UNIVERSITY OF KENTUCKY
CENTER FOR POVERTY RESEARCH

Discussion Paper Series
DP 2021 - 10

ISSN: 1936-9379

Income inequality, race, and the EITC

Bradley Hardy
Georgetown University

Charles Hokayem
U.S. Census Bureau

James P. Ziliak
University of Kentucky

October 2021

Preferred citation:
Hardy, B., Hokayem, C., & Ziliak, J. (2021, Oct.). Income inequality, race, and the EITC. *University of Kentucky Center for Poverty Research Discussion Paper Series, DP2021-10*, Retrieved [Date] from http://ukcpr.org/research.

Author Correspondence
blh5@georgetown.edu

University of Kentucky Center for Poverty Research
Gatton College of Business and Economics, 550 South Limestone,
234 Gatton Building, Lexington, KY, 40506-0034
Phone: 859-257-7641. E-mail: ukcpr@uky.edu

ukcpr.org

EO/AA

Income Inequality, Race, and the EITC*

Bradley Hardy
Georgetown University

Charles Hokayem
U.S. Census Bureau

James P. Ziliak
University of Kentucky

October 2021

Abstract: We examine the relationship between the Earned Income Tax Credit (EITC) and Black-White after-tax income inequality from 1980-2020. The EITC lowers overall inequality by 5-10 percent in a typical year, improving the incomes of Black households relative to White households in the bottom half of the distribution. Gains in relative economic status emerged after the 1993 EITC expansion, concentrated among working class Black households, and not extending to those at the very bottom. Estimating the effect of the 1993 expansion on labor supply, we find evidence of a much larger extensive margin employment response for Black households than White households.

JEL Codes: H2, I3
Keywords: After-Tax Income, Redistribution, Labor Supply

* Bradley Hardy:blh5@georgetown.edu (Corresponding Author); Charles Hokayem: charles.hokayem@census.gov; James P. Ziliak: jziliak@uky.edu; Charles Hokayem contributed to this article in his personal capacity and independent of his responsibilities at the U.S. Census Bureau. The views expressed in this article, including those related to statistical, methodological, technical, or operational issues, are solely those of the authors and do not necessarily reflect the official positions or policies of the U.S. Census Bureau.

I. Introduction

Income inequality between Blacks and Whites stands as among the most durable group level outcome differences in the United States. Historically, the root causes of this inequality include large scale structural factors, including the long-term consequences of the exclusion of Blacks from capital, product, and labor markets, and from participation in the political process with spillovers to tax policy (e.g., Darity and Mullen 2020; Huang and Taylor 2019; Gale 2021; Williams et al. 2021). After converging in the first few decades after World War II, Black-White income gaps stalled and, if anything, widened in recent years despite ostensible improvements with respect to labor market and educational opportunities (Smith and Welch 1989; Bayer and Charles 2018). Such gaps, and the low levels of income that many Black American families are routinely exposed to, are associated with diminished socioeconomic outcomes, including lowered educational attainment, health status, and wealth (Brooks-Gunn and Duncan 1997; Duncan et al. 2010).

In this paper, we examine the potential role of redistributive tax policy through the Earned Income Tax Credit (EITC) to mitigate after-tax income differences between Black and White households. The EITC, which provides a refundable tax credit to low-wage workers, was introduced in 1975 and expanded in generosity and reach in the tax acts of 1986, 1990, 1993, and 2009. Because the program is more generous to those households with qualifying children, by the late 1990s the program overtook traditional cash welfare as the nation's primary tool to deliver income support for families with dependent children headed by non-disabled adults.[1] While initially available only at the federal level, over half of states have since enacted their own

[1] For the purposes of the EITC, a qualifying child must be under age 19, between ages of 19 and 23 if a full-time student, of any age if totally and permanently disabled, must reside with the tax filer at least 6 months and a day during the calendar year, and must have a valid Social Security Number.

supplements to the federal credit. The rising cash value and policy importance of the EITC represents a deliberate policy shift, reorienting the nation's safety net towards an emphasis on temporary income support and enhanced incentives for families to pursue employment opportunities (Moffitt and Ziliak 2019). This policy shift occurred via the Personal Responsibility and Work Opportunity Reconciliation Act of 1996—known as "welfare reform"—which transitioned cash welfare from Aid to Families with Dependent Children to Temporary Assistance for Needy Families. Around the same time period, the Omnibus Budget Reconciliation Act of 1993 expanded the EITC. There is a now a very large literature on the effects of the EITC on a host of outcomes, ranging from labor supply to child academic achievement in both the short and long run (see surveys in Hotz and Scholz 2003; Nichols and Rothstein 2016; Hoynes 2019). Most of that literature does not examine whether the EITC has differential effects on Black and White households, and to our knowledge this is the first paper to estimate the effect of the EITC on Black-White after-tax income gaps and labor-supply responses.[2]

Whether the EITC mitigates after-tax racial income gaps depends on several, possibly reinforcing, factors. First, as a first-dollar subsidy to wages of workers, the EITC could reduce Black-White after-tax income gaps if there is a larger positive Black employment response to the credit, whether at the extensive participation margin or intensive hours-worked margin. There is robust evidence that the EITC expansions of the 1990s stimulated the employment rates of unmarried mothers (Eissa and Leibman 1996; Meyer and Rosenbaum 2001; Hoynes and Patel 2018; Schanzenbach and Strain 2020) and, if anything, depressed hours worked of married

[2] Gundersen and Ziliak (2004) examine the effect of the business, cycle, welfare reform, and the EITC on before and after-tax poverty overall and by race of the family head, while Ajilore (2008) examines whether the EITC affects pre-tax poverty transitions of Black families relative to Whites. Our paper differs by focusing on the distribution of income and attendant labor-supply responses.

women (Eissa and Hoynes 2004), but evidence of differential responses by race is lacking. Second, even if there are no racial differences in the labor-supply response to the credit, the EITC could reduce the Black-White after-tax income gap if Black workers are systematically paid lower pre-tax wages than White workers, and the EITC does more to narrow the post-tax wages of Black workers relative to White. There is long-standing evidence that pre-tax hourly wages of Black men are well below those of White men, but gaps among women are much less pronounced (Smith and Welch 1989; Bayer and Charles 2018; Blundell et al. 2018). Third, conditional on eligibility, the EITC could reduce Black-White income gaps if Black households are more likely to file and take up the credit. Evidence from Jones (2014) shows that take-up rates of the EITC are nominally higher among Blacks than Whites (82 versus 78 percent, respectively, in 2009). In sum, there is not strong evidence from the extant literature to assess whether the EITC reduces Black-White after-tax income inequality, and we aim to fill this gap.

Using 40 years of data from the Current Population Survey (1980-2020), we examine the relationship between the EITC and Black-White income inequality. We begin by constructing a broad measure of after-tax and transfer household income without and with the EITC to estimate pre- and post-EITC inequality using standard measures from the literature. We find evidence of rising inequality throughout the overall U.S. population, consistent with inequality trends documented by Autor et al. (2008), Burkhauser et al. (2012), and Autor (2014), and that the EITC lowers inequality by 5-10 percent in a typical year. As expected, the EITC has no effect on upper-tail inequality (e.g., P90-50 ratios), but it is associated with qualitatively large inequality reductions in the bottom half of the income distribution, which is where we focus our attention on Black-White differences. Several important results emerge. First, the EITC is associated with lowering the Black-White income gap at the both the median and 25th percentile, especially after

the EITC expansions of the early 1990s. Importantly, we also find that the EITC has no discernible inequality reducing effects at the 10th percentile of pre-tax income. Instead, from the early 2000s onward, the EITC may slightly widen the Black-White income ratio at the bottom of the distribution.

We then explore possible mechanisms underlying Black-White convergence in after-EITC household incomes, focusing on the labor supply response to the EITC expansion of the 1990s. We extend the event-study model developed in Schanzenbach and Strain (2020) to estimate the employment response to the EITC separately by race and at both the extensive and intensive margins of labor supply. Our event study results suggest that EITC expansions in the early 1990s are associated with large employment responses at the extensive margins that are noticeably larger among Black households. The evidence at the intensive margin is less conclusive, in part because of evidence of pre-trends in hours of work perhaps in response to the earlier EITC expansion in 1990. Collectively, our results demonstrate that, while the EITC reduces racial income inequality, these effects are concentrated between the 25th and 50th percentiles and seem to reduce inequality by operating through the extensive margin of employment. Yet, the built-in work conditions within the credit lead to no improvements in racial inequality at very low levels of household income.

II. Data and Measures

We use the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) for the 1980-2020 survey years. The CPS ASEC is a stratified random sample of 60,000-90,000 household addresses from the noninstitutionalized population in the United States. It is a supplement to the monthly CPS survey conducted in February-April of each year that contains detailed information on annual earnings and incomes, employment, hours worked, and family

structure. It serves as the official source of income and poverty statistics and has been the workhorse dataset for research on wage and income inequality. All income information in the CPS ASEC refers to the prior calendar year. Since the CPS ASEC does not collect tax information, we use NBER's TAXSIM simulation program to estimate taxes and tax credits, including the EITC. With nonresponse to earnings questions and to the entire CPS ASEC altogether on the rise (Bollinger et al. 2019), we drop those with imputed earnings and hours worked as well as whole supplement imputations.

To gauge the impact of the EITC on inequality we construct two measures of household income: (1) pre-EITC after-tax household income, and (2) post-EITC after-tax household income that includes receipt of federal and state EITCs. Pre-EITC after-tax household income includes earnings of the primary and any secondary earners (if present), transfer income and nontransfer nonlabor income such as rent, interest, and dividend income, and subtracts away federal, state, and payroll taxes but excludes the refundable federal and state EITC. Post-EITC income adds back the refundable EITC credits. Transfers include Social Security, Disability Insurance, Unemployment Insurance, Workers Compensation, Supplement Security Income, Temporary Assistance for Needy Families (cash only), and Supplemental Nutrition Assistance Program (food stamps).[3] Both household income measures are deflated to 2019 dollars using the Personal Consumption Expenditure Deflator.

As mentioned before, taxes and tax credits are simulated using TAXSIM. The first step uses the family relationship pointers provided in the ASEC to construct tax units. TAXSIM takes as inputs the tax unit marital status, ages of members, number of (child) dependents for

[3] Self-reported transfer benefits in surveys are known to be under-reported when compared with administrative records (Meyer, Mok, and Sullivan 2015; Brewer, Etheridge, and O'Dea 2017). We are not aware of any evidence of whether this varies systematically by race of the household head, and if rates are similar then our ratios of Black to White household income should not be biased by under-reporting.

