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Black-White Disposable Income Inequality: The Rising Importance of Single Women

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Abstract

The share of tax units headed by single women is twice as large for Black units than White units, and this gender differential in tax unit structure significantly contributes to Black-White income inequality. I decompose the Black-White disposable income gap by tax unit structure categories to estimate single women's contribution to racial income inequality and examine the extent to which this is influenced by taxes and transfers at the 10th, 25th, and 50th percentiles. The portion of the gap explained by single women without children has grown consistently since the 1980s while the share attributable to low-income single mothers has declined in recent years. At the median, single mothers account for an average of 26 percent of the gap from 1980-2022, and single women without children account for an average of 11 percent. The declining importance of single mothers is in large part due to redistribution of the tax and transfer systems and declining inequality between Black and White single mothers. For single women without children, their share of the gap is exacerbated by the tax code despite declining within-group racial inequality. Singles, particularly single women, represent an under-investigated group in research on tax policy and racial inequality. I provide evidence that single mothers and single women without children are important to understanding Black-White income inequality relative to single men as well as demographic and economic factors.

Keywords: inequality, women, racial gaps, household composition, taxes, government transfers

JEL Codes: H24, J12, J15

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1 Introduction

Tax liability and transfer receipt in the U.S. are in large part determined by earnings, marriage, and presence of dependents. Because all three factors are correlated with race, the U.S. tax and transfer systems can contribute to racial inequality while being void of explicitly racial language. An extensive literature documents disproportionate impacts of the tax and transfer systems on Black taxpayers compared to White taxpayers, focusing mainly on channels specific to married couples (Brown, 1997, 1999, 2005, 2007, 2022; Alm et al., 2023; Holtzblatt et al., 2024). Considerably less attention has been given to unmarried taxpayers, and their impact on racial inequality is heretofore unknown. Because the share of tax units headed by single (defined as unmarried) women is nearly twice as large for Black units than White units (40 percent compared to 22 percent), this group is likely a significant contributor to Black-White income inequality.

This is the first paper to directly estimate single women's contribution to the Black-White disposable income gap and examine the extent to which this is influenced by the tax and transfer systems over the income distribution. I use Recentered Influence Function (RIF) decompositions (Firpo et al., 2009, 2018) to attribute portions of the unconditional Black-White disposable income gap to detailed tax unit structure categories: married couples (hereafter, couples) with or without children (reference group), single men without children, single women without children, single fathers, and single mothers. This is a two-step procedure that first divides the racial income gap into group differences in characteristics (composition effect) and group differences in coefficients (structure effect) using inverse probability weights to identify the counterfactual distribution. In the second stage, the composition effect is further disaggregated into contributions of each covariate. This involves first estimating a quantile RIF for each individual observation and quantile, then replacing the dependent variable–log income–in a linear regression with the quantile RIF. The linear RIF-regressions produce estimates of each covariate's contribution to the income gap at an unconditional quantile. I focus on the bottom half of the income distribution because although single women are important to Black-White disposable income gaps in the top quartile, their interaction with the social safety net is minimal and the impact of taxes and transfers on their

shares of the gap is small. Estimates for the 75th and 90th percentiles are provided in Appendix F.

To isolate the impact of taxes and transfers on single mothers' and single-childless-women's shares of the gap, I compare each group's pre- tax and -transfer labor earnings share to their gross cash income share and their post- tax and -transfer disposable income gap share. Taxes and transfers may impact single mothers' and single-childless-women's shares of the Black-White income gap in two potential ways. First, by differentially benefiting or harming tax units headed by single mothers and single women without children relative to the reference group (i.e. married couples) regardless of race. Given the higher rates of single mothers and single women without children across Black tax heads, if tax policy makes all single mothers or single women without children better off relative to couples, this will have a greater impact on Black units than White units and contribute to a reduction in the overall Black-White income gap and the share attributed to single mothers or single women without children. The second way is by differentially benefiting or harming Black single women compared to White single women thus closing or widening the gap between the two. Additionally, I estimate earnings, gross cash income, and disposable income gaps between Black and White single women with and without children to examine how much of single women's contribution to the Black-White disposable income gap is due to changing inequality within tax unit structure groups.

My results show that racial differences in the proportion of single mothers and single women without children explain large portions of Black-White disposable income gaps relative to single men and demographic and economic factors. While single mothers have long been discussed within the context of U.S. poverty and inequality, single women without children have been largely excluded from conversations of racial income inequality. I find that the portion of the Black-White income gap explained by single women without children has grown consistently since the 1980s while the share attributable to low-income single mothers has declined in recent years. At the 10th percentile, single mothers account for an average of 15 percent of the gap from 1980-2022. Their contribution has declined since the mid-1990s, in large part due to redistribution of the tax system and declining inequality between Black and White single mothers.

At the 25th percentile, the importance of single mothers fluctuates between 20-30 percent and is reduced by cash transfers, social insurances, and personal incomes that differentially benefit single mothers compared to married couples regardless of race. At the 50th percentile, single mothers' importance has increased over time and is reduced by the transfer system but exacerbated by the tax code. Single women without children account for an average of 11-12 percent over the period. At each percentile, their importance to understanding Black-White income inequality increases consistently over time and is made larger by the tax system despite declining inequality between Black and White single-childless-women.

By centering my analysis on single women with and without children, I make important contributions to understanding the relationship between the tax and transfer systems and racial economic inequality. Singles, particularly single women without children, represent an under-investigated group in research on tax policy and racial inequality, and much of Black-White economic inequality research has focused on wage differentials between Black and White men (O'Neill, 1990; Neal and Johnson, 1996; Heckman et al., 2000; Bayer and Charles, 2018; Thompson, 2021). More recently, attention has expanded to include Black-White differences in disposable household, family, and tax unit income rather than focusing exclusively on individual male earnings estimates (Hardy et al., 2025). Evaluating only male earnings differences is often motivated by the idea that women are marginal or secondary earners and thus have only a mild impact on overall racial inequality. While this may have been historically true of some women–namely high-income, married, and White–it is a poor characterization of Black or low-income women who have generally stronger labor force attachments and when married, contribute a higher percentage of earnings to tax unit income relative to their White or high-income counterparts (Goldin, 1977; Corcoran and Duncan, 1979; Brown, 1997). Moreover, female labor force participation has increased dramatically over the last half century, and with it, women's potential impact on racial economic inequality (Blau and Kahn, 2017; Goldin, 2014).

While Hardy et al. (2025) document the tax and transfer systems' impact on Black-White household income inequality, they do not account for gender differentials in household structure.

Although men and women are treated equally under the tax code, there is a larger racial gap in the share of tax heads who are single women with and without children compared to the share of tax heads who are single men with and without children. The difference in rates of single mothers and single women without children between Black and White tax heads is greater than the difference in rates of single fathers and single men without children between Black and White tax heads. Thus, policy and economic conditions that impact single-childless-individuals will affect both single men and single women, but the impact on single women is what spills over into racial inequality. This is because there are much higher rates of single women among Black tax units compared to White tax units while the difference in the rates of single men across race are more muted. Furthermore, extant research on tax policy and racial inequality has been focused on channels specific to couples. Brown (2022) suggests that singles penalties are another avenue through which taxes may contribute to racial inequality, but this has not been directly studied. Holtzblatt et al. (2024) argue that because Black taxpayers are less likely to be married than White taxpayers, policies intended to alleviate marriage penalties may result in overall greater tax cuts for White units than Black units, but they do not address the implied fact that a higher proportion of Black taxpayers are therefore single compared to White taxpayers which can have its own consequences on racial inequality. My research seeks to fill this gap in the literature.

In the following section, I provide an overview of how the tax and transfer systems have evolved over time and present stylized facts of racial differences in tax unit structure. I then discuss how differences in tax unit structure can exacerbate or reduce Black-White income inequality through a race-correlated transfer system and tax code. In Section 3, I outline my empirical methods. I present my results in Section 4 beginning with overall Black-White disposable income gaps and the contributions of single mothers and single women without children. I continue my results with the impact of taxes and transfers and changing inequality between Black and White single women with and without children. Section 5 concludes.

2 Evolution of Taxes and Transfers and Racial Differences in Tax Unit Structure

2.1 Evolution of Taxes and Transfers

Over the past 40 years, the tax and transfer systems have undergone significant reform with implications that vary by family structure and result in different outcomes across racial groups. In the 1980s, the Economic Recovery Tax Act of 1981 (ERTA) and the 1986 Tax Reform Act (TRA86) lowered marginal tax rates (most notably at the top of the distribution), reduced the number of tax brackets, raised the level of standard deduction and personal exemption, and broadened the tax base (Auerbach and Slemrod, 1997; Kniesner and Ziliak, 2002). These changes led to a dramatic increase in income inequality, as well as a reduction in the number of taxpayers with positive income tax liabilities who are at or below the federal poverty line (Auerbach and Slemrod, 1997; Hardy et al., 2025).

TRA86 also significantly expanded the Earned Income Tax Credit (EITC), which was introduced in 1975 as a refundable tax credit for low-income workers and families with qualifying children and was further expanded in 1990, 1993, and 2009. The 1990s expansions have been shown to increase the labor supply of single mothers (Eissa and Liebman, 1996; Meyer and Rosenbaum, 2001; Hoynes and Patel, 2018; Whitmore Schanzenbach and Strain, 2021) and potentially reduce the labor supply of married women (Eissa and Hoynes, 2004). Hardy et al. (2022) show that the 1990s EITC expansions reduced racial income inequality at the 25th and 50th percentiles through increases in the extensive margin of employment. In 1997, the Child Tax Credit (CTC) was created as part of that year's Taxpayer Relief Act (TRA97). The CTC served as a modest per-child non-refundable tax credit for middle-income families but was largely expanded in generosity in 2017 with the Tax Cuts and Jobs Act (TCJA) and most notably in 2021 as part of the American Rescue Plan (ARP). Hardy and Hokayem (2023) find that the 2021 CTC expansion is associated with a reduction in Black-White income inequality in the bottom half of the income

distribution, particularly at the 10th and 25th percentiles.

At the same time that tax credits were growing in generosity, transfer programs that provided direct cash assistance to the low-income population were being restricted. The Personal Responsibility and Work Opportunity Reconciliation Act (Welfare Reform) of 1996 replaced Aid to Families with Dependent Children (AFDC) with Temporary Assistance for Needy Families (TANF) and eliminated the entitlement feature of cash welfare. Under TANF, the federal government provides block grants to states to fund programs aimed at reducing poverty and promoting marriage. This change led to a reduction in direct cash assistance to low-income families (Blank, 2002; Moffitt, 2007; Grogger and Karoly, 2005), and several studies identify racial disparities in the delivery of social services and cash benefits (Kalil et al., 2002; Bonds, 2006; Fording et al., 2007; Hardy et al., 2019; Parolin, 2021). Together, the changes to the tax and transfer systems over the past 40 years mark a shift away from direct cash transfers and towards temporary assistance with greater work incentives. The implications of these changes vary by marital status and presence of dependents which leads to different outcomes across racial groups.

2.2 Racial Differences in Tax Unit Structure

Historical trends in tax unit structure show clear differences in marriage and childbearing by race. I use survey years 1981-2023 of the Current Population Survey Annual Social and Economic Supplement (CPS ASEC)–an annual interview survey of around 60,000 households conducted by the U.S. Census Bureau–to construct a sample of Black and White tax unit heads aged 25 to 60 reporting positive earnings, gross cash incomes, and disposable incomes. Following Census definitions of race and ethnicity, I classify individuals into three mutually exclusive racial-ethnic groups: non-Hispanic White, non-Hispanic Black, or other. I assign tax heads to one of six mutually exclusive tax unit structure groups based on marriage status, the presence of dependents under the age of 18, and gender: couples with or without children (reference group), single man

without children, single woman without children, single father, and single mother.[1] Although there are only four tax filing statuses–married filing jointly, married filing separately, head of household, and single–I create six tax unit structures to understand the gender composition of these groups, particularly head of household and single filers.[2] [3] Data are pooled into nine approximately five-year bins to alleviate sample size concerns at the extremes of the distribution and are described in detail in Appendix A.

Figure 1 shows the share of tax heads who fall into one of the six structure categories for Black (Panel A) and White (Panel B) tax units. From 1980-2022, the share of single taxpayers increased from 59 to 73 percent for Blacks and from 36 to 51 percent for Whites. For both racial groups, the share of couples without children has been stable while the share of couples with children has declined. For Black tax units, the share of single men without children has remained around 25 percent while the share of single women without children has increased from 15 to 25 percent. For White units, the shares of both single men and women without children have increased over time–from 17 to 24 percent for men and 12 to 18 percent for women. The share of single fathers has grown slightly over time for both race groups from 2 to 3 percent for Blacks and from 1 to 3 percent for Whites. The share of single mothers has been consistent over time for both Black and White taxpayers but differs greatly in level–about 20 percent for Blacks and 6 percent

[1] Cohabitators are allocated to the single taxpayer groups because cohabitating couple is not recognized as a tax filing status.

[2] Lin and Slemrod (2024) also split unmarried filers by gender and show unmarried women face lower average federal income tax rates compared to unmarried men. Lin et al. (2025) investigate gender norms within couples and find that opposite-sex couples filing a joint return put the male name first 88.1% of the time in tax year 2020 which has declined from 97.3% in 1996. This does not impact the couple's tax liability but reflects societal gender norms. Here, I do not classify couples into separate gendered categories based on the gender of the primary filer, but rather use couples as the reference group to explore the impact of single women compared to single men on Black-White income inequality.

[3] Roughly 15% households in the CPS consist of multiple tax units e.g. a married couple and their adult child live in the same household but file taxes separately (the adult child is not claimed as a dependent). Because tax burdens are assigned to tax units and not to households, I treat each tax unit as its own entity rather than aggregating up to the household level. Additionally, aggregating tax units to the household level would miss important family structure dynamics that exist at the tax unit level. For example, imagine a married couple that live in a household with their 30-year-old daughter who is also a single mother. If the CPS reference person is part of the married couple, a household level analysis would categorize this household as a married couple and any tax credits and government transfers the single mother receives would be mis-attributed to the married couple. A tax unit level analysis avoids this problem and treats the married couple and the single mother as separate units. See Appendix A for details on tax unit construction.

for Whites.[4]

Figure 1 also shows that the greatest differences in tax unit structure by race appear in the share of couples and single women with and without children. This can impact Black-White income inequality in three major ways. First, because a higher proportion of Black taxpayers are single, policy and economic conditions that negatively impact singles relative to couples, such as singles penalties–when a single person has a higher tax liability than they would if they were married with the same income–, will be more prevalent across Black units than White units. While marriage penalties have garnered much attention over the past two decades, considerably less research has focused on singles penalties. Papers that do examine the singles penalty find that single taxpayers consistently have higher tax burdens than a married taxpayer with the same income (Alm et al., 2002; Gravelle and Gravelle, 2006; Kahng, 2009).[5] Additionally, because single individuals are less likely to own their home compared to married couples, tax breaks associated with homeownership will benefit White taxpayers more often than Black taxpayers (Mundra and Uwaifo Oyelere, 2019).

Second, married couples tend to have higher incomes than singles. This is partly due to the mechanics of two potential earners compared to one. Moreover, there is significant evidence that married men earn more than their single counterparts (Hill, 1979; Kenny, 1983; Nakosteen and Zimmer, 1987; Korenman and Neumark, 1991) although it is unclear how these effects differ by race or apply to women. Additionally, the number of marginal tax brackets has declined over the sample period from 16 to 7 meaning married couples were more likely to face higher marginal tax rates in 1980, but more likely to face similar rates as singles in 2022 despite having higher incomes. Much of this difference in Black and White marriage rates can be explained by higher rates of single mothers and single women without children across Black tax heads.

[4]The gender differentials in household structure across racial groups cannot be explained by the exclusion of non-earners. Appendix Figure C2 shows the share of tax heads by tax unit structure category and race inclusive of non-earners. Across both racial groups, the share of couples decreases and the shares of single men and women without children and single mothers increase. The large gender differentials in household structure across racial groups remain evident.

[5]Kahng (2009) does not estimate single's penalties directly but argues there are added social costs to the penalty in addition to the financial burden.

This leads into a third major reason: because a higher proportion of Black tax units are headed by single women with or without children than White tax units–40 percent compared to 22 percent–gender earnings penalties will fall more heavily on Black units. A rich literature documents income disparities by gender, and although the gender wage gap has declined substantially since the 1980s–as women's labor force participation and education attainment soared–more recent progress has been slow especially among top earners (Goldin, 2014; Blau and Kahn, 2017). Attempts to understand the remaining gender earnings gap often focus on the impacts of childbearing on women's labor market outcomes (Waldfogel, 1998; Bertrand et al., 2010; Goldin, 2014; Kleven et al., 2019; Cortés and Pan, 2023; Blundell et al., 2024), although little is known about how child penalties vary by race (Liu, 2021; Kleven, 2022).

For these reasons, single mothers and single women without children likely constitute a significant portion of Black-White disposable income inequality. Despite these facts, the contribution of single mothers and single women without children has not yet been quantified. I address this in the following section.

3 Decomposing Disposable Income Gaps

To attribute portions of the overall distribution of Black-White income gaps to single-mother- and single-childless-women- tax units, I use an extension of the Oaxaca-Blinder decomposition with RIF regressions, or RIF decomposition, developed by Firpo et al. (2009, 2018). The standard Oaxaca-Blinder method estimates mean differences in incomes by race, and then decomposes the difference in these estimates into explained (composition effect, as determined by racial differences in the model covariates) and unexplained (structure effect, as determined by the racial differences in the estimated coefficients on the covariates) components, where the unexplained differences are often interpreted as discrimination.[6] The explained component is then often further broken down

[6]Racial differences in model covariates refers to racial differences in tax unit structure (married couple, single man without children, single woman without children, single father, and single mother), education attainment, age, education-age interactions, part-time employment, metro status, and geographic region. The structure effect includes anything that cannot be explained by racial differences in model covariates such as racial discrimination, labor market

into portions attributed to groups of explanatory variables.[7]

RIF decompositions similarly divide group outcome differences into composition and structure effects but can be applied to distributional statistics other than the mean. This method replaces the dependent variable of a regression with the corresponding RIF for the distributional statistic of interest, in this case a quantile of log disposable income denoted by $q_\tau(F_Y^D)$ where q_τ is the τth quantile (e.g. 10th, 25, or 50th) and (F_Y^D) is the cumulative distribution of log income conditional on race, *D=r* with $r \in [0, 1]$. This allows the regression to capture the effect of covariates on that specific point in the distribution. Under the assumptions of conditional independence and overlapping support, the aggregate structure effect can be identified and interpreted as a treatment effect (Firpo et al., 2018; Rios Avila, 2019).[8]

Specifically, let log disposable income be written as

$$Y_{it}^D = X_{it}'\beta_t{}^D + \epsilon_{it}{}^D \tag{1}$$

where Y_{it}^D is log household income of individual *i* in 5-year period *t*; *D* indicates the racial group sample, White (*D=0*) or Black (*D=1*); X_{it} is a vector of explanatory variables including the tax unit structure indicators for single mothers, single women, single fathers, and single men (couples are excluded as the reference category), and other factors described below; and ε_{it}^D is an error term.

