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The Intergenerational Transmission of Poverty and Public Assistance: Evidence from the Earned Income Tax Credit

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ABSTRACT

This paper examines the intergenerational effects of the Earned Income Tax Credit (EITC) on poverty and public assistance use. Using data from the PSID, we find that increased exposure to the EITC in childhood reduces the use of public assistance in adulthood (WIC and other public assistance) and reduces the likelihood of being in poverty (<100% of poverty) or near poor (<200% of poverty) by about 7 percentage points. These findings build on a growing literature that considers the intergenerational impacts of public policy and suggests that the economic benefits of policies in one generation may have long-term effects on the next generation.

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Children who grow up in poverty are more likely to experience poverty as adults compared to those who were not poor. Children growing up in the bottom income quintile are roughly one-third as likely to reach the top income quintile in adulthood as those growing up in the top income quintile (Chetty et al. 2014). While this intergenerational correlation of poverty is presumed to have at least some causal component, a host of potential confounding factors, such as parental educational attainment, family structure, neighborhood characteristics, and school quality make it difficult to isolate a causal link between childhood poverty and adulthood poverty. As such, it is not clear whether investing in social programs to increase family income for the current generation necessarily leads to reductions in poverty for the next generation. These questions are critically important for public policy, amidst debates about how to break the intergenerational poverty link, and for assessing the short and long-term benefits of investing in anti-poverty programs.

As one of our largest anti-poverty programs, the Earned Income Tax Credit (EITC) provides an excellent context to investigate this question of how social investments in one generation affect poverty and economic well-being in the next. Large, federal expansions to the EITC beginning in the 1970s, in addition to several states implementing their own EITCs since the late 1980s, generate ample variation in childhood EITC exposure according to year of birth, state of residence, and household composition. This policy variation provides plausibly exogenous shocks to family resources during childhood, allowing us to examine the causal link between childhood family resources and economic outcomes in adulthood. A long line of research demonstrates that expansions to the EITC substantially increase the short-term labor force participation of single mothers (e.g., Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Michelmore and Pilkauskas 2021), increase pre-tax earnings, and lift families out of poverty (Hoynes and Patel 2018). A growing body of research examines the impacts of the EITC on children in both the short- and long-term: children are less likely to be born low birthweight (Hoynes, Miller, and Simon 2015),[1] have higher test scores (Dahl and Lochner 2012; 2017), and are more likely to enroll in (Manoli and Turner 2018) and complete college (Bastian and Michelmore 2018). This work suggests that the EITC not only nearly pays for itself in the short-term (Bastian and Jones 2021), but is likely to generate cost savings in the long-term. To date,

[1] However, Dench & Joyce (2020) questions the validity of their results.

however, less is known about the intergenerational impacts of the EITC on poverty and economic self-sufficiency.

In this paper, we investigate how exposure to the EITC during childhood affects poverty and economic self-sufficiency in adulthood. Using data from the Panel Study of Income Dynamics (PSID), a longitudinal panel dataset, we exploit federal and state variation in EITC generosity over several decades to provide causal evidence on how increasing family resources throughout childhood affects poverty, public assistance use (cash, food stamps, and other welfare), earnings, and income mobility once these children reach adulthood, between ages 25 and 45.

Our study makes three primary contributions to the literature. First, our findings add to a growing body of evidence examining the long-term effects of childhood exposure to the social safety net on outcomes in adulthood (e.g., Hoynes, Schanzenbach, and Almond 2016; Bailey, Sun, and Timpe 2021; Barr, Eggleston, and Smith 2022). Much of the previous research on this topic is based on in-kind programs such as the food stamps program, Medicaid, and Head Start, which target poor and near-poor households (typically those with income below 130% of the federal poverty line). Less is known about the long-term effects of broader-reaching income transfer policies such as the EITC, which reaches more than 31 million households each year (IRS 2023), including about half of all families with children (Brewer and Hoynes 2019). Second, by examining the intergenerational poverty, employment, and earnings effects of the EITC, we illustrate the importance of considering the long-term benefits associated with social safety net programs; cost-benefit analyses confined to the short term will underestimate the total benefits of the program. Finally, this work contributes to a growing literature on the causal effects of family resources in childhood on later-life outcomes (e.g., Aizer et al. 2016; Hoynes, Schanzenbach, and Almond 2016).

Our results suggest that exposure to more generous EITC benefits throughout childhood leads to substantial reductions in the likelihood of living in poverty as an adult and decreases the likelihood of receiving public assistance such as food stamps, the supplementary food program for Women, Infants, and Children (WIC), and other types of welfare assistance. A $1,000 increase in average annual EITC exposure during childhood (between birth to age 15 – a $15,000 increase in total childhood EITC exposure) increases the likelihood of having earnings above the poverty threshold by 7 percentage points. Analyses by child's age at exposure suggest stronger

effects among children who were exposed to the EITC at younger ages (under age 8), consistent with the literature on the importance of income in early childhood (e.g., Duncan, Magnuson and Votruba-Drzal 2017). We also find suggestive evidence that the effects are stronger for Black children (as compared to White children), though the differences are not statistically significant.

Our findings are consistent with the notion that children who were most likely to be exposed to the EITC in childhood experience the largest effects on poverty and public assistance use in adulthood. We find that the EITC has the largest effect on those who grew up with family income in the second quartile of the income distribution (25th through the 50th percentile, an average income of about $45,000 in childhood measured in 2017 dollars), who were more likely to receive the EITC in childhood relative to children growing up with family income in other quartiles in the income distribution. Similarly, we find stronger effects among those whose parents had relatively strong labor force attachment and whose parents had some college education, but no college degree.

The reductions in poverty and public assistance receipt are driven at least in part by increases in employment and earnings when the children reach adulthood. A $1,000 increase in annual EITC exposure during childhood increases employment between ages 25 and 45 by about 4 percentage points. While we find few effects of childhood EITC exposure on average earnings, quantile regressions show increases in earnings for the bottom half of the earnings distribution of about 10-30%. Finally, we also find some suggestive evidence that the EITC increases income mobility. Like the findings for poverty alleviation, these effects are driven by children who grew up with family income in the second quartile of the income distribution, as well as Black individuals. Unsurprisingly, we find no impact of the EITC on poverty in adulthood among children who grew up in the top half of the income distribution, as the vast majority were never eligible for the EITC in childhood. Perhaps more surprisingly, we find little evidence that the EITC reduces poverty or increases income mobility among those who grew up in the bottom income quartile, whose families earned about $32,000 on average when they were young. These findings are consistent with prior research that shows that the EITC does little to improve the economic circumstances of those at the very bottom of the income distribution (Hoynes and Patel 2018: Hardy et al. 2022), and illustrate that this pattern persists for the children of EITC recipients as well.

These findings provide evidence of the positive effect of family resources during childhood on economic well-being and self-sufficiency in adulthood (between ages 25 and 45) and have important implications for policy. However, likely because benefits are contingent on work, we also show that the EITC does little to improve the economic status of children growing up at the very bottom of the income distribution, whose parents may have more precarious attachment to the labor force. Nonetheless, our results imply that the EITC produces economic benefits that persist beyond current beneficiaries, extending to the next generation as well.

Background

The EITC

The EITC was established in 1975 as a temporary subsidy for workers earning less than $10,000. The original credit was worth up to $500 and could only be claimed by families with children. Since its inception, the credit has been expanded several times. It was made a permanent fixture of the tax code in 1978, and the credit was indexed to inflation beginning in 1987.

The credit amount was greatly expanded in the late 1980s and early 1990s. In 1991, a larger benefit was introduced for families with two or more children and in 2009, a more generous credit was introduced for families with three or more children (see Crandall-Hollick [2018] for a more detailed history of the EITC). As of 2021, the maximum federal credit was worth up to $6,728 for a family with three children, $5,980 for a family with two children, and $3,618 for a family with one child. In percentage terms, these credits are worth up to 45% of a household's annual earnings for a family with three or more children, up to 40% of annual earnings for a family with two children, and up to 34% of annual earnings for a family with one child. Accounting for inflation, the maximum federal EITC benefit has increased by more than $2,000 since 1975 (see Figure 1), with larger increases for families with two or more children.

[Figure 1 about here]

In addition to the several federal expansions to the EITC that have occurred over time, several states have implemented their own EITCs, which piggyback off of the federal credit. As of 2023, there were 32 states and the District of Columbia that have established their own EITCs, varying in generosity and when they were implemented (see Appendix Table 1). Most state EITCs are designed as fixed percentages of the federal credit, ranging from 3 to over 100% of

the value of the federal credit. In these states, tax filers who claim the federal EITC are also eligible for the state EITC, provided they fill out their state tax forms and claim the credit. A couple of states have their own EITC benefit structures that do not directly map onto the federal credit. California, for instance, provides a very generous state benefit worth up to 85% of the federal EITC, but the credit phases out at a much lower income level than the federal EITC.

We leverage this rich variation in EITC generosity—over time, by state, and across household size—to test how exposure to larger benefits in childhood affects poverty and public assistance receipt in adulthood. For instance, we take advantage of the fact that a child born in 1990 in the state of New York would not initially be eligible for a state EITC because New York did not institute one until 1994, but a similar child born in 1995 in New York would be eligible for a much more generous credit, over more years of childhood. We leverage additional variation by comparing two children born in the same year, but in different states, as well as children born in different years, but who reside in households with the same number of children. As we discuss in more detail below, we also take advantage of variation over the entire course of childhood, capturing exposure to the EITC from birth until age 15, providing additional variation in EITC exposure compared to a cross-sectional measure alone.

Prior literature

Many studies find that the EITC substantially increases labor force participation among single mothers, increasing pre-tax earnings, and lifting families out of poverty in the short term (e.g., Meyer and Rosenbaum 2001; Hoynes and Patel 2018; Michelmore and Pilkauskas 2021; Schanzenbach and Strain 2022; for an exception see Kleven 2019). Hoynes and Patel (2018), for instance, find that a $1,000 increase in average EITC benefits contemporaneously increases earnings by about 5% and increases the probability of having earnings above the federal poverty line by about 10% (reducing poverty by nearly 20%). Recent work illustrates that these earnings gains are long-lasting. Using a difference-in-differences design, Kuka and Shenhav (2020) estimate that single mothers have nearly 20% higher earnings 5 to 9 years after giving birth if they were exposed to larger EITC benefits in their child's first year of life, earnings gains that persist for up to 19 years.

The EITC is also linked with a host of other positive outcomes for mothers and their children such as increased savings (Jones and Michelmore 2018), reduced debt (Shaefer et al.

2013), improved health (Evans and Garthwaite 2014), reduced suicidal behaviors (Morgan et al. 2021), and improved housing outcomes (Pilkauskas and Michelmore 2019). Several studies have examined effects on children in the short- to medium-term. These studies find that the EITC is linked with better health (Baughman and Duchovny 2016), higher test scores (Dahl and Lochner, 2012; 2017; Agostinelli and Sorrenti 2018), and greater college enrollment (Manoli and Turner 2018) and completion (Bastian and Michelmore 2018).

A newer strand of research considers the longer-term impacts of the EITC. Individuals exposed to larger EITC benefits in childhood are in better health in adulthood and are less likely to be obese (Braga, Blavin and Gangopadhyaya 2020). Women exposed to larger EITC benefits in childhood are also less likely to have children or get married as teenagers (Michelmore and Lopoo 2021). A recent paper by Barr, Eggleston, and Smith (2022) uses a regression discontinuity design to analyze the causal impact of income received from tax credits in the first year of life on earnings in early adulthood. They find that a $1,300 increase in tax credits (mainly the EITC, the Child Tax Credit, and the dependent exemption) in the first year of life increases earnings in early adulthood by 1-3%. Finally, another recent paper also finds that EITC exposure in childhood is linked with a higher income rank, slightly lower EITC use, and a higher probability of employment in early adulthood (Akee, Jones and Simeonova 2020). Yet, to date no research on the EITC has considered intergenerational impacts of the EITC on poverty or the use of public assistance, and almost all the evidence we have only evaluates outcomes into early adulthood (up through age 30). Our paper fills these gaps by evaluating the impact of EITC exposure throughout childhood on poverty, public assistance use, income mobility, and employment up through age 45.

