ( $\delta$ ):  $\delta = 1 - EXP(\beta)$ . The service flow is then the product of this depreciation rate and the current market price. If the vehicle has a reported purchase price but was not purchased within 12 months of the interview we calculate the service flow as: (real reported purchase price)\* $\delta(1 - \delta)^t$ , where t is the number of years since the car was purchased.

Although the 1972-1973 CE data files include an inventory of vehicles owned, we do not use these data to calculate service flows from vehicles for several reasons. First, we do not observe the year the car was manufactured, only whether it was manufactured before or after 1967. Second, we do not observe the model for vehicles manufactured during or before 1967, and for those manufactured after 1967 we only observe a broadly defined model group: subcompact domestic, compact domestic, etc. Thus, rather than using the vehicle inventory data, we impute service flows for owned automobiles using data on reported spending on new and used automobile purchases during the survey year and the reported number of automobiles owned during the year. Specifically, for a sample with positive spending on automobiles, we regress annual spending for new and used automobiles on a quadratic in total (non-automobile) spending and observable characteristics of the family including family income, family size, and the age, sex, and education of the family head. Parameter estimates from these regressions are used to predict spending on new and used car purchases for all families that own automobiles. We calculate the service flow from automobiles as the product of predicted automobile spending, the number of owned automobiles and a depreciation rate. This approach will understate total automobile flows for some families because the number of automobiles is topcoded at 2. This approach will overstate vehicle flows for families that dispose of an automobile during the survey year if this automobile is included in the total count of automobiles owned. This approach will also overstate vehicle flows for families that have owned their vehicles for an extended time, because we are predicting the value based on recent automobile purchases. Note that unlike our approach for 1980-2009, we calculate service flows only for automobiles, not for other vehicles such as trucks, motorcycles, campers, etc., because we do not have reliable information on the total number of each of these types of vehicles owned.

### **D.3 Validation**

We validate our procedure for predicting the current market value of vehicles for those observations where we do not have a purchase price by comparing the predicted values to published values in National Automobile Dealers Association (NADA) guides. For a given year of the CE we take a random sample of 100 vehicles for which a purchase price was not observed. We then find the average retail price of the vehicle reported in the NADA Official Used Car Guide, using observable vehicle characteristics including make, model, year, number of cylinders, and number of doors. In cases where a unique match is not found in the NADA guide (for example, there might be multiple sub-models listed in the NADA guide), we use the midpoint of the range of prices for the vehicles that match the description of the vehicle from the CE. For the sample of vehicles randomly drawn from the 2000 CE, the correlation between our imputed price and the 2000 NADA price was 0.88. Similarly, for a sample of 100 cars with a reported purchase price, the correlation between the reported price and the NADA price was 0.91.

### **E. Estimating a Rental Equivalent for Families Living in Government or Subsidized Housing**

We impute a rental equivalent for families in the CE living in government or subsidized housing using reported information on their living unit including the number of rooms, bedrooms and bathrooms, and the presence of appliances such as a microwave, disposal, refrigerator, washer, and dryer. Specifically, for renters who are not in public or subsidized housing we estimate quantile regressions for log rent using the CE housing characteristics mentioned above as well as a number of geographic identifiers including state, region, urbanicity, and SMSA status, as well as interactions of a nonlinear time trend with appliances (to account for changes over time in their price and quality). We then use the estimated coefficients to predict the 40th percentile of rent for the sample of families that do not report full rent because they reside in public or subsidized housing. We use the 40th percentile because public housing tends to be of lower quality than private housing in dimensions we do not directly observe. Evidence from the PSID indicates that the average reported rental equivalent of public or subsidized housing is just under the predicted 40th percentile for these units using parameters estimated from those outside public or subsidized housing.

### **F. Estimating the Value of Health Insurance**

We impute a measure of the value of public and private health insurance using the coverage information in the CE and data on insurance costs. The worker and firm cost of employer provided insurance is obtained from a combination of sources including the National Medical Care Expenditure Survey and the Mercer/Foster Higgins National Survey of Employer Sponsored Health Plans. From these surveys we calculate a cost of employer provided health insurance that varies by year and nine geographic regions. The cost of Medicaid and Medicare is taken from expenditures per person in a given state and year. For Medicaid we calculate these expenditures separately for children, adults under 65, and adults 65 and over. A detailed explanation of the procedure used to estimate the value of health insurance along with the data are available at [www.nd.edu/~jsulliv4/data.html](http://www.nd.edu/~jsulliv4/data.html).

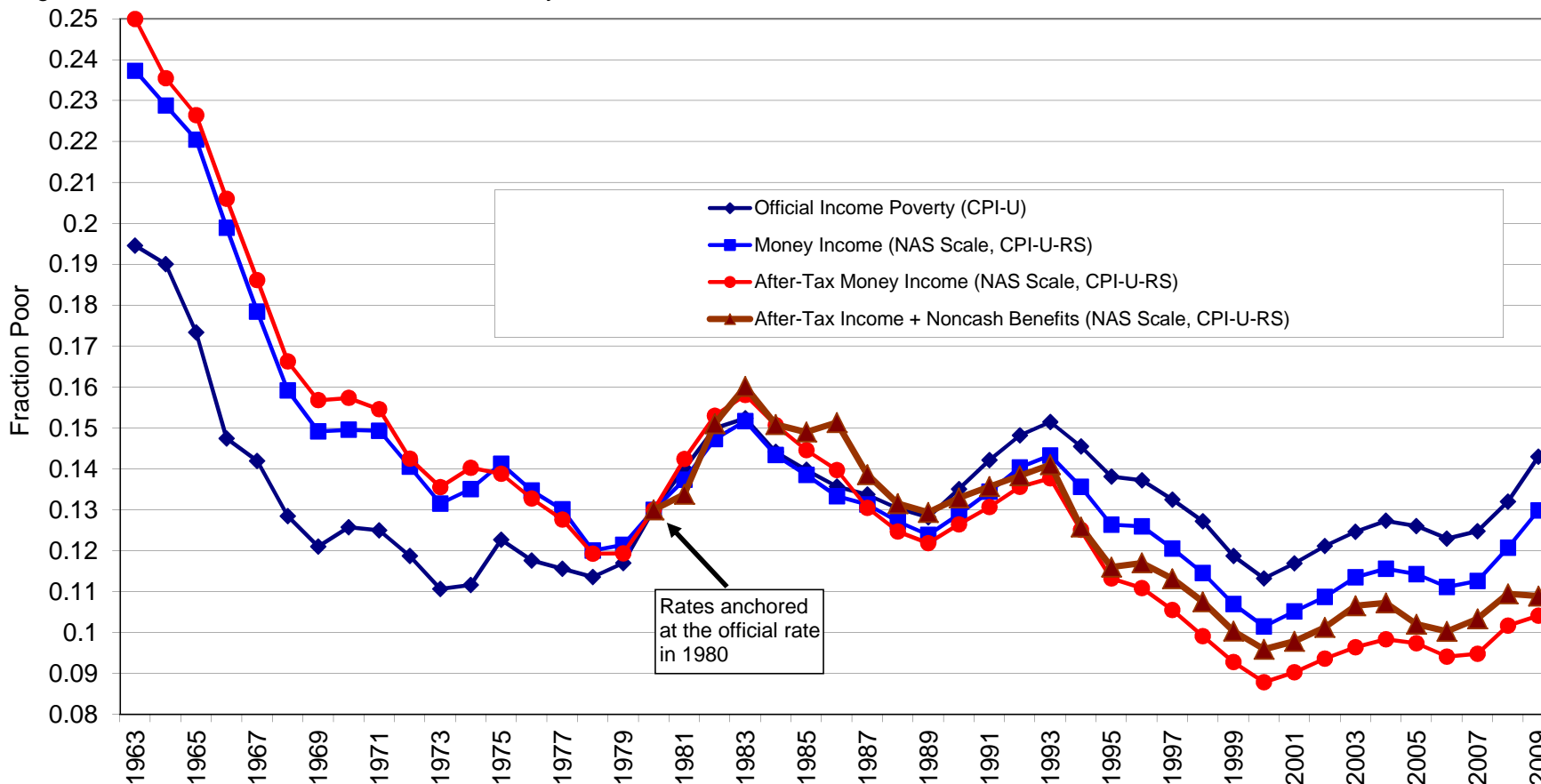
The value a family places on health coverage may exceed its cost because of its insurance value. On the other hand, this in-kind transfer may be valued at much less than cost given the one size fits all nature of insurance and the lower value of purchases of most goods by the poor. The compromise that we consider here is to count desired health expenditures. Assuming that desired health expenditures by those with few resources can be characterized by Cobb-Douglas preferences with a coefficient of 0.33 on health and 0.67 on other goods, only health expenditures up to one-third of total expenditures are included. This compromise values health coverage at cost for those with substantial resources as they likely spend less than one-third of consumption on health, but at much less than cost for those with few other resources. Because information on health insurance coverage is not available in 1960-1961, 1972-1973 and from 1984 to 1987, we do not report consumption measures that include health insurance for these years.

## **G. Inflation Differences by Income**

Here we summarize the evidence on whether the price adjustment for the poor should use the same market basket as overall official price indices. McGranahan and Paulson (2005) have compared a CPI-U based index using a market basket of the poor to the official index and found little difference. However, one could go one step further and ask if the bias calculations in the literature should be directly applied to the poor given that the market basket for the poor is different from that of the overall population—food at home, rent, and utilities have particularly large shares for the poor. The research on CPI bias for specific commodities provides mixed evidence on how the CPI bias for the poor might compare to the overall bias. Food at home is the main source of outlet bias that is estimated to be quite substantial in Hausman and Leibtag (2005). On the other hand, the largest single component of expenditures by the poor, rent, has been found to have bias in the opposite direction—true prices have gone up faster than suggested by the CPI through the mid-1980s (Gordon and vanGoethem 2005). However, because of BLS changes in the mid-1980s, there is negligible bias in the shelter CPI for the second half of our period. Furthermore, given that the rental weight in the CPI is only slightly lower than its share in the consumption of the poor (because the cost of homeownership is calculated using a rental equivalent), but the food at home weight is much lower, the bias in an index reweighted for the poor is unlikely to be appreciably smaller than that in the CPI-U.

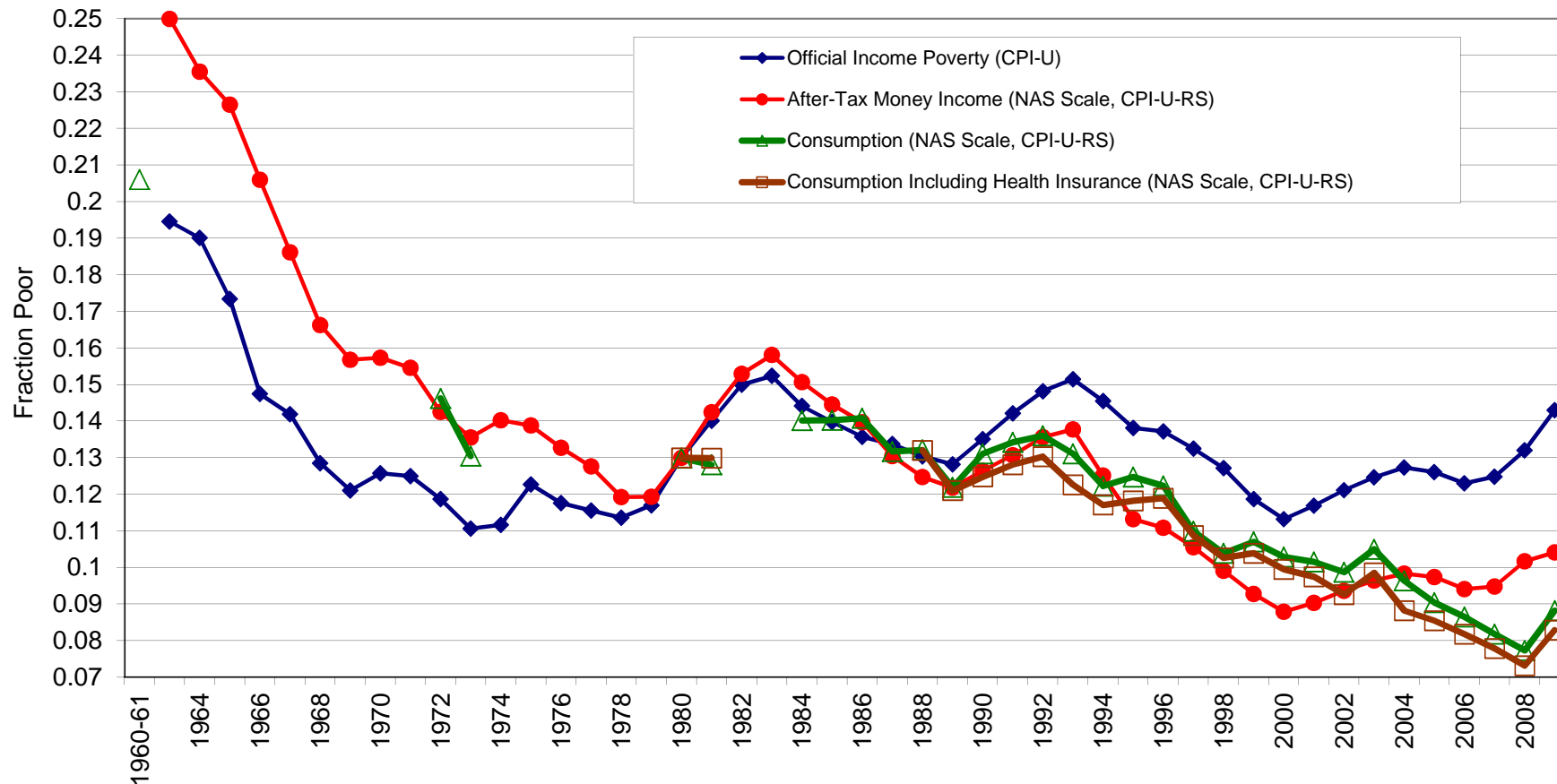
Broda and Romalis (2008) find that inflation for the lowest ten percent of households was 6 percentage points lower than inflation for the highest ten percent. Applied to poverty measures, this would lead to a greater decline in poverty over time. However, what is relevant for poverty measures is the difference between the poor and the average household rather than the difference between the bottom and top deciles reported by Broda and Romalis. The former differences appear to be much smaller. We have chosen not to adjust for their findings because the results only apply to a small part of our time period, are for a small fraction of consumption, and they depend on how price changes are measured.

