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FAMILIES 25 YEARS AFTER WELFARE REFORM

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**ABSTRACT**

We investigate how material well-being has changed over time for single mother headed families—the primary group affected by welfare reform and other policy changes of the 1990s. We focus on consumption as well as other indicators including components of consumption, measures of housing quality, and health insurance coverage. The results provide strong evidence that the material circumstances of single mothers improved in the decades following welfare reform. The consumption of the most disadvantaged single mother headed families—those with low consumption or low education—rose noticeably over time and at a faster rate than for those in comparison groups.

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## I. Introduction

The signature change in social policy of the past thirty years was the passage of the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) and the other policies that emphasized work-based assistance such as the expansion of the Earned Income Tax Credit (EITC) and Medicaid, and increased support for childcare, training and other services. While it is clear that these changes were associated with a dramatic fall in welfare receipt and increases in work and earnings among single mothers, there is less agreement on the changes in material circumstances among this population.<sup>1</sup> In particular, there has been some dispute about how poverty and income levels have responded to these policy changes. There also is a concern that, even if there were gains on average, the most vulnerable may have been made worse off because these policies relaxed the entitlement to benefits—by imposing time limits or by conditioning support on work, for example. These questions have taken on increased relevance as the debates over recent reforms to the Child Tax Credit and Child and Dependent Care Tax Credit have focused on whether work-based welfare reform can be successful.

In this paper, we analyze changes in material well-being between 1984 and 2019, focusing on the period starting in 1993 with the welfare waivers that preceded PRWORA. We study single mother headed families—the primary group affected by the changes in tax and welfare policy. For these families, we analyze changes in income and consumption and other measures of well-being. We focus on consumption, particularly its most well-measured components, given its conceptual advantages over income as a measure of economic well-being as well as the pronounced underreporting of income in surveys. We also examine individual components of consumption, housing characteristics and health insurance coverage. We emphasize the importance of examining well-being at different parts of the distribution of income and consumption, particularly the very bottom, because policy changes are likely to have very different effects at different points in the distribution (Bitler et al. 2006; Meyer and Sullivan 2006).

Much of these analyses build off of Meyer and Sullivan (2004, 2008), but we extend this work in several substantive ways. First, we highlight new evidence on the extent and growth in

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<sup>1</sup>See Rebecca M. Blank (2002), Jeffrey Grogger and Lynn A. Karoly (2005), and Ziliak (2016) for reviews of this literature. Meyer and Sullivan (2006) and Moffitt and Garlow (2018) provide summaries of the fall in welfare receipt and increase in employment for single mothers with low income, consumption or education.

income underreporting and the potential for these errors to account for differences in the patterns of income and consumption. Many income sources, particularly some of those commonly received by single mothers, are sharply underreported and this underreporting has increased over time. These flaws are largely ignored in studies of the experience of single mothers after welfare reform, resulting in biased indications of the material circumstances of these families. Second, Meyer and Sullivan (2008) examine consumption and other measures of well-being that have not seen the sharp decline in reporting and are more closely tied to well-being. We expand on this approach by addressing concerns about measurement error in consumption, focusing on components that have been shown to be well-measured. These components account for a large share of total reported consumption by low-educated single mothers, 72 percent, and together are arguably an appropriate proxy for total consumption.

Third, we compare the long-run patterns for single mothers to those for other groups that are unlikely to be affected by the reforms in order to better understand the direct effect of the policy changes accounting for labor market and other changes. Finally, the addition of many more years of data that span multiple business cycles including the worst recession since the Great Depression as well as the post-PRWORA boom sheds light on the role macroeconomic conditions play in these long-run patterns.

Our results for income, which do not correct for underreporting, show that while income grew for single mothers, particularly during the years shortly after welfare reform, the pattern is quite different for the lowest income single mothers. For those in the bottom income decile, income falls sharply after welfare reform. We argue that these reported changes reflect the growing underreporting of income. The trends in consumption, on the other hand, show steady increases over a long period from at least the early 1990s up until 2007, with the largest increases apparent for the lowest decile, providing little evidence that the most disadvantaged families became worse off after welfare reform. Consumption has grown more slowly, if at all, for most deciles since the start of the Great Recession, although we continue to see a rise in consumption at the very bottom.

We find additional evidence of improved economic well-being for single mothers when looking at components of consumption, housing characteristics and health insurance coverage. In our earlier work, which only goes through 2003, we found that a decline in food consumption for

single mothers was offset by increased housing and transportation consumption (Meyer and Sullivan, 2008). In this expanded analysis, we find that all of the components of (well-measured) consumption have risen since the early 1990s—although food at home is flat at the bottom of the distribution of consumption—and that much of the rise in consumption is accounted for by increased consumption of housing, utilities, and gasoline and motor oil. Although homeownership rates have not increased, we do find increases in out-of-pocket rent for those who are renting, and this rise is accompanied with noticeable improvements in the characteristics of the living unit—more rooms, more amenities, and fewer housing problems. In previous work we had shown that health insurance coverage declined somewhat in the years immediately after welfare reform (Meyer and Sullivan, 2008). Since then, health insurance coverage for single mothers has expanded due to later expansions in coverage under the ACA.

Comparisons of the patterns of consumption for single mothers to those for other groups show that improved macroeconomic economic conditions cannot fully explain the rise in consumption, indicating an important role for policy. We find that during our period from 1990 through 2019, consumption rose more for low-educated single mothers than for low-educated single women without children, low-educated married mothers, and high-educated single mothers. In addition, we verify that our general conclusion that economic well-being has improved for single mothers is robust to alternative approaches. For example, we find even greater improvements when looking at a measure of total consumption (that includes components that are not well-measured), and our results are not sensitive to how we account for the changing demographic composition of single mothers over time.

## **II. Background and Literature**

During the 1990s sweeping changes were made to the social safety net. In particular, a series of policy changes shifted the emphasis of support from unconditional cash assistance to assistance conditioned on work for most single mothers. For detailed discussions of these policy changes see Grogger and Karoly (2005) and Ziliak (2016). While much of the attention is on PRWORA, other policy changes during this time also increased the incentives to work, including the significant expansions to the Earned Income Tax Credit between 1993 and 1996. Funds for childcare and job training expanded as well as other noncash assistance. In addition, policies that

significantly impacted single mothers continued to be implemented during and well after the welfare reform period, including expansions in Medicaid, the introduction of the Child Tax Credit in 1997, allowing a portion of the CTC to be refundable in 2001, expanded access to health insurance through the ACA, as well as other changes in tax and transfer policy. Some of these policies reduce work incentives, such as the refundability of the CTC and the expanded availability of health insurance through Medicaid without work.

Given these policy changes, it is not surprising that spending on tax and transfer programs changed significantly, with a shift away from cash program like TANF towards tax and in-kind transfer programs. Looking at Figure 1, we see that spending on AFDC/TANF cash benefits fell sharply after welfare reform. Between 1996 and 2013, the real value fell by nearly 70 percent. This drop reflected declining TANF caseloads as well as a shift of TANF funds from cash assistance to other efforts to promote work such as support for childcare, training, and other noncash assistance, much of which was made available to groups beyond just single mothers. At the same time the value of the EITC expanded. Between 1996 and 2016 the aggregate spending on the EITC grew by 60 percent. In-kind assistance through SNAP and Medicaid increased sharply after an initial drop in the late 1990s.

A number of studies have shown a direct tie between the policy changes in the 1990s and the employment of single mothers. This link is evident in Figure 2 which reports the fraction of single mothers that were employed at any point in the year by educational attainment. The most striking feature of these patterns is the sharp rise in employment rates for single mothers without a high school degree—the group most likely to be affected by the reform—between 1992 and 1999 a period that spans welfare reform as well as other pro-work policies. This pattern of rising employment in the 1990s is also evident, but to a much lesser extent, for single mothers with a high school degree or some college. Past work has shown that this rise in employment for low-educated single mothers contrasts sharply with the pattern for childless single women (Meyer 2010; Moffitt and Garlow 2018). There was some reduction in employment for these groups in the 2000s that mirrored the changes for other groups, such as single women without children, but most of the increase in employment was permanent. For single mothers with a college degree, however, the employment rates have been both higher and remarkably flat over the past 35 years.

While this sizeable and permanent increase in involvement in the labor market led to

increased earnings for single mothers, it is not immediately clear whether this increase led to improvements in economic well-being given the sharp decline in the receipt of cash welfare, as well as other concerns such as the greater need for child care due to increased work. In the results we present below, we consider whether, on aggregate, these changes led to improvements or declines in economic well-being for single mothers, and in particular, whether certain subgroups such as those with few resources, were differentially affected by these changes.

A small literature that has almost entirely ignored income misreporting has argued that many women were worse off financially after welfare reform (e. g. Blank and Kovak 2009; Shaefer and Edin 2013). The evidence in these papers has been described as a “dire set of facts” (Ziliak 2016). Others have made adjustments for some key components of misreporting using the Urban Institute’s TRIM3 model and found sharp declines in poverty for children (National Academy of Sciences, Engineering and Medicine 2019) or children in single mother headed families or both (Winship 2016).

### **III. The Merits of Consumption and Income as Measures of Well-Being**

In previous work, we present fairly strong evidence that consumption provides a more appropriate measure of well-being than income for families with few resources (Meyer and Sullivan 2003, 2011, 2012b). Conceptual arguments as to whether income or consumption is a better measure of the material well-being almost always favor consumption. For example, consumption reflects long-run resources, whereas income may be quite variable in the short term (for further discussion, see Cutler and Katz 1991; Slesnick 1993; and Poterba 1991, Blundell, Preston and Pistaferri 2008). Income measures fail to capture disparities in consumption that result from differences across families in the accumulation of assets or access to credit. Also, even if income remains unchanged, changes in government programs affect the ability of households to consume because these programs act as insurance against sharp declines in income—they diminish the need for households to save for a rainy day. Consumption is more likely to capture income from self-employment (Hurst, Li and Pugsley 2014) and to reflect private and government transfers.

Focusing on low deciles, Meyer and Sullivan (2003, 2011, 2012b) find that consumption is a better predictor of well-being than income. These papers examine other measures of material hardship or adverse family outcomes for those with low consumption or income. These problems



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

Income may be particularly difficult to report accurately for families with few resources, as these families tend to have many income sources and fewer financial records, making income hard to report accurately. In the welfare-reliant single mother sample in Edin and Lein (1997), the average single mother obtains at least 10 percent of her income from each of four different sources (Aid to Families with Dependent Children [AFDC], food stamps, unreported work, and boyfriends/absent fathers) and very little from reported work. Furthermore, Edin and Lein (1997) find that these families significantly underreport income.

This evidence is supported by a growing literature indicating that income is substantially underreported, especially for categories of income important for those with few resources, and the extent of underreporting has increased over time. Meyer, Mok and Sullivan (2015) document the decline in the share of many types of reported transfers (AFDC/TANF, FSP/SNAP, as well as many other programs) appearing in household surveys based on aggregate data for all demographic groups. This work was supplemented with more limited information on trends using microdata, in particular Gathright and Crabbe (2014). Since then, several papers have linked surveys to administrative microdata and shown that in recent years the incomes of those at the bottom, particularly single parents, are sharply understated due to misreporting of transfers and earnings (Meyer and Mittag, 2019) and pensions (Bee and Mitchell 2017). Meyer et al. (2021) find that the underreporting of income is the predominant reason for an overstatement by a factor of over ten the number of people at the very bottom of the reported income distribution. There is also underreporting of consumption, but several large categories of consumption are reported well and can be used as an informative consumption measure as we describe below (Bee, Meyer, and Sullivan, 2015; Meyer and Sullivan, 2021).

High rates of nonresponse to key income questions are a concern for our main income surveys. In cases where respondents do not report values for income components such as earnings or investment income, a value is imputed by assigning an amount from a randomly chosen survey respondent with similar characteristics. In the Current Population Survey (CPS), the survey that is the primary source for income and poverty statistics in the United States, more than half of after-tax income dollars are imputed (Meyer and Sullivan 2011). Taxes, crucial in measuring disposable income, are entirely imputed. Imputation rates have increased over time,

are higher in the tails of the income distribution (Bollinger, Hokayem and Ziliak 2019), are much higher than the rates in our main consumption survey, and could lead to considerable bias in estimates of economic well-being and inequality.

Meyer and Sullivan (2011) show that at low percentiles, reported expenditures tend to exceed reported income. For example, the fifth percentile of expenditures exceeds the fifth percentile of income by 44 percent, while the tenth percentile of expenditures exceeds the tenth percentile of income by 8 percent. For those with income in the bottom 5 percent of the income distribution, expenditures average nine times income—a striking indication of mismeasurement in the data. Borrowing or dissaving by those at the bottom does not appear to explain these discrepancies. The evidence strongly suggest that income is underreported at the bottom. These facts provide a strong motivation for looking beyond income to other measures that more accurately reflect material well-being.

Past work looking at consumption-based measures of inequality and poverty suggests that changes in these measures differ from income-based measures (Cutler and Katz, 1991; Johnson, 2004; Krueger and Perri, 2006; and Slesnick, 2001). Research by Meyer and Sullivan (2008) on single-mother families shows sharp differences between changes in consumption and changes in income over the 1990s. In each decile, consumption rises between 6 and 10 percent. In contrast, income falls sharply in the first decile and rises by five percentage points more than consumption in deciles three, four, and five. Meyer and Sullivan (2012, 2021) show that income and consumption measures of poverty and inequality differ sharply, especially over the last 15 years.

#### **IV. Data and Methods**

##### *A. Data and Samples*

Our analyses primarily use consumption data from the Consumer Expenditure (CE) Interview Survey. The CE is a quarterly survey that provides comprehensive information on family spending for about 7,000 families each quarter (or about 5,000 prior to 1999). We use the surveys from the first quarter of 1984 through the first quarter of 2020. Surveys are administered throughout the three months of a quarter, and questions about expenditures typically have a

reference period of the three months preceding the interview month. For each observation we specify the reference year as the year in which the majority of reference months fall.<sup>2</sup>

Our main analysis sample from the CE includes families headed by a single woman aged 18-54 who lives with her own children only and at least one child is under the age of 18, which excludes single mother headed families where other related or unrelated adults are present. We include observations with reference years for spending from 1984 to 2019, a period that spans many years prior to and after the implementation of the major reforms to the social safety net during the 1990s that we highlight.

We will supplement our analyses of the characteristics of living units from the CE using data from the American Housing Survey (AHS), which is conducted by the Department of Housing and Urban Development, for the period from 1991 to 2019. The AHS collects detailed data on housing characteristics for a national sample every other year. The survey interprets housing units broadly, as it includes trailers and mobile homes.

While the focus of this paper will be on consumption-based measures of well-being, we also report the patterns for income using data from the Annual Social and Economic Supplement (formerly called the Annual Demographic File or March Supplement) to the Current Population Survey (CPS), which provides data for approximately 90,000 households annually in recent years. We use data from the 1985 through 2020 surveys, which provide family income information for the previous calendar year.<sup>3</sup> The CPS is the source of many official government statistics on material well-being, including poverty and median income.

### *B. Measures of Income and Consumption*

To construct a consumption-based measure of well-being, we make a number of adjustments to reported expenditure data (see Data Appendix for details). First, we include housing consumption rather than housing expenditures because the latter, which include mortgage payments, are not an appropriate measure of the value of homeownership. For example, using housing expenditures as a proxy for housing consumption would imply that families who have paid off their mortgage have zero housing consumption. For homeowners, we

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<sup>2</sup> For example, interviews in January and February will be assigned a reference year equal to the prior calendar year, while March interviews will be assigned to the current calendar year.

<sup>3</sup> We obtain the CPS ASEC data from IPUMS (Flood et al., 2020)

measure housing consumption as the reported rental equivalent of the home. For unsubsidized renters, out-of-pocket spending on rent is used, and for respondents living in government or subsidized housing, we impute a rental value using detailed housing characteristics.

Second, including vehicle purchases in a measure of consumption would not accurately reflect material well-being because a family's well-being would be overstated in periods when a car is purchased and understated in periods when the family owns the car outright. To address this concern, we convert reported expenditures on vehicles into a service-flow value that reflects the value of services a consumer receives from owning a car during the period (see Data Appendix for details). Third, we exclude from consumption out-of-pocket health expenses because they are not closely tied to well-being. For example, unhealthy individuals without full insurance may have high out-of-pocket health expenses that do not reflect greater well-being. Fourth, our consumption measure excludes spending that is better interpreted as an investment, such as spending on education; outlays for retirement, including pensions and Social Security; and other miscellaneous spending categories that are very small relative to total consumption.<sup>4</sup>

Finally, our primary measure of consumption relies on only the well-measured categories of consumption to address concerns about underreporting of consumption and changes in the completeness of reporting in the CE for some components of consumption over time. These well-measured components include food at home, rent plus utilities, the rental value of owner-occupied housing, gasoline and motor oil, and the rental value of owned vehicles (see Data Appendix for more details). These components account for 72 percent of overall reported consumption by low-educated single mothers in our sample period of 1984-2019, and compare well to national accounts both in levels and in changes over time (Bee, Meyer, and Sullivan, 2015). Moreover, well-measured consumption satisfies two conditions required for an adequate proxy for total consumption: its aggregate price changes are close to those of the total consumption bundle, and its share of total reported consumption is roughly constant as total consumption varies (Meyer and Sullivan, 2021). For the discussion that follows, we will refer to the measure that includes only the well-measured components as "consumption" and the one that includes all components as "total consumption."

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<sup>4</sup> This includes categories such as membership fees for credit cards or shopping clubs; non-real estate legal fees, burial fees, banking service fees, etc. These are excluded to ensure a consistently defined measure of total consumption throughout our sample period.

