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ABSTRACT

The Child Tax Credit over Time by Family Type: Benefit Eligibility and Poverty*

We examine disparities in Child Tax Credit (CTC) eligibility and anti-poverty effects since 1998 by family type. Initially, single mothers were least likely to be eligible and were underrepresented among those lifted from poverty by the CTC, because the credit was virtually nonrefundable. By 2017, disparities by family type mostly disappear, as eligibility and anti-poverty effectiveness of the CTC among single mothers increases dramatically, because of reforms increasing CTC refundability. When the credit doubles in 2018, disparities revert toward initial levels, as eligibility and the anti-poverty effectiveness of single mothers rises least, because of a phaseout threshold expansion and partial refundability.

JEL Classification: H24, H71, J22

Keywords: Child Tax Credit, poverty, gender, tax policy

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I. INTRODUCTION

In 2015, almost a quarter of American children under the age of 18 lived with single mothers.[1] These children grow up in households that are *twice* as likely to be in poverty relative to single fathers and cohabiting couples, and *three* times as likely to be in poverty relative to married couples. These higher poverty rates among single mothers reflect that women are less likely to be employed outside the home than men, while conditional on employment, they have lower wages (Blau and Kahn, 2017). The lower earnings of employed women can, in part, be explained by: (a) women working in occupations with lower wages, (b) women working fewer hours and placing a higher value on temporal flexibility of their job, (c) women's greater responsibility for non-market work such as housework and taking care of family members, or (d) employer discrimination.[2] Importantly, parenthood itself leads to permanent reductions in employment and earnings among mothers, but not among fathers (Kleven et al., 2019). Even as children grow up, female employment declines when child costs rise (Braga and Malkova, 2023).

Several tax credits provide financial relief for families with children and depend on earnings. Eligibility rates for these credits may differ for single mothers relative to other family types because of their lower average earnings; for example, in 2015, the adjusted gross income for single mothers was almost 38 and 66 percent lower than for single fathers and married couples, respectively. An emerging literature takes seriously disparities in outcomes (among others, federal tax liabilities, eligibility for professional deductions that benefit those in formal employment, and taxes paid on consumer goods) by gender that can exist in tax systems that ostensibly appear to be gender neutral (Coelho et al., 2022; Grown and Valodia, 2010; Slemrod and Lin, 2022; Slemrod, 2022), and may reflect what is called "implicit gender bias". In her pioneering work, Stotsky (1996, 1997) defines "implicit gender bias" as provisions in tax systems that, because of gendered social arrangements and economic behavior, have different implications for men and women. This paper adds to the limited work on the gendered effects of tax policy that follow from differences in circumstances and socio-demographic characteristics, by focusing on the Child Tax Credit (CTC) in the United States.

[1] We used the Current Population Survey to calculate that 23.4 percent of children under age 18 lived with single mothers.

[2] Blau and Kahn (2017) provide a comprehensive overview of the literature on the causes of the gender wage gap.

The federal CTC is one of the largest cash transfer programs to families with children. As of 2022, the credit provides up to $2,000 per child under age 17 and is available to households earning at least $2,500 and up to $400,000. Since its inception in 1998, CTC eligibility is based on earned income and comprises: (1) a *nonrefundable* portion claimed up to the amount of tax liability and (2) a *refundable* portion claimed in excess of their tax liability as a refund (Additional Child Tax Credit – ACTC). The CTC has become more generous over the years, as reforms raised maximum credit amounts, expanded the generosity of its refundable component (that rises with earnings until it hits its statutory maximum), and allowed the credit to phase out at higher incomes. Expenditures on the CTC have also increased over time and in 2019 were $118 billion, overtaking spending on the Earned Income Tax Credit (Hahn et al., 2020).

This paper documents disparities in eligibility and the anti-poverty effects of the CTC by family type over time since its inception in 1998 through 2020 using the Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS).[3] The CTC rules have changed over time, leading to differences in how the CTC affects families depending on where they fall along the earned income distribution. We restrict our sample to individuals age 20 and older with any children of their own who are under age 17. We classify them into four family types: (1) married couples, (2) cohabiting couples, (3) single mothers without a partner present, and (4) single fathers without a partner present. In 2015, the average tax liabilities among single mothers were almost 7 and 18 times lower than among single fathers and married couples, respectively.[4] The lack of full refundability of the CTC implies that single mothers may either be less likely to be eligible for the CTC or be more likely to only be eligible for a partial credit, relative to other family structures, because of their lower tax liabilities. Throughout, we also consider heterogeneity by race/ethnicity.

We first show that at its inception, large disparities in CTC eligibility and its anti-poverty effectiveness existed across household types. Only 43.8 percent of single mothers were eligible for the CTC, while single fathers, cohabiting couples, and married couples were 23.6, 26.2 and 36 percentage points more likely to be eligible, respectively. Because the CTC was virtually nonrefundable in 1998, lower-income households who had little to no income tax liability were ineligible for the credit. Reflecting these disparities in eligibility, single mothers and their children were under-represented

[3] Thus, the 2021 American Rescue Plan Act (ARPA) is not in our period of analysis.

[4] Using the CPS, among families with children under age 17, we calculate that in 2015 average tax liabilities were $779 among single mothers, $5,210 among single fathers, and $13,695 among married couples.

among those lifted out of poverty in the CTC's initial years. Up until 2017, gaps in credit amounts among the eligible were small, indicating that disparities in anti-poverty effects were mainly due to differences in credit eligibility.

The initial disparities by family types shrank over time. By 2017, eligibility among single mothers *increased* by 23.6 percentage points. In contrast, eligibility among single fathers and married couples *decreased* by 3.1 and 10.1 percentage points, respectively. As a result, single mothers surpassed single fathers in credit eligibility and the gap in eligibility between married couples and single mothers declined to only 2.3 percentage points. Reflecting the shrinking disparities in eligibility, the representation of single-mother families among those lifted from poverty became slightly higher than their representation in the population. By 2017, the CTC had closed the 17.3 pp poverty gap (in the absence of the CTC) between single fathers and single mothers by 10.4 percent (1.8 pp), and the 27.3 pp gap between married couples and single mothers by 4.8 percent (1.3 pp).

The trend in the shrinking disparities by family types abruptly reversed after the 2017 Tax Cuts and Jobs Act (TCJA) that doubled the credit and made it available to households with much higher incomes (the phaseout threshold increased from $110,000 to $400,000 for married joint filers). In 2018, all household types—except single mothers—experienced abrupt increases in eligibility. As a result, from 2017 to 2018, the gap in CTC eligibility between married couples and single mothers jumped by 24.1 percentage points. Moreover, the small gap in credit amounts among the eligible expands in 2018. This is consistent with the doubling of the share of single mothers eligible for a partial credit, because they are less likely to have earnings high-enough to qualify for the higher refundable credit. Reflecting these widening gaps in credit amounts, single mothers again became under-represented among those lifted from poverty. Between 2017 and 2018, while the number of parents and children lifted out of poverty increased by 48.9 and 89.2 percent among married and cohabiting families, respectively, it did not change among single-mother families.

While prior studies also document disparities in CTC eligibility by family structure, race and income, they miss the shrinking and the widening of eligibility gaps because each focuses only on a specific point in time. Goldin and Michelmore (2022) show that in 2018, children in the lowest-income, single-parent, and Black and Hispanic households were disproportionately less likely to be eligible for the CTC in large part because their earnings were below the minimum earnings threshold of $2,500. Moreover, Black and Hispanic children were less likely to be eligible for the CTC than

white children in 2005 (Burman and Wheaton, 2007), and in 2011 (Harris, 2012). Finally, recent work shows that the 2021 expansion of the CTC reduced food and financial insecurity (Parolin et al., 2021; Hamilton et al., 2022) and may have substantially lowered poverty (Acs and Werner, 2021; Bastian, 2022; Corinth et al., 2021; National Academies of Sciences and Medicine, 2019; Parolin et al., 2021).[5]

We next conduct three counterfactual simulations to evaluate how the policy parameters that determine CTC eligibility either amplify or mitigate the observed eligibility disparities by family type. These simulations demonstrate that policy changes that made the CTC more refundable played a key role in reducing disparities in eligibility and the anti-poverty effectiveness of the CTC. Our first simulation makes the CTC fully refundable by assigning the maximum CTC to all families living with children under age 17 whose earnings are below the phaseout thresholds. Full refundability mitigates differences in eligibility and renders nearly 100 percent of single mothers eligible over the entire period. By 2017, a fully refundable CTC would have closed the poverty gap between single mothers and single fathers by 31 percent and between single mothers and married couples by 12 percent. After the TCJA, a fully refundable CTC would have led to a much larger 85 percent increase in the number of single mothers and children lifted out of poverty, relative to the observed lack of change. Thus, partial refundability of the CTC played a role in the under-representation of single mothers among those lifted from poverty after the TCJA.

Excluding the refundable portion from the CTC in our second simulation amplifies disparities over time. Counterfactual eligibility among single mothers would have instead *declined*—in contrast to the marked observed increase. The CTC would have lifted almost no one out of poverty had it been nonrefundable.

Our simulations also demonstrate that the erosion by inflation of the phase-out threshold played a key role in diminishing eligibility among high-income families by 2017, while the increase in the phaseout threshold in 2018 played a key role in eligibility disparities that re-emerged. Our third simulation expands the phaseout thresholds, in years 1998 to 2017, to the more generous levels in 2018. Expanding the phase out threshold amplifies differences in eligibility and undoes the convergence in eligibility. Increasing the threshold shifts eligibility upward the most among

[5]Studies yield different conclusions on magnitudes of the poverty reductions depending on assumptions about labor supply responses to the 2021 expansion of the CTC.

married couples—as they have the highest average earnings—accompanied by the smallest shifts among single mothers, who have the lowest earnings.

Our analysis is particularly relevant for understanding the effects of temporary CTC expansions under the 2021 American Rescue Plan, which made the credit fully refundable and more generous, as well as ongoing debates over the design of the CTC and state initiatives to implement their own state-level child tax credits. More generally, we demonstrate that policies that are applied in a gender neutral way can perpetuate gender inequality through rules that disadvantage single mothers. The consequences of CTC eligibility and refundability among single mothers is important because the CTC raises household income, and previous literature shows that income in the form of cash transfers like the CTC (e.g., the EITC) substantially improves child health and educational outcomes (Bastian and Michelmore, 2018; Dahl and Lochner, 2012; Hoynes et al., 2015, 2016; Manoli and Turner, 2018).

II. BACKGROUND ON THE CHILD TAX CREDIT

In the early 1990s, increased financial burdens on families with children because of slow wage growth, increased costs of living, and a rising tax burden for the average family raised concerns about the well-being of families with children (Crandall-Hollick, 2021).[6] In response to Congressional concerns that the individual income tax structure did not reflect a family's reduced ability to pay taxes, the 1997 Taxpayer Relief Act created the Child Tax Credit (CTC) starting from the 1998 tax year.

At inception, the CTC could be claimed for eligible dependents below 17 years of age as of December 31 of the tax year and the maximum credit was $400 per eligible child. The CTC consisted of a nonrefundable portion that could only be claimed up to the amount of tax liability and a refundable portion which was called the Additional Child Tax Credit (ACTC).[7] The CTC did not flow to the lowest-income households, because the ACTC only provided limited refundability for families with three or more qualifying children (and was nonrefundable for families with less than 3

[6] The real value of the dependent exemption fell by more than one-third over the prior 50 years.

[7] Eligible dependents are those who reside with (or are in the custody of one or both divorced or separated parents) the taxpayer for more than half of the year. Second, the taxpayer must be one of a specified set of relatives such as parent, grandparent, sibling, aunt, uncle, or step-parent. Third, the child must not provide more than half of his or her own support. Fourth, when multiple taxpayers qualify to claim the same child, a series of tie-breaker rules specify which tax unit may do so. Also, since 2018 only children with social security numbers can be claimed for the credit.

qualifying children)—the ACTC amounts were only 3 to 5 percent of the total CTC expenditures in the first few years (Lippold, 2019).[8] The credit was initially phased out for taxpayers with adjusted gross income (AGI) over fixed thresholds that were not indexed to inflation ($75,000 for single, $110,000 for married filing jointly, and $55,000 for married filing separately) at the rate of $50 for each additional $1,000 AGI in excess of the threshold.

Several reforms have raised the maximum credit amount and the generosity of the refundable portion of the CTC. Appendix Figure C1 illustrates changes in the CTC schedule over time in 2015 dollars for a single parent with one child (Panel A) or two children (Panel B). The maximum credit amount increased to $500 for the 1999 and 2000 tax years, to $600 for the 2001 and 2002 tax years, and to $1,000 from the 2003 to the 2017 tax years. The real value of the maximum credit starting falling from 2004, as it was never indexed to inflation. Several reforms made the CTC increasingly more refundable. Starting from the 2001 tax year the ACTC becomes available to all taxpayers with qualifying children whose earnings are above $10,000 (the minimum earnings threshold); this threshold is lowered further to $8,500 in the 2008 tax year and to $3,000 starting from the 2009 tax year.[9] Even those eligible for the ACTC may not receive the full credit because starting from the 2001 (2004) tax year taxpayers can only claim 10 (15) percent of the excess of their earned income over the minimum earnings threshold.[10]

The 2017 Tax Cuts and Jobs Act (TCJA) included a major change to the federal CTC, effective starting in the 2018 tax year. The TCJA doubled the maximum federal credit to $2,000 per child. The law further lowered the minimum income threshold allowing the receipt of the ACTC to $2,500. Notably, the law did not double the maximum amount of the refundable portion of the credit (unlike the maximum federal credit), and instead raised the maximum amount of the refundable portion from $1,000 to $1,400 per child.[11] The income level at which the credit begins to phase out increased from $110,000 to $400,000 for married filing jointly and from $75,000 to $200,000 for heads of household and single filers. The law created a credit for other dependents who are not eligible for the CTC. Finally, the TCJA increased the standard deduction and eliminated

[8] The ACTC equaled the excess of a taxpayer's payroll taxes over their EITC. Because lower-income taxpayers often pay less in payroll taxes than they receive in the EITC, few households benefited.

[9] The minimum earnings threshold was indexed to inflation.

[10] The ACTC could reach the maximum of the federal credit amount for households with sufficient earnings.

[11] The ACTC cap is adjusted for inflation; the law rounds the $1,400 amount to the next lowest multiple of $100. The first adjustment took place in 2022, when the ACTC rose to $1,500. As before, credit amounts and phase-out ranges are not adjusted for inflation.

the personal exemption, which independently can have ambiguous effects on federal tax liabilities depending on marital status and the number of dependents.[12]

The 2021 American Rescue Plan Act (ARPA) introduced temporary increases in the credit amount for many taxpayers, and especially the lower-income ones, for the 2021 tax year.[13] The law made the CTC fully refundable by eliminating the minimum income threshold to receive the refundable CTC and the ACTC cap of $1,400 per child. Moreover, the law expanded eligibility to children who are age 17, and increased the maximum amount of the credit from $2,000 to $3,600 per young child (aged 0 to 5) and to $3,000 per older child (aged 6 to 17). In 2022, the CTC reverted back to the rules outlined in the TCJA. Our data only go to tax year 2020, so we do not observe changes under ARPA.

III. DATA AND METHODS

We use individual-level data from the Annual Social and Economic Supplement (ASEC) to the monthly Current Population Survey (CPS) conducted in March of each year among households in all states (Flood et al., 2021). The ASEC contains employment, income, and program participation information for individuals from the prior calendar year, in addition to demographic information at the time of the survey, such as family structure. Official poverty statistics are published using these data every year. We use data from the 1999 to 2021 surveys, corresponding to income information from calendar years 1998 to 2020.