Figure 1: Official and Alternative Income Poverty Rates, 1963-2009



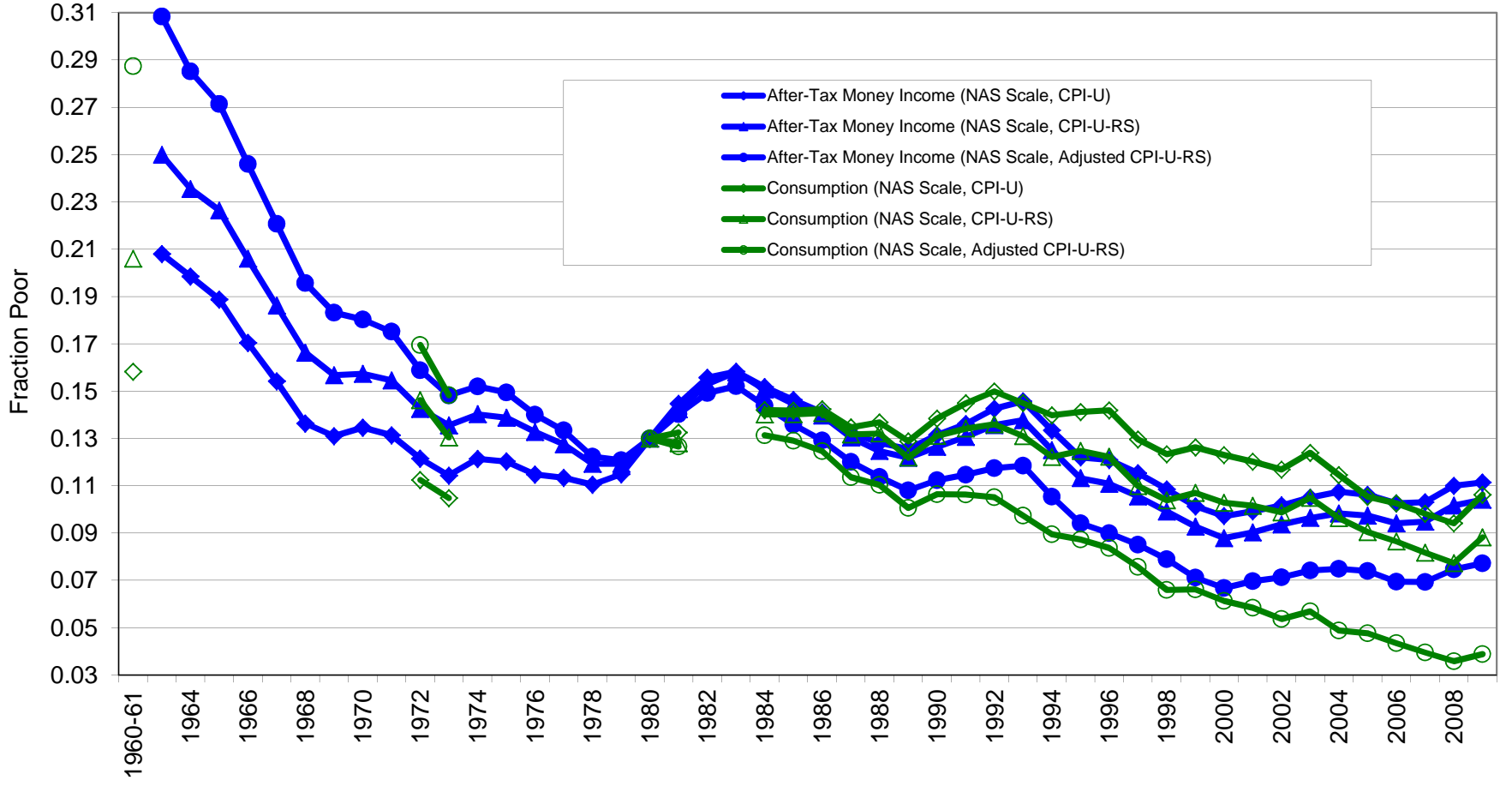
Notes: Data are from the CPS-ASEC/ADF. Official Income Poverty follows the U.S. Census definition of income poverty using official thresholds. For measures other than the official one, the threshold in 1980 is equal to the value that yields a poverty rate equal to the official poverty rate in 1980 (13.0 percent). The thresholds in 1980 are then adjusted overtime using the CPI-U-RS. Poverty status is determined at the family level and then person weighted. After-Tax Money Income includes taxes and credits (calculated using TAXSIM). After-Tax Money Income + Noncash Benefits also includes food stamps and CPS-imputed measures of housing and school lunch subsidies, the fungible value of Medicaid and Medicare, employer health benefits, and the net return on housing equity. This last series is only available starting with the 1980 CPS-ASEC/ADF. See Data Appendix for more details.

Figure 2: Consumption and Income Poverty Rates, 1960-2009



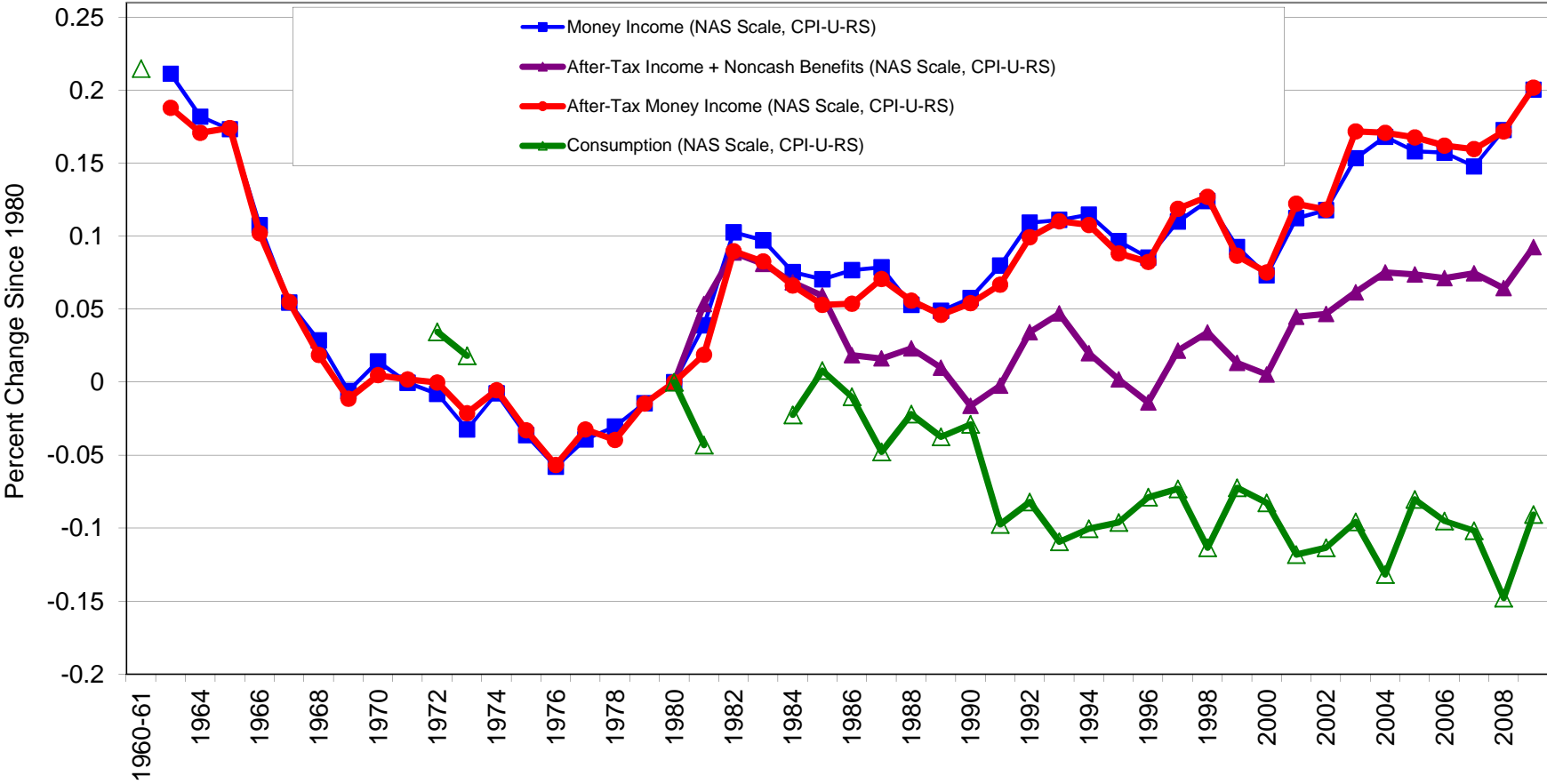
Notes: The rates are anchored at the official rate in 1980. Poverty status is determined at the family level and then person weighted. Consumption data are from the CE and income data are from the CPS-ASEC/ADF. Official Income Poverty and After-Tax Money Income Poverty are as in Figure 1. CE data are not available for the years 1962-1971, 1974-1979 and 1982-1983. Also, consumption data are not available for the years 1984-1987 and before 1980 for measures that include health insurance.

Figure 3: Consumption and Income Poverty Rates using Different Price Indices, 1960-2009



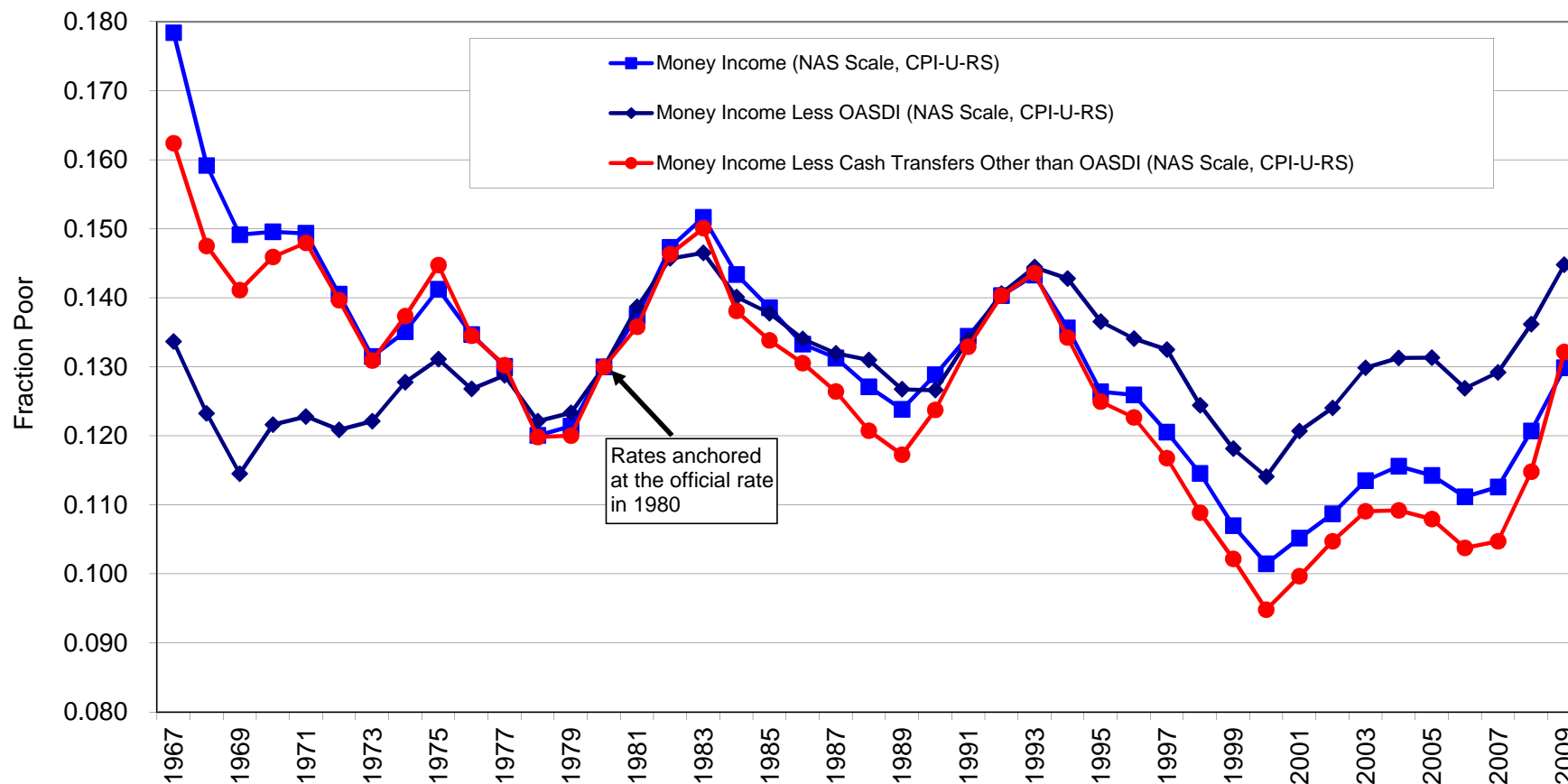
Notes: The rates are anchored at the official rate in 1980. Consumption data are from the CE and income data are from the CPS-ASEC/ADF. Poverty status is determined at the family level and then person weighted. Adjusted CPI-U-RS subtracts 0.8 percentage points from the CPI-U-RS per year. See text for more details.

Figure 4: Percent Change in Average Poverty Gap Since 1980, Various Income and Consumption Measures, Poor Families, 1960-2009



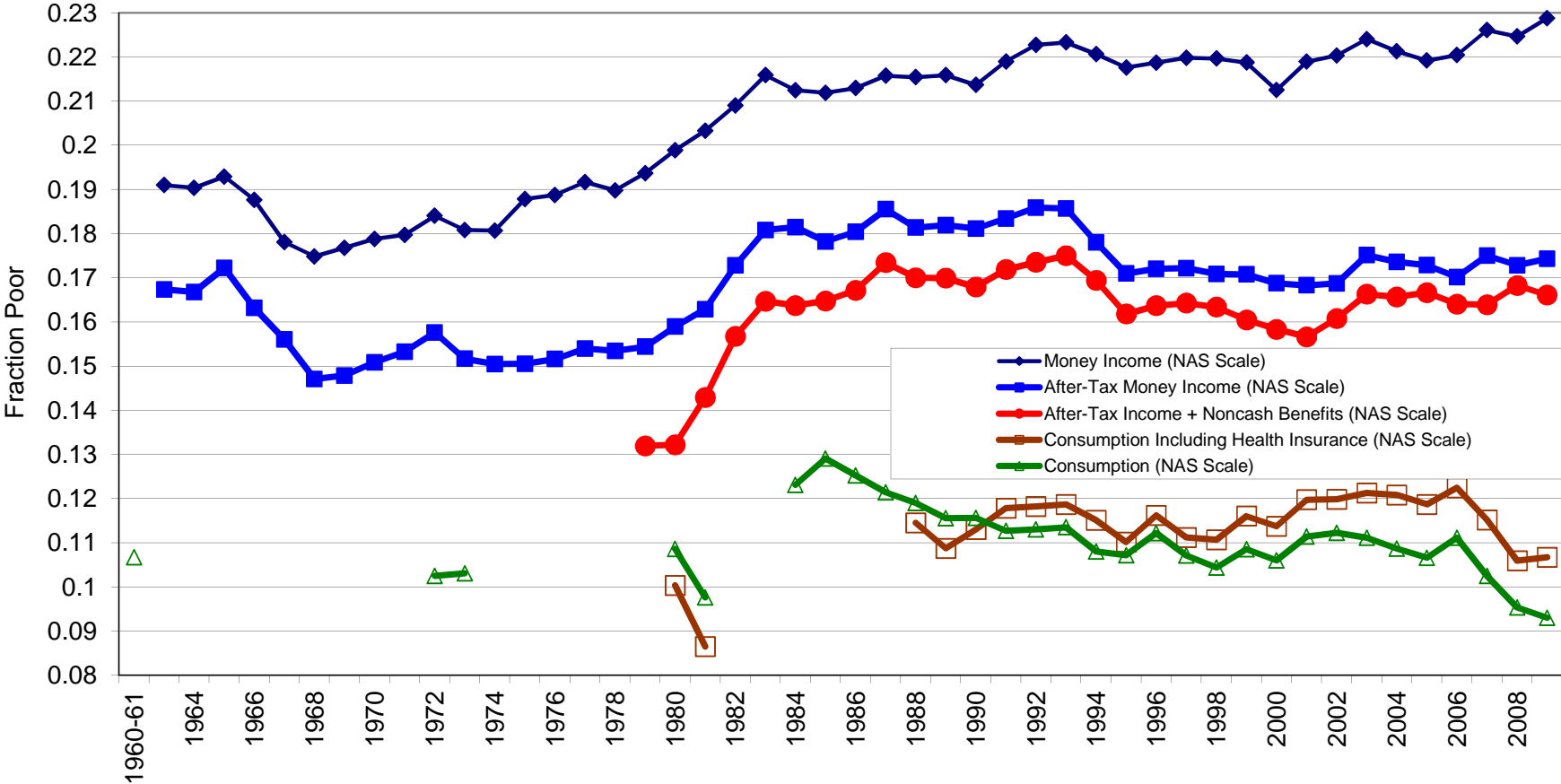
Notes: The average gap (reported in Appendix Table 6) is calculated as the sum of the gap for each family in poverty divided by the total number of poor families. The gaps are calculated using the same thresholds as in Figures 1-3. Consumption data are from the CE and income data are from the CPS-ASEC/ADF.

