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EVALUATING THE SUCCESS OF PRESIDENT JOHNSON'S WAR ON POVERTY:  
REVISITING THE HISTORICAL RECORD USING AN ABSOLUTE FULL-INCOME POVERTY MEASURE

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Evaluating the Success of President Johnson's War on Poverty: Revisiting the Historical Record  
Using an Absolute Full-Income Poverty Measure

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**ABSTRACT**

We evaluate progress in President Johnson's War on Poverty relative to the 20 percent baseline poverty rate he established for 1963. No existing poverty measure fully captures poverty reductions based on these standards. We fill this gap by developing an absolute Full-income Poverty Measure (FPM) whose thresholds are established to obtain this same 20 percent official poverty rate in 1963 while using a fuller measure of income and updating thresholds each year only for inflation. While the official poverty rate fell from 19.5 percent in 1963 to 10.5 percent in 2019, our absolute FPM rate fell from 19.5 to 1.6 percent. This reflects increases in full income throughout the distribution, with real median income more than doubling between 1963 and 2019, together with the expansion of government transfers and tax benefits not fully captured by the official measure. It is also broadly consistent with the expectations of President Johnson and his Council of Economic Advisers, including Robert Lampman who predicted in 1971 that poverty based on these absolute standards would be eliminated by 1980. However, we also show that reductions in relative poverty since 1963 have been far more modest, falling from 19.5 to 16.0 percent in 2019.

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## 1. Introduction

In his State of the Union address on January 8, 1964, President Lyndon B. Johnson said: “This administration today, here and now, declares unconditional war on poverty in America” (Johnson 1965, p. 114). In a speech two months later, he outlined his terms of engagement:

“... I have called for a national war on poverty. Our objective: total victory. There are millions of Americans—one fifth of our people—who have not shared in the abundance which has been granted to most of us, and on whom the gates of opportunity have been closed” (Johnson 1965, p. 376).

Almost sixty years have passed since President Johnson declared his War on Poverty. Even so, academics and policymakers still debate its outcome. Arguing that progress in the War on Poverty was ineffective, Haskins (2013) stated that President Johnson’s “prediction that the nation could ‘conquer poverty’ turned out to be false.” In 2014 Congressman Paul Ryan wrote that “the poverty rate is the highest in a generation” (Ryan 2014). Both echoed President Reagan’s 1988 State of the Union address statement that “the Federal Government declared war on poverty, and poverty won” (Reagan 1990, p. 87).

Others have pointed to substantial progress, while making clear that President Johnson’s War on Poverty is not over. Bailey and Danziger (2013, p. 4) argue that the “conclusion that the War on Poverty was a ‘failure’ is far too simplistic.” The Council of Economic Advisers (2014) and Wimer et al. (2016) support this view of substantial progress, using an alternative poverty measure to find that poverty had declined by about 40 percent since 1967. The Council of Economic Advisers in 2018 suggested even greater progress and stated, “Based on historical standards of material wellbeing and the terms of engagement, our War on Poverty is largely over and a success” (CEA 2018, p. 29).

We argue that no existing poverty measure is capable of accurately evaluating the success of President Johnson’s War on Poverty as he defined it. Specifically, current measures either do

not evaluate progress relative to President Johnson’s baseline poverty rate of approximately 20 percent in 1963 or do not fully capture the growth of real income throughout the distribution. Real median incomes more than doubled between 1963 and 2019. This income growth, together with the creation and expansion of government transfers and tax benefits, has also resulted in real absolute income increases in the bottom tail of the income distribution.

A natural measure for evaluating the War on Poverty is the Official Poverty Measure. Reagan (1990), Haskins (2013) and Ryan (2014) base their claim of a lack of progress in fighting poverty on this official government statistic. Academic researchers, however, have long viewed the Official Poverty Measure as flawed. A 1995 report from a National Academies of Sciences Panel, for example, outlined its limitations, including its failure to capture the increase in in-kind benefits and tax-based transfers (Citro and Michael 1995).

Recognizing these limitations, several alternative measures address the shortcomings of the Official Poverty Measure. The Census Bureau now publishes a Supplemental Poverty Measure. Academics have also developed an absolute Supplemental Poverty Measure (Wimer et al. 2016) and a Consumption Poverty Measure (Meyer and Sullivan 2003, 2012a, 2012b, 2018).<sup>1</sup> Some of these alternative measures show substantial reductions in poverty over the past 50 years. Even so, none match the official rate in 1963, and some incorporate additional changes such as switching away from an absolute poverty measure to a quasi-relative one. Although these adjustments provide valuable new information on how low-income families are faring, these poverty measures do not evaluate President Johnson’s War on Poverty as he defined it.

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<sup>1</sup> Although Wimer et al. (2016) call their measure an “anchored-Supplemental Poverty Measure,” we refer to it in this paper as the absolute-Supplemental Poverty Measure since it is an absolute measure that holds constant the real value of its poverty thresholds over time. As we will discuss later, we use this terminology to avoid confusion in this paper and to distinguish it from poverty measures anchored to the Official Poverty Measure. Wimer et al. (2016) instead anchor to the Supplemental Poverty Measure’s poverty rate in a given year.

To evaluate his War on Poverty, a poverty measure must meet three basic conditions. First, its poverty thresholds must be set such that its poverty rate in 1963 is equal to the approximately 20 percent level set by President Johnson. President Johnson explicitly referenced this rate and it provides a uniform starting point for the share of people in poverty in 1963. Second, the 1963 poverty thresholds (also known as the “poverty line”) must remain constant in inflation-adjusted terms. Third, it must incorporate the full array of anti-poverty programs, including in-kind transfers and transfers administered through the tax code.

No existing poverty measure meets these three conditions. To fill this gap, we create a poverty measure, which we refer to as the absolute Full-income Poverty Measure (FPM). This measure maintains the same 1963 poverty rate as the Official Poverty Measure, matching Johnson’s baseline poverty rate (Johnson 1965). We hold poverty thresholds constant in inflation-adjusted terms using the Personal Consumption Expenditure (PCE) price index, which more accurately reflects price changes than the CPI-U inflation measure used for the Official Poverty Measure. Additionally, unlike the Official Poverty Measure, we include both cash and in-kind programs designed to fight poverty, including the market value of food stamps (now the Supplemental Nutrition Assistance Program, or SNAP), the school lunch program, housing assistance, and health insurance. Finally, we incorporate in a consistent way the technical improvements in how income is measured since the 1960s in both our measure of full income and in the new thresholds we create to anchor our new FPM poverty rate to the official poverty rate of 19.5 percent in 1963.

Based on Johnson’s standard and making these technical improvements to the official measure, our absolute FPM poverty rate in 2019 is 1.6 percent, well below the official poverty

rate of 10.5 percent.<sup>2</sup> The dramatic reduction in poverty is robust to individual components in the absolute FPM – for example, the poverty rate is 3.8 percent in 2019 when we place a zero value on health insurance, or 1.9 percent when we use the Consumer Price Index – Research Series (CPI-U-RS) instead of the PCE price index. Consequently, while recognizing that today’s expectations for minimum living standards have evolved from those in the 1960s, a relatively small share of Americans now live in poverty based on President Johnson’s initial standards.

An additional contribution is the creation of a counterfactual to our absolute poverty measure which shows how dramatically the levels and trends in poverty rates would have changed if President Johnson had instead committed the United States to reducing poverty based on a poverty measure that is the same as our absolute FPM except that its yearly threshold increases are tied (proportionally) to changes in median income—a relative FPM. Using this measure, little progress has been made in improving the relative living standards of low-income households. Using our relative FPM, poverty falls from 19.5 percent in 1963 to 16.0 percent in 2019—a 3.5 percentage point decline over the 56-year period.

## **2. Criteria for evaluating President Johnson’s War on Poverty**

When President Johnson declared his War on Poverty in 1964, much of the current social safety net did not exist and government tax expenditures and transfers made up a much smaller portion of Gross Domestic Product. His declaration was followed by key legislation that expanded federal programs assisting low-income individuals including food stamps, Medicaid, and Medicare. In the following decades, economic growth enabled further expansion of these programs along with tax expenditures directed to lower income individuals, transferring the

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<sup>2</sup> Rothbaum and Bee (2020) note that survey non-response in the 2020 March CPS due to COVID-19 appears to have upwardly biased median incomes and downwardly biased poverty statistics in 2019. However, results are qualitatively similar when we use 2018 income data that was not subject to the same concerns.

rewards of economic growth to the bottom part of the income distribution. Neither the in-kind transfer programs created in response to President Johnson's call to fight poverty nor future tax benefits are incorporated in the Official Poverty Measure.

In order to evaluate success in President Johnson's War on Poverty, a poverty measure must reflect the standards that President Johnson set and the array of anti-poverty programs implemented to fight that war by his and subsequent administrations. This requires satisfying three necessary conditions. First, the poverty threshold should maintain the initial 20 percent standard set by President Johnson. Second, the poverty thresholds should adjust with inflation each year to reflect an absolute standard rather than a relative one. Finally, post-tax, post-transfer resources should be included in income given the government's use of in-kind transfers and tax policies to fight poverty.

The first condition, that the starting point maintains an initial 20 percent poverty rate in 1963, reflects President Johnson's initial declaration of the war based on his view of how many Americans lived in poverty.<sup>3</sup> This 20 percent baseline was developed by President Johnson's Council of Economic Advisers (CEA), which published its poverty measure in the 1964 Economic Report of the President.<sup>4</sup> Subsequently, in response to President Johnson's War on

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<sup>3</sup> Adjusting the threshold to maintain the 20 percent poverty rate is consistent with the Council of Economic Advisers (CEA)'s initial view of poverty. They stated that while they measured poverty using a cash money income concept out of necessity, had they been able to use a broader income concept "the total of money plus nonmoney income that would correspond to the limit used here would be somewhat higher" (CEA 1964, p. 59). Nevertheless, Lampman acknowledges that poverty "is to a certain extent subjective rather than objective" (Lampman 1971, p. 53) and the CEA states that "[a] case could be made ... for setting the over-all income limit either higher or lower than \$3,000, thereby changing the statistical measure of the size of the problem" (CEA 1964, p. 58).

<sup>4</sup> After communications with President Kennedy in the spring of 1963, CEA (1964) set a \$3,000 threshold for families and a \$1,500 threshold for unrelated individuals to arrive at this approximately 20 percent poverty rate for 1962, its latest year of data. As Fisher (1992) makes clear this threshold was developed independently of those developed by Orshansky: "Robert Lampman (a member of the CEA staff) had been working on an analysis of poverty using the \$3,000 figure as early as the spring of 1963 several months before Orshansky's initial article was published. Instead, the \$3,000 figure was a consensus choice based on consideration of such factors as the minimum wage level, the income levels at which families began to have to pay Federal income taxes, and public assistance payment levels. In a February 1, 1964 speech, President Johnson implied that his 20 percent poverty rate was based

Poverty, the Official Poverty Measure was implemented using a different set of thresholds from Orshansky (1965) that obtained a similar 1963 poverty rate (Census Bureau 1969b). Fisher (2008) argues that the Official Poverty Measure used Orshansky's thresholds based on an "economy" food plan instead of a "low-cost" food plan because these thresholds produced a poverty rate consistent with the CEA (1964) 20 percent baseline.<sup>5</sup>

The second condition, that the 1963 poverty thresholds should increase over time to reflect inflation, reflects President Johnson's definition of the War on Poverty based on an absolute standard. In the 1964 Economic Report of the President, the Council of Economic Advisers used an absolute poverty line to calculate poverty rates back to 1947, and it was this poverty measure President Johnson referenced in his January 8, 1964 speech declaring the War on Poverty. Robert Lampman, the senior CEA staff economist who authored the poverty chapter in the 1964 Economic Report of the President and was considered the "intellectual architect of the war on poverty" (Passell 1997), argued that an absolute standard was appropriate for judging poverty efforts. He stated, "I do not think we should engage in frequent changes of the poverty line, other than to adjust for price changes" (Lampman 1971, p. 53).<sup>6</sup> Consistent with the CEA view of poverty endorsed by President Johnson for his War on Poverty, a relative standard was

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on the CEA thresholds. He said: "Imagine what government would mean to you that attacked the poverty program if your income was among the 20 percent that earns less than \$3,000 per year" (Johnson 1965, p. 287).