The first step is to estimate q_τ^1 - the τth quantile of the Black log income distribution and q_τ^0 - the τth quantile of the White log income distribution.[9] Equation (2) then defines the Black-White income gap at quantile q_τ as Black incomes at the τth quantile of the Black income distribution

segregation, and differential access to opportunities, etc.

[7] In general, the unexplained structure effect is not disaggregated into the contribution of each covariate as these estimates are sensitive to the choice of the base group (Jones, 1983; Oaxaca and Ransom, 1999; Gardeazabal and Ugidos, 2004).

[8] The conditional independence assumption requires the distribution of unobserved explanatory factors that determine income to be the same across race, conditional on the observed factors - i.e. there is no nonrandom selection on unobservables into Group 0 (White) or Group 1 (Black). The overlapping support assumption states that there is no value of *x* in *X* that is only observed among either White or Black individuals. See Appendix Table A1 for summary statistics by race.

[9] t subscripts are dropped in the remainder of the methods section for simplicity.

less White incomes at the τth quantile of the White income distribution

$$\Delta q_\tau = q_\tau^1 - q_\tau^0. \tag{2}$$

As in the standard Oaxaca-Blinder decomposition, it is necessary to create a counterfactual to separately identify the impact of differences in characteristics (composition effect) and differences in coefficients (structure effect) on the overall gap in q_τ. The counterfactual distribution defined in equation (3) represents predicted incomes using Black characteristics and White coefficients, reflecting Black incomes in the absence of discrimination:[10]

$$q_\tau^c = q_\tau(F_Y^c) = \overline{X}^{1'} \hat{\beta}_\tau^0, \tag{3}$$

where $\overline{X}^1$ is the sample mean characteristics of the Black sample and $\hat{\beta}_\tau^0$ are the estimated coefficients from the τth quantile of the White distribution.

Firpo et al. (2018) suggest using a semiparametric reweighting approximation (DiNardo et al., 1996; Barsky et al., 2002) to identify the counterfactual distribution based on observed data. This involves approximating the counterfactual distribution by multiplying the observed distribution of characteristics $dF_X^0(X)$ by a reweighting factor $\omega(X)$–the inverse conditional probability of someone with characteristics **X** being part of group 1 (Black), obtained from a probit or logit model–so that it resembles the group 1 distribution $dF_X^1(X)$. I estimate the reweighting factors using a logit model with the same set of covariates used in the log income equation (1).

[10]It is a well-known issue in Oaxaca-Blinder decompositions that estimates are sensitive to the choice of the base group. I use the White income structure here as the interpretation corresponds to an absence of racial discrimination rather than a reversal and White incomes tend to be more predictable than Black incomes (due to racial discrimination, labor market segregation, and differential access to opportunities). Estimates using the reverse counterfactual are presented in Appendix E and are similar in both level and trend for single women without children, single men without children, and single fathers. Reverse counterfactual estimates for single mothers are generally lower and declining over time.

The overall gap can now be disaggregated into two components:

$$\Delta q_\tau = \underbrace{\hat{q}_\tau^1 - \hat{q}_\tau^c}_{\Delta q_{\tau S}} + \underbrace{\hat{q}_\tau^c - \hat{q}_\tau^0}_{\Delta q_{\tau X}}, \tag{4}$$

where $\Delta q_{\tau S}$ represents the structure effect and $\Delta q_{\tau X}$ represents the composition effect.

In the second estimation step, the aggregate differences in coefficients and characteristics are further divided into individual covariate effects using RIF-regressions. First, RIFs are estimated for each observation according to the following equation:

$$\widehat{RIF(y_i; q_\tau^k)} = \widehat{q_\tau^k} + \frac{\tau - 1(y_i \leq \widehat{q_\tau^k})}{\widehat{f_Y^k}(\widehat{q_\tau^k})} \tag{5}$$

$\widehat{q_\tau^k}$ is the τth quantile of the log income distribution of sample *k* (Black, White, or counterfactual), estimated in the first step. $(y_i \leq \widehat{q_\tau^k})$ is an indicator function equal to 1 if the observation y_i is below $\widehat{q_\tau^k}$ and 0 otherwise, and $\widehat{f_Y^k}(\widehat{q_\tau^k})$ is the density of *Y* evaluated at $(\widehat{q_\tau^k})$. An intuitive interpretation of $\widehat{RIF(y_i; q_\tau^k)}$ is the influence of an observation y_i on the estimation of a specific unconditional quantile q_τ^k recentered around that quantile.

Next, linear RIF-regressions are estimated for each sample k where the usual dependent variable–Y_i^D in equation (1)–is replaced with the predicted value based on the corresponding RIF, $\widehat{RIF(y_i; q_\tau^k)}$:

$$E[RIF(y_i; q(F_Y^k))|X] = \overline{X}^{k'}\hat{\beta}^k \tag{6}$$

The final decomposition consists of four terms:

$$\Delta q_\tau = \underbrace{\overline{X}^{1'}(\hat{\beta}_\tau^1 - \hat{\beta}_\tau^c)}_{\Delta q_{\tau S}^p} + \underbrace{(\overline{X}^1 - \overline{X}^C)'\hat{\beta}_\tau^C}_{\Delta q_{\tau S}^e} + \underbrace{(\overline{X}^c - \overline{X}^0)'\hat{\beta}_\tau^0}_{\Delta q_{\tau X}^p} + \underbrace{\overline{X}^{c'}(\hat{\beta}_\tau^c - \hat{\beta}_\tau^0)}_{\Delta q_{\tau X}^e} \tag{7}$$

The first two terms, $\Delta q_{\tau S}^p + \Delta q_{\tau S}^e$, make up the aggregate structure effect and the last two terms, $\Delta q_{\tau X}^p + \Delta q_{\tau X}^e$, make up the aggregate composition effect. Within the aggregate structure effect, $\Delta q_{\tau S}^p$ is the pure income structure effect and $\Delta q_{\tau S}^e$ is the reweighting error used

to evaluate the quality of the reweighting strategy and is expected to go to 0 in large samples. A large and significant reweighting error implies that the counterfactual is not well identified, and the specification of the logit model used to estimate the reweighting factors may need to be modified. Within the aggregate composition effect, $\Delta q^p_{\tau X}$ is the pure composition effect and $\Delta q^e_{\tau X}$ is the specification error used to assess the importance of departures from linearity in the RIF approximation (Firpo et al., 2018; Rios Avila, 2019).

4 Results

I estimate the model and associated decomposition in equations (1) through (7) using a measure of disposable income defined as the sum of earnings; non-labor non-transfer income such as rent, interest, and dividend income; cash welfare transfers such as from AFDC and TANF; social insurance including unemployment, disability, workers compensation, and retirement/survivors benefits; and in-kind transfers such as Supplemental Nutrition Assistance Program (SNAP) minus payroll taxes such as Social Security and Medicare federal and state taxes including refundable EITC and CTC credits and stimulus payments made during the Covid-19 pandemic and inflation adjusted using the 2021 PCE.[11] Tax payments and credits for each tax unit are simulated using NBER's TAXSIM program.[12]

First, I decompose the Black-White income gap into portions attributed to tax unit structure–married couple with or without children (reference group), single man without children, single woman without children, single father, and single mother–, education attainment, age, education-age interactions, part-time employment, metro status, region, and year fixed effects.[13]

[11] There is strong evidence of underreporting of transfer payments in survey data and specifically in the ASEC. In Appendix E, I use imputed transfer recipients and benefit amounts for a subset of programs and years to re-estimate the impact of taxes and transfers on single mothers' and single-childless-women's shares of the Black-White income gap. Imputing transfers has no meaningful impact on racial gap shares.

[12] All married couples are assumed to be filling jointly. Although some married couples choose to file separately, they represent a small percentage of married couples, and this assumption is unlikely to meaningfully impact the results.

[13] Region refers to nine Census geographic divisions, and West-North Central is excluded as the reference category. Region is used to control for geographic variation instead of state fixed effects because some states are not racially diverse enough to be included in the model. Using state instead of region dummies does not meaningfully change the

For ease of presentation, I focus on the 10th, 25th, and 50th percentiles of the income distributions. After establishing the importance of single mothers and single women without children, I examine how this is impacted by the tax and transfer systems as well as inequality between Black and White single mothers and single women without children.

4.1 RIF Decomposition of Black-White income gaps

Figure 2 shows the log point difference between Black and White incomes and how much of that difference is explained by model covariates (left panels) and what percent of the total gap can be attributed to racial differences in tax unit structure (right panels) for the 10th, 25th, and 50th percentiles. At each percentile, single mothers and single women without children are important to understanding Black-White income inequality, and the share of the gap explained by single women without children has increased dramatically over time.

Beginning with the 10th percentile in Panel A, the overall Black-White income gap has declined since the 1980s from 0.53 to 0.28 log points, suggesting Black units gaining relative to White units at the 10th percentile. The portion of the gap explained by single mothers is higher than any other estimated tax unit classification and relatively consistent–fluctuating around 16 percent–until the mid 2000s when it begins to decline and is surpassed by single women without children. Single-women-without-children's share of the gap increases steadily throughout the period from 5 percent in 1980-84 to 18 percent in 2020-22. Single-childless-men's contribution to racial inequality declines from 10 percent in the 1990s to 2 percent in the 2010s before rebounding to 8 percent in 2020-22. Single fathers explain less than 1 percent of the gap.

Panel B shows the log point difference between Black and White incomes at the 25th percentile and the contributions of each tax unit structure. The gap at the 25th percentile is stable from 1980-84 to 1990-94 and then declines to 0.31 in 2020-22 as racial inequality lessens. The contributions of single women, single men, and single fathers exhibit similar patterns to those of the 10th percentile: single women's share increases from 7 to 20 percent, single men's share falls

estimates. See Appendix E.

from 10 percent in 1980-84 to 3 percent in 2010-14 then increases to 9 percent in 2020-22, and single fathers' share remains under 1 percent. Single mothers explain a larger portion of racial inequality at the 25th percentile than at the 10th, explaining nearly a quarter of the gap in 1980-84. Their share increases to 29 percent in 2000-04 and gradually declines to 20 percent in 2020-22 where it meets the increasing importance of single women without children.

Panel C shows the log point difference between Black and White incomes at the 50th percentile and the contributions of each tax unit structure. The gap at the 50th percentile is mostly stable throughout the four-decade period declining slightly from 0.47 to 0.41 log points, suggesting less of a racial narrowing of the gap. The contributions of single women, single men, and single fathers are again similar to those of the 10th and 25th percentiles: single women's share increases from 5 to 18 percent, single men's share falls from 8 percent in 1980-84 to 3 percent in 2010-14 and increases to 9 percent in 2020-22, and single fathers' share remains around 1 percent. The portion of the gap attributed to single mothers increases from 19 in 1980-84 to 30 percent in 2005-09, and falls to 26 percent in 2020-22. Single mothers explain more of the gap than any other estimated tax structure category in each 5-year period, and single women explain the second largest portion from 1995-99 onward.[14]

Because the importance of each covariate is presented as the log-point share of the total income gap, the contributions of the covariates can be impacted by changes in overall Black-White inequality. The log-point coefficient from the RIF decomposition represents a covariate's absolute importance and the covariate's share of the income gap is its relative importance. Thus, a factor's increasing relative importance could be the result of declining racial inequality rather than increasing absolute importance. This is a particular concern for factors at the 10th and 25th percentiles where declines in racial inequality are greatest. Log point estimates (i.e., absolute

[14]Figure 2 presents a tax-unit level analysis of Black-White income inequality and summarizes the contributions of different tax-unit structures. A household-level analysis would likely result in similar conclusions, but would capture different dynamics. Trends in overall Black-White income inequality are similar at the tax-unit and household level: racial income inequality is declining over time at the 10th and 25th percentiles but stagnant at the 50th percentile.See Hardy et al. (2025) for Black-White household income gaps using the same data and over a similar time period. The contributions of each structure category would likely differ between a tax unit analysis and a household analysis, but the overall trends are likely to be similar. See Appendix C3 for a more complete discussion.

importance) and confidence bands of each tax unit structure's contribution to the Black-White income gap at the 10th, 25th, and 50th percentiles are provided in Appendix B.

The log point estimates are similar in trend to each group's share of the total income gap and are precisely estimated which signals that changes in relative importance are not driven by changes in overall Black-White inequality. At the 10th percentile, the increase in single-childless-women's absolute importance is less pronounced than the increase in their relative importance. This suggests the dramatic rise in their relative importance (Figure 2 Panel A) is somewhat exaggerated by large declines in racial inequality, but their absolute importance is clearly increasing over time. At each percentile, single-childless-women's relative importance increases from 2015-2020 while their absolute importance is stagnant. Thus, the increase in single-childless-women's relative importance from 2015-19 to 2020-22 shown in Figure 2 can be attributed to declines in racial inequality. The reduction in overall Black-White inequality from 2015-19 to 2020-22 closely tracks large declines in the absolute importance of single mothers. One explanation for this is that expansions in the Child Tax Credit during the Covid-19 pandemic boosted incomes of single parents (the majority of which are single mothers) and reduced overall Black-White income inequality (Hardy and Hokayem, 2023). Which in turn, increased the relative importance of childless units.

Consistent across each percentile shown in Figure 2, the importance of single women without children is increasing over time while the importance of single men without children is declining until 2010. There are a few reasons for this. First, the importance of single men closely tracks that group's labor force non-participation. Appendix Figure C1 displays the share of tax units without labor market earnings by race and structure category. Panel B shows that labor force non-participation is consistently higher for Black single men without children compared to White single men without children. However, each group's non-participation has generally trended in the same direction over time, increasing from 1985-89 until 2010-2014 when it begins to decline. Differences in labor market non-participation between Black and White single men without children declined from 18 percentage points in 1980-84 to 13 percentage points in 1985-89.

The gap remained around 13 percentage points until 2010-14 when it rose to 16 percentage points and then fell to 14 percentage points in 2015-19 and 10 percentage points in 2020-22. Racial differences in single-childless-men's labor force participation likely explain some of the changes in single-childless-men's importance to Black-White income inequality. More importantly however, rates of both Black and White single male labor force non-participation match the inverse of single men's ability to explain Black-White income inequality. The decline in single-childless-men's importance can more so be explained by both Black and White men exiting the labor force (thus exiting the sample), rather than differential changes in single-childless-men's labor force participation by race.

Another reason for the divergence in single-childless-men's and -women's importance to racial income inequality is that the racial gap in the share of tax units that are single men without children is declining over time while the racial gap in the share of units that are single women without children is increasing over time. So, policy and economic conditions that impact single-childless-individuals will affect both single men and single women, but the impact on single women is what spills over into racial inequality. This is because there are much higher rates of single women among Black tax units compared to White tax units while the difference in the rates of single men across race are more muted.

Figure 3 shows what percent of the total gap can be attributed to the remaining model covariates for the 10th (Panel A), 25th (Panel B), and 50th (Panel C) percentiles.[15] The education term includes indicators for attending some college and having a college degree with having a high school degree or less used as the base group; age is a vector of five-year bins with a base group of ages 25 to 29; employment is an indicator for part-time work; metro is an indicator for residing in a metropolitan area; region refers to the nine Census Bureau region classification and uses West-North Central as the base group; year refers to year fixed effects. Racial differences in education and age are important to understanding Black-White disposable income inequality, especially at the bottom of the distribution. Differences in employment are important as well,

[15]Log point estimates and confidence bands are provided in Appendix B.

particularly before 2000-04 when labor market non-participation was much higher among Black single mothers compared to White single mothers. [16] The declining importance of employment over the 1990s coincides with expansions in the Earned income Tax Credit (EITC) which Hardy et al. (2022) show had stronger employment effects on low-income Black workers compared to low-income White workers.

These results highlight that single mothers and single women without children are important not only compared to other tax unit structures, but also relative to other covariates that are more common to economic literature. Single mothers explain an average of 15 percent at the 10th percentile and 24-26 percent at the 25th and 50th percentiles. Single women without children explain an average of 11-12 percent of the gap at each percentile. The next section investigates how the portions of racial inequality explained by single mothers and single women without children are influenced by the tax and transfer systems.

4.2 Differential redistribution of the tax and transfer systems

Because single mothers and single women without children are more prevalent among Black taxpayers than White taxpayers and tax credits and government transfers are often tied to marriage and childbearing, the tax and transfer systems may strongly influence each group's contribution to Black-White income inequality. Furthermore, several studies identify racial disparities in the delivery of social services through disproportionately harsh sanctions among Black families on welfare (Kalil et al., 2002; Bonds, 2006; Fording et al., 2007) and lower provisions of cash benefits in states with a higher proportion of Black families in the state or on the welfare caseload (Hardy et al., 2019; Parolin, 2021). An extensive literature documents the impacts of tax and welfare reforms on the labor supply and well-being of single parents, with much of the research centering on single mothers (Meyer and Sullivan, 2003; Eissa and Hoynes, 2006; Eissa et al., 2008; Ziliak, 2009; Brehm and Malkova, 2023).

Another channel through which the tax system can impact the contribution's of single

[16] Labor market non-participation rates across race and tax unit category are discussed in detail in Appendix C.

mothers and single women without children is homeownership. Being single, being Black, and being a woman all reduce one's likelihood of owning a home (Mundra and Uwaifo Oyelere, 2019). This makes Black single women less likely to qualify for the home mortgage interest deduction–a deduction of interest payments on home mortgages from adjusted gross income. The home mortgage interest deduction has been cited by (Brown, 2022; Holtzblatt et al., 2024) as a way the tax code can increase racial inequality through racial difference in homeownership rates, but they do not discuss gender differences in homeownership as an additional channel.