Many related studies consider the intergenerational impacts of exposure to other types of public assistance programs on adult poverty and economic well-being. Several studies use the roll out of the Food Stamp program to study intergenerational effects and find that food stamps improve adult health outcomes (Hoynes, Schanzenbach and Almond 2016), increase earnings (Bitler and Figinski, 2019), and increase economic self-sufficiency (especially among children who were exposed before age 5; Bailey et al. 2021; Glasner et al. 2023). Others have considered the intergenerational effects of welfare reform (work requirements, time limits and other conditions) and found some evidence of reduced intergenerational welfare use (but not broader social assistance; Hartley, Larmarch and Ziliak 2017), whereas other studies find that welfare

reform was associated with improved human capital (Vaughn, 2018) and reduced food insecurity (Corman et al. 2021).

Previous research also shows that exposure to Medicaid in childhood is linked with improved adult health and employment (Boudreaux, Golberstein and McAlpine 2016; Goodman-Bacon 2021). Medicaid exposure in childhood is associated with better birth outcomes in the next generation (East et al. 2023). Head Start also has positive intergenerational effects on academic outcomes (Barr and Gibbs 2021). Lastly, extended maternity leave policies have similarly been linked with intergenerational effects on wages (Carneiro, Loken and Salvanes 2015; Danzer et al. 2017), though this evidence is based on maternity leave policies in Western Europe, which have quite different social policy contexts relative to the US.

Thus, there is some evidence of the intergenerational transmission of the effects of public policy on economic well-being, but much of this research is based on exposure to social safety net programs targeted at a relatively narrow portion of the population: those living below or near the poverty line (below 130% of poverty), or from policies outside of the US context. Additionally, much of the evidence in the U.S. context is based on in-kind programs such as food stamps and Medicaid. Little is known about how exposure to a more widely targeted cash transfer program (the EITC includes families with incomes up to 225% of the federal poverty line, roughly half of all families with children), over an extended period of childhood (birth to age 15), affects long-term poverty and economic self-sufficiency.

Given the prior literature on the positive effects of the EITC and positive intergenerational effects of other social policies on poverty and economic well-being, we anticipate that children who experience exposure to more generous EITC benefits in childhood will be less likely to live in poverty as adults and be less likely to receive benefits from other public assistance programs. This hypothesis builds on a long literature suggesting that family financial conditions have long-term effects on children when they reach adulthood (e.g., Currie 2009; Duncan, Magnuson and Votruba-Drzal 2017). Although there are many reasons to anticipate that the additional income provided by the EITC during childhood should improve the outcomes of those children as adults, some research suggests that maternal employment induced by the EITC might lead to negative outcomes for children through reduced supervision and time with children (e.g., Dave et al. 2019; Agostinelli and Sorreni 2018; Bastian and Lochner 2020; Reichman et al. 2020). Thus, although we believe the weight of the evidence would predict that

EITC exposure in childhood should improve poverty and reduce public assistance use in adulthood, the offsetting effects of maternal employment may mute those effects.

Data

We use data from the Panel Study of Income Dynamics (PSID), a longitudinal data set that collects information on a wide range of topics including demographics, income, and public assistance use. The survey started in 1968 with nearly 5,000 households – 1,872 families from the Survey of Economic Opportunity, which oversamples low-income individuals, and 2,930 families from a nationally representative sample. Since then, the survey has collected information on individuals living within a PSID household, as well as individuals who are direct descendants of original sample members. Prior to 1997, the survey was conducted annually, and since 1997, the survey has been conducted biennially. The structure of the PSID allows us to link individuals' outcomes in adulthood to a rich set of information about their childhood and family backgrounds.

We use data from the 1968 to 2017 survey waves for our analyses. Our sample is comprised of individuals born between 1967 and 1992.[2] We examine the effect of exposure to the EITC during childhood between birth and age 15, on poverty and participation in public assistance programs during adulthood between the ages of 25 and 45. The 1967 birth year restriction allows us to observe the entire childhood environment for everyone in our sample, while the 1992 birth year restriction limits the sample to those we can observe at least through age 25. We further restrict the sample to individuals we observe as head or spouse between age 25 and 45, as many of our outcome measures are only consistently collected for heads and spouses. Prior to age 25 many individuals are still living with their parents and have not yet formed independent households, a necessary condition to become the "head" or "spouse".[3]

Because of policy endogeneity concerns, we make no further sample restrictions based on income or family structure during childhood. EITC generosity likely affects family income, and previous work also finds changes in family structure as a function of EITC generosity (e.g.

[2] We exclude immigrants from our sample as there is a lack of clarity regarding eligibility (everyone in the household must have social security numbers to claim the EITC) and the PSID is not representative of the immigrant population for the birth cohorts we include. According to data from the 2021 American Community Survey, this restriction means we exclude approximately 20% of 25 to 45 year olds residing in the U.S..
[3] The vast majority (88%) of 25 to 45 year old individuals are either heads or spouses.

Herbst 2011; Michelmore 2018). As a robustness check, in some analyses we examine heterogeneity according to childhood family income to illustrate that our effects are driven by those most likely to have received the EITC as children, but our main models do not make such exclusions. Our final sample consists of 5,464 individuals, with up to 26,800 person-year observations (sample varies by outcome). Because of the non-random composition of the sample, we conduct all analyses using the average of the PSID sampling weights during childhood. Table 1 contains descriptive statistics on the sample.

Measures

EITC exposure. Our independent variable of interest is measured as the annual maximum federal plus state EITC benefit available in each year between a child's birth and age 15, conditional on the state of residence and the number of children in the family, similar to the approach taken by Bastian and Michelmore (2018) and Braga et al. (2020). We average this maximum federal and state EITC benefit over the course of childhood, from birth to age 15. We measure exposure up until age 15 to avoid concerns that older teenagers may leave the household, which may also be endogenously determined by EITC exposure. Prior to taking the average, the annual maximum EITC benefit is converted to real 2017 dollars. In our sample, the average individual is exposed to an annual maximum EITC benefit worth $1,540 based on their state of residence, the year, and the number children that reside in the household.

Variation in annual EITC exposure is generated by changes in federal and state EITC policies that occur over time and across household sizes. We illustrate this variation in Figure 2, which presents the maximum federal and state combined EITC benefit averaged over each year between birth and age 15, by birth year. Average EITC exposure is much larger for individuals born in the 1980s and early 1990s relative to those born in the 1970s, and there is also considerable variation within each birth year, as illustrated by the vertical dispersion of points within each birth year in Figure 2. For those born in 1970, for instance, the average EITC exposure ranged from 0 to about $2,000 per year. Those born after 1980 experienced much wider variation in EITC exposure, due in part to the expansion of the EITC for households with multiple children, as well as the implementation and expansion of several state EITCs. For those born in 1992, for instance, average EITC exposure ranges from about $2,000 per year up to

$6,000 per year. The vast majority of our variation is generated by federal changes to the EITC over time (as represented by variation by birth year, which accounts for about 93% of the variation in our measure), followed by differences across states (about 3% of our variation); household size variation makes up the smallest share of the variation in EITC exposure in our sample (about 0.1%). To further illustrate the EITC variation we exploit, in Appendix Figure 1, we plot the residuals by birth year from a model predicting the EITC amount with all the controls in our model.

We use this measure of EITC exposure rather than calculating actual household EITC benefits in childhood each year due to concerns of endogeneity of EITC eligibility. Households can only receive the EITC if they have at least some annual earnings, but their earnings must be below approximately 225% of the federal poverty line to meet the eligibility requirements. Thus, EITC eligibility is directly correlated with family income, which is also correlated with poverty and public assistance receipt in adulthood. Relying on actual EITC exposure based on family income would likely result in a biased relationship between EITC exposure in childhood and poverty and public assistance receipt in adulthood, since children who grow up in poverty are more likely to live in poverty in adulthood. Leveraging the federal and state variation in the EITC over time ensures that variation in EITC exposure is driven by policy changes to the benefit amounts and structure, rather than changes in family income. Additionally, we leverage variation from changes in the number of children residing in the household over time and changes in state of residence. There is little evidence that fertility is affected by the EITC in the short-term (Baughman and Dickert-Conlin 2009; Kuka and Shenhav 2020), reducing concerns that the number of children in the household is endogenous. In our main analyses, we assume that cross-state moves are not related to EITC generosity, but we also test the robustness of our findings to individuals who do not move across states. We also conduct a robustness check where we separately estimate the effect of federal versus state EITC exposure to further assuage concerns about how endogenous cross-state moves may impact our results.

Primary outcomes. To study the intergenerational effect of the EITC on poverty, we construct binary indicators for whether individuals have labor income above the U.S. Census Bureau's Official Poverty Measure [OPM] poverty threshold and above 200% of the poverty threshold,

given the individual's family size in a given year.[4] The poverty threshold indicators are constructed from 1993 onwards because the PSID only started collecting labor income separately for spouse and other family members in 1993. Although we focus on the OPM in our main analyses, in a supplemental analysis we re-calculate the poverty thresholds using post-tax income where we estimate families' tax liabilities using NBER's TAXSIM.

The PSID collects information on three public assistance programs: Temporary Assistance for Needy Families (TANF) formerly known as Aid to Families with Dependent Children (AFDC), the Supplemental Nutrition Assistance Program (SNAP) formerly known as Food Stamps, and the Supplemental Nutrition Assistance Program for Women, Infants and Children (WIC). The PSID also collects information on whether individuals participate in any other welfare programs other than the three listed. In addition to examining public assistance receipt from any of these sources individually, we construct a public assistance use variable as a binary indicator equal to one if an individual or their spouse receives benefits from *any* public assistance program in a given year, and zero otherwise. To examine the length of time individuals receive benefits from public assistance programs, we collapse the data into a single observation per person and construct variables indicating the proportion of observed years individuals received benefits from any welfare program between age 25 and age 45. These are continuous variables that take on values between zero and one, where zero indicates that the individual never received benefits from the welfare program in any of the periods observed between ages 25 and 45, and one indicates that the individual received benefits in all periods observed between age 25 and 45.

Mechanisms. We consider a few mechanisms through which we expect childhood EITC exposure to affect adult poverty and public assistance. First, we examine adult employment and earnings. We consider both a binary measure of employment as an adult as well as a measure of annual hours worked. These are time-varying measures constructed in each year the individual is observed between ages 25 and 45. We analyze adult earnings as (a) annual labor earnings for the individual and (b) annual family labor income (in $2017).

[4] The poverty threshold data is obtained from the Census Bureau's website: https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html.

Second, we consider marriage and childbearing/fertility. Because both marriage and fertility affect whether an individual lives below the poverty line and receives public assistance in adulthood, those outcomes may serve as channels through which the EITC impacts poverty and public assistance among the second generation. Additionally, although research suggests relatively few effects of the EITC on marriage decisions in the first generation (Herbst 2011; Michelmore 2018), some work shows the EITC leads young women to delay the timing of marriage and first births in the second generation (Michelmore and Lopoo 2021). If the EITC raises income and reduces poverty in the second generation, we might expect it to increase marriage given the long literature that documents the link between economic wellbeing and marriage (e.g., Schneider 2011; Burgess, Proper and Assave 2003). Similarly, if the EITC affects educational outcomes in the second generation, as has been found by some studies (Bastian and Michelmore 2018), then we might observe higher marriage rates (and delayed fertility) as education is also strongly linked with marriage (e.g., McLanahan 2004).

We construct a binary variable for marital status and a binary and a continuous variable for measuring childbearing. Marital status is constructed as a binary variable equal to one if the individual reports ever being married by age 45 or the last year observed in the PSID, whichever comes first, and zero otherwise. The first variable we construct related to childbearing is an indicator variable for whether the individual has a child by age 45 or the last year observed in the PSID, whichever comes first, and the second variable is the number of children they have by age 45 or the last year observed in the PSID, whichever comes first. Both the marriage and childbearing measures are constructed at the person-level, and do not vary over time.

One other channel through which we expect the EITC to impact the second generation is through its effects on the first (parent) generation. Thus, we estimate the short-term impacts of the EITC on parents' labor supply, income, and EITC benefits when the individuals in our main sample were children (birth to age 15). We use NBER's TAXSIM to estimate the families' tax liabilities and then subtract them from the relevant pre-tax variables. Annual hours worked (by head and spouse), annual after-tax earnings (by head and spouse) and annual after-tax family income are measured between birth and age 15 and modeled as a function of the maximum federal and state EITC available in the prior year.