(refundable) tax credits, earnings, taxable and nontaxable transfers, and other items. It then returns a simulated estimate of federal, state, and payroll tax liability, inclusive of tax credits under the assumption of 100 percent take-up among those estimated to be eligible. For the payroll tax, we assign the employee share. Because some households contain multiple tax filing units, we assign the tax liability to the relevant tax unit head to estimate tax-unit after-tax income, and then we aggregate across tax unit heads to estimate total household after-tax income.[4] Focusing on the household rather than the tax unit is justified under the assumption that members of the same household share resources. However, to account for household size and composition, we apply a modified OECD scale to equivalize incomes. This equivalization divides household income by a factor $\varphi = 0.67 + 0.33\mathrm{I}[\mathrm{spouse}] + 0.2\mathrm{n}_{\mathrm{child}\ 0-13} + 0.33\mathrm{n}_{\mathrm{child}\ 14+}$, where $\mathrm{I}[\mathrm{spouse}]$ is an indicator function that equals one if a spouse is present in the tax unit, and $\mathrm{n}_{\mathrm{child}\ 0-13}$ and $\mathrm{n}_{\mathrm{child}\ 14+}$ give the number of dependent children in the tax unit aged 0-13 and 14 and above, respectively. Our sample includes head of households ages 25 to 64, the primary group eligible for the EITC.[5] Appendix Table 1 provides select summary statistics for our sample.

Our key measures of inequality include household percentile ratios that cover the 90th to the 10th percentiles (P9010), the 90th to 50th (P9050), the 50th to 25th (P5025), and the 25th to 10th (P2510) based on pre-EITC and post-EITC income.[6] We present trends in these ratios for all races combined, and to examine the effect of the EITC between Blacks and Whites, we also

[4] While the other transfers are collected at the individual level and thus are assigned to tax units, SNAP is asked at the household level and thus is added to the household after-tax income.

[5] Tax filers under age 25 and over age 64 may file for the EITC provided that they have qualifying children in their tax unit. EITC eligibility for childless filers is restricted to ages 25-64, and thus we restrict our sample to household heads in this age range.

[6] All estimates are weighted using the household weight provided in the CPS ASEC.

present trends in the household Black-White percentile ratio using the P10, P25, and P50 levels for each group with pre-EITC and post-EITC income. For example, at the P10 level, we calculate the Black-White percentile ratio with pre-EITC income as $\text{P10 Pre} - \text{EITC} = \frac{\text{Black P10 Pre}-\text{EITC}}{\text{White P10 Pre}-\text{EITC}}$, and with post-EITC income as $\text{P10 Post} - \text{EITC} = \frac{\text{Black P10 Post}-\text{EITC}}{\text{White P10 Post}-\text{EITC}}$. The comparison of trends in these ratios allows us to gauge the effect of the EITC at P10 and similarly for P25 and P50.

III. The EITC and Trends in Black-White Inequality

We begin our discussion of results with Figure 1. Panel A depicts overall P5025 inequality trends, before and after accounting for the cash value of federal and state EITC benefits at the household level. Here, we find that the EITC reduces the P5025 ratio at an increasing rate from 1985 onward, by 0.006 (1988) to as much as 0.07 (2015), or by about 10 percent. Moving to Panel B of Figure 1, we find that the EITC is associated with particularly large reductions in P2510 inequality; the post-EITC inequality reduction begins to widen after the Tax Reform Act of 1986, and especially after the Omnibus Budget Reconciliation Act of 1993 (OBRA-93), from a level reduction of roughly 0.02 (1989) to 0.10 by 2005, or about 10 percent. However, after the Great Recession of 2007-2009, we observe a reduction in the level of post-EITC inequality, with ratio differences as low as 0.03 in 2014 and 2015, suggesting that the EITC is doing less redistribution at low levels of income.

Our results establish that the EITC's inequality reduction is centered on individuals and families at the lower left tail of the income distribution; as expected, pre- and post-EITC P9050 ratios (Appendix Figure 1) are indistinguishable, though there is evidence of pre- and post-EITC P9010 inequality reduction (Appendix Figure 1). Given this fact, the remainder of our inequality

estimates focus on Black and White respondents at or below the 50th percentile of the income distribution.

[Figure 1 here]

Figure 2 summarizes racial inequality trends across the pre-EITC/post-EITC equivalized household income distributions at the 10th, 25th, and 50th percentile of each group's respective pre- or post-EITC household income distribution (see the percentile levels of equivalized income for each group in Appendix Figure 2). The results demonstrate clear differences with respect to where and how the EITC operates as a racial inequality-reducing policy intervention. Starting at the bottom of the income distribution, comparing Black incomes at the 10th percentile of the pre-EITC Black income distribution to White incomes at the 10th percentile of the pre-EITC White income distribution (Panel A), the EITC is associated with no substantive reduction in racial inequality and, if anything, an actual widening of income inequality. On the other hand, the EITC is consistently associated with reduced Black-White inequality at the 25th and 50th percentiles (Panels B and C, respectively). At those percentiles, the EITC's racial inequality reduction rises around the implementation of OBRA 1993. At the 25th percentile the reduction in racial inequality from the EITC peaked in 2005 at about 10 percent, and then tapered off to about 5 percent in a typical year thereafter. Black-White inequality reduction from the EITC at the 50th percentile of the income distribution is smaller, consistent with the higher incomes across race at the middle of the distribution, but we also do not see a diminution over time like at the 25th percentile, except in the final year of the sample. This reduction at the 50th percentile is driven by Black-White income level differences that leave a higher proportion of Black households eligible for the EITC (see Appendix Figure 2). The other notable feature in Figure 2 is that at both the 25th and 50th percentiles there was a substantial reduction in the Black-White income gap starting

in the early 1990s that persisted over time. Because this is observed at the pre-EITC income measure as well as the post-EITC measure, this suggests that the EITC had a differential labor-supply response among Black households. We explore this in further detail in the next section.

[Figure 2 here]

Appendix Figure 3 presents racial inequality trends without equivalizing, the adjustment used to account for household size and composition. Here we see that the post-EITC racial inequality gap at the 10th percentile shows evidence of further widening relative to the equivalized results in Figure 2, and while at the 25th percentile it continues to have a strong redistributive effect in the decade after the 1993 expansion, this dissipates more after the Great Recession compared to the equivalized results in Figure 2. On the other hand, at the median of the household income distribution we continue to find a robust effect of the EITC in reducing Black-White income gaps that does not diminish over the 2000s. This suggests that, overall, our results are robust to equivalization of household income.

Comparing Figure 2 and Appendix Figure 3 raises important issues about family structure and how the EITC interacts with the family (Curran 2021). The EITC is more generous for households with more children, especially in moving from 0 to 1 child, and then from 1 to 2 children. Indeed, on an equivalence-scale basis the 1993 expansion was disproportionately generous to two-child families compared to one—65 percent when it should have been 19 percent higher in equivalence units (Hoynes 2014). Prior to 2009 the credit was capped at 2 or more children, but then a new range was added for 3 or more children. This suggests that part of the redistributive effect of the EITC toward Black households could stem from differences in the number of qualifying children by race. Appendix Figure 4 presents the average number of EITC qualifying children by race (left panel) and by race and percentile of the equivalized after-tax

household income (right panel). [7] There we see that the number of qualifying children in Black families consistently exceeded that of White families in the 1980s and 90s, though in a remarkable development, these trends converged such that by 2015 there was no racial gap in the number of children that qualify for the EITC in the bottom half of the income distribution. This convergence was by way of changes in the Black family more than in the White family.

IV. Labor Supply Response of Black and White Households to the EITC

Evidence of heterogenous post-EITC racial inequality reduction across the bottom half of the income distribution suggests that differences in employment levels and intensities could potentially help to explain some aspects of the patterns we document in Figure 2. We use two measures to examine labor market outcomes on inequality: employment and annual hours worked. Employment is measured at any point in time in the prior year. Annual hours worked is constructed by multiplying weeks worked by usual hours worked per week in the prior year. Both of these labor supply measures align with the timing of our income measures. We begin by documenting trends in employment and hours worked both overall and at percentiles in the bottom half of the distribution. We then develop a model that attempts to causally identify the effect of the EITC on employment by racial group and gender.

A. Labor Market Trends

As was the case with the previous overall racial inequality trends, important patterns emerge as we disaggregate employment across the income distribution in Panel A of Figure 3. Here we see that Black employment at the 10th and 25th percentiles of the income distribution

[7] We classify households as falling into a five-percentile range around each percentile. For example, the 10th percentile refers to households falling in the 5th to 15th percentile range of the pre-tax income distribution for that year and race. Similarly, the 25th percentile refers to the 20th to 30th percentile range, and the 50th percentile refers to the 45th to 55th percentile range.

rises by 74 and 30 percent, respectively, between 1995 and 2000. The economic expansion throughout the mid-1990s coincides with policy expansions to the EITC and large-scale changes to the design of traditional cash assistance policy in the U.S. The employment trends reveal a potentially important mechanism through which racial income inequality operates. Employment levels for Blacks at the 25th percentile of the Black pre-EITC income distribution lag those of their White counterparts at the 10th percentile of the White pre-EITC income distribution from 1980 up until 2000, when Black employment (0.573) briefly overtakes White employment (0.528). This reveals stark differences in extensive margin employment across race and income level which can, in turn, render ineffective the benefits of a cash transfer conditional on earnings from taxable work participation. A similar pattern of racial employment inequality emerges higher up the distribution, as the employment levels for Blacks at the middle of the Black pre-EITC income distribution lie below those of Whites at the 25th percentile of the White pre-EITC income distribution until 1998.

[Figure 3 here]

The EITC not only conditions payments on work, but benefits rise with income up to some threshold before phasing out. The intensive margin of work – how many hours people work for pay– potentially drives EITC-induced inequality as well. We explore racial differences in annual hours worked in Panel B of Figure 3. Black-White gaps vary across the distribution, and Whites with relatively lower incomes (10th percentile of the White distribution) report higher hours worked than Blacks at the 25th percentile of their group's distribution, through roughly the same after 2000. Of course, this is also a statement on the underlying group-level inequality. As is demonstrated in Appendix Figure 2, the scale of Black-White inequality is large enough so

that Whites at the 10th percentile of the distribution report mean equivalized income of $16,720, higher than mean Black income of $16,460 at the 25th percentile.

B. Event Study Analysis

We extend our descriptive findings with a research design that aims to causally isolate the effect of the large policy expansion of the EITC in 1993. We focus on the 1993 expansion because this is the period where measurable redistribution toward Black families emerges in the descriptive inequality figures above. To do so, we extend the event study model, also referred to as a dynamic difference-in-differences approach, implemented by Schanzenbach and Strain (2020) by stratifying our results by race and gender (they focused on women only and not by race).