A. Construction of CTC Eligibility and Sample Selection

We use income information from the ASEC on labor earnings, non-labor earnings, and in-kind transfers. We use NBER's TAXSIM (Feenberg and Coutts, 1993) to simulate taxes and credits, including the CTC. TAXSIM calculates eligibility for the CTC and credit amounts, calculating both the federal CTC and the ACTC. Full details of tax simulations are in Online Appendix A. Importantly, this paper measures eligibility for the CTC, and does not model changes in other tax credits, aside from their influence on the after-tax-and-transfer family income.

[12] For instance, child-related tax credits may rise by less than the value of the CTC for families with multiple children for whom the higher standard deduction is worth less than the eliminated personal exemption. Auxier and Maag (2019) show that federal taxes did substantially fall after the CTC for families with children.

[13] Figure C1 does not include the 2021 ARPA expansion, because it is after the time-period included in our study.

We use two samples in our analysis. First, the sample in our eligibility analysis consists of parents who may be eligible for the CTC: individuals ages 20 and older with any own children (biological, step-child, or adopted) younger than 17 living with them at the time of the survey.[14] Thus, we exclude non-parents, such as grandparents, aunts/uncles, or foster parents.[15] Because we do not observe how long an individual lives with a child over the year, we assume that all own children present in the household at the time of the survey are claimed for the CTC.[16] Second, the sample in our anti-poverty analysis consists both of eligible parents (first sample) and of their children ages 0 to 17.[17]

Our analysis focuses on four family types based on marital status, household composition, and gender: (1) single mothers with no partner present, (2) single fathers with no partner present, (3) married couples living together, and (4) cohabiting unmarried couples.[18] Following Goldin and Michelmore (2022), for the TAXSIM calculations, when two unmarried taxpayers are cohabiting and have a child in the household, we assume the parent with the higher income claims the CTC.

We drop observations with imputed earnings and whole ASEC supplement imputations.[19] The Census Bureau imputes missing earnings for item non-responders and imputes the entire ASEC supplement to those who do not respond to the ASEC. We classify a worker as having imputed earnings if their wage and salary income from the longest job, from other jobs, or from self-employment earnings is imputed. A growing literature shows the importance of accounting for non-response, especially with the rise in non-response to earnings questions and to the entire ASEC (Bollinger et al., 2019; Hokayem et al., 2015; Jones and Ziliak, 2022). Following this literature, we drop observations with imputed earnings and re-weight our sample using inverse probability weights (IPWs) to maintain national representation.[20] Our conclusions accounting for imputations are qualitatively similar to using the full sample. However, using the sample including imputes

[14] Other researchers have used different age ranges; for example, Hoynes and Patel (2018) use ages 24 - 48 to avoid confusion about whether individuals can be reported as a qualifying child on a parent's return for the EITC, while Kleven (2023) use ages 20 to 50. Our results are qualitatively similar if we made such sample restrictions.

[15] When we compare the total number of children ages 0 to 16 to the number of own children ages 0 to 16 in our sample, we estimate that we are not picking up 5.9 percent of children in our analysis.

[16] We may also miss eligible individuals with children who live with the household for more than half of the year, but are not present at the time of the survey.

[17] This sample excludes non-parents who can claim the CTC and their dependents.

[18] Married and cohabiting couples include same-sex couples.

[19] We also drop 1.4 percent of observations because they have missing inputs to TAXSIM (that are not imputed); see Online Appendix A for a description of all inputs.

[20] For additional details, see Appendix B.

yields estimates of parents and children lifted from poverty by the CTC that are 22.3 percent higher, in a typical year, relative to dropping observations with imputed earnings.[21]

This paper focuses on describing which taxpayers are eligible for the CTC because we do not observe take-up. While we are unaware of take-up estimates of the CTC for the entire eligible population, we expect its take-up to be high given the high take-up rates of the EITC among families with children (Goldin et al., 2022).[22] Historically, tax credit take-up rates among families below the minimum income threshold required to file are lower, which likely affects single-mother, and Black and Hispanic households more than married and White households. Thus, we may overstate the anti-poverty effects of the CTC if there is incomplete take-up. However, we may understate the anti-poverty effects of the CTC if ineligible households receive the credit.[23]

We estimate CTC expenditures in the CPS using TAXSIM and the Census tax model and compare them to actual claims from IRS records in Appendix Figure C2 (in 2015 USD).[24] In our sample, expenditures using TAXSIM (the focus of this paper) match closely expenditures using the Census tax model, that only became available starting from the 2004 tax year. Our expenditure estimates match actual claims closely until 2004, but after that point our estimates are, on average, 20 percent lower than actual claims. While our estimates are very similar in magnitude for the nonrefundable portion of the CTC (Panel B), they are visibly lower for the refundable portion (Panel C).

These results are consistent with other studies finding that CPS tax imputations underestimate total CTC claims (Meyer et al., 2022; Lin, 2022).[25] Meyer et al. (2022) state that the underestimates in their sample are due to the CPS underestimating AGI and taxable income. This explanation is consistent with underestimates only in the ACTC that flows to households with

[21] This result is consistent with Jones and Ziliak (2022) who estimate the number of people lifted from poverty by the EITC is 35 percent higher with imputed earnings observations relative to using administrative data on earnings.

[22] Estimates using IRS data are closer to an 80 percent EITC take-up rate (Dickert-Conlin et al., 2005; Jones, 2013; Jones and Ziliak, 2022). Feldman et al. (2016) suggests that CTC take-up rates are close to 97 percent for the subset of families whose children are 16 or 17 years old.

[23] The IRS may pay for ineligible CTC claims just as it pays for ineligible EITC claims (Marcuss et al., 2014). About one-fourth of actual EITC payments are made improperly to ineligible tax units (Marcuss et al., 2014). Improper claims may results from qualifying child errors or misreported income. Jones and Ziliak (2022) find evidence that improper EITC claims mainly flow to low-income households.

[24] We obtained CTC claims using the IRS Individual Income Tax Returns Complete Report (publication 1304) table A (Internal Revenue Service, 2022) available at `https://www.irs.gov/statistics/soi-tax-stats-individual-income-tax-returns-complete-report-publication-1304`.

[25] Meyer et al. (2022) estimate that in the 2010 tax year imputations underestimate total CTC claims by 20 percent. Census calculations find that in the 2019 tax year the underestimate is entirely due to the ACTC (Lin, 2022).

the lowest incomes. If the CPS underestimates AGI, then TAXSIM will either under count the eligible, because their incomes in the CPS appear (mistakenly) to be below the minimum earnings requirement, or assign them a lower credit. Further, potential over-claiming of the CTC, as is the case with the EITC (Marcuss et al., 2014; Jones and Ziliak, 2022), may also explain this finding.[26]

B. Construction of Poverty Status

Using the above sample, we estimate the antipoverty effects of the CTC at the household level using a measure of after-tax and in-kind transfer income (ATT income) and supplemental poverty measure (SPM) thresholds. We follow Jones and Ziliak (2022) and generate the poverty status at the household level, which closely resembles the family unit defined for the SPM (Fox and Burns, 2021). Under the assumption that all household members pool resources to meet expenses, the poverty population is everyone in the household, regardless of relationship status. To determine whether an individual is in poverty we sum incomes of everyone in the household, and classify everyone in the household as in poverty if the total household income is below the SPM threshold.[27]

We measure household after-tax and in-kind transfer (ATT) income as the sum of pre-tax cash income (labor earnings; dividend, interest, and rental income; cash payments from private persons and governments including retirement income, social security/SSI/survivor/disability benefits, welfare transfers, worker's compensation, veteran's payments, alimony, child support, and unemployment insurance), the cash value of in-kind transfers (the Supplemental Nutrition Assistance Program (SNAP), the National School Lunch Program, and the Low Income Home Energy Assistance Program (LIHEAP)), minus tax payments from federal, state, and payroll taxes inclusive of refundable credits such as the EITC.[28]

To estimate the anti-poverty effects of the CTC, we compare the household ATT income

[26] Our eligible sample omits only a small share of non-parents with eligible children, so it's not a likely explanation. Starting from 2018, we under-estimate CTC expenditures because we do not include the full amount of the $500 credit for other dependents that applied to older dependents. Our total CTC expenditures exclude this credit for parents who only have children over age 16 in the household. However, our CTC expenditures include this credit for parents in our sample who also have children over age 16 in the household.

[27] In contrast, the official poverty population is based on family membership due to marriage, birth or adoption, and excludes cohabiting partners and unrelated people under age 15 (foster children are excluded).

[28] We do not include the value of in-kind housing assistance, the value of the Women, Infants, and Children program (WIC), and do not subtract expenses related to work and medical out-of-pocket expenses (MOOP), because we do not have a consistent measure of those for the entire period of our analysis (Hoynes and Patel, 2018; Jones and Ziliak, 2022).

including and excluding the CTC to the household-size specific SPM threshold.[29] The Census Bureau publishes the SPM thresholds from 2005 until 2021. Following Wimer et al. (2016), we construct "anchored" SPM thresholds from 1998 to 2004; we use the 2005 threshold and carry it back in time by adjusting it for inflation using the Consumer Price Index. We calculate SPM thresholds specific to the household size by adjusting the published threshold in each year for a family with two adults and two children. To do this, we use equivalence scales where we calculate thresholds for households using a three-parameter equivalence scale, where there are child- and adult-specific adjustments, and adjustments for single families.[30] Additionally, following the Census Bureau and BLS methodology, we use separate thresholds for two housing-status groups: owners (with and without a mortgage), and renters.[31]

IV. CTC ELIGIBILITY BY FAMILY STRUCTURE

A. Changes in the Composition of Who is Eligible for the CTC

We start by documenting the convergence of characteristics of individuals by CTC eligibility until 2017, and a striking reversal of this trend after the TCJA to their 1998 differences. Table 1 presents summary statistics for households with children ages 16 and younger in 1998 (the first year of the CTC), 2017 (just before the TCJA), and 2018 (just after the TCJA), separately by CTC eligibility.[32] In 1998, adults eligible for the CTC (relative to those ineligible) had higher incomes, were less likely to be in poverty, were less likely to be Black, Hispanic, and single mothers. In particular, married couples were disproportionately represented among those eligible for the CTC at 76.9 percent (relative to 66.7 percent in the population), while single mothers were at only 15 percent (relative to 24.9 percent in the population). By 2017, disparities in individual characteristics by credit eligibility shrank substantially, and even reversed as adults eligible for the

[29] The Bureau of Labor Statistics produces SPM thresholds using data on food, clothing, shelter and utilities from the Consumer Expenditure Survey. Please see details at https://www.bls.gov/pir/spmhome.htm.

[30] The scale for one or two adults without children is $numberofadults^{0.5}$; for single adults with children is $(1 + 0.8 + 0.5 * (numberofchildren - 1))^{0.7}$; and for other household types is $(numberofadults + 0.5 * (numberofchildren))^{0.7}$. To produce thresholds for two adults, the scale is set to 1.41.

[31] Data on the presence of a mortgage are not available for the entire period of our analysis, so we take a weighted average of thresholds for owners with a mortgage and owners without a mortgage, based on the share of individuals in each category.

[32] We aggregate statistics within each of our four household types, so each household type receives an equal weight.

CTC now had substantially lower incomes, were more likely to be Hispanic, while they had similar probabilities of being Black and single mothers. Thus, the representation of single mothers and married couples among those eligible closely matched their prevalence in the population. However, in 2018, disparities across the eligible and ineligible reverted back to their 1998 levels.

The changing composition of those eligible for the CTC is not due to changes in the prevalence of different family types with children under age 17 in the population or differential trends in their income. From 1998 to 2020, Panel A of Figure 1 shows only slight declines in the share of all married couples (from 66.7 to 63.5 percent) and single mothers (from 24.9 to 23.7 percent). Yet, Panels B and C show substantial changes in representation of the eligible families and in CTC expenditures by family structure. While the share of expenditures going to single mothers was rising until 2017, the situation reversed in 2018, as expenditures again disproportionately went to married couples.[33] Second, there have been similar trends in AGI by family structure among families with children (Panel A of Appendix Figure C3). While average incomes were rising among all families with children, by 2017, the incomes of families eligible for the CTC declined substantially, suggesting the importance of the changing policy parameters. Together, these figures show that neither shifts in family types nor differential trends in income by family type, alone, can explain changes in the composition of those who are CTC eligible.

B. Eligibility by Family Type over Time

In light of stark changes in the composition of CTC beneficiaries, we document trends in CTC eligibility and reasons for ineligibility across family types. Panel A of Figure 2 plots the evolution of the share of families with children younger than age 17 who are eligible for the CTC from 1998 to 2020. Table 2 provides summary statistics among those eligible for the CTC separately in 1998, 2017, and 2018. Finally, Figure 3 plots the share of families that are either completely ineligible, or are ineligible to receive the maximum credit. We plot the share of families: whose earnings are above the threshold at which the CTC completely phases out (Panel A), whose earnings are too low to receive a positive credit (Panel B), and who are only eligible for a partial credit because their earnings are too low (Panel C).

[33] The share of CTC eligible single fathers and cohabiting couples with children has been similar to their shares in the population.

Initially, single mothers were substantially less likely to be eligible for the CTC than other family types (Panel A of Figure 2). In 1998, 43.8 percent of single mothers were eligible compared to 67.4 percent of single fathers, 70 percent of cohabiting couples, and 79.8 percent of married couples. These wide gaps in eligibility reflect that single mothers have the lowest incomes, making them least likely to benefit from a virtually nonrefundable CTC. Consistent with this, the vast majority of single mothers are ineligible because their earnings are too low (Panel B of Figure 3).

The initial wide gaps in CTC eligibility of single mothers relative to other family types have shrunk substantially by 2017. The gap in eligibility of married relative to single mothers substantially declined (by 33.7 pp) to only 2.3 percentage points, while the eligibility among single mothers even surpassed that of single fathers by 3.1 pp in 2017 (Panel A of Figure 2).[34] Single mothers experienced the largest 23.6 pp *increase* in eligibility, which was mainly due to increases among lower-income mothers. This increase in eligibility reflects reforms that made the CTC more refundable, because the share of single mothers whose earnings were too low to qualify for a credit declined by 26 pp (Panel B of Figure 3), while the AGI among eligible single mothers fell by about 20 percent (panel B of Figure C3). In contrast, single fathers and married couples experienced 3.1 and 10.1 pp *declines* in CTC eligibility (Panel A of Figure 2). These declines are consistent with a phaseout threshold that was not adjusted for inflation, because the share of single fathers and married couples whose benefits were completely phased out rose by 9.1 and 18.3 pp, respectively (Panel A of Figure 3).

After the TCJA, the gaps in CTC eligibility of other family types relative to single mothers widened substantially, remaining until 2020 (Panel A of Figure 2). In 2018, the gap in eligibility among married couples and single mothers experienced the largest increase to 24.1 percentage points, which is similar to the sizable gap in 1998 that eroded by 2017. This widening is a result of eligibility among single mothers rising the least (from 2017 to 2018) by only 3.1 pp, relative to larger 6.4, 8.6 and 24.9 pp increases among single fathers, cohabiting couples and married couples, respectively. The stark increases in eligibility among family types with higher incomes (the AGI among the eligible married couples rose by nearly 50 percent), are consistent with the substantial expansion of the phaseout threshold. While the gaps by family type in the share of families whose credit is completely phased out continued widening until 2017, they suddenly equalized after TCJA,

[34] The gap in eligibility of cohabiting couples relative to single mothers declined by 9.4 pp.

as the share of individuals whose credit completely phased out dropped to below 2 percent for all family types (Panel A of Figure 3).

We show that there are only small differences in CTC *amounts* by family types before 2017, with a similar widening starting from 2018 as that for eligibility. Panel B of Figure 2 plots the average CTC amount (in 2015 USD) per qualifying child, conditional on CTC eligibility by family structure.[35] In 1998, single mothers were eligible for the smallest CTC per child at $514, while other family types were eligible for amounts that were only $20 to $40 higher. After TCJA, the disparity in average credit amount increases, where single mothers continue being eligible for the smallest CTC per child at $1,546, while other family types were eligible for amounts that were $170 and $220 higher.