Figure 5: Income Poverty Rates with and without Cash Transfers, 1967-2009



Notes: Data are from the CPS-ASEC/ADF. Social Security (OASDI) includes OASI, SSDI and railroad retirement. The other cash transfers include UI, workers' compensation, veterans' payments, SSI, and AFDC/TANF. Social security income cannot be identified separately from other income in the CPS prior to 1967. SSI payments are first available in the CPS in survey year 1976.

Appendix Figure 1: Consumption and Income Relative Poverty (Fraction below 50% of Median), 1960-2009



Notes: Poverty status is determined at the family level and then person weighted. An individual is designated as poor if the measure of resources falls below 50 percent of the median of the individual weighted, scale-adjusted distribution for the respective resource measure. Consumption data are from the CE and income data are from the CPS-ASEC/ADF.

Table 1: Consumption and Income Poverty Rates, 1960-2009

Scale Year	Income Measures of Poverty				Consumption Measures of Poverty		
	Official Income Poverty	Money Income	After-Tax Money Income	After-Tax Income + Noncash Benefits	Consumption	Consumption Including Health Insurance	Core Consumption
	Official	NAS	NAS	NAS	NAS	NAS	NAS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61/1963	0.195	0.237	0.250		0.206		
1972	0.119	0.141	0.142		0.146		0.195
1973	0.111	0.131	0.136		0.130		0.176
1980	0.130	0.130	0.130	0.130	0.130	0.130	0.130
1981	0.140	0.137	0.142	0.134	0.128	0.130	0.128
1982	0.150	0.147	0.153	0.151			
1983	0.152	0.152	0.158	0.160			
1984	0.144	0.143	0.151	0.151	0.140		0.147
1985	0.140	0.139	0.145	0.149	0.140		0.144
1986	0.136	0.133	0.140	0.151	0.141		0.146
1987	0.134	0.131	0.130	0.139	0.132		0.140
1988	0.130	0.127	0.125	0.132	0.132	0.132	0.140
1989	0.128	0.124	0.122	0.129	0.122	0.121	0.128
1990	0.135	0.129	0.126	0.133	0.131	0.125	0.135
1991	0.142	0.134	0.131	0.136	0.134	0.128	0.137
1992	0.148	0.140	0.136	0.138	0.136	0.130	0.138
1993	0.151	0.143	0.138	0.141	0.131	0.123	0.128
1994	0.145	0.136	0.125	0.126	0.122	0.117	0.125
1995	0.138	0.126	0.113	0.116	0.125	0.118	0.122
1996	0.137	0.126	0.111	0.117	0.122	0.119	0.115
1997	0.133	0.121	0.106	0.113	0.110	0.109	0.105
1998	0.127	0.115	0.099	0.108	0.104	0.103	0.102
1999	0.119	0.107	0.093	0.100	0.107	0.104	0.107
2000	0.113	0.101	0.088	0.096	0.103	0.100	0.100
2001	0.117	0.105	0.090	0.098	0.102	0.097	0.092
2002	0.121	0.109	0.094	0.101	0.099	0.093	0.090
2003	0.125	0.114	0.096	0.107	0.105	0.099	0.089
2004	0.127	0.116	0.098	0.107	0.096	0.088	0.080
2005	0.126	0.114	0.097	0.102	0.090	0.085	0.078
2006	0.123	0.111	0.094	0.100	0.086	0.082	0.071
2007	0.125	0.113	0.095	0.103	0.082	0.078	0.066
2008	0.132	0.121	0.102	0.109	0.077	0.073	0.062
2009	0.143	0.130	0.104	0.109	0.088	0.083	0.070
Change:							
1961-1972	-0.076	-0.097	-0.107		-0.060		
1972-1980	0.011	-0.011	-0.013		-0.016		-0.065
1980-1990	0.005	-0.001	-0.004	0.003	0.001	-0.005	0.005
1990-2000	-0.022	-0.027	-0.039	-0.037	-0.028	-0.025	-0.035
2000-2009	0.030	0.028	0.016	0.013	-0.015	-0.017	-0.030
1980-2009	0.013	0.000	-0.026	-0.021	-0.042	-0.047	-0.060
1972-2009	0.024	-0.011	-0.038		-0.058		-0.125

Notes: For measures other than the official one, the threshold in 1980 is equal to the value that yields a poverty rate equal to the official poverty rate in 1980 (13.0 percent). The thresholds in 1980 are then adjusted overtime using the CPI-U-RS (except for Column 1). Poverty status is determined at the family level and then person weighted. Consumption data are from the CE and income data are from the CPS-ASEC/ADF. Core Consumption includes key components that compare more favorably to NIPA data totals including food at home, housing, utilities, transportation, and gasoline and motor oil. See notes to Figure 1 for other definitions. Data from the 1960s are for 1960-1961 (CE) or 1963 (CPS). CE data are not available for the years 1962-1971, 1974-1979 and 1982-1983. Also, consumption measures that include health insurance are not available for 1984-1987 and before 1980.

Table 2: Consumption and Income Poverty by Family Type, 1960-2009

Year	Single Parent Families		Married Parent Families		Single Individuals		Married without Children		Head 65 and Over	
	After-Tax		After-Tax		After-Tax		After-Tax		After-Tax	
	Income	Consumption	Income	Consumption	Income	Consumption	Income	Consumption	Income	Consumption
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1960-61/1963	0.602	0.466	0.223	0.192	0.304	0.147	0.135	0.087	0.429	0.343
1972	0.484	0.388	0.097	0.127	0.188	0.124	0.052	0.060	0.244	0.240
1973	0.471	0.385	0.089	0.103	0.172	0.111	0.050	0.041	0.223	0.236
1980	0.421	0.369	0.093	0.100	0.143	0.136	0.039	0.041	0.157	0.191
1981	0.435	0.353	0.107	0.104	0.163	0.130	0.049	0.041	0.152	0.180
1982	0.479		0.122		0.163		0.055		0.143	
1983	0.478		0.129		0.174		0.056		0.141	
1984	0.455	0.356	0.123	0.132	0.160	0.138	0.055	0.040	0.127	0.148
1985	0.450	0.332	0.113	0.123	0.156	0.140	0.053	0.050	0.124	0.174
1986	0.462	0.380	0.101	0.124	0.157	0.124	0.046	0.047	0.125	0.146
1987	0.434	0.371	0.091	0.114	0.141	0.111	0.041	0.041	0.123	0.133
1988	0.426	0.380	0.083	0.116	0.141	0.094	0.041	0.035	0.113	0.137
1989	0.408	0.339	0.084	0.113	0.135	0.080	0.040	0.036	0.107	0.125
1990	0.415	0.329	0.090	0.121	0.136	0.115	0.040	0.039	0.108	0.131
1991	0.430	0.348	0.091	0.130	0.144	0.115	0.039	0.040	0.107	0.117
1992	0.428	0.334	0.093	0.129	0.150	0.114	0.042	0.037	0.116	0.115
1993	0.423	0.329	0.096	0.123	0.155	0.107	0.046	0.038	0.112	0.116
1994	0.387	0.300	0.083	0.112	0.149	0.102	0.042	0.047	0.101	0.101
1995	0.341	0.299	0.072	0.125	0.142	0.100	0.041	0.031	0.086	0.101
1996	0.335	0.315	0.069	0.115	0.135	0.096	0.041	0.037	0.093	0.092
1997	0.323	0.278	0.063	0.102	0.138	0.094	0.035	0.034	0.089	0.082
1998	0.290	0.254	0.059	0.104	0.134	0.095	0.036	0.033	0.086	0.070
1999	0.272	0.245	0.053	0.105	0.132	0.105	0.038	0.033	0.081	0.083
2000	0.242	0.233	0.052	0.100	0.126	0.100	0.038	0.034	0.082	0.084
2001	0.249	0.258	0.050	0.091	0.132	0.103	0.042	0.031	0.082	0.074
2002	0.246	0.238	0.053	0.089	0.142	0.106	0.040	0.030	0.090	0.075
2003	0.266	0.249	0.052	0.099	0.144	0.102	0.041	0.039	0.086	0.078
2004	0.260	0.222	0.053	0.095	0.148	0.092	0.046	0.040	0.090	0.068
2005	0.267	0.193	0.052	0.086	0.150	0.097	0.040	0.033	0.086	0.075
2006	0.264	0.186	0.049	0.085	0.144	0.078	0.039	0.033	0.079	0.078
2007	0.265	0.180	0.051	0.080	0.138	0.079	0.035	0.037	0.083	0.059
2008	0.270	0.187	0.057	0.070	0.152	0.085	0.043	0.025	0.086	0.059
2009	0.273	0.201	0.059	0.087	0.163	0.099	0.041	0.028	0.076	0.056
Change:										
1961-1972	-0.118	-0.077	-0.126	-0.065	-0.117	-0.024	-0.083	-0.027	-0.185	-0.103
1972-1980	-0.063	-0.020	-0.004	-0.027	-0.045	0.012	-0.013	-0.019	-0.087	-0.049
1980-1990	-0.006	-0.039	-0.003	0.021	-0.007	-0.020	0.001	-0.002	-0.049	-0.060
1990-2000	-0.173	-0.096	-0.038	-0.020	-0.010	-0.016	-0.002	-0.005	-0.027	-0.047
2000-2009	0.031	-0.032	0.007	-0.013	0.037	-0.000	0.003	-0.006	-0.006	-0.028
1980-2009	-0.148	-0.167	-0.034	-0.013	0.020	-0.036	0.002	-0.013	-0.081	-0.135
1972-2009	-0.211	-0.187	-0.038	-0.040	-0.025	-0.024	-0.011	-0.032	-0.168	-0.184

Notes: Poverty status is determined at the family level and then person weighted. For each measure, thresholds are the same as those used in Figures 1-3. Thus, thresholds are anchored in 1980 for the full sample, rather than for each demographic group. Consumption data are from the CE and income data are from the CPS-ASEC/ADF. Each series is adjusted using the NAS recommend equivalence scale. See notes to Figures 1-3 for additional details.

Table 3: Average Poverty Gap by Family Type, Poor Families, 1960-2009

Year	Single Parent Families		Married Parent Families		Single Individuals		Married without Children		Head 65 and Over	
	After-Tax		After-Tax		After-Tax		After-Tax		After-Tax	
	Income	Consumption	Income	Consumption	Income	Consumption	Income	Consumption	Income	Consumption
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1960-61/1963	9,291	5,645	8,000	6,343	4,415	2,499	5,458	3,877	4,184	3,417
1972	6,832	5,314	7,263	5,241	4,062	2,636	5,557	3,634	3,199	3,061
1973	6,802	5,457	7,079	5,094	3,856	2,628	5,356	3,267	3,115	3,152
1980	6,723	5,093	7,451	4,968	3,920	3,258	5,498	3,080	2,696	2,956
1981	6,997	5,141	6,955	4,636	4,085	2,738	5,862	3,404	2,689	2,880
1982	7,204		7,396		4,153		5,838		3,090	
1983	7,268		7,145		4,195		6,066		3,002	
1984	7,176	4,791	7,102	5,011	4,143	3,012	5,554	3,278	2,737	2,543
1985	7,079	4,837	7,110	5,586	3,983	3,088	5,742	3,276	2,877	2,697
1986	7,163	4,816	6,914	4,877	4,144	2,964	5,863	3,489	2,809	2,766
1987	7,324	4,643	7,355	4,612	4,171	2,740	5,740	2,731	2,804	2,856
1988	7,427	5,252	7,410	4,588	4,089	2,608	5,344	2,396	2,752	2,713
1989	7,384	4,702	6,828	4,568	4,128	2,904	5,448	3,123	2,827	2,582
1990	7,380	4,692	6,874	4,806	4,088	3,002	5,879	3,172	2,873	2,500
1991	7,357	4,431	7,415	4,611	4,068	2,556	5,400	2,978	2,896	2,265
1992	7,655	4,590	7,238	4,554	4,241	2,605	5,554	2,617	3,104	2,396
1993	7,492	4,520	7,426	4,466	4,355	2,512	5,796	2,438	3,126	2,325
1994	7,369	4,359	7,378	4,375	4,378	2,643	5,638	3,181	3,501	2,329
1995	7,291	4,203	6,838	4,557	4,512	2,884	5,775	2,433	3,331	2,144
1996	7,231	4,277	7,037	4,299	4,365	2,903	5,975	3,451	3,370	2,221
1997	7,655	4,283	7,488	4,599	4,514	2,973	5,781	3,210	3,570	2,135
1998	7,515	4,104	7,645	4,271	4,657	2,742	6,041	2,519	3,784	2,555
1999	7,340	4,279	7,301	4,347	4,612	3,081	6,146	3,034	3,327	2,566
2000	7,430	3,993	7,362	4,716	4,510	3,025	6,489	2,826	3,434	2,387
2001	7,924	3,902	7,809	4,640	4,730	2,912	6,104	2,836	3,385	2,028
2002	7,862	3,720	7,686	4,397	4,753	3,029	6,492	2,906	3,457	2,536
2003	8,111	3,981	7,938	4,429	4,906	3,125	6,529	3,077	3,822	2,339
2004	8,074	3,654	7,819	4,458	4,884	2,985	6,428	2,696	4,139	2,400
2005	8,058	4,096	7,877	4,656	4,998	3,151	6,382	2,962	3,847	2,400
2006	7,896	4,027	7,808	4,190	4,928	3,242	6,327	2,978	4,047	2,520
2007	8,045	3,925	8,305	4,385	4,929	3,123	6,088	2,691	3,772	2,564
2008	8,100	3,831	8,410	4,247	4,847	3,073	6,614	2,943	4,020	2,042
2009	8,160	4,112	8,986	4,394	5,103	3,150	6,001	3,439	4,121	2,179
% Change										
1961-1972	-26.47%	-5.87%	-9.21%	-17.37%	-7.99%	5.48%	1.83%	-6.27%	-23.53%	-10.41%
1972-1980	-1.60%	-4.16%	2.58%	-5.21%	-3.49%	23.61%	-1.07%	-15.24%	-15.74%	-3.46%
1980-1990	9.78%	-7.87%	-7.74%	-3.26%	4.27%	-7.86%	6.93%	2.97%	6.59%	-15.42%
1990-2000	0.67%	-14.89%	7.10%	-1.87%	10.33%	0.74%	10.37%	-10.89%	19.53%	-4.52%
2000-2009	9.84%	2.98%	22.06%	-6.83%	13.15%	4.14%	-7.51%	21.67%	20.00%	-8.73%
1980-2009	21.39%	-19.25%	20.60%	-11.55%	30.17%	-3.33%	9.15%	11.64%	52.89%	-26.29%
1972-2009	19.44%	-22.61%	23.72%	-16.16%	25.63%	19.49%	7.99%	-5.37%	28.82%	-28.84%

Notes: The amounts are in 2005 dollars. Consumption data are from the CE and income data are from the CPS-ASEC/ADF. Each series is adjusted using the NAS recommend equivalence scale. See notes to Figure 4.