Specifically, for person *i* in group *j* residing in state *s* at time period *t*, we estimate

$$(1) \quad y_{ist}^{j} = \sum_{k \neq -1} \left(\delta_k^j Year_{k=t} * kids_{ist}^{j}\right) + \gamma^j kids_{ist}^{j} + X_{ist}^{j}\phi^j + \eta^j UR_{st}^{j} + \theta^j\left(UR_{st}^{j} * kids_{ist}^{j}\right) + \lambda_s^j + \pi_t^j + \nu_{ist}^{j},$$

where *y* takes on a value of 0 or 1 for the extensive margin employment models and takes on a continuous value as the natural log of annual hours of work among workers. The explanatory variables include the indicator *kids* for the presence of an EITC qualifying child; the vector of demographics *X* include the person's age dummied into 5-year age bins, their education level (indicators of less than high school, high school, some college, college or more), and the age of the youngest child (in bins of ages 0-1, 2-3, 4-6, 7-9, 10-13, 14-17, 18-23); the state unemployment rate (*UR*) and its interaction with the indicator for children; and controls for state (λ) and time (π) fixed effects. The state unemployment rate controls for local business cycles and the possible differential response among households with EITC qualifying children. The state

fixed effects admit permanent differences across states in labor markets, and the year fixed effects control for aggregate business-cycle and policy shocks.

Following Schanzenbach and Strain (2020), we focus on the five tax years before and after the 1993 EITC expansion, 1989-1998. Thus, the coefficients of interest in equation (1) are the δ_k^j, which reflect the interaction between the year indicator and that of the presence of qualifying children. We normalize with respect to 1993 since that is the year the legislation was passed and adjust the year indicators because the 1993 expansion was phased in differentially by number of children.[8] Specifically, for filers with one qualifying child, 92 percent of the expansion took effect in 1994 and 100 percent by 1995, and thus we multiply the 1994 year dummy by 0.92. For filers with two or more qualifying children, 50 percent of benefits took effect in 1994, 78 percent in 1995, and 100 percent in 1996, and thus we multiply the 1994 and 1995 year dummies by 0.5 and 0.78, respectively. For childless EITC filers, the 1993 law took immediate effect in 1994 and thus there is no adjustment. Identification of the year-child parameters comes from differential timing and generosity in the credit expansion across tax units with different numbers of qualifying children. We view the extensive margin models as more definitive in identifying a causal effect of the EITC compared to the hours of work regressions. The reason is that our hours of work regressions do not account for nonrandom selection into who chooses to be a worker and who does not, and thus the hours response should be interpreted as descriptive only.

[Figure 4 here]

[8] The Urban Institute Brookings Institution Tax Policy Center provides EITC parameters from 1975 to 2021, at https://www.taxpolicycenter.org/statistics/eitc-parameters

Figure 4 presents the estimated δ_k^j coefficients along with 95% confidence intervals based on standard errors clustered by state of residence for the sample of all men and women ages 25-64 regardless of marital status, both combined and separately by race (Panel A). We begin with the broadest sample possible because there are no programmatic restrictions based on marital status and the fact that the EITC recipient could be a secondary earner in the household. Consistent with Hoynes and Patel (1998) and Schanzenbach and Strain (2020), we find strong evidence of an employment response to the 1993 EITC expansions. Panel A of Figure 4 shows that in the pooled sample ("All") there is no evidence of any EITC effect in the years before the 1993 expansion, but then there is a sustained increase starting in 1994 that averages about 3 percentage points on a baseline employment rate of 73 percent. Appendix Table 2 presents the corresponding individual coefficients and standard errors, along with p-values of the Wald test that the pre-trends are jointly equal to zero and that the post-trends are jointly zero. We cannot reject the former, but we do reject the latter.

The corresponding estimates for White and Black adults in Panel A of Figure 4 show that the employment response by Blacks is about 3 times larger than for Whites on a baseline employment rate that is 10 percentage points lower (64 percent Black, 74 percent White). We strongly reject the null hypothesis that the White and Black post-1993 coefficients are the same.[9] Although there is some suggestive qualitative evidence of possible pre-trends among Blacks, the p-value of 0.12 cannot reject the null that the pre-trends are jointly equal to zero at usual levels of significance.[10] In Panel A of Appendix Figure 5 we restrict the sample to the heads of tax

[9] This statement is based on a Wald test of structural change. Let β^b and β^w be the vector of year*kid coefficients from the Black and White regressions, respectively, and $Var(\beta^b), Var(\beta^w)$ be the corresponding variances. The Wald test is $(\beta^b - \beta^w)'[Var(\beta^b) + Var(\beta^w)]^{-1}(\beta^b - \beta^w)$ and is distributed asymptotically chi-square with degrees of freedom equal to the number of post-expansion coefficients (5 in this case).

[10] Schanzenbach and Strain (2020) report similar pre-trends around the 1993 reform in their sample of low-skilled single women, and attribute this to the expansion that occurred as part of OBRA 1990.

units. While the magnitude and statistical significance of the post-EITC effects among Blacks are little changed, the corresponding estimates among White household heads is attenuated compared to the sample overall. This suggests that the larger EITC response among Whites in Panel A of Figure 4 is driven by secondary earners.

In tax year 2017 nearly 60 percent of the EITC payments went to unmarried taxpayers filing as head of household with one or two dependents (Crandall-Hollick, Falk, and Boyle 2021), and based on long-term demographic trends the majority of these heads of household are women. Thus, in Panels B and C of Figure 4 we first restrict the sample to women regardless of marital status (Panel B) and then to unmarried women (Panel C). In Panel B we continue to identify a much more robust response among Black women that is roughly double that among White women, with the p-value rejecting equality of the post-expansion coefficients of 0.014. However, when we restrict further to unmarried women in Panel C of Figure 4 the qualitative magnitudes are more similar, with the p-value on the null of equal coefficients a more modest 0.06. This is underscored further in Appendix Figure 5 when we eliminate secondary earners in the tax unit and focus on heads of household where we no longer reject the null of equal post-1993 expansion effects between Black and White women (p-value of 0.3). The implication is that part of the difference we observe in the redistributive effect of the EITC in Figure 2 is a different labor-supply response in Black and White households based on family structure.

[Figure 5 here]

In Figure 5 we report the results of a similar exercise, but in this case the dependent variable is the natural log of annual hours of work. This transformation permits us to interpret the Year*kids interaction coefficients as percent changes. As noted above, these intensive-margin regressions do not control for nonrandom selection into work, the latter of which is determined in

part by the EITC. Thus, we refrain from placing a causal interpretation on the coefficients in the hours regressions. Panel A of Figure 5 shows that the 1993 EITC expansion was associated with an increase in annual hours of work among all adults ages 25-64 of about 4 percent ("All"), and again this increase was about twice as large on average among Black workers relative to White workers. The p-value on the test of equal Black and White post-1993 coefficients is 0.04, suggesting this difference was statistically significant. However, because we find evidence of a sizable pre-trend among Black workers at the intensive margin, we cannot attribute this difference to the 1993 EITC expansion. Even more than we saw for employment responses in Figure 4, when we restrict the sample to women (Panel B) and unmarried women (Panel C), we detect fewer differences at the intensive margin between Black and White women, in part because of a loss of precision in the point estimates among the sample of Black women.

V. Conclusion

Using 40 years of data from the CPS, we document that Black-White income inequality is lower in the bottom half of the after-tax income distribution in response to the increased generosity of the EITC, starting in particular with the 1993 credit expansion. This redistributive effect of the EITC is heterogeneous across the lower tail. For households at the 10^{th} percentile of incomes there is no demonstrated improvement in the Black-White income gap from the EITC, but there is notable improvement at the 25^{th} and 50^{th} percentiles. Much of this is due to visible racial gaps in the extensive-margin employment response across race to the 1993 expansion, which we show is at least twice as large for Blacks compared to Whites. These results are consistent with analyses that have documented the shift in the safety-net to a more work-based system that

provides greater support for the near-poor, and less support for families and households in relatively deep poverty (e.g., Ben-Shalom et al. 2011; Hardy et al. 2018; Shaefer et al. 2015).

To put these results into a broader policy context, it is worthwhile noting that, although the credit supplements after-tax incomes for many families—depending on where they reside—by as much as $6,000 or more, it is also the case that work participation and tax filing operate as pre-conditions of receipt. Black Americans face a range of historical and current-day structural barriers to work and economic opportunity, including diminished labor market networks, explicit racial discrimination, and higher rates of incarceration—which in turn can exacerbate the barriers they face in the labor market (Western and Pettit 2010). Racial differences in take-up of the EITC is relatively under-studied, and Black-White employment gaps likely understate the problem. For example, recent work by Anderson (2021) documents that families with children who were eligible "non-filers" were more likely to reside in low-income, majority-minority zip codes. Socioeconomically disadvantaged groups may be less likely to file taxes for several reasons, including the fact that many low-income filers may believe that, due to having no liability, there is no need to file. Local non-profits, including tax clinics housed within law-schools, have conducted EITC outreach for decades, with the goal of boosting participation in the program. Recent work by Brown (2021) and Gale (2021) have documented the connection of many of these issues to the ways in which tax policy – both intentional and unintentional – potentially contributes to racial economic inequality.

As a result of these longstanding factors, Black families typically have lower levels of savings to cushion the blow from employment disruptions or unanticipated expenses. The absence of this private insurance against joblessness and low earnings leaves income support as an important, last-resort intervention to counteract the most extreme consequences of economic

insecurity and poverty (Hardy, Smeeding, and Ziliak 2018). This system of programs and policies has increasingly emphasized work supports and transfers conditional on work participation. For Black-White inequality, the results are decidedly mixed. The EITC unambiguously incentivizes work, and supplements earnings for workers with lower wages – including those of many Black families. Still, for a subset of Blacks and others with high earnings volatility and associated barriers to stable work participation, the EITC appears to be limited as a viable income support alternative. Targeted expansions of the EITC that supplement very low earnings (e.g., Burman 2020)—as well as policies not conditioned on work participation, such as the recently enacted child allowances within the American Rescue Plan, are required to assist families below poverty at the very lowest end of the income distribution.

References

Ajilore, Olugbenba. "The Impact of the Earned Income Tax Credit on Poverty: Analyzing the Dimensions by Race and Immigration," Review of Black Political Economy, 35, 117-127.

Anderson, Nathan. 2021. "Advance Child Tax Credit Payments: Increasing Support for Families with Children." Federal Reserve Bank of Chicago CDPS Blog.

Autor, David. 2014. "Skills, education, and the rise of earnings inequality among the "other 99 percent"," Science, 344(6186), 843-851.

Autor, David, Lawrence Katz, and Melissa Kearney, 2008. "Trends in U.S. Wage Inequality: Revising the Revisionists," The Review of Economics and Statistics, 90(2), 300–323.

Bayer, Patrick and Kerwin Charles. 2019. "Divergent Paths: A New Perspective on Earnings Differences Between Black and White Men Since 1940," The Quarterly Journal of Economics, 133(3), 1459–1501.

Ben-Shalom, Y., Moffitt, R.A., & Scholz, J.K. 2012. “An Assessment of the Effectiveness of Anti-Poverty Programs in the United States.” In Oxford Handbook of the Economics of Poverty, P.N. Jefferson, ed. Oxford: Oxford University Press.

Blundell, Richard, Robert Joyce, Agnes Norris Keiller, and James P. Ziliak. 2018. “Income Inequality and the Labour Market in Britain and the US,” Journal of Public Economics, 162: 48-62.