<sup>5</sup> One possible reason for the CEA not endorsing the methodology Orshansky used to establish her initial threshold is the lack of a scientific case for basing an absolute poverty line on cost estimates of some proposed level of nutritional adequacy. Stigler (1945) was an early critic of establishing minimum cost diets based on National Research Council Recommended Dietary Allowances, an argument he continued to make in the first edition of his price theory textbook (Stigler 1966). Others made similar criticisms. For example, Reid (1949) argued that food adequacy should not be singled out as the sole focus of poverty and later Reid (1964) criticized the arbitrary nature of poverty thresholds in her testimony before the Subcommittee on the War on Poverty Program of the Committee on Education and Labor. Friedman (1965) and later Townsend (1979) also included the use of this nutritional adequacy methodology in their criticism of absolute poverty thresholds.

<sup>6</sup> Lampman recognizes, however, that holding poverty thresholds constant in real terms is also arbitrary. He states: "There are various ways to state such a goal. For example, one could say the goal is to bring families over a poverty line defined as that income equal to one-half the median income" (Lampman 1971, p. 48). This reflects the controversy over how to adjust thresholds that existed in the 1960s and continues today.



rejected during the development of the Official Poverty Measure as well. Rather than increase thresholds based on changes in food consumption as proposed by the Social Security Administration, the Bureau of the Budget (supported by the Office of Economic Opportunity and CEA) decided that official thresholds would increase annually with inflation (Fisher 1992). While purely relative thresholds such as those tied to half of median income were not among the options most actively considered, these policy advisers were aware of such relative poverty standards that were being discussed by academics in the United Kingdom and United States at the time (e.g. Townsend 1962; Fuchs 1965).<sup>7</sup>

Finally, non-cash and tax-based benefits should be included in income to reflect the full array of anti-poverty programs. Just as full income measures should be used to measure levels and trends in income and income inequality (Elwell, Corinth, and Burkhauser 2020, Larrimore et al. forthcoming), broad income measures that include poverty-reducing tax and transfer programs should also be used when tracking how many people remain in poverty.<sup>8</sup> Although these programs were excluded from the Official Poverty Measure due to implementation concerns, the CEA (1964) stated that “[i]f it were possible to obtain estimates of total income—including non-money elements—for various types of families, those data would be preferable for the analysis” (CEA 1964, p. 58). The Canberra Group—in setting international standards for

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<sup>7</sup> While some have noted that the 1963 thresholds set by CEA (1964) were nearly half of median income, Robert Lampman later stated that this was not intentional (Fisher 1997, p. 10). Nevertheless, relative poverty measures were under discussion at the time. A relative conception of poverty was alluded to in general terms by John Kenneth Galbraith in his 1958 book, *The Affluent Society*, in which he refers to people as poor “when their income, even if adequate for survival, falls radically behind that of the community” (p. 251). Peter Townsend is more specific in his 1962 article, “The Meaning of Poverty,” stating that “poverty could be defined on the basis of the number of households or families of certain types having a total income of less than, say, half or two-thirds of the average” (Townsend 1962, p. 96). In 1965, Victor Fuchs proposed a relative poverty measure specifically for the United States (Fuchs 1965). While these proposals did not lead to government-produced relative poverty measures for the United States, relative poverty measures are standard in Europe and are also published yearly by the OECD.

<sup>8</sup> We do not attempt to include accrued capital gains to even more completely follow a Haig-Simons income definition since the procedure from Larrimore et al. (forthcoming) to estimate these gains cannot be implemented with available data prior to 1989. However, this should have relatively little effect on absolute poverty rates as few people in or near poverty have meaningful levels of investment income.

income measures—later emphasized the importance of broadening the definition of income beyond cash income measures such as that used in the Official Poverty Measure. They stated that if there “is a change in the way in which some goods or services are funded—e.g. a change from government’s providing in-kind benefits to providing cash benefits—then a consistent cash income definition may give a misleading impression of how particular groups have fared over time” (Canberra Group 2001, p. 56). More generally, a full income measure should be used to capture the growth in the importance of subsequent government tax and transfer policies in shifting growth in market income toward the lower tail of the distribution than that captured as income in the Official Poverty Measure as we more fully discuss below.

### **3. The Absolute Full-Income Poverty Measure Relative to the Official Poverty Measure**

The Official Poverty Measure cannot be used to measure success in President Johnson’s War on Poverty based on the criteria above. It satisfies the condition that the starting poverty rate was approximately 20 percent in 1963. However, it excludes many anti-poverty programs introduced since the 1960s in response to the War on Poverty. It also uses an upwardly biased measure of inflation, meaning that while it attempts to keep poverty thresholds constant in real terms, it does not actually do so.

The Official Poverty Measure is based on pre-tax, post-transfer cash income, excluding all in-kind benefits as well as social assistance administered through the tax code. For example, this measure excludes food stamps, which were expanded and made permanent in the Food Stamp Act of 1964. It also excludes Medicaid and Medicare, which began after the 1965 Social Security Act, as well as other programs implemented since the 1960s through the tax code such as the Earned Income Tax Credit (EITC) and the Child Tax Credit (CTC).

Since the 1960s, however, these excluded sources of income have become increasingly important for low-income populations. The percent of the population receiving Medicaid increased from non-existent in 1963 (prior to the program's inception in 1965) to 22.9 percent in 2019 (CMS 2020). The percent receiving food stamps increased from 0.2 percent in 1964, when the program had not yet been implemented nationally, to 10.9 percent in 2019 (USDA 2020). Also, the percent of U.S. households receiving rental housing assistance increased from 0.9 percent in 1963 to 3.4 percent in 2019, excluding those benefiting from the Low Income Housing Tax Credit (Collinson et al. 2016; HUD 2020). In 2019, the U.S. spent \$706 billion on these three non-cash welfare programs alone (authors' calculations). By not including these benefits as resources, the Official Poverty Measure effectively puts a zero value on them and misses their importance in reducing material hardship.

In addition, the U.S. spent \$65 billion on the Earned Income Tax Credit and \$36 billion on the Additional Child Tax Credit in tax year 2018 (IRS 2020). These tax provisions that are predominately targeted to low- and moderate-income families with children did not exist in 1963 at the outset of the War on Poverty. The Official Poverty Measure, by looking at pre-tax income rather than post-tax income, will miss the value of these tax changes to the after-tax resources of families.

The other major shortcoming of the Official Poverty Measure is that it adjusts the poverty line each year using the Bureau of Labor Statistics' (BLS) Consumer Price Index for all Urban Consumers (CPI-U). This prevents it from accurately tracking absolute levels of economic hardship. This is because the CPI-U has not used consistent methods to measure inflation over time and has historically overstated inflation (e.g., Boskin et al. 1996, Moulton 2018). As a result, using the CPI-U to adjust for inflation increases the poverty thresholds faster than is

necessary to keep the threshold constant in real terms over time. The BLS, which produces the CPI-U, is aware of the limitations of the CPI-U. In fact, the BLS states that “[t]raditionally, the CPI was considered an upper bound on a cost-of-living index in that the CPI did not reflect changes in buying or consumption patterns that consumers would make to adjust to relative price changes” (BLS 2019, para. 4).

The BLS has improved the CPI-U over time by accounting for the ways in which consumers respond to increasing prices by substituting to different goods, but historical CPI-U index values have not been updated to reflect these improvements. This means that the CPI-U overstates inflation in earlier years even relative to the inflation that would have been seen using the current methods for producing the series. The BLS makes these historical adjustments in another series, the CPI-U-RS, although the Census Bureau does not use the CPI-U-RS for poverty measurement.<sup>9</sup> Additionally, as discussed further below, other price indices such as the Chained CPI-U, also produced by the BLS, and the PCE price index, produced by the Bureau of Economic Analysis, more fully account for the ability of consumers to substitute between broader categories of products when prices increase. However, they do not account for all upward biases of the CPI-U identified by Moulton (2018) and other previous research. Although the Chained CPI-U is only available since 2000 and cannot be used for historical measures, the PCE can be used historically and has provided similar estimates of inflation for the years when

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<sup>9</sup> Because the CPI-U-RS is not available for the period from 1963-1978, we use the CPI-U inflation growth over this period in our analysis that follows whenever using the CPI-U-RS. This matches the Census Bureau’s approach to using CPI-U-RS for their annual income report (Fontenot, Semega, and Kollar 2018). However, this will likely increase observed inflation relative to the case where the adjustments were available for the entire period.

both are available.<sup>10</sup> Additionally, both suggest lower rates of inflation than the CPI-U and CPI-U-RS, implying that the CPI-U and CPI-U-RS generally overstate inflation.

Our absolute FPM addresses these limitations of the Official Poverty Measure and, as a result, can evaluate the progress in President Johnson’s War on Poverty based on the criteria above. This measure uses the same Current Population Survey–Annual Social and Economic Supplement (CPS-ASEC) data as the Official Poverty Measure. In creating the absolute FPM, we anchor it to the official measure by choosing thresholds that result in a poverty rate of 19.5 percent in 1963—an approximation of the 20 percent of the population President Johnson declared to be poor. We also incorporate anti-poverty programs left out of the official measure by using a post-tax, post-transfer income definition. Since we are broadening the income definition beyond that of the Official Poverty Measure, we adjust the thresholds upwards to reflect the additional income sources we include, and adjust the thresholds downwards to reflect income sources we exclude (i.e., taxes paid).<sup>11</sup> This is consistent with the recommendation from Citro and Michael (1995) that “any significant change in the definition of family resources should be accompanied by a consistent adjustment of the poverty thresholds” (pg. 67). Finally, we adopt an absolute poverty standard by adjusting thresholds each year using the PCE as a measure of inflation that addresses upward bias in the CPI-U. We provide the full details of our

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<sup>10</sup> See Cage, Greenlees, and Jackman (2003) for a discussion of the differences between the Chained CPI and the PCE as well as an early comparison of the measures. Because the PCE includes spending not conducted directly by consumers, the Chained CPI is preferred for measuring changes in consumer prices. However, since the Chained CPI is not available prior to the year 2000 and it produces similar results to the PCE since its inception, we opt to use the PCE for measuring inflation back to the 1960s in a consistent way.

<sup>11</sup> This means that when adding programs to the income definition that existed in 1963 but are excluded from the Official Poverty Measure, our threshold shifts to maintain the nearly 20 percent poverty rate in 1963. However, adding programs that did not exist in 1963 does not change the initial threshold since no individuals were yet receiving resources from these programs. This results in a consistent treatment of programs that existed in 1963 and programs that did not.

absolute FPM below, before showing how its poverty rate trends compare to those under the Official Poverty Measure.

The absolute FPM estimates the share of people in poverty using a post-tax, (comprehensive or full) post-transfer definition of income. Similar to the Official Poverty Measure, it includes market income (wages and salaries, self-employment and business income, farm income, retirement income from pensions, dividends, interest, rent and alimony) and cash transfers (Aid to Families with Dependent Children/Temporary Assistance for Needy Families, Social Security and workers' compensation). It then adds the market value of health and non-health in-kind transfers (food stamps/SNAP, subsidized school lunches, rental housing assistance, and Medicare and Medicaid) as well as the market value of compensation provided as employer-paid contributions to health insurance. It subtracts federal income and payroll taxes but adds tax credits including the Earned Income Tax Credit, Child Tax Credit, and Additional Child Tax Credit (the refundable portion of the CTC) based on estimated tax liabilities imputed by the Census Bureau in the CPS-ASEC and using NBER Taxsim 9.3 for years in which Census imputations are unavailable (Feenberg and Coutts 1993). We impute several of these income sources in the early years of our analysis because they were not collected in the CPS-ASEC. See Appendix A for details on these imputations.

The inclusion of the market value of health insurance in the resource measure of our absolute FPM follows a growing body of research showing its importance for income distribution trends (Burkhauser, Larrimore, and Simon 2012; Armour, Burkhauser, and Larrimore 2013; Kaestner and Lubotsky 2016; Elwell, Corinth, and Burkhauser 2020 and Larrimore et al. forthcoming). Beginning in 2013, the Congressional Budget Office (CBO 2013) adopted the same valuation for health insurance in its reports on income distribution trends. The

Bureau of Economic Analysis (Fixler, Grindelsky, and Johnson 2020) as well as Piketty, Saez and Zucman (2018, 2019) and Auten and Splitner (2019) use a similar approach to include the value of Medicare and Medicaid in their distributions of national accounts. Some poverty measures have included a non-zero value of health insurance as well (e.g., Smeeding 1977; Meyer and Sullivan 2012b; Korenman and Remler 2016; National Academies of Sciences 2019). Poverty measures that entirely exclude the value of health insurance as a source of income effectively place a zero value on such insurance and hence do not capture all of the resources people receive that can help lift them above poverty thresholds.<sup>12</sup>

The market value of public health insurance (Medicare and Medicaid) is calculated based on the cost of its provision to different risk classes of individuals based on their age, disability status and state of residence.<sup>13</sup> Thus, every individual who is in the same one of these risk classes and lives in the same state is assigned the same market value of health insurance. This value is the average cost of providing the health insurance to this group of individuals.