This widening in CTC amounts is consistent with the rising role of partial refundability for single mothers after TCJA reforms. The gap in eligibility for a partial credit (among single mothers relative to single fathers and married couples) suddenly widened in 2018, as single mothers experienced a dramatic doubling in the share eligible for a partial credit, that was the highest among all family types at 32 percent (Panel C of Figure 3). This increase in eligibility for a partial credit is consistent with single mothers being less likely to have earnings high enough to qualify for the ACTC over $1,000, per child, and more likely to have earnings in the range where the $1,400 refundability cap would apply. Thus, the TCJA reforms resulted in a larger share of the credit to be potentially unavailable to single mothers, resulting in the rise in credit amount disparities.

C. Eligibility By Race/Ethnicity and Family Type over Time

Next, we show the trends in eligibility in Panel A of Figure 2 mask heterogeneneity within family type by race/ethnicity. Earnings among non-White families of all family types are substantially lower, which can result in: (a) initial disparities in credit eligibility by race, when the credit was virtually nonrefundable and (b) differential trends in eligibility as access to the CTC changed lower down and higher up the income distribution.[36] Moreover, the share of families headed by single mothers is substantially higher among Black and Hispanic families at 55 and 27 percent rela-

[35] Qualifying children are children between the ages of 0 and 16. While the age cap was eliminated with the TCJA for tax years 2018 and forward (with the introduction of the Credit for Other Dependents), we continue to use this definition for consistency.

[36] In our sample, relative to white families, earnings among Black families with children are 34, 36, 26 and 16 percent lower among single mothers, single fathers, married couples, and cohabiting couples, respectively.

tive to 17.6 percent among White families, while the earnings of Black and Hispanic single mothers are 34 and 24 percent lower, respectively.[37] Thus, we expect greater increases in eligibility among non-White families, and in particular among non-White single mothers, affecting a greater share of non-White children relative to White children.

Figure 4 shows that Black and Hispanic single mothers were initially much less likely to be eligible for the CTC than White single mothers. In 1998, Black and Hispanic single mothers were 20 and 24.9 percentage points less likely to be eligible than White single mothers. These disparities in eligibility nearly disappeared by 2017 with increases in eligibility among single mothers of all races. The increase was the most salient among Black (by 29.5 pp) and Hispanic (by 39.5 pp) mothers compared to a 14.4 pp increase among White single mothers. These results demonstrate that non-White single mothers benefited the most from expansions in CTC refundability because of their lower incomes.

While there is a relatively flat trend in eligibility among all single fathers (Panel B of Figure 2), eligibility among Black and Hispanic single fathers *increased* by 11.7 and 4.1 pp respectively between 1998 and 2017, while it *declined* by 8.5 pp among White single fathers. As Black and Hispanic families have lower incomes, larger increases in their eligibility is consistent with expansions of the CTC making it more refundable.

Finally, White married couples experienced the largest 16.8 pp decline in eligibility through 2017, when they were significantly less likely to be eligible compared to non-White married couples. From 2017 to 2018, however, White married couples experienced the greatest 29.9 pp increase in eligibility and in 2018, the share eligible by race converged. As White married couples have larger incomes, their steeper eligibility decline through 2017 and substantial 2018 eligibility increase is consistent with a greater share losing access through the erosion of the phaseout thresholds and a greater share gaining access in 2018 with the generous expansion of the phaseout threshold.

V. CTC POLICY PARAMETERS AND ELIGIBILITY

In this section we evaluate how changing the policy parameters that determine CTC eligibility alters the evolution of CTC eligibility by family structure. We aim to answer two questions.

[37] We use our sample of parents of children under age 17 in years 1998 to 2020 to calculate these statistics.

First, what changes in policy parameters amplify or mitigate the observed differences in CTC eligibility by family type? Second, does the importance of a policy parameter change over time by family type, as the CTC undergoes several reforms? To answer these questions, we conduct three counterfactual simulations.[38] These simulations only mechanically change CTC benefits, and do not reflect potential behavioral effects of such changes, such as changes in labor supply decisions.[39] Our results in Figure 5 and Appendix Figure C4 demonstrate how different policy parameters affect the evolution of disparities in CTC eligibility and credit amounts, respectively, by family type.

A. Simulation Making the CTC Fully Refundable

Our first simulation makes the CTC fully refundable by assigning the maximum CTC amount to all families living with qualifying children whose AGI is below the statutory phaseout thresholds. This is equivalent to eliminating both the minimum earnings threshold and the cap on the size of the ACTC, resulting in even the lowest income households (including those with no earned income) becoming eligible for the CTC.

Making the CTC fully refundable mitigates differences in eligibility across family types (Panel A, Figure 5). A fully refundable CTC increases eligibility among all family types, but matters the most for single mothers—almost 100 percent of single mothers become eligible for the CTC across our period of study. In 1998, the documented disparities in eligibility under the statutory CTC all but disappear under full refundability. The benefit of full refundability shrinks the most among single mothers over time, for whom statutory expansions of the refundable CTC are most important to increase eligibility.

Finally, a fully refundable CTC equalizes CTC amounts across all family types in all years (Figure C4). Notably, full refundability (Panel B) counteracts the observed widening of credit amounts by family structure in 2018 (Panel A) due to the partial refundability of the statutory CTC.[40] As previously discussed, the partial refundability played a role in creating the credit amount disparities in 2018 because a larger share of the credit became unavailable to lower-income house-

[38] Please see Online Appendix A for more details on these simulations.

[39] In a similar simulation analysis of the 2018 CTC, Goldin and Michelmore (2022) also does not model such behavioral effects.

[40] While the TCJA lowered the minimum earnings threshold to $2,500 (from $3,000), the CTC remained only partially refundable—individuals could claim 15 percent of the excess of their earned income over $2,500 as the refundable portion of the credit, the ACTC. The TCJA also introduced a $1,400 cap on the refundable credit out of the maximum credit of $2,000, while no such cap was present before.

holds, disadvantaging single mothers relative to other household types.

B. Simulation Eliminating the Refundable Portion of the CTC

Our second simulation demonstrates the importance of the refundable portion (the ACTC) of the CTC by assigning only the *nonrefundable* CTC amount to all families living with qualifying children. This leads low-income households (with low tax liabilities) to lose eligibility for the CTC.

Panel B of Figure 5 shows that eliminating the ACTC substantially dampens the convergence of eligibility across family types. Eliminating the ACTC has the most dramatic consequences for single mothers (consistent with their lower incomes), as their eligibility would have fallen over time rather than slowly increasing as it did under the statutory CTC. This exercise suggests that the rising generosity of the ACTC played a critical role in diminishing the wide eligibility gaps between single mothers and other family types through 2017.

Finally, a nonrefundable CTC also amplifies the gaps in credit *amounts* by family type, relative to statutory CTC, especially after 2018 (Appendix Figure C4). Tax liabilities among single mothers are more likely to be below the maximum credit, resulting in them receiving lower credit amounts in the absence of refundability. This is true even with the doubling of the credit in 2018, as their tax liabilities simply become an even smaller share of the credit.

C. Simulation Expanding the Phaseout Threshold

Our third simulation raises the phaseout thresholds from 1998 to 2017 to the more generous 2018 thresholds. This "expanded CTC" only raises the phaseout thresholds from $110,000 to $400,000 for married couples, and from $75,000 to $200,000 for all other family types; it does not change the credit for households whose income is below the statutory phaseout thresholds. The expanded CTC allows higher-income households to gain eligibility for the CTC.

Raising the phase-out thresholds amplifies disparities in eligibility by family type. Relative to the statutory CTC, this counterfactual expanded CTC increases eligibility the most among married couples, followed by single fathers, consistent with their higher average incomes. Instead of the stark decline in eligibility among married couples, eligibility instead rises over time under an expanded CTC. The decline in eligibility among single fathers and married couples under the statutory CTC is due to the increasing bite of the phase out threshold, as inflation eroded the

threshold while their incomes rose. In contrast, raising the thresholds benefits single mothers the least, as a much smaller share of single mothers have incomes above the more generous phaseout threshold. By 2017, these disparities diminish by less than under statutory CTC, implying that the lower phase out threshold played a role in the convergence of eligibility under statutory CTC.

In addition, these simulations highlight the role the 2018 phaseout threshold increase played in the widening gap in eligibility by family structure. Under the simulated CTC, eligibility evolves smoothly from 2017 to 2018 for all family types. This makes clear that the observed steep increases in eligibility in 2018 among married couples, followed by cohabiting couples and single fathers, can be explained by the generous increase in the phaseout thresholds under the TCJA.

The 2018 increase in the phaseout threshold also explains a small part of the widening gap in credit *amounts*. Raising the phaseout threshold to 2018 levels slightly increases credit amounts for married couples and single fathers before 2018, but not among single mothers. Thus, a small part of the increase in credit amounts among married couples and single fathers after the TCJA is also due to the expansion of the phase-out threshold.

VI. ANTI-POVERTY EFFECTS OF THE CTC

To our knowledge, there are no estimates of the CTC's anti-poverty effectiveness over time. This is important considering how expensive the CTC has become. Moreover, there are large differences in poverty rates across family types; in our sample, the poverty rate of single mothers is 32.3 percent, which is 13.4 pp, 14.6 pp, and 23.9 pp higher than the poverty rate among single fathers, cohabiting couples, and married couples, respectively. These poverty gaps suggest that the changing eligibility for the CTC may have differential anti-poverty effects by family type. In this section, we aim to answer two questions. First, how has the increasing eligibility among single mothers over time correlated with how effective the CTC became at lifting them out of poverty? Second, how do specific CTC policy parameters affect poverty gaps across family types?

The CTC may affect poverty status due to changes in after-tax household income through three mechanisms. First, the "credit effect" increases income due to the direct effect of CTC payments. Second, the "earnings effect" may change income due to behavioral responses of parental labor supply. Third, the "income adjustment effect" may affect income due to offsetting changes in

public assistance benefits (such as SNAP or TANF) if the CTC affects labor income.[41] We do not estimate the behavioral effects of the CTC on poverty due to potential changes in labor supply, but they are important to keep in mind.[42] Empirically, the CTC increased labor force participation among single mothers (Kang, 2020; Zheng, 2020) and low-income single parents (Lippold, 2019), where the estimated elasticities are similar to those in prior work on the EITC (Hoynes and Patel, 2018). Among married parents, the CTC either increased labor force participation among low-income parents (Lippold, 2019) or had null effects on mothers (Kang, 2020; Zheng, 2020).[43] Relevant to our full refundability simulations, Ananat et al. (2022) causally show that the temporary 2021 CTC expansion—raising credit amounts and making the credit fully refundable—did not lead to negative employment effects in the short-term among adults with children.[44]

Overall, the CTC has become an important anti-poverty program. Panel A of Figure 6 graphs the trends in the share of parents and children who are below the poverty line by family type using ATT household income, with and without the CTC. Thus, the vertical difference between these two lines is the contribution of the CTC to poverty reduction. Panel B translates the difference in poverty rates with and without the CTC into the number of individuals lifted out of poverty.[45] The number of individuals lifted out of poverty was only about 146,000 initially and steadily increased until 2011, reaching 2.4 million. It then slightly declined to 2 million by 2017. The number lifted from poverty jumped to its highest level at 2.7 million in 2018. The doubling of the maximum credit in 2018 undoubtedly contributed to this stark jump.[46]

A. Anti-Poverty Effects of the CTC by Family Structure

This overall picture of the anti-poverty effectiveness of the CTC conceals substantial heterogeneity by family type. Figure 7 replicates Panel A and Figure 8 replicates Panel B of Figure 6

[41] Hoynes and Patel (2018) introduce these terms in their discussion of the effects of the EITC on poverty.

[42] Similar analysis on the EITC by Jones and Ziliak (2022) also does not model such behavioral effects.

[43] In contrast, Eissa and Hoynes (2004) show that the EITC leads to a small decline in the labor supply among married mothers. Feldman et al. (2016) find that the loss of the CTC when a child turns 17 among those with AGI between $30,000 and $100,000 reduces the reported wage income, implying a decline in labor supply. The authors interpret it as taxpayer confusion, when individuals interpret the loss of benefits as increases in marginal tax rates.

[44] Ananat et al. (2022) does not differentiate by family structure. However, Corinth et al. (2021) argue that this expansion would lead to substantial dis-employment effects.

[45] The sample in Panel A consists of parents with any own children under age 17 and their children under age 18, who are living with them. The sample in Panel B consists of all individuals; poverty status is assigned at the household level, so we count all members in the household as lifted out of poverty. Panel B provides an under-estimate of the number of individuals lifted from poverty because we do not assign the CTC to non-parents.

[46] We do not focus on poverty reductions in 2020, because of independent effects of the COVID-19 pandemic.

separately by family type.[47] These figures provide a more nuanced view of the anti-poverty effectiveness of the CTC. Prior to the mid-2000s, relative to their share in the population, single mothers (and single fathers) are under-represented among those lifted out of poverty, while cohabiting and married couples are over-represented. In 2001, out of all parents and children lifted out of poverty: 2, 11.2, 12.2, and 74.7 percent reside in single father, cohabiting, single mother and married households, respectively. Beginning in the early to mid 2000s, the CTC led to the largest declines in the poverty rate among married couples, accompanied by the steepest increases in the number of married couples and their children lifted from poverty. Thus, the initial under-representation among single mothers in those eligible for the CTC translates into a similar under-representation among those who the CTC lifts out of poverty.

Starting in the late 2000s, disparities in the anti-poverty effectiveness of the CTC shrink across family types. Single mothers experience larger poverty reductions due to the CTC relative to married couples, which results in the representation of single mothers among those lifted out of poverty to be slightly higher than their prevalence in the population.[48] In 2017, the CTC reduced the poverty rate by 0.9, 1.4, 2.6 and 2.7 pp among single fathers, married couples, cohabiting couples and single mother households, respectively. By 2017, the CTC closed the 17.3 pp gap (in the absence of CTC) in the poverty rate among single mothers and fathers by 1.8 pp, and the 27.3 pp gap (in the absence of CTC) among single mothers and married couples by 1.3 pp. Thus, the greatest increase in eligibility among single mothers by 2017 translates into the greatest increase in the anti-poverty effectiveness of the CTC.

After the TCJA, disparities in the anti-poverty effectiveness of the CTC again re-emerge. Single mothers again became under-represented among those lifted from poverty, relative to their representation in the population. In 2018, out of those lifted from poverty: 1, 15.4, 19.8, and 63.7 percent resided in single-father, cohabiting, single-mother and married households, respectively. Between 2017 and 2018, the number of parents and children lifted out of poverty did not change among single mother families, but increased by 48.9 and 89.2 percent among married and cohabiting families, respectively.[49] Thus, increasing disparities in CTC amounts and the share of families

[47] The sample in both figures consists of parents with any own children under age 17 and their children under age 18.

[48] Out of all parents and children lifted out of poverty in 2017, 27.4 percent reside in single mother households, 1.1 percent in single-father households, 63.7 percent in married households, and 11.2 percent in cohabiting households.

[49] The lack of an increase among single mothers masks heterogeneity by race. While the number lifted from poverty

eligible only for a partial credit translate into the declining importance of the CTC at lifting single mothers out of poverty.