Bollinger, Christopher R., Barry T. Hirsch, Charles Hokayem, and James P. Ziliak. 2019. “Trouble in the Tails: What We Know about Wages 30 Years After Lillard, Smith, and Welch,” Journal of Political Economy, 127(5), 2143-2185.

Brewer, Mike, Ben Etheridge, and Cormac O’Dea. 2017. “Why are Households that Report the Lowest Income So Well-off?,” The Economic Journal, 127(605), F24-F49.

Brooks-Gunn, Jeanne and Greg Duncan. 1997. “The Effects of Poverty on Children,” The Future of Children, 7(2), 55-71.

Brown, Dorothy A. The Whiteness of Wealth: How the Tax System Impoverishes Black Americans--And How We Can Fix It. Crown Publishing Group (NY), 2021.

Burkhauser, Richard V., Shuaizhang Feng, Stephen Jenkins and Jeff Larrimore. 2012. “Recent Trends in Top Income Shares in the USA: Reconciling Estimates from March CPS and IRS Tax Return Data,” Review of Economics and Statistics, 94(2): 371-388.

Burman, Leonard E. 2020. "A Universal EITC: Making Work Pay in the Age of Automation." National Tax Journal 73(4): 1187-1218.

Crandall-Hollick, Margot, Gene Falk, and Conor Boyle. 2021. “The Earned Income Tax Credit (EITC): How it Works and Who Receives It,” Congressional Research Service R43805. URL: https://sgp.fas.org/crs/misc/R43805.pdf .

Curran, Megan. 2021. “The Efficacy of Cash Supports for Children by Race and Family Size: Understanding Disparities and Opportunities for Equity,” Race and Social Problems, 13, 34-48.

Darity Jr, William A., and A. Kirsten Mullen. 2020. From here to equality: Reparations for Black Americans in the twenty-first century. UNC Press Books.

Duncan, Greg, Kathleen M. Ziol-Guest, Ariel Kalil. 2010. "Early-Childhood Poverty and Adult Attainment, Behavior, and Health," Child Development, 81(1), 306-325.

Eissa, Nada, and Hilary Hoynes. 2004. "Taxes and the Labor Market Participation of Married Couples: The Earned Income Tax Credit." Journal of Public Economics 88(9-10): 1931-1958.

Eissa, Nada, and Jeffrey Leibman. 1996. "Labor Supply Response to the Earned Income Tax Credit." The Quarterly Journal of Economics 111(2): 605-637.

Gale, William. 2021. "Public Finance and Racism." National Tax Journal 74(4).

Gundersen, Craig, and James P. Ziliak. 2004. "Poverty and Macroeconomic Performance Across Space, Race, and Family Structure," Demography, 41(1), 61–86.

Hardy, Bradley, Timothy Smeeding, and James P. Ziliak. 2018. "The Changing Safety Net for Low Income Parents and Their Children: Structural or Cyclical Changes in Income Support Policy?" Demography 55(1): 189-221.

Hotz, V. Joseph, and John Karl Scholz. 2003. "The Earned Income Tax Credit," In Means-Tested Transfer Programs in the United States, R.A. Moffitt (ed), Chicago: NBER and University of Chicago Press, 141-197.

Hoynes, Hilary. 2014. "Building on the Success of the Earned Income Tax Credit," In Policies to Address Poverty in America, M. Kearney and B. Harris (eds.), Hamilton Project: The Brookings Institution, 119-129.

Hoynes, Hilary. 2019. "The Earned Income Tax Credit," The ANNALS of the American Academy of Political and Social Science, 686(November): 180-203.

Hoynes, Hilary, and Ankur Patel. 2018. "Effective Policy for Reducing Poverty and Inequality? The Earned Income Tax Credit and the Distribution of Income," Journal of Human Resources, 53(4): 859-890.

Hoynes Hilary, Diane Whitmore Schanzenbach, and Douglas Almond. 2016. "Long-Run Impacts of Childhood Access to the Safety Net," American Economic Review, 106(4), 903-934.

Huang, Chye-Ching, and Roderick Taylor. 2019. "How the Federal Tax Code Can Better Advance Racial

Equity: 2017 tax law took step backward," Center on Budget and Policy Priorities.

Jones, Maggie R. 2014. "Changes in EITC Eligibility and Participation, 2005-2009," CARRA Working Paper Series 2014-04, U.S. Census Bureau.

Meyer, Bruce, Wallace Mok, and James Sullivan. 2015. "Household Surveys in Crisis," Journal of Economic Perspectives, 29(4), 199-226.

Moffitt, Robert, and James P. Ziliak. 2019. "Entitlements: Options for Reforming the Social Safety Net in the United States," The ANNALS of the American Academy of Political and Social Science, 686(November): 8-35.

Nichols, Austin, and Jesse Rothstein. 2016. "The Earned Income Tax Credit," In Economics of Means-Tested Transfer Programs in the United States, Volume 1, Robert A. Moffitt (ed.), Chicago, IL: The University of Chicago Press, 137-218.

Schanzenbach, Diane Whitmore, and Michael Strain. 2020. "Employment Effects of the Earned Income Tax Credit: Taking the Long View," Tax Policy and the Economy, 35, 87-129.

Shaefer, H. Luke, Kathryn Edin, and Elizabeth Talbert. 2015. "Understanding the Dynamics of $2-a-day Poverty in the United States." RSF: The Russell Sage Foundation Journal of the Social Sciences 1, no. 1: 120-138.

Smith, James P., and Finis R. Welch. 1989. "Black Economic Progress after Myrdal," Journal of Economic Literature 27(2): 519-564.

Western, Bruce, and Becky Pettit. 2010. "Incarceration & Social Inequality." Daedalus 139, no. 3: 8-19.

Williams, Jhacova, Trevon D. Logan, and Bradley Hardy. 2021. "The Persistence of Historical Racial Violence and Political Suppression: Implications for Contemporary Regional Inequality." The ANNALS of the American Academy of Political and Social Science 694(1), 92-107.

Figure 1. Trends in Lower-Tail Equivalized After-Tax Household Income Inequality, Pre- and Post-EITC. Note: Blue bars indicate tax reforms in 1986, 1990, 1993, and 2009.

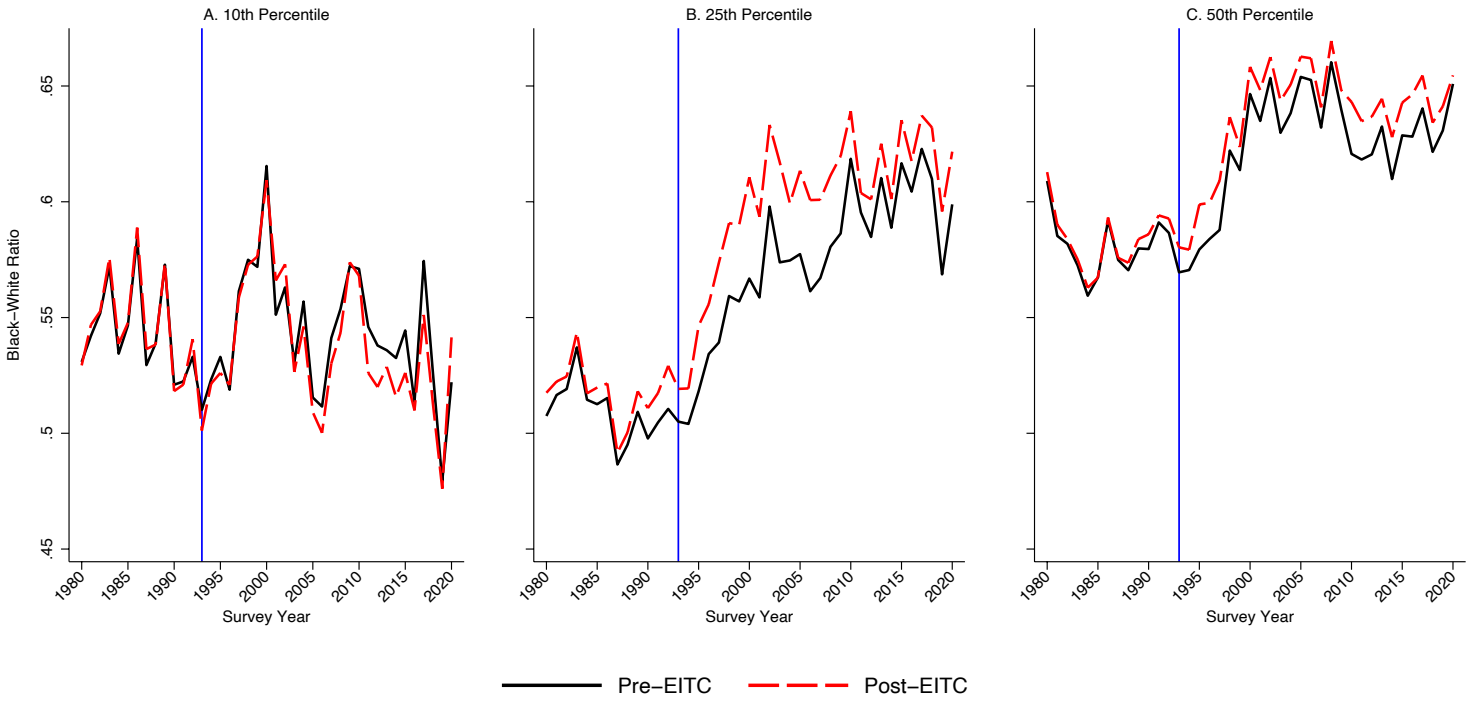


Figure 2. Black-White Percentile Ratios of Equivalized After-Tax Household Income Pre- and Post-EITC. Note: Blue bars indicate tax reforms in 1993.