The market value of employer provided health insurance is calculated based on the cost paid by employers on behalf of their employees, excluding any premiums paid by employees or

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<sup>12</sup> Finkelstein, Hendren, and Luttmer (2015) suggest only 20 to 40 percent of welfare benefits of Medicaid accrue to beneficiaries, largely due to it offsetting the value of uncompensated care for the uninsured. If uncompensated care were available to the uninsured at the same rates in 1963 as it is today, including the value of this care would increase the poverty thresholds (in order to maintain the anchored 20 percent poverty rate in 1963) and partially offset the reductions in poverty observed in this paper from increases in health insurance coverage. However, the 1986 Emergency Medical Treatment and Labor Act required treatment in emergency rooms irrespective of ability to pay. This likely increased the availability of uncompensated care, which would suggest additional poverty reductions after the passage of the Act. Recognizing the uncertainty of trends in the value of uncompensated care, we do not attempt to estimate the value of this care and instead show absolute FPM rates both with and without including the market value of health insurance.

<sup>13</sup> As discussed in Appendix A, the Census Bureau provided these values from 1979 and 2014. We follow Elwell, Corinth and Burkhauser (2020) to estimate these values in years prior to 1979 and we follow procedures from the Census Bureau (2015) to estimate these values for years since 2015. Consistent with the Census Bureau's approach and the tendency for "dual-eligible" individuals to have higher medical costs, individuals who are eligible for both Medicare and Medicaid are assigned the sum of the market value of Medicare and Medicaid.

their families. This value is determined based on average employer payments for health care (see Elwell, Corinth and Burkhauser 2020 and Appendix A for further details).

While the absolute FPM includes a comprehensive set of income sources, it will nonetheless understate income due to underreporting of transfers in the CPS-ASEC. Recent research suggests that respondents in the CPS-ASEC and other major surveys underreport transfers (Meyer, Mok and Sullivan 2015) and money income (Burtless and Pulliam 2018), and that underreporting has increased over time. For example, in the average year between 2000 and 2012, CPS-ASEC respondents reported 42 percent fewer dollars in SNAP benefits than they received according to administrative data. This underreporting has tended to increase by about 0.6 percentage points each year. Meyer, Mittag and Goerge (2018) link individual survey data to individual-level administrative data in Illinois and Maryland, and find that half of true SNAP recipients in these two states do not report SNAP receipt in the CPS-ASEC.<sup>14</sup>

We adjust the poverty thresholds for inflation each year using the Personal Consumption Expenditure (PCE) price index. Since 2000, this has been the inflation measure reported by the Federal Reserve Board for their Monetary Policy Report (Federal Reserve 2000), and since 2012 has been the inflation measure used by the CBO in its reports on the distribution of household income (CBO 2013). Unlike the CPI-U, which is used for the Official Poverty Measure, the PCE price index accounts for consumer substitution and is consistent over time (Bullard 2013 and Winship 2016).

Although we opt to use the PCE price index to adjust for inflation, Meyer and Sullivan (2012b) have created alternative inflation measures to correct for substitution bias as well as bias from the failure to account for new or higher quality goods. We refer to this series as the Meyer-

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<sup>14</sup> Larrimore and Splinter (2019) also find an undervaluation of employer provided health insurance in the CPS-ASEC, although this concern is less important for poverty measurement.



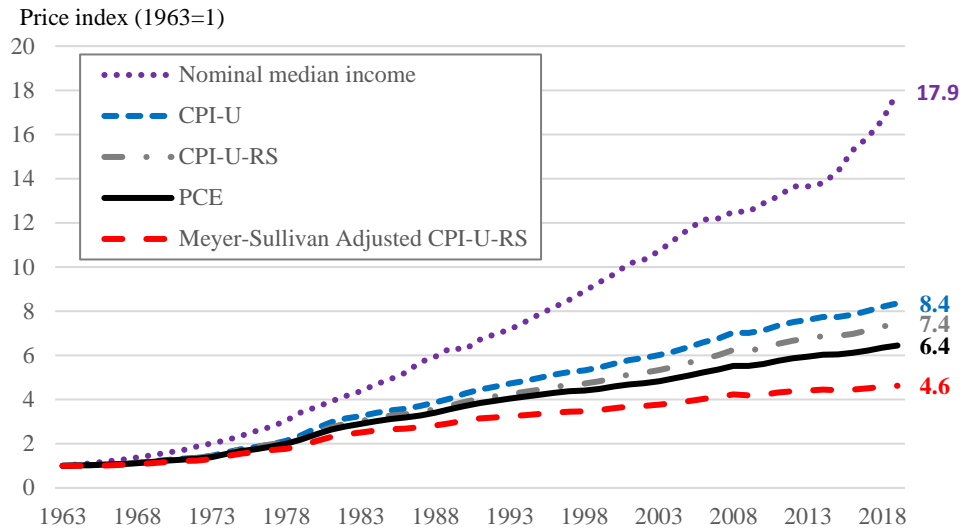
Sullivan adjusted CPI-U-RS. This series, which shows slower inflation than the PCE, adjusts for biases in the CPI-U-RS based on estimates from the Boskin Commission (Boskin et al. 1996) and follow-up work by Hausman (2003), Berndt (2006) and Gordon (2006). It is also consistent with more recent estimates from Moulton (2018).<sup>15</sup>

Figure 1 shows the importance of the choice of inflation measure for determining how much the nominal dollar value of poverty thresholds must increase each year to hold their real dollar values at 1963 levels. Compared to 1963 thresholds, in 2019 the CPI-U used by the Official Poverty Measure generates a threshold that is 8.4 times as high in nominal dollars to hold constant the real value of the thresholds. To the degree that this is an overstatement of inflation, it will effectively raise the real level of these poverty thresholds and exaggerate the share of people in poverty in 2019 relative to 1963. In contrast, all the other measures of inflation shown result in smaller changes in nominal thresholds. In particular, the PCE—which we use for the absolute FPM—generates nominal thresholds in 2019 that are 23 percent below the thresholds using the Official Poverty Measure’s CPI-U, whereas using the Meyer-Sullivan adjusted CPI-U-RS would generate thresholds that are 45 percent below that using the CPI-U.

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<sup>15</sup> We also note a substantial body of research that estimates inflation measures targeted at the lower income population. While some research has found that lower income consumers do not face higher rates of inflation than higher income consumers (e.g., Garner et al. 1996; McGranahan and Paulson 2006; Broda, Leibtag and Weinstein 2009), other research finds that lower income consumers may face higher inflation especially in more recent periods (e.g., Kaplan and Schulhofer-Wohl 2017; Jaravel 2019). It is unclear whether lower income consumers have faced higher or lower inflation over the entire 1963-2019 period, which is the period of primary focus for our analysis.

**Figure 1. Price index based on various inflation measures, 1963 to 2019**



Sources: Bureau of Labor Statistics, Bureau of Economic Analysis; Authors' calculations.

Note: Nominal median income is based on household size-adjusted, post-tax, post-transfer income including the value of health insurance, expressed in nominal dollars. CPI denotes Consumer Price Index. CPI-U-RS denotes CPI Research Series. PCE denotes Personal Consumption Expenditure price index. As described in Meyer and Sullivan (2012b, 2018), the Meyer-Sullivan adjusted CPI-U-RS is calculated by subtracting 0.8 percentage points from the growth rate in the CPI-U-RS for each year from 1978 through 2019, and subtracting 1.1 percentage points from the growth rate in the CPI-U-RS for each year from 1963 through 1977.

Figure 1 also shows the dramatic difference that moving from an absolute to a relative poverty measure would make on nominal poverty thresholds over time. Increasing nominal poverty thresholds each year at the same rate as median nominal income increases, to maintain their same ratio to nominal median income set in 1963, generates a threshold that is 17.9 times as high. The difference between this increase in nominal thresholds and the increase in each of the other price indexes is a result of increases in real median income over time.

The final differences between the absolute FPM and the official measure are the specifications of the sharing unit and equivalence scale. While the Official Poverty Measure originally used a family as its sharing unit, more contemporary measures of levels and trends in income and its distribution based on survey data use the household as their sharing unit. We adopt this technical improvement and similarly assume that income is shared among all people in

the household. This is broader than the family sharing unit used by the Official Poverty Measure and is closer to the sharing unit used for the Supplemental Poverty Measure and the Consumption Poverty Measure. However, as discussed below, the conclusion regarding the general extent of poverty reduction by 2019 is robust to using a family sharing unit. Our focus on the household reflects the increasing prevalence of cohabitation in the U.S. and thus the sharing of resources across families within the same household (Canberra Group 2011; Fry and Cohn 2011). For our equivalence scale, we adjust poverty thresholds based on the square root of the number of people in the household. For example, the poverty threshold for a 4-person household is twice that for a 1-person household. This approach matches the common equivalence scale used by Gottschalk and Smeeding (1997), Canberra Group (2011), and Forster and d’Ercole (2012) in the broader income distribution literature.

Figure 2 shows the trends in both absolute and relative FPM poverty rates relative to the official poverty rate. By construction, the 1963 absolute and relative FPM poverty rates are identical to the official poverty rate.<sup>16</sup> The absolute FPM poverty rate subsequently falls most dramatically between 1963 and 1973 (from 19.5 percent in 1963 to 7.0 percent in 1973) and, with the exception of one year, continues to fall, reaching 4.8 percent in 1979. This suggests that there was dramatic progress in the War on Poverty in its first 16 years that is obscured and understated in magnitude by the failure of the Official Poverty Measure to capture important poverty alleviation programs. Absolute FPM poverty, in conjunction with the double-dip recession between 1980 and 1982 and the failure of transfer program benefits to keep up with the

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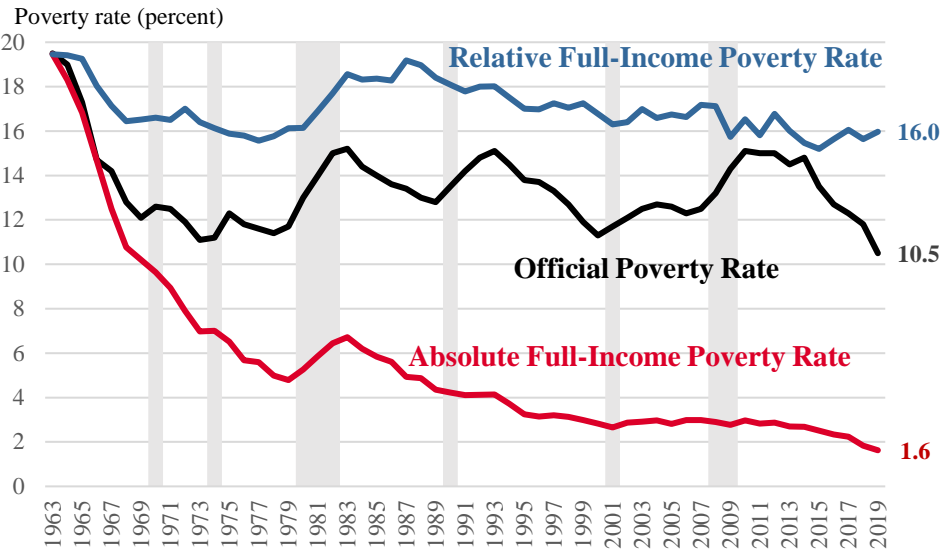
<sup>16</sup> While these measures capture the same percentage of the population in 1963, as any anchored poverty measures do, the population below the poverty thresholds under our FPM are not the same people as captured in the Official Poverty Measure. Thus, our implicit assumption is that President Johnson was concerned about the bottom fifth of Americans (properly measured) in the resource distribution, not necessarily the bottom fifth identified as poor by the Official Poverty Measure in 1963. After 1963 a greater percentage of the population is found using our relative FPM than our absolute FPM to the degree that real median income increases over time.

double-digit inflation of this period, rises to 6.7 percent by 1983. However, it then falls almost continuously until 2001 when it reaches 2.7 percent. The absolute FPM poverty rate never again exceeds 3.0 percent and falls to 1.6 percent in 2019.

In contrast, relative poverty is far more persistent since it cannot be alleviated through economic growth alone. This is seen with the relative FPM, which adjusts thresholds based on median income growth each year rather than inflation. In order to match the 19.5 percent poverty rate in 1963, this measure sets poverty thresholds at 55 percent of median full income in all years. Using the relative FPM, the poverty rate is also 19.5 in 1963 but is then higher than the official poverty rate in every other year and is 16.0 percent in 2019.