Appendix Figures C5 and C6 show that the CTC becomes more effective at reducing poverty rates among non-White relative to White households of all types. In our time period, poverty rates are consistently higher among Black and Hispanic relative to White households of all types. Thus, because a greater share of non-white individuals live in households with incomes below the poverty line, they stand to gain the most (in terms of poverty reductions) from a credit that increasingly becomes available to lower-income households. In particular, the average poverty rate (in our time period) among Black and Hispanic single mothers is nearly 40 percent, which is higher than the 25 percent poverty rate among White single mothers. More Black and Hispanic single mothers are lifted out of poverty than White single mothers, which is consistent with their greater increase in CTC eligibility and higher poverty rates. Hispanic married couples have higher poverty rates of 18 percent relative to 5.6 and 9.5 percent among White and Black marred couples, respectively. Appendix Figure C5 shows that more parents and children living in Hispanic married households are lifted out of poverty relative to other family structures, which is consistent with their largest increases in eligibility and higher poverty rates.[50]

B. The Role of Specific CTC Parameters and Poverty

The importance of the refundable component of the CTC in the anti-poverty effectiveness of the CTC is clear. The fewest number of people are lifted out of poverty without the ACTC (the poverty rates with and without the ACTC are nearly identical among all family types), while a fully refundable CTC would have lifted an additional 1.6 million individuals at inception (Figure 6). Moreover, the gap in poverty rates between the statutory and the fully refundable CTC has shrunk from 1.3 pp in 1998 to 0.4 pp in 2017, suggesting that expansions of the ACTC contributed to the increasing poverty reductions of the CTC.

Again, the overall picture of the importance of full refundability obscures heterogeneity by family type. The gap in the poverty rate between the statutory and a fully refundable CTC is the largest among single mothers in all years, which is consistent with full refundability increasing

doubled among Black women, it declined among Hispanic mothers and did not change among White mothers.

[50] Strikingly, out of all family types and races, the CTC reduces poverty rates the most among Hispanic cohabiting couples.

eligibility among single mothers the most. Thus, the virtual non-refundability of the initial credit made the CTC less effective at lifting single mothers out of poverty, relative to other family types.

Reforms making the CTC more refundable through 2017 undoubtedly played a role in increasing the anti-poverty effectiveness of the CTC among single mothers. Substantial scope remained for a fully refundable CTC to further reduce poverty rates among single mothers, however. While the difference in the poverty rate between the statutory and a fully refundable CTC shrinks among every family structure, it remains sizable at 1.3 pp among single mothers.[51] This suggests that while expansions in the ACTC led to a near convergence of poverty rates under statutory and a fully refundable program among other family types, single mothers could still see considerable poverty reduction from a fully refundable program. Thus, relative to the statutory CTC, a fully refundable CTC would have closed the 2017 gap in poverty rates between single mothers and married couples by an *additional* 2 pp and between single mothers and single fathers by an additional 3.6 pp.

After the TCJA, the partial refundability of the statutory CTC played a role in the lack of an increase in the anti-poverty effectiveness of the CTC among single mothers (and single fathers) relative to substantial increases among married and cohabiting couples. The gap between the number of single mothers (and single fathers) lifted from poverty under the fully refundable relative to the statutory CTC suddenly widens in 2018, and does so by much more than for other family types (Figure 8). This translates to a much larger 85 percent increase in the number of single mothers lifted from poverty under a fully refundable CTC, between 2017 to 2018, relative to no changes we documented under the statutory CTC. Thus, the TCJA's doubling of the credit provides little benefit to single mothers (in terms of lifting them out of poverty), who instead become much more likely to be eligible for a partial credit.

VII. CONCLUSION

Altogether, our findings demonstrate the evolving differences in CTC eligibility, as parameters governing the credit have changed, and the resulting effects on disparities in poverty rates by gender and family structure. Initially, single mothers were the least likely to be eligible for the CTC because it was virtually nonrefundable and their tax liabilities were more likely to fall below the credit. Over

[51] In 2017, this gap is 0.24, 0.27, and 0.45 pp gaps among married, cohabiting, and single-father households, respectively.

time, as reforms allowed lower-income households to be eligible for the CTC, eligibility grew among single mothers, and the CTC became more important at lifting single mothers out of poverty. The CTC is an important anti-poverty program overall, with growing effects over time. By 2018, the CTC lifted 2.7 million parents and children out of poverty. This number is slightly lower that the 4 million individuals per year that the EITC lifts out of poverty (Jones and Ziliak, 2022)—the EITC has lifted more people out of poverty than any other safety net program for children and non-elderly working households (Hoynes and Patel, 2018; Ziliak, 2015).[52]

Our findings underscore the importance of refundable tax credits, because of their greater value to low-income families with little tax liability to offset. Batchelder et al. (2006) argue for refundable credits in general for efficiency reasons, while Edelberg and Kearney (2023) propose several reforms to the current CTC including a partial award to nonearners with a sharp phase-in. For families with low tax liability, a nonrefundable credit that scales with the number of dependents provides little bonus for additional children because it is capped by a family's tax liability. Consistent with these predictions, in our counterfactual simulations, we demonstrate that a fully refundable CTC makes the most difference in raising eligibility among single mothers.

Our analysis highlights how gender-neutral policies can have disproportionate effects by family structure. Although tax law does not codify differences by gender, men and women often have different preferences, have different spending patterns, and may engage differentially in unpaid household work. These correlates of group membership, whether choices, a result of structural/institutional factors in the economy or of systemic discrimination can make a tax system that appears equitable conditional on income, inequitable by gender. We find substantial differences in CTC eligibility and its anti-poverty effectiveness by gender and family type, which points to the importance of critically evaluating how the tax system reinforces or mitigates inequities that already exist.

[52] Hardy et al. (2022) demonstrate that the EITC reduces income inequality as well.

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Table 1: Taxpayer Characteristics by Child Tax Credit Eligibility

	1998		2017		2018	
	No Credit	Credit	No Credit	Credit	No Credit	Credit
Share of Individuals (%)	29.9	70.1	30.1	69.9	12.4	87.6
CTC per Child among the Eligible	$0	$547	$0	$869	$0	$1,790
Adjusted Gross Income	$66,086	$80,410	$151,150	$65,751	$72,273	$93,862
After Tax and Transfer Income	$51,773	$60,603	$101,808	$55,113	$56,565	$73,905
Share in Poverty (%)	53.4	0.6	28.7	7.5	66.4	6.0
Labor Force Participation Rate	66.1	88.5	68.7	87.3	37.2	88.1
Age of Adult	36	37	41	38	39	39
Number of Children Ages 0-16	2.0	1.8	1.7	1.9	1.8	1.8
Share Non-Hispanic White (%)	52.8	73.2	60.9	54.2	44.6	58.2
Share Non-Hispanic Black (%)	22.5	10.7	14.1	13.4	22.8	11.7
Share Hispanic (%)	20.0	11.7	14.9	24.3	24.8	20.9
Share Married (%)	45.7	76.8	64.1	63.5	28.1	69.8
Share Cohabiting (%)	3.7	3.5	3.4	8.3	3.6	7.1
Share Single Mother (%)	45.5	15.1	25.7	22.9	55.5	18.8
Share Single Father (%)	5.2	4.5	6.8	5.3	12.7	4.3
Number of Individuals	10,354,478	24,322,854	10,420,886	24,172,962	4,251,936	30,066,544
Number of Observations	3,915	9,095	4,050	9,475	1,572	11,607

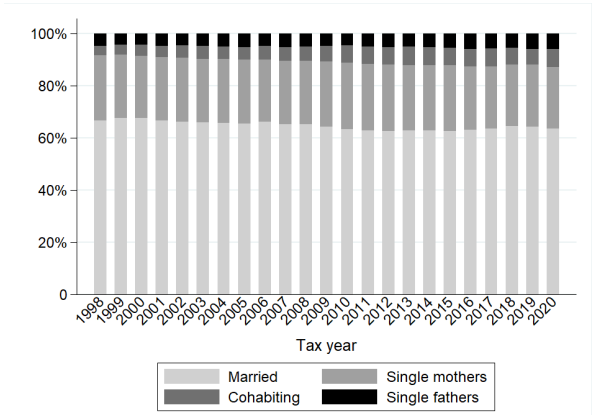
Sources and notes: Current Population Survey (1999, 2018, and 2019). Sample restricted to individuals ages 20 and older at the time of the survey with at least one own child ages 0 through 16 in the household at the time of the survey. Sample excludes duplicates within couples; among cohabiting couples, statistics reflect those of the partner with higher earnings. AGI and ATT income calculated using inputs to TAXSIM (see appendix A for full details). Dollar amounts in 2015 USD. Number of children is the number of own children ages 0 to 16 (eligible for the CTC) residing in the household. Weighted using IPW weights to account for imputed observations (see appendix B for full details). CTC per child is calculated as the total CTC divided by the number of own children ages 0 to 16.

Table 2: Characteristics by Family Structure: Taxpayers Eligible for the Child Tax Credit

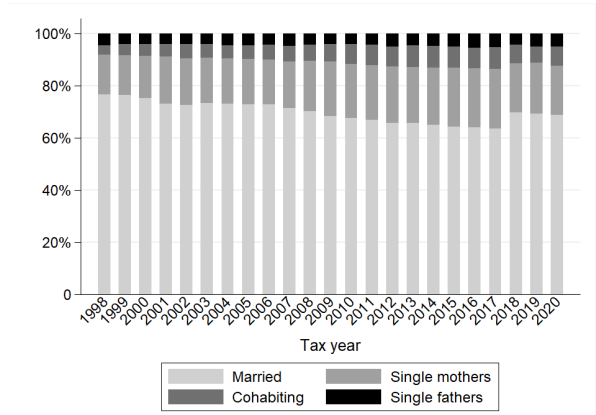
A. Couples	Married Parents			Cohabiting Parents		
	1998	2017	2018	1998	2017	2018
Share Receiving CTC (%)	79.8	69.7	94.6	70.0	84.2	92.8
CTC per Child	$554	$868	$1,865	$532	$905	$1,712
Adjusted Gross Income	$87,037	$75,868	$110,812	$68,077	$59,695	$67,460
After Tax and Transfer Income	$64,024	$60,942	$84,196	$54,945	$51,466	$57,770
Share in Poverty (%)	0.4	4.8	3.5	1.4	8.7	9.9
Mother LFP Rate (%)	73.4	67.0	71.1	83.2	71.4	74.3
Father LFP Rate (%)	97.6	95.0	96.2	94.9	94.9	92.9
Mother's Age	36.1	37.3	38.6	31.5	32.5	33.3
Father's Age	38.4	39.8	40.8	33.1	34.7	35.5
Number of Children Ages 0-16	1.9	2.0	1.9	1.6	1.9	1.8
Share Non-Hispanic White (%)	75.9	58.1	63.0	68.4	57.6	52.4
Share Non-Hispanic Black (%)	7.3	7.4	6.5	15.3	13.1	14.5
Share Hispanic (%)	11.7	24.7	19.7	14.9	22.8	26.8
Number of Individuals	37,400,000	30,700,000	41,900,000	1,688,540	3,940,242	4,158,611
Number of observations	14,344	12,729	16,988	700	1,517	1,577
B. Singles	Mothers			Fathers		
	1998	2017	2018	1998	2017	2018
Share Receiving CTC (%)	43.8	67.4	70.5	67.4	64.3	70.7
CTC per Child	$514	$851	$1,546	$544	$888	$1,768
Adjusted Gross Income	$53,448	$42,137	$46,492	$68,342	$55,997	$70,448
After Tax and Transfer Income	$46,829	$41,706	$45,388	$53,350	$49,148	$58,679
Share in Poverty (%)	0.8	14.7	14.2	1.3	6.0	4.5
LFP Rate	97.5	96.3	95.5	98.9	96.3	97.8
Age of Adult	35.8	36.3	36.6	38.7	39.2	40.1
Number of Children Ages 0-16	1.5	1.7	1.7	1.5	1.5	1.5
Share Non-Hispanic White (%)	61.4	40.6	40.0	70.8	58.5	63.6
Share Non-Hispanic Black (%)	26.0	29.1	29.9	14.0	16.9	10.9
Share Hispanic (%)	10.5	25.3	24.0	11.1	18.6	18.5
Number of Individuals	3,669,327	5,516,911	5,653,153	1,107,239	1,272,894	1,307,064
Number of observations	1,231	1,925	1,902	340	426	420

Sources and notes: Current Population Survey, 1999-2020. Sample restricted to individuals ages 20 and older at the time of the survey with at least one child ages 0 through 16 at the time of the survey, and eligible for the CTC. AGI and ATT income is calculated using inputs to TAXSIM (see appendix A for full details). Dollar amounts in 2015 USD. Number of children is the number of own children ages 0 to 16 residing in the household. Weighted using IPW weights to account for imputed observations (see appendix B for full details). CTC per child is calculated as the total CTC divided by the number of own children ages 0 to 16.

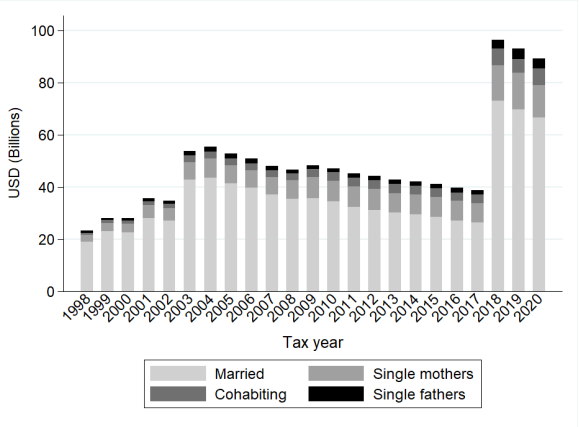
Figure 1: Trends in Family Structure and CTC Expenditures



(a) All Families with Children



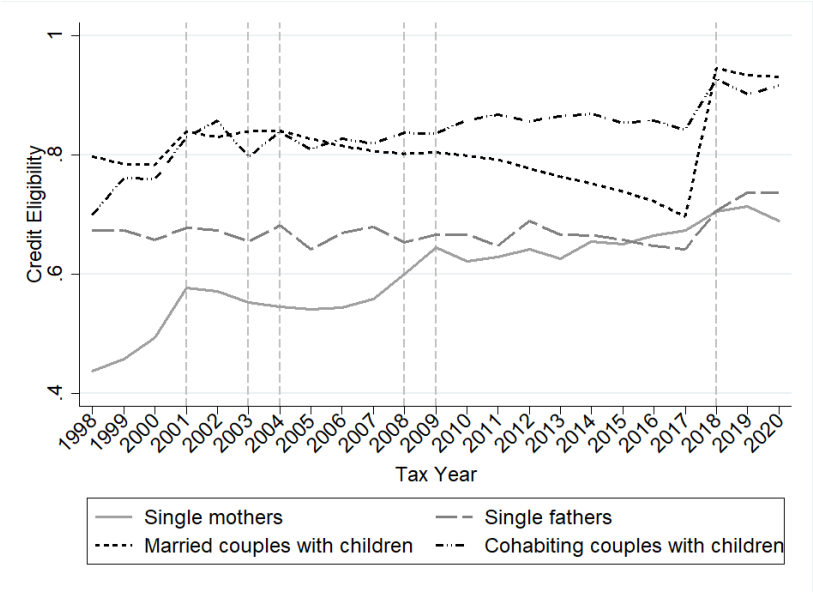
(b) Families Eligible for the Child Tax Credit



(c) Expenditures on the CTC

Notes: Panels A and B show the evolution of the prevalence of different types of families with children. Married and cohabiting couples include both opposite-sex and same-sex partners. Panel A includes all households with any own children ages 16 and younger at the time of the survey, while panels B and C restrict the sample in panel A to households who are also eligible to receive the Child tax Credit (CTC). Panel C aggregates CTC expenditures among each family type using our CPS sample. Dollar amounts in 2015 USD. Source: CPS 1999-2021.