Secondary outcome – intergenerational mobility. Economic mobility is another important indicator of the intergenerational transmission of economic well-being. To study mobility, we examine whether individuals move up in the income rank relative to the rank of their parents. We create four measures of mobility: continuous measures of rank difference and income difference (child-parent, in $2017) and indicator variables that the child has higher income rank than their parent, and that the child has higher, absolute income (adjusting for inflation). Our primary measure considers only the income rank of the head parent (using head's labor income), but in a supplemental analysis, we also construct a version of this measure where we consider the income of both parents (using family income). When considering only the head parent's income, we restrict the child's earnings to their own income. When examining both parents' income – or family income – we use the family income (both head and spouse if married) of the child's generation as well. We foreground the analysis that uses only the head's income of the parent and child generation for simplicity, but present results using both head and spouse's income in an appendix because income mobility may be achieved not only through one's own employment and earnings, but also through marriage decisions. To make income levels more comparable across generations, we restrict the construction of these income ranks between the ages of 25 and 35 for the child and the parents and take the average income rank over this age range.[5]

Control variables. We control for some parental attributes between the birth of the child and age 15: education, the age of the head of the household, and the share of childhood spent with married parents. For the child generation, we also control for race, gender, state of birth, year of birth, average number of siblings between birth and age 15, and the age (and age squared) at the time the outcome is observed (age 25 through 45). We account for the possibility that state level EITC benefits might be correlated with state level attributes that are also correlated with our outcomes (Bitler and Hoynes 2016; Schmidt, Shore-Sheppard and Watson 2016) by including controls for the state unemployment rate, state gross domestic product, state maximum TANF benefits for a family of three, state maximum SNAP benefits for a family of three and the state

[5] Instead of constructing the income rank at each age between 25 and 35, we take the average income in this age range for both the child and parent generation, and then construct the relevant ranks. We take this approach because information is not observed at all relevant ages for children and parents. Furthermore, as discussed in Solon, Barsky and Parker (1994), because of the procyclical nature of micro level income data, averaging across years produces a less noisy measure of income.

minimum wage rate. All these state controls come from the University of Kentucky's Center for Poverty Research National Welfare Database and are constructed as the average value between birth and age 15.

Empirical Strategy

Our identification strategy exploits variation from changes in the maximum federal and state level EITC benefits over time, by family size, and by state to estimate the following models:

$$Y_{isb} = \beta_1 EITC_{sbc}^{0-15} + \gamma_1 X_{isb}^{0-15} + +\gamma_2 W_{isb}^{0-15} + \gamma_3 Z_{sb}^{0-15} + \gamma_s + \delta_b + \theta_c + \epsilon_{ist} \quad (1)$$

Where Y_{isb} is the outcome of interest for an individual, *i*, residing in state, *s*, from birth year, *b*. $EITC_{sbc}^{0-15}$ represents the average annual maximum federal plus state EITC benefit available between birth and age 15, which is based on the state of residence (*s*), birth year (*b*), and number of children (*c*) residing in the household in each year of childhood. X_i^{0-15} is a set of parental controls and W_{isb}^{0-15} is a set of individual controls of the child generation. In some models, we also include, Z_{sb}^{0-15}, which controls for state level contextual variables as described above. Our model also includes a set of state fixed effects, birth year fixed effects, and a set of fixed effects for the average number of siblings living in the household over the course of childhood. These are captured by γ_s, δ_b, and θ_c, respectively. Standard errors are clustered at the state level to allow for correlation in the error terms occurring for individuals born within the same state.

Our main coefficient of interest is β_1, which represents the effect of a $1,000 increase in annual EITC exposure in childhood on the poverty, public assistance receipt, or income mobility outcome of each individual in adulthood. With state, year, and average number of sibling fixed effects in the model, variation in annual EITC exposure is driven by variation in federal and state EITC generosity at the intersection of these three sources: state-by-year, state-by-household size, and year-by-household size. Additional variation stems from accounting for EITC exposure over 15 years of childhood, rather than a single point in time. With all of our controls in the model, we assume that there were no other policy changes or factors that are correlated with our outcomes of interest as well as state-by-year, state-by-household size, and year-by-household size. We test the validity of this assumption in several ways, as discussed below.

In some models, we also control for state of birth specific linear trends to account for general trends in the outcomes of interest that vary by state and birth year and may be correlated with EITC exposure. However, there is also some concern that these time trends may bias our estimates by absorbing any dynamic effects of EITC exposure on the outcomes of interest. Additionally, prior work has also demonstrated issues with including time trends in difference-in-differences analyses when the treated and comparison groups are allowed to have different time trends (Borusyak and Jaravel 2017). Because of these concerns, our preferred specification excludes these time trends, but we demonstrate that many of our results are robust to their inclusion.

We conduct several subgroup analyses to test for heterogeneous treatment effects on our measures of poverty and public assistance. We consider variation by several different child characteristics: exposure by age during childhood, variation by adult age when the outcomes are measured, and heterogeneity by child's gender and race. We also examine heterogeneity by several parental characteristics: educational attainment, marital status, parental income rank when the parent was 25-35 years old, and parental labor force attachment. These analyses shed light on which individuals were most impacted by childhood EITC exposure, and also likely reflect differences in eligibility for the EITC.

We also conduct several robustness checks to test the sensitivity of our findings. These robustness checks aim to consider different ways of measuring EITC exposure (in utero, excluding the top 10% of the family income distribution), different ways of accounting for state policies (separating state and federal EITC variation, controlling for the roll out of food stamps and Medicaid, controlling for TANF(AFDC) caseloads as a proportion of those living in poverty, examining heterogeneity before and after the SNAP-rebrand in 2009), and testing the robustness of our results to our particular model specification (adding interactions of our demographic controls with birth year linear time trends to allow demographics to vary over time to address concerns of compositional change, adding birth-year-by-state fixed effects to effectively "shut down" the state variation and rely only on the federal variation, and adding birth-year-by-number-of-sibling-fixed effects to "shut down" the federal variation and rely only on the state

variation).[6] We also consider endogenous migration by conducting a robustness check restricting our sample to individuals who did not move across states between childhood and adulthood.

Results

Poverty and Public Assistance

We begin by examining the effects of childhood EITC exposure on adult poverty and public assistance receipt in Table 2. Each cell represents a separate regression and displays the effect of a $1,000 increase in average annual EITC exposure in childhood (a $15,000 increase in total childhood EITC exposure between birth and age 15) on the outcome of interest. Column 1 represents models that include all the demographic controls described above for the individual (child in adulthood) and their parents, as well as a set of state, year of birth, and average number of siblings fixed effects. Column 2 adds controls for average state characteristics between birth and age 15 (our preferred model, as detailed in the empirical strategy). Finally, column 3 adds state-specific birth-year time trends.

Results indicate that exposure to the EITC in childhood substantially reduces poverty in adulthood. A $1,000 increase in average annual EITC exposure in childhood increases the likelihood of being above the federal poverty threshold by 7 to 8 percentage points and increases the likelihood of individuals earning above 200% of the federal poverty line by about 6.5 percentage points.[7] These results are robust across the three model specifications and are economically meaningful. About 87% of our sample has earnings above the federal poverty line, so this represents about a 9% increase in the likelihood of being above the poverty line. Similarly, about 72% of the sample has earnings above 200% of the federal poverty line, so this

[6] Note that because we use average number of sibling fixed effects in our model, rather than number of siblings in each year between birth and age 15 fixed effects, we cannot fully control for the federal variation that varies by household size. Due to dimensionality issues, we are unable to control for number of sibling fixed effects for each year between birth and age 15.

[7] It is possible that this estimate also reflects own, adulthood eligibility for the EITC, to the extent that childhood EITC exposure impacts adulthood EITC eligibility. Previous research by Akee et al. (2020) finds a slight, negative correlation between EITC exposure in childhood and adulthood EITC exposure. Since EITC benefits are not included in the official poverty measure, this should not impact our estimates, but could potentially lead to an underestimation of post-tax poverty reduction (as shown in Appendix Table 2).

also represents a 9% increase in the likelihood of having earnings above 200% of the federal poverty line.[8]

In Figure 3, we plot results of regressing different ratios (between 0% and 500%) of the federal poverty line on our EITC exposure measure, to provide a more detailed portrait of where in the distribution the EITC has the largest impact. The results suggest that childhood EITC exposure has a larger impact on raising adulthood income above 100-200% of the federal poverty line (6-8ppt), with smaller effect sizes between 200-300% of poverty (2-6ppt), and virtually no impact on raising income above 300% of the poverty line (which equates to approximately $59,000 for a family of three in 2017). This pattern of effects – most significant between 100-200% of the federal poverty line – is consistent with previous research examining the impact of the EITC on poverty for the first (parent) generation (Hoynes and Patel 2018).

In terms of public assistance receipt, all the coefficients point in the expected direction, given the reductions in poverty: we find a negative association between EITC exposure in childhood and public assistance receipt in adulthood, but only a few coefficients are statistically different from zero. We find some evidence that exposure to the EITC in childhood reduces the likelihood of receiving WIC and other welfare benefits by about 1-2 percentage points. Only a small share of the sample receives WIC (6 percent) or other welfare (less than 1 percent), so these estimates are quite large. We do not find statistically significant reductions in the likelihood of receiving TANF/AFDC or food stamps/SNAP, though the point estimates are economically large and negative. The point estimate on TANF implies a 0.3 percentage point reduction in TANF receipt associated with a $1,000 increase in average annual EITC exposure, which represents a 33% reduction. About 10% of the sample receives food stamps in any given year; our point estimates imply a 20-30% reduction in food stamp receipt associated with a $1,000 increase in average annual EITC exposure.

Finally, we also conducted analyses collapsing the data to a single observation per person and measuring the fraction of years receiving public assistance (and above poverty), as a function of EITC exposure. Results, presented in Appendix Table 3, are qualitatively quite similar to those presented in Table 2.

[8] In Appendix Table 2, we run the same analysis using post-tax income (based on NBER's TAXSIM). The results are similar for above poverty, but the estimates are somewhat smaller for above 200% of poverty, likely reflecting marginal tax rates that turn positive above 100% of the poverty line.

We interpret the public assistance receipt results with some caution, as survey data tend to suffer from under-reporting of public assistance receipt relative to administrative data. The level of underreporting in the PSID is measured to be near 50% for programs like TANF, though reporting rates are much higher for food stamps/SNAP and WIC (see Meyer, Mok, and Sullivan 2009).[9] In theory, underreporting should be unrelated to EITC exposure in childhood; measurement error in public assistance receipt likely results in less precise estimates but should not bias estimates. For instance, if we assume that only half of TANF recipients self-report in the PSID, then our point estimates imply that the "true" reduction in TANF receipt as a function of EITC exposure in childhood is about 0.6 percentage points.

While these effect sizes may appear large, our treatment variable is quite large, representing a $1,000 increase in *annual* EITC exposure between birth and age 15, an approximate $15,000 increase in EITC exposure over the course of childhood. Since the average individual in our sample is exposed to a maximum annual EITC benefit of about $1,540, a $1,000 increase in annual exposure represents an approximate 65% increase in exposure. We discuss the plausibility of our effect sizes in more detail in the "contextualizing effect sizes" section below.

Heterogeneity

Exposure to the EITC and the impact of exposure might vary by demographic characteristics. In this section, we consider heterogeneity by several child and parental characteristics to better understand who is most impacted by the EITC.

Child age. Given the long literature showing larger long-run effects of exposure to public assistance programs in early childhood (Duncan, Magnuson and Votruba-Drazl 2017), we test whether effects are also larger for EITC exposure in early childhood. To do this, we parse our EITC exposure measure into two age ranges: birth to age 7 and age 8 to 15 and re-estimate our main outcomes of interest with both of these exposure measures in the model simultaneously.[10] Results, shown in Table 3, are consistent with previous research on the impact of exposure to the

[9] According to Meyer, Mok, and Sullivan (2009), the average reporting of TANF benefits in the PSID relative to the administrative records is about 53%, meaning that the PSID likely misses about half of TANF recipients in a given year. Food stamp reporting is a bit higher, at 73% of administrative records, while WIC reporting is much higher, at about 93% of administrative records.