Note especially that in the period when all three poverty rates fell the most from 1963 to the end of the 1970s, the largest percentage falls were in the absolute FPM poverty rate (75 percent decline by 1979), followed by the official poverty rate (41 percent decline by 1978), and the relative FPM poverty rate (20 percent decline by 1978). As we will discuss this ordering is in large part because economic growth in full income for all Americans grew substantially over this period (Elwell, Corinth and Burkhauser 2020) including the middle and bottom quintiles. The absolute FPM poverty rate drops the most since its thresholds are constant in real terms and because it includes growth in income not captured in the Official Poverty Measure (non-cash transfers like food stamps and Medicaid and Medicare implemented in the early 1960s and expanded in the 1970s). The relative FPM poverty rate fell the least since median income grew substantially faster than inflation over this period, hence raising its thresholds higher than the inflation rate.

**Figure 2. Official poverty rate and absolute and relative full-income poverty rate, 1963 to 2019**



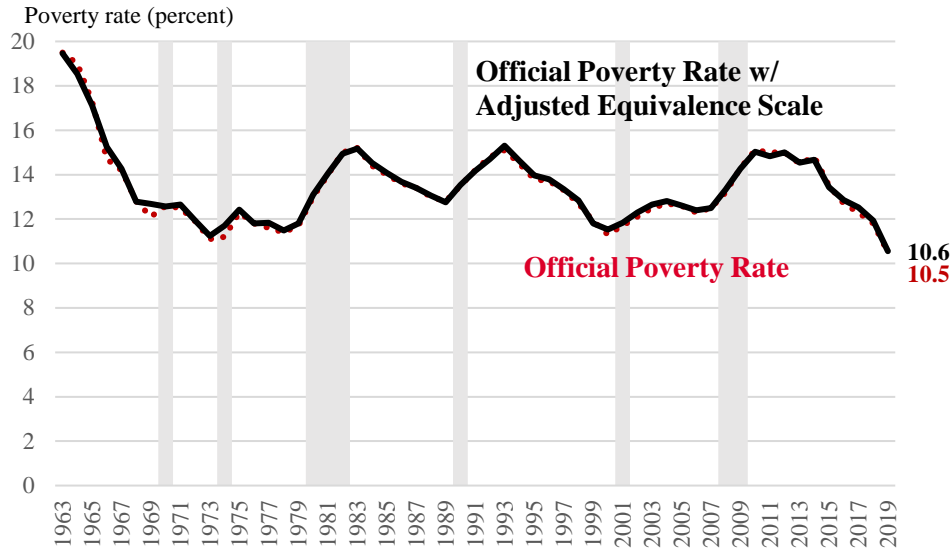
Source: IPUMS and NBER CPS data; Advisory Commission on Intergovernmental Relations (1968); BEA; BLS; Census Bureau; CMS; Collinson et al. (2016); Flood et al. (2018); Hoynes et al. (2016); Kramer (1988); MACPAC; NBER TaxSim; NHEA; OMB; USDA; Authors' calculations.

Note: Shading denotes NBER-based recession periods.

Putting aside the relative FPM for the moment, we estimate the sources of the poverty reduction captured by the absolute FPM by adjusting elements of the Official Poverty Measure in single steps. Figure 3 shows the original official poverty rates along with a poverty measure using the equivalence scale from our absolute FPM but leaving all other characteristics of the Official Poverty Measure unchanged. The poverty trends are nearly identical, implying that the equivalence scale plays no role in the decline in poverty under our absolute FPM. In fact, the poverty threshold for a one-person family using the square root of the number of persons in a sharing unit equivalence scale (the method used in the absolute FPM) in 1963 is \$1,531, exactly equal to the weighted average poverty threshold for the official measure across farm and non-farm families in 1963 (Census Bureau 1969a). That these poverty trends and thresholds are nearly identical is unsurprising in light of previous research finding that an equivalence scale

based on the square root of the number of members in the sharing unit does not materially affect overall poverty rates (see, for example, Burkhauser, Smeeding, and Merz 1996).<sup>17</sup>

**Figure 3. Poverty rate based on Official Poverty Measure, with and without adjusted equivalence scale, 1963 to 2019**



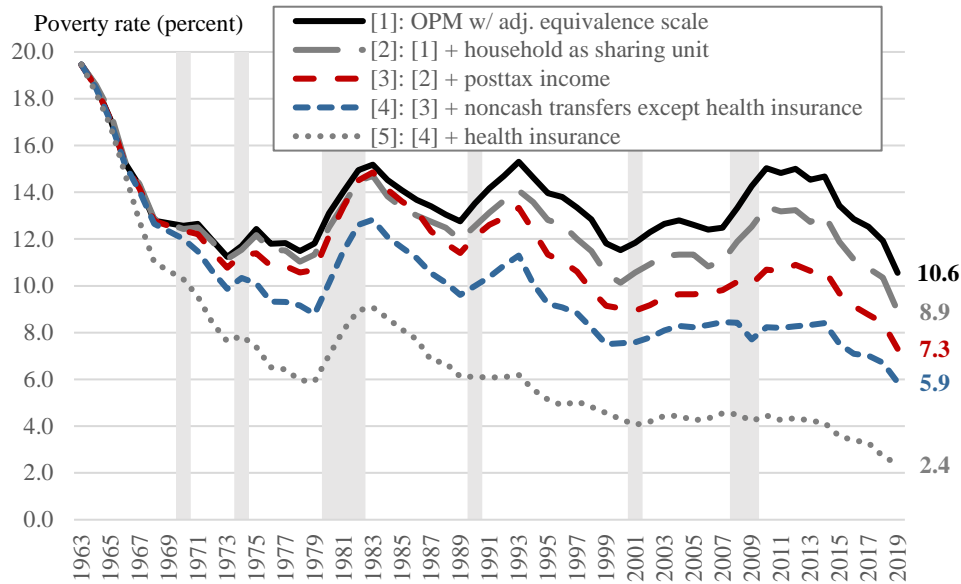
Sources: Census Bureau; Current Population Survey; Authors' calculations.

Note: Shading denotes NBER-based recession periods. The Official Poverty Measure under the adjusted equivalence scale recreates poverty thresholds based on the square root of the number of family members, instead of the more complex formula used by the Official Poverty Measure.

Figure 4 shows the Official Poverty Measure modified only based on the equivalence scale change in Figure 3 as a baseline, and then shows how other iterative changes to the income-definition made under the absolute FPM affect the poverty rate trend. Note that all iterations of our crosswalk to our preferred absolute FPM are anchored to preserve the 19.5 percent share of the population that President Johnson's War on Poverty determined were poor in 1963 as implemented in the Official Poverty Measure. Using the household instead of the family as the sharing unit reduces the poverty rate 56 years later in 2019 to 8.9 percent—lower than the 10.6 percent using the Official Poverty Measure with the adjusted equivalence scale from Figure 3.

<sup>17</sup> Although this choice has little effect on the trends in overall poverty rates in a country, Burkhauser, Smeeding, and Merz (1996) show that the choice of equivalence scale affects the characteristics of sharing units considered poor (e.g., larger sharing units headed by a working-age person with children vs. older persons without children).

**Figure 4. Crosswalk of income components from the official poverty rate with adjusted equivalence scale to the absolute full-income poverty rate, 1963 to 2019**

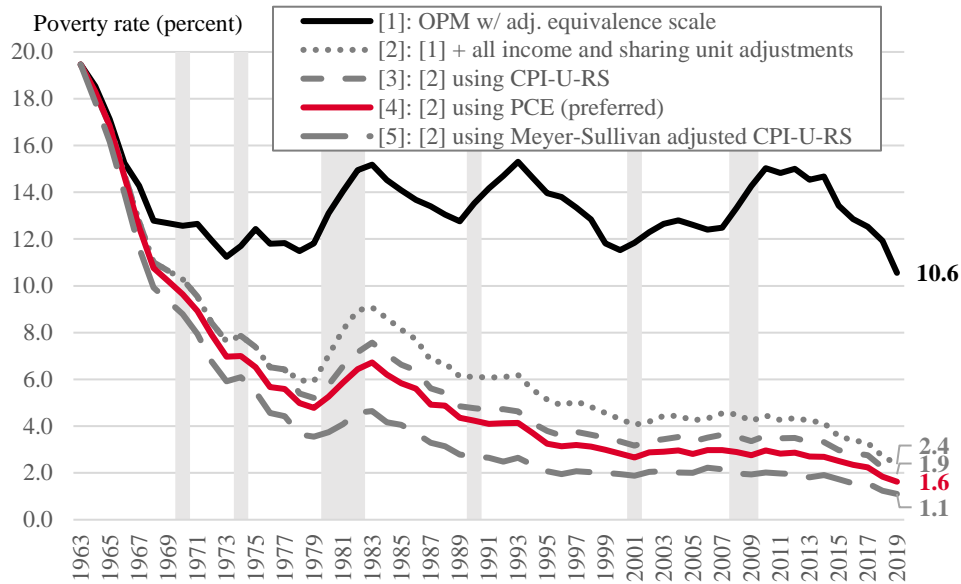


Source: IPUMS and NBER CPS data; Advisory Commission on Intergovernmental Relations (1968); BEA; BLS; Census Bureau; CMS; Collinson et al. (2016); Flood et al. (2018); Hoynes et al. (2016); Kramer (1988); MACPAC; NBER TaxSim; NHEA; OMB; USDA; Authors' calculations.  
 Note: Shading denotes NBER-based recession periods.

Using a post-tax measure of income reduces the 2019 poverty rate further to 7.3 percent. Incorporating the market value of non-cash transfers except for health insurance reduces it to 5.9 percent, which offers an upper bound assessment of the absolute FPM poverty rate by assigning a zero value to health insurance (and using the CPI-U) while still capturing the poverty reduction from other in-kind transfers excluded from the Official Poverty Measure. Incorporating the market value of health insurance reduces it further to 2.4 percent.

As discussed above, the CPI-U is known to upwardly bias inflation and diminish the extent of poverty reduction over time. Figure 5 illustrates the effect of using alternate measures of inflation. Moving from the CPI-U to the CPI-U-RS reduces the rate further to 1.9 percent. Using the PCE reduces it even further to 1.6 percent, which is the estimate under our preferred FPM specification. If we instead use the lower Meyer-Sullivan adjusted CPI-U-RS inflation measure, the FPM poverty rate falls to 1.1 percent in 2019.

**Figure 5. Crosswalk of inflation measures from the official poverty rate with adjusted equivalence scale to the absolute full-income poverty rate, 1963 to 2019**



Source: IPUMS and NBER CPS data; Advisory Commission on Intergovernmental Relations (1968); BEA; BLS; Census Bureau; CMS; Collinson et al. (2016); Flood et al. (2018); Hoynes et al. (2016); Kramer (1988); MACPAC; NBER TaxSim; NHEA; OMB; USDA; Authors' calculations.

Note: Shading denotes NBER-based recession periods.

The order in which we add these elements of the absolute FPM affects their relative contribution to reducing the poverty rate. Nevertheless, it is clear that the sharing unit used, the use of a post-tax measure of income, the inclusion of in-kind transfers (except health insurance), the inclusion of the market value of health insurance, and the measure of inflation used are all important drivers of the poverty trend under our absolute FPM.

In Table 1, we show the sensitivity of our preferred specification of the absolute FPM to individual changes in each of three characteristics—the inflation measure used, the resources included, and the sharing unit used. All the various measures considered in Table 1 are anchored such that their poverty rates in 1963 are 19.5 percent.



**Table 1. Sensitivity of poverty rate under Full-income Poverty Measure to various characteristics**

	<b>Inflation measure</b>	<b>Resources</b>	<b>Sharing unit</b>	<b>Poverty rate in 2019</b>
[0]	PCE	Full-income	Household	1.6
[1]	CPI-U	Full-income	Household	2.4
[2]	CPI-U-RS	Full-income	Household	1.9
[3]	Meyer-Sullivan Adjusted CPI-U-RS	Full-income	Household	1.1
[4]	PCE	Excluding health insurance	Household	3.8
[5]	PCE	Excluding non-health in-kind transfers	Household	2.0
[6]	PCE	Before-tax, otherwise full-income	Household	1.8
[7]	PCE	Full-income	Family	3.0

Note: All alternative poverty measures are anchored such that the poverty rate is 19.5 percent in 1963. Each poverty measure is based on the Full-income Poverty Measure described above—in addition to the elements listed in the columns of the table, we use an equivalence scale based on the square root of the number of members in the sharing unit, and use a post-tax measure of income for all poverty measures, except where noted.