When we examine the patterns of consumption over the past three and half decades for single mothers, we do so at different points in the consumption distribution. For example, we sort our sample into deciles of well-measured consumption within three-year periods and then we examine changes over time in consumption and components of consumption within deciles. We focus, in particular, on the bottom deciles in order to determine how economic well-being has changed for the most disadvantaged single mothers. When comparing single mothers to other demographic groups that experienced similar macroeconomic and labor market conditions, we condition on having a high school degree or less, as this group was targeted by the policy changes and experienced most of the employment change.

For our analyses of income, we focus on after-tax income plus food stamps/Supplemental Nutrition Assistance Program (SNAP) benefits and housing subsidies for all members of the family. For food stamps, we include the reported cash value. The value of housing subsidies is imputed based on detailed housing characteristics supplemented by income, region, and family size and composition (see Data Appendix for more details). Although there is considerable evidence that income is under-reported, particularly for components of income that are likely to be important for single mothers such as means-tested transfer payment (Meyer, Mok, and Sullivan, 2015), we do not adjust these income measures for under-reporting. Point in time analyses show that such corrections that substitute administrative data have a very large impact (Meyer and Mittag 2019; Meyer et al. 2021), but time-series analyses are currently not available.

To allow for economies of scale in consumption and account for differences in consumption between children and adults, we adjust measures of income, consumption, and number of rooms using a scale following NAS recommendations (Citro and Michael 1995):  $(\text{number of adults} + (\text{number of children} * 0.7))^{0.7}$ .<sup>5</sup> We account for changes in prices over time using the Personal Consumption Expenditures Index and express income and consumption measures in 2019 dollars.

### *C. Accounting for Changes in Demographic Characteristics*

There have been substantial changes in the composition of the single mother population over the last four decades. For example, single mothers in the 2010s were more likely to be Hispanic and more likely to attend college than those in 1980s, as shown in Appendix Table 1.

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<sup>5</sup> We standardize this scale to a family with one adult and two children by multiplying by 1.8456.

Because our analysis focuses on the effects of tax and welfare reform on consumption growth, we exclude the influence of changes in the demographic composition of the single mother population by holding observable characteristics—age, education, and race/ethnicity of head—constant over time by re-weighting the samples from 1987-2019. Specifically, we first divide our sample from the first period (1984-1986) into 24 demographic cells defined by three variables: age (18-34, 35-54), education (high school dropout, high school degree, some college, College degree or above), and race/ethnicity (non-Hispanic White, non-Hispanic other race, Hispanic). These cells are defined broadly enough to ensure that none of the periods contain empty cells. We then use the share of the population in each of the 24 demographic cells to adjust the weights to hold constant demographic characteristics.

#### *D. Accounting for Inflation*

While the most common index used to account for price changes is the Consumer Price Index for All Urban Consumers (CPI-U), well-known biases in this index can significantly affect estimates of changes over long periods.<sup>6</sup> The Boskin Commission (Boskin et al. 1996) concluded that the annual bias in the CPI-U was 1.1 percentage points per year at the time of the report, but 1.3 percentage points per year before 1996. Some more recent studies have similar conclusions: Lebow and Rudd (2003) estimated an upward bias of about 0.9 percentage point in 2001, and Moulton (2018) estimated an upward bias of 0.85 percentage points in 2017. Other studies have concluded that the bias is even larger (Hausman 2003, Costa 2001, Hamilton 2001, Redding and Weinstein 2018, and Ehrlich et al. 2020). See Furth (2017) for a recent review. Over time the methods for calculating the CPI-U have changed to partially address some but not all of the biases.

A small bias in the CPI-U compounded over many years can lead to very large bias in changes in measures of well-being. For example, a 1 percent annual upward bias would lead to a 43 percent understatement of our income and consumption growth measures over the 36-year

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<sup>6</sup> Four types of biases in the CPI-U have been emphasized in the literature: substitution bias, outlet bias, quality bias, and new-product bias. Substitution bias refers to bias in the use of a fixed market basket when people substitute away from high-relative-price items so the old market basket becomes less relevant. Outlet bias refers to the inadequate accounting of the movement of purchases toward low-price discount or big-box stores like Walmart. Quality bias refers to inadequate adjustments for the quality improvements in products over time, while new-product bias refers to the omission of or long delay in the incorporation of new products into the CPI (Meyer and Sullivan 2012, Lebow and Rudd 2003, Moulton 2018).

period we examine. For all of the results we report, we will adjust for inflation using the Personal Consumption Expenditures Chain-Type (PCE) price index. The PCE grows slower than the CPI-U—between 1984 and 2019 the PCE grew by a factor of 2.14 while the CPI-U grew by 2.46. But this growth in the PCE is still larger than the changes in prices implied by many of the estimates in the literature on CPI bias. If we were to correct for CPI bias using these estimates, the real changes in income and consumption that we report would rise more (or fall less) over time than we report.

In the case of the bottom deciles, one might be concerned that official price indices are not a good indicator of price changes since the mix of goods these households consume is different from that of the overall population. The evidence that prices change differently for subpopulations, such as those with few resources, is mixed. Some studies have concluded that low-income populations experience lower rates of inflation (Garner et al. 1996; McGranahan and Paulson 2006; Broda, Leibtag, and Romalis 2009) while others indicate that they face higher rates (Kaplan and Schulhofer-Wohl 2017; Jaravel 2019), making it unclear how one might (or whether one should) differentially adjust for price changes for the poor.

#### *E. Other Indicators of Economic Well-being*

As additional indicators of changes in economic well-being for single mothers over the past three and a half decades, we examine trends for measures of housing quality and health insurance coverage. We examine housing characteristics using data from both the CE and the AHS. While both data sources collect information on characteristics such as number and type of rooms, the presence of amenities such as washers, dryers, dishwashers and air conditioning, the AHS also collects information on housing problems such as a water leak.<sup>7</sup> For health insurance we consider whether individuals are covered by any health insurance and whether they are covered by Medicaid. Because these measures of housing quality and health insurance are not denominated in dollars, they do not require a price index for interpretation of the changes over time. Such measures are also tangible indicators of an improved level of material well-being.

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<sup>7</sup> While the CE collected information on a broad set of housing amenities for much of our sample period, data on air conditioning and the presences of appliances such as washers, dryers, and dishwashers are only available through 2012.

## V. Changes in Income and Consumption of the Worst Off

Before we present our main results for consumption, we consider how income has changed for single mother headed families at different parts of income distribution from 1984 to 2019. Figure 3 shows the percent changes in after-tax income plus food stamps and housing subsidies relative to 1990-92 by income decile using the CPS ASEC. Because small annual samples can result in somewhat noisy estimates, we pool the annual data into 3-year intervals. These results indicate that in the 25 years following welfare reform income for single mothers above the bottom decile rose by 6 to 20 percent, but for those in the bottom decile it fell by 13 percent. Although these analyses use the CPS, in Appendix Figures 1a and 1b, we demonstrate that the results using the CE are broadly consistent with those from the CPS when we use pre-tax income plus food stamps/SNAP as an income measure, which is defined compatibly in the two surveys.<sup>8</sup>

Figure 4 and Panel A of Table 1 show how consumption has changed for single mothers between 1984 and 2019 relative to the early 1990s for each of the bottom five deciles and the top half of the consumption distribution. These results differ sharply from those for income in two ways. First, unlike the income data indicating declines for single mothers in the bottom decile, consumption data indicate improvements at all deciles. Second, single mothers in the bottom income decile see the greatest decline in income, whereas single mothers in the bottom consumption decile experience the greatest rise in consumption. In particular, consumption for single mothers in the bottom decile rises by 39% between 1990-92 and 2017-19. The degree of consumption growth during this period declines monotonically as we move up the consumption distribution, with consumption in the top half of the distribution rising only by 19%.

These increases in consumption that we report are precisely estimated. For readability, we do not report standard errors in our main tables. But to provide an indication of the precision of the estimates, we provide a version of Table 1 that includes standard errors in Appendix Tables 2 and 3. For total well-measured consumption (Appendix Table 2), we can reject the hypothesis that consumption did not rise between the early 1990s and 2019. In fact, we can reject the hypothesis that consumption in the bottom decile grew by only the same amount as the top half of the distribution.

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<sup>8</sup> We cannot construct a comparable measure of after-tax income in the CE because the state identifier, which is needed to calculate state tax credits and liabilities, is missing for a significant portion of CE observations.



The sharp contrast between income and consumption patterns in the bottom decile brings into question how well-being has changed for the most disadvantaged single mothers. Growing evidence indicates that the declining quality of income data could explain these different patterns. In particular, Meyer, Mok and Sullivan (2015) document the declining quality of income data from the CPS and other national surveys. They show that the extent of underreporting has increased over time, especially for categories of income important for those with few resources. Furthermore, recent research that links the CPS to administrative micro data shows that the vast majority of those below low-income cutoffs, such as 2 or 4 dollars per person per day, have higher incomes than reported. Similar data from the Survey of Income and Program Participation show that incomes based on administrative data are often multiples of the survey reported amount (Meyer, Wu, Mooers and Medalia 2021). These problems particularly bias estimates of the very lowest incomes.

Although the long-term improvements in consumption among single mothers may be due, in part, to changes in welfare and related policies that targeted single mothers, changing macroeconomic conditions are also likely to have played an important role. Indeed, we see a break in trends in consumption around the Great Recession. Between the early 1990s and 2005-07, consumption increased by 31% for single mothers in the bottom decile and it increased by 25% for those in the top half. After 2005-07, consumption rose only modestly (by 1-6%) for those in the bottom five deciles, while consumption declined by 5% for those in the top half. In the following section, we consider the extent to which the improved material well-being is due to policy changes, as opposed to changes in macroeconomic conditions, by comparing the patterns of consumption for single mothers to those of other groups that are less likely to be affected by the policies.

We verify that these patterns of rising consumption are robust to alternative approaches. For example, we find similar patterns when looking at a measure of total consumption (that includes components that are not well-measured). These results, which are reported in Appendix Figure 2, indicate that consumption for those in the bottom decile rose by 35% between the early 1990s and 2019, as compared to 39% growth for well-measured consumption. For the top half of the distribution, the growth in total consumption during this period is less pronounced (14%) than the growth in well-measured consumption (19%). In results not reported, we also verify that

these patterns are not sensitive to how we account for the changing demographic composition of the single mother population over time.

Changes in consumption over the last three decades may mask heterogeneity in changes in various components. The components may be of independent interest as they have different income elasticities (e.g., spending on automobiles tends to be more elastic than spending on food at home), and may be more or less associated with increases in employment. Table 1 decomposes consumption into five subcomponents and reports changes in each subcomponent by decile of consumption. To help see how changes in each component contribute to the overall change, we include in the far right column the share of consumption for each component.

Although food at home is one of the larger components—its share of consumption ranges from 24-37%, depending on the decile of the consumption distribution—it accounts for very little of the overall rise in consumption over the last three and half decades (Panel B).<sup>9</sup> In fact, for the bottom three deciles, food at home remained flat between 1990-92 and 2017-19. For single mothers higher up the consumption distribution, food at home rose modestly during this period (5-13%).

In contrast, housing flows, which accounts for the largest share of consumption (39-49%), increased substantially since the early 1990s (Panel C). Specifically, housing consumption increased by 49-59% in the bottom four deciles, with a slightly smaller increase (26-39%) in the fifth decile and the top half of the consumption distribution. Much of the increase in housing flows occurred between 1990-92 and 2005-07, with the rise being most (least) noticeable in the bottom decile (top half) of the consumption distribution. After 2005-07, there was only a modest change in housing flows; single mothers in the bottom decile and top half experienced a small decline, while those in other parts of the distribution experienced a modest rise. Together, the patterns for housing consumption are in line with those of well-measured consumption in Figure 4 and Panel A of Table 1. Although an increase in housing consumption accounts for a large fraction of the rise in overall consumption, consumption excluding housing (not reported in table) has still risen by 13-28% since 1990-92. One reason why housing consumption might rise is due to rising housing prices. However, in analyses presented below we also show that housing quality improved for single mothers.

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<sup>9</sup> The 24-37% shares are from Table 1 and are the range for the bottom 5 deciles and for the top half of the consumption distribution. The analogous figures for food at home as a share of total consumption are 16-25%.

Because housing consumption is the most important (but not the only) component explaining the overall rise in consumption since early 1990s, we further examine key components of housing such as public or subsidized housing, private market rental units, and owned homes (see Appendix Table 4). These results indicate that the share of single mothers that are living in public or subsidized housing mostly trended slowly upward between the early 1990s and 2005-07. After 2005-07, the likelihood of living in public or subsidized housing declined for those in the bottom four deciles, whereas it continued to increase for those in the fifth decile and top half. Homeownership rates, which are much lower in the bottom half of the distribution than the top half, remained fairly steady until the Great Recession, after which the rates declined at all points in the consumption distribution. Rent (both out of pocket rent and the imputed value for those in public and subsidized housing), on the other hand, trended upward smoothly throughout the post welfare reform period at all deciles.

Panel D of Table 1 shows the growth in utilities spending between 1990-92 and 2017-19. Again, the patterns of utility expenses across deciles and over time are broadly consistent with those of consumption, suggesting that the rise in utilities expenses contributes to the rise in the consumption since the early 1990s. For example, the increase in utilities spending over the last three decades is concentrated in the bottom decile (where it rose 66%), and declines monotonically with consumption decile. While utilities spending increased between 1990-92 and 2005-07 throughout the entire consumption distribution, since 2005-07 all deciles except for the bottom decile experienced a decline in utilities spending.

Several previous studies have suggested that people disproportionately increase their spending on vehicles when their income increases (Barrow and McGranahan 2000; Aaronson, Agarwal, and French 2012). Panels E and F respectively shows that spending on gasoline and motor oil and vehicle flows substantially increased between 1990-92 and 2017-19 for all consumption deciles. For both consumption components, the growth was generally greater for families in the bottom of the consumption distribution and typically declined monotonically with higher overall consumption. The substantial increases in these two components of spending, however, have only limited impact on the increase in consumption, because these components account for a small fraction of consumption (2-7%).

## **VI. Overall Effects of the Policy Changes on Consumption**

While our results suggest that the major reforms to the social safety net over the past three decades led to improvements in the economic well-being of single mothers, other factors, such as a growing economy, may have also contributed to these gains. It is reasonable to expect that macroeconomic conditions played some role in this improvement given that the period over which we see the most noticeable growth in consumption for single mothers (1990-2007) is also a period during which there was considerable economic growth (real GDP per capita grew by 39 percent between 1990 and 2007).

To disentangle the effects of the policy changes from the effects of changes in macroeconomic conditions we compare the patterns of consumption for low-educated single mothers to three groups—low-educated single women without children, low-educated married mothers, and high-educated single mothers. We focus on the effects of the policies on low-educated single mothers because they are the group most likely to be affected by these changes. As we and others have argued in past research, our comparison groups are likely to be affected similarly by many economic changes as low-educated single mothers, but they are much less likely to be affected by the major policy reforms (Meyer and Rosenbaum, 2000, 2001; Meyer and Sullivan, 2004). All three low-educated groups of women are in the same labor markets and have similar wages. Low-educated single women with and without children respond in an extremely similar way when aggregate unemployment changes (Meyer and Rosenbaum, 2000, 2001). In addition, Meyer (2010) verifies the common trends assumption for employment for single mothers and single childless women, controlling for demographic characteristics including education.

We report changes in median consumption for all three groups of low-educated women and by education for just single mothers (Figure 5). For the low-educated, median consumption rises noticeably for all three groups, but the rise is most pronounced for single mothers (Figure 5a). We also see that consumption rises more for low-educated single mothers than for high-educated single mothers (Figure 5b). Between 1990-92 and 2017-19, median consumption rose by 33 percent for low-educated single mothers, while it rose by 17 percent and 24 percent for low-educated single women without children and married mothers, respectively, and by 18 percent for high-educated single mothers. For changes since 1990-92, the rise in consumption for

low-educated single mothers is almost always greater than or equal to the rise for the comparison groups in every period.

The relative rise in consumption for low-educated single mothers is more muted further down the distribution. At the 25<sup>th</sup> percentile, consumption rose more for low-educated single mothers than for low-educated single women without children or married mothers (Appendix Figure 3a) or for high educated single mothers (Appendix Figure 3b) over the full period, but for most of the period following welfare reform, growth in consumption is comparable across these groups. Nevertheless, even for this very disadvantaged group of low-educated single mothers, we do not find evidence that changes in welfare policies resulted in a decline in economic well-being relative to other groups that were not the target of the reforms. If one looks at total consumption (rather than its well-measured components, which is reported in Figure 5) the rise in relative consumption for single mothers is even more pronounced at the median (Appendix Figure 4) and 25<sup>th</sup> percentile (Appendix Figure 5).

To more clearly show the magnitude of these relative changes and to determine whether these changes are precise, we estimate the regression analogues to Figure 5. In particular, we estimate median regressions of the following form:

$$\ln(C_{it}) = \beta_1 + SM_{it} * PERIOD_{it} \beta_2 + PERIOD_{it} \beta_3 + SM_{it} \beta_4 + X_{it} \beta_5 + \varepsilon_{it}, \quad (1)$$

where  $C_{it}$  is well-measured consumption for family  $i$  in quarter  $t$ ;  $SM_{it}$  is an indicator for whether the household head is a low-educated single mother;  $PERIOD_{it}$  is a vector of indicators for each of our three-year periods;  $X_{it}$  is a vector of demographic characteristics including race, education, and a cubic in age of the female head, as well as family size and interview month; and  $\varepsilon_{it}$  is a household-quarter error term. In Table 2 we report estimates of equation (1) for three different samples: low-educated single women (column 1), low-educated women with children (column 2), and all single mothers (column 3). In all specifications we leave out 1990-92 period dummy and its interaction with being a low-educated single mother, so that all estimates are relative to this base period, as was the case in Figure 5.