To isolate the impact of taxes and transfers on single mothers' and single-childless-women's shares of the gap, I follow Hardy et al. (2025) and compare each group's labor market earnings gap share to their gross cash income gap share and disposable income gap share. Gross cash income includes earnings and income from private sources such as rent, interest, and dividend income as well as cash transfers from social insurance and mean-tested transfers (but not in-kind transfers like SNAP).[17] Placing earnings, gross cash income, and income alongside one another illustrates how government transfers and taxes may impact the portions of racial inequality explained by single mothers and single women without children. If a group's share of the earnings gap is larger (smaller) than their share of the gross cash income gap, this implies that cash transfers, social insurances, and private incomes reduce (exacerbate) that group's contribution to racial inequality at a given percentile. If a group's share of the gross cash income gap is larger (smaller) than their share of the disposable income gap, this implies that the tax system reduces (exacerbates) that group's contribution to racial inequality at a given percentile.

Figure 4 shows the portions of the Black-White earnings (green line), gross cash income (yellow line), and disposable income (purple line) gaps attributed to single mothers at the 10th (Panel A), 25th (Panel B), and 50th (Panel C) percentiles and over time. The disposable income

[17]See Hardy et al. (2024) for benefits as a proportion of gross income by quartile of the disposable income distribution. The portion of gross cash income made up of safety net benefits is highest for the lowest quartile of the distribution, roughly 20-30%. Most of the benefits received by the second and third quartiles come from social benefits such as Unemployment Insurance. The portion of gross cash income made up of safety net benefits at the top quartile is around 2-5%. In the top quartile of the distribution, nonlabor income is more likely sourced from private sources such as rent, interest, and dividend income. However, the dominate source of gross cash income in the top of the distribution is labor market earnings (Raffalovich et al., 2009).

gap shares are the same as in Figure 2. While the estimates presented here are not causal, they still provide useful insights into how the tax and transfer systems might affect the portions of Black-White income inequality attributed to single women with and without children and motivate the need for future causal research. Cash transfers, social insurances, and private incomes reduce single mothers' contribution to Black-White income inequality at each percentile. The tax system reduces single mothers' contribution at the 10th percentile, has little impact at the 25th percentile, and increases their contribution at the 50th percentile.

Starting with the 10th percentile in Panel A, both the tax and transfer systems reduce the share of the gap attributable to single mothers. Adding cash nonlabor income (cash transfers, social insurances, and private incomes) to earnings reduces single mothers' share of the gap by roughly 5 percentage points in each five-year period from 1980-84 to 1995-99, 15 percentage points in 2005-09, and 5 percentage points in 2015-22. Comparing gross cash income to disposable income–which isolates the impact of the tax system, plus near-cash food assistance–greatly reduces single mothers' share throughout the period. Moreover, the magnitude of this decease has grown over time from 2 percentage points in 1980-84 to 14 percentage points in 2020-22. This corresponds to the reduction in importance of single mothers at the 10th percentile shown in Figure 2.[18]

At the 25th percentile in Panel B, adding gross cash income reduces the portion of the gap explained by single mothers by roughly 5 percentage points in each five-year period, while the tax code has little to no impact impact until 2010-14. From 2010-14 to 2020-22, the tax code reduces their share by 2-3 percentage points. Panel C shows that at the 50th percentile, adding cash nonlabor income reduces single mothers' share of the gap by roughly 5 percentage points in each five-year period. However, the tax code increases their share by 1-4 percentage points, which may explain some of the increasing importance of single mothers to Black-White disposable income inequality at the 50th percentile shown in Figure 2.

[18]Percentage point changes between the earnings and gross cash income gap shares – each group's share of the gross cash income gap less their share of the earnings gap – and between the gross cash income and income gap shares – each group's share of the income gap less their share of the gross cash income gap – attributed to single mothers by percentile and over time are provided in Appendix D.

Figure 5 shows the portions of the Black-White earnings (green line), gross cash income (yellow line), and disposable income (purple line) gaps attributed to single women without children at the 10th (Panel A), 25th (Panel B), and 50th (Panel C) percentiles and over time. At each percentile, adding nonlabor income has little to no impact on single-childless-women's shares of the overall Black-White income gap while the tax system increases their share throughout the period and the magnitude of this increase is growing over time. In 1980-84, the tax system increased single-childless-women's share of the gap by 1.40 percentage points at the 10th percentile, 1.31 percentage points at the 25th percentile, and 0.60 percentage points at the 50th percentile. In 2020-22, this increase was 5.64 percentage points at the 10th percentile, 5.78 percentage points at the 25th percentile, and 4.31 percentage points at the 50th percentile. Figure 5 suggests that the tax system can explain much of the increasing importance of single women without children at each percentile seen in Figure 2.

4.3 Inequality between Black and White single women with and without children

Taxes and transfers may impact single mothers' and single-childless-women's shares of the Black-White income gap in two potential ways. First, by differentially benefiting or harming tax units headed by single mothers and single women without children relative to the reference group (i.e. married couples) regardless of race. Given the higher rates of single mothers and single women without children across Black tax heads shown in Figure 1, if tax policy makes all single mothers or single women without children better off relative to couples, this will have a greater impact on Black units than White units and contribute to a reduction in the overall Black-White income gap and the share attributed to single mothers or single women without children. The second way is by differentially benefiting or harming Black single women compared to White single women thus closing or widening the gap between the two.

To understand how taxes and transfers impact single mothers' and single-childless-women's shares of the income gap, I estimate earnings, gross cash income,

and disposable income gaps between Black and White single mothers and single women without children at the 10th, 25th, and 50th percentiles. The income gap is defined as in equation (2) but the sample is restricted to Black and White single mothers or single women without children. Income is estimated as in equation (1), but the tax unit structure indicators are omitted and an indicator for if an individual is Black is added. The coefficient on the Black indicator represents the log point difference in Black and White incomes at quantile τ in five-year period t converted to a percent gap.[19]

Figure 6 presents earnings, gross cash income, and disposable income gaps between Black and White single mothers at the 10th (Panel A), 25th (Panel B), and 50th (Panel C) percentiles. Inequality between Black and White single mothers has declined since 1980. In general, Black-White single mother inequality is reduced by the tax code but exacerbated by the transfer system. The only exception to this is at the 10th percentile before 2005-09 where both taxes and transfers reduce inequality between Black and White single mothers. However, the transfer system only has a meaningful impact on Black-White single mother inequality at the 10th percentile in 1990-94 and 1995-99. Tax and transfer policies that impact racial inequality between single mothers do not differentiate by race, but are built on criteria that are correlated with race such as earnings and number of dependent children. Figure 6 shows at each percentile, Black single mothers earn less than White single mothers. This earnings gap makes Black mothers more likely to qualify for means-tested transfers and tax credits compared to White mothers. Additionally, Black households at the 10th, 25th, and 50th percentiles tended to have a higher number of EITC qualifying dependents compared to White households at the same percentile, particularly before 2010 (Hardy et al., 2022). These differences in family size make Black units with children more likely to receive greater child-related benefits and be subject to lower income tax rates (Cronin et al., 2012).

I begin with the 10th percentile in Panel A. In 1980-84, Black single mothers earn 15

[19]The quantiles are recalculated based on the sample of single mothers and single women without children. The 10th, 25th, and 50th percentiles in Figures 6 and 7 are not comparable to those in the previous Figures. They are specific to single mothers and single women without children, respectfully.

percent less than their White counterparts, and while the transfer system has no meaningful effect on this gap, the tax code reduces income inequality between Black and White single mothers by 10 percentage points. From 1985-89 to 2000-04, both the tax and transfer systems reduce the Black-White single mother gap suggesting these systems differentially benefit Black single mothers compared to White single mothers. Although the tax code continues to reduce income inequality between Black and White single mothers for the rest of the period, the transfer system begins to increase the gap in 2005-09. This suggests that the reduction in single mothers' share of overall Black-White income inequality due to adding cash nonlabor income (Figure 4) can be explained by transfers that benefit single mothers relative to couples regardless of race after 2005. Over time, the earnings, gross cash income, and disposable income gaps between Black and White single mothers at the 10th percentile have declined. This signals a reduction in racial inequality between low-income single mothers and can help explain this group's declining importance to the overall Black-White income gap at the 10th percentile in Figure 2 Panel A.

At the 25th percentile (Panel B), in 1980-84 Black single mothers earn 11 percent less than White single mothers. Adding cash nonlabor income increases the Black-White single mother gap by 10 percentage points and the tax code reduces the gap by 8 percentage points, nearly counteracting the impact of the transfer system entirely. Black-White single mother gross income gaps continue to be larger than earnings gaps throughout the period. This suggests that the reduction in single mothers' share of overall Black-White income inequality due to adding cash nonlabor income (Figure 4) is explained by transfers that benefit single mothers relative to couples regardless of race. While the tax code consistently reduces the gap between Black and White single mothers, taxes only begin to impact single mothers' overall contribution to racial inequality in 2010-14 (Figure 4).

Panel C shows that adding nonlabor income increases the income gap between Black and White single mothers at the 50th percentile despite consistently reducing that group's share of overall Black-White income inequality–the same phenomenon seen at the 25th percentile. This can be explained by transfers that differentially benefit White single mothers compared to Black

single mothers while at the same time benefit single mothers regardless of race relative to married couples. The tax code reduces the Black-White single mother income gap at the 50th percentile throughout the period while increasing single mothers' share of overall racial inequality (Figure 4) from 1995-09 onward. This suggests that taxes may benefit Black single mothers compared to their White counterparts but make single mothers worse off relative to couples regardless of race starting in 1995-09.

Figure 7 presents earnings, gross cash income, and disposable income gaps between Black and White single women without children at the 10th (Panel A), 25th (Panel B), and 50th (Panel C) percentiles. Beginning with the 10th percentile in Panel A, in 1980-84 Black single women without children earn 19 percent less than White single women without children. Adding cash nonlabor income to earnings increases the gap between Black and White single-childless-women by 4 percentage points and the tax code reduces the gap by 5 percentage points. The tax and transfer systems continue to work in opposing directions throughout the period, with transfers widening the gap and taxes closing the gap. The same is true at the 25th percentile. At the 50th percentile, although cash nonlabor income increases inequality between Black and White single women without children, taxes have little to no impact

Over time, the earnings, gross cash income, and disposable income gaps between Black and White single women without children have declined at each percentile signaling a reduction in racial inequality between single women without children in the lower half of the distribution. Despite this, their contribution to overall racial inequality has grown. How can we reconcile these two findings? Consider a policy aimed at reducing the tax penalty faced by many married couples such as the Economic Growth and Tax Relief Reconciliation Act (EGTRRA) of 2001. Because this policy specifically benefited couples, single adults were made relatively worse off. Since the share of tax units headed by single women without children is greater in level and growing faster among Black units than White units (Figure 1), the resulting singles penalty will fall harder on the Black population than the White population and increase single-childless-women's share of the racial income gap. This can help explain how the tax system can increases single-childless-women's

share of overall Black-White income inequality while reducing the income gap between Black and White single women without children.

4.4 Summary of Results

I provide a summary of my results in Table 1. Panel A displays the contributions of single mothers and single women without children to Black-White income inequality at each percentile and averaged over time.[20] Both single mothers and single women without children are important to understanding Black-White income gaps. Single mothers increase in importance as we move up the income distribution and the importance of single women without children is consistent over percentile.

The impact of transfers and taxes on each group's share of Black-White income inequality averaged over time is shown in Panel B. The transfer estimates represent the share of the Black-White gross cash income gap less the share of the Black-White earnings gap attributed to each respective category. The tax estimates represent the share of the Black-White income gap less the share of the Black-White gross cash income gap attributed to each respective category.[21] Single mother's contribution to Black-White income inequality is reduced by the transfer system. However, the tax system reduces their share at the 10th percentile, has a small effect at the 25th percentile, and increases their share at the median. For single women without children, transfers have little to no impact on their share of racial inequality while the tax system increases their contribution.

The impact of transfers and taxes on within-group racial inequality averaged over time is shown in Panel C. The transfer estimates represent the share of the Black-White gross cash income gap less the share of the Black-White earnings gap for single mothers and single women without children, respectively. The tax estimates represent the share of the Black-White income gap less the share of the Black-White gross cash income gap for single mothers and single women without

[20] Gap shares used to calculate estimates in Panel A come from Figure 2.

[21] Gap shares used to calculate estimates in Panel B come from Figures 4 and 5.

children, respectively.[22] Income inequality between Black and White single mothers is reduced by the tax code but exacerbated by transfers at the 25th and 50th percentiles. Income inequality between Black and White single women without children is increased by transfers but reduced by taxes. I discuss these results in the following section.

5 Conclusion

Differences in tax unit structure across race allow for policies that impact the tax liabilities and transfer receipt of certain family structures compared to others to have spillover effects into Black-White income inequality. The high prevalence of single mothers and single women without children among Black tax heads relative to White tax heads act as a channel for tax and transfer policies based on earnings marriage, and childbearing to fall more heavily on the Black population.

While single mothers have long been discussed within the context of U.S. poverty and inequality, single women without children were previously excluded from conversations of racial income inequality. I quantify the importance of single mothers and single women without children to the Black-White income gap by using RIF decomposition to assign portions of the gap to detailed tax unit structures. I assess the impact of taxes and transfers on single mothers' and single-childless-women's contributions to Black-White income inequality by comparing earnings, gross cash income, and disposable income gap shares.

Single mothers and single women without children are important to understanding Black-White income gaps relative to other tax unit structures and more classic economic factors. The portion of racial inequality explained by single women without children has grown consistently since the 1980s at each percentile and is made larger by the tax system despite declining inequality between Black and White single-childless-women. At the 10th percentile, the contribution of single mothers has declined in recent years, in large part due to redistribution of the tax system and declining inequality between Black and White single mothers. At the 25th percentile, the

[22] Gaps used to calculate estimates in Panel C come from Figures 6 and 7.

importance of single mothers is more consistent and is reduced by cash transfers, social insurances, and personal incomes that differentially benefit single mothers compared to married couples regardless of race. The portion of the Black-White income gap explained by higher rates of single mothers across Black tax heads at the median has increased over time and is reduced by the transfer system but exacerbated by the tax code. Future research will evaluate the specific subcomponents of tax policy that lead to racial disparities in income and the rising importance of single women without children to explaining this inequality.

Recent studies document how a race-blind tax code can perpetuate and grow Black-White income inequality through marriage penalties, but none evaluate single tax units as a potential channel. Singles, particularly single women without children, represent an under-investigated group in research on tax policy and racial inequality. This paper provides evidence that women without children are important to understanding Black-White income inequality and their ability to explain racial inequality is increasing over time. Single mothers continue to explain large portions of racial income inequality, although their importance has declined in recent years, particularly at the 10th percentile.

A race-correlated tax code is not unique to the U.S., and this paper motivates the need for more international research on tax policy and racial inequality. A study of racial-ethnic inequality in the United Kingdom (UK) found that incomes of Bangladeshis, Pakistanis, and Black Caribbeans living in the UK were increased by taxes and government benefits relative to the White British median income (Mirza and Warwick, 2022). However, cuts to benefits, tax credits, and universal credit disproportionately affect these groups as well. Countries with high levels of racial-ethnic inequality, as well as countries with high levels of redistribution based on earnings, have the potential to significantly impact racial income inequality through their tax and transfer systems. Global migration has increased over recent years making countries more racially and ethnically diverse (McAuliffe and Oucho, 2024). These demographic trends boost the ability of tax-and-transfer systems built on race-correlated factors (marriage, childbearing, distribution of earnings across married couples, earnings level, income source, etc.) to impact overall income

inequality as well as racial-ethnic divides.