The first row of Table 1 is our base case, which uses a PCE inflation rate, a full-income measure of resources, and the household as the sharing unit. As discussed above this base case of the absolute FPM results in a poverty rate of 1.6 percent in 2019. Holding the last two characteristics constant and varying the inflation measure results in a poverty rate of between 2.4 percent using the CPI-U and 1.1 percent using the Meyer-Sullivan adjusted CPI-U-RS. Holding constant PCE as the inflation rate and household as the sharing unit we see that excluding health insurance results in the largest single divergence from our base case of 1.6 percent, increasing the poverty rate to 3.8 percent. Excluding non-health in-kind transfers only increases the poverty rate to 2.0 percent. When we ignore the importance of taxes but continue to include all in-kind transfers the poverty rate increases to 1.8 percent. When we keep PCE as our inflation rate and

full-income as our resource measure but shift from a household to a family sharing unit, the poverty rate increases to 3.0 percent.

#### **4. Limitations of Existing Alternative Poverty Measures**

Although other alternatives to the Official Poverty Measure exist, none of these existing alternative poverty measures satisfy all three conditions for fully evaluating success in President Johnson's War on Poverty. The Census Bureau's Supplemental Poverty Measure, which is the most prominent alternative poverty measure, partially incorporates anti-poverty programs. However, it also dramatically redefines poverty by changing the baseline poverty rate and by increasing the real poverty thresholds over time. An academic research measure, the absolute Supplemental Poverty Measure (Wimer et al. 2016), also partially incorporates anti-poverty programs, but changes the baseline 1963 poverty rate. Finally, a Consumption Poverty Measure developed by Meyer and Sullivan (2003; 2012a, 2012b, 2018) uses consumption rather than income as its resource measure. It is anchored to the 1980 official poverty rate, rather than the 1963 rate, and it does not include the value of health insurance. We next summarize each of these existing poverty measures with an emphasis on how they do or do not satisfy these conditions. Table 2 compares their basic characteristics alongside the characteristics of the Official Poverty Measure as well as the absolute and relative FPM discussed above.

**Table 2. Characteristics of alternative poverty measures**

	Official Poverty Measure	Supplemental Poverty Measure	Absolute-Supplemental Poverty Measure (Wimer et al. 2016)	Consumption Poverty Measure (Meyer and Sullivan 2012b)	Absolute-Full income Poverty Measure	Relative-Full Income Poverty Measure
Income included:						
Cash income (market income and cash transfers)	Yes	Yes	Yes	N/A*	Yes	Yes
In-kind transfers except healthcare	No	Yes	Yes	N/A*	Yes	Yes
Market value of health insurance	No	No	No	N/A*	Yes	Yes
Deduct income and payroll taxes; add tax credits	No	Yes	Yes	N/A*	Yes	Yes
Expenses deducted	No	Health, child care, work expenses	Health, child care, work expenses	N/A*	No	No
Regional cost of living adjustment	No	Yes	No	No	No	No
How thresholds are updated	CPI-U	Quasi-relative**	CPI-U-RS	Meyer-Sullivan Adjusted-CPI-U-RS	PCE	Proportional to median income
Sharing unit***	Family	Family, unmarried partners and their children, unrelated children under 15	Family, unmarried partners and their children, unrelated children under 15	Household members sharing resources and expenses	Household	Household

Sources: Census Bureau; Fontenot et al. (2018); Fox et al. (2015); Wimer et al. (2016); Meyer and Sullivan (2012b, 2018).

Note: Private market income includes wages, salary, self-employment and property income.

\*The Consumption Poverty Measure includes consumption rather than income. It includes almost all spending to measure consumption, but excludes spending on home and vehicle purchases (replaced by flow value of ownership), health, and education

\*\*Equal to 5-year average of spending on necessities by moderate expenditure households multiplied by 1.2

\*\*\* The size-adjustments for each sharing unit also differ. The Official Poverty Measure uses the cost of a food plan for a family of a given size; the two Supplemental Poverty Measures and the Consumption Poverty Measure use a formula based on the number of adults and children in the household; and the Full-income Poverty Measure uses the square root of household size.

**Supplemental Poverty Measure.** The Supplemental Poverty Measure has been published by the

Census Bureau since 2009 (Fox 2018) and was extended back to 1967 by Fox et al. (2015).

Building off concepts outlined in Citro and Michael (1995), the Supplemental Poverty Measure represents a fundamental shift away from an absolute poverty standard for purposes of updating the thresholds over time. A key feature of this measure is the adoption of “quasi-relative”

thresholds that are based on expenditures on basic necessities including housing, food, clothing

and utilities, by households at the 30<sup>th</sup> to 36<sup>th</sup> percentile of the distribution of spending in these categories. This spending is then multiplied by 1.2 to generate poverty thresholds that reflect expenditures on other necessities. Since real spending by moderate expenditure households has increased since 1963, the Supplemental Poverty Measure thresholds have increased in real terms.

Additionally, the Supplemental Poverty Measure is not designed to match the initial poverty thresholds that President Johnson defined. This goal of the Supplemental Poverty Measure to explicitly increase the threshold was outlined in the National Academies of Sciences report on which it was based, which proposed “setting the initial threshold to consider the real growth in the standard of living since 1963” (Citro and Michael 1995, p. 55). Consequently, the Supplemental Poverty Measure was not designed to reflect President Johnson’s War on Poverty and introduced thresholds that suggest that poverty rates in 1963 were substantially higher.<sup>18</sup> Increasing the poverty thresholds in turn increases poverty estimates under this measure in every year.

Nonetheless, the Supplemental Poverty Measure improves on the official measure by focusing on post-tax income and including more sources of income in its resource measure. The Supplemental Poverty Measure includes non-cash transfers such as SNAP and housing benefits, although it excludes a value of health insurance. The Supplemental Poverty Measure makes several other adjustments to income as well. These include deducting child care and medical out-of-pocket expenses, as well as varying thresholds across geographical areas based on housing costs and differences in expenses.<sup>19</sup>

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<sup>18</sup> The historical supplemental poverty rate produced by Fox et al. (2015) is only available back to 1967. In that year, the supplemental poverty rate was approximately 4.4 percentage points above the official poverty rate. Consequently, the higher supplemental poverty rate in this series results in part from the higher starting value, even though poverty based on this supplemental measure has declined by more than the official rate since 1967.

<sup>19</sup> Additionally, some researchers have suggested that these deductions can lead to perverse poverty results. For example, Meyer and Sullivan (2012a) find that the Supplemental Poverty Measure’s deduction of medical out-of-

**Absolute Supplemental Poverty Measure.** Wimer et al. (2016) created a variation of the Supplemental Poverty Measure, which they call an “anchored-Supplemental Poverty Measure.” Currently, this series does not attempt to match the official poverty rate in 1963 or any other year (although conceptually such a comparison is feasible as discussed below).<sup>20</sup> Instead, this measure is anchored to the poverty rate under the Supplemental Poverty Measure in a given year. That is, the initial thresholds are defined in a given year based on expenditures by moderate expenditure households in that period, and then thresholds are updated in all other years based on inflation. While poverty rates from Wimer et al. (2016) cannot be directly compared to the Official Poverty Measure or used to evaluate the success of President Johnson’s War on Poverty, their measure is an absolute poverty measure since its thresholds are updated each year based on inflation, though it uses the CPI-U-RS which suffers from upward bias as noted above. Thus, we refer to it as the “absolute Supplemental Poverty Measure” in order to distinguish it from poverty measures anchored to the Official Poverty Measure.

**Consumption Poverty Measure.** The final poverty measure we consider is the Consumption Poverty Measure developed by Meyer and Sullivan (2003; 2012a, 2012b, 2017, 2018). It is based on how much households spend rather than their income. Consumption-based measures differ conceptually from income-based measures in that households with low incomes but high capacities to consume in that year (for instance because they have higher levels of wealth or higher capacities to borrow) are not counted as poor. One practical advantage of consumption-based measures is that they are not affected by the increasing underreporting of income and

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pocket expenses leads to more people with higher levels of consumption, higher levels of educational attainment, larger homes, and higher likelihoods of health insurance coverage to appear poor.

<sup>20</sup> Similar to the Supplemental Poverty Measure, the absolute-Supplemental Poverty Measure is unavailable prior to 1967 but was 4.4 percentage points higher than the official poverty rate in that year, suggesting a 1963 -absolute supplemental poverty rate that also exceeds the initial 1963 official poverty rate.

especially transfers in the CPS-ASEC (Meyer, Mok, and Sullivan 2015), although they are still subject to biases in reporting of spending patterns. While consumption underreporting has also increased over time, Meyer and Sullivan (2013b, 2018) suggest that the problem may be overstated and likely has only a limited effect on consumption poverty trends.

Like the official measure, the Consumption Poverty Measure tracks absolute poverty. It holds the real dollar value of its thresholds constant over time using the Meyer-Sullivan adjusted CPI-U-RS as its measure of inflation. Meyer and Sullivan explain that their adjusted inflation measure reflects estimates of the upward bias in the CPI-U-RS. As a result, their adjusted inflation measure has increased substantially slower than other indices, as seen previously in Figure 1.

Unlike the Supplemental Poverty Measure, the Consumption Poverty Measure is anchored to the official poverty rate. However, the underlying consumption data from the Consumer Expenditure Survey are unavailable in 1963 and are available only intermittently prior to 1980, so the earliest year in which Meyer and Sullivan anchor their measure to the official poverty rate is 1980. As a result, like the Supplemental Poverty Measure, the Consumption Poverty Measure suggests that poverty rates in 1963 were far higher than 20 percent and thus it cannot evaluate the success of President Johnson's War on Poverty. It also does not include the value of health insurance and so does not capture all of the power of government in-kind transfers to increase the resources going to the bottom part of the distribution measured by income or consumption.<sup>21</sup>

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<sup>21</sup> Meyer and Sullivan (2012b) show poverty rates under a consumption-based poverty measure that includes a value of health insurance. However, as described in Meyer and Sullivan (2013a), they do so only for families when the market value is equal to at most one third of total expenditures. For other families, health insurance is valued at one-third of total expenditures, which can be much less than the market value for families with low total expenditures or a high value of health insurance.

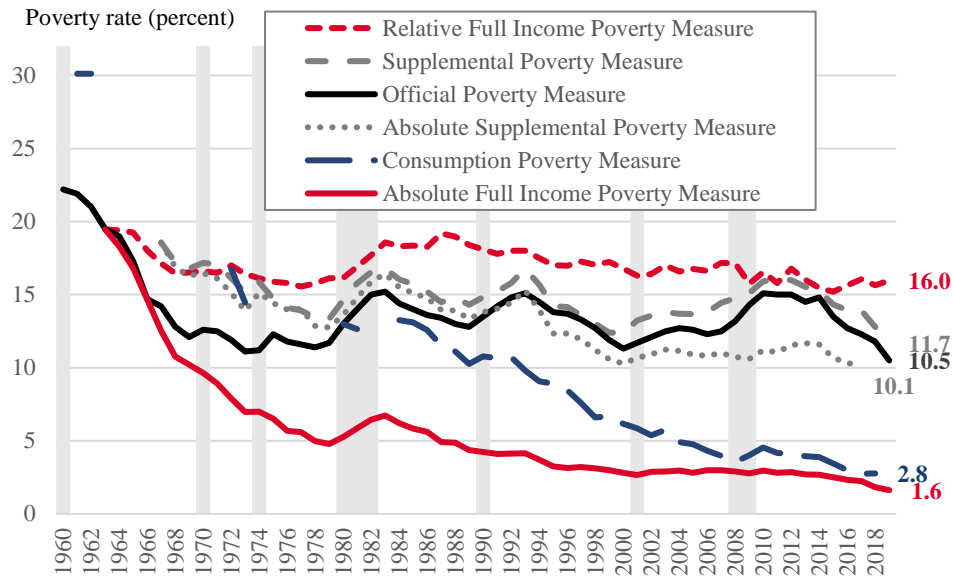
## 5. Comparison of the Absolute Full-Income Poverty Measure to Alternative Measures

Our absolute FPM shows lower poverty rates in 2019 than do the other income-based poverty measures in part because it is designed to evaluate President Johnson’s War on Poverty using his 1963 standards. This can be seen in Figure 6. The poverty rate under the Supplemental Poverty Measure falls from 18.6 percent in 1967, the first year available, to 11.7 percent in 2019. However, recall that the Supplemental Poverty Measure typically increases the poverty thresholds by more than inflation each year. This means that it understates declines in absolute hardship over time. Because the absolute Supplemental Poverty Measure uses the 1967 Supplemental Poverty Measure thresholds and adjusts them only by inflation (using the CPI-U-RS) each year, it falls somewhat faster—from 18.6 percent in 1967 to 10.1 percent in 2017, the latest year available.<sup>22</sup> But since the poverty rate under the Supplemental Poverty Measure and its absolute version in 1967 are both 4.4 percentage points higher than the official poverty rate, both would also be considerably lower in 2019 if they had been anchored to the official poverty rate in 1967 or 1963. As a result, these measures both show higher poverty rates because their redefined poverty thresholds result in higher initial levels of poverty than the official poverty rate.