[10] We also conducted a robustness check including *in utero* exposure to the EITC, given prior work illustrating the importance of in utero exposure to the EITC for infant birth outcomes (Hoynes, Miller and Simon 2015), and results were similar to the main results; see Appendix Table 4.

food stamps program or Medicaid in childhood: we find larger anti-poverty effects for exposure in early childhood, and small, insignificant effects on poverty for exposure to the EITC in later childhood. We lack precision on any of the public assistance receipt measures, but point estimates are also suggestive of larger reductions in public assistance receipt as a function of EITC exposure in early childhood.

Adult age. We also consider whether the effect of EITC exposure in childhood has a differential effect on poverty alleviation at different ages in adulthood. For this analysis, we stratify the sample into five-year age groups according to when the outcome was measured (ages 25-30, 31-35, 36-40, and 41-45). This analysis also allows us to consider whether there is heterogeneity in the effects of the EITC by cohort (due to differential exposure to the EITC or compositional change over time), and examine how imbalance in our panel (i.e., older cohorts have more observations than younger cohorts), might affect our results.

Overall, our estimates on poverty alleviation are of similar magnitude for individuals between ages 25 and 40, though effects are most significant between ages 31 and 35 (see Table 4). Similarly, for our estimates of public assistance receipt, estimates are largest between ages 31 and 40, with significant declines in use of any welfare between the ages of 36 and 40. We find no effects of childhood EITC exposure after age 40 – which is in keeping with what we expect as this group had the smallest exposure to the EITC in childhood (a relatively small portion of our sample had reached age 40 by the 2017 PSID follow-up, only those born before 1978, when the EITC was a relatively small program). In sum, the findings are consistent when we look separately at different age ranges of the adult outcomes, but there is some evidence that the effects are particularly pronounced when individuals are between the ages of 30 and 40.

Gender and race. We examine differences in the main results by both gender and race in Table 5. We study differences by these two demographic characteristics because large historical differences in income, wealth, employment, and earnings that arise from discrimination and discriminatory or racist policies, meaning that both women and Black individuals experience higher rates of poverty than men or White individuals. Additionally, certain public assistance programs, like WIC, and to a lesser extent TANF, are typically only available to women. Thus, the impact of childhood exposure to the EITC might have bigger effects on women and Black individuals than on White individuals or men. Our analyses by race are limited to White/Black differences because of insufficient sample to examine other racial/ethnic groups.

Starting with gender, we find similar reductions in poverty among men and women. However, for public assistance receipt, we find some evidence that effects are larger for women than men, although the point estimates generally have overlapping confidence intervals. Reductions in the receipt of WIC, for instance, are only statistically significant for women: A $1,000 increase in average annual EITC exposure in childhood is linked with a 3-percentage point reduction in receipt of WIC in adulthood for women, but no effect on men, as might be expected given that WIC targets pregnant women and their young children.[11] Similarly, while not statistically significant, our point estimates suggest that a $1,000 increase in annual EITC exposure in childhood reduces the likelihood of participating in any welfare program by about 5.5 percentage points for women, but just 1 percentage point for men.

When we examine differences by race, we find some suggestive evidence of larger reductions in poverty and public assistance receipt among Black individuals than White individuals, although the estimates are imprecise, and the confidence intervals overlap across groups. Nonetheless, these estimates imply that increases in the likelihood of having earnings above the federal poverty threshold among Black individuals are more than twice as large as the effects among White individuals (in terms of percentage points and percent relative to the baselines). Differences in public assistance receipt by race are similarly very imprecise.

Parental income rank, work history, and education. To provide further insight into which children were most impacted by the EITC, we conduct several subgroup analyses according to the characteristics of the parents (see Table 6). Each subgroup analysis is motivated by differences in eligibility for the EITC across various parental characteristics, although with the exception of parental education, these measures are likely endogenous. Nonetheless, we think this exercise is still useful for providing insights into which groups are most impacted by the EITC. Since the EITC is targeted at families who work, we might expect to find larger effects of the EITC for individuals who grew up in households with stronger ties to the labor market, or those who grew up in the bottom half of the income distribution. EITC eligibility also likely varies by parental educational attainment, with higher rates of eligibility among those without a college degree.[12]

[11] The PSID does ask whether anyone in the household receives public assistance of a given form; thus it is possible for men to report that someone in the household receives WIC or TANF.

[12] In a supplemental analysis (see Appendix Table 5), we consider heterogeneity by parental marital status (comparing those who were always married during childhood to those who were not always married) as a higher

We first show results where we estimate models separately according to parental income quartile, measured when the parent was between the ages of 25 and 35, in some cases, before the child was born. We measure parental income during this age range to reduce concerns about the endogeneity of income with respect to our treatment variable. Here we find evidence that the main effects are driven by those who are most likely to be impacted by the EITC. The effects on both poverty reduction and public assistance use are concentrated in the second quartile (25-50th percentile of income, about $45,000) of the parental income distribution, the group most likely to receive the EITC in childhood relative to children from higher-income backgrounds.[13] In contrast, we find few significant effects on poverty or public assistance in the lowest income quartile (average income of about $32,000), likely driven by lower levels of labor force participation, which reduces the likelihood that children in those households received the EITC. For the top two quartiles, who are very unlikely to have received the EITC in childhood (because their incomes are too high, on average, over $70,000), we find much smaller and statistically insignificant point estimates.

We find a largely consistent pattern when we examine differences according to parental work history. We split the sample according to whether the individual grew up in a household where at least one parent worked full-time for at least half of their childhood. Effects are generally larger and more significant among individuals who grew up in households with stronger ties to the labor market. This is particularly true for public assistance receipt, where childhood EITC exposure is linked with reductions in public assistance use for those with relatively "strong" ties to the labor force, but for those with "weak" ties, the estimates are not significant and often point in the opposite direction.

Finally, we also examine how exposure to the EITC varies by parental educational attainment, splitting the sample into three categories: those where neither parent has more than a high school diploma, at least one parent has some college, or at least one parent has a college degree. Results suggest larger anti-poverty effects for those living with parents with some

fraction of children residing in single-parent households are eligible for the EITC compared to those living in married-parent households. The point estimates are similar across groups, although point estimates are generally somewhat larger (though not statistically significant) for the group that spent some time in a single parent household compared with those whose parents were always-married.

[13] In our sample, we estimate that children growing up in the second income quartile spend about 40% of their childhood eligible for the EITC and are estimated to have an average annual EITC benefit of $450 (unconditional on eligibility). In contrast, those growing up in the top income quartile are eligible for the EITC for about 6% of their childhood, with an average annual EITC of $64 (unconditional on eligibility).

college. We find no association between EITC exposure in childhood and poverty and public assistance receipt for individuals living with college-educated parents, for whom we view this exercise as a placebo test.

Together, these results suggest that exposure to the EITC in childhood reduces poverty and public assistance receipt the most for children who grow up in somewhat disadvantaged households – those with family income in the second quartile of the income distribution and those where neither parent had a college degree. These subgroup analyses also imply that the EITC does little to alleviate poverty and reduce public assistance receipt among children growing up in the most disadvantaged households: those growing up in the bottom quartile of the income distribution and those with weaker parental ties to the labor market.

Mechanisms

As noted above, there are many ways in which the EITC might impact the well-being of children both in the first generation and in the second generation. While a full accounting for the possible mechanisms is beyond the scope of this paper, here we consider a few ways that childhood EITC exposure might impact adult outcomes.

Employment and earnings. Do labor supply and earnings explain the reductions in poverty and near poverty we observe in adulthood? To examine this question, in Table 7, we show how EITC exposure in childhood affects employment and earnings in adulthood. We find evidence that EITC exposure in childhood is linked with increases in employment in adulthood, providing evidence of not only short-run increases in labor supply among EITC recipients, but also long-run increases in labor supply among the *children* of EITC recipients. A $1,000 increase in average annual EITC exposure in childhood leads to a 4-percentage point increase in the likelihood of working in any given year between ages 25 and 45, which represents about a 4% increase in employment.

In terms of hours worked, we find that a $1,000 increase in average annual EITC exposure in childhood is linked with a 100-130 hour increase in the number of hours worked in the last year, which represents a 6 to 7% increase in number of hours worked, or about 3 more weeks of annual, full-time employment per year. If this effect were solely driven by the extensive margin response (3.5-4.5ppt increase), we would expect to find an increase in annual hours worked of 80-100 hours, based on 2,000 hours of full-time, full-year employment. Our

point estimates on annual hours worked are slightly larger (though our confidence intervals contain those estimates), which suggests these effects are driven by a combination of intensive and extensive margin employment effects. Additionally, the fact that the extensive margin employment effects are smaller than the effects we find on poverty alleviation further suggests that reductions in poverty are driven by both extensive and intensive margin employment effects.

These increases in employment, however, do not translate into higher earnings at the mean, and point estimates are negatively signed in some models. We find a positive association between EITC exposure in childhood and annual family labor income, though the estimate is not statistically different from zero. This is somewhat puzzling, as we consistently find significant increases in the likelihood of having family labor income above the poverty line.

To examine this set of seemingly contradictory findings in more detail, in Table 8, we move beyond estimating effects at the mean, and estimate quantile regressions for individual annual personal earnings, measured for the individuals in our sample when they are between the ages of 25 and 45. For simplicity, we present results for our preferred model (Model 2 in Table 2), which includes demographic and family characteristics, as well as state control variables, but does not include state of birth specific linear trends.

Estimates from these quantile regressions shed light on the null findings for average individual annual earnings. We find substantial increases in individual earnings and family labor income associated with EITC exposure in childhood for the bottom portion of the individual earnings distribution (that is, the earnings distribution of the individuals in our sample when they reach adulthood), while the relationship is not significant for the very top of the distribution. At the 10^{th} percentile of the distribution, we estimate that a $1,000 increase in average annual EITC exposure in childhood is linked with a $4,000 increase in annual individual earnings. Estimates are of similar magnitude for the 25^{th} percentile, with earnings increases of about 30%, and begin to taper off for the 50^{th} and the 75^{th} percentiles (though the effects are still positive and significant, ranging from a 5-11% increase in earnings). While coefficients for annual earnings turn negative at the 90^{th} percentile, these estimates are small relative to average earnings at that level and not statistically significant. The pattern is quite similar if we measure family labor income instead (including earnings of both the head and spouse), but effects are only statistically significant up through the 25^{th} percentile of the family labor income distribution.

That we find the largest effects of EITC exposure for those with income very near the poverty threshold (those at the 10th and 25th percentiles) explains why we find that EITC exposure leads to such large reductions in poverty and near poverty (see Table 2 and Figure 3). The attenuation of earnings effects for those at the upper end of the distribution also sheds light on why we do not find statistically significant effects of EITC exposure on earnings when we evaluate effects at the mean, nor do we find that the EITC affects the likelihood of having earnings above 300% of the federal poverty line (Figure 3).

Marriage and fertility. Another mechanism through which we might observe reductions in poverty is through changes in marriage and fertility. If EITC exposure in childhood increases the likelihood of marriage, or reduces the number of children in adulthood, both factors could also lead to mechanical reductions in poverty since poverty is assessed at the family level, and less public assistance since many programs are only available to single mothers with children. Additionally, prior research shows that childhood EITC exposure delays marriage and fertility in early adulthood for women (Michelmore and Lopoo 2021). In Appendix Table 6, we test these mechanisms by examining three individual-level variables that are assessed by age 45 (or the last survey year they were observed, whichever comes first): ever married, ever had a birth, and total number of births.

We find little evidence that EITC exposure in childhood affects the likelihood of ever marrying, ever having a child, or the total number of births by age 45. This suggests that our findings of reductions in poverty and public assistance receipt are not likely explained by changes in marriage and fertility in adulthood.

Parent's labor market outcomes. Another mechanism through which we expect exposure to the EITC in childhood to impact poverty in adulthood is through the economic resources available to our sample members when they were children. We conduct an analysis where we estimate the short-term effects of the EITC on the parent generation during the second generation's childhood. These results are presented in Appendix Table 7. The estimates suggest that greater EITC exposure increases annual after-tax earnings for the head and spouse, annual after-tax family income and estimated EITC benefits (using TAXSIM). These results imply that a $1,000 increase in EITC is associated with about $1,300 more in earnings for the head and spouse, $1,125 more in total family income, and $104 more in estimated EITC benefits.