Figure 2: Federal CTC Eligibility and Amounts by Family Structure

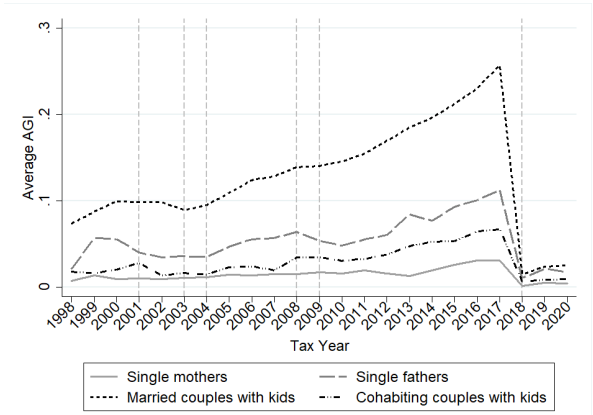


(a) Federal CTC Elibility

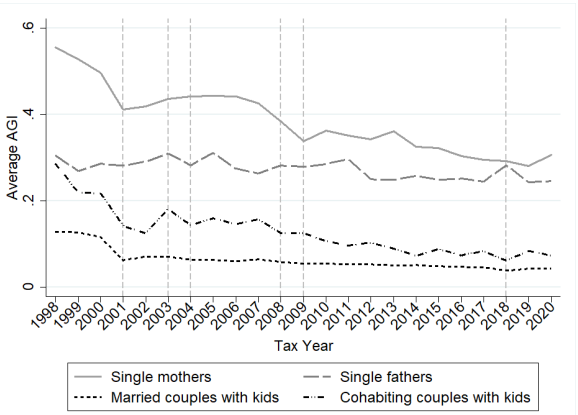
(b) Federal CTC Amount

Notes: Panel A shows the evolution of the share of households with children who are eligible to receive the CTC by household type. We restrict the sample to individuals ages 20 and older, with any own children ages 16 and younger at the time of the survey. Panel B shows the evolution of the CTC amount among individuals in our sample in panel A, who are also eligible to receive the CTC, per own child ages 16 and younger. Dollar amounts in 2015 USD. Vertical lines indicate federal expansions to the CTC. In 2001, the maximum credit value was increased to $600 and the refundable component was introduced. In 2003, the maximum credit value was increased to $1,000 and the refundable component was expanded. It was expanded again in 2004; in 2008 and 2009, the earnings threshold amount was lowered. The value of the maximum credit was doubled to $2,000 and the income threshold at which the CTC begins to phase out raised to $400,000 for married filing jointly and to $200,000 for heads of household and single filers beginning in tax year 2018. Source: CPS 1999-2021.

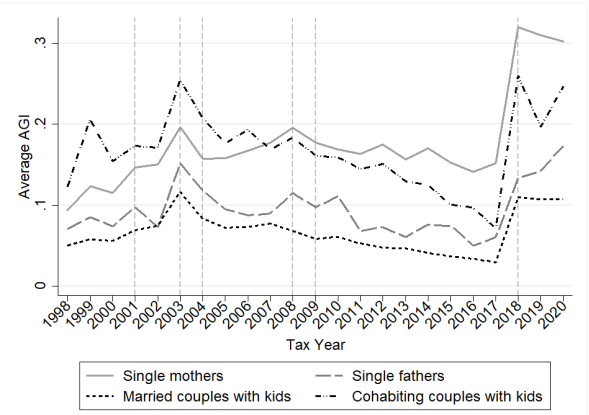
Figure 3: Reasons for Ineligibility for the Federal CTC by Family Structure



(a) Percent with AGI that is Too High



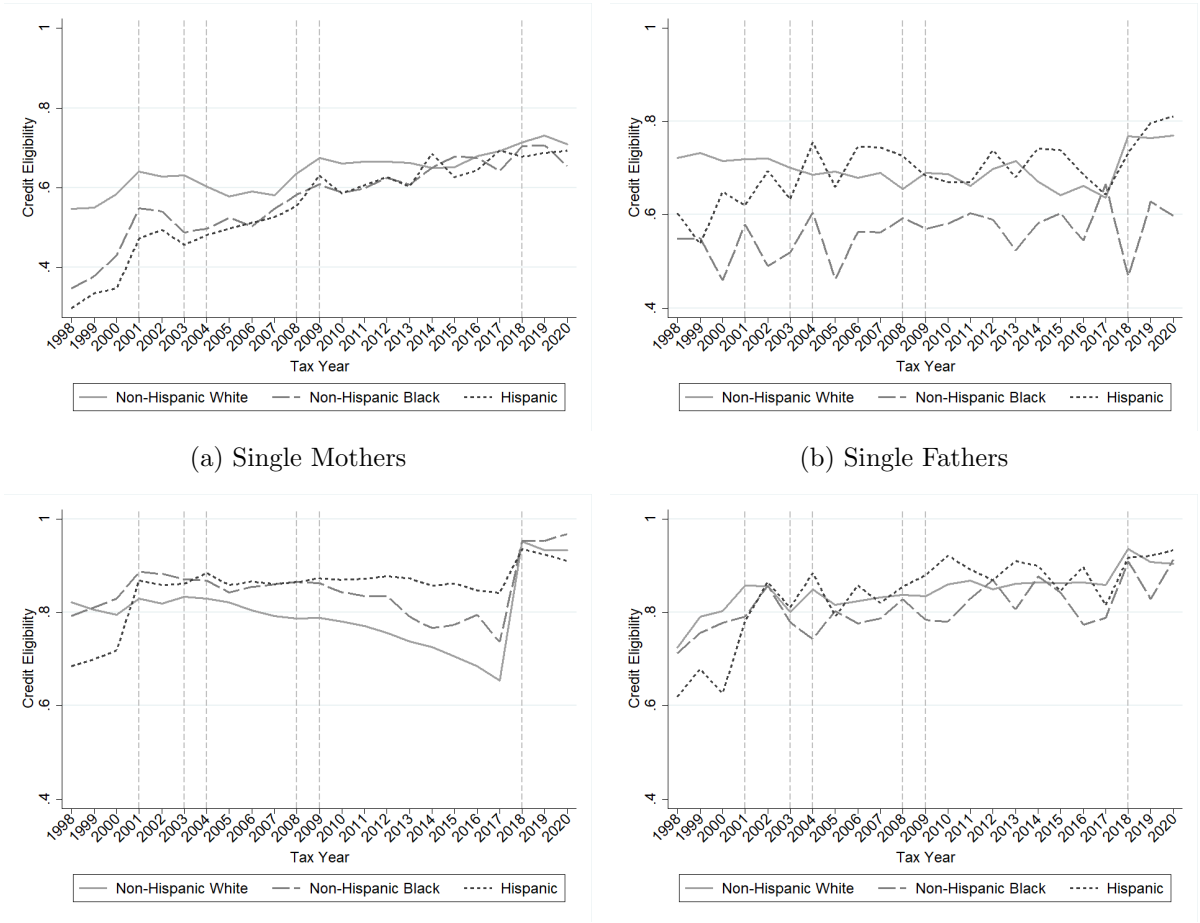
(b) Percent with Insufficient AGI



(c) Percent Eligible for Partial Credit

Notes: By household type: Panel A shows the evolution of the share of households with children who are ineligible to receive the CTC because their AGI is above the threshold at which the CTC completely phases out; Panel B shows the evolution of the share of households with children who are ineligible to receive the CTC because their AGI is too low; and Panel C shows the evolution of the share of households with children receiving only a partial credit, because their low AGI does not allow them to qualify for the full credit. We restrict the sample to individuals ages 20 and older, with any own children ages 16 and younger at the time of the survey. Vertical lines indicate federal expansions to the CTC. Source: CPS 1999-2021.

Figure 4: Federal CTC Eligibility by Race/Ethnicity



(a) Single Mothers

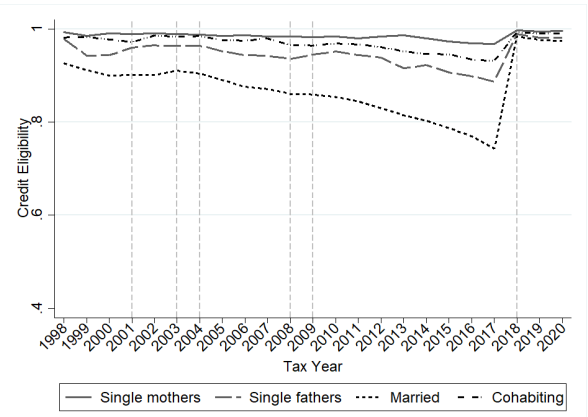
(b) Single Fathers

(c) Married Couples

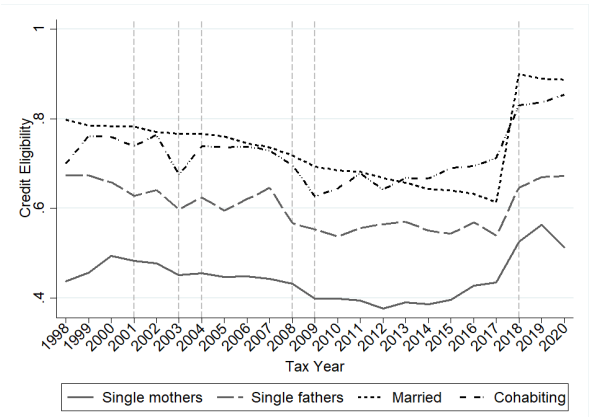
(d) Cohabiting Couples

Notes: Panels show the evolution of the share of households with children who are eligible to receive the CTC by household type and race. We restrict the sample to individuals ages 20 and older, with any own children ages 16 and younger at the time of the survey. Vertical lines indicate federal expansions to the CTC. Source: CPS 1999-2021.

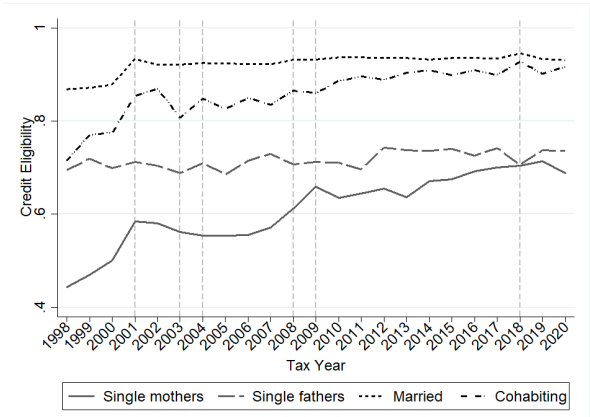
Figure 5: Federal CTC Eligibility: CTC Policy Simulations



(a) Fully Refundable CTC



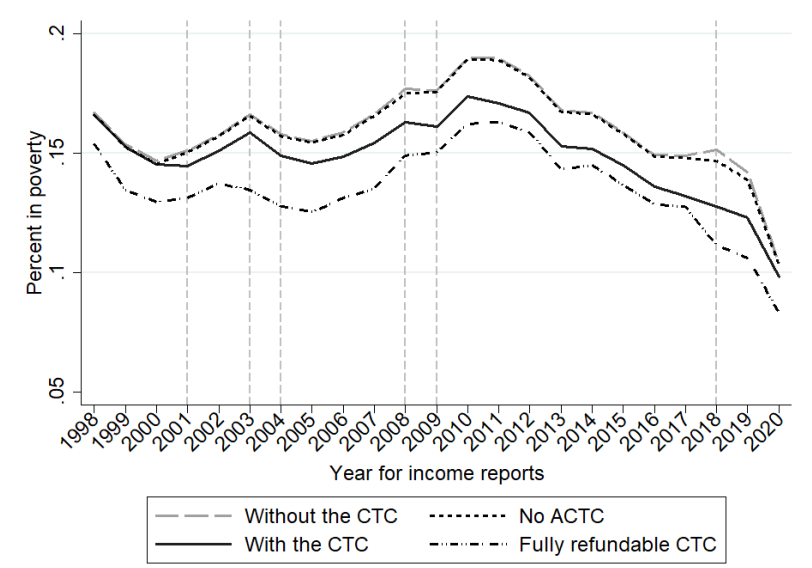
(b) Nonrefundable CTC



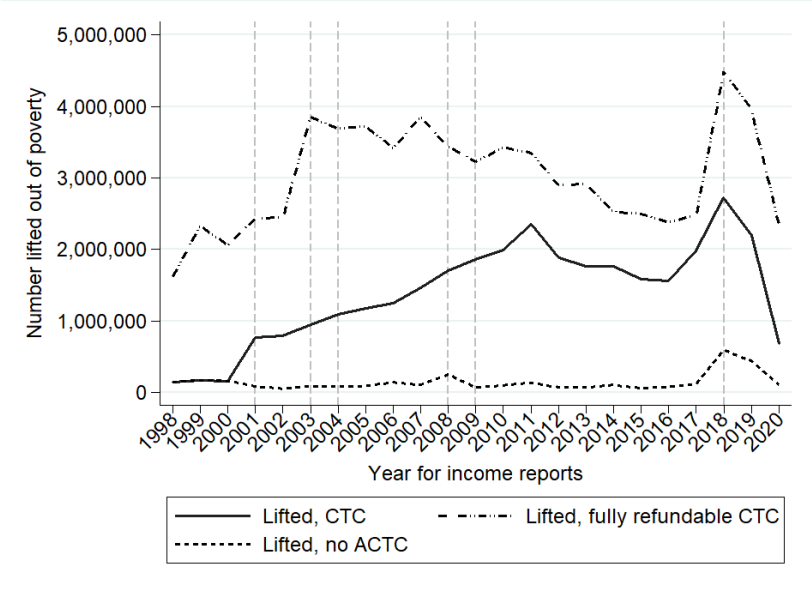
(c) Expanded Phaseout Thresholds

Notes: Panels show the evolution of the share of households with children who are eligible to receive the CTC by household type. Figures show the effect of alternative policy reforms to the CTC rules. Panel A simulates a fully refundable CTC that creates a child benefit for all families living with eligible children (equal to the maximum federal credit amount) with incomes below the phase out thresholds. Panel B simulates a nonrefundable CTC where we exclude the refundable portion (ACTC) of the CTC. Panel C simulates the statutory CTC but in years 1998 to 2017 expands the income thresholds at which the CTC begins to phase out to the more generous phase out levels in 2018 (thus raising the phase out levels from $110,000 to $400,000 for married couples, and from $75,000 to $200,000 for single parents). We restrict the sample to individuals ages 20 and older, with any children ages 16 and younger at the time of the survey. Vertical lines indicate federal expansions to the CTC. Source: CPS 1999-2021.