For all three comparison groups—single women without children, married mothers, and high-educated single mothers—these results indicate that the relative increase in economic well-being for low-educated single mothers increased after welfare reform. Relative consumption for

low-educated single mothers is 6.5 percentage points greater in 2017-19 than it was in 1990-92 when compared to single women without children, 1.6 percentage points greater when compared to married mothers, and 9.0 percentage points greater when compared to high-educated single mothers. Although the change relative to married mothers is not statistically significant, the changes relative to the other two groups are significant at the 5% level. Results for mean regressions (Appendix Table 5a) and the 25<sup>th</sup> percentile (Appendix Table 5b), rather than median, show a similar pattern. In between 1990-92 and 2017-19 the median and 25<sup>th</sup> percentile estimates are nearly always positive and often significant for all three comparison groups, but negative and marginally significant for the sample of low-educated single women in 1999-01 for the median. We should also note that there are some differences in changes in relative consumption prior to welfare reform as well. For example, relative consumption for single mothers is significantly greater in 1984-86 than in 1990-92 when compared to single childless women. However, this relative change is not evident when comparing low-educated single mothers to low-educated married mothers or to high-educated single mothers (column 3).

## **VII. Other Indicators of Economic Well-being**

Does the increase in housing consumption reported earlier reflect improvements in housing quality? One might be concerned that it just reflects the rise in home prices and ownership leading up to the Great Recession. Before answering this question, it is worth noting that typical rental prices did not rise as much as home prices in the housing boom, and neither did the rental equivalent that we use to assess the consumption value of home ownership. Most importantly, we examine consumption before, during, and after the housing boom, and see similar patterns of relative consumption changes in all phases, though consumption for all groups rose less quickly after the Great Recession.

To more directly address this question, we examine information on housing characteristics from both the CE and AHS. Figures 6a to 6h and Appendix Table 6 report trends in housing characteristics from the CE such as the equivalence-scale adjusted number of rooms and bedrooms, air conditioning, and the presence of major household appliances from the CE from 1984 to 2019. Overall, housing conditions for single mothers improved since the early 1990s, with improvements more pronounced in the bottom half of the consumption distribution. In particular, Figure 6a shows that between 1990-92 and 2017-19 the number of rooms for the

bottom four deciles of the consumption distribution increased by 4-8%, while the number of rooms for the top six deciles decreased slightly during the same period. Figure 6b shows that between 1990-92 and 2017-19 the number of bedrooms increased for all deciles, with the increase being most noticeable in the bottom four deciles. The number of rooms and bedrooms increased at all deciles between 1990-92 and 2005-07. Since 2005-07, however, the number of rooms and bedrooms substantially declined for those in the top six deciles, while they changed little or increased modestly for those in the bottom four deciles.

Figure 6c shows that the number of bathrooms increased for all deciles since early 1990s, with little differences in the growth rates across deciles. Figures 6d to 6h show that the likelihood of having air conditioning, a dishwasher, a washing machine, or a dryer improved between 1990-92 and 2011-13 for all deciles, with the improvement being typically more pronounced in the bottom half of the consumption distribution.<sup>10</sup> Together, the results in Figures 6a to 6h suggest that the rise in housing consumption reflects improvements in the quality of housing, with the improvement being most pronounced for single mothers at the bottom of the consumption distribution.

We further examine changes in housing characteristics by examining the AHS which has a larger sample size than the CE and contains additional information on housing quality. Because we cannot examine housing conditions in the AHS by consumption decile, we report housing characteristics for all single mothers (Table 3). Across all 12 indicators of housing quality from the AHS, we see evidence that housing conditions have improved for single mothers since the early 1990s. In particular, the number of rooms, bathrooms, and bedrooms increased between 1991-95 and 2015-19, consistent with the results from the CE in Figures 6a to 6c. Also, the likelihood of having major appliances in the housing unit increased during the same period. With the exception of stoves or ranges, which were already present in 99% of housing units for single mothers in 1991-1995, the likelihood of having a dishwasher, washer, clothes dryer, or air conditioning (garbage disposal) improved by 11-25 percentage points between 1991-95 and 2015-19 (2009-2013). Moreover, we see a decline in reported housing problems since early 1990s. For example, the frequency of inoperative toilets and water leaks declined by 2-6 percentage points over the last three decades. As was the case with housing consumption, much of the improvement in housing quality occurred between 1991-95 and 2003-07.

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<sup>10</sup> The CE stopped collecting information on many appliances starting in 2013.

Health insurance is generally tied to employment. As a result, the substantial increase in employment among single mothers following welfare reform may have had important impacts on single mothers' access to health insurance and health related expenditures. In Figure 7 and Appendix Table 7, we examine trends in health insurance coverage and health expenditures by consumption decile since early 1990s.

Overall, we see marked improvements in health insurance coverage among single mothers 25 years after welfare reform. In particular, Figure 7a shows that the fraction of individuals in single mother families who are uninsured declined throughout the entire consumption distribution between 1990-92 and 2017-19, with the decline being most pronounced in the bottom decile, where it fell from 40% to 21%. As Figure 7b shows, during the same period, the fraction of individuals in single mother families who enrolled in Medicaid substantially rose throughout the entire distribution (16-31 percentage points). Unlike the patterns for consumption or housing flows, much of the changes in the fraction of the uninsured individuals or Medicaid enrollees has occurred since 2008-10, reflecting the impacts of a series of Medicaid expansions following the passage of the Affordable Care Act in 2010. We find that, for single mothers in the bottom half of the consumption distribution, improvements in access to health insurance mainly occurred in the initial years of the ACA implementation (2011-2013), while much of the increase in health insurance coverage for single mothers in the top half occurred after the ACA increases in Medicaid eligibility cutoffs became effective in 2014. Finally, we see a general increase in health expenditures among single mothers (Figure 7c), but there is no clear association between the growth of health expenditures and consumption deciles.

### **VIII. Discussion and Caveats**

Given the rise in nonresponse to most surveys including the CE, one might be concerned that the survey is missing especially deprived individuals at a greater rate over time. Such a change could bias the estimates of those at the very bottom. Our best evidence suggests that this worry is not well founded. Brummet et al. (2018) link tax records to the addresses of responding and nonresponding units from the 2013-14 CE surveys. While not specifically for single mother households, among those with the lowest incomes (as measured by AGI), the response rate is only slightly lower than the overall rate, and not enough to have an appreciable effect on the distribution of income or consumption.



Maybe a more important caveat to our analyses of single mothers over time is that we are assuming that the composition of the population of single mothers has not changed. We should emphasize that we do account for changes in observable characteristics through fixed demographic weights. But we are unable to account for unobservable changes in who is a single mother. If our sample composition has changed over time, either due to the changes in welfare policies or other factors, then the interpretation of our estimates is more complicated. The rise in the share of families headed by a single mother slowed sharply after the early 1990s, likely diminishing the concerns, but this is an important caveat. To the extent that increased work incentives led to some exit from single motherhood, one might expect those on the margin of leaving single motherhood to be the best off. In such a case, that would bias us against finding the improvements at the bottom of the single mother consumption distribution than we observe.

We should also emphasize that our data sources omit two especially deprived populations, the homeless and incarcerated. While statistics on the homeless population, particularly going back to the 1990s, should be interpreted with caution, more reliable recent statistics indicate that the number of homeless single parents is small compared to the overall population of single mothers.<sup>11</sup>

Quantitatively more important, incarceration rates for both men and women rose sharply over most of our sample period, leveling off around 2005. It is unclear how these changes would affect the population of single mothers. The increase in female incarceration could have either added to or removed from our sample some of the most deprived individuals, through effects on fertility, and likely conflicting effects during (when some of the most disadvantaged are removed from the sample) and post incarceration (when a larger group of hard to employ women is in the survey). Similarly, the removal of potential partners of single mothers could have affected the level of deprivation of the population of survey sampled single mothers toward a more or less deprived sample.

## **IX. Conclusions**

We find strong evidence that single mothers at the bottom of the distribution of material resources have not been left behind in the decades following welfare reform. While some

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<sup>11</sup> See Meyer, Wyse, Grunwaldt and Medalia (2021) for a summary of estimates of the homeless population.

mothers undoubtedly fared poorly after welfare reform, the distribution shifted in favorable ways. The consumption of the lowest decile of single mother headed families has risen noticeably over time and at a faster rate than those higher up in the consumption distribution. Indications of improved well-being are evident in measures of expenditures on housing, food, transportation and utilities as well as in housing characteristics and health insurance coverage. The material circumstances of single mothers especially affected by welfare reform have also improved relative to plausible comparison groups. Median consumption of low-educated single mothers has risen relative to that of low-educated childless women and married mothers and relative to high-educated single mothers. This evidence during the period of the policy changes of the 1990s suggests that a combination of a reduction in unconditional aid and an expansion of aid conditional on work (with exceptions for those who could not work) was successful in raising material well-being for single mothers.

These results contrast sharply with the time pattern in survey reported income data from the CPS and the CE. These patterns indicate that income for single mothers in the bottom decile declined after welfare reform. These results are likely biased due to significant and increasing underreporting of key income sources for single mothers. Studies using data for a single point in time show that using administrative microdata to correct for underreporting in surveys results in a low share of those with very low incomes post welfare reform. We hope to be able to report in future work income measures for the single mother population over this time period that account for changes in income misreporting through the linkage of administrative data.

It is important to note that although we find strong evidence that the material circumstances of single mothers improved in the decades following welfare reform, other components of well-being may have followed a different pattern. For example, these policy changes may have adversely, or positively, affected time spent with children, health, educational investments, outcomes for children, or other important outcomes. Prior research has shown that single mothers did not spend less time with kids in the period following welfare reform. Rather, the shift in time use was from home production to market work (Meyer and Sullivan 2008, Gelber and Mitchell 2011). Less is known about the long-run effects of these policy changes on children (see Bastian et al. in this issue for a discussion). It is also important to note that our evidence of improved economic circumstances does not imply that the level of economic well-

being for single mothers is high. In fact, the families that are the focus of this study have very few resources; average total annual consumption for a single mother with two kids in the bottom decile of the consumption distribution is about \$14,000 in 2019.

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## **Data Appendix: Consumer Expenditure Interview Survey Data**

The Consumer Expenditure Interview Survey (CE) is a national survey administered by the U.S. Bureau of Labor Statistics (BLS), collecting information about the consumer unit's detailed expenditures for the previous three months where the consumer unit consists of individuals who are related by blood or marriage, a single or financially independent individual, or two or more persons who share resources. Each consumer unit is interviewed every quarter for up to five consecutive quarters. The first interview collects demographic and ownership of major durables for bounding purposes, although the BLS stopped conducting bounding interviews in 2015. Interviews two through five collect detailed information on expenditures, income, assets, and CU characteristics. Income questions are typically asked only in the second and fifth interviews and the response in the second interview is carried over to the third and fourth interviews. However, the CU is asked to report income in the third or fourth interviews if it has a new member after the second interview, or if it has a member who was non-employed at the time of the second interview and works in a subsequent interview.

### *A. Consumption Measure from the CE*

Our main measure of consumption is based on well-measured components of consumption, which include food at home, utilities, gasoline and motor oil, and the value of service flows for housing and vehicles. To calculate service flow for housing expenditures, we use the reported rental equivalent of the home for homeowners, while we use the reported out of pocket rent for renters who are not in public or subsidized housing. For renters that reside in public or subsidized housing, we impute a rental equivalent using the reported information on their housing characteristics including the number of rooms, bedrooms and bathrooms, and the presence of appliances such as a microwave, disposal, refrigerator, washer, and dryer. Specifically, using a sample of renters who are not living in public or subsidized housing and have positive rent, we estimate the distribution of log rent conditional on housing characteristics mentioned above, location characteristics (state, region, urbanicity, and SMSA status), and interactions of a nonlinear time trend with appliances using quantile regressions. We then use the estimated coefficients to predict the 40th percentile of rent for the sample of CUs that do not report full rent because they reside in public or subsidized housing. We use the 40th percentile

because public housing tends to be of lower quality than private housing in characteristics that we do not observe.

We calculate the service flow value from owned vehicles as the as the product of the current market price of the vehicle and an estimated depreciation rate ( $\delta$ ) for vehicles purchased in the past 12 months of the interview. For vehicles that were not purchased within 12 months of the interview, we calculate the service flow as: (real reported purchase price)\* $\delta(1-\delta)^t$ , where  $t$  is the number of years since the car was purchased. In cases where we do not observe the vehicle purchase price we impute a current market price by estimating the relationship between vehicle prices and vehicle characteristics, family characteristics, and make-model-year indicators for a sample of vehicles that were purchased within twelve months of the interview and that have a reported purchase price. See Meyer and Sullivan (2012) for more details. Meyer and Sullivan (2020) provide a more detailed description of the procedure to construct our measure of consumption as well as the data files and code to replicate it.

#### *B. Income Measure from the CPS*

Our measure of after-tax money income plus noncash benefits includes all components of money income collected by the CPS: earnings; net income from self-employment; Social Security, pension, and retirement income; public transfer income including Supplemental Security Income, welfare payments, veterans' payment or unemployment and workmen's compensation; interest and investment income; rental income; and alimony or child support, regular contributions from persons outside the household, and other periodic income. We then add to money income the value of tax credits such as the EITC, and subtract state and federal income taxes and payroll taxes. Federal and state income tax liabilities and credits and FICA taxes are calculated for all years using TAXSIM (Feenberg and Coutts 1993).<sup>12</sup> We then add the reported cash value of food stamps and the imputed value of housing subsidies.

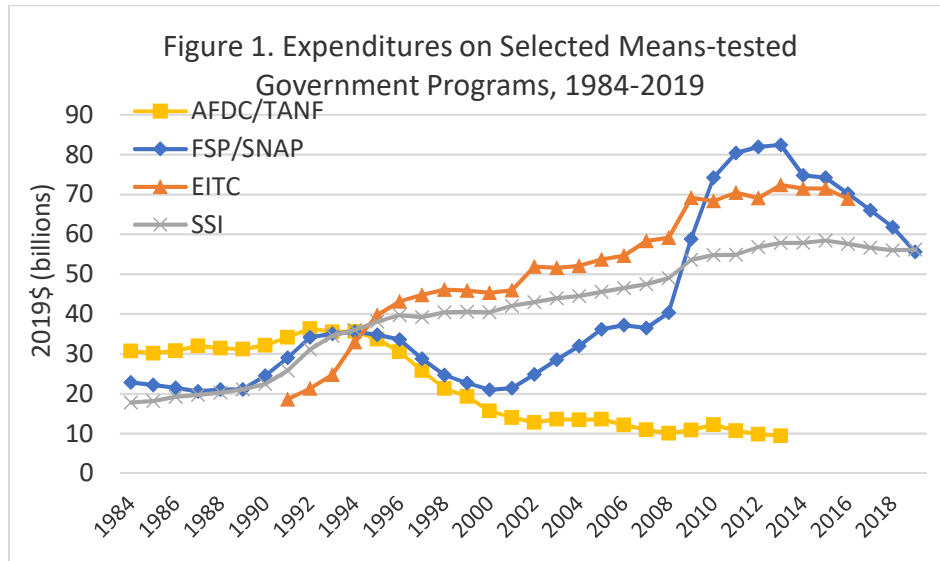
To impute the value of housing subsidies, we subtract the required rent payment from Fair Market Rent (FMR), which varies across metropolitan areas and the number of bedrooms. We obtained the historical FMR data for the years 1983, 1985-2019 from the HUD website (<https://www.huduser.gov/portal/datasets/fmr.html#history>). For 1984, we linearly interpolate

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<sup>12</sup> <https://users.nber.org/~taxsim/taxsim32/stata-remote.html> (date of access: 13 June 2021).

estimates using the FMR in 1983 and 1985. Since the CPS does not contain information about the number of bedrooms, we assign the number of bedrooms based on the household size following the HUD guidelines. We then merge observations from the CPS data with the FMR data using the Metropolitan Statistical Area (MSA) or county code. For observations with missing MSA/county code, we assign the state average FMR. We estimate rent payment as 30% of adjusted income (income after deductions). To calculate deductions, we use information on the number of children and whether a household has an elderly member ( $\text{age} \geq 62$ ). We find that our estimates on the average value of housing subsidies per unit-month are comparable to the average federal spending per unit-month in 2010 and 2018.





Note: The reported programs include: Aid to Families with Dependent Children/Temporary Assistance for Needy Families (AFDC/TANF); the Food Stamp Program/Supplemental Nutrition Assistance Program (FSP/SNAP); the Earned Income Tax Credit, and the Supplemental Security Income program (SSI). TANF costs only include funds spent on cash and work-based assistance. The expenditures are adjusted for inflation using the Personal Consumption Expenditures Chain-type (PCE) price Index and are expressed in 2019 dollars.

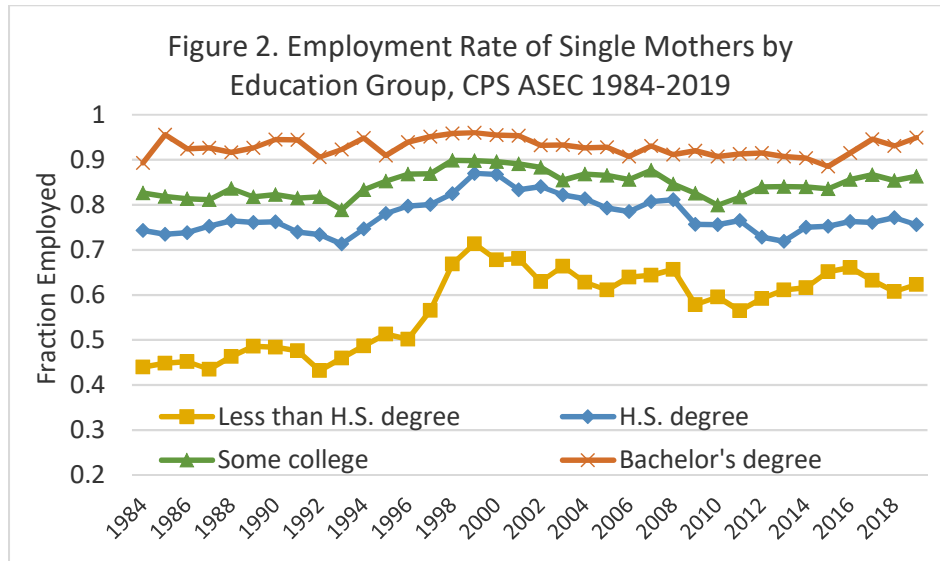
Sources:

AFDC/TANF: <https://aspe.hhs.gov/report/welfare-indicators-and-risk-factors-fourteenth-report-congress>.