Income mobility

The results thus far indicate that increasing exposure to the EITC in childhood leads to reductions in poverty and increases in employment and earnings in adulthood. We next examine whether these improvements in poverty and earnings lead to increases in income mobility, or whether children are more likely to out-earn their parents upon reaching adulthood. Prior research shows that there are strong intergenerational correlations in income (e.g., Solon 1992) and that children's earnings are dependent upon parent's investments in human capital (Solon 1999, 2004). If the EITC raises parental income (Kuka and Shenhav 2020), which raises children's human capital (Dahl and Lochner 2017; Bastian and Michelmore 2018), then we might expect the EITC to improve intergenerational mobility. Similarly, the experience of poverty in childhood, especially early childhood, is linked with poorer child development (Duncan, Brooks-Gunn and Klebanov 1994; Duncan and Brooks-Gunn 2000) and reductions in poverty are linked with higher lifetime earnings and reduced use of public assistance (Duncan, Kalil and Ziol-Guest 2008, 2018; Duncan, Telle, Ziol-Guest and Kalil, 2011). By reducing poverty (Hoynes and Patel 2018), the EITC may also increase intergenerational mobility.

In Table 9, we examine whether childhood EITC exposure affects income mobility, for our sample as a whole, as well as by race, gender, and parental income rank. For our full sample, we find no statistically significant effects of EITC exposure on any of these outcomes, though point estimates are slightly positive, but very small and noisily estimated. We find some suggestive evidence of increases in income mobility among women, though none of our point estimates are statistically significant. All the coefficients are very small, but negatively signed for men.

We find distinct racial patterns in income mobility. For White individuals, we find no evidence that EITC exposure in childhood impacts income mobility, and all the coefficients are small and negatively signed. On the other hand, we do find evidence that the EITC increases income mobility among Black individuals. On average, a $1,000 increase in average annual EITC exposure in childhood increases Black individuals' income rank in adulthood by 0.17 points (measured on a scale of -1 to 1, where 1 represents a child with income rank of 100 and a parent with income rank of 0) relative to their parents' income rank at the same age. We also see evidence of positive income mobility when we examine the absolute difference in income

between the child and parent: on average, for a $1,000 increase in annual EITC benefits, Black individuals in our sample earn more than $11,300 more than their parents did at the same age.

Estimating models separately according to parental income quartile, consistent with our findings on poverty alleviation, we find evidence of increases in income mobility among children whose parental income rank is in the second (25^{th}-50^{th}) quartile of the parents' income distribution. A $1,000 increase in annual EITC exposure is correlated with an increase in income rank between the child and parent of 0.212 points, and a 30-percentage point increase in the probability of having a higher income rank compared to one's parents. This implies that, for children whose parents' income rank places them in the second income quartile, a $1,000 increase in average annual EITC exposure increases the child's income rank by approximately 20 percentiles relative to their parents' income rank. In contrast, we find no association between EITC exposure in childhood and changes in income mobility in adulthood for children growing up in the top half of the parental income distribution, or for those at the very bottom of the income distribution. Point estimates are small, and not statistically significant for any of the other income quartiles.

Robustness checks

We conduct several analyses to test the robustness of our main findings. First, we exclude the top 10% of parental earners from the sample (about 1,800 observations), with the assumption that this group should not have been affected by the EITC. Here we find generally similar results to those using the full sample, although the point estimates are slightly larger (see Appendix Table 9). Second, we consider the possibility of endogenous migration. We restrict our analysis to individuals who lived in the same state during childhood and adulthood (see Appendix Table 10). We find larger effects on poverty among the non-movers. This is likely driven by the fact that those who move across states are somewhat more economically advantaged; thus, by restricting to non-movers we capture a population that is somewhat more likely to have received the EITC in childhood.

Third, to address concerns that there may be other time-varying state characteristics that are correlated with state EITC generosity, we test whether our results are robust to including controls for exposure to the food stamps program and Medicaid in early childhood as well as state TANF generosity (Appendix Table 11), and results are consistent with our main estimates.

Appendix Table 11 also includes several other model specifications to test the robustness of our results. These include: interactions between each of our demographic controls with a birth year time trend, to allow the impact of demographic controls to change over time; birth-year-by-number-of-sibling fixed effects to "shut down" the federal variation in the EITC and rely instead only on the state variation, and birth-year-by-state fixed effects to effectively "shut down" the state variation and rely only on the federal variation. Our main results are robust to each of these different model specifications.

As another way to address the concern that unobserved, time-varying state characteristics could confound our estimates of EITC exposure, we also conduct a robustness check where we separately estimate our models using only the federal and then only the state variation in the EITC (see Appendix Table 12). This exercise suggests that our results are mainly driven by the federal variation in the EITC. This is not surprising since federal variation in the EITC accounts for over 90% of the variation in childhood EITC exposure in our sample. In contrast, state variation in the EITC only accounts for about 3% of the variation. This is likely driven both by the fact that the PSID has relatively small sample sizes at the state level and there has been much more state variation in EITC benefits in recent years, after the youngest cohort in our sample turned 15 (and thus is not included in our EITC exposure measure).

Finally, we test the robustness of our food stamps findings to the time period that we observe receipt in adulthood. In late 2008, food stamps were renamed SNAP and underwent a number of changes that expanded eligibility. These changes led to increased take-up of SNAP among those eligible, and thus our findings may differ for this later time period due to this shift in policy. In Appendix Table 13, we look at the effects of childhood EITC exposure on receipt of food stamps before and after 2009 and find no significant effects before 2009 (although coefficients are positive), and a significant, negative effect on SNAP receipt (a 6-7 percentage point decline) post-2009. However, we caution that this larger, negative effect on food stamp receipt might be driven by compositional changes of our sample, since the post-2009 period includes more of our younger cohorts, who were also exposed to larger EITC benefits in childhood. Nonetheless, this robustness check provides more suggestive evidence that EITC exposure in childhood reduces food stamp use as an adult.

Contextualizing effect sizes

How plausible are our effect sizes? At first glance our estimates appear quite large, but our indicator of EITC exposure is measured over a 15-year window; since we present our estimates as $1,000 annual increases, this is akin to a $15,000 increase in the EITC over the course of childhood, a 65% increase relative to the mean. While this is the first study to examine the link between childhood EITC exposure and poverty, public assistance receipt, and income mobility in adulthood, there is a broader literature on the impacts of social programs in which we can contextualize our findings. Here, we discuss four intertwined literatures that are highly relevant to our study: the literature on the impact of the EITC on earnings and employment among the first (parent) generation; the impact of childhood exposure to tax credits on earnings in adulthood; the impact of childhood exposure to other social safety net programs on poverty and earnings in adulthood; and the impact of the EITC on contemporaneous childhood outcomes. We discuss the relevant findings from each of these literatures in turn.

The large literature on the effects of the EITC on earnings and employment in the first-generation points to positive effects of the EITC on the labor supply of single mothers in both the short- (e.g., Schanzenbach and Strain 2021) and long-term (e.g., Kuka and Shenhav 2020). These increases in employment could also lead to positive impacts on poverty, earnings, and employment of the second generation through a variety of mechanisms that we discuss in more detail below. Hoynes and Patel (2018), for example, estimate that a $1,000 increase in the EITC contemporaneously reduces poverty by nearly 20% among the first generation. Although this estimate makes our reduction in poverty of about 7 percentage points (off of a base of 13%, a more than 50% reduction) in the second generation seem very large, more recent evidence has demonstrated that these earnings gains among the first generation persist for several years after

reforms took place (Kuka and Shenhav 2020). Hoynes and Patel (2018) capture the contemporaneous effect of the EITC on poverty, whereas Kuka and Shenhav (2020) show that single mothers most impacted by the large expansion to the federal EITC in the early 1990s had up to 20% higher earnings 5 to 9 years later, with positive effects on earnings up to 19 years later. This work demonstrates that expansions to the EITC not only impact contemporaneous employment and earnings but also long-term earnings, which could have significant impacts on the children of EITC recipients.

Although there are no estimates of the long-term effects of the EITC on public assistance and poverty reduction among the children of EITC recipients, two other studies estimate the impacts of childhood EITC exposure on earnings in early adulthood and can serve as comparisons for our estimates. In the first study, although primarily focused on educational outcomes, Bastian and Michelmore (2018) estimate that a one-time, $1,000 increase in maximum EITC benefits between ages 13 and 18 increases earnings when respondents are in their mid-20s by about 2%. Making this estimate more comparable to our treatment (by multiplying by 15), suggests their estimate would be closer to a 30% increase in earnings. Although not significant at the mean, our estimates range from a 0-6% increase in earnings, much smaller than the Bastian and Michelmore (2018) estimates; however, when we look at the quantile regressions, our estimates range from a 5-30% increase in earnings, similar to that implied by Bastian and Michelmore (2018).

In a second study, Barr et al. (2022) find that a $1,300 increase in tax credits (namely the EITC, CTC, and dependent exemption) in infancy increases earnings in early adulthood by 1-3%. In our sample, we find that a $1,000 increase in the maximum EITC benefit is associated with an approximate $110 increase in annual EITC benefit eligibility during childhood (see

Appendix Table 7), which implies we should divide the Barr et al. (2022) estimates by eleven to make it comparable to the maximum EITC. This would imply that a one-time, $1,000 increase in maximum EITC benefits in the first year of life increases earnings by 0.1-0.3% in early adulthood. Multiplying this estimate by 15 would result in a 1.5-4.5% increase in earnings associated with a $1,000 annual increase in EITC benefits between birth and age 15. Again, these are similar to our average estimates of a 0-6% increase in earnings.

Turning to the research focused on the long-run effects of other forms of public assistance can also help to benchmark our findings. Hoynes, Schanzenbach, and Almond (2016), for instance, examine long-run effects of early childhood exposure to the food stamp program and find that full exposure to the food stamp program between birth and age 5 (though not statistically significant) increases the probability of having income above the poverty threshold by about 5 percentage points. A recent working paper by Glasner et al. (2023) uses a similar approach and estimates the same reduction in adulthood poverty associated with exposure to the food stamps program in early childhood. During the early 1970s, the maximum food stamp benefit for a mother with two children and no earnings was about $3,300 (adjusted to 2017 dollars),[14] which would imply a cumulative maximum benefit of about $18,000 over the course of five years (similar to our roughly $15,000 exposure between birth and age 15). That our point estimate on poverty alleviation is within the range of Hoynes et al. (2016) and Glasner et al. (2023) provides some reassurance that our effect sizes are plausible.[15]

[14] See https://aspe.hhs.gov/reports/trends-afdc-food-stamp-benefits-1972-1994-0 for more detail.
[15] Bailey et al. (2021) also estimate the impact of early life exposure to the food stamps program and find a 2.5 percentage point increase in the likelihood of having income above the poverty threshold and a 7% increase in earnings in adulthood for those likely eligible for food stamps and living in counties where the program was in place between birth and age 5.

Goodman-Bacon (2021) examines the long-run effects of childhood exposure to the Medicaid program and finds that an additional year of Medicaid eligibility in childhood increases employment in early adulthood by 4-5 percentage points. It is difficult to compare EITC benefits to Medicaid benefits, but median per-child spending on Medicaid was about $3,555 in 2019.[16] In comparison, we find that a $1,000 annual increase in EITC exposure in childhood (or $15,000 cumulative EITC exposure) is linked with a 4-percentage point increase in employment in adulthood. If we make the (perhaps unlikely) assumption that annual per-child spending on Medicaid is akin to EITC receipt, Goodman-Bacon's (2021) effects are much larger than our estimates.