Figure 6: Trends in After-Tax Poverty



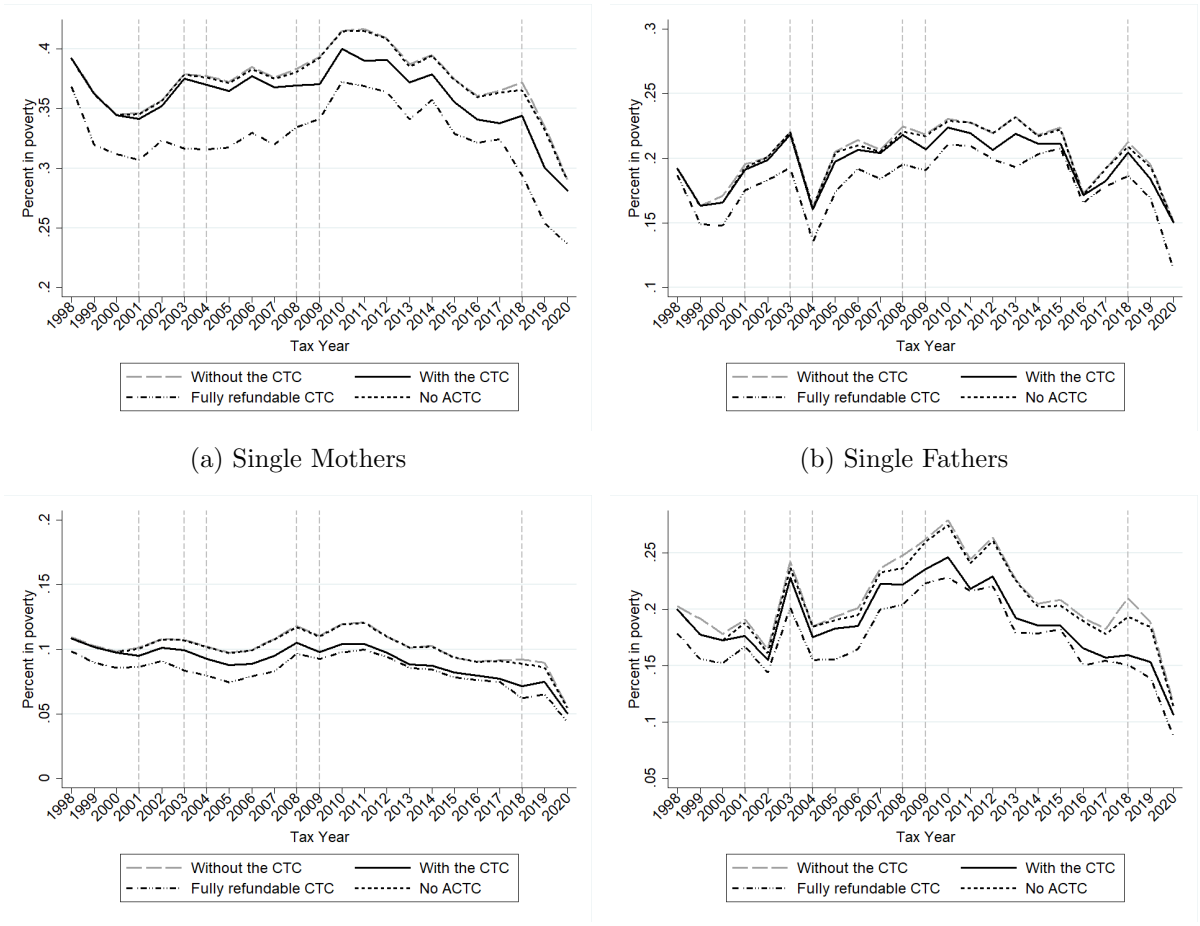
(a) Poverty rate among parents and children



(b) Number of parents and children lifted out of poverty

Notes: Panel A shows the evolution of the share of parents and children who are below the SPM poverty threshold, using the after-tax and in-kind transfer (ATT) household income: (a) without the CTC, (b) with the CTC, (c) with the CTC but excluding the refundable ACTC, and (d) with a fully refundable CTC. The sample includes individuals ages 20 and older with any own children ages 16 and younger at the time of the survey and their children ages 17 and younger at the time of the survey. Panel B shows the evolution of the number of individuals lifted from SPM poverty by: (a) the statutory CTC, (b) the CTC excluding the ACTC, and (c) a fully refundable CTC. The sample includes all individuals in the CPS. Source: CPS 1999-2021.

Figure 7: Trends in After-Tax Poverty Rates by Family Structure



(a) Single Mothers

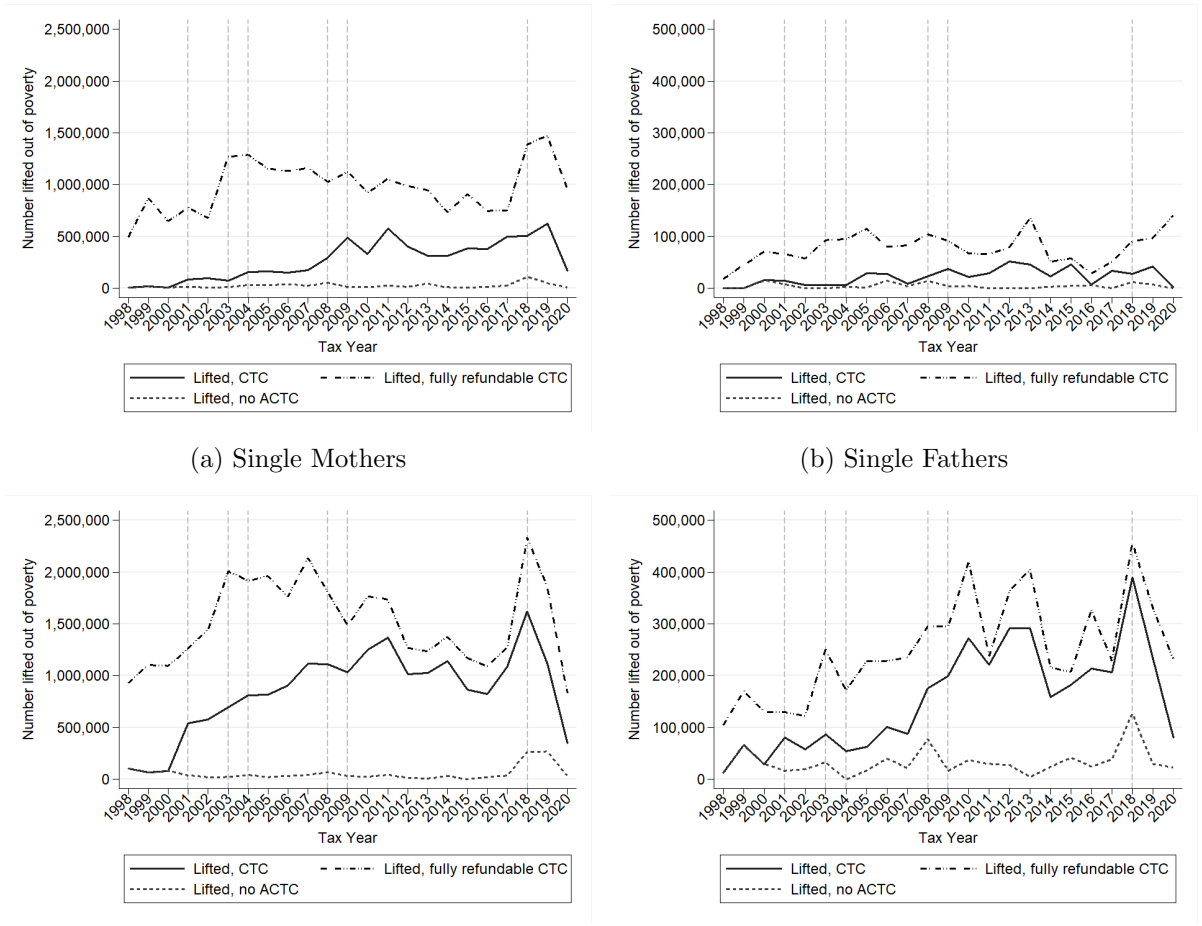
(b) Single Fathers

(c) Married Couples

(d) Cohabiting Couples

Notes: The graphs show the evolution of the share of parents and children whose household income is below the SPM poverty threshold by family type. Figures also show the effect of alternative policy reforms to the CTC rules: (a) federal CTC as enacted (solid line), (b) a fully refundable CTC (dash-dot line), and (c) excludes the refundable portion of the existing CTC from the ATT household income (dotted line). We restrict the sample to individuals ages 20 and older, with any own children ages 16 and younger at the time of the survey and their children ages 17 and younger at the time of the survey. Vertical lines indicate federal expansions to the CTC. Source: CPS 1999-2021.

Figure 8: Number of Parents and Children Lifted out of Poverty



(a) Single Mothers

(b) Single Fathers

(c) Married Couples

(d) Cohabiting Couples

Notes: The graphs show the evolution of the number of parents and children lifted from SPM poverty by the CTC by family structure. Figures also show the effect of alternative policy reforms to the CTC rules: (a) federal CTC as enacted (solid line), (b) a fully refundable CTC (dash-dot line), and (c) excludes the refundable portion of the existing CTC from the ATT household income (dotted line). We restrict the sample to individuals ages 20 and older, with any own children ages 16 and younger at the time of the survey and their children ages 17 and younger at the time of the survey. Source: CPS 1999-2021.

Online Appendix for "The Child Tax Credit over Time by Family Type: Benefit Eligibility and Poverty"

Margaret E. Brehm and Olga Malkova

A TAXSIM Tax Credit Simulations

We use NBER's TAXSIM 35 in this paper to calculate eligibility for and amount of the federal Child Tax Credit. TAXSIM requires inputs on wages and income, filing status, number and age of dependents, ages of the primary taxpayer and spouse, and state of residence, among other items. Following conversations with Daniel Feenberg at NBER, we use TAXSIM inputs dep13, dep17, and dep18 rather than age1, age2, and age3 (the ages of the 3 youngest dependents) for better accuracy in the updated TAXSIM 35 program. We follow Jones and Ziliak (2022) and Kleven (2023) and use the following TAXSIM inputs (named in parentheses) based on the variables in the CPS:

- Marital status (mstat) is either "single or head of household" or "married filing jointly" and is given by CPS variable *marst*. We drop individuals listed as married without information provided for the spouse.
- Age of the primary taxpayer (page) and age of the spouse (sage) are given by the CPS *age* variable. Spouses are identified using the CPS variable *sploc*. The age of the spouse is set to zero if the individual is filing as "single or head of household."
- Number of dependents (depx) is the number of own children, who are present in the household during the time of the survey, ages 0 to 18 and own children ages 19 to 23 who are in school full time. Own children include step-children, adopted children, as well as biological children. We use a combination of year, household ID (*serial*) and IPUMS CPS variables *momloc* and *poploc* to link respondents to their own children. We then also use child age and whether the child is in full time school (*schlcoll*=1 or =3) to count the total number of dependents. By construction, this variable will miss dependents who are not own children, such as grandchildren, nephews/nieces and foster children.

- Number of children under 13 with eligible child care expenses (dep13) is the number of own children that are ages 0 to 12 at the time of the survey and who are present in the household during the time of the survey. We follow a similar procedure as for depx.

- Number of children under 17 for the entire year (dep17) is the number of own children that are ages 0 to 16 at the time of the survey and who are present in the household during the time of the survey. This variable represents the number of children who are eligible for the CTC.

- Number of qualifying children for EITC (dep18) is equal to depx.

- Wages and salary income of the primary taxpayer (pwages) and any spouse (swages) are determined by the sum of wage and salary income given by the CPS variable *incwage* and positive business and farm income given by the CPS variable *oincbus*. Wages for the spouse are set to zero if the individual is filing as "single or head of household."

- Dividends (dividends) are from the CPS variable *incdivid* and other property income (otherprop) is from *incint* and *incrent*.

- Pensions (pensions) are given by the CPS variable *incretir*.

- Gross Social Security benefits for the individual (pgssi) and their spouse (sgssi) is given by the sum of income from Social Security, *incss*, income from supplemental Social Security *incssi*, survivor's benefits, *incsurv*, and disability, *incdisab*.

- Transfer income (transfers) is given by the CPS variables *incwelfr*, *incwkcom* for worker's compensation, *incvet* for veteran's benefits, and *incchild* for child support.

- Unemployment insurance for the individual (pui) and their spouse (sui) is given by the CPS variable *incunemp*.

- All other income inputs to TAXSIM default to zero because they are not observed in the CPS (stcg, ltcg, mortgage, nonprop, rentpaid, proptaxm, otheritem, childcare).

We also use TAXSIM to simulate alternative policy reforms to the CTC rules. First, we simulate a fully refundable CTC by creating a child benefit for all families living with eligible

children, whose incomes are below the phaseout threshold, that equals to the maximum federal CTC amount. We follow Goldin and Michelmore (2022) by assigning the maximum credit amount multiplied by the number of children ages 0 to 16 at the time of the survey (dep17) for all individuals with qualifying children. We then phase the amount out at the appropriate point based on the year and filing status.

Second, we eliminate the refundable portion of the CTC, the ACTC. The TAXSIM calculations separately provide the CTC amount without the ACTC ("v22") and the ACTC amount ("v23"). Thus, for this simulation, we only use the amount calculated in "v22" to determine credit eligibility and amount for the poverty analysis.

Finally, we simulate the effect of expanding the income threshold at which the CTC begins to phase out to the 2018 thresholds in all years. To do this, we assign the credit amount under existing law each year but instead begin phasing out the credit using the 2018 income phaseout thresholds. Thus, we raise the phaseout thresholds from $75,000 to $200,000 for single mothers, fathers and cohabiting couples, and from $110,000 to $400,000 for married couples.

B Dropping Imputes from the CPS

We follow the recommendation of Jones and Ziliak (2022) and drop observations from the CPS with imputed wage earnings and whole imputes and re-weight the sample.

To identify whole imputes, we use the CPS variables *uh_suprec_a1* and *uh_suprec_a2*. To identify those with imputed wage earnings, we use the CPS variables *qinclong* and *qoincwage*. We drop observations if they are imputed themselves, or a member of a couple where one of the partners is imputed. In samples of children, we drop children if any member of their household is imputed.

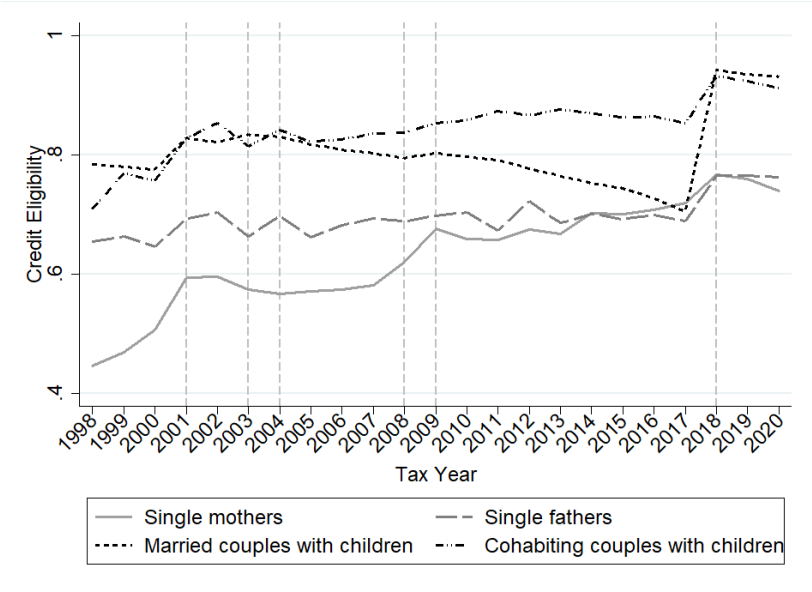
We re-weight the resulting sample using inverse probability weights (IPW). To do this, we estimate a probit model of the probability that an individual is a "responder" (has no imputed earnings and is not a whole supplement imputation) as a function of a set of co-variates for each year and gender. We then divide the person-level ASEC supplement weight by the fitted probability from this regression. The co-variates in the probit regression include indicators for age, race and ethnicity, nativity, marital status, disability, home ownership, number of household members, education, and state.

Figure B1 graphs CTC eligibility by family structure in the CPS sample that includes imputes. The trends in the sample including imputes are similar to trends in our main sample excluding imputes (Figure 2). However, level differences in eligibility are present, as credit eligibility is higher in the sample with imputes (relative to the one without them), especially for single mothers and fathers. In 2017, credit eligibility is higher in the sample with imputes by 4.5 pp among single mothers, by 4.7 pp among single fathers, by 0.8 pp among married couples, and by 1.1 pp among cohabiting couples. The credit amount per qualifying child among the eligible is identical across samples.