Table 4: Demographic Characteristics of the Consumption and Income Poor, 1960-2009

Resources Used to Define Poverty Survey	1960-1961/1963		1972-1973		1980-1989		1990-1999		2000-2009	
	After-Tax Consumption		After-Tax Consumption		After-Tax Consumption		After-Tax Consumption		After-Tax Consumption	
	CPS	CE	CPS	CE	CPS	CE	CPS	CE	CPS	CE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Family Type										
Single Mother Families	0.122	0.117	0.266	0.204	0.339	0.282	0.378	0.313	0.341	0.296
Married Parent Families	0.548	0.611	0.377	0.485	0.335	0.403	0.273	0.409	0.214	0.387
Single Individuals	0.066	0.032	0.096	0.052	0.136	0.100	0.171	0.107	0.246	0.150
Married without Children	0.076	0.058	0.062	0.062	0.062	0.056	0.060	0.053	0.077	0.065
Head 65 and Over	0.190	0.181	0.200	0.197	0.129	0.159	0.118	0.117	0.122	0.102
Age										
0-17	0.423	0.463	0.409	0.424	0.397	0.385	0.396	0.403	0.334	0.366
18-64	0.429	0.387	0.433	0.418	0.500	0.499	0.511	0.510	0.567	0.556
65+	0.149	0.150	0.157	0.157	0.102	0.116	0.093	0.087	0.099	0.078
Education of Head										
Less than HS	0.741	0.832	0.673	0.755	0.528	0.604	0.461	0.494	0.369	0.442
HS	0.183	0.125	0.208	0.184	0.299	0.249	0.321	0.316	0.333	0.300
Some College	0.046	0.030	0.082	0.042	0.125	0.111	0.161	0.151	0.211	0.206
College +	0.030	0.012	0.038	0.019	0.048	0.036	0.057	0.038	0.087	0.053
Race										
White, Non Hispanic	0.725		0.579		0.533	0.488	0.465	0.439	0.450	0.396
Black, Non Hispanic	0.263		0.298		0.279	0.308	0.273	0.285	0.241	0.252
Other	0.013		0.123		0.187	0.205	0.262	0.276	0.309	0.352
Region										
Northeast	0.169	0.115	0.217	0.156	0.171	0.177	0.176	0.154	0.164	0.129
Midwest	0.237	0.257	0.176	0.214	0.231	0.245	0.200	0.213	0.196	0.214
South	0.467	0.535	0.444	0.504	0.413	0.414	0.396	0.414	0.411	0.456
West	0.126	0.093	0.162	0.126	0.185	0.165	0.228	0.219	0.228	0.201
Homeowner										
Single family home		0.382		0.383	0.383	0.342	0.340	0.312	0.383	0.306
Mobile home or trailer				0.352		0.269		0.223		0.217
Own an automobile		0.595		0.576		0.619		0.650		0.669
N ('000s)	12.9	2.7	37.1	2.6	229.7	17.7	173.1	20.9	189.2	22.5
Total Financial Assets										
Median				0		0		0		0
85th Percentile				2,314		803		607		454
N (asset sample)				2,584		2,714		3,659		3,987
Debt										
Median						0		0		0
85th Percentile						1,517		1,112		363
N (debt sample)						8,756		10,334		11,113

Notes: Consumption data are from the CE and income data are from the CPS-ASEC/ADF. Poverty status is determined at the family level and then person weighted. Poverty definitions are calculated using the NAS scale and the CPI-U-RS. Column 6 only includes data from the CE from 1980-1981 and 1984-1989. Debt includes all non-mortgage, non-vehicle debt. Financial asset statistics come from samples of families in their fifth CE interview, while debt statistics come from families in either their second or fifth interview.

Table 5: The Effect of Changes in Demographic Characteristics on Changes in Poverty, 1960-2009

	1960-61/ 1963	1972	1980	1990	2000	2009	Change 1963-1972	Change 1972-1980	Change 1980-2009
<b>A. Consumption Poverty</b>									
Actual Poverty	0.206	0.146	0.130	0.131	0.103	0.088	-0.060	-0.016	-0.042
Predicted poverty holding within group poverty at 1972 rate									
Changes in family type	0.143	0.146	0.154	0.161	0.163	0.163	0.003	0.008	0.009
Changes in family type and employment	0.144	0.146	0.152	0.156	0.157	0.164	0.003	0.006	0.012
Changes in family type and race	-	-	-	-	-	-	-	-	-
Changes in family type and region	0.149	0.146	0.159	0.159	0.161	0.158	-0.003	0.013	0.000
Changes in family type, education, and employment	0.165	0.146	0.130	0.117	0.101	0.098	-0.019	-0.016	-0.032
Predicted poverty holding within group poverty at 1980 rate									
Changes in family type	0.117	0.121	0.130	0.138	0.141	0.142	0.004	0.009	0.012
Changes in family type and employment	0.126	0.124	0.130	0.135	0.135	0.143	-0.002	0.006	0.013
Changes in family type and race	-	-	0.130	0.140	0.152	0.161	-	-	0.031
Changes in family type and region	0.119	0.119	0.130	0.134	0.136	0.134	0.000	0.011	0.004
Changes in family type, education, and employment	0.163	0.141	0.130	0.122	0.110	0.112	-0.022	-0.011	-0.018
Predicted poverty holding within group poverty at 2009 rate									
Changes in family type	0.082	0.082	0.084	0.087	0.088	0.088	0.000	0.002	0.004
Changes in family type and employment	0.119	0.093	0.085	0.083	0.083	0.088	-0.026	-0.008	0.003
Changes in family type and race	-	-	0.076	0.080	0.085	0.088	-	-	0.012
Changes in family type and region	0.097	0.092	0.094	0.092	0.092	0.088	-0.004	0.002	-0.006
Changes in family type, education, and employment	0.187	0.139	0.115	0.100	0.089	0.088	-0.049	-0.024	-0.027
<b>B. Income Poverty (After-tax money income)</b>									
Actual Poverty	0.250	0.142	0.130	0.126	0.088	0.104	-0.107	-0.013	-0.026
Predicted poverty holding within group poverty at 1972 rate									
Changes in family type	0.132	0.142	0.157	0.166	0.169	0.176	0.010	0.014	0.019
Changes in family type and employment	0.139	0.142	0.158	0.165	0.169	0.188	0.004	0.016	0.030
Changes in family type and race	0.123	0.142	0.159	0.174	0.183	0.196	0.019	0.017	0.037
Changes in family type and region	0.132	0.143	0.159	0.169	0.174	0.182	0.011	0.016	0.022
Changes in family type, education, and employment	0.154	0.142	0.146	0.141	0.134	0.145	-0.011	0.003	-0.001
Predicted poverty holding within group poverty at 1980 rate									
Changes in family type	0.112	0.120	0.130	0.136	0.139	0.144	0.008	0.010	0.014
Changes in family type and employment	0.117	0.118	0.130	0.133	0.137	0.156	0.001	0.012	0.026
Changes in family type and race	0.102	0.118	0.130	0.141	0.149	0.160	0.015	0.012	0.030
Changes in family type and region	0.110	0.118	0.130	0.137	0.139	0.145	0.008	0.012	0.015
Changes in family type, education, and employment	0.144	0.131	0.130	0.122	0.115	0.125	-0.013	-0.001	-0.005
Predicted poverty holding within group poverty at 2009 rate									
Changes in family type	0.075	0.082	0.091	0.097	0.100	0.104	0.006	0.009	0.013
Changes in family type and employment	0.068	0.071	0.081	0.084	0.087	0.104	0.003	0.011	0.023
Changes in family type and race	0.058	0.070	0.081	0.090	0.096	0.104	0.011	0.011	0.023
Changes in family type and region	0.072	0.079	0.089	0.096	0.099	0.104	0.007	0.010	0.015
Changes in family type, education, and employment	0.112	0.101	0.102	0.097	0.092	0.104	-0.011	0.001	0.002

Notes: Predicted poverty is the weighted average of the poverty rates for each group in the base year using as weights the distribution across groups in the year listed in the column headings.

Table 6: Demographic Characteristics of All Individuals and by Poverty Status, 1960-2009

	All Individuals					Consumption Poor					Income poor					Income Poor but Not Consumption Poor				
	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Head Employed	0.894	0.847	0.780	0.761	0.739	0.763	0.635	0.560	0.572	0.587	0.701	0.614	0.532	0.520	0.517	0.719	0.654	0.605	0.560	0.530
Number of Earners	.	.	1.694	1.635	1.617	.	.	1.273	1.276	1.385	.	.	1.130	1.062	0.969	.	.	1.230	1.112	0.965
Homeowner	0.627	0.656	0.672	0.663	0.699	0.382	0.381	0.330	0.297	0.302	0.409	0.388	0.399	0.360	0.384	0.715	0.471	0.543	0.479	0.489
Single family home	.	0.609	0.581	0.570	0.601	.	0.352	0.260	0.216	0.213	.	0.355	0.330	0.282	0.294	.	0.426	0.454	0.390	0.391
Mobile home or trailer	.	0.019	0.043	0.044	0.042	.	0.019	0.054	0.064	0.069	.	0.022	0.043	0.055	0.052	.	0.022	0.047	0.053	0.052
Own a car	0.822	0.861	0.891	0.894	0.903	0.595	0.573	0.609	0.653	0.675	0.545	0.598	0.645	0.671	0.691	0.718	0.737	0.797	0.783	0.772
Service flows from vehicles	245	651	963	1,080	1,229	76	151	156	180	211	80	228	333	385	458	201	436	575	620	663
Service flows from owned	1,955	2,524	3,242	3,902	5,274	614	490	598	583	655	805	894	1,394	1,495	2,104	2,246	1,825	2,360	2,445	3,151
Total service flows	2,200	3,174	4,205	4,982	6,503	691	641	754	763	866	885	1,122	1,727	1,879	2,562	2,447	2,262	2,935	3,065	3,815
Family size	4.291	4.164	3.485	3.374	3.324	5.408	5.038	4.372	4.336	4.281	5.205	5.008	3.894	3.841	3.572	3.567	3.914	3.334	3.293	3.176
# of children	2.076	1.842	1.278	1.232	1.150	3.146	2.779	2.087	2.104	1.913	3.016	2.782	1.795	1.815	1.597	1.584	1.814	1.307	1.337	1.288
# over 64	0.215	0.201	0.239	0.245	0.252	0.322	0.314	0.265	0.208	0.203	0.353	0.261	0.240	0.204	0.216	0.397	0.259	0.284	0.252	0.265
# of rooms	.	5.668	5.911	5.952	6.180	.	4.972	5.043	4.948	4.971	.	5.051	5.255	5.160	5.170	.	5.280	5.541	5.386	5.390
# of Bedrooms	.	.	2.806	2.839	2.960	.	.	2.511	2.487	2.563	.	.	2.571	2.567	2.615	.	.	2.651	2.630	2.678
# of Bathrooms	.	.	1.488	1.479	1.666	.	.	1.337	1.150	1.250	.	.	1.419	1.235	1.364	.	.	1.488	1.320	1.462
Appliances																				
Stove	.	.	0.995	0.992	0.993	.	.	0.979	0.971	0.961	.	.	0.976	0.970	0.964	.	.	0.983	0.982	0.983
Microwave	.	.	0.533	0.846	0.952	.	.	0.196	0.594	0.846	.	.	0.253	0.639	0.876	.	.	0.370	0.736	0.913
Refrigerator	.	.	0.991	0.995	0.995	.	.	0.983	0.984	0.983	.	.	0.982	0.985	0.985	.	.	0.983	0.991	0.992
Freezer	.	.	0.393	0.358	0.359	.	.	0.300	0.240	0.222	.	.	0.298	0.257	0.243	.	.	0.332	0.291	0.282
Disposal	.	.	0.347	0.401	0.484	.	.	0.093	0.153	0.208	.	.	0.158	0.226	0.297	.	.	0.236	0.302	0.367
Dishwasher	.	.	0.473	0.534	0.647	.	.	0.113	0.146	0.237	.	.	0.194	0.237	0.351	.	.	0.305	0.342	0.456
Window Air Conditioning	.	0.278	0.242	0.226	0.207	.	0.130	0.213	0.269	0.309	.	0.159	0.216	0.243	0.269	.	0.256	0.255	0.250	0.250
Central Air Conditioning	.	0.150	0.324	0.438	0.602	.	0.028	0.106	0.196	0.365	.	0.054	0.156	0.258	0.422	.	0.100	0.223	0.330	0.482
Washer	.	.	0.792	0.810	0.851	.	.	0.585	0.574	0.626	.	.	0.597	0.603	0.650	.	.	0.674	0.676	0.712
Dryer	.	.	0.692	0.750	0.821	.	.	0.336	0.401	0.509	.	.	0.394	0.463	0.563	.	.	0.537	0.576	0.653
Television	.	.	0.706	0.973	0.986	.	.	0.607	0.920	0.949	.	.	0.623	0.923	0.962	.	.	0.685	0.944	0.974
Computer	.	.	0.122	0.309	0.725	.	.	0.024	0.084	0.371	.	.	0.043	0.140	0.469	.	.	0.071	0.198	0.555
Stereo	.	.	0.447	0.672	0.760	.	.	0.274	0.455	0.591	.	.	0.307	0.508	0.638	.	.	0.352	0.566	0.678
VCR	.	.	0.473	0.810	0.917	.	.	0.221	0.556	0.763	.	.	0.265	0.592	0.801	.	.	0.356	0.683	0.843
Race																				
White, Non Hispanic	.	.	0.777	0.738	0.684	.	.	0.485	0.434	0.390	0.681	0.696	0.539	0.485	0.456	.	.	0.672	0.592	0.530
Black, Non Hispanic	.	.	0.118	0.117	0.118	.	.	0.310	0.268	0.242	0.299	0.304	0.277	0.256	0.237	.	.	0.180	0.193	0.204
Other	.	.	0.105	0.145	0.198	.	.	0.205	0.297	0.368	0.020	0.000	0.184	0.259	0.308	.	.	0.148	0.214	0.266
Expenditures > Income	0.435	0.372	0.445	0.429	0.346	0.459	0.319	0.413	0.428	0.355	0.672	0.739	0.823	0.852	0.878	0.952	0.982	0.976	0.977	0.975
N	13,728	18,805	129,249	173,869	230,583	2,728	2,477	14,588	16,018	16,707	2,180	1,471	17,638	20,556	21,928	464	639	9,757	12,487	14,659
Total Financial Assets																				
Median	.	2,474	2,290	2,046	1,723	.	0	0	0	0	.	0	0	0	0	.	11	152	68	20
75th Percentile	.	15,224	14,367	13,720	12,055	.	679	200	205	118	.	303	383	280	300	.	1,719	1,643	1,398	944
85th Percentile	.	33,080	33,660	36,336	38,081	.	2,426	860	718	531	.	1,522	1,359	1,228	1,211	.	5,116	5,421	5,320	3,095
90th Percentile	.	53,381	55,427	68,181	81,794	.	5,709	1,748	1,433	1,104	.	3,806	2,983	3,128	2,720	.	9,301	12,487	13,993	7,427
95th Percentile	.	103,122	117,237	142,862	237,664	.	17,701	5,586	3,588	2,583	.	10,397	11,972	14,098	9,557	.	25,174	30,451	43,934	34,752
Change in Total Financial Assets																				
5th Percentile	-8,297	-8,735	-7,930	-6,650	-11,184	-2,107	-2,093	-793	-341	-273	-5,531	-3,640	-1,699	-724	-968	-19,631	-7,684	-5,437	-2,606	-2,594
10th Percentile	-3,540	-4,023	-2,888	-2,097	-3,099	-774	-761	-34	0	0	-1,798	-952	-170	0	-50	-12,846	-4,044	-1,529	-409	-500
15th Percentile	-1,751	-1,998	-1,038	-620	-942	-274	-231	0	0	0	-691	-381	0	0	0	-8,297	-1,618	-346	0	0
Percent Change in Total Financial Assets																				
5th Percentile	.	-0.99	-0.50	-0.39	-0.39	.	-1.00	-0.43	-0.31	-0.23	.	-1.00	-0.62	-0.33	-0.33	.	-1.00	-0.74	-0.51	-0.45
10th Percentile	.	-0.67	-0.25	-0.20	-0.20	.	-0.98	-0.06	0.00	0.00	.	-1.00	-0.17	0.00	-0.07	.	-1.00	-0.33	-0.19	-0.17
15th Percentile	.	-0.39	-0.13	-0.09	-0.11	.	-0.47	0.00	0.00	0.00	.	-0.71	0.00	0.00	0.00	.	-0.89	-0.14	0.00	0.00
N (asset sample)	13,728	18,805	21,466	33,240	39,517	2,728	2,477	2,573	3,303	3,432	2,180	1,471	2,772	3,819	4,203	464	639	1,376	2,172	2,620
Debt																				
Median	.	.	476	391	0	.	.	0	0	0	.	.	0	0	0	.	.	0	0	0
75th Percentile	.	.	3,122	3,584	2,971	.	.	481	281	0	.	.	603	380	62	.	.	1,099	1,064	496
85th Percentile	.	.	5,628	6,726	7,000	.	.	1,627	1,398	504	.	.	1,778	1,630	1,390	.	.	2,957	2,751	2,661
90th Percentile	.	.	8,155	9,681	10,994	.	.	2,657	2,796	1,756	.	.	3,187	3,180	3,400	.	.	4,725	4,784	5,587
95th Percentile	.	.	13,296	15,548	20,265	.	.	4,587	5,660	4,987	.	.	6,080	7,143	9,549	.	.	9,186	9,702	12,476
N (debt sample)	.	.	65,253	87,996	116,948	.	.	7,237	7,957	8,298	.	.	8,594	10,078	10,904	.	.	4,723	6,105	7,277