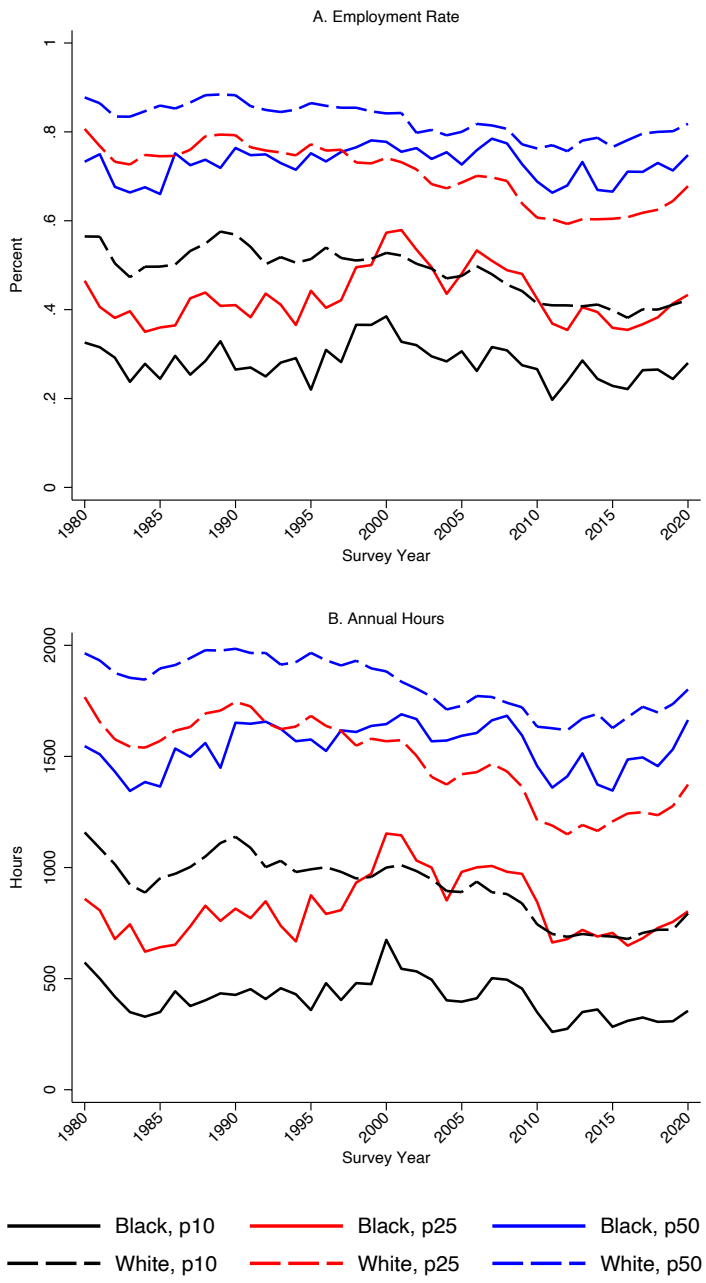


Figure 3. Employment Rates and Annual Hours of Work by Race of Household Heads at Percentile Points of Equivalized After-Tax Household Income

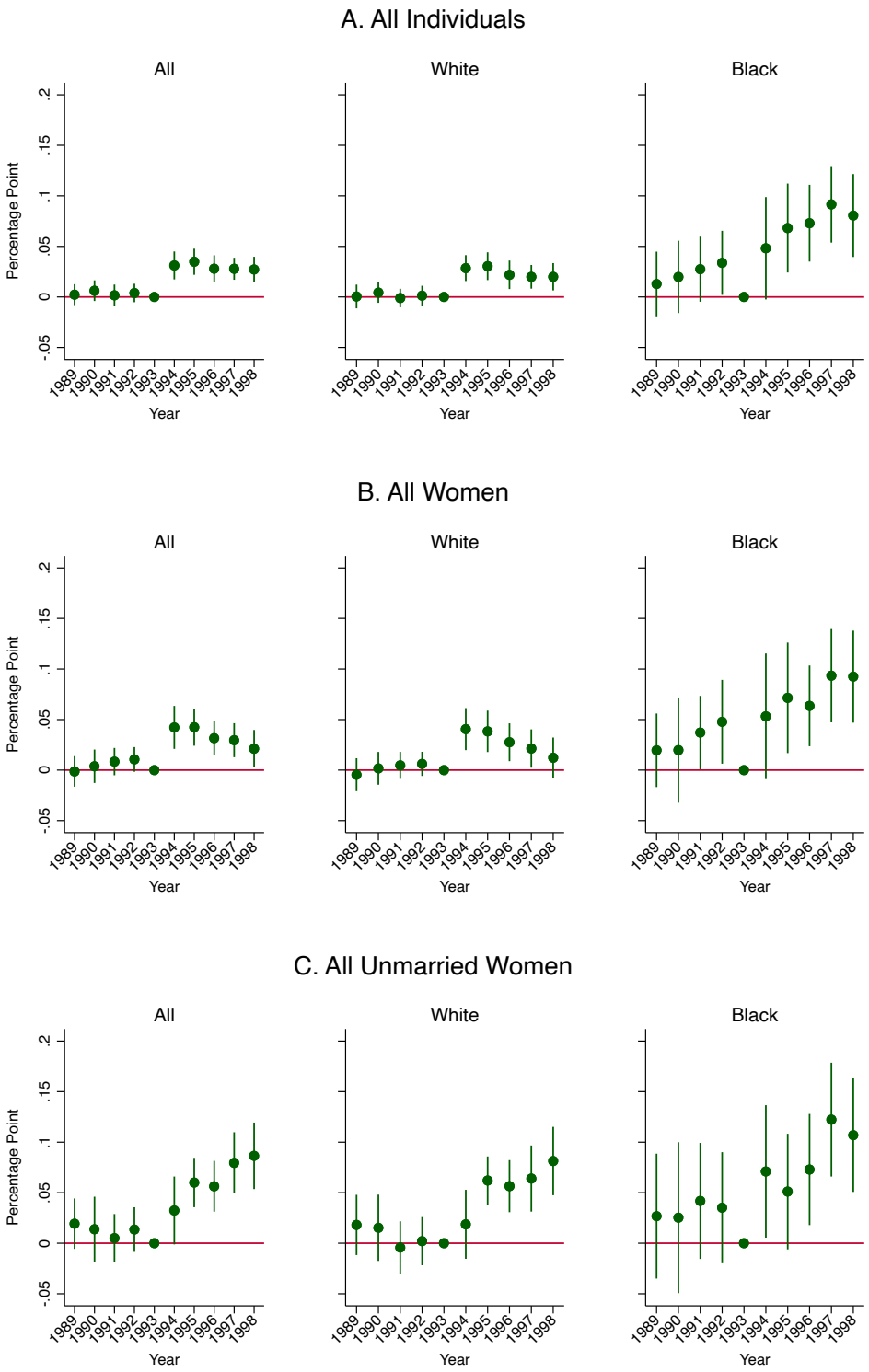


Figure 4. Event-Study Estimates of the EITC on Employment Rates

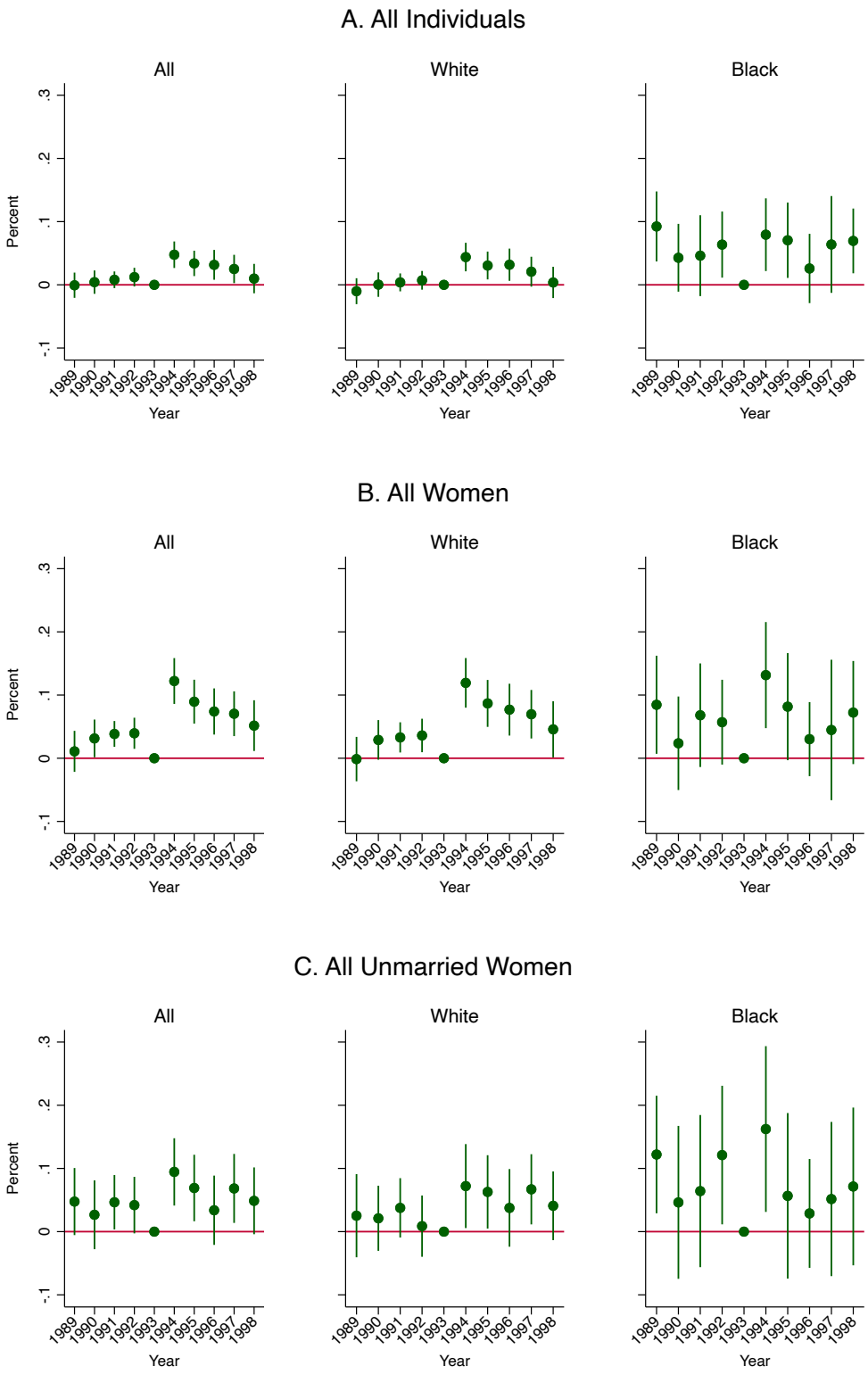
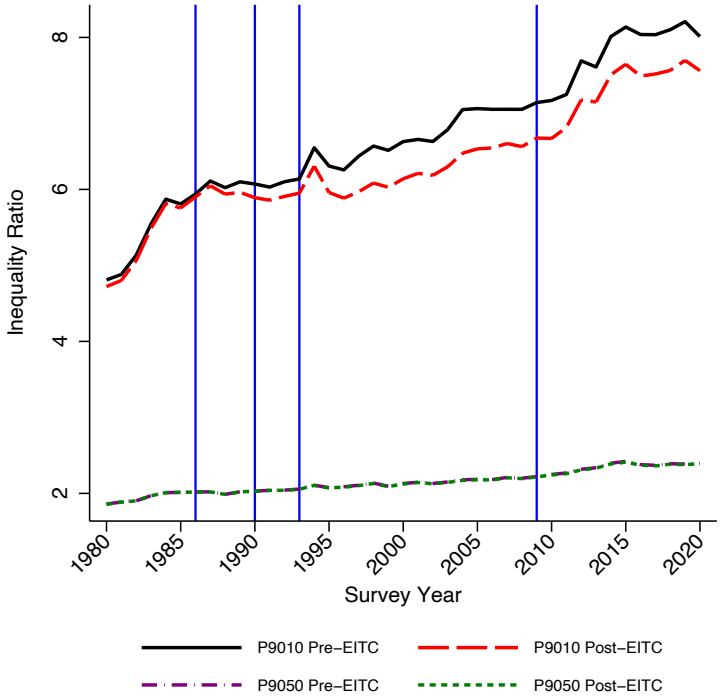