Another way to contextualize our effect sizes is to consider the potential mechanisms through which childhood exposure to the EITC might affect adult poverty and public assistance receipt. We showed that the declines in public assistance receipt and poverty were not driven by changes in fertility or marriage and that they were at least in part explained by increased labor force attachment in adulthood. We also showed, like many prior studies have shown (e.g., Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Schanzenbach and Strain 2021; Kuka and Shenhav 2020), that childhood EITC exposure is linked with increased work and earnings among the parent generation. Increased resources in childhood likely leads parents to purchase better goods and services that improve children's wellbeing, which in turn impacts adult wellbeing. For example, the EITC is linked with use of higher quality childcare (Michelmore and Pilkauskas 2021), increased access to private health insurance (Baughman and Duchovny 2016), and housing stability (Pilkauskas and Michelmore 2019). Indirectly, the EITC also affects children through the well-being of their parents. Studies show that the EITC improves parental mental

[16] See https://www.medicaid.gov/state-overviews/scorecard/how-much-states-spend-per-medicaid-enrollee/index.html, for details.

health (Evans and Garthwaite 2014), improves pre-natal behavior (Baker 2008; Hoynes et al. 2015; Strully et al. 2010), and reduces child maltreatment (Berger et al. 2017; Klevens et al. 2017; Rittenhouse 2022). All these mechanisms may improve children's environments growing up, which in turn, may improve their adult outcomes.

Additionally, a growing body of work also finds significant, positive effects of the EITC on child outcomes like infant birth weight, health, test scores, and educational attainment, which likely partly explain the effects we observe in adulthood (Averett and Wang 2018; Baughman and Duchovny 2016; Dahl and Lochner 2012; Agostinelli and Sorrenti 2021). Chetty, Friedman, and Rockoff (2011), for instance, find that a one-time, $1,000 increase in predicted EITC benefits increases test scores by about 6% of a standard deviation, and that this increase in test scores leads to a 0.9% increase in earnings at age 28. Converting these estimates to be comparable with our own would imply an earnings increase at age 28 of about 1.2%,[17] somewhat smaller than our earnings estimates, which implies that childhood EITC exposure is not working solely through improved test scores. We come to a similar conclusion if we consider estimates from Bastian and Michelmore (2018), who find that a one-time $1,000 increase in the maximum EITC during adolescence increases educational attainment by 0.08 years. Under the common assumption that an additional year of schooling increases earnings by about 10% (e.g., Angrist and Krueger 1991), this would imply that earnings should increase by about 0.8% (0.08*0.10), which is smaller, but within the confidence interval of the earnings increase they actually observe (2%). Accounting for fifteen years of EITC exposure implies that we should find an increase in earnings of about 12% in our sample, which is on par with some of the estimates we

[17] Using the same approach that we took in comparing our estimates to Barr et al. (2022): we first divide the 0.9% increase in earnings by 11 to convert Chetty et al.'s (2011) average EITC benefit treatment to our maximum EITC treatment, and then multiply by 15 to account for 15 years of exposure rather than a single year of exposure, as Chetty et al. (2011) measure.

find in our quantile regressions. This suggests that improvements in human capital likely contribute substantially to the anti-poverty effects we find here.

Finally, other work shows that the EITC improves health in both childhood (Baughman and Duchovny 2016) and adulthood (Braga et al. 2020). Baughman and Duchovny (2016), for instance, use a simulated benefit strategy and find that a $100 increase in average state EITC benefits increases the likelihood that children are in excellent health by about 3.4 percentage points. Smith (2009) shows that children who are in excellent or good health have 12% higher earnings in adulthood, which implies a 0.4% increase in earnings associated with a $100 increase in average state EITC benefits (0.034*0.12). This evidence suggests that improvements in childhood health also likely contribute to reductions in poverty and increases in earnings and employment in adulthood. While it is not possible to precisely calculate how each of these factors contribute to our estimates, together, the previous literature points to the many positive effects of the EITC on education, health, and childhood environments and helps explain the relatively large effects we observe on poverty and public assistance receipt in adulthood.

Conclusion

Children who grow up in poverty are much more likely to be poor themselves in adulthood. Does reducing poverty in childhood necessarily lead to reductions in poverty in adulthood? Using several decades of variation in EITC generosity at the federal and state level, we investigated this question using the PSID for individuals born between 1967 and 1992. We find that exposure to the EITC in childhood leads to significant reductions in poverty and public assistance receipt in adulthood. These effects are driven in part by increases in employment and earnings in adulthood, and we find suggestive evidence that these effects increase income mobility, particularly for Black individuals and children who grew up in the second quartile of

the parental income distribution. Together, these results suggest that the EITC not only improves the economic status of EITC recipients themselves, but also the children of EITC recipients.

Our results are primarily driven by EITC exposure in early childhood (birth to age 7), consistent with a host of other research examining the long-run impacts of exposure to other social safety net programs on outcomes in adulthood (e.g., Hoynes et al. 2016; Goodman-Bacon 2021). We also find that our effects are concentrated among children who grew up in families with income in the second quartile of the income distribution, with average family income of $45,000 (2017$). In contrast, we find no impact of EITC exposure on children who grew up in the top half of the income distribution, who have much higher earnings (on average, more than $70,000) and are much less likely to be eligible for the EITC in childhood.

We also find little evidence that the EITC reduces poverty among children who grew up in families in the very bottom of the income distribution, whose parents earned about $32,000 per year. These results are somewhat puzzling, but also consistent with previous research that finds that contemporaneously, the EITC does little to reduce deep poverty (Hoynes and Patel 2018), or to improve the economic standing of those at the very bottom of the income distribution (Hardy et al. 2022). These null findings may be explained by the fact that the EITC is contingent on work and may do less to help families with precarious labor force attachment. Given the lack of effects of the EITC on reducing deep poverty among the parent generation, it is perhaps not surprising that we find no impact of the EITC on reducing poverty among their children.

Nonetheless, our results indicate that there are intergenerational effects of exposure to the EITC as it relates to poverty, public assistance use, earnings, and employment for children growing up in the second income quartile (average family income of about $45,000 in

childhood). These findings relate more generally to an emerging literature showing the long-lasting beneficial effects of childhood exposure to the social safety net (see Aizer, Hoynes and Lleras-Muney 2022 for a summary). If policy makers do not account for the long-term effects of safety net programs, they will likely underestimate the returns to the investments in these programs, especially programs that target families with children.

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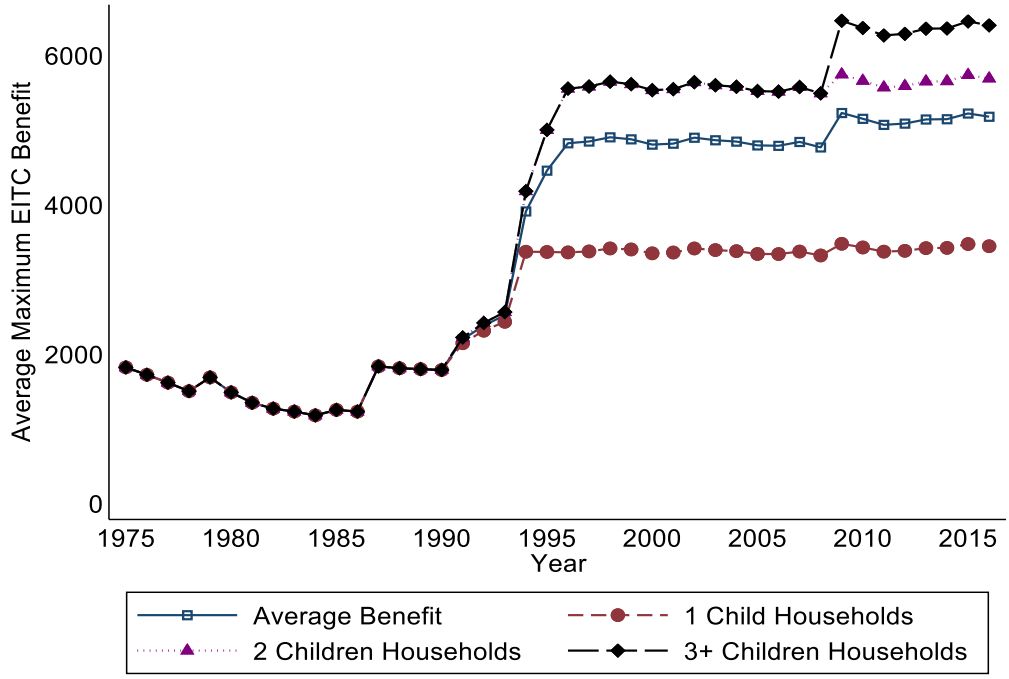
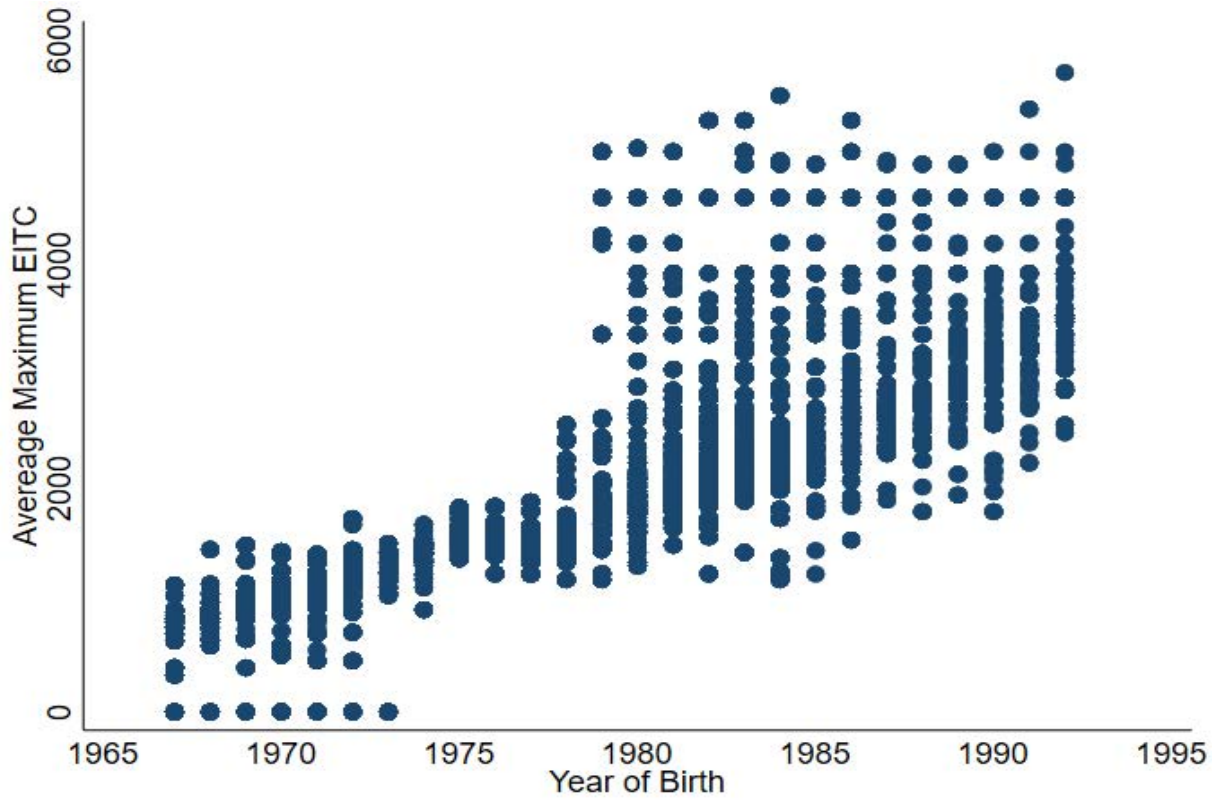
Figure 1. Maximum Federal EITC Benefit Over Time, by Number of Qualifying Children



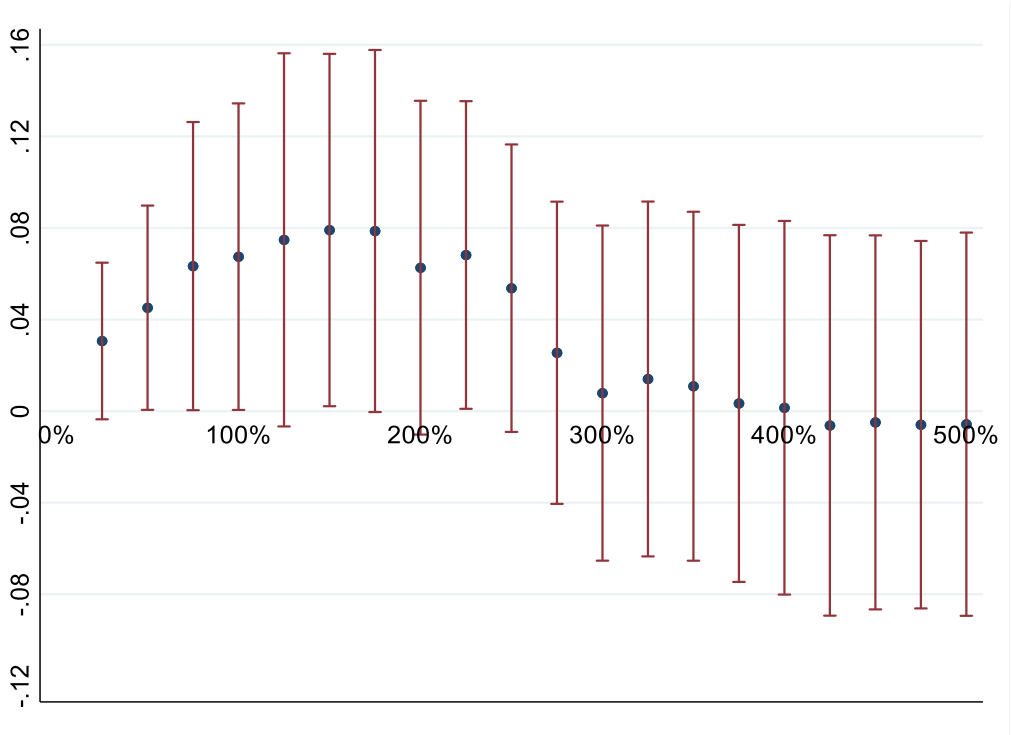
Notes: Authors' calculations.