Conflict of Interest Disclosure

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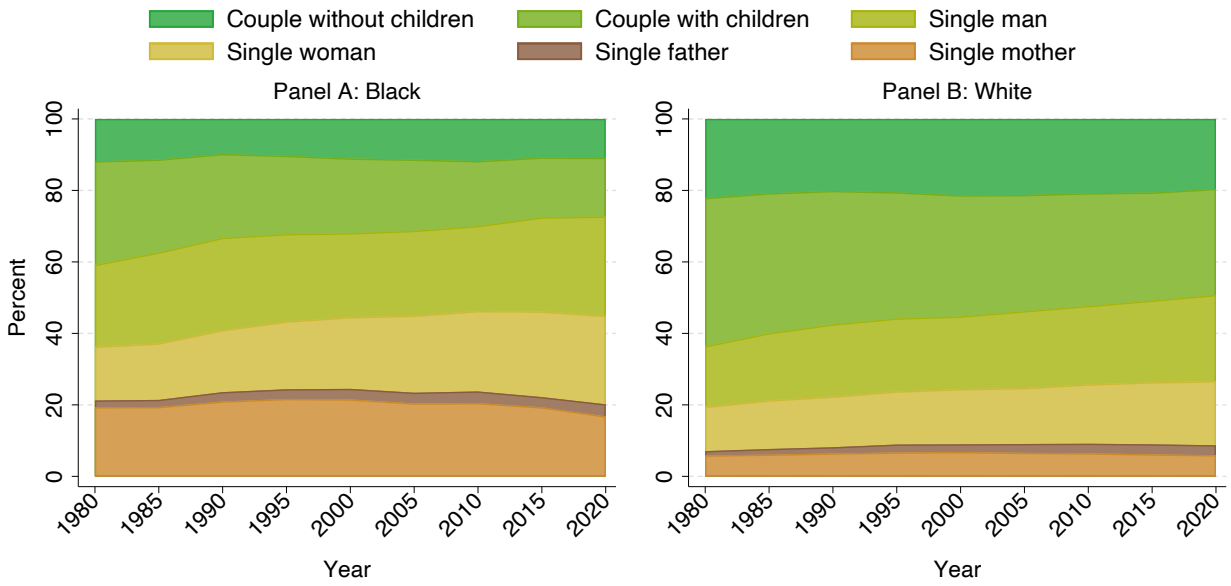
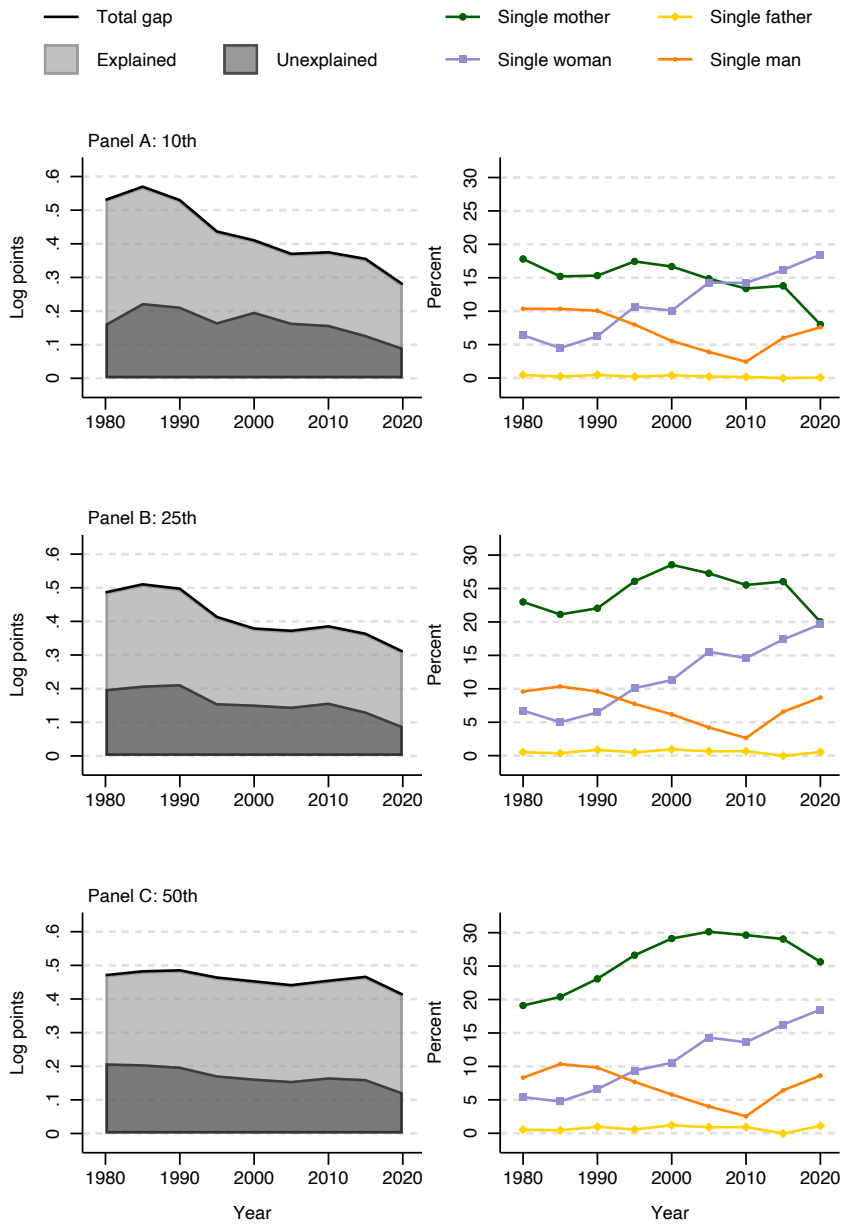
Figures

Figure 1: Share of tax heads by tax unit structure category and race



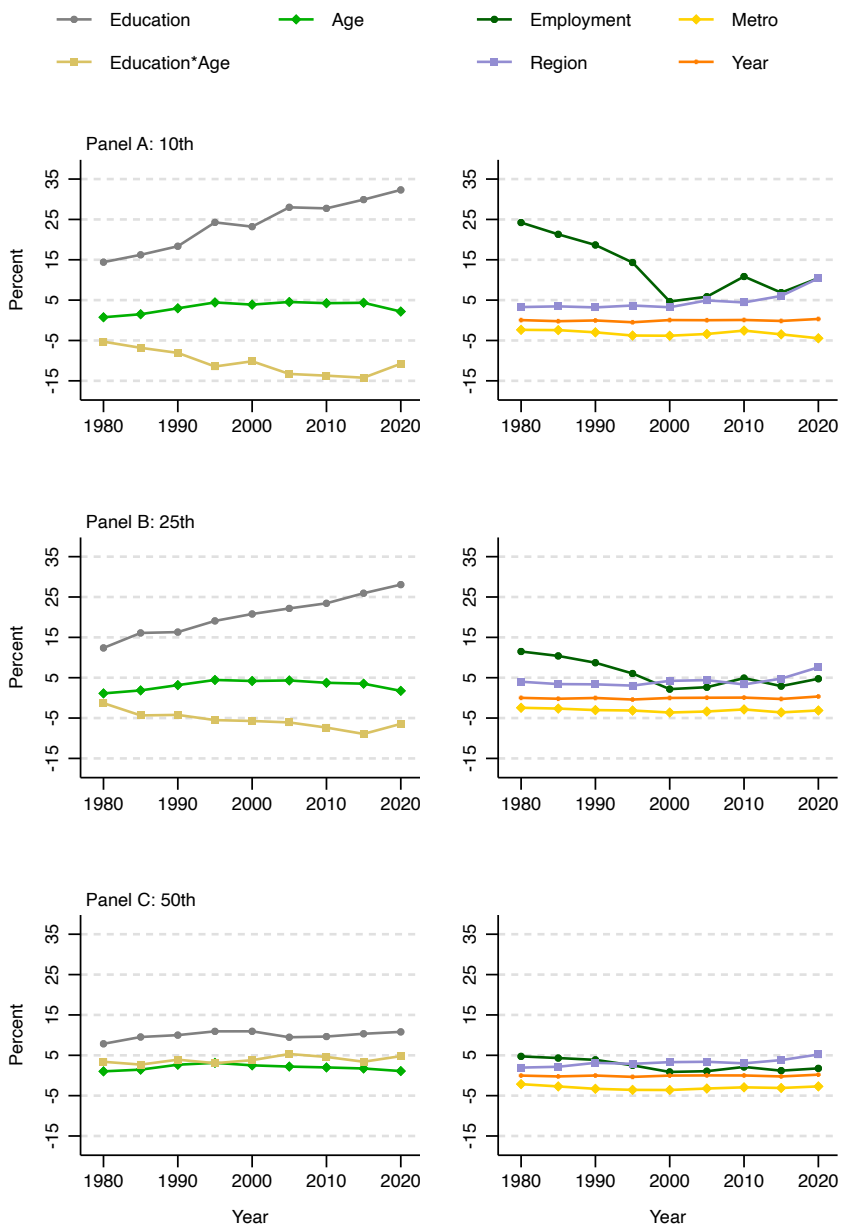
Note: This figure shows the share of Black and White tax heads who fall into one of six mutually exclusive tax unit structure categories. Single women refers to single women without children and single men refers to single men without children. Data are pooled into 9 approximately 5-year bins. Sample is restricted to tax heads reporting positive earnings, gross cash incomes, and disposable incomes.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure 2: Black-White disposable income gap and contributions, over time, select percentiles



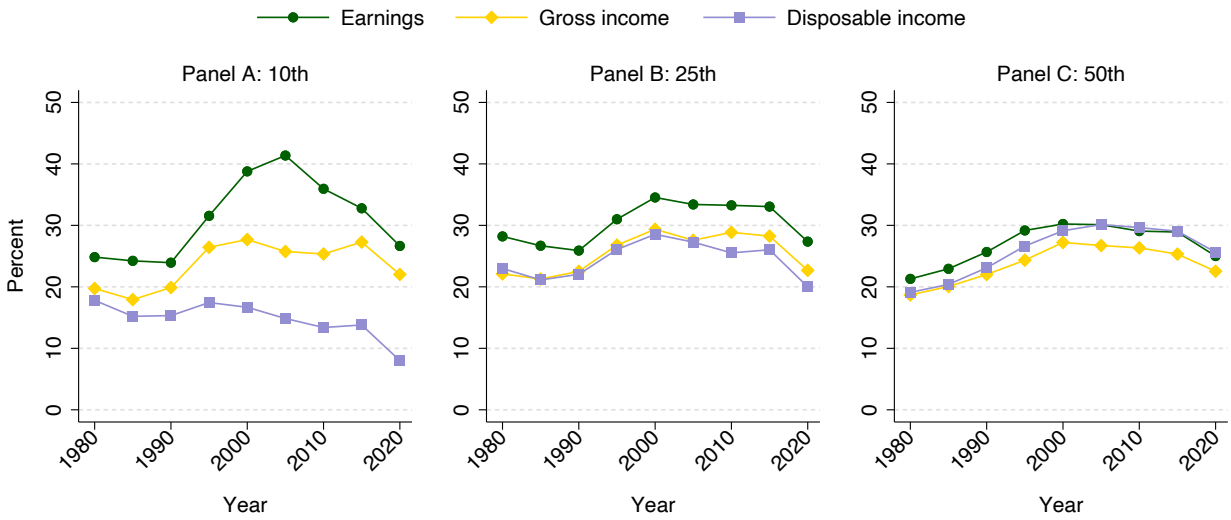
Note: This figure plots the log-point Black-White disposable income gap and the shares of the gap attributed to each tax unit structure category obtained using RIF decomposition. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details. Single women refer to single women without children and single men refer to single men without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure 3: Black-White disposable income gap and contributions, over time, select percentiles



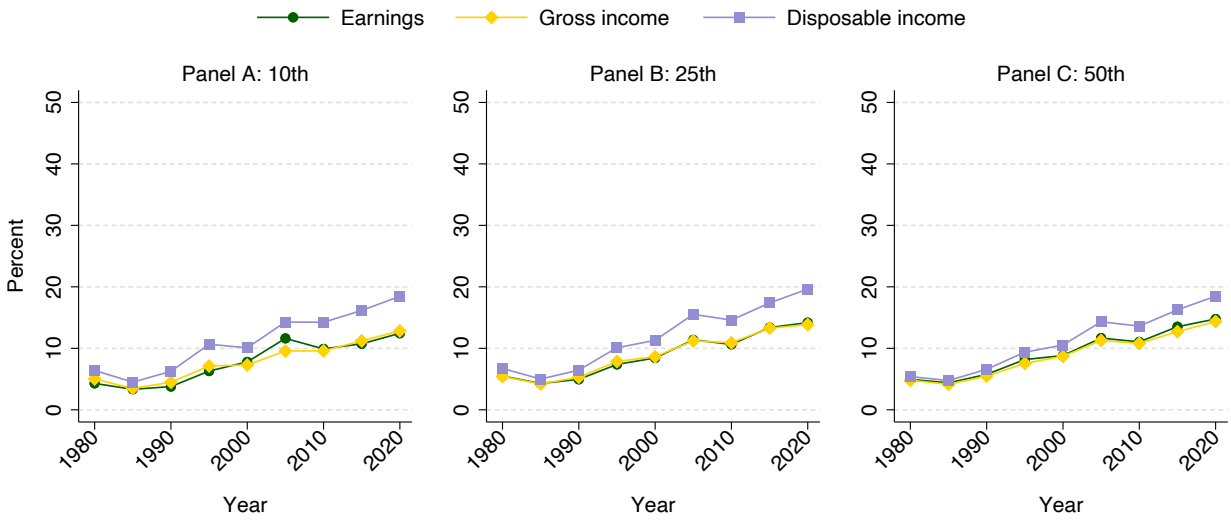
Note: This figure plots the log-point Black-White disposable income gap and the shares of the gap attributed to model covariates obtained using RIF decomposition. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure 4: Portion of Black-White earnings, gross cash income, and income gaps explained by single mothers



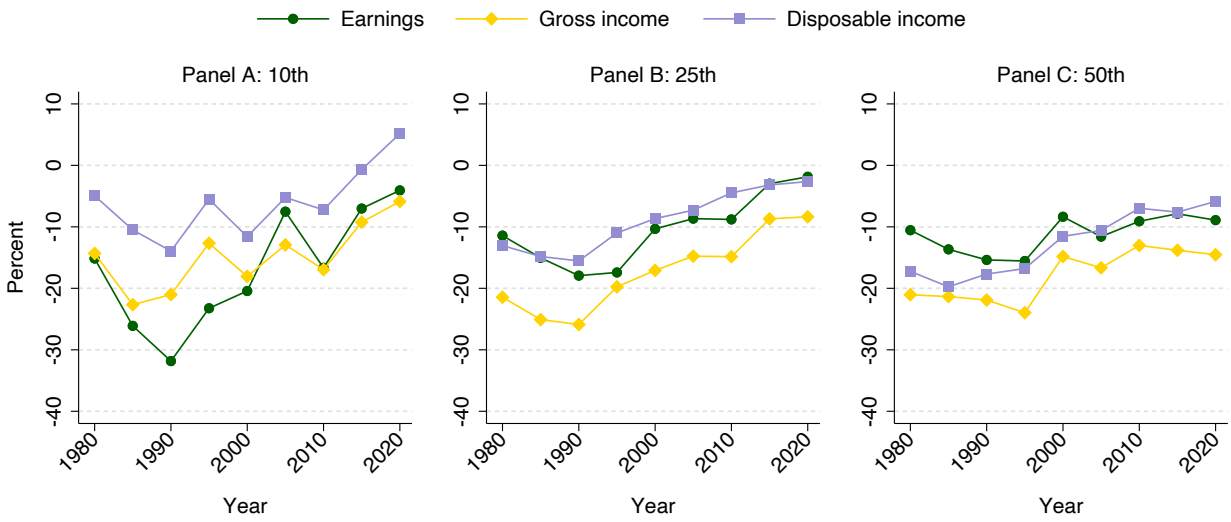
Note: This figure plots the shares of the Black-White earnings, gross cash income, and income gap attributed to single mothers obtained using RIF decomposition. Earnings refers to labor market earnings only. Gross cash income is earnings plus rent, interest, and dividend income and cash transfers. Disposable income is gross cash income plus SNAP benefits less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure 5: Portion of Black-White earnings, gross cash income, and income gaps explained by single women without children



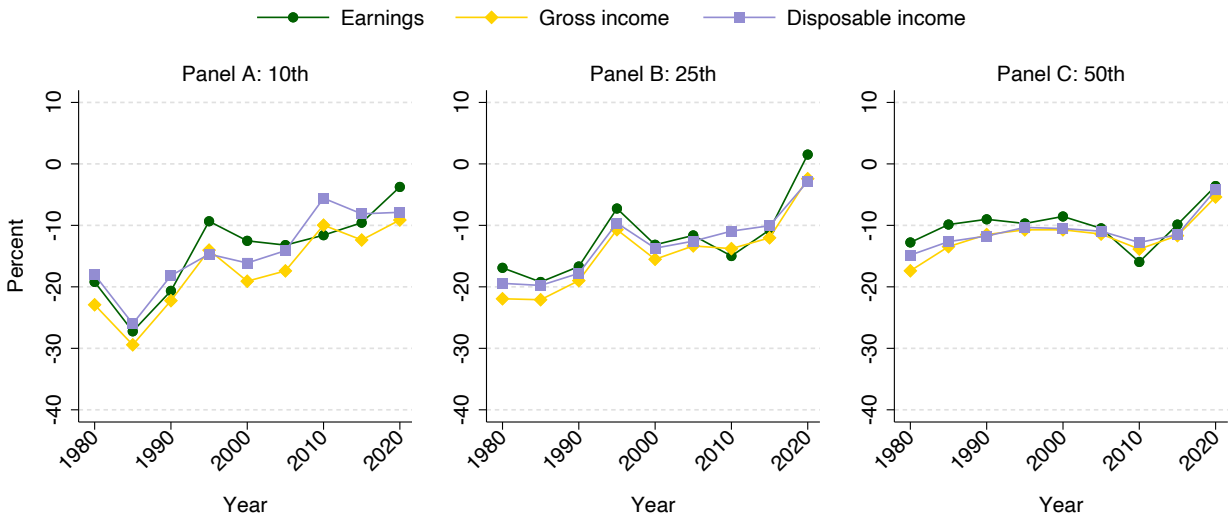
Note: This figure plots the shares of the Black-White earnings, gross cash income, and income gap attributed to single women without children obtained using RIF decomposition. Earnings refers to labor market earnings only. Gross cash income is earnings plus rent, interest, and dividend income and cash transfers. Disposable income is gross cash income plus SNAP benefits less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023

Figure 6: Black-White single mother earnings, gross cash income, and income gaps



Note: This figure plots the Black-White single mother earnings, gross cash income, and income percent gaps obtained using unconditional quantile regression. Earnings refers to labor market earnings only. Gross cash income is earnings plus rent, interest, and dividend income plush cash transfers. Disposable income is gross cash income plus SNAP benefits less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to single mother tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure 7: Black-White single women without children earnings, gross cash income, and income gaps



Note: This figure plots the Black-White single women without children earnings, gross cash income, and income percent gaps obtained using unconditional quantile regression. Earnings refers to labor market earnings only. Gross cash income is earnings plus rent, interest, and dividend income plush cash transfers. Disposable income is gross cash income plus SNAP benefits less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to single-childless-women tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Tables

Table 1. Summary of Results

	Single Mothers		Single Women without Children	
	Percent			
Panel A: Contribution to explaining racial inequality				
10th	15		11	
25th	24		12	
50th	26		11	
	Percentage point change			
	Transfers	Taxes	Transfers	Taxes
Panel B: Impact on contribution to total racial inequality				
10th	-7.6	-8.8	0.0	3.4
25th	-4.9	-1.1	0.1	2.9
50th	-3.2	2.2	-0.4	2.2
Panel C: Impact on within group racial inequality				
10th	-2.0	-8.8	3.3	-3.1
25th	6.8	-8.4	2.4	-1.6
50th	6.7	-5.2	1.8	-0.7

Note: This table summarizes the findings of the paper. Panel A displays the shares of the Black-White disposable income gap attributed to single mothers and single women without children obtained using RIF decomposition, averaged over time. Panel B shows the percentage point change in the portion of Black-White income gap explained by single mothers and single women without children due to cash nonlabor income and the tax code, averaged over time. Panel C shows the percentage point change in the Black-White single mother and single-childless-women gaps due to cash nonlabor income and the tax code, averaged over time.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Online Appendices

A Appendix: Data

The data come from the Current Population Survey Annual Social and Economic Supplement (CPS ASEC). The CPS is a monthly interview survey of around 60,000 households conducted by the US Census Bureau to collect information on the employment situation and demographic status of the population. The random sample covers the civilian noninstitutionalized population in every state and the District of Columbia. The ASEC is a supplement to the basic monthly CPS collected in March of every year and contains additional data on work experience, income, noncash benefits, and family structure. The data is collected at the person, family, and household level and includes weights to make the sample nationally representative.