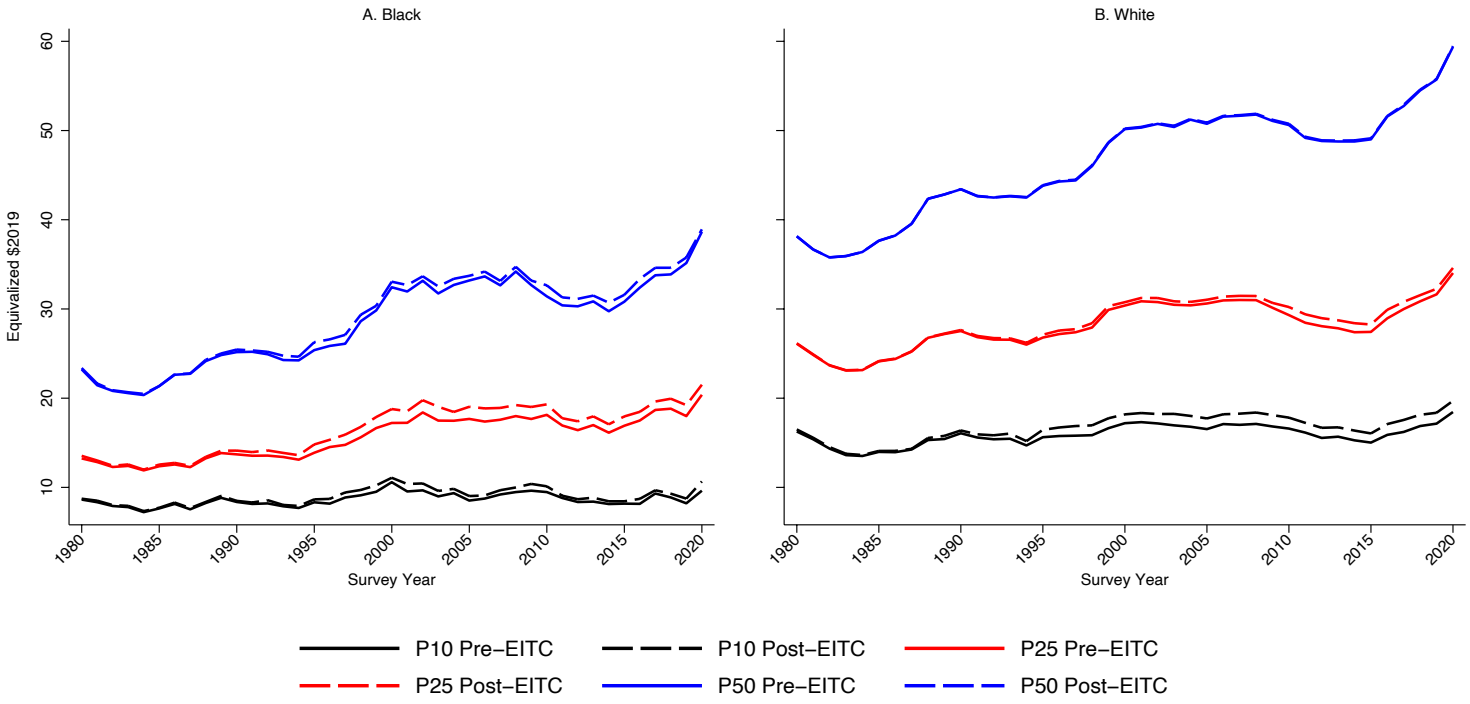
Figure 5. Event-Study Estimates of the EITC on Annual Hours of Work

ONLINE APPENDIX

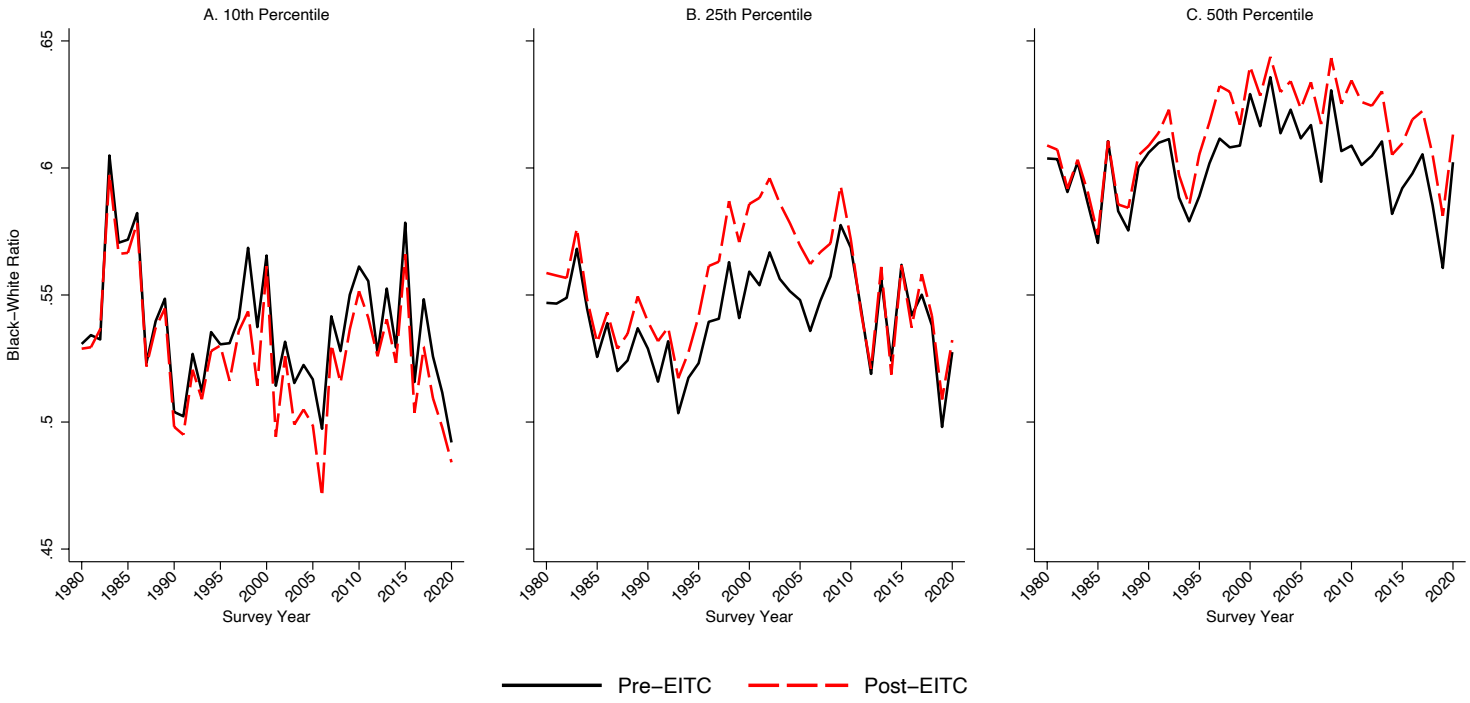
Income Inequality, Race, and the EITC



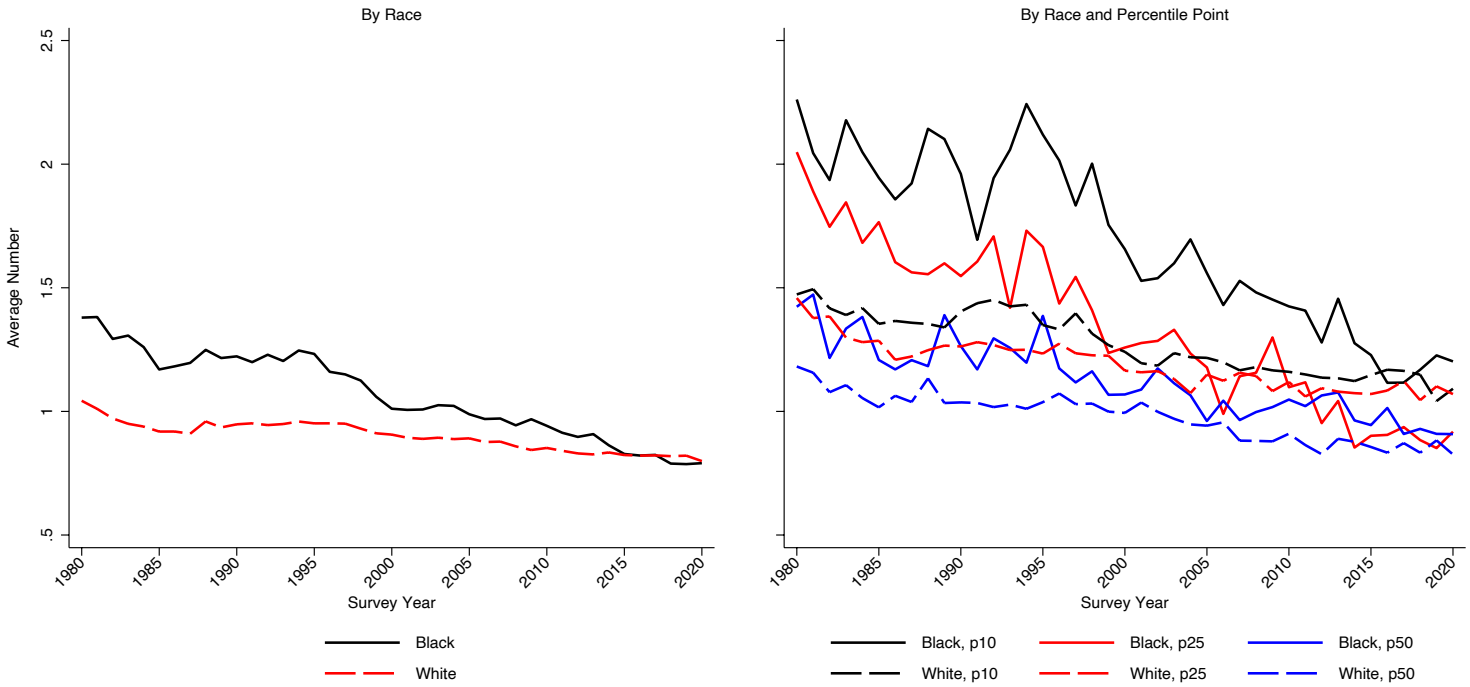
Appendix Figure 1. Trends in Overall and Upper-Tail Equivalized After-Tax Household Income Inequality Pre- and Post-EITC. Note: Blue bars indicate tax reforms in 1986, 1990, 1993, and 2009.