Figure 2. Average Annual EITC Exposure between Birth and Age 15, by Year of Birth



Source: 1968-2017 waves of the Panel Study of Income Dynamics (PSID).
Notes: Sample consists of heads and spouses born between 1967 and 1992. All monetary variables are in 2017 dollars. All results are weighted by average childhood PSID weights.

Figure 3. Effect of EITC Exposure in Childhood on Income in Adulthood Above Various Levels of the Federal Poverty Threshold



Notes: Effect of the EITC measured in thousands of 2017 dollars. Regression includes individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment, and the average age of the head parent between the child's birth and age 15. The regression also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. 95% confidence intervals clustered at the state level. Results are weighted by average childhood PSID weights.

Table 1: Descriptive Statistics

	Mean	SD
Parental characteristics - measured during childhood - ages 0-15		
Age of the parental head (average)	35.54	6.63
Married (share of childhood)	0.84	
Education		
Less than HS	0.12	
High School	0.32	
Some College	0.33	
College +	0.23	
Child characteristics		
Male	0.48	
Race		
White	0.85	
Non-White	0.15	
Age	32.17	5.49
Number of siblings (during childhood)	1.29	0.78
EITC measure		
Average annual maximum EITC exposure between ages 0 and 15 (in $1,000, $2017)	1.54	0.62
Outcome measures		
Poverty		
Above 100% poverty	0.87	
Above 200% of poverty	0.72	
Program participation/Public assistance		
TANF/AFDC	0.01	
Food stamps/SNAP	0.10	
WIC	0.06	
Other welfare	0.01	
Any welfare participation	0.13	
Secondary Outcomes		
Employment and earnings		
Worked last year	0.90	
Hours worked last year	1800.03	919.41
Hourly wage ($) among those who worked last year	25.05	23.71
Annual earnings ($)	43918.98	46934.87
Annual family labor income ($)	71045.70	52892.18
Intergenerational income/rank		
Child and parent rank difference	-0.04	0.32
Child has higher income rank	0.46	0.50
Child and parent income difference ($)	-4394.72	3210.00
Child has higher income	0.44	0.50
Fertility and marriage		
Ever married	0.75	
Ever have birth	0.66	
Total number of births	1.44	1.38
Person-year observations	26,800	
Number of individuals	4,923	

Source: 1968-2017 waves of the Panel Study of Income Dynamics (PSID).
Notes: Sample consists of heads and spouses born between 1967 and 1992 when they were between the ages of 25 and 45. All $ variables are in 2017 dollars. All results are weighted by average childhood PSID weights.

Table 2: Effect of EITC exposure in childhood on poverty and public assistance receipt in adulthood

	(1)	(2)	(3)
Poverty			
Above poverty	0.072**	0.067**	0.080***
	(0.034)	(0.033)	(0.027)
Above 200% of poverty	0.066*	0.063*	0.065*
	(0.037)	(0.036)	(0.038)
Public assistance			
TANF/AFDC	-0.007	-0.003	-0.004
	(0.009)	(0.008)	(0.007)
Food Stamps/SNAP	-0.031	-0.022	-0.030
	(0.038)	(0.037)	(0.033)
WIC	-0.016	-0.009	-0.023*
	(0.010)	(0.011)	(0.012)
Other welfare	-0.014*	-0.013*	-0.013*
	(0.008)	(0.007)	(0.007)
Any welfare program participation	-0.045	-0.032	-0.047
	(0.040)	(0.038)	(0.031)
State controls		X	X
State-specific time trends			X
Number of observations		26,800	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Effect of EITC exposure in childhood on poverty and public assistance receipt in adulthood, partitioning EITC exposure into early and late childhood

	(1)	(2)	(3)
Above poverty			
Birth to age 7	0.057*	0.054	0.064**
	(0.031)	(0.034)	(0.029)
Age 8 to age 15	0.002	0.002	0.004
	(0.009)	(0.009)	(0.011)
Above 200% of poverty			
Birth to age 7	0.060	0.059	0.066
	(0.036)	(0.038)	(0.041)
Age 8 to age 15	0.005	0.004	0.002
	(0.010)	(0.010)	(0.012)
TANF/AFDC			
Birth to age 7	0.001	0.006	0.007
	(0.007)	(0.007)	(0.007)
Age 8 to age 15	0.005	0.003	0.002
	(0.004)	(0.003)	(0.003)
Food Stamps/SNAP			
Birth to age 7	-0.041	-0.036	-0.048
	(0.035)	(0.034)	(0.033)
Age 8 to age 15	0.001	0.001	0.001
	(0.009)	(0.009)	(0.010)
WIC			
Birth to age 7	0.004	0.013	-0.001
	(0.023)	(0.022)	(0.025)
Age 8 to age 15	-0.006	-0.009**	-0.007*
	(0.004)	(0.004)	(0.004)
Other welfare			
Birth to age 7	-0.002	-0.001	-0.001
	(0.005)	(0.006)	(0.007)
Age 8 to age 15	0.003	0.003	0.003
	(0.002)	(0.002)	(0.002)
Any welfare program participation			
Birth to age 7	-0.039	-0.029	-0.047
	(0.037)	(0.036)	(0.037)
Age 8 to age 15	-0.001	-0.003	-0.002
	(0.010)	(0.010)	(0.011)
State controls		X	X
State-specific time trends			X
Number of observations		26,723	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Each cell represents the coefficient on EITC childhood exposure in the given childhood age range, measured in thousands of 2017 dollars. Each outcome represents a separate regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Effect of EITC exposure in childhood on poverty and public assistance use, by age at outcome

	Age 25-30	Age 31-35	Age 36-40	Age 41-45
Poverty				
Above poverty	0.060	0.077**	0.083	-0.003
	(0.049)	(0.037)	(0.063)	(0.168)
Above 200% of poverty	0.016	0.118***	0.092	0.040
	(0.060)	(0.038)	(0.065)	(0.173)
Public assistance				
TANF	-0.003	-0.004	-0.000	0.019
	(0.015)	(0.005)	(0.005)	(0.016)
Food Stamps	-0.005	-0.022	-0.065	0.030
	(0.050)	(0.030)	(0.046)	(0.093)
WIC	0.010	-0.011	-0.067*	0.004
	(0.015)	(0.021)	(0.034)	(0.028)
Other welfare	-0.012	-0.016	-0.013	-0.021
	(0.007)	(0.015)	(0.011)	(0.025)
Any welfare program participation	-0.003	-0.042	-0.101**	0.027
	(0.051)	(0.033)	(0.047)	(0.088)
State controls	X	X	X	X
Number of Observations	12,657	7,055	4,621	2,467

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. The regression also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Effect of EITC exposure in childhood on public assistance and employment in adulthood, by gender and race

	All	Men	Women	White	Black
Poverty					
Above poverty	0.072**	0.063*	0.084**	0.059*	0.128
	(0.034)	(0.036)	(0.040)	(0.030)	(0.089)
Above 200% of poverty	0.066*	0.072*	0.070	0.059	0.116
	(0.037)	(0.042)	(0.053)	(0.040)	(0.081)
Public assistance					
TANF/AFDC	-0.007	0.006**	-0.011	-0.002	0.001
	(0.009)	(0.003)	(0.016)	(0.007)	(0.023)
Food Stamps/SNAP	-0.031	-0.016	-0.033	-0.028	0.005
	(0.038)	(0.025)	(0.056)	(0.043)	(0.060)
WIC	-0.016	0.016	-0.033*	-0.021	0.040
	(0.010)	(0.021)	(0.017)	(0.013)	(0.056)
Other welfare	-0.014*	-0.012	-0.015	-0.013*	-0.023
	(0.008)	(0.009)	(0.009)	(0.007)	(0.014)
Any welfare program participation	-0.045	-0.009	-0.056	-0.038	-0.053
	(0.040)	(0.032)	(0.055)	(0.043)	(0.066)
State controls	X	X	X	X	X
Number of observations	26,800	12,074	14,726	16,649	9765

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. The regression also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Effect of EITC exposure in childhood on public assistance and employment in adulthood, by parental income rank, work status, and educational attainment

		Parental income rank				Parental work history*		Parental educational attainment		
	All	Parent Rank<25	Parent Rank 25-50	Parent Rank 50-75	Parent Rank>75	Strong	Weak	No more than a HS diploma	Some college	College degree
Poverty										
Above poverty	0.067**	0.002	0.244***	0.031	0.049	0.067*	0.049	0.074	0.119***	0.030
	(0.033)	(0.083)	(0.078)	(0.025)	(0.037)	(0.034)	(0.111)	(0.058)	(0.041)	(0.059)
Above 200% of poverty	0.063*	-0.008	0.315***	-0.004	0.054	0.056	0.082	0.050	0.167**	-0.034
	(0.036)	(0.073)	(0.115)	(0.032)	(0.056)	(0.039)	(0.101)	(0.046)	(0.071)	(0.070)
Public assistance										
TANF/AFDC	-0.003	0.043	0.015	0.005	-0.023	-0.006	0.021	0.002	-0.016	-0.006
	(0.008)	(0.035)	(0.021)	(0.009)	(0.024)	(0.012)	(0.025)	(0.011)	(0.023)	(0.013)
Food Stamps/SNAP	-0.022	0.051	-0.169**	0.026	-0.035	-0.027	0.060	-0.070	-0.032	0.037
	(0.037)	(0.071)	(0.065)	(0.029)	(0.032)	(0.040)	(0.063)	(0.054)	(0.057)	(0.029)
WIC	-0.009	0.129*	-0.028	-0.025	-0.026*	-0.022	0.071	-0.000	-0.036*	-0.002
	(0.011)	(0.066)	(0.039)	(0.024)	(0.014)	(0.013)	(0.064)	(0.035)	(0.022)	(0.027)
Other welfare	-0.013*	0.000	-0.048*	-0.000	-0.015	-0.014*	-0.002	-0.011	-0.020	0.001
	(0.007)	(0.006)	(0.026)	(0.005)	(0.009)	(0.008)	(0.007)	(0.007)	(0.013)	(0.006)
Any welfare program participation	-0.032	0.066	-0.224***	0.029	-0.050	-0.038	0.014	-0.087	-0.047	0.050
	(0.038)	(0.068)	(0.069)	(0.031)	(0.030)	(0.042)	(0.061)	(0.059)	(0.054)	(0.040)
State controls	X	X	X	X	X	X	X	X	X	X
Average family income during childhood	77,917	32,314	46,687	68,780	101,457					
Median family income during childhood	68,202	26,959	42,327	60,839	87,719					
Number of observations	26,800	4,428	5,332	6,375	10,665	22,782	4,018	14,249	8,031	4,520

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. The regression also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. Parental income rank measured using average income between the ages of 25 and 35. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

*Parental work history defined as "strong" if at least one parent worked full-time for at least half of childhood, and "weak" otherwise.