I use survey years 1981-2023 (calendar years 1980-2022) to construct a sample of working-age adults (ages 25 to 60) with positive labor market earnings, gross cash incomes, and disposable incomes. I use household relationship codes in the CPS to identify tax filing units in a household following programs provided by Jim Ziliak.[23] Most households consist of a single tax unit, but some contain multiple filers. Because tax burdens are assigned to tax units and not to households, I treat each tax unit as its own entity rather than aggregating up to the household level. I then restrict my sample to only the tax unit head. Following Census definitions of race and ethnicity, I classify individuals into three mutually exclusive racial-ethnic groups non-Hispanic white, non-Hispanic Black, or other. I assign tax heads to one of six mutually exclusive tax structure groups based on marriage status, the presence of dependents under the age of 18, and gender: couples with or without children (reference group), single man without children, single woman without children, single father, and single mother. To alleviate sample size concerns at the extremes of the distribution, I pull the data into nine approximately five-year bins: 1980-84, 1985-89, 1990-94, 1995-99, 2000-04, 2005-09, 2010-2014, 2015-2019, and 2020-22.

I define disposable income as the sum of earnings; non-labor non-transfer income such as

[23] Sample programs are available on how to prepare ASEC data for TAXSIM at https://taxsim.nber.org/to-taxsim/cps/.

rent, interest, and dividend income; cash welfare transfers such as from AFDC and TANF; social insurance including unemployment, disability, workers compensation, and retirement/survivors benefits; and in-kind transfers such as Supplemental Nutrition Assistance Program (SNAP) minus payroll taxes such as Social Security and Medicare federal and state taxes including refundable EITC and CTC credits and stimulus payments made during the Covid-19 pandemic. Tax payments and credits for each tax unit are simulated using NBER's TAXSIM program.

One potential issue with using the CPS to estimate income differences is the prevalence of earnings nonresponse which has grown substantially over time from around 15-20 percent in the late 1980s to 43 percent in 2015 (Bollinger et al., 2019). There are two types of nonresponse in the CPS ASEC that may impact my earnings estimates – item nonresponse or refusing to answer the earnings question and supplement nonresponse or the refusal of a CPS monthly household to respond to any part of the ASEC supplement. The Census Bureau handles nonresponse by imputing item answers and whole supplement surveys using a "hot-deck" procedure. Hot-deck imputation matches an item or survey nonrespondent to an item or survey respondent with similar characteristics determined by a set of demographic characteristics. Once matched, the nonrespondent is assigned the earnings value of the respondent.

Bollinger et al. (2019) show that this imputation procedure imparts bias into inequality estimates. To combat this, I drop tax heads with imputed earnings or whole supplement nonresponse and then reweight the sample to be nationally representative using an inverse probability weight. I construct my inverse probability weight separately by gender and by year by estimating a probit model of the probability of not being imputed as a flexible function of age, education attainment, race, ethnicity, marital status, metro status, interactions of many of these variables, along with state fixed effects conditional on a respondent's gender and the survey year. The ASEC person weight is then divided by the fitted probability of nonimputation from the probit model. Having different probability weights for each year and sex allows me to maintain a nationally representative sample in the face of changing nonresponse over time. This minimizes measurement error due to nonresponse from confounding my estimates of earnings and income

inequality over time.

Appendix Table A1. Provides weighted summary statistics of demographics, earnings, gross cash incomes, and disposable incomes for the pooled sample as well as by race. The Black sample is slightly younger, has lower educational attainment, is more likely to be employed part time, and more likely to live in a metro area than the White sample. Additionally, Black tax heads are evenly split across gender, while White tax heads are more likely to be male. The estimates include married couples, for whom the gender is that of the survey reference person.

Table A1. Summary Statistics

	Pooled		Black		White	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
White	0.86	0.35	0.00	0.00	1.00	0.00
Black	0.14	0.35	1.00	0.00	0.00	0.00
Female	0.38	0.49	0.51	0.50	0.36	0.48
Age	40.92	10.13	39.89	9.86	41.09	10.16
High school or less	0.37	0.48	0.45	0.50	0.36	0.48
Some college	0.28	0.45	0.31	0.46	0.28	0.45
College or more	0.35	0.48	0.24	0.42	0.36	0.48
Part time	0.09	0.29	0.13	0.33	0.09	0.29
Metro	0.82	0.39	0.88	0.32	0.81	0.40
Couple with children	0.33	0.47	0.21	0.41	0.35	0.48
Childless couple	0.19	0.40	0.11	0.31	0.21	0.41
Single mother	0.08	0.28	0.20	0.40	0.06	0.24
Single father	0.02	0.15	0.03	0.16	0.02	0.15
Single woman	0.16	0.37	0.20	0.40	0.15	0.36
Single man	0.21	0.41	0.25	0.43	0.21	0.40
Earnings	65.42	59.64	45.34	41.27	68.79	61.56
Gross cash income	85.60	92.69	55.78	62.46	90.60	95.93
Disposable income	79.01	87.48	52.00	60.28	83.54	90.47
N observations	1,065,490		130,753		934,737	

Note: Earnings refers to labor market earnings only. Gross cash income is earnings plus rent, interest, and dividend income plush cash transfers. Disposable income is gross cash income plus SNAP benefits less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash income, and disposable income. Incomes are in real 000's using the 2021 PCE.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023

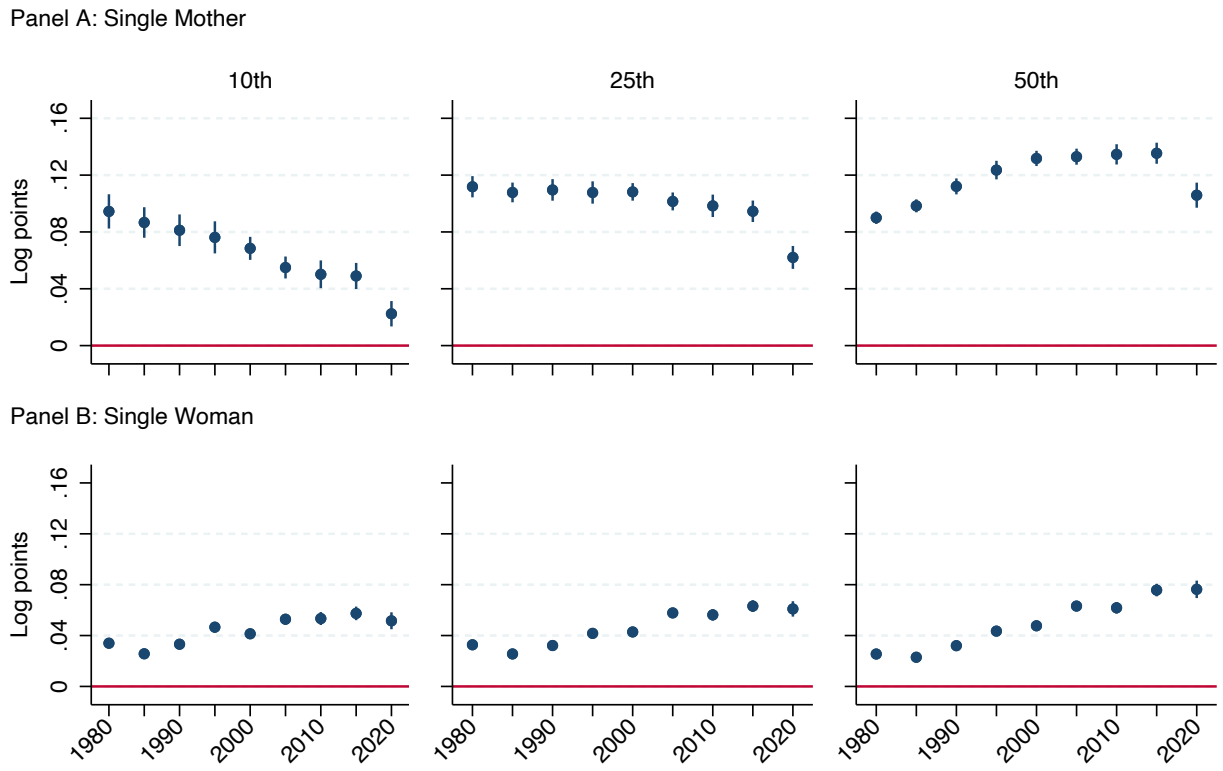
B Appendix: Point estimates and confidence bands of model covariates

Figures B1-6 provide point estimates of the Black-White disposable income gap RIF decomposition at the 10th, 25th, and 50th percentiles. Standard errors are robust and clustered at the individual level. The log point estimates are similar in trend to each group's share of the total income gap and are precisely estimated.

The education term includes indicators for attending some college and having a college degree with having a high school degree or less used as the base group; age is a vector of five-year bins with a base group of ages 25 to 29; employment is an indicator for part-time work; metro is an indicator for residing in a metropolitan area; region refers to the nine Census Bureau region classification and uses West-North Central as the base group; year refers to year fixed effects.

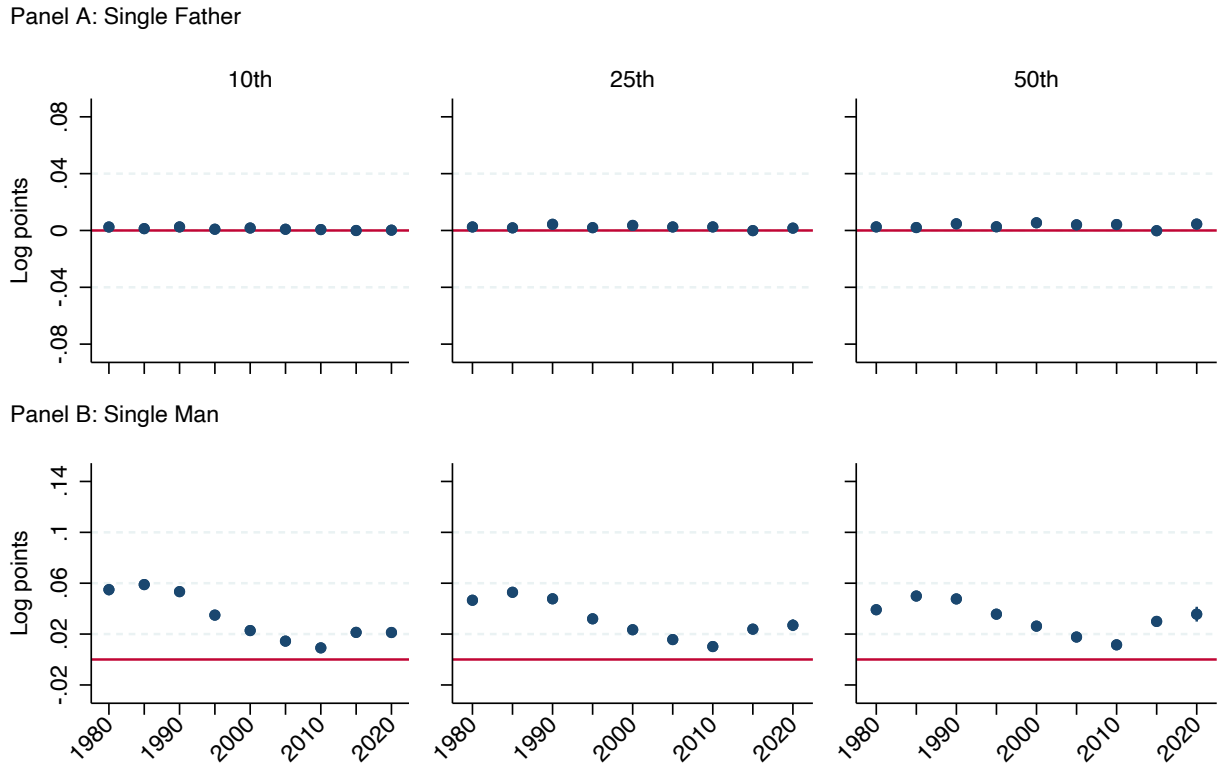
Figure B7 displays the specification reweighting errors of the RIF decompositions. The reweighting error is small and insignificant at every percentile. The specification error is statistically significant at the 25th and 50th percentiles in some years. However, this error is small relative to the total log point difference in Black and White incomes which signals that the RIF-regressions accurately estimate the overall composition and structure effects (Firpo et al., 2018).

Figure B1: Point estimates of Black-White disposable income gap attributed to single mothers and single women without children, over time, select percentiles



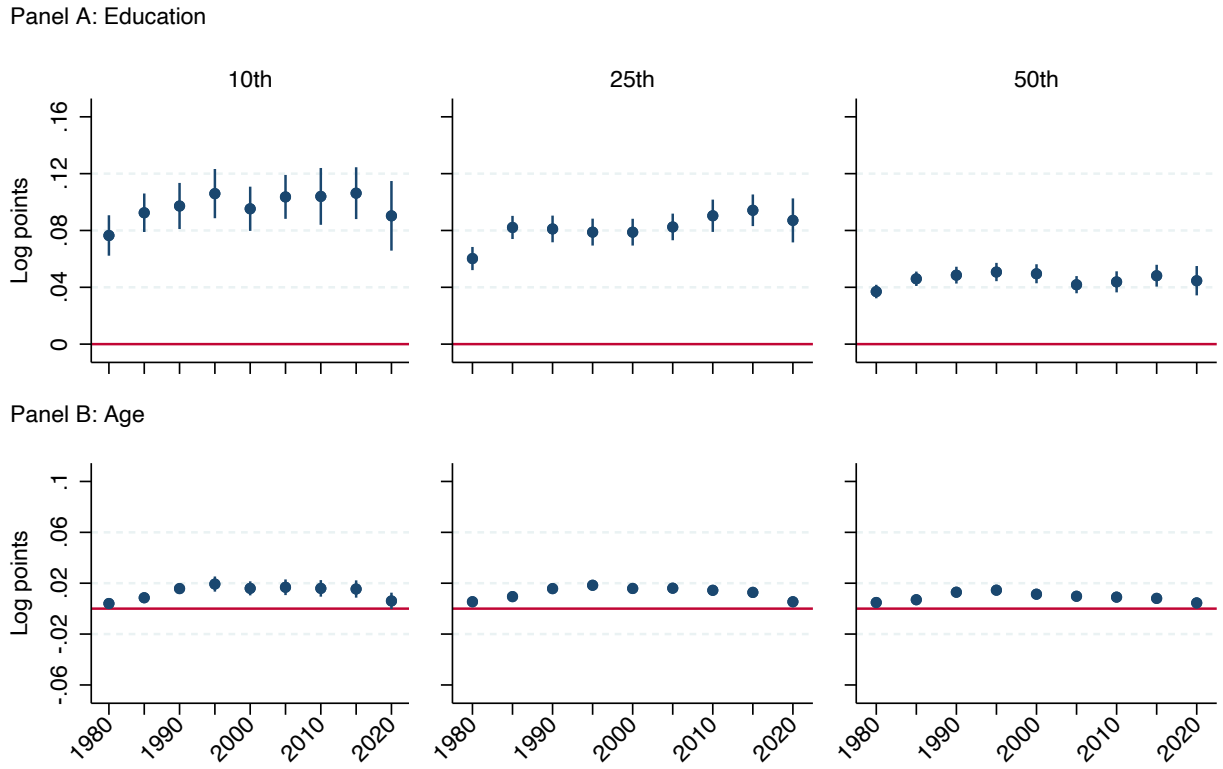
Note: This figure plots the point estimates and standard errors of the Black-White disposable income gap attributed to single mothers and single women without children obtained using RIF decomposition. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details. Single women refer to single women without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure B2: Point estimates of Black-White disposable income gap attributed to single father and single men without children, over time, select percentiles



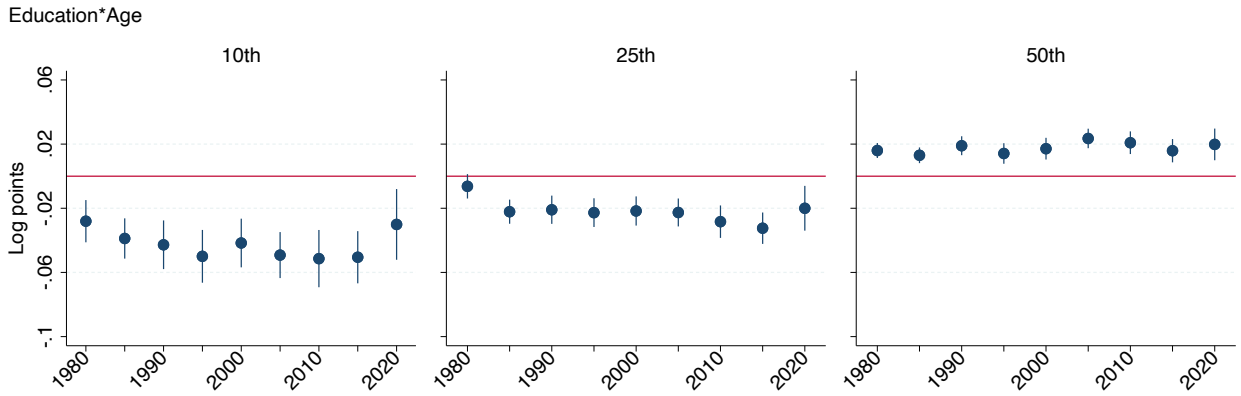
Note: This figure plots the point estimates and standard errors of the Black-White disposable income gap attributed to single fathers and single men without children obtained using RIF decomposition. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details. Single men refer to single men without children. **Source**: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure B3: Point estimates of Black-White disposable income gap attributed to education and age, over time, select percentiles