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<sup>22</sup> See Appendix B for our construction of this Absolute-Supplemental Poverty Measure series based on data from Wimer et al. 2017.

**Figure 6. Percent of population in poverty based on various poverty measures, 1960-2019**



Sources: Census Bureau; Fox et al. (2015); Wimer et al. (2017); Meyer and Sullivan (2019); IPUMS and NBER CPS data; Advisory Commission on Intergovernmental Relations (1968); BEA; BLS; Census Bureau; CMS; Collinson et al. (2016); Flood et al. (2018); Hoynes et al. (2016); Kramer (1988); MACPAC; NBER TaxSim; NHEA; OMB; USDA; Authors' calculations.

Note: Shading denotes NBER-based recession periods.

Conversely, the poverty rate has fallen more under the Consumption Poverty Measure than it has under the Official Poverty Measure or the Supplemental Poverty Measure. It falls from 30.2 percent in 1961 to 2.8 percent in 2018. In other words, despite the fact that consumption poverty starts 8.3 percentage points higher than the official poverty rate in 1961 (thus likely exceeding the official poverty rate in 1963 as well), it still reaches a poverty rate of under 3 percent by 2018. Despite the differences between the Consumption Poverty Measure and our absolute FPM, the steep decline in consumption poverty lends support to the results from our absolute FPM that existing income-poverty measures fail to capture the success in President Johnson's War on Poverty. (Note that our relative FPM not only results in a higher poverty rate in 2019 than all other measures but does so for almost all other years since the 1970s except for the Supplemental Poverty Measure in 2011.)



Given the stark differences in trends between our absolute FPM and other poverty measures, a natural question is what drives these differences. To explore this question, we produce a modified version of our absolute FPM to allow for a consistent comparison with the absolute Supplemental Poverty Measure and the Consumption Poverty Measure. This differs from the absolute FPM in three ways. First, since data used to produce the absolute Supplemental Poverty Measure and the Consumption Poverty Measure are not available in 1963, we anchor all three measures to the same base year of 1980. Second, we also exclude the market value of health insurance from the modified absolute FPM since it is excluded in the other measures. Third, we update poverty thresholds using the CPI-U-RS, since neither the Consumption Poverty Measure nor the absolute Supplemental Poverty Measure provide estimates using the PCE inflation series.<sup>23</sup> Since the CPI-U-RS has a faster rate of inflation than the PCE, this offers an upper bound for inflation trends.<sup>24</sup>

This comparison provides insights into why the poverty estimates differ across these series. In particular, the inclusion of the market value of health insurance in the FPM, the 1963 anchor year, and the use of the PCE to adjust for inflation appear to explain the major differences in poverty trends under this measure relative to the absolute Supplemental Poverty Measure and the Consumption Poverty Measure. Other differences such as the sharing unit, equivalence scale, geographic adjustments, and the deduction of certain expenses do not appear to be as important.

Figure 7 shows the modified absolute FPM (without the market value of health insurance) as well as the modified absolute Supplemental Poverty Measure and the modified Consumption Poverty Measure, now anchored to the official poverty rate in 1980 and with

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<sup>23</sup> Because the resource measure is equivalent for the absolute and relative FPM, subjecting them to the same thresholds would produce equivalent results.

<sup>24</sup> Estimates using the Meyer-Sullivan adjusted CPI-U are available upon request from the authors to provide a lower bound for inflation trends.

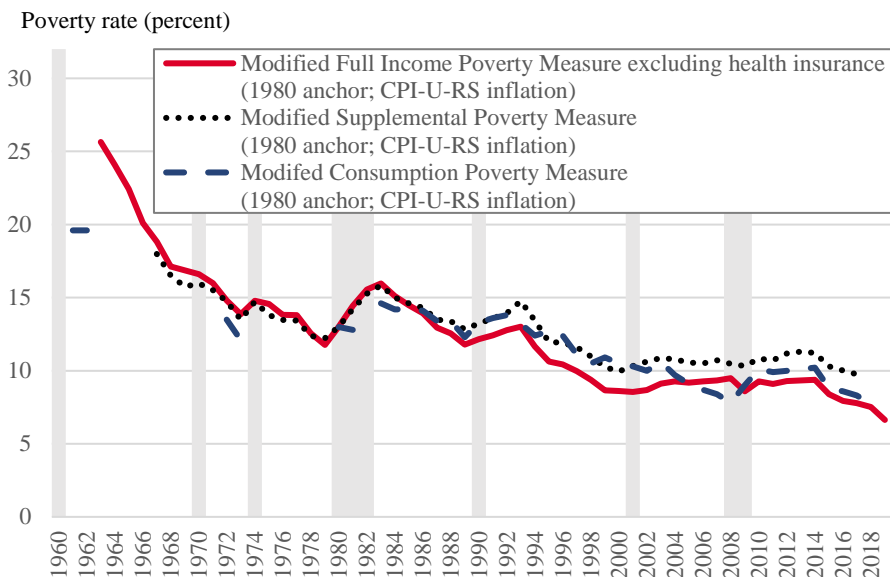
thresholds adjusted for inflation using the CPI-U-RS.<sup>25</sup> In 1980, the poverty rate under all three measures is by definition equal to 13.0 percent, the official poverty rate in that year. In 2017, the poverty rate is 7.8 percent under the modified absolute FPM vs. 9.8 percent under the modified absolute Supplemental Poverty Measure. As can be inferred from the similar poverty trends in Figure 7, the anchor year, inflation measure, and inclusion of the market value of health insurance explain most of the differences in poverty trends, while the remaining differences between the poverty measures are far less consequential. This is even more the case with respect to the modified absolute FPM and the modified Consumption Poverty Measure. Once they both use the same anchor year (1980), inflation measure (CPI-U-RS), and exclude health insurance, their poverty trends since 1980 are almost identical (7.8 percent vs. 8.3 percent in 2015).<sup>26</sup> However, they do diverge in earlier years with the modified absolute FPM showing greater poverty reduction than the modified Consumption Poverty Measure prior to 1980, and especially from the early 1960s through 1972.

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<sup>25</sup> The modified Consumption Poverty Measure presented here comes from Meyer and Sullivan 2018 and matches the consumption measure from Figure 6 except for the inflation rate. We create the modified absolute Supplemental Poverty Measure such that the poverty rates (with geographical adjustments) in 1980 equals the official poverty rate in each year. Thresholds in other years are adjusted using the CPI-U-RS inflation measure. See Appendix B for further details on how we constructed this measure.

<sup>26</sup> Were we to use the Meyer-Sullivan adjusted CPI-U-RS instead of the unadjusted CPI-U-RS, the decline in poverty using the Consumption Poverty Measure would exceed that of the absolute FPM. Consumption poverty in 2017 would be 2.7 percent whereas using the absolute FPM it would be 4.7 percent. Hence, measuring poverty based on consumption rather than income could have more important implications for the poverty rate when reaching the lowest points of the resource distribution.

**Figure 7. Poverty rate based on various poverty measures anchored to Official Poverty Measure in 1980, using the CPI-U-RS, 1961 to 2019**



Sources: Wimer et al. (2017); Meyer and Sullivan (2019); IPUMS and NBER CPS data; Advisory Commission on Intergovernmental Relations (1968); BEA; BLS; Census Bureau; CMS; Collinson et al. (2016); Flood et al. (2018); Hoynes et al. (2016); Kramer (1988); MACPAC; NBER TaxSim; NHEA; OMB; USDA; Authors’ calculations.  
 Note: Shading denotes NBER-based recession periods.

## 6. Discussion

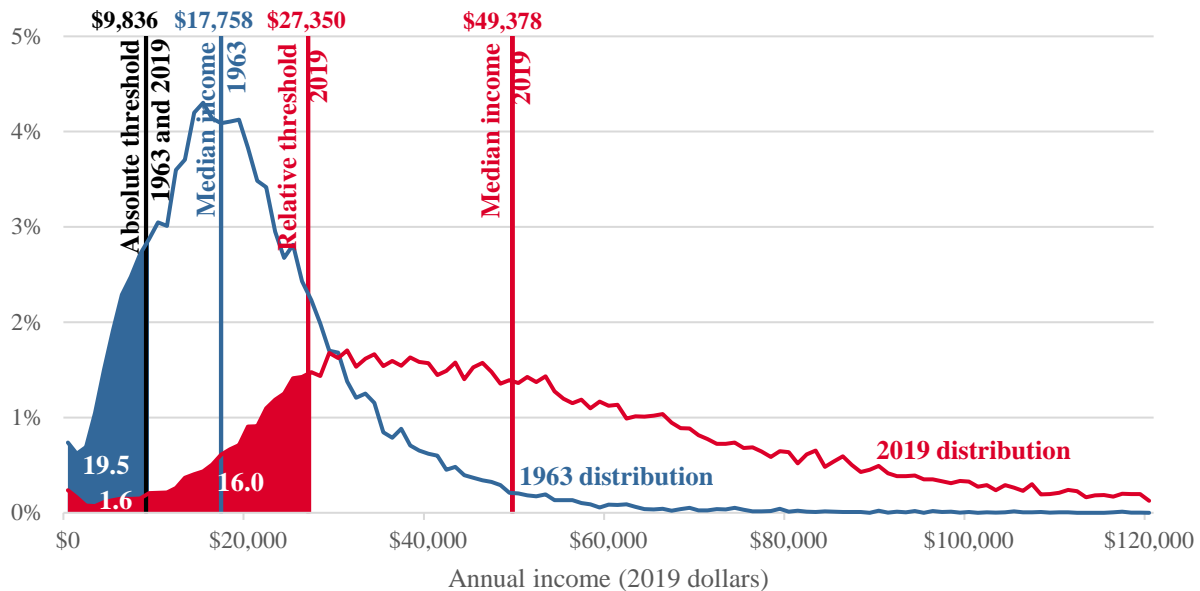
Our results demonstrate that even though a substantial portion of Americans struggle financially based on today’s living standards, President Johnson’s War on Poverty—based on economic standards when he declared that war—is largely over and a success. This observation is apparent using our absolute FPM since, unlike previous poverty measures, it is anchored to President Johnson’s scientifically arbitrary but policy relevant judgment with respect to the poverty population in 1963 and sets its initial thresholds accordingly.<sup>27</sup> It also adjusts these nominal thresholds each year to hold them constant in real terms and uses a full measure of real income.

<sup>27</sup> The National Academies of Sciences panel also viewed poverty thresholds as reflecting political, rather than purely scientific, decisions, stating that “[s]pecifying a poverty line is the most judgemental of all the aspects of a poverty measure, and we did not think it appropriate for us to make that final, ultimately political, judgement” (Citro and Michael 1995 p. 106). Nevertheless, since they sought to increase the poverty threshold to reflect increases in financial resources and living standards among low-income populations since the 1960s they still recommended a range of thresholds that were 50 to 74 percent above the official poverty thresholds at the time. This range of recommendations ultimately guided the thresholds for the Supplemental Poverty Measure.

While this conclusion stands in stark contrast to conventional wisdom (and the poverty rates based on the Official and Supplemental Poverty Measures), it should not be surprising given the substantial resources contributed to transfer programs that are not counted by other poverty measures, as well as the overall economic growth that has occurred since the 1960s.

This broad economic growth can be seen in Figure 8, which shows the distribution of full household size-adjusted income (i.e., PCE inflation-adjusted disposable income including cash and in-kind transfers plus health insurance) across all individuals in 1963 and in 2019. The entire distribution has moved far to the right (exhibiting first order stochastic dominance), reflecting substantial real income gains (including transfers) throughout the income distribution over the past five decades.

**Figure 8. Individual-level household size-adjusted full-income distribution, 1963 and 2019**



Source: IPUMS and NBER CPS data; Advisory Commission on Intergovernmental Relations (1968); BEA; BLS; Census Bureau; CMS; Collinson et al. (2016); Flood et al. (2018); Hoynes et al. (2016); Kramer (1988); MACPAC; NBER TaxSim; NHEA; OMB; USDA; Authors' calculations.

Note: Income in 1963 is inflation-adjusted to 2019 dollars based on the PCE price index. The poverty threshold is calculated such that 19.5 percent of individuals in 1963 have a size-adjusted income that falls below it—\$9,836 in 2019 dollars. Incomes are size-adjusted using the square-root of household size. Income levels above \$120,000 are not shown.