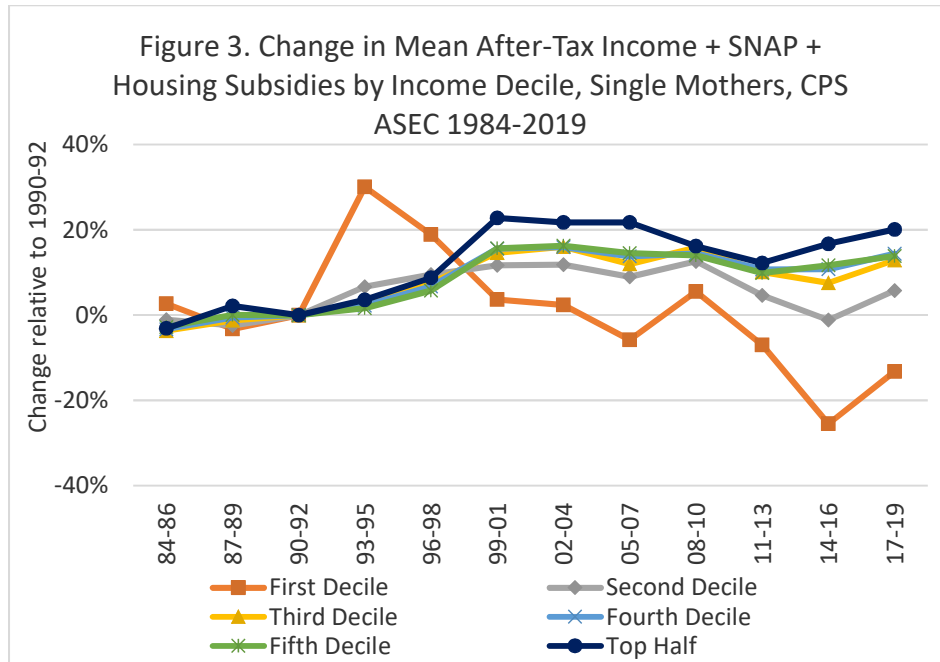
SNAP: <https://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap>.

EITC: <https://www.taxpolicycenter.org/statistics/spending-eitc-child-tax-credit-and-afdctanf-1975-2016>.

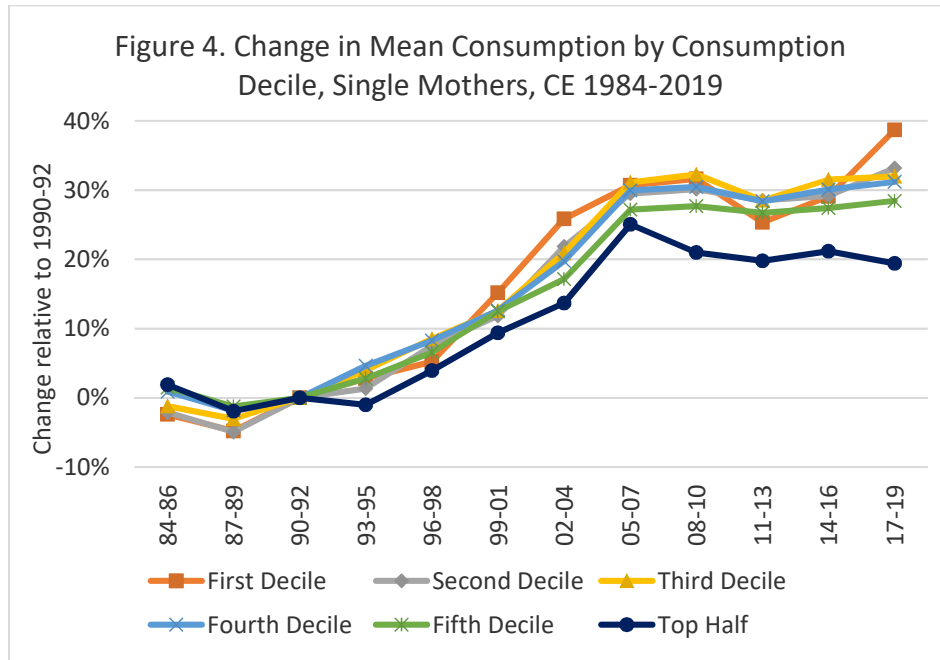
SSI: <https://www.ssa.gov/oact/ssir/index.html>



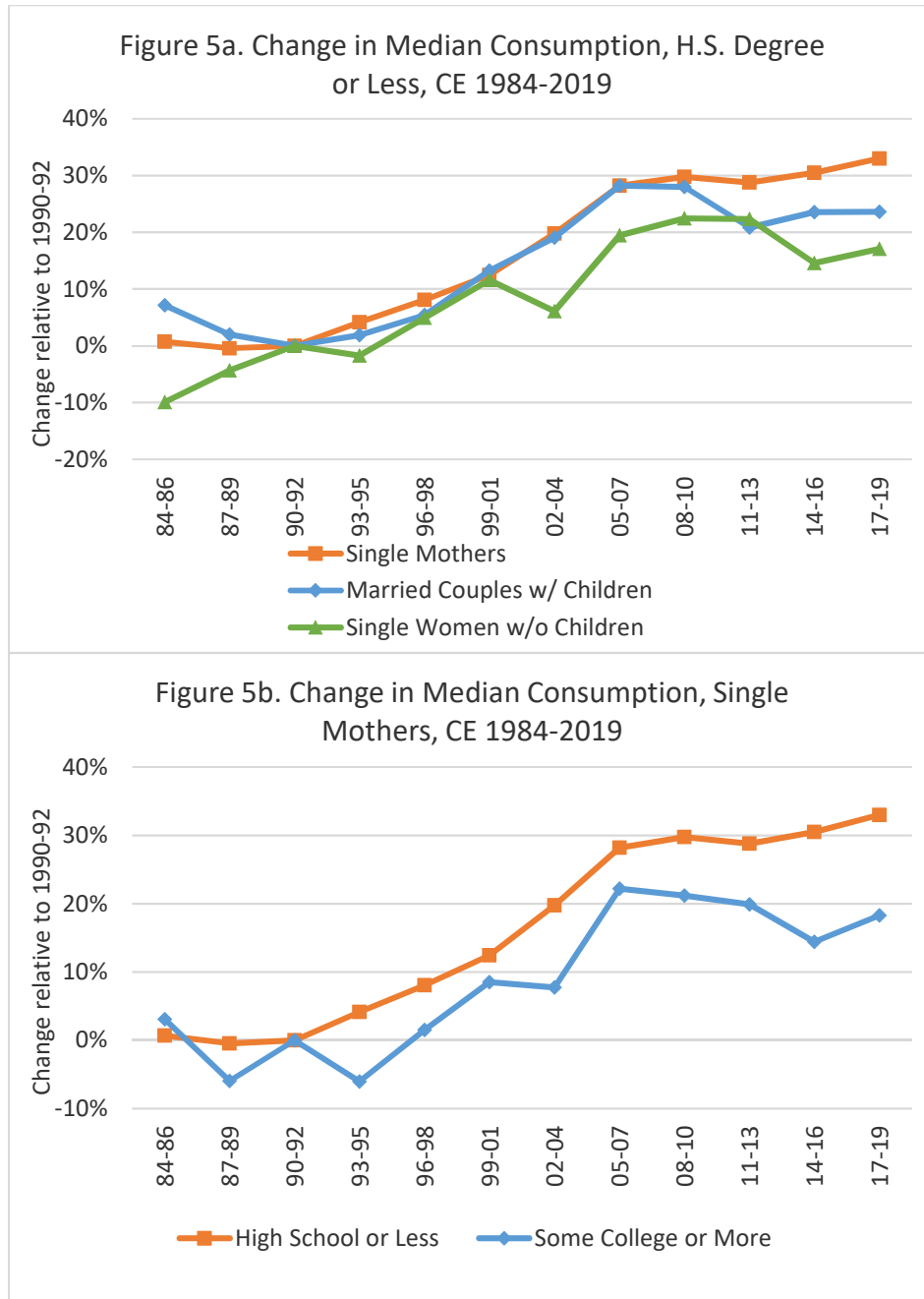
Note: Employment is defined as working at all for profit, pay, or as an unpaid family worker during the previous calendar year. Prior to 1991, education groups are defined based on the the highest grade completed, instead of degree obtained. The statistics are weighted using fixed demographic weights as explained in the text.



Note: The income measure uses the NAS equivalence scale to account for differences in family size, and is expressed in 2019 dollars using the PCE price index. The statistics are weighted using fixed demographic weights as described in the text. The value of housing subsidies is imputed as explained in the Data Appendix.



Note: This figure reports well-measured consumption, which includes spending on food at home, rent (for renters), rental equivalent (for homeowners or those in government or subsidized housing), utilities, spending on gasoline and motor oil, and service flows from owned vehicles. Consumption is equivalence-scale adjusted using the NAS scale to account for differences in family size, and is expressed in 2019 dollars using the PCE price index. The statistics are weighted using fixed demographic weights as described in the text.



Note: This figure reports well-measured consumption as described in the text. Consumption is equivalence-scale adjusted using the NAS scale to account for differences in family size, and is expressed in 2019 dollars using the PCE price index. The statistics are weighted using fixed demographic weights as described in the text.

Figure 6a. Number of Rooms by Consumption Decile, Single Mothers, CE 1984-2019

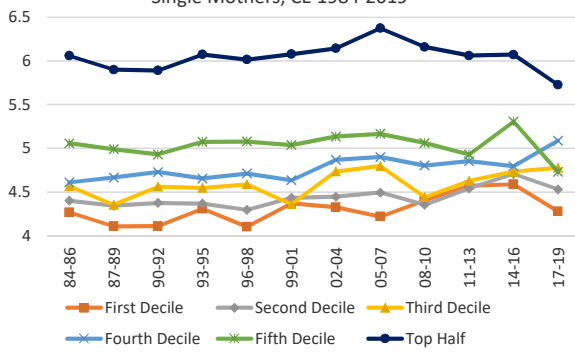


Figure 6b. Number of Bedrooms by Consumption Decile, Single Mothers, CE 1984-2019

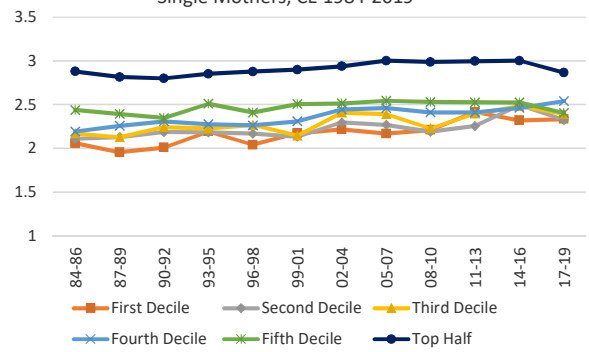


Figure 6c. Number of Bathrooms by Consumption Decile, Single Mothers, CE 1984-2019

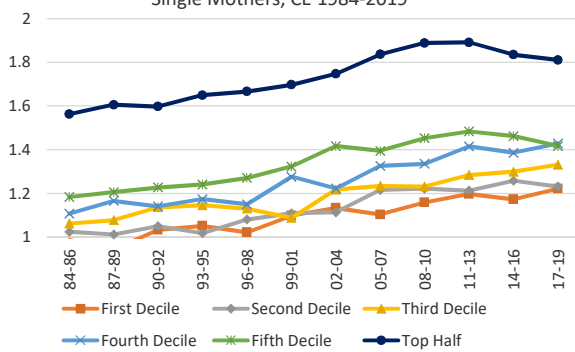


Figure 6d. Share with Air Conditioning by Consumption Decile, Single Mothers, CE 1984-2019

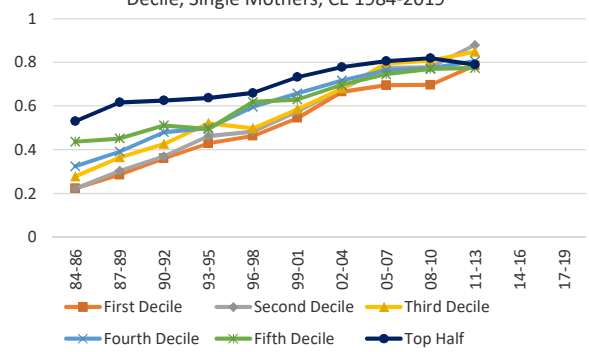


Figure 6e. Share with Central Air by Consumption Decile, Single Mothers, CE 1984-2019

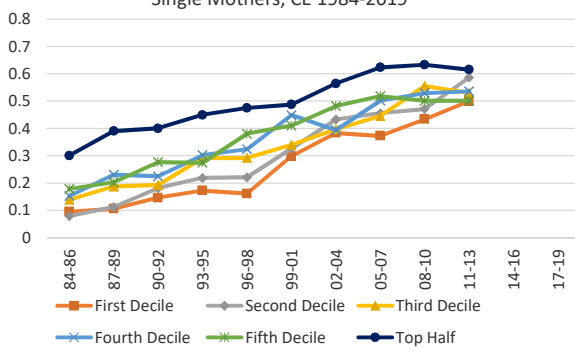


Figure 6f. Share with Dishwasher by Consumption Decile, Single Mothers, CE 1984-2019

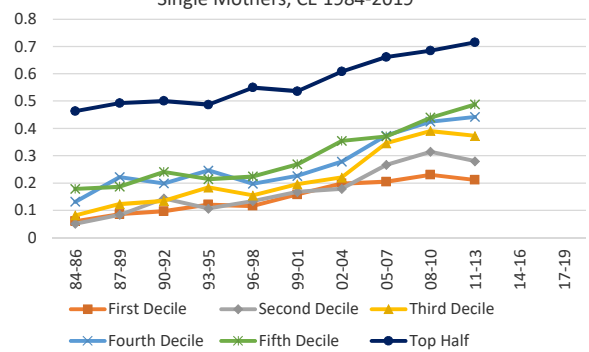


Figure 6g. Share with Washing Machine by Consumption Decile, Single Mothers, CE 1984-2019

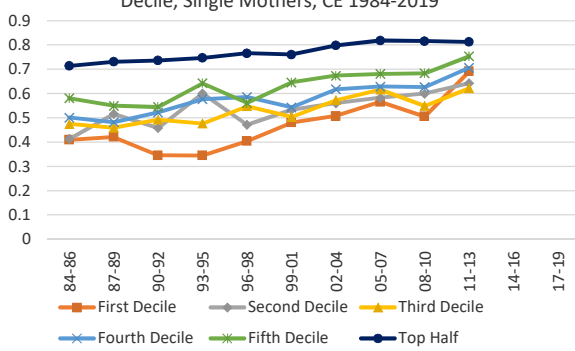
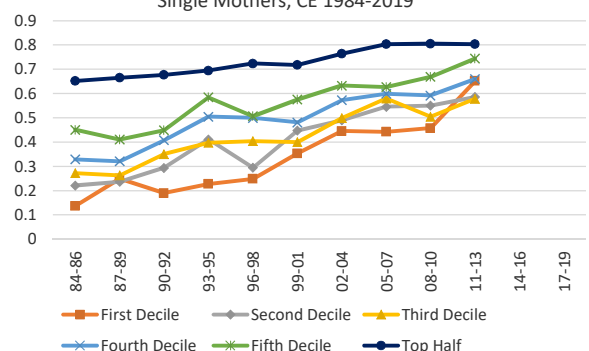
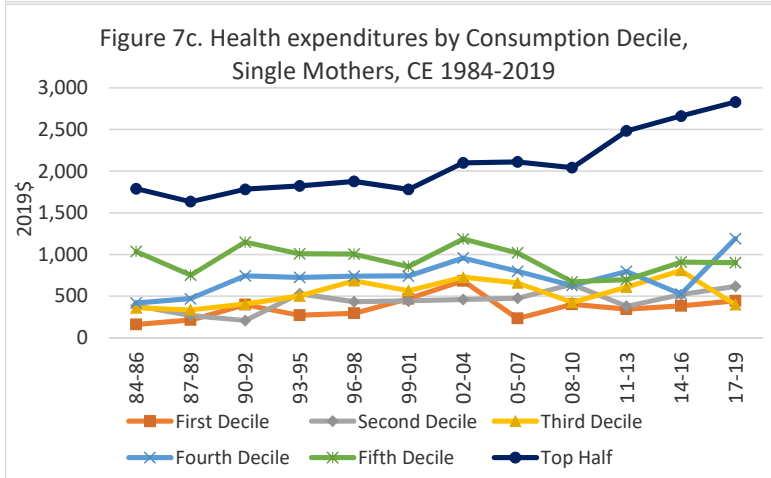
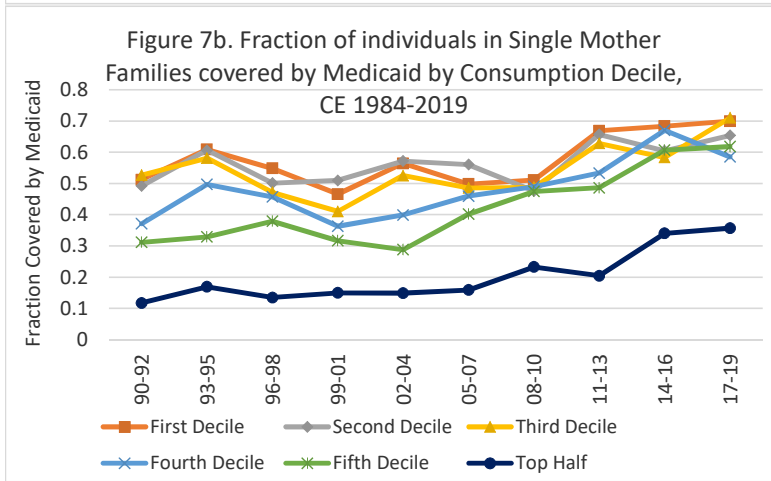
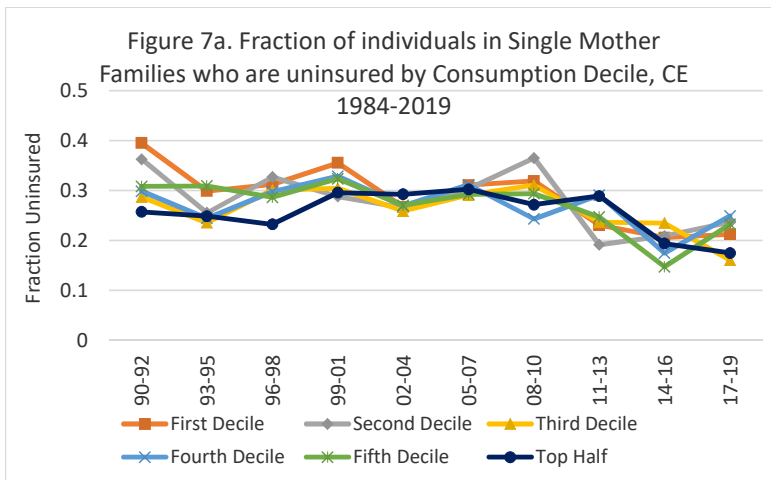


Figure 6h. Share with Dryer by Consumption Decile, Single Mothers, CE 1984-2019



Note: The number of rooms, bedrooms, and bathrooms are equivalence-scale adjusted. The statistics are weighted using the fixed demographic weights as described in the text. The CE stopped collecting information on many appliances starting in 2013. Consumption deciles are defined using well-measured consumption as described in the text.