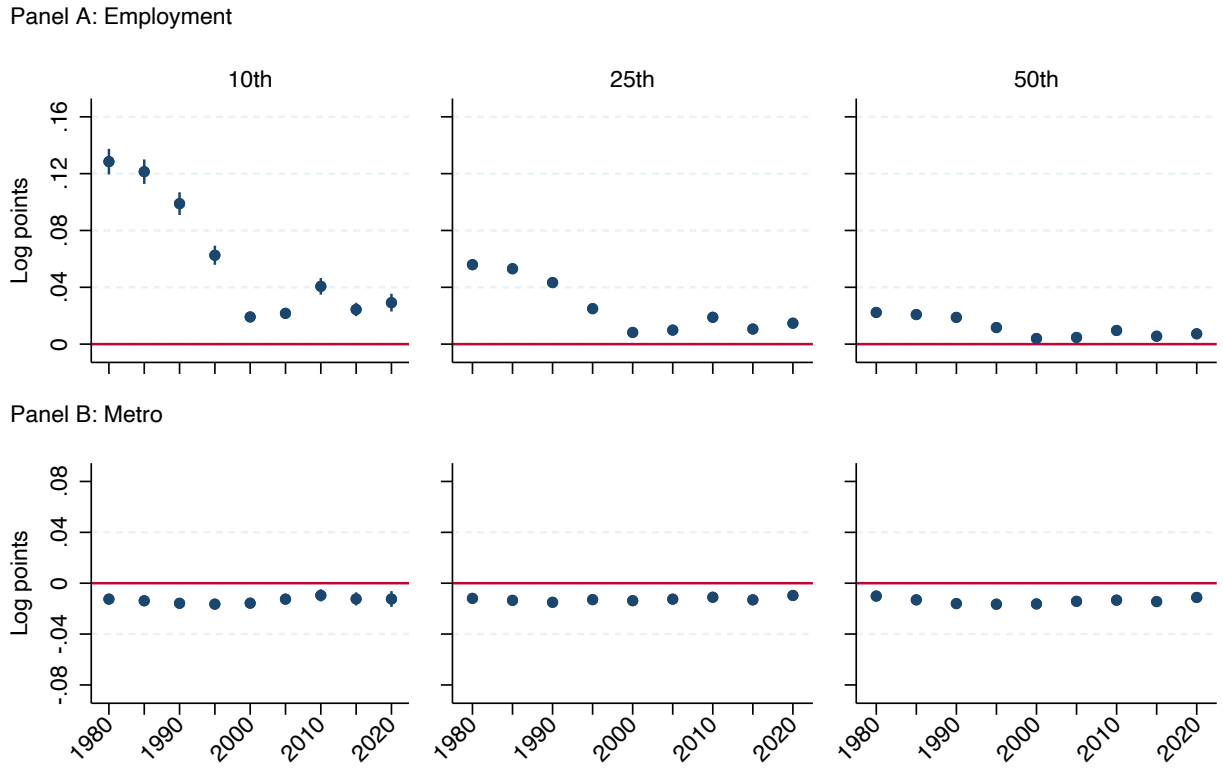
Note: This figure plots the point estimates and standard errors of the Black-White disposable income gap attributed to education and age obtained using RIF decomposition. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure B4: Point estimates of Black-White disposable income gap attributed to education-age interactions, over time, select percentiles



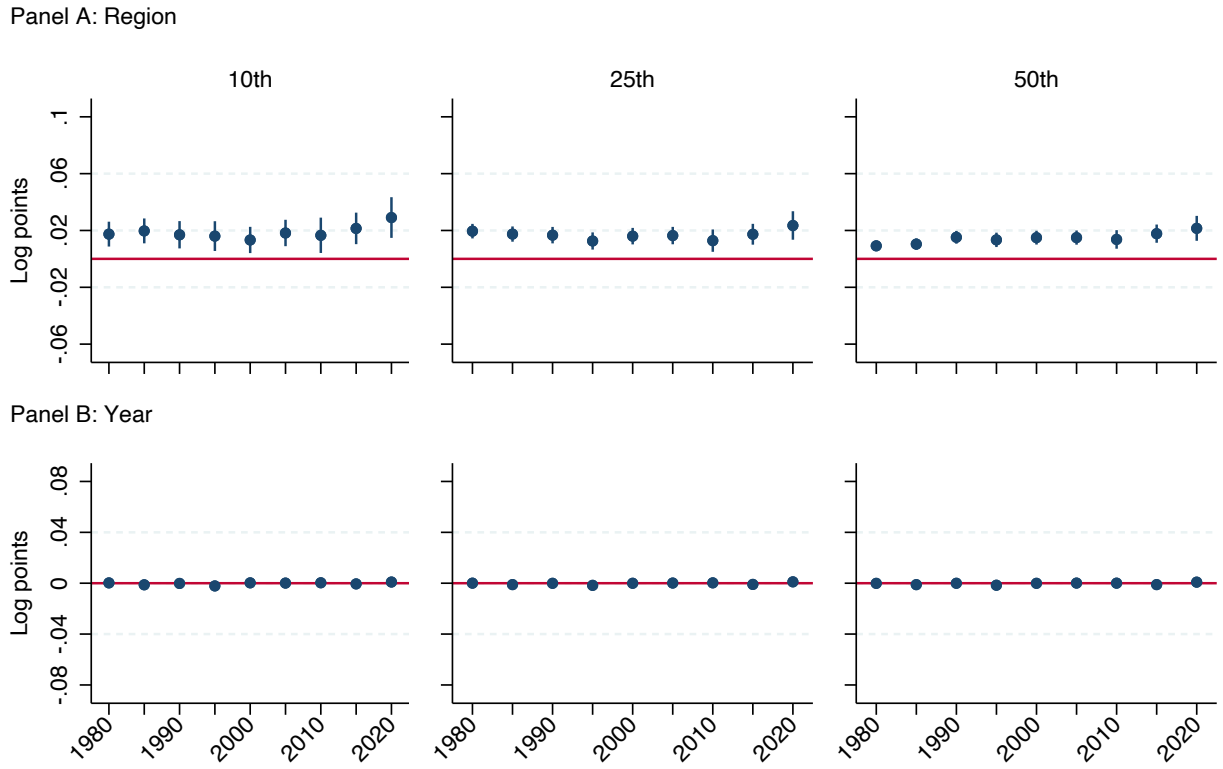
Note: This figure plots the point estimates and standard errors of the Black-White disposable income gap attributed to education-age interactions obtained using RIF decomposition. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure B5: Point estimates of Black-White disposable income gap attributed to employment and metro status, over time, select percentiles



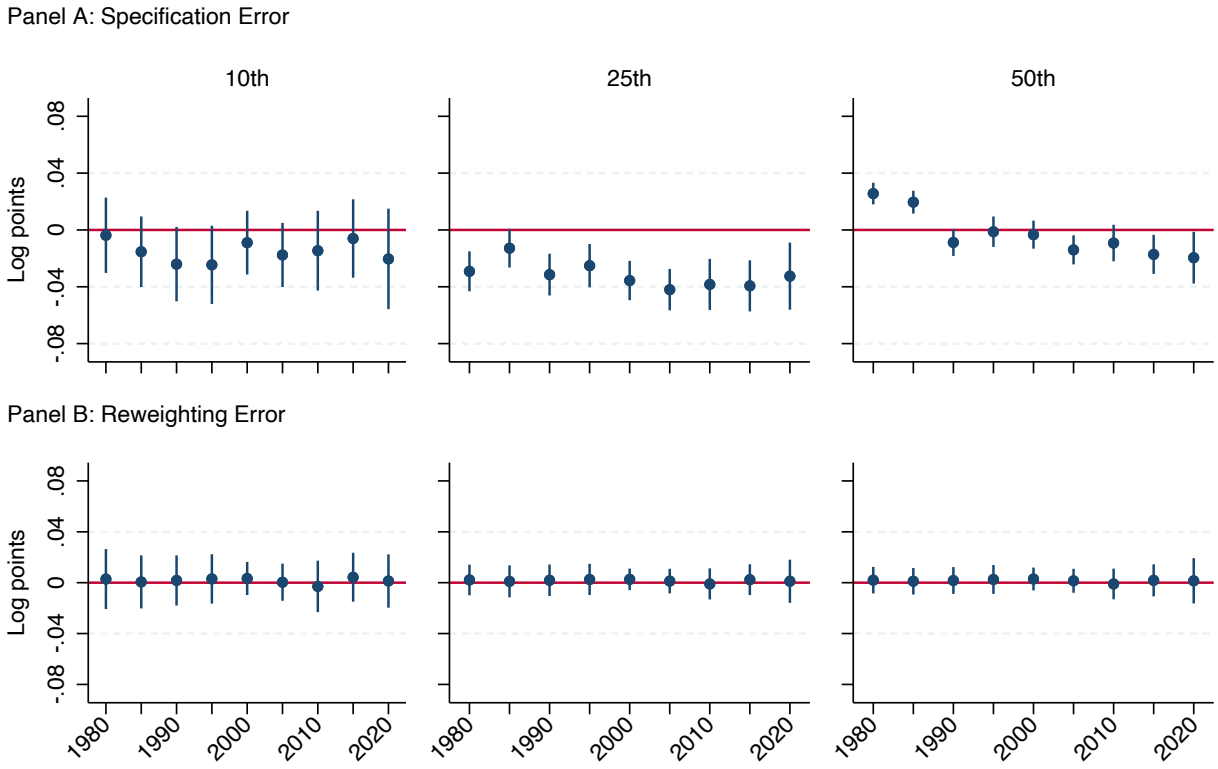
Note: This figure plots the point estimates and standard errors of the Black-White disposable income gap attributed to employment and metro status obtained using RIF decomposition. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure B6: Point estimates of Black-White disposable income gap attributed to region and year fixed effects, over time, select percentiles



Note: This figure plots the point estimates and standard errors of the Black-White disposable income gap attributed to region and year fixed effects obtained using RIF decomposition. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See Appendix A for details.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure B7: Specification and reweighting errors



Note: This figure plots the specification and reweighting errors of the RIF decomposition. Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. See Appendix A for details.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

C Appendix: Non-Earners, Cohabitation, and the Household as a Unit

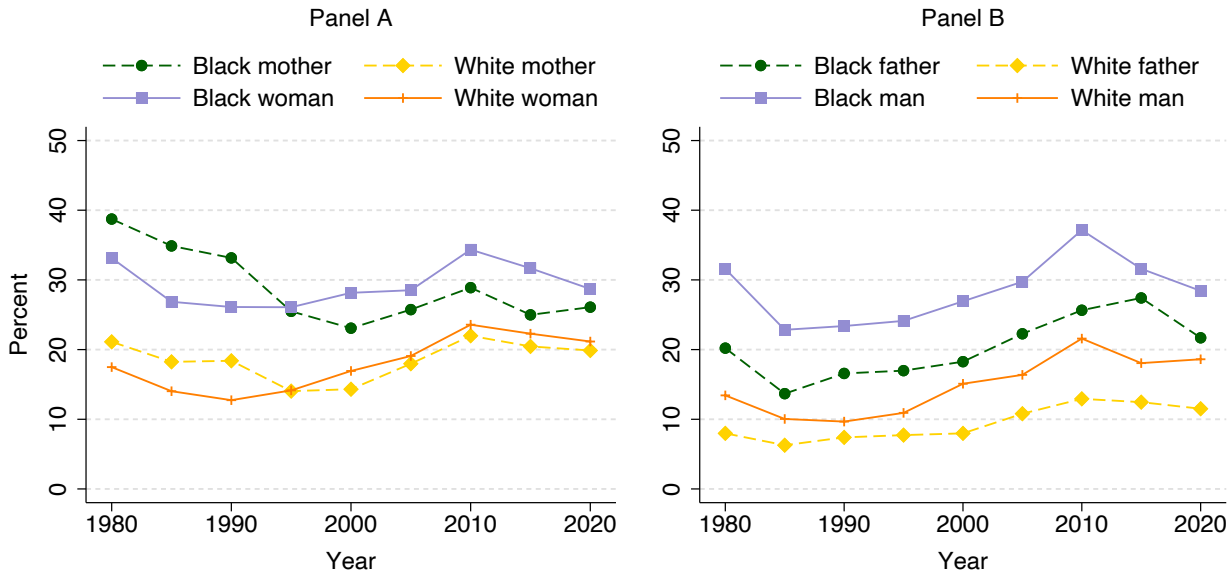
1 Proportion of non-earning tax units by race and structure category over time

The sample is restricted to tax units reporting positive labor market earnings which could lead the results to understate the importance of certain tax unit structures that have different rates of labor market participation by race. Figure C1 shows the proportion of non-earning tax units by race and structure category over time - Panel A shows the female categories and Panel B shows the male categories. Throughout the period, Black single mothers are more likely to report zero earnings than White single mothers but this gap shrinks considerably over time. In 1980-84, 39 percent of tax units headed by Black single mothers reported no labor market earnings compared to 21 percent of of tax units headed by White single mothers, and in 2020-22, 26 percent of Black single mothers had no labor market earnings compared to 20 percent of White single mothers. The increase in Black single mothers' labor supply coincides with expansions in the EITC and may explain some of the increasing importance of single mothers in the 1990s seen at each percentile shown in Figure 2. Labor market nonparticipation among Black single women without children has been relatively consistent over time–fluctuating around 30 percent–while nonparticipation among White single women without children has slightly increased over time ending at 21 percent in 2020-22. Declining labor market participation gaps between Black and White single women without children cannot explain the marked increase in single-childless-women's importance to overall racial inequality shown in Figure 2.

Turning to Panel B, labor force non-participation is consistently higher for Black single men without children compared to White single men without children. However, each groups non-participation has generally trended in the same direction over time, increasing from 1985-89 until 2010-2014 when it begins to decline. Differences in labor market non-participation between

Black and White single men without children declined from 18 percentage points in 1980-84 to 13 percentage points in 1985-89. The gap remained around 13 percentage points until 2010-14 when it rose to 16 percentage points and then fell to 14 percentage points in 2015-19 and 10 percentage points in 2020-22. Differences in single-childless-men's labor force participation likely explain some of the changes in single-childless-men's importance to Black-White income inequality. More importantly however, rates of both Black and White single male labor force non-participation match the inverse of single men's ability to explain Black-White income inequality. The decline in single-childless-men's importance can more so be explained by both Black and White men exiting the labor force (thus exiting the sample), rather than differential changes in single-childless-men's labor force participation by race. Differences in labor market participation between Black and White single fathers has grown over time as Black single fathers pull away from the labor market faster than White single fathers. However, the portion of Black-White income inequality attributed to differences in single fatherhood by race is small and consistent over time.

Figure C1: Share of tax units without labor market earnings

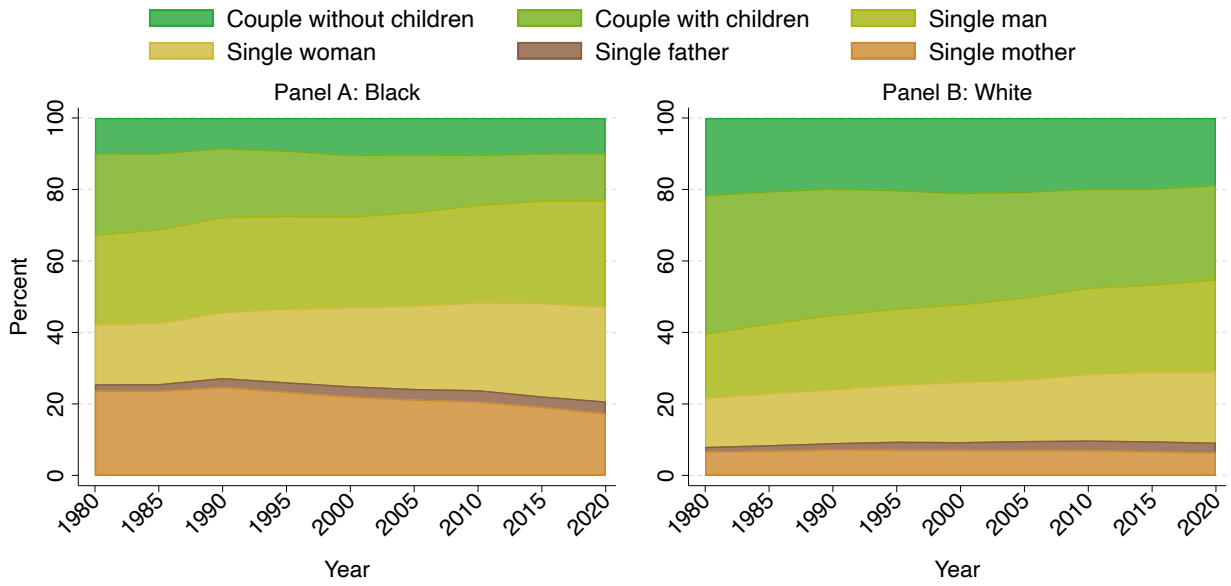


Note: This figure plots the share of single tax units reporting zero labor market earnings by race and gender. Single women refer to single women without children and single men refer to single men without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

2 Share of tax heads by tax unit structure category and race - inclusive of non-earners

Figure C2 which shows the share of tax heads by tax unit structure category and race as in Figure 1, but is inclusive of non-earners. Across both racial groups, the share of couples decreases and the shares of single men and women without children and single mothers increase. However, the racial differences in shares of single men and single women are not meaningfully changed.

Figure C2: Share of tax heads by tax unit structure category and race - inclusive of non-earners



Note: This figure shows the share of Black and White tax heads who fall into one of six mutually exclusive tax unit structure categories. Single women refers to single women without children and single men refers to single men without children. Data are pooled into 9 approximately 5-year bins. Sample includes tax heads reporting zero earnings.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

3 Cohabitation and the household as a unit

This paper conducts a tax-unit level analysis of Black-White income inequality and evaluates the contributions of different tax-unit structures. A household-level analysis would likely result in similar conclusions, but would capture different dynamics. Trends in overall Black-White income inequality are similar at the tax-unit and household level: racial income inequality is declining over time at the 10th and 25th percentiles but stagnant at the 50th percentile. [24] However, the contributions of each family structure category would likely differ between a tax unit analysis and a household analysis. At the household level, some unmarried individuals who fall into one of four gendered categories in the tax-unit analysis would instead be classified as a "cohabitating household" if they live with another tax unit. This would reduce the share of Black and White individuals who are considered single because the definition of single would become more restrictive (e.g., unmarried individuals living alone rather than unmarried individuals).

Appendix Figure C3 shows the percent of Black and White tax units that are cohabitating with and without children.[25] The shares of Black and White tax units that are cohabitating and have children are quite similar, roughly 5-7% after 2006. The shares of Black and White tax units that are cohabitating without children diverge after 2006 with higher cohabitation rates among White units compared to Black units. Thus, creating a separate structure-category for cohabitators, or including them in the couples category, would result in a greater difference between the share of tax units that are unmarried and not cohabitating and the share of tax units that are married or cohabitating across racial groups (i.e., the share of White units that are married or cohabitating would increase by a greater percentage than the share of Black units that are married or cohabitating). This would likely increase the importance of single childless men and women to Black-White income inequality because the difference in racial shares of these groups would be exacerbated.