Median size-adjusted full-income for an individual more than doubled (increasing by 178 percent) from \$17,758 in 1963 to \$49,378 in 2019. This reflects an increase from \$35,516 to \$98,757 for a household of four. In 2019, only 1.6 percent of people remain below a real poverty threshold based on an absolute standard level of household size-adjusted income established in 1963 as reported previously in Figures 2 and 5. These observations reflect the substantial economic progress that the United States has made since 1963 both at the median and in the lower part of the distribution once our anti-poverty tax and transfer programs are more fully included in our measure of income.

Nonetheless, societal views on poverty evolve over time. In 1971, Robert Lampman observed that “by present-day American standards most of the several billion people who have ever lived, and most of the three billion people alive today, were or are poor” (Lampman 1971, p. 51-52). He also suggested that the goal of eliminating poverty based on these initial standards “should be achieved before 1980, at which time the next generation will have to set new economic and societal goals, perhaps including a new distributional goal for themselves” (p. 53).<sup>28</sup>

The near elimination of poverty based on standards from more than half a century ago is, therefore, an important but insufficient indication of progress toward today’s higher minimum standards. Figure 8 also shows that had President Johnson chosen to measure poverty reduction based on a relative rather than an absolute standard, poverty would be 16.0 percent in 2019, a much higher rate that reflects the 178 percent increase in real median income between 1963 and 2019. As shown in Figure 2, almost all of this reduction in relative poverty occurred between

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<sup>28</sup> Fisher similarly extends this concept backwards, observing that “families in 1907 with constant-dollar incomes equivalent to 92 percent of Orshansky’s poverty threshold were described as ‘liv[ing] well’” but that “[i]n 1965 – and even more so in 1993 – no reasonable person would describe a family with that real income as ‘living well’” (Fisher 1994, para. 19).

1963 and 1977 when the relative poverty rate fell by a fifth from 19.5 percent of the population to 15.6 percent of the population.

But from a policy evaluation perspective, the success of President Johnson's War on Poverty should reflect the goals of policymakers of that era. The Supplemental Poverty Measure fails to capture the full extent of progress. This is because that measure of poverty, based primarily on the recommendation of the National Academies of Sciences Panel in 1995 (Citro and Michael 1995), changed the terms of President Johnson's War on Poverty by arbitrarily increasing the initial poverty thresholds established in 1963 and adjusting poverty thresholds each year using a quasi-relative rather than an absolute standard. John Cogan made some of these same fundamental points in his dissent contained in the National Academies of Sciences Panel in 1995:

"I dissent because the report's recommendations—to choose three particular commodities upon which to base the calculation of poverty and to exclude other commodities; to establish a normative range of values within which the poverty line should fall; to increase the poverty line over time to account for perceived improvements in the standard of living; and to exclude medical expenses from family resources—are the outcome of highly subjective judgements. These are judgements that do not result from scientific inquiry and, therefore, in my opinion, are improperly placed in this report" (Citro and Michael 1995, p. 390).

Cogan's criticism of the National Academies of Sciences recognizes that baseline poverty thresholds are ultimately a normative decision. The same is the case with respect to the decision to change those thresholds using absolute or relative standards. Consequently, while the Supplemental Poverty Measure can offer insights into the relative economic situation of low-income individuals, it was never intended to evaluate absolute poverty trends over time as initially envisioned when the War on Poverty was established.<sup>29</sup> Our absolute FPM fills this gap

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<sup>29</sup> In hindsight, the National Academies of Sciences Panel could have anchored their proposed poverty measure alternatives to the Official Poverty Measure's 19.5 percent approximation of President Johnson's concern for the

and shows that the War on Poverty based on President Johnson's standards is largely over and a success. Had President Johnson instead declared a war on relative poverty, our relative FPM shows how many more Americans would be considered poor under thresholds increased over time to reflect growth in real median income.

The dramatic reduction in poverty by 2019 based on President Johnson's absolute 1960s standards suggests that policymakers might consider setting new poverty thresholds that reflect modern-day expectations for what it means to be impoverished. Although even if policymakers reconsider the standards for poverty, it will still be true that the poverty rate using an absolute standard is far below where it stood in the 1960s at the start of President Johnson's War on Poverty.

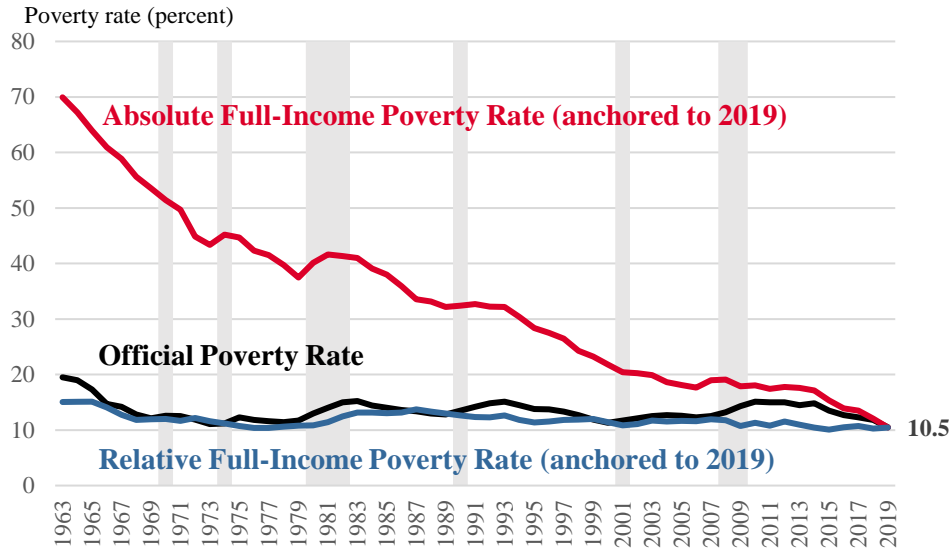
For example, one could consider the 10.5 percent official poverty rate in 2019 to be the appropriate poverty rate based on today's living standards. Under this approach, Figure 9 shows an alternative absolute FPM that is anchored to the 10.5 percent poverty rate under the Official Poverty Measure in 2019. By this standard, the FPM poverty rate fell from 69.9 percent in 1963 to 10.5 percent in 2019. Almost 6 in 10 Americans have been lifted from poverty since 1963 based on this modern poverty standard. Consequently, even if today's standards are preferred, this should not discount the progress made in reducing absolute poverty over the past half-century. Alternatively, using our relative FPM only 15.1 percent rather than 19.5 percent of the

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one fifth of Americans who lived in poverty in 1963 and more accurately determined its success in reducing poverty based on his terms of engagement. They could then have more transparently argued, based on that success, for an increase in its thresholds for a new generation as Lampman expected. For example, the quasi-relative poverty measure developed by the panel could have adjusted the definition of moderate expenditure households based on a different point in the basic expenditure distribution, or it could have changed the multiplier applied to their purchases of basic goods, such that the poverty rate in 1963 under the new measure was equal to 19.5 percent. Then they could have showed how their more sophisticated measures of poverty would have more accurately measured poverty trends over time using both an absolute standard and their quasi-relative ones.

population would have been considered in poverty in 1963, and the reduction to 10.5 percent in poverty by 2019 would constitute a much more modest improvement in relative poverty.

**Figure 9. Poverty rate based on Official Poverty Measure and Full-Income Poverty Measure anchored to 2019, 1963 to 2019**



Source: IPUMS and NBER CPS data; Advisory Commission on Intergovernmental Relations (1968); BEA; BLS; Census Bureau; CMS; Collinson et al. (2016); Flood et al. (2018); Hoynes et al. (2016); Kramer (1988); MACPAC; NBER TaxSim; NHEA; OMB; USDA; Authors' calculations.  
 Note: Shading denotes NBER-based recession periods.

## 7. Conclusion

When evaluating the War on Poverty based on President Johnson’s initial 1963 standards and using a technically improved poverty measure, we find that the poverty rate fell from 19.5 percent in 1963 to 1.6 percent in 2019. The low absolute FPM poverty rate today suggests that even though there remain Americans still struggling financially based on today’s living standards, President Johnson’s War on Poverty based on absolute 1960s living standards is largely over and a success. We reach this conclusion by using his initial assessment that 20 percent of people were poor in 1963, holding future poverty thresholds constant in real terms, and, importantly, including as resources the programs used to fight this war.



This result reflects the substantial increase in full income throughout the distribution and the creation and expansion of major safety net programs, with median income more than doubling between 1963 and 2019. It is also broadly consistent with the expectations of President Johnson and his advisers, including Robert Lampman who predicted in 1971 that poverty based on these initial standards would be eliminated by 1980. Nevertheless, this finding stands in contrast to existing poverty measures that attempt to assess progress in President Johnson's War on Poverty based on different standards that effectively redefine his terms of engagement.

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## **Appendix A. Imputing income sources**

The CPS-ASEC contains for each survey respondent the receipt and market value of in-kind transfers including Medicaid, Medicare, food stamps, housing subsidies and school lunch beginning in income year 1979 (survey year 1980).<sup>30</sup> It also includes the value of employer provided health insurance beginning in 1979. However, the receipt and value of these income sources are not available in the CPS-ASEC between 1963 and 1978. Thus, we impute both receipt and values of these income sources for each year between 1963 and 1978. To do so, we use an array of data sources on the number of recipients, total spending, and program rollout (Census Bureau 1965; Advisory Commission on Intergovernmental Relations 1968; Census Bureau 1970; Kramer 1988; Gruber 2003; CMS 2013; Collinson et al. 2016; Hoynes et al. 2016; Medicaid and CHIP Payment and Access Commission 2018; USDA 2018; CMS 2019; OMB 2019; USDA 2019). The methodology for imputing receipt and values for each income source follows.

### **Medicare**

#### *Receipt*

Medicare was first implemented in 1966, initially covering Americans age 65 and over. Thus, we impute Medicare receipt in 1966-1978 to all adults age 65 and over.

Medicare coverage was expanded to nonelderly adults receiving Social Security Disability Insurance (SSDI) in 1973. Thus, we also impute Medicare receipt to some adults under the age of 65. In order to impute which nonelderly adults received Medicare as a result of SSDI coverage in 1973 through 1978, we first identify all adults age 18 to 61 who received

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<sup>30</sup> Since income year 2014, the Census Bureau no longer includes the market value of Medicaid and Medicare in the CPS-ASEC. However, it continues to make available instructions for data users to calculate these values.

Social Security income in each year. We exclude adults age 62, 63, and 64 because Social Security income may have been retirement rather than disability income. However, even among adults age 18 to 61 who receive Social Security income, not all would have received Medicare coverage, for at least three reasons:

1. Widows between the ages of 60 and 61 received Social Security income but were not covered by Medicare.
2. SSDI recipients were not eligible for Medicare coverage until receiving SSDI for 24 months.
3. Some respondents who report receiving Social Security income between the ages of 18 and 61 may have actually received Supplemental Security Income or a disability benefits from a private entity or state or local government but misreported as receiving Social Security Income.

We address the first issue by never assigning Medicare coverage to female widows between the ages of 60 and 61. We address the second and third issue by assigning Medicare coverage probabilistically to adults between the ages of 18 and 61 (but not widows age 60 or 61) who report receiving Social Security income.<sup>31</sup> Probabilities are estimated based on the CPS-ASEC data for income year 1979, which contains information on Social Security income receipt, Medicare receipt, and other respondent characteristics. Specifically, our sample for estimating probabilities is all adults age 18 and 61 who are not widows age 60 or 61 and who report receiving Social Security income in 1979. We estimate a probit model. The outcome variable is whether or not the adult received Medicare coverage in 1979, and the predicting variables include sex, race, education, age and marital status.

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<sup>31</sup> We assign coverage probabilistically instead of assigning coverage to those with the highest probabilities in order to more accurately capture the distribution of recipients, as described by Mittag (2019).

We then apply the model estimates based on the CPS-ASEC for 1979 to the survey respondents in 1973-1978 who were between the ages of 18 and 61 (but not widows age 60 or 61) and reported receiving Social Security income. In particular, we predict the probability of Medicare coverage for each respondent on the basis of his or her characteristics, using the probit model estimates obtained from the 1979 data.

Next, we use the predicted probabilities of each Social Security recipient in 1973-1978 to assign Medicare coverage. For each year, we randomly select individuals according to these probabilities as receiving Medicare coverage until the number of imputed Medicare recipients matches the adjusted total number of disabled Medicare recipients according to administrative data. The adjusted administrative total is equal to the administrative total number of disabled Medicare recipients in each year from 1973-1978, multiplied by the ratio of the number of disabled Medicare recipients identified in the CPS-ASEC in 1979 to the number of disabled Medicare recipients based on administrative data in 1979. This adjustment makes coverage of disabled Medicare recipients in earlier years of the CPS-ASEC consistent with coverage in 1979.