Notes: The sample includes all families in the CE that are designated as complete income reporters. All estimates are person weighted. Debt includes all non-mortgage, non-vehicle debt. Financial asset statistics come from samples of families in their fifth CE interview, while debt statistics come from families in either their second or fifth interview. Income poverty is determined using after-tax money income.

Appendix Table 1: Demographic Characteristics of all Individuals, 1960-2009

Survey	1960-1961/1963		1972-1973		1980-1989		1990-1999		2000-2009	
	CPS	CE	CPS	CE	CPS	CE	CPS	CE	CPS	CE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Family Type										
Single Mother Families	0.052	0.052	0.077	0.073	0.106	0.104	0.123	0.127	0.125	0.128
Married Parent Families	0.634	0.656	0.562	0.582	0.449	0.462	0.418	0.429	0.390	0.406
Single Individuals	0.056	0.045	0.074	0.061	0.123	0.114	0.142	0.126	0.164	0.148
Married without Children	0.144	0.138	0.168	0.169	0.184	0.181	0.176	0.176	0.181	0.183
Head 65 and Over	0.114	0.109	0.119	0.115	0.138	0.140	0.142	0.142	0.139	0.134
Age										
0-17	0.371	0.383	0.326	0.336	0.267	0.273	0.265	0.272	0.251	0.256
18-64	0.538	0.521	0.575	0.566	0.617	0.610	0.615	0.607	0.627	0.623
65+	0.091	0.095	0.099	0.098	0.116	0.117	0.120	0.121	0.122	0.121
Education of Head										
Less than HS	0.508	0.530	0.384	0.404	0.260	0.271	0.194	0.206	0.153	0.160
HS	0.285	0.261	0.316	0.316	0.337	0.316	0.325	0.313	0.299	0.271
Some College	0.095	0.096	0.149	0.130	0.195	0.206	0.246	0.244	0.271	0.299
College +	0.112	0.113	0.151	0.150	0.208	0.208	0.235	0.236	0.277	0.270
Race										
White, Non Hispanic	0.883		0.822		0.778	0.779	0.729	0.739	0.671	0.682
Black, Non Hispanic	0.108		0.112		0.119	0.118	0.125	0.123	0.122	0.125
Other	0.009		0.067		0.103	0.103	0.147	0.139	0.208	0.193
Region										
Northeast	0.249	0.248	0.288	0.241	0.210	0.222	0.196	0.203	0.185	0.180
Midwest	0.279	0.287	0.221	0.277	0.249	0.252	0.235	0.236	0.223	0.222
South	0.307	0.307	0.315	0.307	0.340	0.317	0.348	0.335	0.361	0.368
West	0.165	0.158	0.176	0.175	0.201	0.209	0.221	0.226	0.232	0.231
Homeowner										
Single family home		0.627		0.659	0.683	0.683	0.679	0.673	0.705	0.703
Mobile home or trailer				0.018		0.041		0.045		0.040
Own an automobile		0.822		0.862		0.892		0.889		0.898
N ('000s)	54.5	13.7	269	19.9	1,600	157.4	1,427	221.5	2,021.3	300.0
Total Financial Assets										
Median				2,265		2,062		1,757		1,451
85th Percentile				32,062		32,621		33,474		34,192
N (asset sample)				19,871		20,520		31,783		40,210
Debt										
Median						329		145		0
85th Percentile						5,179		6,025		5,810
N (debt sample)						78,935		111,121		151,105

Notes: Consumption data are from the CE and income data are from the CPS-ASEC/ADF. See notes to Table 6.

Appendix Table 2: Comparison of CE Expenditure Measures to National Aggregates, 1972-2008

	1972	1973	1980	1984	1987	1992	1994	1997	2002	2004	2007	2008
Food at home <sup>a</sup>												
CE	87.5	98.1	199.2	211.9	236.4	324.9	338.7	376.2	436.8	477.4	545.9	587.1
PCE	100.7	112.1	213.7	260.6	290.7	366.8	392.8	431.3	540.1	603.4	630.3	669.8
Ratio	0.869	0.875	0.932	0.813	0.813	0.886	0.862	0.872	0.809	0.791	0.866	0.877
Food away from home <sup>b</sup>												
CE	24.3	26.9	75.8	104.0	120.1	136.4	150.8	164.9	191.8	217.8	371.5	340.3
PCE	35.7	40.2	90.2	123.6	154.9	212.3	234.5	262.7	339.4	388.2	440.9	456.6
Ratio	0.680	0.668	0.841	0.842	0.775	0.643	0.643	0.628	0.565	0.561	0.843	0.745
Total food												
CE	111.8	124.9	275.0	315.9	356.4	461.4	489.5	541.1	628.6	695.2	917.5	927.4
PCE	136.4	152.3	303.9	384.2	445.6	579.1	627.3	694.0	879.5	991.6	1071.2	1126.4
Ratio	0.819	0.820	0.905	0.822	0.800	0.797	0.780	0.780	0.715	0.701	0.856	0.823
Rent plus utilities <sup>c</sup>												
CE	66.7	73.6	132.0	202.3	235.1	306.7	334.2	380.7	438.5	485.1	601.3	636.1
PCE	58.6	64.8	144.2	209.9	250.0	315.0	347.0	387.7	469.6	504.5	619.1	657.5
Ratio	1.139	1.135	0.916	0.964	0.940	0.974	0.963	0.982	0.934	0.961	0.971	0.967
Gasoline and motor oil												
CE	27.4	31.1	98.6	95.4	83.6	97.5	100.8	115.9	138.5	185.7	286.4	328.0
PCE	24.4	28.1	86.7	94.6	85.4	112.4	116.2	134.4	164.5	231.4	343.9	386.4
Ratio	1.125	1.107	1.137	1.008	0.979	0.867	0.867	0.862	0.842	0.803	0.833	0.849
Alcoholic beverages												
CE	2.2	2.3	12.4	14.6	13.6	13.1	13.9	15.3	19.8	19.7	21.9	22.3
PCE	14.8	15.9	29.7	37.1	41.4	48.9	52.9	61.2	75.5	85.0	109.8	114.5
Ratio	0.149	0.147	0.417	0.393	0.329	0.267	0.263	0.250	0.262	0.232	0.199	0.195
Transportation <sup>d</sup>												
CE	38.0	39.3	72.3	106.0	128.0	177.4	203.3	240.5	268.1	279.9	308.8	309.5
PCE	29.6	31.6	65.3	93.2	120.8	157.6	190.7	245.7	288.4	308.2	369.1	369.7
Ratio	1.283	1.245	1.107	1.138	1.059	1.125	1.066	0.979	0.930	0.908	0.837	0.837
Tobacco												
CE	9.0	9.3	14.4	20.5	21.6	27.3	26.3	27.6	35.7	33.3	38.7	37.8
PCE	12.2	13.2	20.9	29.2	34.5	48.0	47.3	53.8	89.2	87.5	75.1	77.1
Ratio	0.734	0.708	0.689	0.701	0.626	0.568	0.556	0.512	0.400	0.380	0.515	0.491
Clothing												
CE	37.4	41.2	55.7	81.5	92.1	105.6	110.7	117.2	119.3	112.1	121.7	115.0
PCE	56.3	62.4	107.2	142.4	174.2	221.6	237.8	257.8	303.1	324.6	335.6	331.9
Ratio	0.663	0.660	0.520	0.572	0.529	0.477	0.465	0.455	0.394	0.345	0.363	0.346
Audio, video, and computers												
CE	8.1	8.4	15.1	26.5	32.8	49.6	62.6	74.4	90.1	102.7	125.5	132.5
PCE	10.1	11.3	20.6	32.0	46.2	57.0	73.7	92.3	120.0	133.3	181.9	184.0
Ratio	0.797	0.743	0.733	0.829	0.709	0.869	0.849	0.806	0.750	0.771	0.690	0.720
Core consumption (excluding flows) <sup>e</sup>												
CE core	219.7	242.1	502.1	615.6	683.1	906.5	977.0	1113.3	1281.8	1428.1	1742.4	1860.7
PCE core	213.3	236.6	509.9	658.3	746.9	951.8	1046.7	1199.1	1462.6	1647.5	1962.4	2083.4
Ratio	1.030	1.023	0.985	0.935	0.915	0.952	0.933	0.928	0.876	0.867	0.888	0.893
Non-core consumption												
CE non-core	72.8	79.8	158.4	220.6	247.5	282.4	301.7	325.0	366.6	382.9	553.7	515.4
PCE non-core	119.0	131.7	248.0	332.3	405.0	530.8	572.5	635.5	807.2	885.3	961.4	980.1
Ratio	0.612	0.606	0.639	0.664	0.611	0.532	0.527	0.511	0.454	0.433	0.576	0.526
Total												
CE total expenditures <sup>f</sup>	584.9	653.5	1,260.2	1,821.0	2,094.0	2,663.1	2,923.6	3,306.5	4,090.7	4,486.1	5,253.2	5,357.4
PCE	770.6	852.4	1,757.1	2,503.3	3,100.2	4,235.3	4,743.3	5,547.4	7,350.7	8,195.9	9,826.4	10,129.9
Ratio (CE/PCE)	0.759	0.767	0.717	0.727	0.675	0.629	0.616	0.596	0.557	0.547	0.535	0.529

Notes: All survey data come from the CE Interview Survey. The expenditure components reported here are those that align most closely with PCE categories.

a Food at home is food purchased for off-premise consumption minus alcoholic beverages purchased for off-premise consumption.

b Food away from home is purchased meals and beverages minus other alcoholic beverages.

c Rent plus utilities is rent on tenant-occupied nonfarm dwellings plus utilities excluding telephone.

d Transportation includes spending on public transportation, vehicle maintenance and repairs, insurance, and rentals and leases.

e Core consumption is the sum of the categories: food at home, rent plus utilities, gasoline and motor oil, and transportation.

f Total expenditures excludes miscellaneous expenditures and cash contributions which are not asked in all interviews.