To summarize, a household-level analysis would reduce the overall share of single

[24] See Hardy et al. (2025) for Black-White household income gaps using the same data and over a similar time period.

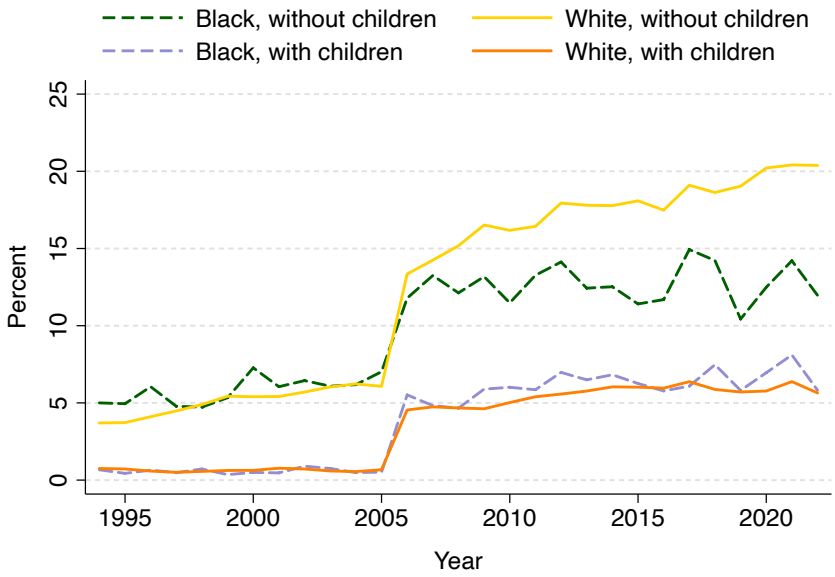
[25] Cohabitation is not recorded in the CPS prior to 1994 and there was a measurement change in 2006.

individuals across both racial groups–likely reducing the importance of singles. However, this reduction would be greater for the White population making the ratio of single Black households to single White households greater–likely increasing the importance of singles. Because these effects work in opposite directions, the overall impact of aggregating tax units to the household level is ambiguous but unlikely to change the conclusions of the analysis.

Still, there are some household dynamics that a tax-unit analysis will miss. Jones and O'Hara (2016); Splinter et al. (2017) find evidence that households with multiple tax units strategically claim dependents to minimize the household's tax liability. However, the percent of children in households with multiple filers who were reassigned is relatively small, around 5%. Because the share of units cohabitating with children is similar across racial groups and the percent of multi-unit households that reassign children year-to-year is relatively small, the strategic claiming of dependents is unlikely to have a significant impact on overall Black-White income inequality or the importance of single-unit categories. Moreover, cohabitation cannot be identified in the CPS until 1994 making a consistent estimate of the importance of cohabitators over time difficult to achieve.

A reviewer raised concerns over the relative shares of earnings between cohabitating partners, and how this might vary by race or change over time. However, a household-level analysis would equivalize incomes to account for differences in household size across racial groups. This would address relative shares of earnings between cohabitating partners and also deflate the income of a working-cohabitator to account for the presence of a non-working cohabitator. This is the approach used by Hardy et al. (2025), and their estimates of overall Black-White household income inequality are similar to my own estimates of overall Black-White tax-unit income inequality.

Figure C3: Cohabitation rate by race and presence of dependents



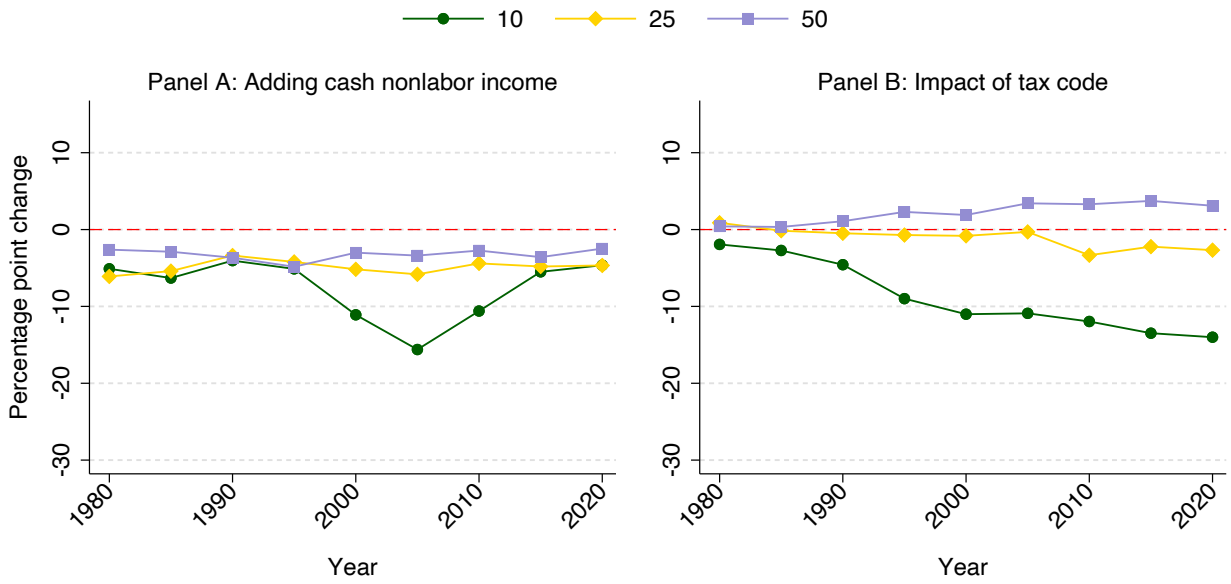
Note: This figure shows the share of Black and White tax heads who are unmarried cohabitators with and without children. Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

D Appendix: Further detail on Black-White earnings, gross cash income, and disposable income gap shares

1 Percentage point change in portion of Black-White income gap explained by single mothers

Figure D1 displays percentage point changes between the earnings and gross cash income gap shares – each group's share of the gross cash income gap less their share of the earnings gap – and between the gross cash income and income gap shares – each group's share of the income gap less their share of the gross cash income gap – attributed to single mothers by percentile and over time. Panel A shows that private incomes and transfer payments reduce single mothers' shares of the Black-White income gap at the 10th, 25th, and 50th percentiles, most notably at the 10th percentile from 2000-04 to 2010-14. Panel B suggests the tax code increases their share at the 50th percentile, decreases their share at the 25th percentile starting in 2010-14, and substantially reduces their share at 10th percentile.

Figure D1: Percentage point change in portion of Black-White income gap explained by single mothers

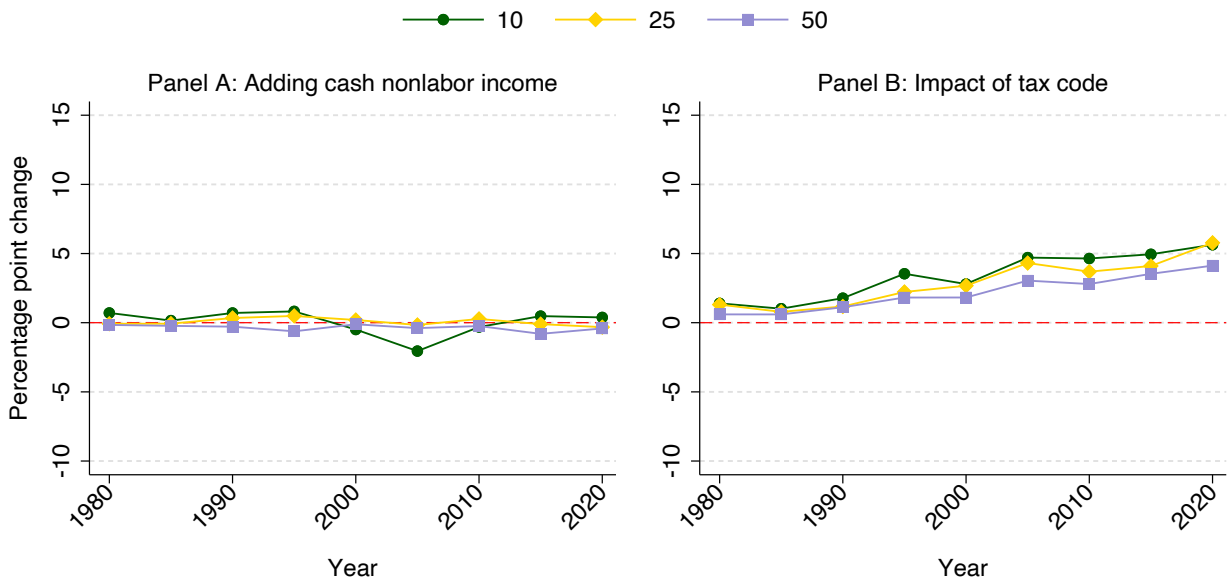


Note: Panel A is the share of the Black-White gross cash income gap less the share of the Black-White earnings gap attributed to single mothers and Panel B is the share of the Black-White income gap less the share of the Black-White gross cash income gap attributed to single mothers.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

2 Percentage point change in portion of Black-White income gap explained by single women without children

Figure D2 displays percentage point changes between the earnings and gross cash income gap shares – each group's share of the gross cash income gap less their share of the earnings gap – and between the gross cash income and income gap shares – each group's share of the income gap less their share of the gross cash income gap – attributed to single women without children by percentile and over time. Adding cash nonlabor income to earnings (Panel A) has minimal impact on single-childless-women's shares of the Black-White income gap, largest impact being a 2-percentage point reduction at the 10th percentile in 2004-09. Panel B suggests the tax code increases single-childless-women's shares at each percentile.

Figure D2: Percentage point change in portion of Black-White income gap explained by single women without children



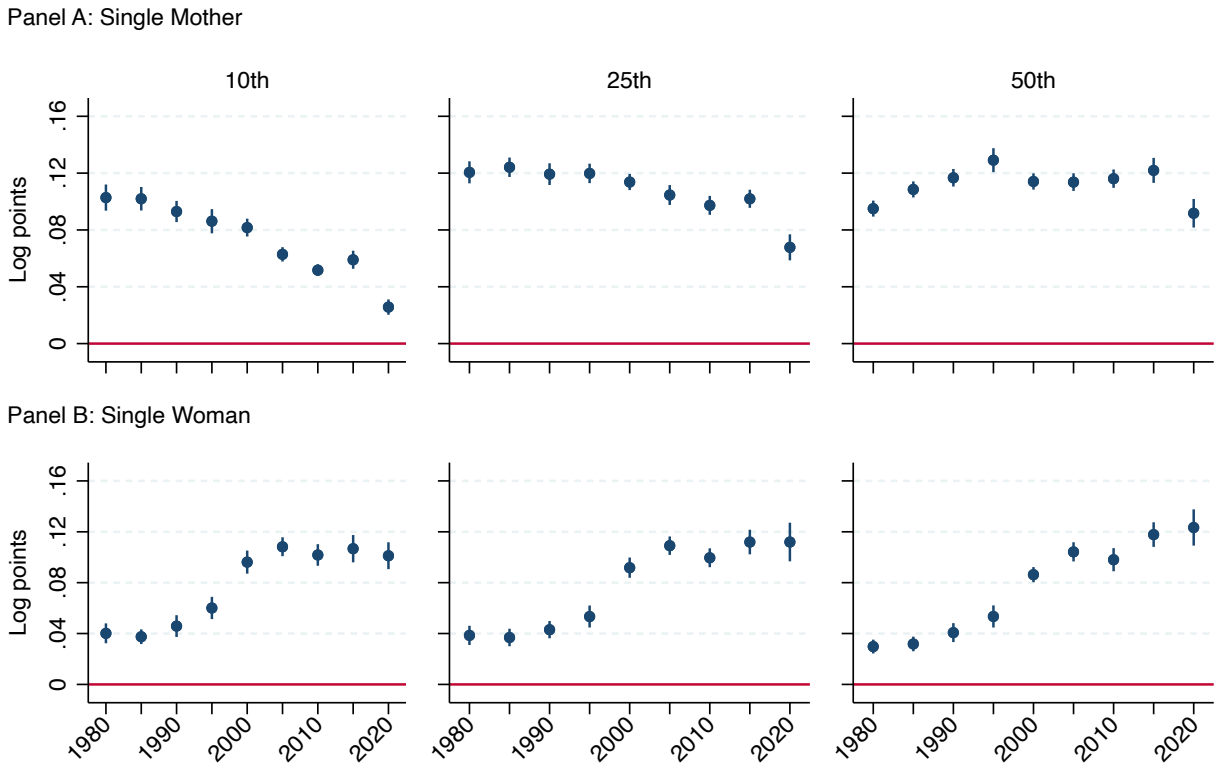
Note: Panel A is the share of the Black-White gross cash income gap less the share of the Black-White earnings gap attributed to single women without children and Panel B is the share of the Black-White income gap less the share of the Black-White gross cash income gap attributed to single women without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

E Appendix: Robustness

1 Bootstrapped standard errors

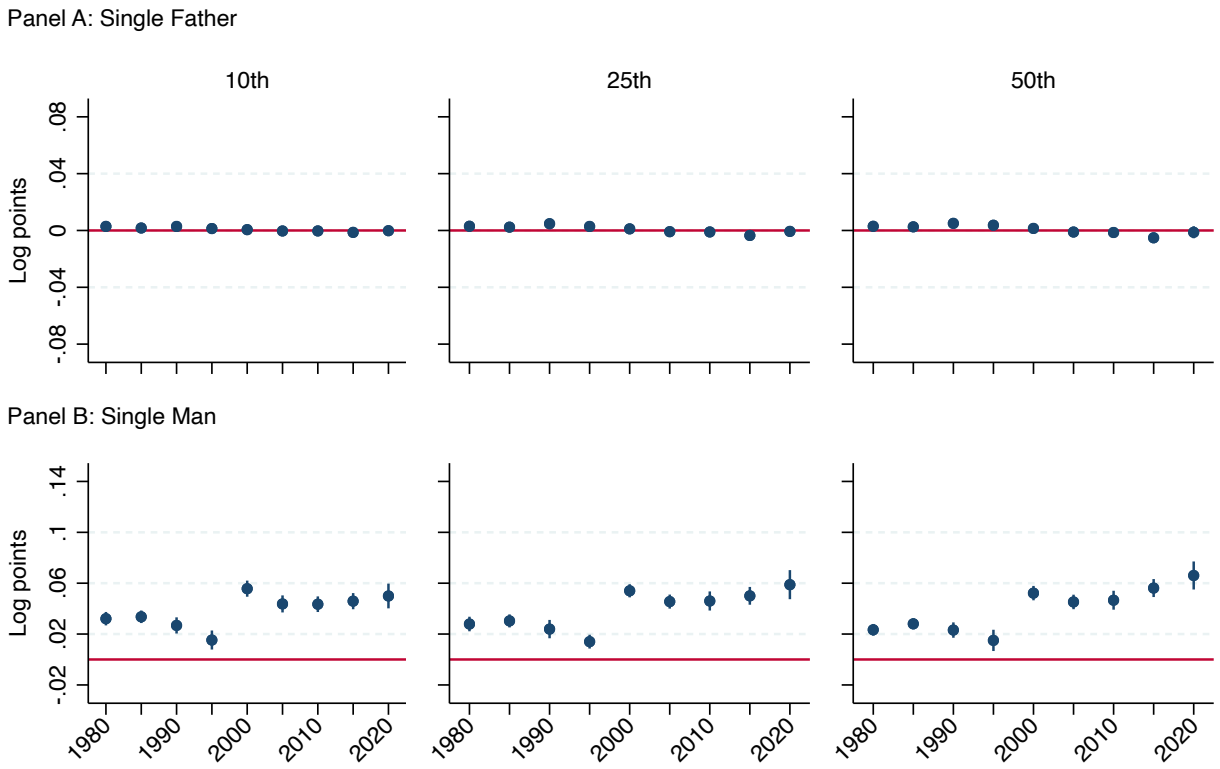
Firpo et al. (2009) recommend using bootstrapped standard errors for RIFs of unconditional quantiles. Given that bootstrapped standard errors cannot be obtained using weights, robust standard errors are preferred, but bootstrapped standard errors are provided in Figures E1 and E2. Coefficients vary between the two methods due to the exclusion of weights, but the conclusions are the same.

Figure E1: Black-White disposable income gap and contributions, over time, select percentiles – bootstrapped standard errors



Note: This figure plots the point estimates and standard errors of the Black-White disposable income gap attributed to single mothers and single women without children obtained using RIF decomposition with bootstrapped standard errors. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. Single women refer to single women without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure E2: Black-White disposable income gap and contributions, over time, select percentiles – bootstrapped standard errors

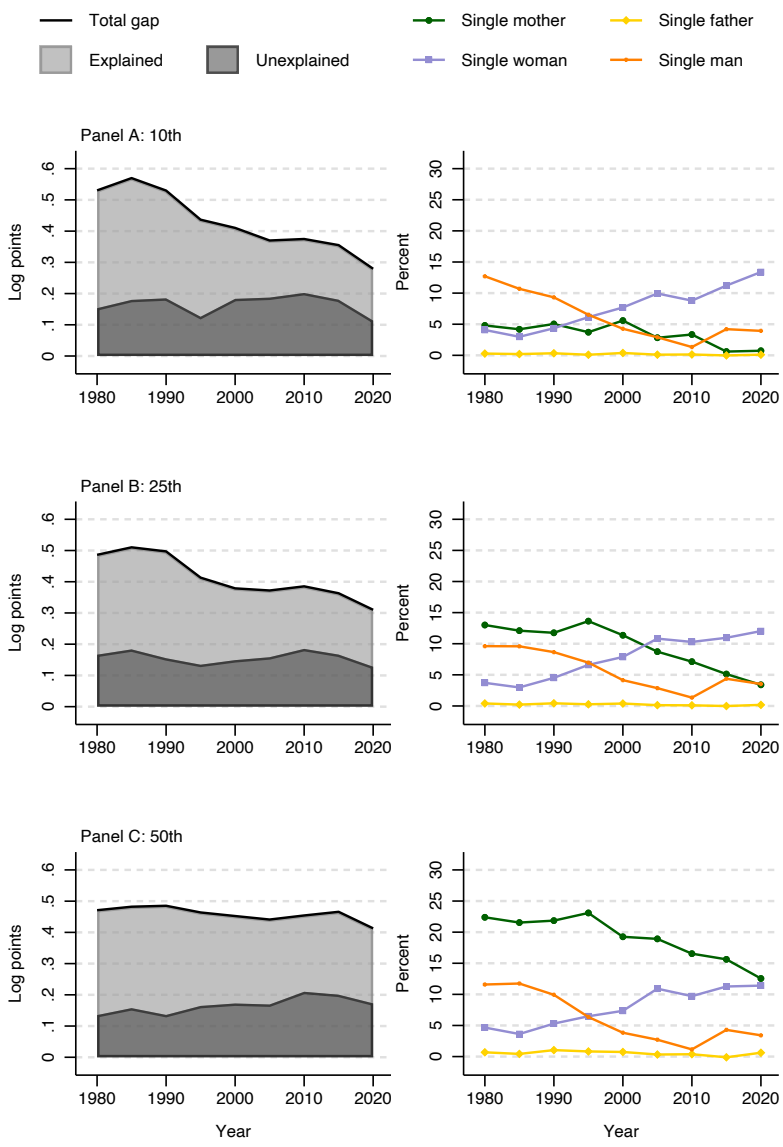


Note: This figure plots the point estimates and standard errors of the Black-White disposable income gap attributed to single mothers and single women without children obtained using RIF decomposition with bootstrapped standard errors. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. Single men refer to single men without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

2 Reverse counterfactual

It is a well-known issue in Oaxaca-Blinder decompositions that estimates are sensitive to the choice of the base group. The counterfactual in the main text (Figure 2) is produced using the White income structure as the interpretation corresponds to an absence of racial discrimination rather than a reversal and White incomes tend to be more predictable than Black incomes (due to racial discrimination, labor market segregation, and differential access to opportunities). Estimates using the reverse counterfactual are provided in Figure E3 and are similar in both level and trend for single women without children, single men without children, and single father. Reverse counterfactual estimates for single mothers are generally lower and declining over time.