### *Value*

We next estimate the market value of Medicare coverage for CPS-ASEC respondents in 1966-1978. To do so, we first obtain the market value of Medicare for aged and disabled Medicare recipients by State in the CPS-ASEC for income year 1979. We apply these 1979 values to CPS-ASEC respondents who we imputed as receiving Medicare coverage in 1966-1978, according to their risk class (aged or disabled) and State of residence. One complication is that between 1967 and 1975, the CPS-ASEC does not provide the exact state of residence for some respondents, instead providing only a group of states in which they might live. In these cases, we assign the population-weighted (according to the 1970 U.S. Census) average of market

values across States in the group of States provided, for the appropriate risk class of the respondent.

Finally, we scale down the Medicare values assigned to all Medicare recipients in 1966-1978 based on average per-recipient Medicare spending each year relative to average per-recipient Medicare spending in 1979. We obtain average per-recipient Medicare spending each year by dividing U.S. spending on Medicare from the National Health Expenditure Accounts by the number of Medicare enrollees in each year according to administrative data.

## **Medicaid**

### *Receipt*

Medicaid was first implemented in some states beginning in 1966. When a given state implements Medicaid, we assign Medicaid coverage to all members of families living in that state who receive cash welfare (generally Aid to Families with Dependent Children or AFDC) or Supplemental Security Income (SSI), except for family members age 18 or above who were not covered by AFDC or SSI. Because we cannot identify cash welfare receipt until 1967, we do not impute Medicaid coverage to any respondents in 1966.

One complication of assigning Medicaid coverage based on the year in which each state implements Medicaid is that some respondents are not assigned to a unique State code between 1967 and 1975 of the CPS-ASEC, as noted above. Since we cannot identify the specific State in which such respondents reside, we cannot determine the year in which such respondents could first access Medicaid coverage. Thus, we assign Medicaid coverage to these respondents probabilistically according to the population of each state (according to the 1970 Census) in the group and whether each state had implemented Medicaid. Specifically, if respondent  $i$  lives in the group of states  $\{S_1, S_2, \dots, S_N\}$ , then his or her probability of coverage  $P_{i,t}$  in year  $t$  is given by

$$P_{i,t} = \sum_{j=1}^N \alpha_j M_{j,t}$$

where  $\alpha_j$  is the population share of state  $j$  among the group of  $N$  states, and  $M_{j,t}$  is an indicator variable equal to one if state  $j$  implemented Medicaid by year  $t$ .

### *Value*

We next estimate the market value of Medicaid coverage for 1967-1978. To do so, we first obtain the average market value for aged, adult and child Medicaid recipients by state in 1979 according to the CPS-ASEC for income year 1979. We do not consider the disabled as a separate risk class because prior to 1976, the CPS-ASEC does not ask about SSI receipt separately from AFDC receipt. We then apply these 1979 market values to respondents who were imputed to receive Medicaid coverage in 1967-1978. Just as with our procedure for Medicare values, we assign state population-weighted averages of Medicaid values for recipients with non-unique State codes.

Finally, we scale down the Medicaid values assigned to all Medicaid recipients in 1967-1978 based on the ratio of average per-recipient Medicaid spending each year to average per-recipient Medicaid spending in 1979. We obtain average per-recipient Medicaid spending each year by dividing U.S. spending on Medicaid from the National Health Expenditure Accounts by the number of Medicaid enrollees in each year according to administrative data.

## **Employer provided health insurance**

### *Receipt*

We impute receipt of employer provided health insurance coverage for 1963-1978. To do so, we first use a probit model to predict coverage for each family in 1979, the earliest year for which employer provided health insurance values are available. The outcome variable is whether

anyone in the family receives employer provided health insurance. The predicting variables include the number of workers in the family, as well as the family head's age, sex, race, education, marital status, and part or full-time work status. Next, we use the model estimates to predict probabilities of family receipt of employer provided health insurance coverage in 1963-1978. We assign receipt probabilistically until reaching our estimate of the number of people covered by employer provided health insurance in each year.

In addition to imputing who is covered by employer provided health insurance, we must also estimate the number of people covered because, to our knowledge, such data are not available for 1963-1979. To estimate the number of people covered, we first obtain total spending on private health insurance each year from the NHEA in 1963-1979. We adjust total spending downward in 1963-1978 based on the ratio of employer provided health insurance spending in CPS-ASEC for 1979 to NHEA spending on private insurance in 1979. This ensures that we capture the same fraction of total spending in 1963-1978 as captured by the CPS-ASEC for income year 1979. Next, we obtain an estimate of average spending per recipient in 1963-1978. We do so by calculating the average spending per recipient in 1979 using the values in the CPS-ASEC for income year 1979, and then deflating this average value each year from 1963 to 1978 according to the CPI for health expenditures. While there is no reason to believe that average spending per recipient necessarily increased at the same annual rate as the CPI for health expenditures, we are unaware of a superior approach to estimating these average values.

In order to obtain our estimate of the number of people covered by employer provided health insurance in the CPS-ASEC, we simply divide the adjusted total private health expenditures each year by our estimate of the average spending per recipient. We then assign

employer provided health insurance coverage to families probabilistically until reaching our estimate of the number of covered individuals in each year.

### *Value*

We next estimate the value of employer provided health insurance coverage for each recipient in 1963-1978. To do so, we estimate a linear model that predicts the total market value of employer provided health insurance for families in the CPS-ASEC for income year 1979. The outcome variable is the total value of employer provided health insurance across all family members in each family. The predicting variables include the number of adults in the family, the number of children in the family and the family's state of residence.

We use the model estimates to predict the total family value of employer provided health insurance in 1963-1978. We assign populated-weighted averages of values for recipients with non-unique State codes. The value for each individual person is then deflated according to the CPI for health expenditures in each year relative to 1979.

## **Food Stamps**

### *Receipt*

We impute food stamp receipt for families in 1963-1978. To do so, we first use a linear probability model to predict food stamp receipt by families in the CPS-ASEC for income year 1979, the earliest year food stamp receipt is available. The outcome variable is whether or not the family received food stamps. The predicting variables include the number of adults in the family, the number of children in the family, and the family head's age, sex, race, marital status, and family income. In a separate model we also include whether the family receives cash welfare.

Next, we use the model estimates to predict probabilities of family receipt of food stamps in 1963-1978. For 1967-1978, we use the model that includes cash welfare receipt as a predicting



variable because the 1967-1978 CPS-ASEC files include information on whether the family received cash welfare, while the 1963-1966 CPS-ASEC files do not include this information.

We then scale the predicted probabilities for 1963-1978 because the food stamp program was implemented in different counties in different years. We identify the implementation year for each county from data published by Hoynes et al. (2016). Since we do not know the county of residence for each CPS-ASEC family, we instead scale each family's predicted probability of food stamp receipt by the share of the state's overall population contained in counties that had implemented the food stamp program by the given year. Our county-level population data come from the 1970 Decennial Census. For individuals with non-unique state codes, we use state population-weighted averages of state population shares covered by counties that had implemented the food stamp program.

Finally, we assign food stamp coverage to families probabilistically according to their predicted probabilities until reaching the adjusted administrative total number of food stamp enrollees in the United States. The adjusted administrative total is equal to the actual administrative total multiplied by the ratio of the number of food stamp recipients in the CPS-ASEC for income year 1979 to the number of food stamp recipients recorded in administrative data for 1979.

### *Value*

We next estimate the value of food stamps for each recipient family. To do so, we first estimate a linear model using the CPS-ASEC for income year 1979. The sample for this model is all families that received food stamps in 1979. The outcome variable is the total value of food stamps the family received. The predicting variables include the number of adults, the number of

children, and the family's (pre-tax, post-cash transfer) income. We also include interactions between the number of adults and children with a 3<sup>rd</sup> degree polynomial of the family's income.

We then use these estimates to predict the value of food stamps received by each family that was imputed to receive food stamps in 1963-1978. We replace any food stamp value below the 5<sup>th</sup> percentile of actual food stamp values in 1979 with the 5<sup>th</sup> percentile, and we replace any food stamp value above the 95<sup>th</sup> percentile of actual food stamp values in 1979 with the 95<sup>th</sup> percentile. In addition, we scale the value of food stamps for each family in 1963-1978 such that the total amount of food stamp value across all families is equal to adjusted total food stamp spending in that year from administrative data. The adjusted total food stamp spending in each year from 1963-1978 is equal to the total spending from the administrative data multiplied by the ratio of total food stamp value in the CPS in 1979 to total food stamp spending in 1979 according to administrative data.

### **School lunch**

School lunch coverage and values are imputed identically to the way Food Stamp coverage and values are imputed, with one exception: School lunch was available in every State in each year during 1963-1978, and so we do not scale probabilities based on county-level implementation dates.

### **Housing subsidies**

Housing subsidies are imputed identically to the way school lunch coverage and values are imputed, with one exception: We only have data on the number of family units covered by housing subsidies rather than the number of recipients who live in those households. Thus, we match the number of families in the CPS-ASEC to the number of assisted families according to

administrative data (scaled based on the ratio of families in the CPS-ASEC in 1979 to those reported in administrative data in 1979).

## **Appendix B. Anchoring the Absolute-Supplemental Poverty Measure to the Official Poverty Measure**

In order to create an anchored version of the absolute Supplemental Poverty Measure (SPM), we create SPM poverty thresholds in the base year for each family type and housing type that are not geographically adjusted. We then grow these geographically unadjusted thresholds with inflation in each year. Next, we apply geographic adjustments to these thresholds. Finally, we rescale the thresholds in all years by a constant factor so that the poverty rate under the SPM in the base year is equal to the poverty rate under the anchor poverty measure in the base year. The poverty rate is calculated as the percent of the population whose SPM resources fall below these thresholds.

In order to create the anchored SPM thresholds, we use the SPM data made publicly available by Wimer et al. (2017). The individual-level data, based on the Current Population Survey–Annual Social and Economic Supplement (CPS-ASEC) and the Consumer Expenditure Survey, can be used to calculate a historical SPM for each year between 1967 and 2015. For each individual in each year, the SPM data provide the geographically adjusted poverty threshold, the geographic adjustment which is applied to the housing portion of the threshold, as well as resource variables.

**Create geographically unadjusted thresholds in base year.** We begin by noting that the overall, geographically adjusted poverty threshold can be written as the sum of the

geographically adjusted housing portion of the threshold and the non-geographically adjusted remaining portion of the threshold:

$$T_{f,h,r,t} = A_{r,t}H_{f,h,t} + N_{f,h,t}$$

for family type  $f$ , in housing type  $h$ , in region  $r$  in year  $t$ , and where  $T$  is the overall geographically adjusted poverty threshold,  $A$  is the geographic adjustment,  $H$  is the unadjusted housing portion of the threshold, and  $N$  is the non-housing portion of the threshold. The SPM data provide  $T$  and  $A$ , but not  $H$  and  $N$ . Thus, we solve for  $H$  and  $N$  by combining threshold equations for two families with the same number of adults and children in the same housing type during the base year, but who live in different regions and thus have different geographic adjustment factors  $A$ . Denoting a family with two adults and two children as family type  $f=0$ , denoting the base year as  $y=0$ , and considering two distinct regions as  $r=1$  and  $r=2$ , we can solve for the unadjusted housing portion for all families of type  $f=0$  during year  $y=0$  as

$$H_{0,h,0} = \frac{T_{0,h,1,0} - T_{0,h,2,0}}{A_{1,0} - A_{2,0}}$$

for each housing type  $h$ . We then obtain the geographically unadjusted poverty threshold as

$$T_{0,h,0} = T_{0,h,r,0} + H_{0,h,0}(1 - A_{r,t})$$

We then apply the SPM equivalence scale to create geographically unadjusted thresholds for each family type and housing type.

**Create geographically unadjusted thresholds in all years.** We create geographically unadjusted poverty thresholds in all other years by applying the appropriate inflation adjustment.

We obtain

$$T_{f,h,t} = \frac{P_t}{P_0} T_{f,h,r,0}$$

where  $P_t$  is the price index in year  $t$ .

**Create geographically adjusted thresholds in each year.** We next apply geographic adjustments to the poverty thresholds in each year. Because the geographic adjustment factors apply only to the housing share of the thresholds, the geographically adjusted poverty thresholds are given by

$$T_{f,h,r,t} = T_{f,h,t}(s_{h,t}A_{r,t} + (1 - s_{h,t}))$$

The housing share of the threshold is constant across all family types in a given year and given housing type, and so

$$s_{h,t} = \frac{H_{0,h,t}}{T_{0,h,t}}$$

which can be calculated as shown in the base year.

**Rescale poverty thresholds to anchor in base year.** The final step is to multiply all geographically adjusted poverty thresholds in all years by a constant factor such that the poverty rate under the SPM is equal to the appropriate poverty rate in the base year.