Appendix Table 3: Poverty Rates and Changes in Poverty with Standard Errors, 1980-2009

Resources Used to Define Poverty	Pre-tax Money Income	After-Tax Income + Noncash Benefits	After-Tax Income + Noncash Benefits	Consumption	Consumption Including Health Insurance	Consumption Including Health Insurance	Consumption Including Health Insurance				
	CPI-U-RS	CPI-U-RS	Adjusted CPI-U-RS	CPI-U-RS	CPI-U-RS	Adjusted CPI-U-RS	Adjusted CPI-U-RS	(4) - (2)	(5) - (1)	(5) - (2)	(7) - (3)
Price Index Survey	CPS	CPS	CPS	CE	CE	CE	CE	(10)	(8)	(9)	(11)
Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)				
1980	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300	0.1300				
1990	0.1287 (0.0013)	0.1327 (0.0013)	0.1145 (0.0013)	0.1311 (0.0050)	0.1253 (0.0049)	0.1065 (0.0047)	0.1020 (0.0046)	-0.0016 (0.0052)	-0.0034 (0.0050)	-0.0075 (0.0050)	-0.0126 (0.0048)
2000	0.1013 (0.0013)	0.0958 (0.0013)	0.0717 (0.0011)	0.1029 (0.0034)	0.0995 (0.0033)	0.0613 (0.0026)	0.0601 (0.0026)	0.0072 (0.0036)	-0.0018 (0.0035)	0.0038 (0.0035)	-0.0116 (0.0028)
2009	0.1298 (0.0011)	0.1088 (0.0011)	0.0770 (0.0009)	0.0882 (0.0034)	0.0829 (0.0034)	0.0388 (0.0023)	0.0374 (0.0023)	-0.0206 (0.0036)	-0.0469 (0.0036)	-0.0259 (0.0035)	-0.0396 (0.0025)
<b>Change</b>											
1980 - 1990	-0.0013 (0.0013)	0.0027 (0.0013)	-0.0155 (0.0013)	0.0011 (0.0050)	-0.0047 (0.0049)	-0.0235 (0.0047)	-0.0280 (0.0046)	-0.0016 (0.0052)	-0.0034 (0.0050)	-0.0075 (0.0050)	-0.0126 (0.0048)
1990 - 2000	-0.0274 (0.0018)	-0.0370 (0.0018)	-0.0429 (0.0017)	-0.0282 (0.0061)	-0.0257 (0.0059)	-0.0452 (0.0054)	-0.0419 (0.0053)	0.0088 (0.0063)	0.0016 (0.0062)	0.0112 (0.0061)	0.0010 (0.0056)
2000 - 2009	0.0284 (0.0017)	0.0130 (0.0016)	0.0054 (0.0014)	-0.0147 (0.0048)	-0.0166 (0.0047)	-0.0225 (0.0035)	-0.0227 (0.0035)	-0.0278 (0.0051)	-0.0451 (0.0050)	-0.0297 (0.0050)	-0.0280 (0.0038)
1980 - 2009	-0.0002 (0.0011)	-0.0212 (0.0011)	-0.0530 (0.0009)	-0.0418 (0.0034)	-0.0471 (0.0034)	-0.0912 (0.0023)	-0.0926 (0.0023)	-0.0206 (0.0036)	-0.0469 (0.0036)	-0.0259 (0.0035)	-0.0396 (0.0025)

Notes: Poverty status is determined at the family level and then person weighted. Standard errors for estimates from the CE are bootstrapped and corrected for family correlation over time.

Appendix Table 4: Consumption and Income Poverty Rates using Different Price Indices, 1960-2009

Price Index Year	Income Measures of Poverty			Consumption Measures of Poverty					
	After-Tax Money Income	After-Tax Money Income	After-Tax Money Income	Consumption Including Health Insurance		Consumption Including Health Insurance		Consumption Including Health Insurance	
			Adjusted	Consumption	Insurance	Consumption	Insurance	Adjusted	Adjusted
	CPI-U	CPI-U-RS	CPI-U-RS	CPI-U	CPI-U	CPI-U-RS	CPI-U-RS	CPI-U-RS	CPI-U-RS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1960-61/1963	0.208	0.250	0.308	0.158		0.206		0.287	
1972	0.122	0.142	0.159	0.113		0.146		0.170	
1973	0.114	0.136	0.148	0.105		0.130		0.148	
1980	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130
1981	0.145	0.142	0.140	0.133	0.132	0.128	0.130	0.127	0.127
1982	0.156	0.153	0.149						
1983	0.158	0.158	0.152						
1984	0.152	0.151	0.144	0.142		0.140		0.131	
1985	0.146	0.145	0.136	0.142		0.140		0.129	
1986	0.141	0.140	0.129	0.142		0.141		0.125	
1987	0.132	0.130	0.120	0.135		0.132		0.114	
1988	0.128	0.125	0.114	0.137	0.136	0.132	0.132	0.110	0.112
1989	0.126	0.122	0.108	0.129	0.127	0.122	0.121	0.101	0.098
1990	0.132	0.126	0.112	0.138	0.133	0.131	0.125	0.106	0.100
1991	0.136	0.131	0.115	0.145	0.137	0.134	0.128	0.106	0.102
1992	0.143	0.136	0.117	0.150	0.144	0.136	0.130	0.105	0.102
1993	0.146	0.138	0.118	0.145	0.136	0.131	0.123	0.097	0.091
1994	0.133	0.125	0.105	0.140	0.130	0.122	0.117	0.090	0.086
1995	0.122	0.113	0.094	0.141	0.133	0.125	0.118	0.087	0.085
1996	0.121	0.111	0.090	0.142	0.137	0.122	0.119	0.084	0.083
1997	0.115	0.106	0.085	0.130	0.124	0.110	0.109	0.076	0.074
1998	0.109	0.099	0.079	0.123	0.117	0.104	0.103	0.066	0.067
1999	0.101	0.093	0.071	0.126	0.121	0.107	0.104	0.066	0.065
2000	0.097	0.088	0.067	0.123	0.116	0.103	0.100	0.061	0.060
2001	0.099	0.090	0.070	0.120	0.114	0.102	0.097	0.058	0.058
2002	0.102	0.094	0.071	0.117	0.109	0.099	0.093	0.054	0.053
2003	0.105	0.096	0.074	0.124	0.115	0.105	0.099	0.057	0.055
2004	0.107	0.098	0.075	0.115	0.105	0.096	0.088	0.049	0.047
2005	0.106	0.097	0.074	0.105	0.101	0.090	0.085	0.048	0.046
2006	0.103	0.094	0.069	0.103	0.097	0.086	0.082	0.043	0.040
2007	0.103	0.095	0.069	0.098	0.094	0.082	0.078	0.040	0.038
2008	0.110	0.102	0.075	0.094	0.086	0.077	0.073	0.036	0.034
2009	0.111	0.104	0.077	0.106	0.098	0.088	0.083	0.039	0.037
Change:									
1961-1972	-0.087	-0.107	-0.150	-0.046		-0.060		-0.118	
1972-1980	0.008	-0.013	-0.029	0.017		-0.016		-0.040	
1980-1990	0.002	-0.004	-0.018	0.009	0.003	0.001	-0.005	-0.023	-0.030
1990-2000	-0.034	-0.039	-0.045	-0.015	-0.017	-0.028	-0.025	-0.045	-0.040
2000-2009	0.014	0.016	0.010	-0.017	-0.018	-0.015	-0.017	-0.022	-0.023
1980-2009	-0.019	-0.026	-0.053	-0.024	-0.032	-0.042	-0.047	-0.091	-0.093
1972-2009	-0.010	-0.038	-0.082	-0.006		-0.058		-0.131	

Notes: The rates are anchored at the official rate in 1980. Each series is adjusted using the NAS recommend equivalence scale. See notes to Figure 3 and Table 1.

Appendix Table 5: Average Poverty Gap, Various Income and Consumption Measures, Poor Families, 1960-2009

Scale	Official		After-Tax	After-Tax		Consumption	Consumption	
	Income	Money	Money	Income +	Income +	Including	Including	
	Poverty	Income	Income	Noncash	Noncash	Health	Health	
	Official	NAS	NAS	NAS	NAS	NAS	NAS	
Price Index			Adjusted				Adjusted	
	CPI-U	CPI-U-RS	CPI-U-RS	CPI-U-RS	CPI-U-RS	CPI-U-RS	CPI-U-RS	CPI-U-RS
Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1960-61/1963	6,398	6,383	5,969			4,697		
1972	5,646	5,228	5,023			3,999		
1973	5,547	5,099	4,917			3,936		
1980	5,684	5,269	5,024	6,099	5,022	3,866	3,901	3,212
1981	5,998	5,475	5,119	6,426	5,307	3,699	3,710	3,046
1982	6,257	5,810	5,476	6,641	5,493			
1983	6,268	5,782	5,440	6,593	5,420			
1984	6,159	5,666	5,357	6,516	5,369	3,779		
1985	6,121	5,641	5,291	6,461	5,301	3,897		
1986	6,192	5,674	5,295	6,212	5,104	3,827		
1987	6,296	5,684	5,379	6,198	5,087	3,681		
1988	6,171	5,549	5,305	6,240	5,124	3,782	3,946	3,204
1989	6,185	5,527	5,256	6,159	5,062	3,721	3,815	3,164
1990	6,135	5,573	5,296	6,001	4,960	3,754	3,831	3,115
1991	6,240	5,691	5,360	6,085	5,045	3,489	3,584	2,848
1992	6,418	5,846	5,523	6,308	5,178	3,549	3,484	2,734
1993	6,564	5,855	5,579	6,386	5,244	3,443	3,368	2,706
1994	6,478	5,874	5,566	6,220	5,089	3,478	3,364	2,590
1995	6,256	5,778	5,467	6,111	5,032	3,494	3,422	2,673
1996	6,178	5,719	5,438	6,015	4,987	3,561	3,540	2,773
1997	6,406	5,849	5,621	6,231	5,194	3,583	3,564	2,735
1998	6,407	5,924	5,663	6,307	5,315	3,427	3,406	2,692
1999	6,266	5,757	5,459	6,180	5,251	3,586	3,616	2,921
2000	6,179	5,656	5,402	6,131	5,264	3,546	3,554	2,934
2001	6,302	5,861	5,638	6,373	5,546	3,409	3,442	2,726
2002	6,358	5,890	5,619	6,384	5,524	3,428	3,441	2,719
2003	6,581	6,078	5,888	6,474	5,622	3,496	3,433	2,744
2004	6,627	6,155	5,883	6,558	5,618	3,357	3,420	2,830
2005	6,566	6,103	5,867	6,550	5,578	3,555	3,480	2,766
2006	6,536	6,098	5,839	6,535	5,612	3,498	3,330	2,744
2007	6,504	6,048	5,826	6,554	5,664	3,473	3,419	2,841
2008	6,642	6,180	5,887	6,492	5,694	3,295	3,174	2,642
2009	6,768	6,326	6,038	6,663	5,774	3,515	3,449	2,845
% Change								
1961-1972	-11.75%	-18.11%	-15.84%			-14.85%		
1972-1980	0.67%	0.80%	0.02%			-3.33%		
1980-1990	7.92%	5.77%	5.41%	-1.62%	-1.22%	-2.88%	-1.80%	-3.02%
1990-2000	0.72%	1.48%	2.01%	2.17%	6.13%	-5.55%	-7.23%	-5.78%
2000-2009	9.54%	11.85%	11.78%	8.69%	9.69%	-0.87%	-2.95%	-3.06%
1980-2009	19.07%	20.05%	20.18%	9.25%	14.99%	-9.07%	-11.59%	-11.42%
1972-2009	19.87%	21.01%	20.21%			-12.09%		

Notes: The amounts are in 2005 dollars. See notes for Figure 4.

Appendix Table 6: Poverty Rates and Changes in Poverty with Standard Errors by Family Type, 1980-2009

Resources Used to Define Poverty Price Index Survey	Single Parent Families			Married Parent Families			Single Individuals			Married without Children			Head 65 and Over		
	After-Tax Income + Noncash Benefits	Consumption Including Health Insurance	(2) - (1)	After-Tax Income + Noncash Benefits	Consumption Including Health Insurance	(5) - (4)	After-Tax Income + Noncash Benefits	Consumption Including Health Insurance	(8) - (7)	After-Tax Income + Noncash Benefits	Consumption Including Health Insurance	(11) - (10)	After-Tax Income + Noncash Benefits	Consumption Including Health Insurance	(14) - (13)
	CPS (1)	CE (2)	(3)	CPS (4)	CE (5)	(6)	CPS (7)	CE (8)	(9)	CPS (10)	CE (11)	(12)	CPS (13)	CE (14)	(15)
<b>Year</b>															
1980	0.3924 (0.0065)	0.3751 (0.0243)	-0.0173 (0.0251)	0.1050 (0.0021)	0.1074 (0.0081)	0.0024 (0.0084)	0.1516 (0.0028)	0.1485 (0.0096)	-0.0030 (0.0100)	0.0407 (0.0017)	0.0446 (0.0057)	0.0039 (0.0059)	0.1236 (0.0029)	0.1463 (0.0101)	0.0227 (0.0104)
1990	0.3974 (0.0065)	0.3348 (0.0211)	-0.0627 (0.0221)	0.1084 (0.0024)	0.1194 (0.0085)	0.0111 (0.0088)	0.1532 (0.0027)	0.1160 (0.0092)	-0.0371 (0.0096)	0.0431 (0.0019)	0.0385 (0.0060)	-0.0046 (0.0063)	0.0895 (0.0025)	0.0887 (0.0094)	-0.0009 (0.0097)
2000	0.2608 (0.0062)	0.2318 (0.0120)	-0.0290 (0.0135)	0.0649 (0.0022)	0.1033 (0.0055)	0.0383 (0.0059)	0.1363 (0.0027)	0.1001 (0.0051)	-0.0362 (0.0058)	0.0393 (0.0020)	0.0324 (0.0039)	-0.0069 (0.0044)	0.0712 (0.0025)	0.0539 (0.0058)	-0.0173 (0.0063)
2009	0.2743 (0.0045)	0.1941 (0.0135)	-0.0802 (0.0143)	0.0678 (0.0017)	0.0871 (0.0064)	0.0194 (0.0066)	0.1736 (0.0023)	0.0939 (0.0056)	-0.0797 (0.0061)	0.0456 (0.0018)	0.0273 (0.0035)	-0.0182 (0.0040)	0.0667 (0.0021)	0.0313 (0.0045)	-0.0354 (0.0049)
<b>Change</b>															
1980 - 1990	0.0051 (0.0092)	-0.0403 (0.0322)	-0.0454 (0.0335)	0.0034 (0.0032)	0.0121 (0.0117)	0.0087 (0.0122)	0.0016 (0.0039)	-0.0325 (0.0133)	-0.0341 (0.0138)	0.0024 (0.0025)	-0.0061 (0.0083)	-0.0084 (0.0086)	-0.0340 (0.0038)	-0.0576 (0.0138)	-0.0236 (0.0143)
1990 - 2000	-0.1367 (0.0089)	-0.1030 (0.0243)	0.0337 (0.0259)	-0.0434 (0.0032)	-0.0162 (0.0101)	0.0273 (0.0106)	-0.0169 (0.0038)	-0.0160 (0.0105)	0.0009 (0.0112)	-0.0038 (0.0027)	-0.0061 (0.0072)	-0.0023 (0.0077)	-0.0184 (0.0035)	-0.0348 (0.0110)	-0.0165 (0.0116)
2000 - 2009	0.0136 (0.0076)	-0.0376 (0.0181)	-0.0512 (0.0197)	0.0029 (0.0028)	-0.0161 (0.0084)	-0.0190 (0.0089)	0.0373 (0.0036)	-0.0062 (0.0076)	-0.0435 (0.0084)	0.0062 (0.0027)	-0.0051 (0.0053)	-0.0113 (0.0059)	-0.0045 (0.0033)	-0.0226 (0.0073)	-0.0181 (0.0080)
1980 - 2009	-0.1180 (0.0079)	-0.1809 (0.0278)	-0.0629 (0.0289)	-0.0372 (0.0027)	-0.0202 (0.0103)	0.0170 (0.0107)	0.0220 (0.0037)	-0.0547 (0.0111)	-0.0767 (0.0117)	0.0049 (0.0025)	-0.0172 (0.0067)	-0.0221 (0.0071)	-0.0569 (0.0035)	-0.1150 (0.0110)	-0.0582 (0.0115)

Notes: See notes to Table 2 and Appendix Table 4.