Notes: Health expenditures include annual out-of-pocket spending on health insurance, medical services, prescription drugs, and medical supplies. Insurance categories do not always sum to one because some individuals are insured through Medicare, CHAMPUS, military health care, or other programs. Health expenditures are reported in 2019 dollars using the PCE price index and are equivalence-scale adjusted using the NAS scale and equalized to a family with 1 adult and 2 children. The statistics are weighted using the fixed demographic weights as described in the text. Consumption deciles are defined using well-measured consumption as described in the text.

Table 1. Changes in Consumption and Its Components by Consumption Decile, Single Mothers, CE 1984-2019

Period	Percent change (relative to 1990-1992)											Mean share	
	1984-1986	1987-1989	1990-1992	1993-1995	1996-1998	1999-2001	2002-2004	2005-2007	2008-2010	2011-2013	2014-2016	2017-2019	1984-2019
Panel A. Consumption													
First	-0.02	-0.05	0.00	0.03	0.05	0.15	0.26	0.31	0.32	0.25	0.29	0.39	1.00
Second	-0.02	-0.05	0.00	0.01	0.08	0.12	0.22	0.29	0.30	0.29	0.29	0.33	1.00
Third	-0.01	-0.03	0.00	0.04	0.08	0.13	0.21	0.31	0.32	0.29	0.32	0.32	1.00
Fourth	0.01	-0.02	0.00	0.05	0.08	0.13	0.20	0.30	0.30	0.28	0.30	0.31	1.00
Fifth	0.01	-0.01	0.00	0.03	0.07	0.12	0.17	0.27	0.28	0.27	0.27	0.28	1.00
Top half	0.02	-0.02	0.00	-0.01	0.04	0.09	0.14	0.25	0.21	0.20	0.21	0.19	1.00
Panel B. Food at home													
First	-0.01	-0.12	0.00	0.00	-0.05	-0.09	-0.05	-0.11	-0.07	-0.07	-0.01	0.00	0.37
Second	0.14	-0.01	0.00	0.06	-0.04	-0.02	0.05	0.01	0.07	0.06	0.10	0.00	0.33
Third	0.08	0.02	0.00	-0.02	-0.04	0.01	0.05	0.00	0.06	0.12	0.12	0.00	0.31
Fourth	0.12	0.02	0.00	-0.01	0.02	-0.03	0.04	0.05	0.10	0.16	0.19	0.05	0.29
Fifth	0.04	-0.01	0.00	-0.07	-0.01	-0.03	0.00	0.00	0.12	0.09	0.06	0.13	0.27
Top half	0.07	0.02	0.00	-0.01	-0.02	-0.02	-0.04	0.00	0.03	0.03	0.07	0.10	0.24
Panel C. Housing Flows													
First	0.05	0.02	0.00	0.05	0.13	0.36	0.49	0.66	0.61	0.34	0.42	0.59	0.39
Second	-0.11	-0.04	0.00	-0.02	0.18	0.22	0.32	0.41	0.43	0.40	0.36	0.51	0.43
Third	-0.07	-0.04	0.00	0.03	0.12	0.19	0.25	0.36	0.42	0.28	0.37	0.49	0.44
Fourth	-0.04	0.02	0.00	0.14	0.12	0.19	0.25	0.39	0.37	0.30	0.35	0.49	0.45
Fifth	-0.08	-0.04	0.00	0.09	0.08	0.20	0.24	0.37	0.27	0.28	0.34	0.39	0.45
Top half	-0.06	-0.06	0.00	-0.02	0.05	0.13	0.21	0.31	0.22	0.19	0.24	0.26	0.49
Panel D. Utilities													
First	-0.14	-0.03	0.00	0.05	0.12	0.31	0.40	0.48	0.47	0.72	0.62	0.66	0.16
Second	-0.14	-0.12	0.00	0.01	0.04	0.13	0.19	0.38	0.29	0.34	0.25	0.37	0.16
Third	-0.10	-0.10	0.00	0.13	0.18	0.11	0.21	0.42	0.27	0.19	0.32	0.25	0.17
Fourth	-0.02	-0.13	0.00	0.01	0.11	0.16	0.21	0.31	0.29	0.19	0.15	0.20	0.17
Fifth	0.14	0.06	0.00	0.05	0.14	0.11	0.16	0.32	0.34	0.28	0.26	0.10	0.17
Top half	0.05	0.00	0.00	0.02	0.05	0.11	0.10	0.24	0.23	0.16	0.21	0.06	0.15
Panel E. Gasoline and Motor Oil													
First	-0.10	-0.09	0.00	-0.05	0.15	0.28	0.59	0.86	0.96	1.15	0.88	1.37	0.06
Second	-0.03	-0.19	0.00	-0.14	-0.07	0.02	0.27	0.91	0.84	0.88	0.88	0.85	0.06
Third	0.23	-0.05	0.00	0.07	0.14	0.28	0.71	1.34	1.48	1.81	1.16	1.23	0.06
Fourth	-0.04	-0.12	0.00	-0.19	-0.11	0.13	0.28	0.92	0.89	0.97	0.73	0.63	0.06
Fifth	0.25	-0.05	0.00	-0.07	0.05	0.14	0.42	0.76	0.89	1.20	0.73	0.73	0.07
Top half	0.26	-0.02	0.00	-0.07	-0.01	0.04	0.17	0.70	0.76	1.03	0.54	0.36	0.07
Panel F. Vehicle Flows													
First	-0.61	0.13	0.00	0.16	0.25	0.52	1.36	0.75	1.22	0.38	0.80	1.20	0.02
Second	-0.22	-0.05	0.00	0.19	0.65	0.93	1.43	1.00	0.58	0.14	1.27	1.28	0.02
Third	-0.10	0.01	0.00	0.35	0.48	0.64	1.14	1.63	0.88	1.09	0.79	1.00	0.03
Fourth	-0.25	-0.07	0.00	0.01	0.39	0.77	0.94	0.37	0.72	0.67	0.98	0.68	0.03
Fifth	0.03	0.08	0.00	0.12	0.29	0.61	0.55	0.45	0.39	0.22	0.73	0.41	0.04
Top half	0.18	0.11	0.00	0.12	0.21	0.25	0.37	0.38	0.27	0.23	0.28	0.26	0.05

Note: Consumption is defined using the well-measured components of total consumption: spending on food at home, rent (for renters), rental equivalent (for homeowners or those in government or subsidized housing), utilities, spending on gasoline and motor oil, and service flows from owned vehicles. Consumption is equivalence-scale adjusted using the NAS scale to account for differences in family size, and is expressed in 2019 dollars using the PCE price index. To calculate housing service flows, we use the reported out of pocket rent (for renters), the reported rental equivalent (for homeowners), and the imputed rental equivalent (for renters that reside in public or subsidized housing). The statistics are weighted using the fixed demographic weights as described in the text. We use vehicle characteristics to impute service flows from vehicles. See Data Appendix for more details



Table 2. Median Regression Difference-in-Difference Estimates of Consumption of Low-Educated Single Mothers, CE 1984-2019

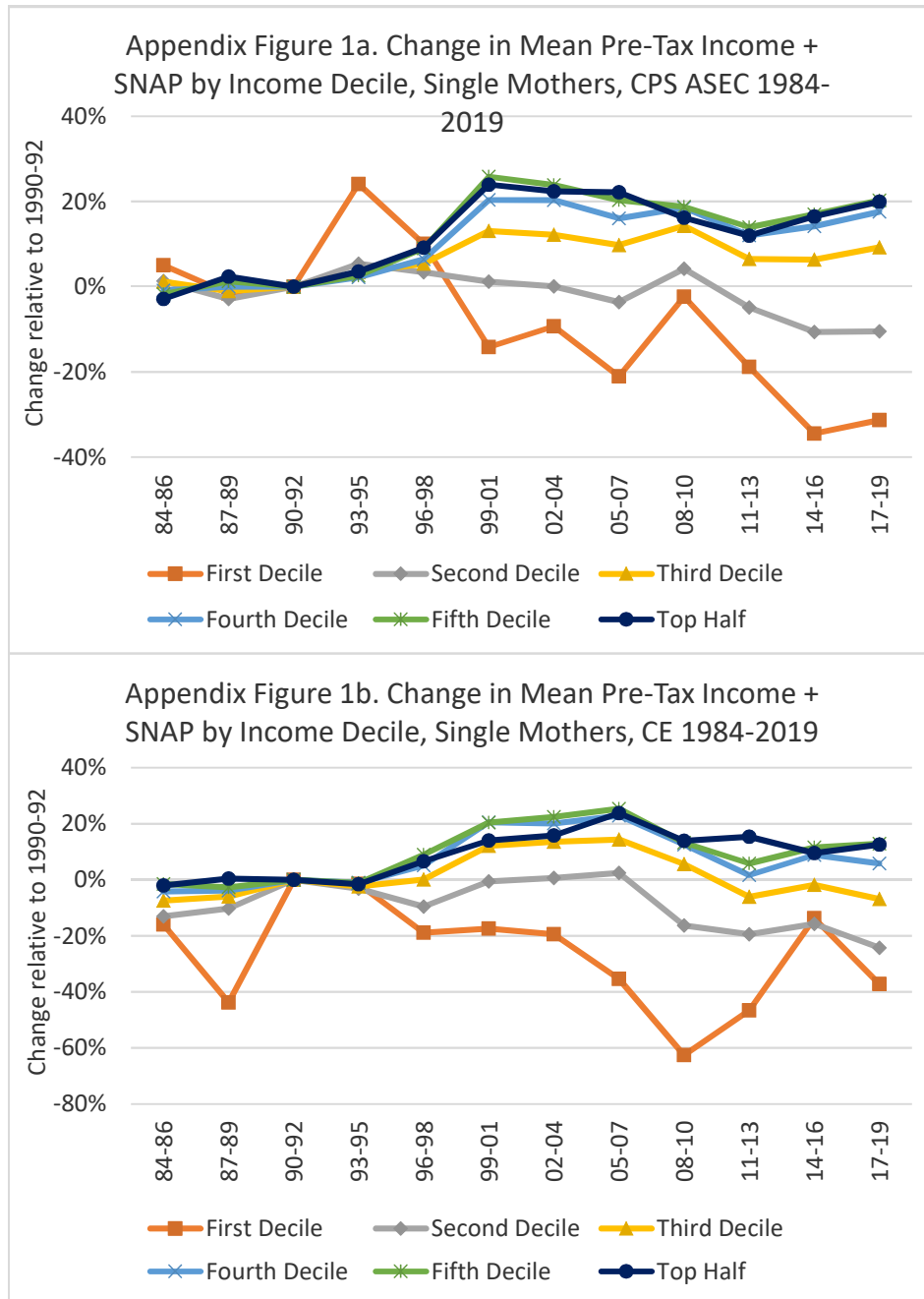
Sample	Survey Weight			Fixed Demographic Weight		
	H.S. Degree or Less		All Single Mothers	H.S. Degree or Less		All Single Mothers
	Single	Mothers		Single	Mothers	
Single Mother w/ H.S. Degree or Less*84-86	0.117*** (0.025)	-0.041 (0.030)	0.033 (0.043)	0.108*** (0.025)	-0.048 (0.030)	0.008 (0.043)
Single Mother w/ H.S. Degree or Less*87-89	-0.002 (0.024)	-0.015 (0.025)	0.060* (0.034)	0.013 (0.024)	-0.021 (0.026)	0.048 (0.034)
Single Mother w/ H.S. Degree or Less*93-95	0.029 (0.026)	0.016 (0.027)	0.068** (0.034)	0.081*** (0.026)	0.014 (0.028)	0.060* (0.034)
Single Mother w/ H.S. Degree or Less*96-98	0.038 (0.026)	0.024 (0.027)	0.047 (0.032)	0.021 (0.026)	0.026 (0.027)	0.042 (0.032)
Single Mother w/ H.S. Degree or Less*99-01	-0.037* (0.022)	-0.017 (0.023)	0.000 (0.030)	-0.032 (0.022)	-0.015 (0.023)	0.006 (0.030)
Single Mother w/ H.S. Degree or Less*02-04	0.052** (0.025)	0.004 (0.027)	0.082*** (0.030)	0.064** (0.026)	0.006 (0.027)	0.080*** (0.030)
Single Mother w/ H.S. Degree or Less*05-07	0.026 (0.027)	-0.001 (0.029)	0.021 (0.030)	0.048* (0.026)	-0.003 (0.031)	0.014 (0.030)
Single Mother w/ H.S. Degree or Less*08-10	0.054* (0.028)	0.003 (0.032)	0.048 (0.034)	0.047 (0.029)	0.005 (0.032)	0.036 (0.034)
Single Mother w/ H.S. Degree or Less*11-13	0.020 (0.025)	0.044* (0.025)	0.063* (0.037)	-0.007 (0.028)	0.060** (0.028)	0.064* (0.037)
Single Mother w/ H.S. Degree or Less*14-16	0.047** (0.023)	0.009 (0.024)	0.067** (0.030)	0.112*** (0.025)	0.024 (0.026)	0.067** (0.030)
Single Mother w/ H.S. Degree or Less*17-19	0.065** (0.026)	0.016 (0.030)	0.090** (0.038)	0.035 (0.034)	0.022 (0.036)	0.053 (0.038)
Number of Observations	38,057	93,251	45,088	38,057	93,251	45,088

Note: This table reports median regression estimates from equation (1) on the sample of low-educated single women (columns 1 and 4), low-educated women with children (columns 2 and 5), and all single mothers (columns 3 and 6). Bootstrapped standard errors, which are clustered at the family level, are reported in parentheses. Consumption is measured using the well-measured components of total consumption as described in the text. \* = p-value < 0.10, \*\* = p-value < 0.05, \*\*\* = p-value < 0.01.