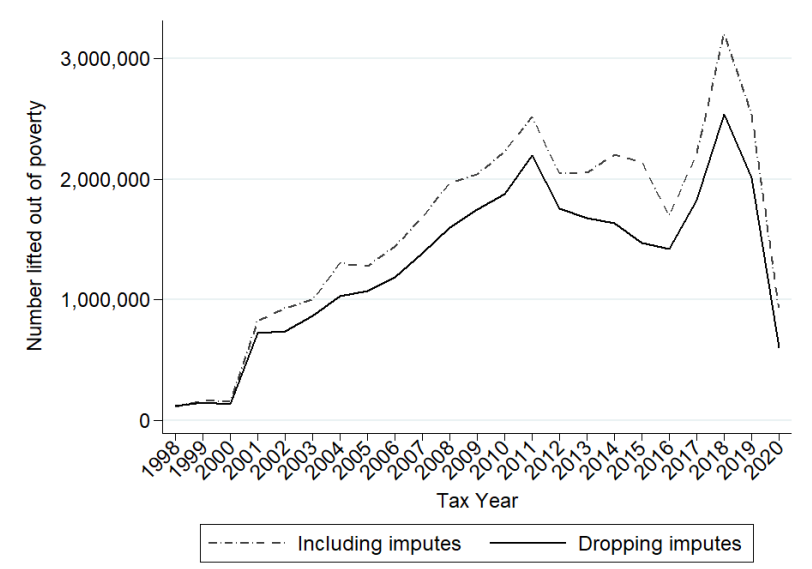
Panel B of Appendix Figure B1 shows that using the sample including imputes yields estimates of people lifted from poverty by the CTC that are 22.3 percent higher, in a typical year, relative to dropping observations with imputed earnings. This result is consistent with higher eligibility for the CTC in the sample with imputes and holds across all family types (Figure B2). This result is also consistent with the findings in Jones and Ziliak (2022) that study the anti-poverty effects of the EITC. Jones and Ziliak (2022) show evidence in favor of dropping imputed observations; the estimated number of people lifted from poverty by the EITC is 35 percent higher with imputed

earnings observations relative to using administrative data on earnings. However, once they drop observations with imputed earnings, the estimates of the EITC anti-poverty effects are similar across administrative and CPS data.

Figure B1: Federal CTC Eligibility and its Anti-Poverty Effects: with Imputes



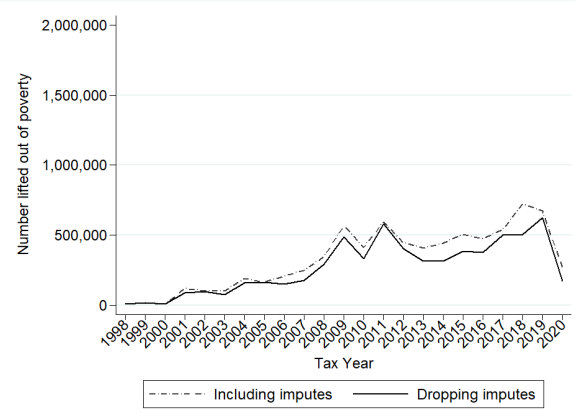
(a) Federal CTC Elibility with Imputes



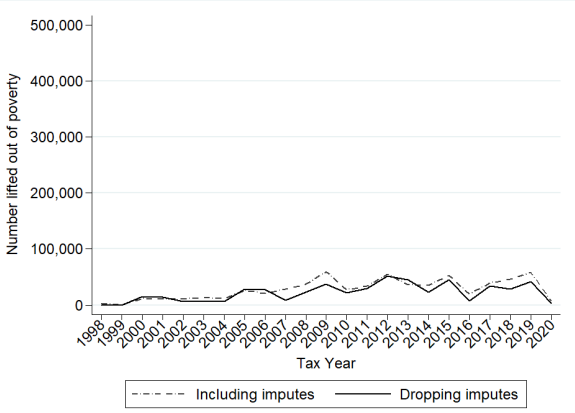
(b) Number of Parents and Children Lifted out of Poverty - With and without Imputes

Notes: In panel (a) we show the evolution of the share of households with children who are eligible to receive the CTC by household type, where we do not drop imputed wage earnings and whole imputes. In panel (b), the solid line presents the main sample of our analysis that drops observations with imputed wage earnings and whole imputes and reweights the sample using the IPW weights. The dashed line presents the full CPS sample that includes observations with imputed earnings. We restrict the sample to individuals ages 20 and older, with any own children ages 16 and younger at the time of the survey. Source: CPS 1999-2021.

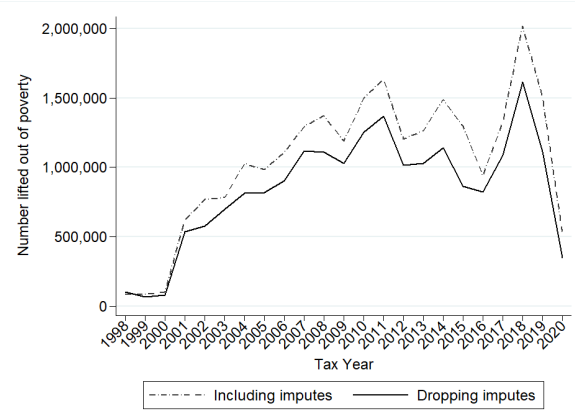
Figure B2: Number of Parents and Children Lifted out of Poverty - With and without Imputes



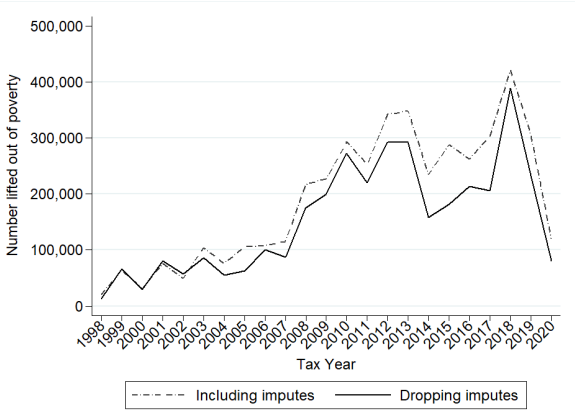
(a) Single moms



(b) Single dads



(c) Married couples

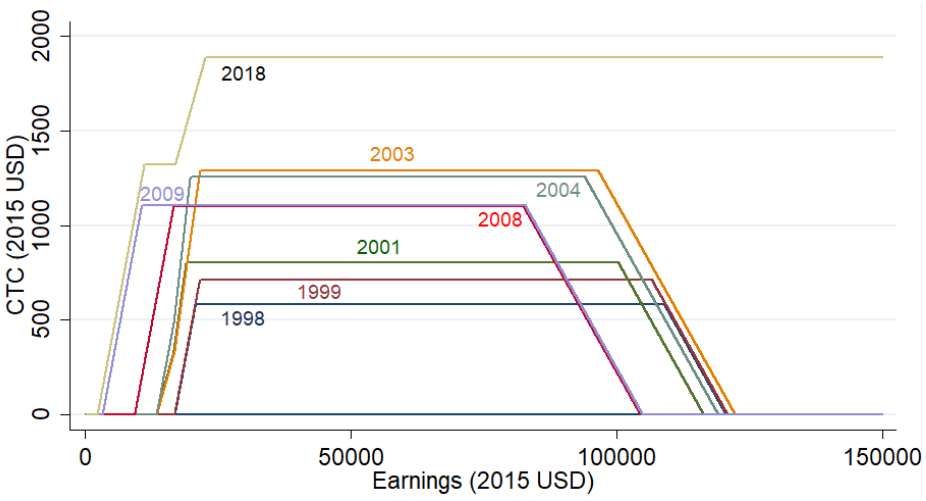


(d) Cohabiting couples

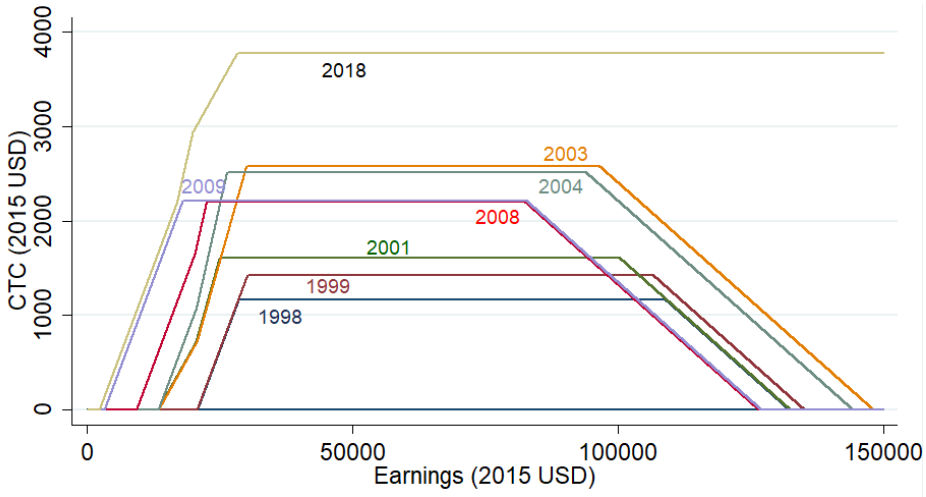
Notes: The solid line presents estimates after we drop observations with imputed wage earnings and whole imputes and re-weights the sample using the IPW weights. The dashed line presents the full CPS sample that includes observations with imputed earnings. We restrict the sample to individuals ages 20 and older, with any own children ages 16 and younger at the time of the survey and their children ages 17 and younger at the time of the survey. Source: CPS 1999-2021.

C Supplemental Analyses

Figure C1: Child Tax Credit Schedule for a Single Parent



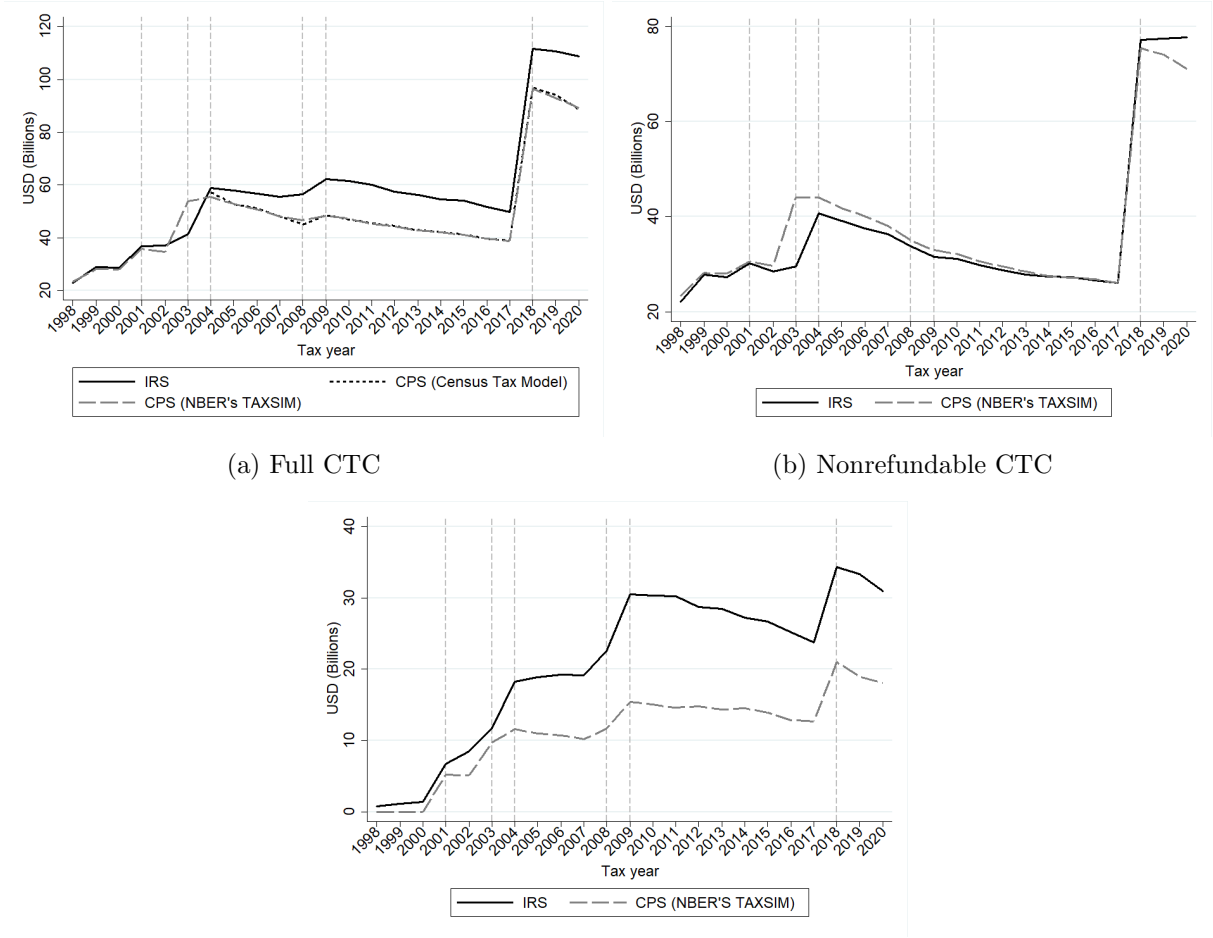
(a) Amount for Single Parent, One Child



(b) Amount for Single Parent, Two Children

Notes: Authors' calculations using TAXSIM. Calculations assume no unearned income or itemized deductions. Panels show years when the CTC structure was changed by law, but excludes the temporary changes in 2021.

Figure C2: Trends in CTC Expenditure: IRS Claims vs. Taxsim



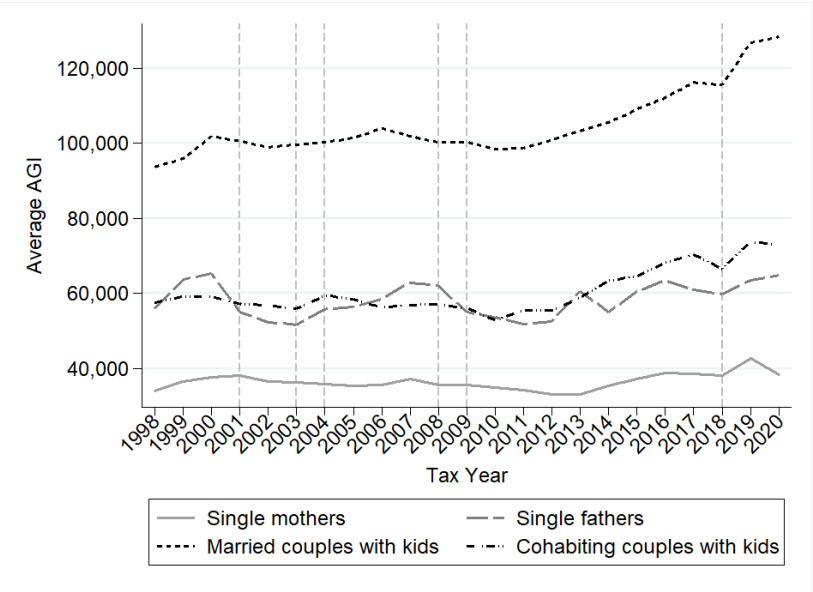
(a) Full CTC

(b) Nonrefundable CTC

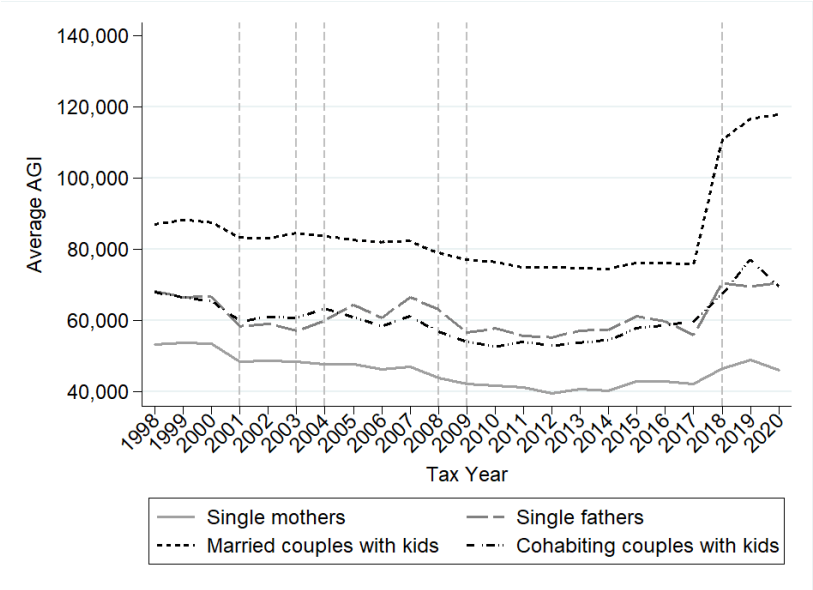
(c) Refundable CTC (ACTC)

Notes: Panel A compares the expenditures on the CTC from several sources: (1) Internal Revenue Service (IRS) data on total claims, (2) NBER Taxsim model for our sample, and the (3) Census Tax Model for our sample. Our sample includes all households with any own children ages 16 and younger at the time of the survey; as in the analysis, we drop imputes and reweight the sample using IPW weights. For (2) and (3), we aggregate CTC amounts in our sample. For (3) we use the Census estimates for CTC amounts in IPUMS CPS (variable names *ctccrd* and *actccrd*), which are available starting from tax year 2004. Panel B includes the nonrefundable CTC expenditures only. Panel C includes only the ACTC (the refundable part of the CTC). Dollar amounts in 2015 USD. Sources: CPS 1999-2021, IRS Individual Income Tax Returns Complete Report (publication 1304) table A (Internal Revenue Service, 2022) using https://www.irs.gov/statistics/soi-tax-stats-individual-income-tax-returns-complete-report-publication-1304.