Figure E3: Black-White disposable income gap and contributions, over time, select percentiles – reverse counterfactual

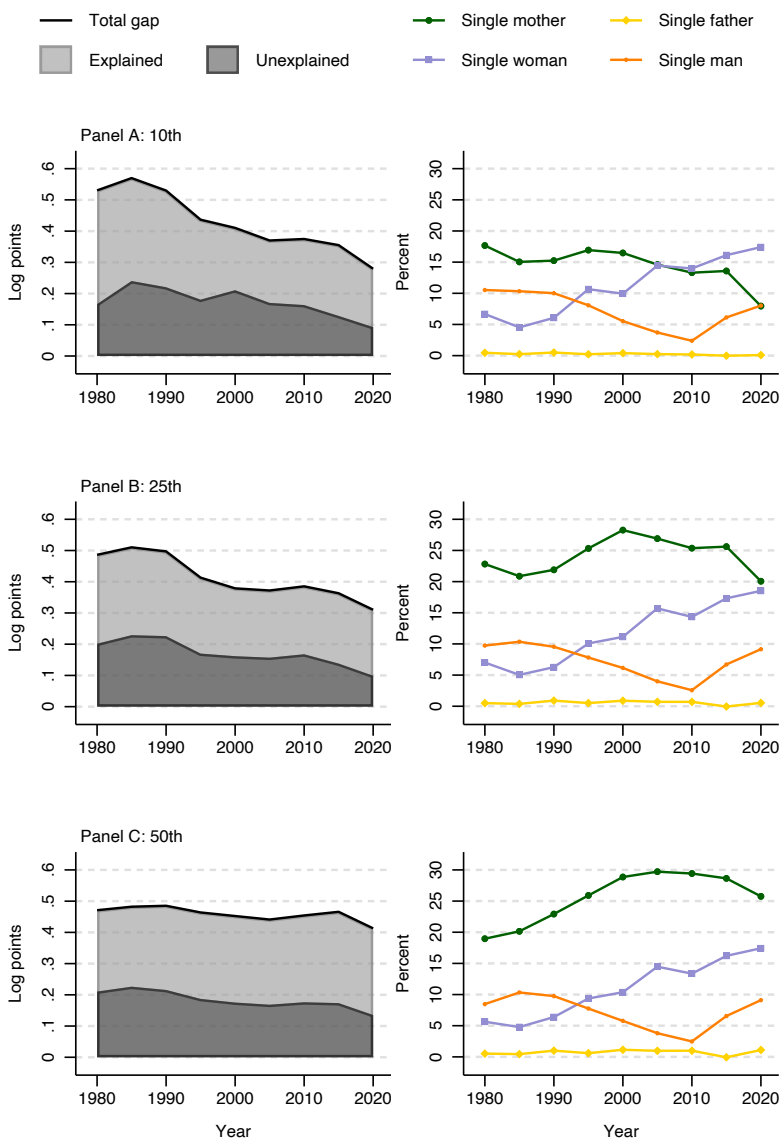


Note: This figure plots the log-point Black-White disposable income gap and the shares of the gap attributed to each tax unit structure category obtained using RIF decomposition with reverse counterfactual. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. Single women refer to single women without children and single men refer to single men without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

3 State fixed effects

In the main text (Figure 2), log disposable income is estimated controlling for nine Census geographic divisions. Region is used to control for geographic variation instead of state fixed effects because some states are not racially diverse enough to be included in the model and including state fixed effects does not meaningfully change the estimates as shown in Figure E4. Standard errors are also similar.

Figure E4: Black-White disposable income gap and contributions, over time, select percentiles – state fixed effects



Note: This figure plots the log-point Black-White disposable income gap and the shares of the gap attributed to each tax unit structure category obtained using RIF decomposition with state fixed effects. Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. Single women refer to single women without children and single men refer to single men without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

4 Imputing government transfers to address underreporting

There is strong evidence that transfer payments are often underreported in survey data and specifically in the ASEC. Underreporting can bias income measures and estimates of between group inequality if the magnitude or direction of this bias varies across groups. Recent work attempts to understand how underreporting biases estimates of government transfers and disposable income as well as develop techniques to account for the misreporting (Meyer et al., 2009; Moffitt and Pauley, 2018; Mittag, 2019; Bee et al., 2023; Bahk et al., 2024; Ziliak, 2025). Meyer et al. (2024) review existing studies and find evidence that survey measurement error in the reporting of government transfer program participation is greater for Black and Hispanic individuals and households compared to their White counterparts. This could lead the previous estimates to understate the positive impact that taxes and transfers have on Black mothers' and Black women's incomes.

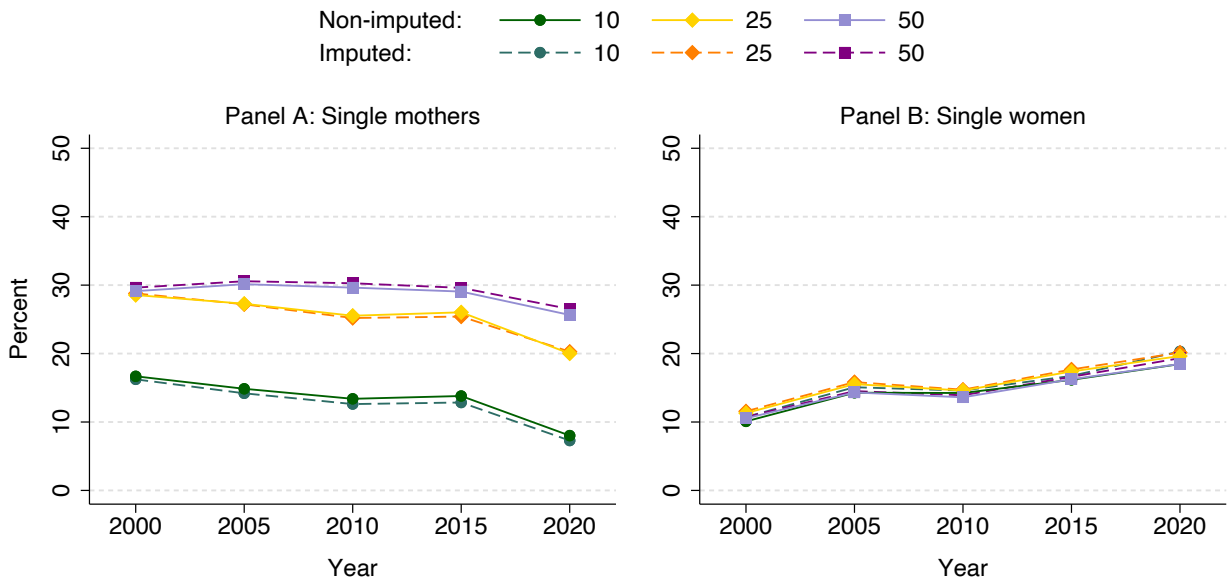
To address this, I use imputed transfer recipients and benefit amounts for six programs and the last two decades of my sample period to re-estimate the impact of taxes and transfers on single mothers' and single women's shares of the Black-White income gap for years 2000-04, 2005-09, 2010-14, 2015-20, and 2020-22.[26] I refer to disposable income constructed using imputed transfers as imputed income and disposable income constructed using non-imputed transfers as non-imputed income.

Figure E5 shows Black-White income gap shares of single mothers (Panel A) and single women without children (Panel B) using non-imputed income and imputed income. For both groups of women, correcting for underreporting has minimal impact on their shares of the gap. Panel A shows that imputing transfers slightly reduces single mothers' contribution to the Black-White income gap at the 10th percentile and slightly increases their share at the 50th percentile.

[26] I am grateful to Jim Ziliak for providing this data. Ziliak (2025) builds on Moffitt and Pauley (2018) and Bahk et al. (2024) to impute transfer recipients and benefit amounts for six programs and across two decades using administrative counts of recipients and benefit amounts to construct imputed transfer payments for SNAP, Social Security, SSDI, SSI, TANF, and UI for years 2001 to 2022 based on family type, income, demographics, and other program participation.

The impact on their share at the 90th percentile is negligible. For single women without children in Panel B, imputing transfers slightly increases their share of the gap at the 10th and 50th percentiles but does not have a discernable impact on their share at the 90th percentile. Imputing transfers not does not have a meaningful impact on the results and the racial gap estimates in the previous section are robust to underreporting.

Figure E5: Portion of Black-White income gap explained by single mothers and single women – imputed government transfers



Note: This figure plots the shares of the Black-White earnings, gross cash income, and income gap attributed to single women without children obtained using RIF decomposition with imputed government transfers. Earnings refers to labor market earnings only. Gross cash income is earnings plus rent, interest, and dividend income and cash transfers. Disposable income is gross cash income plus SNAP benefits less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. See data appendix for details. Single women refer to single women without children and single men refer to single men without children.

Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

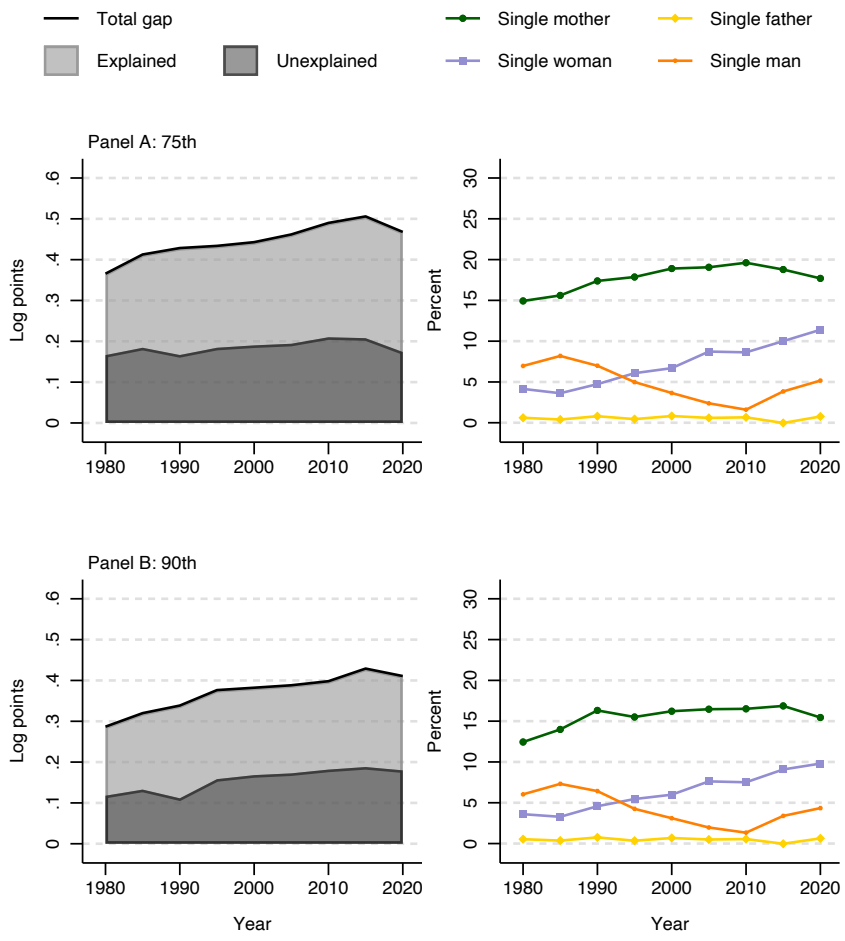
F Appendix: Estimates for 75th and 90th percentiles

1 Black-White disposable income gap and contributions

Figure F1 shows the log point difference between Black and White incomes and how much of that difference is explained by model covariates (left panels) and what percent of the total gap can be attributed to tax unit structure (right panels) for the 75th and 90th percentiles. At both points in the distribution, the overall Black-White income gap has increased since 1980-84, suggesting worsening Black-White income inequality over time at the top. The patterns of tax unit structure shares mimic those of the 50th percentile but are overall much lower. In 2020-22, at the 75th percentile, single mothers account for 18 percent of the gap followed by single women at 11 percent, single men at 5 percent, and single fathers at 1 percent. At the 90th percentile, single mothers account for 15 percent of the gap followed by single women at 10 percent, single men at 4 percent, and single fathers at 1 percent. The fact that less of the gap at the 75th and 90th percentiles is explained by single tax heads compared to the 10th, 25th, and 50th percentiles suggests that married couples may be more important to Black-White inequality at the top compared to the median and below.

In an overview of household income inequality in the U.S., Hardy et al. (2024) find that high-income families are pulling away from low-income families due to differential marriage rates and increased assortative mating. High earning men and women have become more likely to partner with each other over time leading to an increase in household income inequality. Because marriage rates are higher among White adults than Black adults, these dual high earning partnerships are more likely to involve White adults than Black adults which can help explain the greater importance of couples at the 75th and 90th percentile of the Black-White income gap.

Figure F1: Black-White disposable income gap and contributions, over time, select percentiles

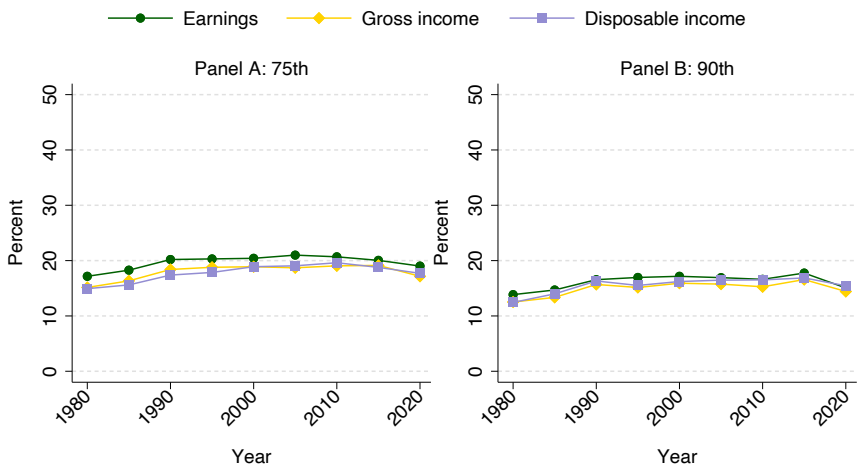


Note: Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. Single women refer to single women without children and single men refer to single men without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

2 Negligible impact of taxes and transfers at the top

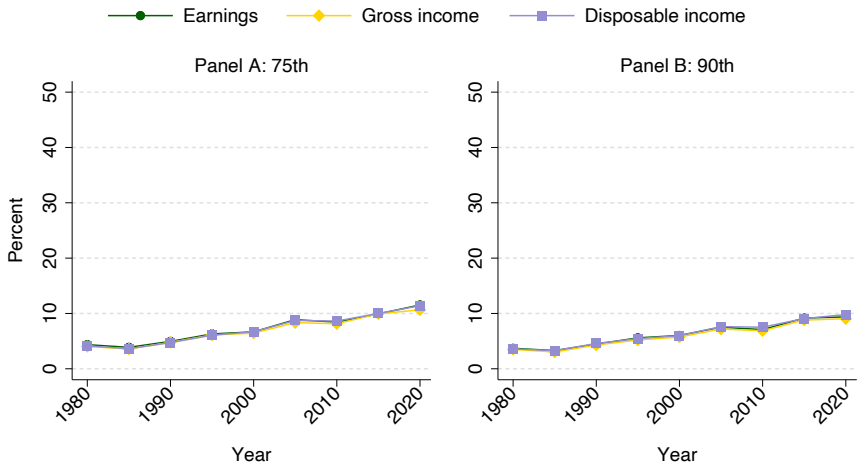
Figures F2 and F3 show the proportions of the Black-White earnings (green line), gross cash income (yellow line), and disposable income (purple line) gaps attributed to ingle mothers and single women without children at the 75th (Panel A) and 90th (Panel B) percentiles and over time. The tax and transfer systems have very little impact on the portion of the gap attributed to single mothers and virtually no impact on the portion of the gap attributed to single women without children.

Figure F2: Portion of Black-White earnings, gross cash income, and income gaps explained by single mothers



Note: Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. Single women refer to single women without children and single men refer to single men without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.

Figure F3: Portion of Black-White earnings, gross cash income, and income gaps explained by single women without children



Note: Disposable income is the sum of earnings and nonlabor income less federal, state, and payroll tax payments (inclusive of refundable tax credits). Sample is restricted to tax heads with positive earnings, gross cash incomes, and disposable incomes. Incomes are in real terms using the 2021 PCE. Single women refer to single women without children and single men refer to single men without children.
Source: Current Population Survey Annual Social and Economic Supplement, 1981-2023.