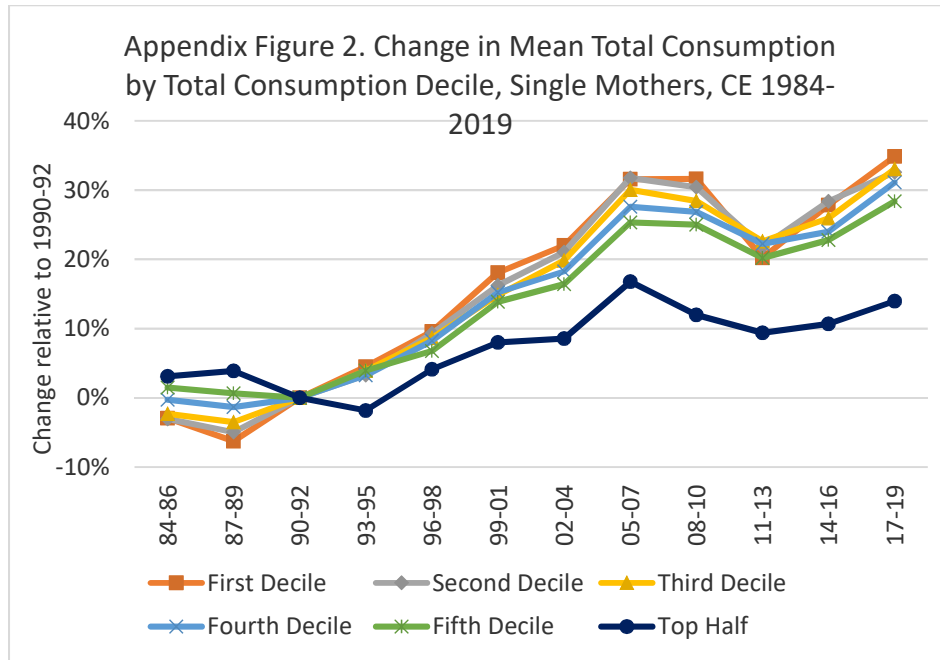
Table 3: Housing Characteristics, Single Mothers, American Housing Survey, 1991-2019

Period	1991- 1995	1997- 2001	2003- 2007	2009- 2013	2015- 2019
Number of Rooms	5.25	5.30	5.50	5.44	5.38
Number of Bathrooms	1.28	1.35	1.43	1.48	1.51
Number of Bedrooms	2.52	2.62	2.72	2.74	2.71
Unit has a working stove or range	0.99	0.99	1.00	0.99	1.00
Unit has a working dishwasher	0.34	0.39	0.49	0.53	0.57
Unit has working washer	0.63	0.66	0.74	0.74	0.74
Unit has working clothes dryer	0.53	0.59	0.69	0.71	0.72
Unit has working garbage disposal	0.33	0.35	0.41	0.45	N/A
Unit has central air or room air	0.64	0.73	0.83	0.88	0.90
Any long toilet breakdown at some point in last 3 months	0.06	0.04	0.03	0.03	0.03
Water leak from inside in last 12 months	0.19	0.17	0.13	0.13	0.13
Water leak from outside in last 12 months	0.17	0.14	0.13	0.11	0.12
N	7,552	6,591	6,305	12,954	7,927

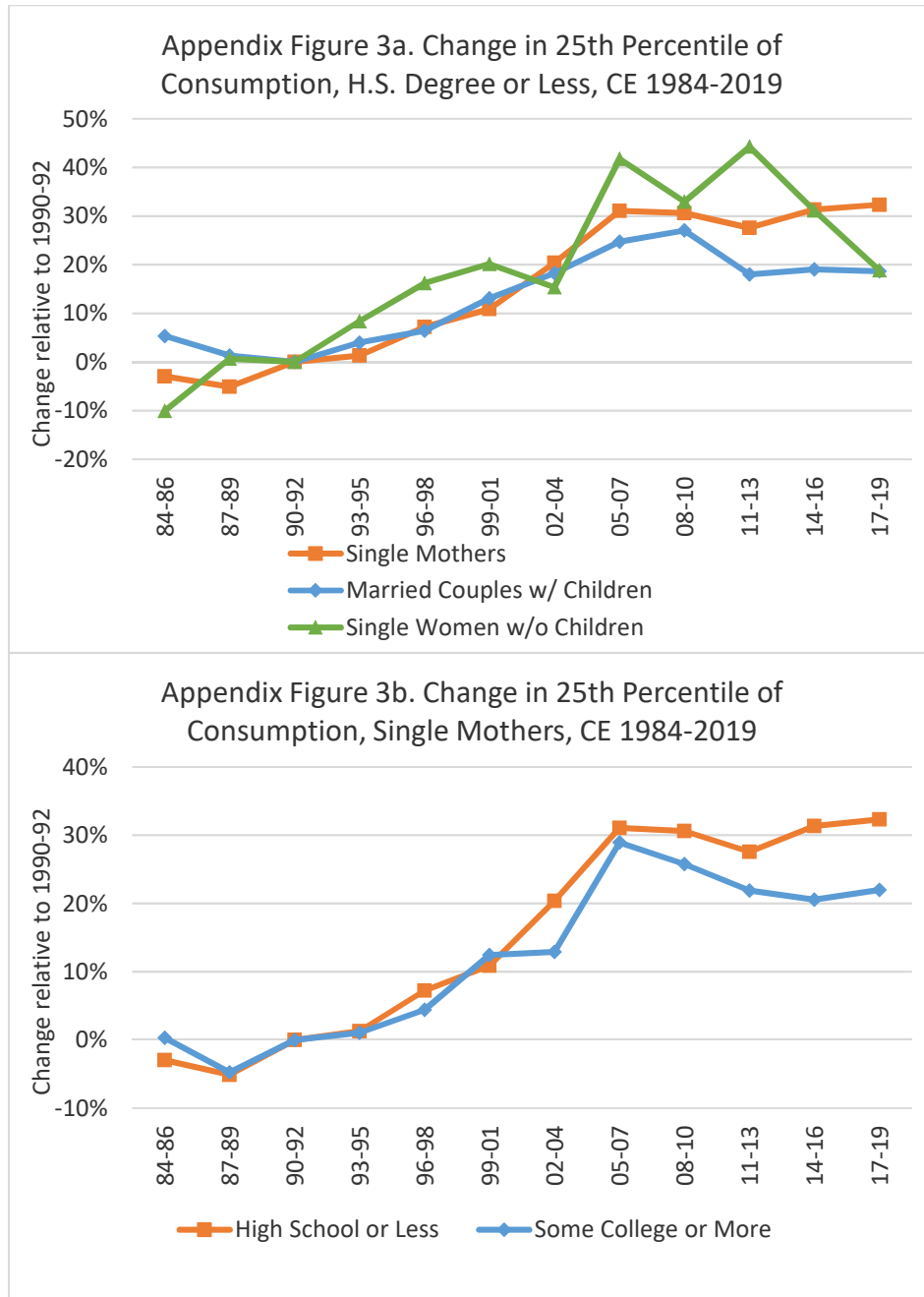
Note: Data are pooled from three waves of the AHS to compute the pooled mean for each 5-year period. For example, the estimates for 1991-1995 represents the pooled mean for data from the 1991, 1993 and 1995 waves of the AHS. The statistics are weighted using household weights. Number of rooms, bathrooms and bedrooms are equivalence-scale adjusted and equalized to a family with 1 adult and 2 children. A long toilet breakdown refers to a breakdown which resulted in the toilet being inoperable for at least 6 hours.



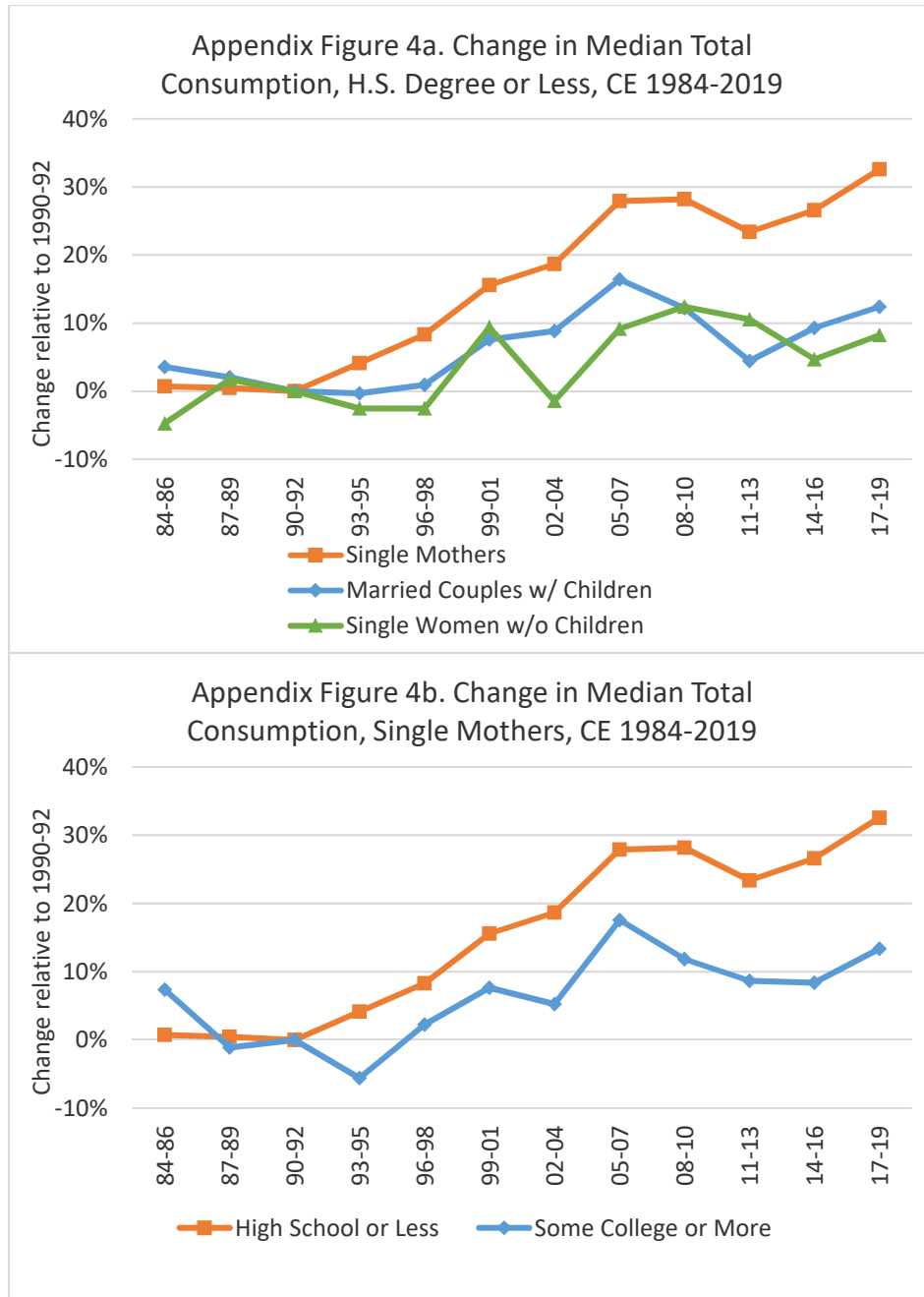
Note: For the CE, we use imputed values provided by the BLS for income components with missing values in years available (2004-2019). For earlier years, we impute values using an approach similar to the one implemented by the BLS. The income measures use the NAS equivalence scale to account for differences in family size, and is expressed in 2019 dollars using the PCE price index. The statistics are weighted using fixed demographic weights as described in the text.



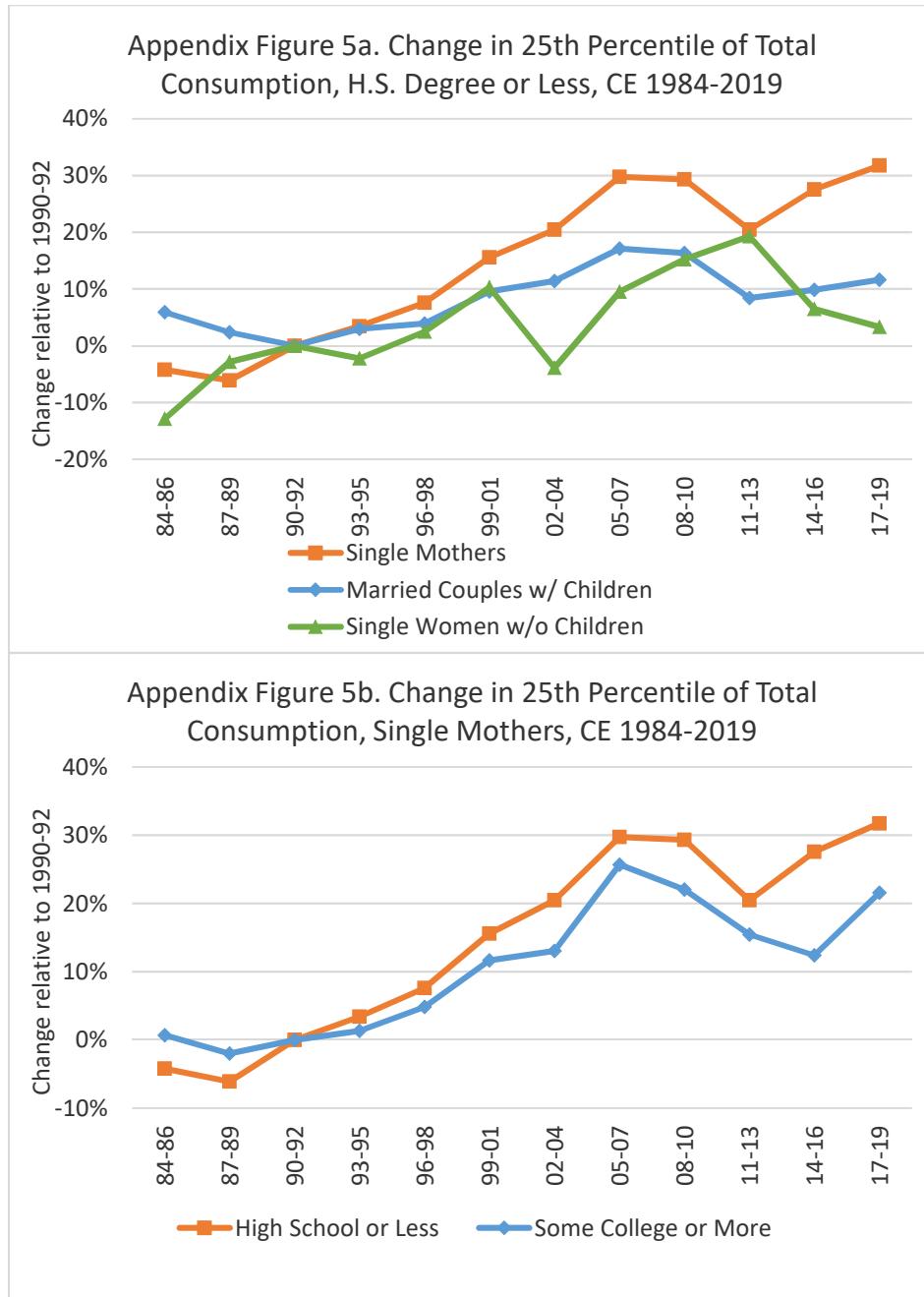
Note: Total consumption is equivalence-scale adjusted using the NAS scale to account for differences in family size, and is expressed in 2019 dollars using the PCE price index. The statistics are weighted using fixed demographic weights as described in the text.



Note: Consumption is measured using the well-measured components of total consumption as described in the text. Consumption is equivalence-scale adjusted using the NAS scale to account for differences in family size, and is expressed in 2019 dollars using the PCE price index. The statistics are weighted using fixed demographic weights as described in the text.



Note: Total consumption is equivalence-scale adjusted using the NAS scale to account for differences in family size, and is expressed in 2019 dollars using the PCE price index. The statistics are weighted using fixed demographic weights as described in the text.



Note: Total consumption is equivalence-scale adjusted using the NAS scale to account for differences in family size, and is expressed in 2019 dollars using the PCE price index. The statistics are weighted using fixed demographic weights as described in the text.

Appendix Table 1. Mean Characteristics of Single Mother Families, CE 1984-2019

Period	1984- 1986	1987- 1989	1990- 1992	1993- 1995	1996- 1998	1999- 2001	2002- 2004	2005- 2007	2008- 2010	2011- 2013	2014- 2016	2017- 2019
Total Consumption	\$29,945	\$29,670	\$29,335	\$29,588	\$31,481	\$33,767	\$34,597	\$37,273	\$36,751	\$35,096	\$36,755	\$39,640
Consumption	\$19,136	\$18,350	\$18,928	\$19,048	\$20,176	\$21,779	\$22,939	\$25,322	\$25,020	\$24,326	\$25,066	\$26,197
Head Employed	71%	69%	72%	71%	78%	84%	83%	83%	80%	78%	83%	86%
Number of Earners	0.98	0.95	0.96	0.90	1.00	1.05	0.99	1.01	0.95	0.93	1.01	1.09
Any health insurance	N/A	N/A	79%	83%	83%	81%	84%	82%	83%	85%	92%	92%
Private health insurance	N/A	N/A	52%	49%	54%	56%	60%	56%	56%	53%	60%	55%
Homeowner	33%	30%	30%	29%	32%	35%	37%	39%	35%	32%	30%	31%
Single family home	26%	24%	23%	22%	26%	27%	28%	29%	28%	20%	14%	25%
Own a car	65%	64%	65%	67%	69%	72%	76%	74%	76%	75%	76%	77%
Service flows from vehicles	\$885	\$843	\$783	\$899	\$1,018	\$1,138	\$1,263	\$1,271	\$1,177	\$1,120	\$1,307	\$1,351
Service flows from owned	\$3,817	\$3,484	\$3,875	\$3,686	\$4,345	\$5,201	\$5,827	\$6,626	\$5,966	\$5,112	\$5,282	\$5,610
Total service flows	\$4,702	\$4,327	\$4,658	\$4,585	\$5,364	\$6,340	\$7,089	\$7,897	\$7,142	\$6,232	\$6,588	\$6,961
Family size	2.97	2.99	2.97	2.95	3.00	2.97	2.96	2.92	3.01	2.99	2.99	3.02
# of children	1.80	1.83	1.80	1.82	1.87	1.82	1.82	1.75	1.83	1.81	1.80	1.78
# of rooms	5.32	5.18	5.21	5.32	5.30	5.40	5.53	5.73	5.53	5.44	5.54	5.46
# of Bedrooms	2.54	2.48	2.51	2.56	2.57	2.62	2.69	2.74	2.71	2.71	2.76	2.70
# of Bathrooms	1.32	1.34	1.36	1.39	1.42	1.48	1.53	1.61	1.66	1.64	1.66	1.69
Appliances and Amenities*												
Microwave	26%	46%	67%	71%	81%	88%	93%	95%	96%	93%	N/A	N/A
Disposal	26%	29%	30%	31%	33%	37%	37%	44%	45%	45%	N/A	N/A
Dishwasher	28%	31%	33%	34%	37%	39%	46%	51%	55%	58%	N/A	N/A
Any Air Conditioning	41%	49%	52%	57%	60%	67%	73%	78%	79%	80%	N/A	N/A
Central Air Conditioning	22%	28%	30%	36%	39%	44%	51%	56%	59%	59%	N/A	N/A
Washer	60%	60%	60%	64%	64%	67%	71%	74%	73%	74%	N/A	N/A
Dryer	47%	47%	50%	55%	56%	60%	66%	71%	71%	71%	N/A	N/A
Television	N/A	N/A	95%	96%	98%	98%	99%	100%	99%	99%	N/A	N/A
Computer	N/A	N/A	12%	15%	24%	41%	57%	67%	75%	77%	N/A	N/A
Education of Head												
Less Than High School	28%	26%	26%	22%	21%	18%	17%	17%	18%	16%	13%	12%
High School Degree	36%	39%	37%	39%	35%	34%	31%	29%	25%	27%	26%	22%
Some College	24%	24%	27%	28%	30%	33%	36%	38%	39%	38%	39%	38%
College Graduate	12%	11%	10%	12%	13%	14%	15%	15%	18%	18%	22%	27%
Race of Head												
White	67%	63%	64%	65%	60%	62%	61%	60%	61%	60%	62%	60%
Black	31%	35%	34%	33%	36%	35%	36%	36%	35%	36%	33%	34%
Asian	1%	1%	2%	1%	2%	2%	1%	1%	2%	2%	2%	3%
Other	1%	1%	1%	1%	2%	2%	2%	3%	2%	2%	2%	3%
Hispanic Origin	10%	10%	11%	13%	14%	14%	15%	16%	18%	18%	20%	21%
Total Financial Assets												
75th Percentile	\$1,207	\$840	\$1,019	\$854	\$1,072	\$769	\$965	\$1,124	\$982	\$528	\$623	\$1,027
90th Percentile	\$5,859	\$5,392	\$5,303	\$3,147	\$5,331	\$4,759	\$4,914	\$6,346	\$4,365	\$2,935	\$4,676	\$5,749
Unweighted Number of Families	3,323	3,338	3,467	3,550	3,866	4,668	4,905	4,413	3,980	3,624	3,366	2,588

Notes: Rooms, total consumption, consumption, and service flows are equivalence-scale adjusted and equivalized to a family with 1 adults and 2 children, and are expressed in 2019 dollars using the PCE price index. Consumption is measured using the well-measured components of total consumption as described in the text.