Appendix Table 7: Assets and Debts of the Income Poor by Family Type, 1960-2009

	Single Parent Families					Married Parent Families					Single Individuals					Married without Children					Head 65 and Over				
	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Homeowner	0.211	0.200	0.215	0.194	0.249	0.358	0.422	0.461	0.412	0.450	0.491	0.194	0.218	0.209	0.219	0.564	0.405	0.634	0.649	0.641	0.603	0.691	0.704	0.729	0.687
Own a car	0.151	0.329	0.433	0.504	0.596	0.726	0.783	0.853	0.840	0.842	0.299	0.475	0.542	0.600	0.581	0.677	0.735	0.851	0.881	0.831	0.343	0.514	0.649	0.722	0.699
Total Financial Assets																									
Median	.	0	0	0	0	.	0	0	0	0	.	4	111	133	114	.	81	58	144	2	.	0	0	24	3
75th Percentile	.	0	0	0	5	.	381	519	333	273	.	607	1,148	1,152	1,325	.	2,022	2,696	2,823	1,000	.	2,831	1,117	1,955	1,240
85th Percentile	.	15	100	60	100	.	1,213	1,730	1,376	1,200	.	1,618	2,549	2,576	3,000	.	4,206	12,516	15,223	5,519	.	8,897	6,796	12,130	6,429
90th Percentile	.	190	397	254	318	.	3,235	3,043	3,639	2,905	.	2,831	4,758	4,852	5,305	.	9,758	24,624	56,378	19,000	.	13,547	16,430	35,539	23,538
95th Percentile	.	1,375	1,019	878	833	.	9,301	11,972	15,059	9,557	.	6,875	13,680	14,072	13,236	.	20,220	60,315	129,874	238,202	.	27,023	48,440	122,514	118,595
Change in Total Financial Assets																									
5th Percentile	-824	-761	-358	0	-145	-3,899	-5,844	-1,699	-1,231	-910	-10,612	-5,055	-1,903	-2,426	-2,354	-11,549	-4,567	-4,354	-11,727	-12,694	-7,633	-5,662	-1,967	-1,239	-3,277
10th Percentile	-55	-190	0	0	0	-1,070	-1,213	-456	0	-100	-7,743	-2,022	-822	-724	-760	-6,361	-2,022	-1,520	-1,239	-942	-3,955	-1,903	-170	0	-1
15th Percentile	0	0	0	0	0	-277	-607	0	0	0	-4,468	-1,423	-329	-261	-136	-4,117	-987	0	0	0	-2,212	-381	0	0	0
Percent Change in Total Financial Assets																									
5th Percentile	.	-1.00	-0.29	0.00	-0.20	.	-1.00	-0.67	-0.33	-0.40	.	-1.00	-0.71	-0.71	-0.43	.	-1.00	-0.94	-0.28	-0.60	.	-1.00	-0.33	-0.12	-0.20
10th Percentile	.	-0.98	0.00	0.00	0.00	.	-1.00	-0.22	0.00	-0.11	.	-0.93	-0.33	-0.33	-0.21	.	-0.84	-0.21	-0.09	-0.20	.	-0.50	-0.03	0.00	0.00
15th Percentile	.	-0.24	0.00	0.00	0.00	.	-1.00	0.00	0.00	0.00	.	-0.86	-0.22	-0.16	-0.10	.	-0.53	0.00	0.00	0.00	.	-0.17	0.00	0.00	0.00
N (asset sample)	194	351	698	1,054	1,012	720	433	539	670	700	206	173	936	1,309	1,561	247	200	197	248	287	813	314	402	538	643
Debt																									
Median	.	.	0	0	0	.	.	0	0	0	.	.	0	0	0	.	.	0	0	0	.	.	0	0	0
75th Percentile	.	.	360	27	0	.	.	1,368	1,173	387	.	.	194	509	212	.	.	865	867	1,155	.	.	152	0	0
85th Percentile	.	.	1,466	859	519	.	.	2,990	3,180	2,589	.	.	1,256	1,596	1,937	.	.	2,230	2,500	4,331	.	.	714	699	410
90th Percentile	.	.	2,336	1,910	1,775	.	.	4,661	5,898	5,649	.	.	3,172	3,258	5,178	.	.	4,377	4,092	8,006	.	.	1,263	1,330	1,114
95th Percentile	.	.	4,607	4,365	5,000	.	.	8,451	10,033	14,525	.	.	6,796	8,443	13,041	.	.	11,085	8,650	14,772	.	.	2,422	4,280	2,971
N (debt sample)	.	.	1,875	2,615	2,376	.	.	1,504	1,672	1,631	.	.	2,837	3,317	3,982	.	.	607	696	802	.	.	1,771	1,778	2,113

Notes: The sample includes all families in the CE that are income poor (defined using after-tax money income) and are designated as complete income reporters. All estimates are person weighted. See notes to Table 6.

Appendix Table 8: Assets, Debts, and Other Characteristics of the Income Poor by Consumption Poverty Status and by Family Type, 1960-2009

	Single Parent Families					Married Parent Families					Single Individuals					Married without Children					Head 65 and Over				
	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009	1960-1961	1972-1973	1980-1989	1990-1999	2000-2009
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Panel A: Income Poor but not Consumption Poor																									
Share of Income Poor	0.082	0.311	0.389	0.484	0.575	0.163	0.397	0.538	0.540	0.589	0.301	0.671	0.574	0.635	0.656	0.308	0.555	0.737	0.791	0.801	0.237	0.417	0.639	0.731	0.810
Homeowner	0.246	0.261	0.349	0.261	0.324	0.641	0.517	0.588	0.554	0.581	0.688	0.220	0.292	0.280	0.288	0.823	0.469	0.725	0.717	0.728	0.907	0.758	0.822	0.814	0.756
Own a car	0.302	0.447	0.666	0.652	0.692	0.878	0.883	0.933	0.906	0.903	0.488	0.553	0.686	0.707	0.679	0.926	0.828	0.921	0.920	0.891	0.504	0.744	0.746	0.810	0.755
Expenditures > Income	1.000	0.995	0.985	0.968	0.971	1.000	0.992	0.991	0.996	0.986	0.950	0.980	0.983	0.989	0.982	0.961	0.980	0.979	0.973	0.988	0.854	0.940	0.932	0.952	0.951
N	16	109	1,473	2,556	2,769	117	172	1,652	1,900	1,940	62	116	3,370	4,250	5,244	76	111	939	1,133	1,302	193	131	2,323	2,648	3,404
Total Financial Assets																									
Median	.	0	0	0	0	.	76	340	154	46	.	34	318	263	200	.	647	865	743	91	.	487	468	559	290
75th Percentile	.	89	224	119	74	.	1,719	1,889	2,455	1,140	.	856	1,740	1,433	1,813	.	3,175	5,915	7,434	2,276	.	5,039	8,976	7,818	4,842
85th Percentile	.	404	731	391	352	.	5,374	5,421	9,368	4,082	.	2,325	4,587	3,325	3,766	.	11,081	24,016	42,966	16,000	.	20,172	25,950	43,934	26,362
90th Percentile	.	1,522	1,643	1,054	652	.	7,612	9,365	15,428	7,748	.	2,980	9,880	8,688	6,960	.	16,378	52,247	78,845	54,918	.	26,642	53,200	89,711	82,782
95th Percentile	.	3,806	5,522	4,070	2,002	.	15,347	20,388	25,270	24,721	.	9,706	28,991	21,078	18,508	.	45,208	67,683	172,299	287,086	.	112,357	138,012	146,766	222,537
Change in Total Financial Assets																									
5th Percentile	-1,571	-3,094	-3,172	-234	-326	-19,413	-14,996	-7,152	-5,088	-2,376	-19,548	-6,834	-5,097	-3,717	-3,766	-33,511	-6,232	-8,204	-12,390	-17,840	-16,607	-19,791	-3,460	-3,816	-12,000
10th Percentile	-1,571	-952	-865	0	0	-12,168	-5,864	-1,520	-364	-703	-16,476	-4,282	-1,520	-1,088	-1,086	-19,631	-2,831	-1,643	-2,392	-2,000	-12,846	-7,612	-2,682	-262	-910
15th Percentile	-1,571	-624	-33	0	0	-7,190	-2,188	-510	0	-3	-10,509	-2,103	-476	-480	-227	-11,549	-1,484	-40	-682	-816	-9,098	-3,806	-1,586	0	0
Percent Change in Total Financial Assets																									
5th Percentile	.	-1.00	-0.76	-0.25	-0.33	.	-1.00	-0.71	-0.62	-0.47	.	-1.00	-0.71	-0.77	-0.45	.	-1.00	-0.94	-0.33	-0.63	.	-1.00	-0.88	-0.33	-0.29
10th Percentile	.	-1.00	-0.24	0.00	0.00	.	-1.00	-0.46	-0.27	-0.27	.	-0.95	-0.33	-0.38	-0.25	.	-0.84	-0.14	-0.15	-0.29	.	-0.50	-0.32	-0.05	-0.10
15th Percentile	.	-0.70	-0.04	0.00	0.00	.	-1.00	-0.21	0.00	-0.07	.	-0.90	-0.24	-0.21	-0.13	.	-0.58	-0.03	-0.05	-0.12	.	-0.44	-0.08	0.00	0.00
N (asset sample)	16	109	255	454	526	117	172	264	349	372	62	116	510	816	1,032	76	111	130	188	216	193	131	217	365	474
Debt																									
75th Percentile	.	.	971	579	181	.	.	2,432	2,427	1,813	.	.	623	1,031	546	.	.	1,155	1,158	1,804	.	.	181	51	0
85th Percentile	.	.	2,244	2,264	1,061	.	.	4,725	5,429	5,580	.	.	2,468	2,462	3,402	.	.	3,653	2,693	5,103	.	.	795	805	570
90th Percentile	.	.	3,678	3,591	2,945	.	.	6,748	8,113	9,067	.	.	4,470	5,576	7,999	.	.	6,344	5,580	9,067	.	.	1,520	1,433	1,412
95th Percentile	.	.	6,718	7,248	7,371	.	.	12,342	13,356	21,661	.	.	9,268	11,125	16,006	.	.	12,977	11,438	17,097	.	.	2,612	3,909	3,627
N (debt sample)	.	.	741	1,246	1,358	.	.	802	897	954	.	.	1,634	2,099	2,628	.	.	438	549	633	.	.	1,108	1,314	1,704
Panel B: Income Poor and Consumption Poor																									
Homeowner	0.208	0.179	0.150	0.146	0.166	0.316	0.374	0.330	0.280	0.276	0.411	0.149	0.106	0.084	0.092	0.457	0.329	0.407	0.418	0.359	0.532	0.653	0.533	0.554	0.468
Own a car	0.139	0.288	0.318	0.395	0.490	0.704	0.733	0.770	0.779	0.762	0.223	0.340	0.327	0.413	0.401	0.574	0.624	0.680	0.749	0.634	0.305	0.384	0.509	0.540	0.522
Expenditures > Income	0.626	0.601	0.660	0.675	0.746	0.670	0.676	0.702	0.745	0.716	0.540	0.536	0.751	0.764	0.730	0.599	0.628	0.703	0.801	0.730	0.508	0.423	0.577	0.682	0.671
N	178	242	2,315	2,728	2,046	603	261	1,417	1,618	1,352	144	57	2,502	2,447	2,747	171	89	335	300	324	620	183	1,312	976	800
Total Financial Assets																									
75th Percentile	.	0	0	0	0	.	76	0	3	11	.	381	510	586	772	.	685	26	0	1	.	1,820	170	120	5
85th Percentile	.	0	8	0	3	.	404	242	124	154	.	1,115	1,274	1,634	1,868	.	1,771	575	254	94	.	6,470	1,049	1,014	331
90th Percentile	.	19	57	33	53	.	1,047	537	269	279	.	1,941	2,059	2,592	3,099	.	2,759	1,019	725	300	.	11,323	2,209	1,955	701
95th Percentile	.	607	397	243	330	.	4,044	1,807	798	700	.	3,806	3,755	4,858	5,837	.	4,206	19,029	957	413	.	19,087	5,097	5,985	1,434
Change in Total Financial Assets																									
5th Percentile	-498	-228	-17	0	-10	-1,383	-1,998	-519	-20	-155	-6,849	-761	-1,384	-1,158	-882	-3,319	-3,425	-1,788	-36	0	-4,287	-1,713	0	0	0
10th Percentile	-6	-57	0	0	0	-553	-607	0	0	0	-4,021	-304	-397	-359	-290	-1,051	-922	-164	0	0	-1,815	-761	0	0	0
15th Percentile	0	0	0	0	0	-55	-266	0	0	0	-2,766	-202	-170	-14	0	-553	-381	0	0	0	-979	0	0	0	0
Percent Change in Total Financial Assets																									
5th Percentile	.	-1.00	-0.18	0.00	-0.07	.	-1.00	-0.43	-0.02	-0.18	.	-0.93	-0.73	-0.54	-0.37	.	-1.00	-1.00	-0.04	0.00	.	-1.00	0.00	0.00	0.00
10th Percentile	.	-0.96	0.00	0.00	0.00	.	-1.00	0.00	0.00	0.00	.	-0.36	-0.35	-0.23	-0.15	.	-0.86	-0.79	0.00	0.00	.	-0.20	0.00	0.00	0.00
15th Percentile	.	0.00	0.00	0.00	0.00	.	-0.99	0.00	0.00	0.00	.	-0.05	-0.18	-0.05	0.00	.	-0.48	0.00	0.00	0.00	.	-0.04	0.00	0.00	0.00
N (asset sample)	178	242	443	600	486	603	261	275	321	328	144	57	426	493	529	171	89	67	60	71	620	183	185	173	169
Debt																									
75th Percentile	.	.	114	0	0	.	.	519	203	0	.	.	0	0	0	.	.	380	0	0	.	.	114	0	0
85th Percentile	.	.	1,025	213	0	.	.	1,699	1,356	282	.	.	209	425	441	.	.	1,427	732	753	.	.	673	405	0
90th Percentile	.	.	1,813	718	516	.	.	2,314	2,936	1,588	.	.	848	991	1,846	.	.	1,901	2,852	1,784	.	.	986	869	386
95th Percentile	.	.	3,735	2,392	2,731	.	.	4,460	6,226	4,357	.	.	3,010	2,576	4,842	.	.	3,142	4,092	11,156	.	.	1,666	4,852	1,081
N (debt sample)	.	.	1,134	1,369	1,018	.	.	702	775	677	.	.	1,203	1,218	1,354	.	.	169	147	169	.	.	663	464	409

Notes: The samples are restricted to families in the CE that are income poor (defined using after-tax money income) and are designated as complete income reporters. All estimates are person weighted. See notes to Table 6.