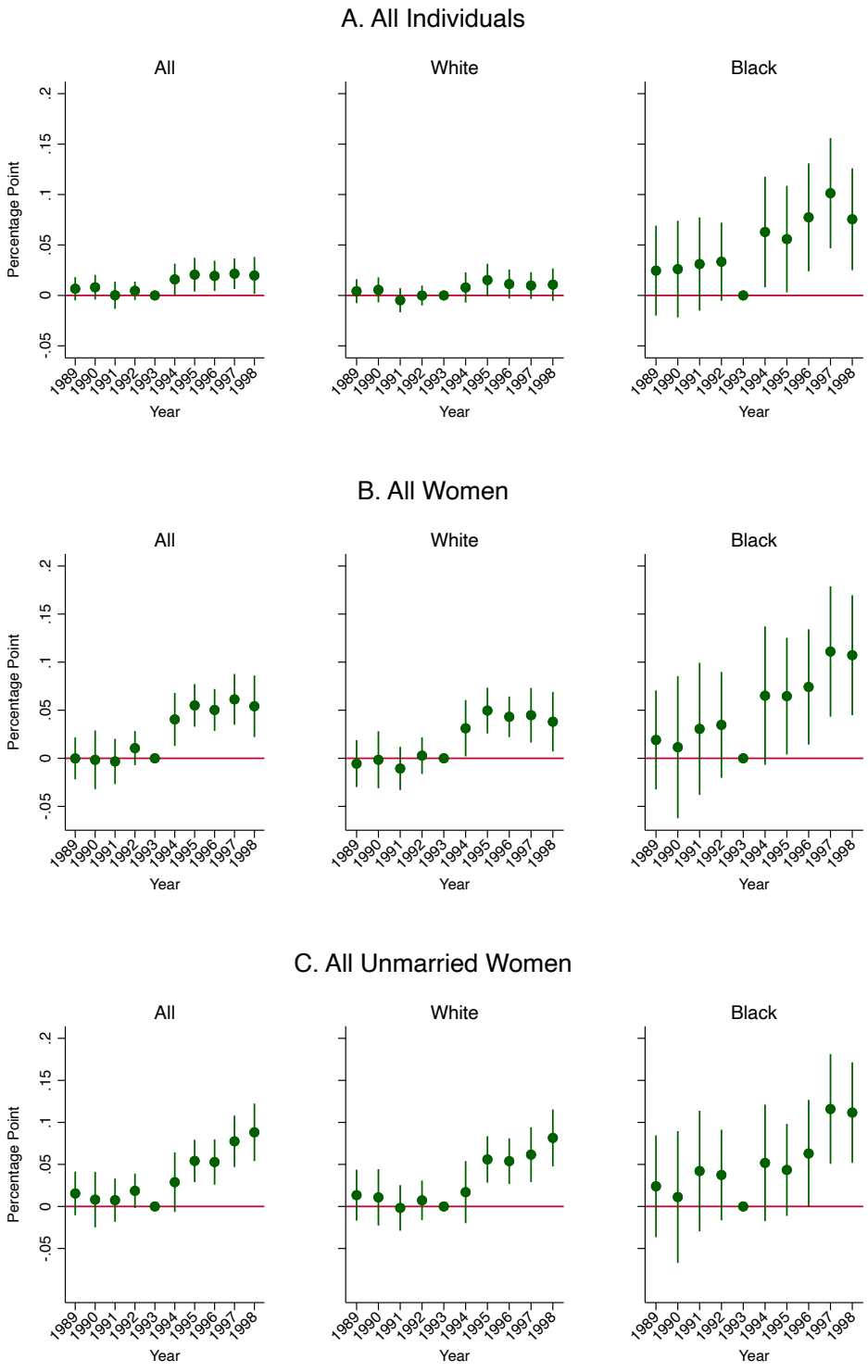
Appendix Figure 2. Percentiles of Equivalized After-Tax Household Income by Race, Pre- and Post-EITC



Appendix Figure 3. Black-White Percentile Ratios of After-Tax Non-Equivalized Household Incomes



Appendix Figure 4. Average Number of EITC Qualifying Dependents by Race and Percentile Point of After-Tax Equivalized Household Incomes



Appendix Figure 5. Event-Study Estimates of the EITC on Employment Rates of Household Heads

Appendix Table 1: Summary Statistics (means)

	Black Households				White Households			
Characteristic	1980s	1990s	2000s	2010s	1980s	1990s	2000s	2010s
Black	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00
White	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00
Female	0.49	0.56	0.60	0.59	0.25	0.32	0.46	0.49
Male	0.51	0.44	0.40	0.41	0.75	0.68	0.54	0.51
Married	0.38	0.33	0.32	0.29	0.64	0.59	0.56	0.52
Never Married	0.23	0.32	0.37	0.43	0.13	0.17	0.19	0.24
Widowed/Divorced/Separated	0.39	0.35	0.31	0.28	0.23	0.24	0.25	0.24
Employed	0.64	0.66	0.66	0.61	0.80	0.80	0.75	0.71
Annual Hours	1306	1400	1415	1265	1773	1798	1635	1505
Number of Dependents	1.16	1.07	0.91	0.77	0.92	0.89	0.83	0.76
Number of Dependents<13	0.98	0.92	0.74	0.63	0.70	0.70	0.64	0.60
Number of Dependents>=14	0.35	0.32	0.29	0.27	0.26	0.26	0.26	0.25
Number of Adults in Household	1.89	1.77	1.72	1.73	1.99	1.92	1.91	1.95
Pre-EITC Income ($2019)	32,392	37,265	44,442	45,115	50,182	58,811	69,287	71,715
Post-EITC Income ($2019)	32,526	37,774	45,134	45,836	50,238	59,058	69,672	72,221
Federal+State EITC ($2019)	134	509	692	721	56	247	385	506
Pre-EITC Income ($2019) Equivalized	27	32	40	41	43	51	61	63
Post-EITC Income ($2019) Equivalized	27	33	41	42	43	51	61	63
Federal+State EITC ($2019) Equivalized	0.09	0.37	0.52	0.53	0.04	0.18	0.27	0.34
N (unweighted)	39,250	35,521	55,117	57,927	337,418	304,724	382,215	351,964

Appendix Table 1 Continued

	Households Headed by Black Women				Households Headed by Black Men			
Characteristic	1980s	1990s	2000s	2010s	1980s	1990s	2000s	2010s
Black	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
White	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Female	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00
Male	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00
Married	0.10	0.15	0.23	0.23	0.64	0.55	0.45	0.38
Never Married	0.31	0.39	0.40	0.46	0.15	0.23	0.32	0.39
Widowed/Divorced/Separated	0.59	0.46	0.36	0.31	0.20	0.21	0.23	0.24
Employed	0.54	0.60	0.64	0.59	0.73	0.73	0.69	0.63
Annual Hours	1048	1200	1312	1191	1556	1652	1568	1373
Number of Dependents	1.33	1.26	1.08	0.93	1.00	0.84	0.66	0.55
Number of Dependents<13	1.14	1.08	0.86	0.73	0.83	0.73	0.57	0.48
Number of Dependents>=14	0.40	0.36	0.34	0.31	0.29	0.27	0.22	0.20
Number of Adults in Household	1.69	1.65	1.64	1.68	2.08	1.93	1.83	1.81
Pre-EITC Income ($2019)	24,599	30,444	39,638	41,242	39,960	45,829	51,509	50,747
Post-EITC Income ($2019)	24,790	31,128	40,531	42,150	40,038	46,119	51,904	51,195
Federal+State EITC ($2019)	191	684	893	908	78	289	395	449
Pre-EITC Income ($2019) Equivalized	21	27	36	38	33	39	47	47
Post-EITC Income ($2019) Equivalized	22	27	36	38	33	40	47	47
Federal+State EITC ($2019) Equivalized	0.14	0.52	0.68	0.68	0.05	0.19	0.27	0.30
N (unweighted)	19,281	19,699	32,611	34,165	19,969	15,822	22,506	23,762

Appendix Table 1 Continued

	Households Headed by White Women				Households Headed by White Men			
Characteristic	1980s	1990s	2000s	2010s	1980s	1990s	2000s	2010s
Black	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00
Male	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00
Married	0.14	0.29	0.47	0.47	0.80	0.74	0.63	0.56
Never Married	0.23	0.23	0.19	0.23	0.10	0.13	0.19	0.25
Widowed/Divorced/Separated	0.63	0.49	0.34	0.30	0.10	0.13	0.17	0.19
Employed	0.69	0.71	0.67	0.64	0.84	0.84	0.81	0.77
Annual Hours	1368	1427	1334	1251	1908	1977	1887	1748
Number of Dependents	0.68	0.78	0.87	0.84	1.00	0.95	0.79	0.68
Number of Dependents<13	0.52	0.64	0.69	0.67	0.77	0.73	0.61	0.54
Number of Dependents>=14	0.23	0.23	0.27	0.27	0.27	0.27	0.25	0.22
Number of Adults in Household	1.59	1.71	1.85	1.93	2.12	2.02	1.96	1.97
Pre-EITC Income ($2019)	36,379	48,643	64,253	67,033	54,778	63,700	73,501	76,196
Post-EITC Income ($2019)	36,481	49,030	64,761	67,672	54,819	63,880	73,784	76,575
Federal+State EITC ($2019)	102	387	508	638	41	180	283	380
Pre-EITC Income ($2019) Equivalized	37	46	57	58	45	54	64	68
Post-EITC Income ($2019) Equivalized	37	46	57	58	45	54	65	68
Federal+State EITC ($2019) Equivalized	0.08	0.30	0.37	0.44	0.03	0.12	0.19	0.25
N (unweighted)	83,332	97,970	174,710	174,524	254,086	206,754	207,505	177,440

Appendix Table 2. Event-Study Estimates of the EITC on Employment Rates: All Individuals

Employed (0/1)	All	White	Black
1989	0.0023	0.0005	0.0128
	(0.0051)	(0.0058)	(0.0159)
1990	0.0062	0.0043	0.0198
	(0.0051)	(0.0050)	(0.0178)
1991	0.0016	-0.0011	0.0274
	(0.0053)	(0.0046)	(0.0160)
1992	0.0039	0.0013	0.0338
	(0.0045)	(0.0049)	(0.0158)
1994	0.0312	0.0285	0.0482
	(0.0069)	(0.0064)	(0.0252)
1995	0.0348	0.0304	0.0682
	(0.0064)	(0.0069)	(0.0219)
1996	0.0279	0.0219	0.0729
	(0.0066)	(0.0070)	(0.0189)
1997	0.0279	0.0199	0.0916
	(0.0054)	(0.0058)	(0.0189)
1998	0.0272	0.0199	0.0805
	(0.0062)	(0.0067)	(0.0204)
Constant	0.5726	0.5589	0.7542
	(0.0159)	(0.0139)	(0.0336)
Observations	565,983	514,377	51,606
R-squared	0.1146	0.1135	0.1259
P-value on pre-trends	0.476	0.708	0.120
P-value on post-trends	5.92e-05	0.000726	0.000311
P-value on Equal Black-White post-trends			0.00489

Appendix Table 3. Event-Study Estimates of the EITC on Employment Rates: All Women