\*Results for the period 2011-2013 are based on the 2011-2012 data because most appliances variables are unavailable starting in 2013.



Appendix Table 2. Change in Mean Consumption by Consumption Decile, Single Mothers, CE 1984-2019

Period	Percent change (relative to 1990-1992)											
	1984-1986	1987-1989	1990-1992	1993-1995	1996-1998	1999-2001	2002-2004	2005-2007	2008-2010	2011-2013	2014-2016	2017-2019
First Decile	-0.02 (0.04)	-0.05 (0.04)	0.00	0.03 (0.04)	0.05 (0.04)	0.15 (0.04)	0.26 (0.05)	0.31 (0.05)	0.32 (0.05)	0.25 (0.06)	0.29 (0.06)	0.39 (0.09)
Second Decile	-0.02 (0.02)	-0.05 (0.02)	0.00	0.01 (0.03)	0.08 (0.02)	0.12 (0.02)	0.22 (0.03)	0.29 (0.03)	0.30 (0.03)	0.29 (0.04)	0.29 (0.04)	0.33 (0.05)
Third Decile	-0.01 (0.02)	-0.03 (0.02)	0.00	0.04 (0.02)	0.08 (0.02)	0.13 (0.02)	0.21 (0.02)	0.31 (0.03)	0.32 (0.03)	0.29 (0.03)	0.32 (0.04)	0.32 (0.04)
Fourth Decile	0.01 (0.02)	-0.02 (0.02)	0.00	0.05 (0.02)	0.08 (0.02)	0.13 (0.03)	0.20 (0.02)	0.30 (0.03)	0.30 (0.03)	0.28 (0.03)	0.30 (0.03)	0.31 (0.04)
Fifth Decile	0.01 (0.02)	-0.01 (0.03)	0.00	0.03 (0.02)	0.07 (0.02)	0.12 (0.02)	0.17 (0.02)	0.27 (0.03)	0.28 (0.03)	0.27 (0.03)	0.27 (0.03)	0.28 (0.04)
Top half	0.02 (0.02)	-0.02 (0.03)	0.00	-0.01 (0.02)	0.04 (0.03)	0.09 (0.03)	0.14 (0.03)	0.25 (0.04)	0.21 (0.03)	0.20 (0.03)	0.21 (0.03)	0.19 (0.03)

Note: Bootstrapped standard errors are in parentheses. See Table 1 for additional notes.

Appendix Table 3. Change in Components of Mean Consumption by Consumption Decile, Single Mothers, CE 1984-2019

Period	Percent change (relative to 1990-1992)											
	1984-1986	1987-1989	1990-1992	1993-1995	1996-1998	1999-2001	2002-2004	2005-2007	2008-2010	2011-2013	2014-2016	2017-2019
Panel A. Food at home												
First Decile	-0.01 (0.05)	-0.12 (0.05)	0.00	0.00 (0.06)	-0.05 (0.05)	-0.09 (0.05)	-0.05 (0.05)	-0.11 (0.05)	-0.07 (0.06)	-0.07 (0.06)	-0.01 (0.07)	0.00 (0.11)
Second Decile	0.14 (0.04)	-0.01 (0.04)	0.00	0.06 (0.05)	-0.04 (0.04)	-0.02 (0.05)	0.05 (0.05)	0.01 (0.05)	0.07 (0.06)	0.06 (0.06)	0.10 (0.06)	0.00 (0.07)
Third Decile	0.08 (0.04)	0.02 (0.04)	0.00	-0.02 (0.03)	-0.04 (0.04)	0.01 (0.04)	0.05 (0.04)	0.00 (0.04)	0.06 (0.05)	0.12 (0.05)	0.12 (0.05)	0.00 (0.06)
Fourth Decile	0.12 (0.04)	0.02 (0.04)	0.00	-0.01 (0.04)	0.02 (0.04)	-0.03 (0.04)	0.04 (0.04)	0.05 (0.04)	0.10 (0.05)	0.16 (0.05)	0.19 (0.06)	0.05 (0.09)
Fifth Decile	0.04 (0.04)	-0.01 (0.04)	0.00	-0.07 (0.04)	-0.01 (0.05)	-0.03 (0.04)	0.00 (0.04)	0.00 (0.05)	0.12 (0.05)	0.09 (0.05)	0.06 (0.06)	0.13 (0.06)
Top half Decile	0.07 (0.03)	0.02 (0.03)	0.00	-0.01 (0.03)	-0.02 (0.04)	-0.02 (0.03)	-0.04 (0.03)	0.00 (0.03)	0.03 (0.03)	0.03 (0.03)	0.07 (0.03)	0.10 (0.04)
Panel B. Housing Flows												
First Decile	0.05 (0.09)	0.02 (0.08)	0.00	0.05 (0.08)	0.13 (0.09)	0.36 (0.10)	0.49 (0.11)	0.66 (0.13)	0.61 (0.13)	0.34 (0.15)	0.42 (0.15)	0.59 (0.24)
Second Decile	-0.11 (0.05)	-0.04 (0.05)	0.00	-0.02 (0.06)	0.18 (0.06)	0.22 (0.06)	0.32 (0.07)	0.41 (0.07)	0.43 (0.07)	0.40 (0.07)	0.36 (0.08)	0.51 (0.12)
Third Decile	-0.07 (0.06)	-0.04 (0.06)	0.00	0.03 (0.05)	0.12 (0.06)	0.19 (0.06)	0.25 (0.06)	0.36 (0.07)	0.42 (0.08)	0.28 (0.07)	0.37 (0.10)	0.49 (0.11)
Fourth Decile	-0.04 (0.04)	0.02 (0.04)	0.00	0.14 (0.05)	0.12 (0.04)	0.19 (0.04)	0.25 (0.04)	0.39 (0.05)	0.37 (0.05)	0.30 (0.06)	0.35 (0.06)	0.49 (0.07)
Fifth Decile	-0.08 (0.05)	-0.04 (0.04)	0.00	0.09 (0.05)	0.08 (0.05)	0.20 (0.05)	0.24 (0.05)	0.37 (0.07)	0.27 (0.06)	0.28 (0.06)	0.34 (0.07)	0.39 (0.10)
Top half Decile	-0.06 (0.03)	-0.06 (0.04)	0.00	-0.02 (0.04)	0.05 (0.04)	0.13 (0.04)	0.21 (0.05)	0.31 (0.05)	0.22 (0.05)	0.19 (0.05)	0.24 (0.05)	0.26 (0.05)
Panel C. Utilities												
First Decile	-0.14 (0.08)	-0.03 (0.09)	0.00	0.05 (0.13)	0.12 (0.09)	0.31 (0.11)	0.40 (0.12)	0.48 (0.14)	0.47 (0.15)	0.72 (0.19)	0.62 (0.15)	0.66 (0.15)
Second Decile	-0.14 (0.07)	-0.12 (0.07)	0.00	0.01 (0.08)	0.04 (0.08)	0.13 (0.07)	0.19 (0.08)	0.38 (0.09)	0.29 (0.10)	0.34 (0.10)	0.25 (0.11)	0.37 (0.10)
Third Decile	-0.10 (0.06)	-0.10 (0.06)	0.00	0.13 (0.07)	0.18 (0.07)	0.11 (0.06)	0.21 (0.07)	0.42 (0.09)	0.27 (0.08)	0.19 (0.08)	0.32 (0.09)	0.25 (0.10)
Fourth Decile	-0.02 (0.07)	-0.13 (0.06)	0.00	0.01 (0.07)	0.11 (0.07)	0.16 (0.07)	0.21 (0.07)	0.31 (0.08)	0.29 (0.07)	0.19 (0.07)	0.15 (0.08)	0.20 (0.09)
Fifth Decile	0.14 (0.06)	0.06 (0.06)	0.00	0.05 (0.06)	0.14 (0.06)	0.11 (0.06)	0.16 (0.06)	0.32 (0.07)	0.34 (0.07)	0.28 (0.07)	0.26 (0.09)	0.10 (0.10)
Top half Decile	0.05 (0.03)	0.00 (0.03)	0.00	0.02 (0.03)	0.05 (0.02)	0.11 (0.03)	0.10 (0.03)	0.24 (0.03)	0.23 (0.03)	0.16 (0.03)	0.21 (0.03)	0.06 (0.04)
Panel D. Gasoline and Motor Oil												
First Decile	-0.10 (0.20)	-0.09 (0.17)	0.00	-0.05 (0.17)	0.15 (0.19)	0.28 (0.22)	0.59 (0.25)	0.86 (0.32)	0.96 (0.36)	1.15 (0.42)	0.88 (0.35)	1.37 (0.73)
Second Decile	-0.03 (0.19)	-0.19 (0.12)	0.00	-0.14 (0.15)	-0.07 (0.16)	0.02 (0.16)	0.27 (0.20)	0.91 (0.31)	0.84 (0.27)	0.88 (0.34)	0.88 (0.33)	0.85 (0.35)
Third Decile	0.23 (0.22)	-0.05 (0.17)	0.00	0.07 (0.15)	0.14 (0.15)	0.28 (0.17)	0.71 (0.25)	1.34 (0.33)	1.48 (0.35)	1.81 (0.37)	1.16 (0.30)	1.23 (0.36)
Fourth Decile	-0.04 (0.10)	-0.12 (0.14)	0.00	-0.19 (0.08)	-0.11 (0.11)	0.13 (0.11)	0.28 (0.14)	0.92 (0.23)	0.89 (0.19)	0.97 (0.22)	0.73 (0.19)	0.63 (0.24)
Fifth Decile	0.25 (0.13)	-0.05 (0.10)	0.00	-0.07 (0.09)	0.05 (0.10)	0.14 (0.12)	0.42 (0.12)	0.76 (0.17)	0.89 (0.22)	1.20 (0.25)	0.73 (0.19)	0.73 (0.24)
Top half Decile	0.26 (0.06)	-0.02 (0.05)	0.00	-0.07 (0.06)	-0.01 (0.05)	0.04 (0.05)	0.17 (0.05)	0.70 (0.08)	0.76 (0.09)	1.03 (0.08)	0.54 (0.07)	0.36 (0.07)
Panel E. Vehicle Flows												
First Decile	-0.61 (0.13)	0.13 (0.42)	0.00	0.16 (0.31)	0.25 (0.31)	0.52 (0.38)	1.36 (0.57)	0.75 (0.51)	1.22 (0.58)	0.38 (0.38)	0.80 (0.50)	1.20 (0.78)
Second Decile	-0.22 (0.22)	-0.05 (0.27)	0.00	0.19 (0.36)	0.65 (0.40)	0.93 (0.53)	1.43 (0.65)	1.00 (0.59)	0.58 (0.40)	0.14 (0.44)	1.27 (0.65)	1.28 (0.62)
Third Decile	-0.10 (0.18)	0.01 (0.23)	0.00	0.35 (0.28)	0.48 (0.26)	0.64 (0.32)	1.14 (0.39)	1.63 (0.47)	0.88 (0.37)	1.09 (0.37)	0.79 (0.34)	1.00 (0.43)
Fourth Decile	-0.25 (0.17)	-0.07 (0.19)	0.00	0.01 (0.20)	0.39 (0.26)	0.77 (0.30)	0.94 (0.28)	0.37 (0.25)	0.72 (0.28)	0.67 (0.28)	0.98 (0.50)	0.68 (0.31)
Fifth Decile	0.03 (0.16)	0.08 (0.25)	0.00	0.12 (0.19)	0.29 (0.23)	0.61 (0.28)	0.55 (0.25)	0.45 (0.26)	0.39 (0.26)	0.22 (0.21)	0.73 (0.37)	0.41 (0.29)
Top half Decile	0.18 (0.08)	0.11 (0.08)	0.00	0.12 (0.08)	0.21 (0.09)	0.25 (0.08)	0.37 (0.09)	0.38 (0.10)	0.27 (0.09)	0.23 (0.10)	0.28 (0.09)	0.26 (0.10)

Note: Bootstrapped standard errors are in parentheses. See Table 1 for additional notes.

Appendix Table 4. Public or Subsidized Housing, Homeownership, and Rent by Consumption Decile, Single Mothers, CE 1984-2019

Period	1984- 1986	1987- 1989	1990- 1992	1993- 1995	1996- 1998	1999- 2001	2002- 2004	2005- 2007	2008- 2010	2011- 2013	2014- 2016	2017- 2019
Panel A: share in public or subsidized housing, all single mothers												
First Decile	0.24	0.17	0.18	0.27	0.27	0.33	0.34	0.39	0.32	0.21	0.30	0.19
Second Decile	0.31	0.34	0.35	0.33	0.39	0.39	0.46	0.42	0.40	0.38	0.34	0.39
Third Decile	0.28	0.30	0.38	0.38	0.38	0.39	0.37	0.41	0.44	0.38	0.39	0.39
Fourth Decile	0.24	0.28	0.30	0.28	0.30	0.33	0.34	0.45	0.32	0.35	0.38	0.39
Fifth Decile	0.15	0.27	0.18	0.20	0.29	0.33	0.27	0.35	0.30	0.29	0.30	0.41
Top Half	0.04	0.06	0.07	0.11	0.09	0.12	0.12	0.11	0.14	0.12	0.12	0.19
N	3,323	3,338	3,467	3,550	3,866	4,668	4,905	4,413	3,980	3,624	3,366	2,588
Panel B: Homeownership rate, all single mothers												
First Decile	0.04	0.05	0.04	0.05	0.04	0.05	0.13	0.10	0.08	0.09	0.05	0.02
Second Decile	0.08	0.10	0.07	0.09	0.06	0.13	0.10	0.12	0.13	0.11	0.10	0.07
Third Decile	0.14	0.08	0.14	0.09	0.12	0.12	0.13	0.16	0.13	0.17	0.12	0.04
Fourth Decile	0.13	0.13	0.17	0.13	0.15	0.15	0.18	0.17	0.19	0.19	0.12	0.10
Fifth Decile	0.28	0.22	0.21	0.21	0.24	0.22	0.23	0.25	0.22	0.20	0.19	0.14
Top Half	0.52	0.49	0.49	0.47	0.49	0.51	0.49	0.52	0.48	0.47	0.41	0.35
N	3,323	3,338	3,467	3,550	3,866	4,668	4,905	4,413	3,980	3,624	3,366	2,588
Panel C: Imputed rental value, non-home-owning single mothers in public or subsidized housing												
First Decile	\$2,514	\$2,729	\$2,656	\$2,050	\$3,007	\$2,828	\$3,099	\$3,473	\$4,059	\$3,700	\$4,168	\$4,088
Second Decile	\$2,859	\$3,281	\$2,919	\$3,111	\$3,106	\$2,997	\$3,247	\$3,875	\$3,694	\$2,997	\$3,445	\$3,090
Third Decile	\$3,126	\$3,713	\$3,217	\$3,693	\$3,389	\$3,012	\$3,855	\$4,044	\$4,504	\$4,237	\$4,090	\$4,271
Fourth Decile	\$3,428	\$3,575	\$3,582	\$4,168	\$3,513	\$3,903	\$3,814	\$4,265	\$4,874	\$4,722	\$4,628	\$4,577
Fifth Decile	\$3,546	\$4,116	\$3,808	\$3,503	\$4,189	\$4,261	\$3,563	\$5,161	\$5,492	\$4,358	\$3,773	\$4,656
Top Half	\$3,210	\$2,595	\$3,460	\$3,845	\$4,132	\$3,384	\$3,579	\$4,002	\$4,310	\$4,448	\$5,570	\$7,171
N	511	543	609	670	792	1,032	1,096	951	905	781	663	506
Panel D: Out of pocket rent, non-home-owning single mothers not in public or subsidized housing												
First Decile	\$2,360	\$2,383	\$2,283	\$2,442	\$2,373	\$2,809	\$3,139	\$3,406	\$3,605	\$3,031	\$2,981	\$3,520
Second Decile	\$3,558	\$3,666	\$3,942	\$3,757	\$4,627	\$4,850	\$5,246	\$5,643	\$5,888	\$5,868	\$5,298	\$5,886
Third Decile	\$4,690	\$4,784	\$4,881	\$5,114	\$5,684	\$5,805	\$6,403	\$6,655	\$7,146	\$6,478	\$6,395	\$7,223
Fourth Decile	\$5,773	\$5,966	\$5,862	\$6,836	\$6,542	\$6,742	\$7,427	\$7,518	\$8,033	\$7,439	\$7,574	\$7,913
Fifth Decile	\$6,545	\$6,762	\$6,898	\$7,624	\$7,529	\$7,885	\$8,523	\$9,156	\$8,584	\$8,817	\$8,864	\$9,573
Top Half	\$10,717	\$10,922	\$10,978	\$10,916	\$11,851	\$12,328	\$13,093	\$13,707	\$13,509	\$13,908	\$13,989	\$14,483
N	1,777	1,797	1,800	1,843	1,833	1,967	1,983	1,791	1,729	1,760	1,699	1,286

Note: Consumption is equivalence-scale adjusted and equivalized to a family with 1 adult and 2 children, and is expressed in 2019 dollars using the PCE price index. The statistics are weighted using the fixed demographic weights as described in the text. Consumption deciles are defined using well-measured consumption as described in the text.