Figure C3: Adjusted Gross Income Trends by Family Type



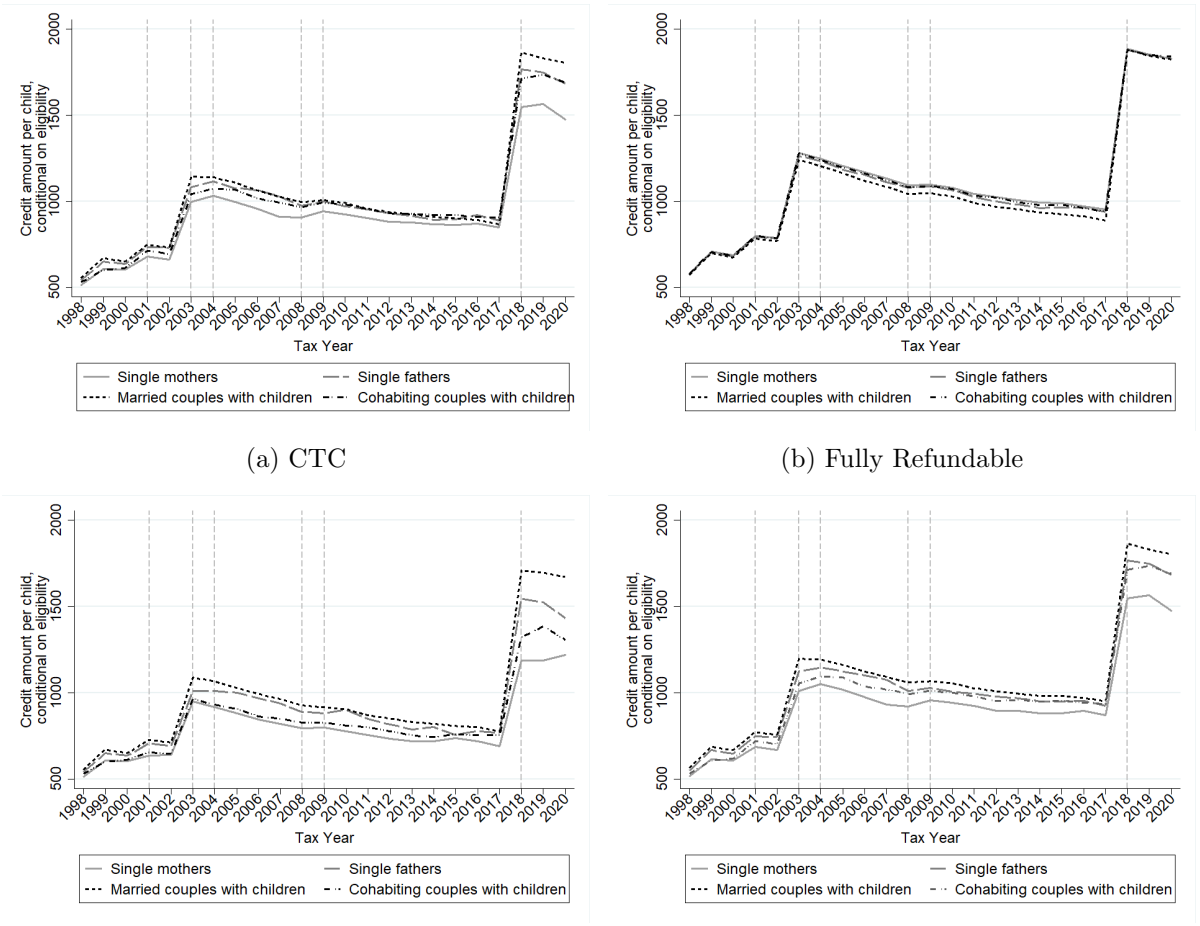
(a) All Families with Children: Adjusted Gross Income (AGI)



(b) Families Eligible for the Child Tax Credit: AGI

Notes: The graphs show the evolution of adjusted gross income (as calculated by TAXSIM) among parents. Dollar amounts in 2015 USD. The sample comprises individuals ages 20 and older with any own children ages 16 and younger at the time of the survey. Source: CPS 1999-2021.

Figure C4: Federal CTC Amounts: CTC Policy Simulations



(a) CTC

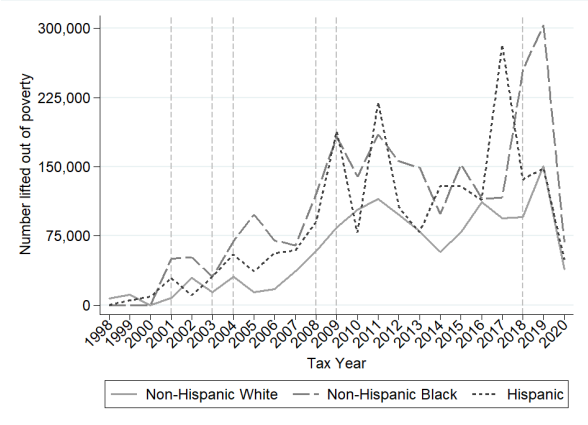
(b) Fully Refundable

(c) No ACTC

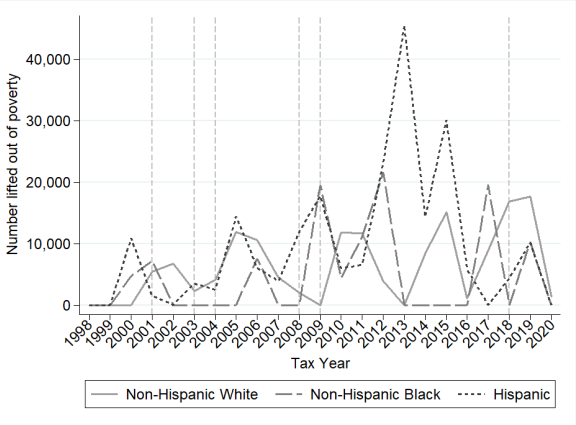
(d) Expanded Income Thresholds

Notes: Panels show the evolution of the CTC amount by household type. Dollar amounts in 2015 USD. Figures show the effect of alternative policy reforms to the CTC rules. "CTC" references enacted law; "Fully refundable" references a child benefit for all families living with eligible children that equals to the maximum federal CTC amount, as long as their earnings are below the phaseout thresholds; "No ACTC" references the existing CTC without the refundable portion (ACTC); and "Expanded Phaseout Thresholds" references the existing CTC with 2018 income thresholds at which the CTC begins to phase out in years 1998 to 2017a. We restrict the sample to individuals ages 20 and older, with any own children ages 16 and younger at the time of the survey. Vertical lines indicate federal expansions to the CTC. Source: CPS 1999-2021.

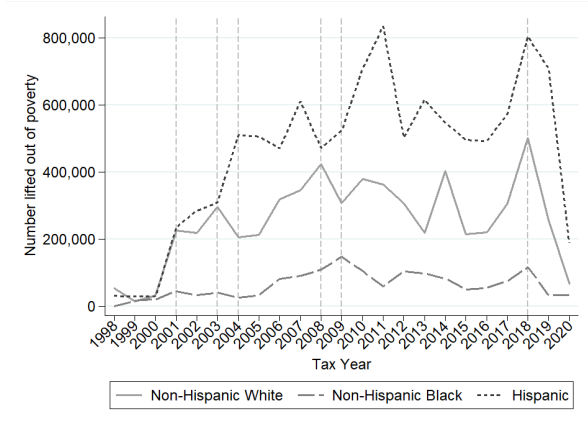
Figure C5: Number of Parents and Children Lifted out of Poverty by Race/Ethnicity



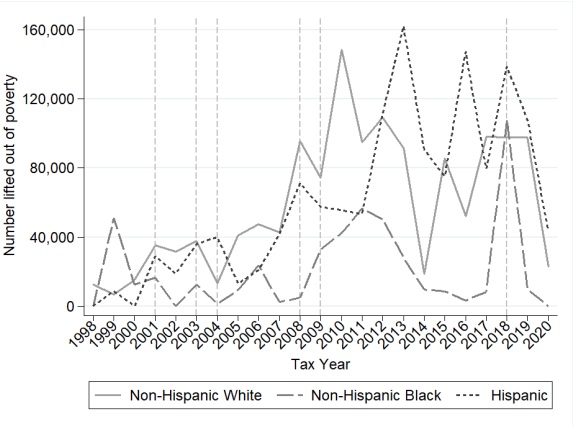
(a) Single Mothers



(b) Single Fathers



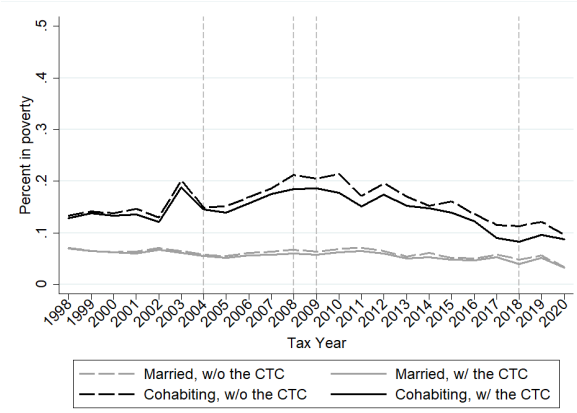
(c) Married Couples



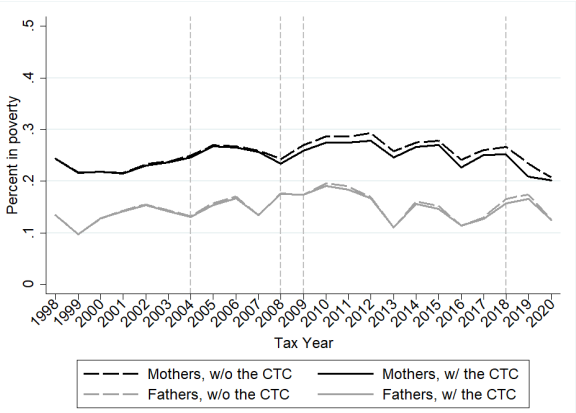
(d) Cohabiting Couples

Notes: The graphs show the evolution of the number of parents and children by ethnicity/race who are lifted from SPM poverty by the CTC. The sample comprises individuals ages 20 and older with any own children ages 16 and younger at the time of the survey and children ages 17 and younger. Source: CPS 1999-2021.

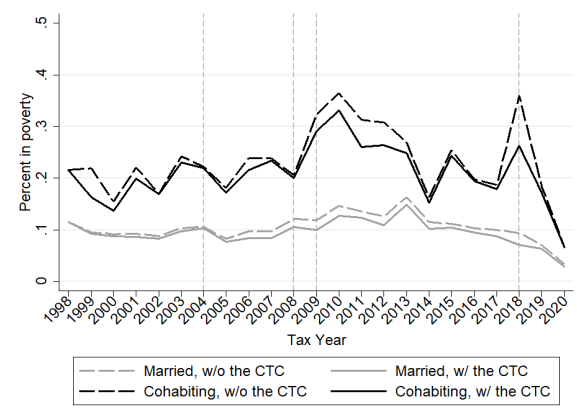
Figure C6: Trends in After-Tax Poverty Rates, by Race/Ethnicity



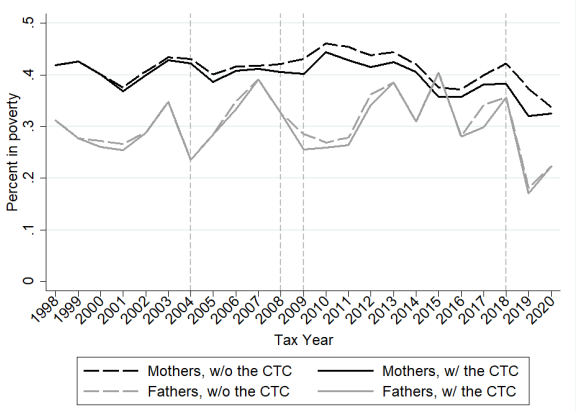
(a) Non-Hispanic White Couples



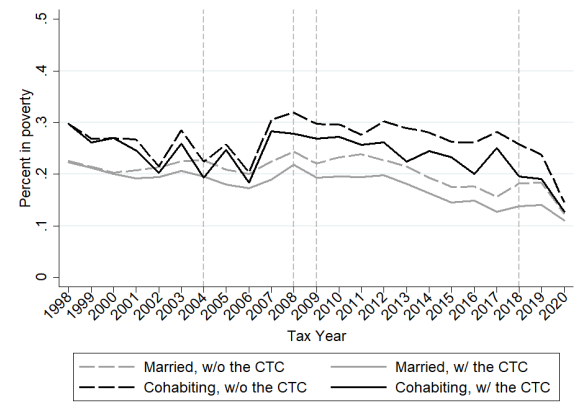
(b) Non-Hispanic White Singles



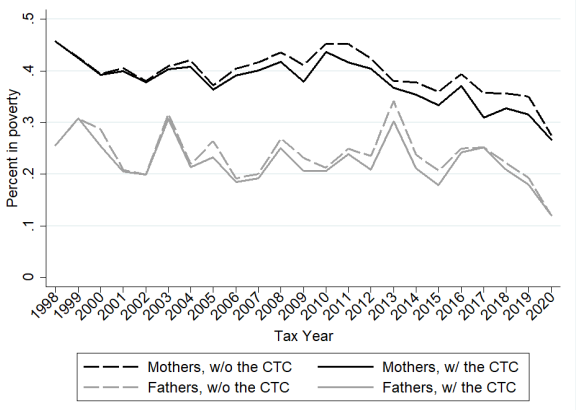
(c) Non-Hispanic Black Couples



(d) Non-Hispanic Black Singles



(e) Hispanic Couples



(f) Hispanic Singles

Notes: The graphs show the evolution of the share of households of each type who are below the SPM poverty threshold, using the after-tax and in-kind transfer (ATT) household income with and without the CTC by ethnicity/race. The sample includes individuals ages 20 and older with any own children ages 16 and younger at the time of the survey. Source: CPS 1999-2021.