Employed (0/1)	All	White	Black
1989	-0.0013	-0.0046	0.0196
	(0.0075)	(0.0081)	(0.0181)
1990	0.0038	0.0017	0.0198
	(0.0082)	(0.0081)	(0.0259)
1991	0.0084	0.0047	0.0372
	(0.0067)	(0.0066)	(0.0181)
1992	0.0106	0.0062	0.0478
	(0.0061)	(0.0059)	(0.0206)
1994	0.0422	0.0405	0.0532
	(0.0106)	(0.0103)	(0.0309)
1995	0.0425	0.0384	0.0715
	(0.0091)	(0.0102)	(0.0272)
1996	0.0316	0.0276	0.0635
	(0.0085)	(0.0093)	(0.0199)
1997	0.0296	0.0214	0.0934
	(0.0084)	(0.0094)	(0.0230)
1998	0.0211	0.0122	0.0925
	(0.0092)	(0.0100)	(0.0227)
Constant	0.4975	0.4722	0.7328
	(0.0160)	(0.0139)	(0.0423)
Observations	299,656	269,152	30,504
R-squared	0.1444	0.1448	0.1514
P-value on pre-trends	0.253	0.553	0.0748
P-value on post-trends	0.000366	0.000268	0.000476
P-value on Equal Black-White post-trends			0.0142

Appendix Table 4. Event-Study Estimates of the EITC on Employment Rates: Unmarried Women

Employed (0/1)	All	White	Black
1989	0.0193	0.0181	0.0268
	(0.0124)	(0.0148)	(0.0307)
1990	0.0139	0.0153	0.0253
	(0.0160)	(0.0163)	(0.0371)
1991	0.0050	-0.0043	0.0419
	(0.0119)	(0.0129)	(0.0286)
1992	0.0135	0.0020	0.0351
	(0.0110)	(0.0119)	(0.0273)
1994	0.0324	0.0187	0.0710
	(0.0167)	(0.0170)	(0.0326)
1995	0.0600	0.0620	0.0511
	(0.0122)	(0.0118)	(0.0285)
1996	0.0563	0.0564	0.0729
	(0.0125)	(0.0128)	(0.0273)
1997	0.0795	0.0640	0.1223
	(0.0151)	(0.0163)	(0.0280)
1998	0.0865	0.0813	0.1069
	(0.0164)	(0.0168)	(0.0279)
Constant	0.6266	0.6269	0.7677
	(0.0226)	(0.0193)	(0.0643)
Observations	99,355	80,540	18,815
R-squared	0.1847	0.1854	0.1652
P-value on pre-trends	0.220	0.513	0.499
P-value on post-trends	1.86e-05	6.52e-06	0.000408
P-value on Equal Black-White post-trends			0.0599

Appendix Table 5. Event-Study Estimates of the EITC on Annual Hours Worked: All Individuals

Ln(Hours Worked)	All	White	Black
1989	-0.0007	-0.0101	0.0924
	(0.0099)	(0.0102)	(0.0276)
1990	0.0043	0.0003	0.0428
	(0.0092)	(0.0096)	(0.0267)
1991	0.0080	0.0039	0.0462
	(0.0066)	(0.0071)	(0.0319)
1992	0.0122	0.0071	0.0637
	(0.0074)	(0.0074)	(0.0260)
1994	0.0476	0.0439	0.0793
	(0.0105)	(0.0112)	(0.0286)
1995	0.0339	0.0305	0.0705
	(0.0100)	(0.0110)	(0.0297)
1996	0.0316	0.0318	0.0259
	(0.0117)	(0.0127)	(0.0273)
1997	0.0251	0.0208	0.0639
	(0.0112)	(0.0118)	(0.0381)
1998	0.0099	0.0038	0.0695
	(0.0116)	(0.0123)	(0.0255)
Constant	7.3887	7.3894	7.5277
	(0.0158)	(0.0156)	(0.0533)
Observations	452,281	415,135	37,146
R-squared	0.0233	0.0234	0.0362
P-value on pre-trends	0.521	0.755	0.0107
P-value on post-trends	0.000170	0.000237	0.0301
P-value on Equal Black-White post-trends			0.0399

Appendix Table 6. Event-Study Estimates of the EITC on Annual Hours Worked: All Women

Ln(Hours Worked)	All	White	Black
1989	0.0109	-0.0013	0.0846
	(0.0162)	(0.0175)	(0.0386)
1990	0.0314	0.0290	0.0237
	(0.0148)	(0.0156)	(0.0368)
1991	0.0385	0.0330	0.0681
	(0.0102)	(0.0119)	(0.0408)
1992	0.0395	0.0360	0.0570
	(0.0122)	(0.0132)	(0.0334)
1994	0.1222	0.1193	0.1315
	(0.0180)	(0.0196)	(0.0418)
1995	0.0895	0.0867	0.0816
	(0.0173)	(0.0185)	(0.0422)
1996	0.0740	0.0769	0.0302
	(0.0182)	(0.0204)	(0.0292)
1997	0.0704	0.0696	0.0447
	(0.0176)	(0.0191)	(0.0553)
1998	0.0516	0.0457	0.0723
	(0.0200)	(0.0221)	(0.0406)
Constant	7.2293	7.1951	7.5143
	(0.0283)	(0.0308)	(0.0575)
Observations	215,452	194,812	20,640
R-squared	0.0510	0.0532	0.0551
P-value on pre-trends	0.00324	0.0206	0.128
P-value on post-trends	4.79e-07	2.82e-06	0.0790
P-value on Equal Black-White post-trends			0.354

Appendix Table 7. Event-Study Estimates of the EITC on Annual Hours Worked: Unmarried Women

Ln(Hours)	All	White	Black
1989	0.0476	0.0252	0.1221
	(0.0264)	(0.0328)	(0.0463)
1990	0.0267	0.0211	0.0463
	(0.0271)	(0.0256)	(0.0602)
1991	0.0465	0.0376	0.0642
	(0.0214)	(0.0234)	(0.0599)
1992	0.0420	0.0087	0.1212
	(0.0223)	(0.0241)	(0.0546)
1994	0.0945	0.0721	0.1624
	(0.0265)	(0.0331)	(0.0653)
1995	0.0691	0.0629	0.0566
	(0.0262)	(0.0289)	(0.0652)
1996	0.0338	0.0376	0.0288
	(0.0273)	(0.0306)	(0.0428)
1997	0.0684	0.0670	0.0516
	(0.0272)	(0.0276)	(0.0607)
1998	0.0488	0.0409	0.0715
	(0.0263)	(0.0271)	(0.0621)
Constant	7.4385	7.4369	7.6146
	(0.0326)	(0.0336)	(0.0762)
Observations	74,456	62,281	12,175
R-squared	0.0578	0.0567	0.0679
P-value on pre-trends	0.126	0.603	0.0883
P-value on post-trends	0.0128	0.155	0.230
P-value on Equal Black-White post-trends			0.725

Appendix Table 8. Event-Study Estimates of the EITC on Employment Rates: All Household Heads

Employed (0/1)	All	White	Black
1989	0.0066	0.0042	0.0246
	(0.0057)	(0.0059)	(0.0222)
1990	0.0081	0.0055	0.0261
	(0.0061)	(0.0062)	(0.0238)
1991	0.0002	-0.0048	0.0311
	(0.0067)	(0.0059)	(0.0230)
1992	0.0046	-0.0001	0.0334
	(0.0045)	(0.0049)	(0.0193)
1994	0.0159	0.0079	0.0629
	(0.0077)	(0.0075)	(0.0273)
1995	0.0206	0.0153	0.0558
	(0.0083)	(0.0080)	(0.0263)
1996	0.0193	0.0113	0.0774
	(0.0075)	(0.0071)	(0.0266)
1997	0.0215	0.0098	0.1014
	(0.0075)	(0.0066)	(0.0272)
1998	0.0198	0.0107	0.0755
	(0.0091)	(0.0080)	(0.0251)
Constant	0.6527	0.6564	0.7536
	(0.0169)	(0.0156)	(0.0451)
Observations	340,245	304,724	35,521
R-squared	0.1236	0.1220	0.1361
P-value on pre-trends	0.436	0.586	0.268
P-value on post-trends	0.0629	0.554	0.00250
P-value on Equal Black-White post-trends			0.00229

Appendix Table 9. Event-Study Estimates of the EITC on Employment Rates: Households Headed by Women

Employed (0/1)	All	White	Black
1989	-0.0001	-0.0055	0.0191
	(0.0108)	(0.0122)	(0.0256)
1990	-0.0016	-0.0015	0.0116
	(0.0152)	(0.0148)	(0.0368)
1991	-0.0032	-0.0106	0.0306
	(0.0117)	(0.0112)	(0.0342)
1992	0.0106	0.0028	0.0347
	(0.0089)	(0.0095)	(0.0274)
1994	0.0404	0.0312	0.0651
	(0.0137)	(0.0146)	(0.0358)
1995	0.0550	0.0496	0.0646
	(0.0110)	(0.0119)	(0.0302)
1996	0.0503	0.0432	0.0742
	(0.0108)	(0.0105)	(0.0298)
1997	0.0613	0.0448	0.1110
	(0.0132)	(0.0141)	(0.0338)
1998	0.0541	0.0380	0.1072
	(0.0159)	(0.0154)	(0.0311)
Constant	0.6354	0.6367	0.7616
	(0.0197)	(0.0175)	(0.0683)
Observations	117,669	97,970	19,699
R-squared	0.1704	0.1685	0.1689
P-value on pre-trends	0.691	0.754	0.648
P-value on post-trends	5.34e-05	0.00226	0.0171
P-value on Equal Black-White post-trends			0.351

Appendix Table 10. Event-Study Estimates of the EITC on Employment Rates: Households Headed by Unmarried Women

Employed (0/1)	All	White	Black
1989	0.0155	0.0135	0.0240
	(0.0129)	(0.0151)	(0.0301)
1990	0.0081	0.0108	0.0112
	(0.0164)	(0.0167)	(0.0390)
1991	0.0075	-0.0017	0.0422
	(0.0128)	(0.0135)	(0.0357)
1992	0.0186	0.0073	0.0374
	(0.0102)	(0.0117)	(0.0268)
1994	0.0289	0.0171	0.0518
	(0.0177)	(0.0184)	(0.0345)
1995	0.0542	0.0560	0.0435
	(0.0125)	(0.0138)	(0.0272)
1996	0.0529	0.0539	0.0630
	(0.0134)	(0.0135)	(0.0317)
1997	0.0775	0.0616	0.1159
	(0.0152)	(0.0162)	(0.0325)
1998	0.0882	0.0816	0.1117
	(0.0170)	(0.0168)	(0.0297)
Constant	0.6578	0.6692	0.7846
	(0.0226)	(0.0191)	(0.0725)
Observations	87,251	70,509	16,742
R-squared	0.1929	0.1914	0.1771
P-value on pre-trends	0.192	0.703	0.531
P-value on post-trends	1.88e-05	4.62e-05	0.00952
P-value on Equal Black-White post-trends			0.301