Appendix Table 5a. Mean Regression Difference-in-Difference Estimates of Consumption of Low-Educated Single Mothers, CE 1984-20

Sample	Survey Weight			Fixed Demographic Weight		
	H.S. Degree or Less		All Single Mothers	H.S. Degree or Less		All Single Mothers
	Single	Mothers		Single	Mothers	
Single Mother w/ H.S. Degree or Less*84-86	0.149*** (0.054)	-0.045** (0.022)	0.005 (0.034)	0.125** (0.059)	-0.054** (0.023)	-0.008 (0.033)
Single Mother w/ H.S. Degree or Less*87-89	-0.099** (0.047)	-0.028 (0.023)	0.038 (0.034)	-0.105* (0.054)	-0.032 (0.023)	0.027 (0.034)
Single Mother w/ H.S. Degree or Less*93-95	0.027 (0.049)	0.013 (0.022)	0.058* (0.031)	0.039 (0.062)	0.015 (0.023)	0.050 (0.032)
Single Mother w/ H.S. Degree or Less*96-98	-0.002 (0.045)	0.015 (0.022)	0.048 (0.031)	-0.065 (0.056)	0.009 (0.023)	0.044 (0.031)
Single Mother w/ H.S. Degree or Less*99-01	0.001 (0.051)	-0.016 (0.021)	0.012 (0.030)	-0.029 (0.065)	-0.021 (0.022)	0.009 (0.031)
Single Mother w/ H.S. Degree or Less*02-04	0.096* (0.052)	0.000 (0.021)	0.064** (0.029)	0.096 (0.067)	-0.000 (0.023)	0.066** (0.030)
Single Mother w/ H.S. Degree or Less*05-07	0.070 (0.062)	-0.008 (0.023)	0.022 (0.031)	0.127 (0.094)	-0.008 (0.024)	0.021 (0.032)
Single Mother w/ H.S. Degree or Less*08-10	0.053 (0.057)	-0.013 (0.023)	0.015 (0.031)	0.087 (0.092)	-0.019 (0.025)	0.002 (0.032)
Single Mother w/ H.S. Degree or Less*11-13	-0.001 (0.054)	0.003 (0.027)	0.017 (0.033)	-0.033 (0.078)	0.009 (0.032)	0.009 (0.037)
Single Mother w/ H.S. Degree or Less*14-16	0.137** (0.062)	0.020 (0.024)	0.070** (0.031)	0.315* (0.167)	0.051* (0.029)	0.078** (0.034)
Single Mother w/ H.S. Degree or Less*17-19	0.260** (0.128)	0.028 (0.027)	0.077** (0.033)	0.197 (0.174)	0.034 (0.032)	0.043 (0.036)
Number of Observations	38,057	93,251	45,088	38,057	93,251	45,088

Note: This table reports mean regression estimates from equation (1) on the sample of low-educated single women (columns 1 and 4), low-educated women with children (columns 2 and 5), and all single mothers (columns 3 and 6). Robust standard errors, which are clustered at the family level, are reported in parentheses. Consumption is measured using the well-measured components of total consumption as described in the text. \* = p-value < 0.10, \*\* = p-value < 0.05, \*\*\* = p-value < 0.01.

Appendix Table 5b. 25th Percentile Difference-in-Difference Estimates of Consumption of Low-Educated Single Mothers, CE 1984-2019

Sample	Survey Weight			Fixed Demographic Weight		
	H.S. Degree or Less		All Single Mothers	H.S. Degree or Less		All Single Mothers
	Single	Mothers		Single	Mothers	
Single Mother w/ H.S. Degree or Less*84-86	0.171*** (0.022)	-0.069** (0.030)	-0.026 (0.045)	0.163*** (0.024)	-0.071** (0.032)	-0.034 (0.044)
Single Mother w/ H.S. Degree or Less*87-89	-0.042 (0.026)	-0.060 (0.027)	-0.024 (0.046)	-0.050 (0.028)	-0.062 (0.029)	-0.023 (0.046)
Single Mother w/ H.S. Degree or Less*93-95	0.011 (0.024)	0.001 (0.024)	0.047 (0.038)	0.047* (0.026)	0.011 (0.027)	0.046 (0.038)
Single Mother w/ H.S. Degree or Less*96-98	0.037 (0.025)	0.007 (0.025)	0.026 (0.042)	0.002 (0.028)	0.004 (0.028)	0.025 (0.042)
Single Mother w/ H.S. Degree or Less*99-01	0.024 (0.022)	-0.017 (0.023)	-0.010 (0.036)	-0.009 (0.024)	-0.016 (0.025)	0.000 (0.036)
Single Mother w/ H.S. Degree or Less*02-04	0.107*** (0.022)	0.004 (0.022)	0.034 (0.034)	0.097*** (0.024)	0.003 (0.026)	0.046 (0.034)
Single Mother w/ H.S. Degree or Less*05-07	0.052** (0.022)	-0.000 (0.023)	-0.010 (0.037)	0.120*** (0.026)	0.001 (0.030)	-0.012 (0.037)
Single Mother w/ H.S. Degree or Less*08-10	0.091*** (0.027)	-0.013 (0.030)	-0.013 (0.040)	0.112*** (0.031)	-0.018 (0.038)	-0.012 (0.040)
Single Mother w/ H.S. Degree or Less*11-13	0.042* (0.026)	0.018 (0.025)	-0.003 (0.040)	0.029 (0.034)	0.020 (0.034)	-0.015 (0.039)
Single Mother w/ H.S. Degree or Less*14-16	0.100*** (0.027)	0.013 (0.028)	0.035 (0.039)	0.136*** (0.032)	0.063* (0.033)	0.051 (0.039)
Single Mother w/ H.S. Degree or Less*17-19	0.129*** (0.029)	0.027 (0.037)	0.084* (0.044)	0.094** (0.038)	0.067 (0.043)	0.050 (0.044)
Number of Observations	38,057	93,251	45,088	38,057	93,251	45,088

Note: This table reports 25th percentile regression estimates from equation (1) on the sample of low-educated single women (columns 1 and 4), low-educated women with children (columns 2 and 5), and all single mothers (columns 3 and 6). Bootstrapped standard errors, which are clustered at the family level, are reported in parentheses. Consumption is measured using the well-measured components of total consumption as described in the text. \* = p-value < 0.10, \*\* = p-value < 0.05, \*\*\* = p-value < 0.01.

Appendix Table 6. Housing Characteristics by Consumption Decile, Single Mothers, CE 1984-2019

Period	1984- 1986	1987- 1989	1990- 1992	1993- 1995	1996- 1998	1999- 2001	2002- 2004	2005- 2007	2008- 2010	2011- 2013	2014- 2016	2017- 2019
Panel A: Number of Rooms												
First Decile	4.27	4.11	4.11	4.31	4.10	4.37	4.33	4.22	4.40	4.57	4.59	4.28
Second Decile	4.40	4.34	4.37	4.37	4.30	4.43	4.45	4.49	4.35	4.54	4.71	4.53
Third Decile	4.57	4.35	4.56	4.55	4.59	4.36	4.73	4.80	4.44	4.63	4.73	4.78
Fourth Decile	4.61	4.67	4.73	4.66	4.71	4.63	4.87	4.90	4.80	4.85	4.79	5.09
Fifth Decile	5.06	4.99	4.93	5.07	5.08	5.04	5.14	5.17	5.06	4.93	5.31	4.73
Top Half	6.06	5.90	5.89	6.07	6.01	6.08	6.14	6.37	6.16	6.06	6.07	5.73
Panel B: Number of Bedrooms												
First Decile	2.06	1.96	2.01	2.19	2.04	2.17	2.21	2.17	2.21	2.42	2.32	2.33
Second Decile	2.11	2.13	2.19	2.18	2.17	2.13	2.30	2.27	2.19	2.26	2.50	2.33
Third Decile	2.17	2.13	2.24	2.23	2.27	2.14	2.41	2.39	2.23	2.40	2.48	2.39
Fourth Decile	2.19	2.26	2.31	2.27	2.26	2.31	2.44	2.46	2.41	2.41	2.46	2.54
Fifth Decile	2.44	2.39	2.35	2.51	2.41	2.51	2.51	2.54	2.53	2.53	2.52	2.40
Top Half	2.88	2.82	2.80	2.85	2.88	2.90	2.94	3.00	2.99	3.00	3.00	2.86
Panel C: Number of Bathrooms												
First Decile	0.99	0.94	1.03	1.05	1.02	1.10	1.13	1.10	1.16	1.20	1.17	1.22
Second Decile	1.03	1.01	1.05	1.02	1.08	1.11	1.11	1.22	1.22	1.21	1.26	1.23
Third Decile	1.06	1.08	1.14	1.15	1.13	1.09	1.22	1.23	1.23	1.28	1.30	1.33
Fourth Decile	1.11	1.17	1.14	1.17	1.15	1.28	1.22	1.33	1.34	1.42	1.39	1.43
Fifth Decile	1.18	1.21	1.23	1.24	1.27	1.32	1.42	1.40	1.45	1.48	1.46	1.42
Top Half	1.56	1.61	1.60	1.65	1.67	1.70	1.75	1.84	1.89	1.89	1.84	1.81
Panel D: Air Conditioning*												
First Decile	22%	29%	36%	43%	46%	55%	67%	70%	70%	79%	N/A	N/A
Second Decile	22%	30%	37%	46%	48%	58%	68%	78%	78%	88%	N/A	N/A
Third Decile	28%	37%	43%	52%	50%	59%	68%	80%	81%	85%	N/A	N/A
Fourth Decile	32%	39%	48%	50%	60%	66%	72%	76%	77%	81%	N/A	N/A
Fifth Decile	44%	45%	51%	49%	62%	63%	70%	75%	77%	77%	N/A	N/A
Top Half	53%	62%	63%	64%	66%	73%	78%	81%	82%	79%	N/A	N/A
Panel E: Central Air												
First Decile	10%	11%	15%	17%	16%	30%	38%	37%	43%	50%	N/A	N/A
Second Decile	8%	11%	18%	22%	22%	33%	43%	46%	47%	59%	N/A	N/A
Third Decile	14%	19%	19%	29%	29%	34%	40%	45%	56%	53%	N/A	N/A
Fourth Decile	15%	23%	22%	30%	32%	45%	39%	50%	53%	54%	N/A	N/A
Fifth Decile	18%	20%	28%	27%	38%	41%	48%	52%	50%	50%	N/A	N/A
Top Half	30%	39%	40%	45%	48%	49%	56%	62%	63%	62%	N/A	N/A
Panel F: Dishwasher												
First Decile	6%	9%	10%	12%	12%	16%	20%	20%	23%	21%	N/A	N/A
Second Decile	5%	8%	14%	11%	13%	17%	18%	27%	31%	28%	N/A	N/A
Third Decile	8%	12%	13%	18%	15%	20%	22%	35%	39%	37%	N/A	N/A
Fourth Decile	13%	22%	20%	25%	20%	23%	28%	37%	42%	44%	N/A	N/A
Fifth Decile	18%	19%	24%	21%	22%	27%	35%	37%	44%	49%	N/A	N/A
Top Half	46%	49%	50%	49%	55%	54%	61%	66%	68%	72%	N/A	N/A
Panel G: Washing Machine												
First Decile	41%	42%	35%	34%	40%	48%	51%	57%	51%	69%	N/A	N/A
Second Decile	41%	52%	46%	60%	47%	53%	56%	58%	60%	64%	N/A	N/A
Third Decile	47%	46%	49%	48%	55%	50%	57%	62%	55%	62%	N/A	N/A
Fourth Decile	50%	48%	52%	58%	59%	54%	62%	63%	63%	71%	N/A	N/A
Fifth Decile	58%	55%	54%	64%	56%	65%	67%	68%	68%	75%	N/A	N/A
Top Half	71%	73%	74%	75%	77%	76%	80%	82%	82%	81%	N/A	N/A
Panel H: Dryer												
First Decile	14%	25%	19%	23%	25%	35%	45%	44%	46%	65%	N/A	N/A
Second Decile	22%	24%	29%	41%	29%	45%	49%	55%	55%	59%	N/A	N/A
Third Decile	27%	26%	35%	40%	40%	40%	50%	58%	50%	58%	N/A	N/A
Fourth Decile	33%	32%	41%	50%	50%	48%	57%	60%	59%	66%	N/A	N/A
Fifth Decile	45%	41%	45%	58%	51%	58%	63%	63%	67%	74%	N/A	N/A
Top Half	65%	67%	68%	69%	72%	72%	76%	80%	81%	80%	N/A	N/A

Note: The number of rooms, bedrooms, and bathrooms are equivalence-scale adjusted. The results in Panels D-H for the period 2011-2013 are based on the 2011-2012 data because most appliances variables are unavailable in the CE starting in 2013. The statistics are weighted using the fixed demographic weights as described in the text. The CE stopped collecting information on many appliances starting in 2013. Consumption deciles are defined using well-measured consumption as described in the text.

Appendix Table 7. Health Insurance Coverage and Health Spending by Consumption Decile, Individuals in Single Mother Families, CE 1984-2019

Period	1984- 1986	1987- 1989	1990- 1992	1993- 1995	1996- 1998	1999- 2001	2002- 2004	2005- 2007	2008- 2010	2011- 2013	2014- 2016	2017- 2019
Panel A: Fraction of individuals who are uninsured												
First Decile	N/A	N/A	0.40	0.30	0.31	0.36	0.27	0.31	0.32	0.23	0.21	0.21
Second Decile	N/A	N/A	0.36	0.26	0.33	0.29	0.27	0.30	0.37	0.19	0.21	0.24
Third Decile	N/A	N/A	0.29	0.24	0.30	0.30	0.26	0.29	0.31	0.24	0.24	0.16
Fourth Decile	N/A	N/A	0.30	0.24	0.30	0.33	0.27	0.31	0.24	0.29	0.17	0.25
Fifth Decile	N/A	N/A	0.31	0.31	0.29	0.32	0.27	0.29	0.29	0.25	0.15	0.23
Top Half	N/A	N/A	0.26	0.25	0.23	0.30	0.29	0.30	0.27	0.29	0.19	0.18
Panel B: Fraction of individuals covered by Medicaid												
First Decile	N/A	N/A	0.51	0.61	0.55	0.47	0.56	0.50	0.51	0.67	0.68	0.70
Second Decile	N/A	N/A	0.49	0.61	0.50	0.51	0.57	0.56	0.48	0.66	0.60	0.65
Third Decile	N/A	N/A	0.53	0.58	0.47	0.41	0.52	0.49	0.49	0.63	0.58	0.71
Fourth Decile	N/A	N/A	0.37	0.50	0.46	0.36	0.40	0.46	0.49	0.53	0.67	0.59
Fifth Decile	N/A	N/A	0.31	0.33	0.38	0.32	0.29	0.40	0.47	0.49	0.61	0.62
Top Half	N/A	N/A	0.12	0.17	0.13	0.15	0.15	0.16	0.23	0.20	0.34	0.36
Panel C: Health expenditures												
First Decile	\$157	\$210	\$395	\$270	\$292	\$467	\$681	\$229	\$399	\$343	\$379	\$442
Second Decile	\$386	\$266	\$205	\$526	\$430	\$440	\$456	\$471	\$640	\$377	\$516	\$615
Third Decile	\$358	\$333	\$401	\$498	\$683	\$563	\$724	\$657	\$424	\$607	\$806	\$397
Fourth Decile	\$414	\$467	\$742	\$723	\$739	\$739	\$957	\$797	\$626	\$797	\$522	\$1,189
Fifth Decile	\$1,033	\$750	\$1,147	\$1,007	\$1,003	\$854	\$1,185	\$1,019	\$671	\$696	\$907	\$900
Top Half	\$1,789	\$1,632	\$1,781	\$1,820	\$1,876	\$1,779	\$2,098	\$2,108	\$2,041	\$2,483	\$2,661	\$2,829

Notes: Health expenditures include annual out-of-pocket spending on health insurance, medical services, prescription drugs, and medical supplies. Insurance categories do not always sum to one because some individuals are insured through Medicare, CHAMPUS, military health care, or other programs. Health expenditures are reported in 2019 dollars using the PCE price Index and are equivalence-scale adjusted using the NAS scale and equalized to a family with 1 adult and 2 children. The statistics are weighted using the fixed demographic weights as described in the text. Consumption deciles are defined using well-measured consumption as described in the text.