Appendix Table 9: Income Poverty Rates with Different Equivalence Scales and Resource Sharing Units and Consumption Poverty Rates with and without Housing Consumption, 1960-2009

Price Index Scale	Money Income	Money Income	Money Income	Money Income	Consumption Including	
	CPI-U	CPI-U	CPI-U-RS	CPI-U-RS	Health Insurance	Non-housing Consumption
Resource Sharing Unit	Official	NAS	NAS	NAS	CPI-U-RS	CPI-U-RS
Year	Family	Family	Family	Household	Family	Family
	(1)	(2)	(3)	(4)	(5)	(6)
1960-61/1963	0.195	0.203	0.237	0.246		
1972	0.119	0.121	0.141	0.144		
1973	0.111	0.113	0.131	0.135		
1980	0.130	0.130	0.130	0.130	0.130	0.130
1981	0.140	0.139	0.137	0.137	0.130	0.125
1982	0.150	0.149	0.147	0.147		
1983	0.152	0.152	0.152	0.151		
1984	0.144	0.144	0.143	0.141		
1985	0.140	0.139	0.139	0.135		
1986	0.136	0.135	0.133	0.131		
1987	0.134	0.133	0.131	0.128		
1988	0.130	0.130	0.127	0.124	0.132	0.145
1989	0.128	0.127	0.124	0.120	0.121	0.132
1990	0.135	0.133	0.129	0.124	0.125	0.137
1991	0.142	0.140	0.134	0.129	0.128	0.142
1992	0.148	0.147	0.140	0.136	0.130	0.151
1993	0.151	0.150	0.143	0.137	0.123	0.141
1994	0.145	0.143	0.136	0.129	0.117	0.135
1995	0.138	0.136	0.126	0.121	0.118	0.147
1996	0.137	0.134	0.126	0.120	0.119	0.145
1997	0.133	0.130	0.121	0.114	0.109	0.133
1998	0.127	0.124	0.115	0.108	0.103	0.128
1999	0.119	0.116	0.107	0.099	0.104	0.134
2000	0.113	0.111	0.101	0.094	0.100	0.127
2001	0.117	0.114	0.105	0.098	0.097	0.130
2002	0.121	0.118	0.109	0.101	0.093	0.127
2003	0.125	0.123	0.114	0.106	0.099	0.137
2004	0.127	0.125	0.116	0.108	0.088	0.131
2005	0.126	0.124	0.114	0.106	0.085	0.123
2006	0.123	0.119	0.111	0.102	0.082	0.119
2007	0.125	0.122	0.113	0.104	0.078	0.116
2008	0.132	0.130	0.121	0.112	0.073	0.105
2009	0.143	0.140	0.130	0.119	0.083	0.122
Change:						
1963-1972	-0.076	-0.082	-0.097	-0.101	0.000	
1972-1980	0.011	0.009	-0.011	-0.014	0.130	
1980-1990	0.005	0.003	-0.001	-0.006	-0.005	0.008
1990-2000	-0.022	-0.022	-0.027	-0.030	-0.025	-0.011
2000-2009	0.030	0.029	0.028	0.024	-0.017	-0.005
1980-2009	0.013	0.010	0.000	-0.011	-0.047	-0.008
1972-2009	0.024	0.019	-0.011	-0.026	0.083	

Notes: The rates are anchored at the official rate in 1980. Consumption data are from the CE and income data are from the CPS-ASEC/ADF. Household level poverty is determined using the resources of all members of the household, regardless of whether they are related. See notes to Figure 1.

Appendix Table 10: Consumption and Income Deep Poverty Rates (Fraction below 50% of Threshold) and Near Poverty Rates (Fraction below 150% of Threshold), 1960-2009

Scale	50 % of Threshold							150 % of Threshold						
	Official	Money	After-Tax	After-Tax	Consumption	Consumption	Official	Money	After-Tax	After-Tax	Consumption	Consumption		
	Income	Income	Income +	Income +	Including	Including	Income	Income	Income +	Income +	Including	Including		
	Poverty	Income	Noncash	Noncash	Health	Health	Poverty	Income	Noncash	Noncash	Health	Health		
Official	NAS	NAS	NAS	NAS	NAS	NAS	Official	NAS	NAS	NAS	NAS	NAS		
Price Index	CPI-U	CPI-U-RS	CPI-U-RS	Adjusted	CPI-U-RS	CPI-U-RS	CPI-U	CPI-U-RS	CPI-U-RS	Adjusted	CPI-U-RS	CPI-U-RS	Adjusted	
Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1960-61/1963	0.079	0.086			0.034			0.339	0.423				0.487	
1972	0.038	0.042			0.018			0.221	0.261				0.371	
1973	0.034	0.037			0.014			0.207	0.245				0.341	
1980	0.044	0.043	0.032	0.032	0.017	0.018	0.018	0.232	0.239	0.294	0.294	0.331	0.348	0.348
1981	0.049	0.047	0.035	0.034	0.016	0.016	0.015	0.247	0.247	0.294	0.290	0.349	0.365	0.361
1982	0.056	0.054	0.039	0.038				0.255	0.258	0.306	0.299			
1983	0.059	0.057	0.041	0.040				0.256	0.261	0.314	0.303			
1984	0.055	0.054	0.039	0.037	0.015			0.243	0.246	0.299	0.283	0.339		
1985	0.052	0.050	0.038	0.035	0.020			0.239	0.242	0.298	0.279	0.325		
1986	0.053	0.051	0.038	0.035	0.017			0.229	0.231	0.297	0.277	0.333		
1987	0.052	0.051	0.035	0.032	0.013			0.224	0.224	0.271	0.249	0.326		
1988	0.052	0.050	0.035	0.032	0.012	0.014	0.010	0.222	0.221	0.268	0.243	0.321	0.326	0.289
1989	0.049	0.046	0.033	0.030	0.013	0.012	0.010	0.220	0.217	0.265	0.236	0.314	0.314	0.271
1990	0.052	0.048	0.033	0.028	0.013	0.014	0.010	0.227	0.223	0.270	0.239	0.327	0.315	0.270
1991	0.056	0.052	0.035	0.029	0.010	0.010	0.007	0.238	0.231	0.273	0.238	0.335	0.310	0.262
1992	0.061	0.056	0.039	0.033	0.012	0.012	0.009	0.245	0.238	0.277	0.239	0.348	0.320	0.266
1993	0.062	0.058	0.039	0.033	0.011	0.010	0.008	0.250	0.242	0.279	0.236	0.329	0.302	0.246
1994	0.059	0.055	0.033	0.028	0.007	0.008	0.005	0.243	0.232	0.260	0.215	0.331	0.302	0.243
1995	0.053	0.048	0.032	0.026	0.009	0.009	0.006	0.235	0.224	0.249	0.203	0.331	0.305	0.243
1996	0.054	0.049	0.030	0.025	0.009	0.009	0.005	0.234	0.220	0.247	0.199	0.324	0.304	0.234
1997	0.054	0.049	0.033	0.027	0.008	0.008	0.005	0.225	0.212	0.239	0.190	0.304	0.288	0.213
1998	0.051	0.047	0.032	0.027	0.009	0.009	0.005	0.215	0.201	0.226	0.175	0.303	0.279	0.204
1999	0.047	0.043	0.030	0.025	0.010	0.010	0.005	0.210	0.193	0.218	0.162	0.305	0.282	0.204
2000	0.045	0.040	0.029	0.024	0.008	0.008	0.005	0.202	0.187	0.208	0.154	0.296	0.272	0.193
2001	0.048	0.044	0.033	0.028	0.008	0.008	0.005	0.208	0.193	0.205	0.151	0.288	0.265	0.186
2002	0.049	0.046	0.034	0.028	0.007	0.008	0.005	0.214	0.199	0.208	0.152	0.279	0.255	0.175
2003	0.053	0.049	0.037	0.030	0.009	0.009	0.005	0.217	0.201	0.207	0.153	0.297	0.268	0.179
2004	0.054	0.050	0.037	0.030	0.008	0.008	0.004	0.216	0.202	0.205	0.148	0.280	0.255	0.166
2005	0.054	0.051	0.036	0.029	0.007	0.007	0.004	0.215	0.199	0.199	0.143	0.271	0.247	0.154
2006	0.052	0.049	0.034	0.028	0.007	0.007	0.003	0.213	0.195	0.195	0.137	0.253	0.234	0.145
2007	0.052	0.048	0.036	0.028	0.007	0.007	0.004	0.217	0.200	0.203	0.141	0.256	0.232	0.141
2008	0.057	0.053	0.038	0.030	0.006	0.005	0.004	0.226	0.210	0.208	0.144	0.255	0.232	0.131
2009	0.063	0.058	0.040	0.030	0.007	0.006	0.003	0.236	0.221	0.205	0.143	0.277	0.249	0.144
Change:														
1961-1972	-0.041	-0.044			-0.016			-0.118	-0.163			-0.116		
1972-1980	0.006	0.001			-0.001			0.011	-0.022			-0.040		
1980-1990	0.008	0.006	0.001	-0.003	-0.004	-0.004	-0.008	-0.005	-0.016	-0.025	-0.056	-0.003	-0.033	-0.079
1990-2000	-0.007	-0.008	-0.003	-0.004	-0.005	-0.005	-0.004	-0.025	-0.036	-0.062	-0.084	-0.032	-0.043	-0.077
2000-2009	0.018	0.017	0.010	0.006	-0.001	-0.002	-0.002	0.034	0.034	-0.003	-0.011	-0.019	-0.023	-0.049
1980-2009	0.019	0.015	0.008	-0.001	-0.010	-0.011	-0.015	0.005	-0.018	-0.089	-0.151	-0.054	-0.100	-0.205
1972-2009	0.025	0.016			-0.011				-0.040			-0.094		

Notes: Poverty status is determined at the family level and then person weighted. Thresholds are 50 percent and 150 percent of the thresholds used in Tables 1 and 2. Consumption data are from the CE and income data are from the CPS-ASEC/ADF.

Appendix Table 11: Consumption and Income Relative Poverty (Fraction below 50% of Median) by Family Type, 1960-2009

Year	Single Parent Families		Married Parent Families		Single Individuals		Married without Children		Head 65 and Over	
	After-Tax Income	Consumption	After-Tax Income	Consumption	After-Tax Income	Consumption	After-Tax Income	Consumption	After-Tax Income	Consumption
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1960-61/1963	0.490	0.267	0.128	0.097	0.229	0.069	0.086	0.042	0.280	0.188
1972	0.518	0.282	0.110	0.086	0.201	0.093	0.057	0.041	0.270	0.178
1973	0.504	0.325	0.104	0.079	0.189	0.090	0.056	0.028	0.251	0.192
1980	0.471	0.320	0.119	0.081	0.169	0.121	0.049	0.033	0.210	0.159
1981	0.469	0.289	0.127	0.076	0.178	0.101	0.057	0.029	0.185	0.139
1982	0.507		0.142		0.179		0.065		0.173	
1983	0.511		0.153		0.196		0.065		0.173	
1984	0.506	0.322	0.152	0.116	0.190	0.124	0.069	0.034	0.171	0.121
1985	0.505	0.314	0.145	0.116	0.185	0.125	0.069	0.044	0.175	0.151
1986	0.527	0.348	0.142	0.109	0.193	0.110	0.062	0.040	0.184	0.131
1987	0.520	0.349	0.145	0.104	0.197	0.104	0.064	0.034	0.203	0.123
1988	0.507	0.361	0.141	0.103	0.191	0.086	0.063	0.025	0.200	0.122
1989	0.500	0.325	0.145	0.106	0.185	0.077	0.063	0.033	0.197	0.119
1990	0.499	0.298	0.145	0.104	0.185	0.104	0.062	0.034	0.184	0.114
1991	0.511	0.306	0.145	0.108	0.187	0.095	0.060	0.031	0.180	0.094
1992	0.509	0.290	0.143	0.107	0.193	0.096	0.062	0.027	0.188	0.090
1993	0.492	0.295	0.144	0.108	0.201	0.089	0.067	0.027	0.177	0.099
1994	0.470	0.270	0.133	0.097	0.204	0.091	0.067	0.042	0.171	0.088
1995	0.437	0.261	0.126	0.105	0.200	0.088	0.063	0.025	0.164	0.089
1996	0.432	0.295	0.128	0.104	0.198	0.088	0.065	0.036	0.171	0.082
1997	0.439	0.270	0.124	0.101	0.206	0.091	0.064	0.033	0.175	0.078
1998	0.419	0.254	0.123	0.105	0.209	0.095	0.062	0.033	0.185	0.070
1999	0.409	0.247	0.123	0.107	0.210	0.107	0.075	0.034	0.183	0.084
2000	0.394	0.240	0.122	0.104	0.200	0.103	0.071	0.035	0.201	0.086
2001	0.384	0.279	0.117	0.100	0.211	0.110	0.077	0.036	0.196	0.082
2002	0.376	0.264	0.120	0.103	0.215	0.117	0.071	0.037	0.201	0.086
2003	0.396	0.260	0.120	0.106	0.226	0.106	0.075	0.041	0.205	0.083
2004	0.390	0.243	0.115	0.109	0.229	0.102	0.079	0.045	0.203	0.079
2005	0.397	0.226	0.114	0.102	0.230	0.111	0.074	0.041	0.199	0.090
2006	0.404	0.240	0.111	0.110	0.225	0.096	0.072	0.043	0.185	0.099
2007	0.408	0.216	0.119	0.106	0.220	0.092	0.072	0.047	0.194	0.075
2008	0.392	0.228	0.118	0.090	0.231	0.098	0.076	0.030	0.182	0.075
2009	0.398	0.211	0.115	0.093	0.242	0.101	0.076	0.030	0.167	0.061
Change:										
1961-1972	0.028	0.015	-0.018	-0.011	-0.028	0.024	-0.029	-0.001	-0.010	-0.010
1972-1980	-0.047	0.037	0.008	-0.004	-0.032	0.028	-0.008	-0.008	-0.060	-0.020
1980-1990	0.028	-0.021	0.026	0.023	0.016	-0.017	0.013	0.001	-0.025	-0.044
1990-2000	-0.104	-0.059	-0.023	0.000	0.015	-0.001	0.010	0.001	0.017	-0.028
2000-2009	0.004	-0.029	-0.007	-0.011	0.042	-0.003	0.005	-0.005	-0.034	-0.025
1980-2009	-0.073	-0.109	-0.004	0.012	0.073	-0.020	0.027	-0.003	-0.042	-0.097
1972-2009	-0.120	-0.071	0.005	0.008	0.041	0.008	0.019	-0.012	-0.103	-0.117

Notes: An individual is designated as poor if family resources fall below 50 percent of the median of the individual weighted, NAS scale-adjusted distribution for the respective resource measure. Consumption data are from the CE and income data are from the CPS-ASEC/ADF.