Table 7: Effect of EITC exposure in childhood on earnings and employment in adulthood

	(1)	(2)	(3)
Worked last year	0.044*	0.036*	0.040*
	(0.025)	(0.020)	(0.023)
Hours worked last year	139.282**	108.321	134.536*
	(69.236)	(64.876)	(73.745)
Annual earnings	2,669.442	-249.057	-2,096.816
	(4,354.376)	(4,337.921)	(4,919.712)
Annual family labor income	4,404.495	2,009.244	69.876
	(4,962.566)	(5,284.753)	(7,123.138)
State controls		X	X
State-specific time trends			X
Number of Observations		26,757	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Effect of EITC exposure in childhood on earnings in adulthood, results from quantile regressions

	Annual earnings	Annual family labor income
Percentile of earnings distribution in adulthood		
10th percentile	4,153.87***	5,567.77***
	(1,230.13)	(1,068.18)
	[0.00]	[13,320.65]
25th percentile	4,752.39***	6,919.73***
	(1,017.54)	(1,517.98)
	[15,984.78]	[33,289.31]
50th percentile	3,876.95***	2,407.53
	(1,192.22)	(1,801.30)
	[35,621.52]	[61,190.65]
75th percentile	2,656.90**	1,052.56
	(1,091.81)	(1,742.72)
	[57,132.87]	[97,261.90]
90th percentile	-3,488.89	-2,538.08
	(2,501.65)	(3,027.41)
	[86,584.24]	[140,000.00]
State controls	X	X
Number of observations	26,757	26,370

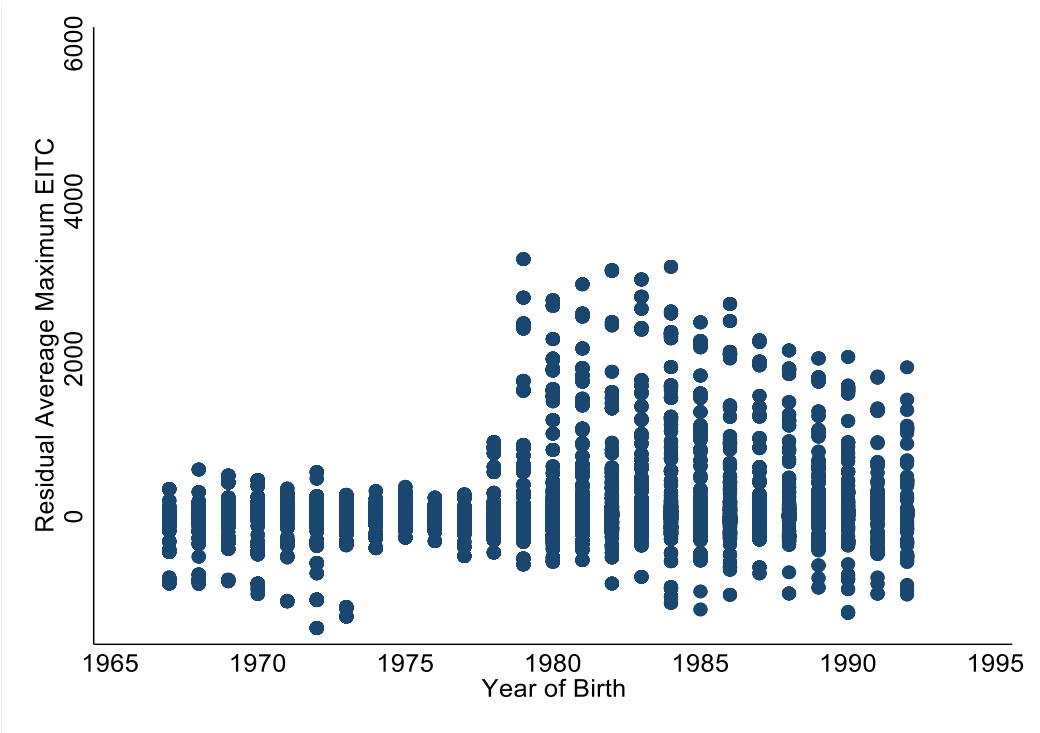
Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. The regression also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. Mean dependent variable in brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9: The effect of EITC exposure in childhood on income mobility, by gender, race, and parental income rank

	All	Men	Women	White	Black	Parent Rank<25	Parent Rank 25-50	Parent Rank 50-75	Parent Rank>75
Child and parent rank difference	0.017	-0.005	0.051	-0.010	0.174***	0.082	0.212***	0.010	0.001
	(0.032)	(0.038)	(0.043)	(0.032)	(0.063)	(0.054)	(0.072)	(0.042)	(0.052)
Child has higher income rank	0.004	-0.036	0.027	-0.008	0.118	0.015	0.304*	-0.028	0.004
	(0.047)	(0.074)	(0.055)	(0.043)	(0.135)	(0.080)	(0.160)	(0.071)	(0.077)
Child and parent income difference	250.265	-3,460.050	3,200.064	-1,373.50	11,322.50***	5,730.524	6,385.041	-780.60	3,817.30
	(3,732.587)	(5,620.139)	(3,512.135)	(3,875.6)	(4,434.7)	(3,851.553)	(12,079.240)	(3,350.5)	(5,750.1)
Child has higher income	-0.022	-0.040	-0.014	-0.041	0.153	0.016	0.283*	-0.012	-0.053
	(0.044)	(0.065)	(0.051)	(0.041)	(0.122)	(0.078)	(0.156)	(0.066)	(0.070)
Number of Observations	4,531	2,130	2,401	2,737	1,723	895	1,017	1,176	1,443

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Income rank measured when child and parents are each between 25 and 35 years old. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. The regression also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. Mean dependent variable in brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure A1. Residual for Average Annual EITC Exposure between Birth and Age 15, by Year of Birth



Source: 1968-2017 waves of the Panel Study of Income Dynamics (PSID).
Notes: The residuals are collected by treating maximum EITC benefit as the dependent variable and using the set of independent variables from our main model to predict EITC exposure, then collect the residuals. The sample consists of heads and spouses born between 1967 and 1992. All monetary variables are in 2017 dollars. All results are weighted by average childhood PSID weights.

Appendix Table 1. State EITC generosity by year, expressed as a share of the federal EITC

Tax Year	CA[a]	CO	CT	DC	DE	HI[**]	IL	IN	IA	KS	LA	ME[**]	MD	MA	MI	MN[c]	MO[**]	MT	NE	NJ	NM	NY	NC	OH[**]	OK[**]	OR	RI	SC[**]	UT[**]	VT	VA[**]	WA	WI (1)	WI (2)	WI (3)
1986																											0.22[**]								
1987																											0.23**								
1988																											0.23**			0.23					
1989																											0.23**			0.25			0.05	0.25	0.75
1990									0.05[**]																		0.23**			0.28			0.05	0.25	0.75
1991									0.065[**]							0.10											0.275**			0.28			0.05	0.25	0.75
1992									0.065[**]							0.10											0.275**			0.28			0.05	0.25	0.75
1993									0.065[**]							0.15											0.275**			0.28			0.05	0.25	0.75
1994									0.065[**]							0.15						0.08					0.275**			0.25			0.044	0.208	0.625
1995									0.065[**]							0.15						0.10					0.275**			0.25			0.04	0.16	0.50
1996									0.065[**]							0.15						0.20					0.275**			0.25			0.04	0.14	0.43
1997									0.065[**]					0.10		0.15						0.20				0.05**	0.275**			0.25			0.04	0.14	0.43
1998									0.065[**]	0.10			0.10	0.10		0.25						0.20				0.05**	0.27**			0.25			0.04	0.14	0.43
1999		0.085							0.065[**]	0.10			0.10	0.10		0.25						0.20				0.05**	0.265**			0.25			0.04	0.14	0.43
2000		0.10		0.10			0.05**		0.065[**]	0.10		0.05	0.15	0.10		0.25				0.10		0.23				0.05**	0.26**			0.32			0.04	0.14	0.43
2001		0.10		0.25			0.05**		0.065[**]	0.10		0.05	0.16	0.15		0.33				0.15		0.25				0.05**	0.255**			0.32			0.04	0.14	0.43
2002		0		0.25			0.05**		0.065[**]	0.15		0.05	0.16	0.15		0.33				0.18		0.28			0.05	0.05**	0.25**			0.32			0.04	0.14	0.43
2003		0		0.25			0.05	0.06	0.065[**]	0.15		0.05	0.18	0.15		0.33			0.08	0.20		0.30			0.05	0.05**	0.25			0.32			0.04	0.14	0.43
2004		0		0.25			0.05	0.06	0.065[**]	0.15		0.05	0.20	0.15		0.33			0.08	0.20		0.30			0.05	0.05**	0.25			0.32			0.04	0.14	0.43
2005		0		0.35			0.05	0.06	0.065[**]	0.15		0.05	0.20	0.15		0.33			0.08	0.20		0.30			0.05	0.05	0.25			0.32			0.04	0.14	0.43
2006		0		0.35	0.20		0.05	0.06	0.065[**]	0.15		0.05	0.20	0.15		0.33			0.08	0.20		0.30			0.05	0.05	0.25			0.32	0.20		0.04	0.14	0.43
2007		0		0.35	0.20		0.05	0.06	0.07	0.17		0.05	0.20	0.15		0.33			0.08	0.20	0.08	0.30			0.05	0.05	0.25			0.32	0.20		0.04	0.14	0.43
2008		0		0.40	0.20		0.05	0.06	0.07	0.17	0.035	0.05	0.25	0.15	0.10	0.33			0.10	0.23	0.10	0.30	0.035		0.05	0.06	0.25			0.32	0.20	0.10[***]	0.04	0.14	0.43
2009		0		0.40	0.20		0.05	0.09	0.07	0.17	0.035	0.05	0.25	0.15	0.20	0.33			0.10	0.25	0.10	0.30	0.05		0.05	0.06	0.25			0.32	0.20	0.10[***]	0.04	0.14	0.43
2010		0		0.40	0.20		0.05	0.09	0.07	0.18	0.035	0.05	0.25	0.15	0.20	0.33			0.10	0.20	0.10	0.30	0.05		0.05	0.06	0.25			0.32	0.20	0.10[***]	0.04	0.14	0.43
2011		0	0.30	0.40	0.20		0.05	0.09	0.07	0.18	0.035	0.05	0.25	0.15	0.20	0.33			0.10	0.20	0.10	0.30	0.05		0.05	0.06	0.25			0.32	0.20	0.10[***]	0.04	0.11	0.34
2012		0	0.30	0.40	0.20		0.05	0.09	0.07	0.18	0.035	0.05	0.25	0.15	0.06	0.33			0.10	0.20	0.10	0.30	0.05		0.05	0.06	0.25			0.32	0.20	0.10[***]	0.04	0.11	0.34
2013		0	0.30	0.40	0.20		0.05	0.06	0.07	0.18	0.035	0.05	0.25	0.15	0.06	0.33			0.10	0.20	0.10	0.30	0.05		0.05	0.06	0.25			0.32	0.20	0.10[***]	0.04	0.11	0.34
2014		0.10	0.275	0.40	0.20		0.10	0.09	0.14	0.17	0.035	0.05	0.25	0.15	0.06	0.33			0.10	0.20	0.10	0.30	0.05	0.05	0.05	0.08	0.25			0.32	0.20	0.10[***]	0.04	0.11	0.34
2015		0.10	0.30	0.40	0.20		0.10	0.09	0.14	0.17	0.035	0.05	0.25	0.15	0.06	0.33			0.10	0.20	0.10	0.30	0.05	0.05	0.05	0.06	0.25			0.32	0.20	0.10[***]	0.04	0.11	0.34
2016	0.85	0.10	0.275	0.40	0.20		0.10	0.09	0.15	0.17	0.035	0.05	0.26	0.23	0.06	0.33			0.10	0.30	0.10	0.30[f]	0	0.10	0.05	0.08	0.13			0.32	0.20	0.10[***]	0.04	0.11	0.34
2017	0.85	0.10	0.23	0.40[b]	0.20	0.20[***]	0.10	0.09	0.15	0.17	0.035	0.05	0.27	0.23	0.06	0.33			0.10	0.30	0.10	0.30[f]	0	0.10	0.05	0.08[g]	0.125	1.25[***]		0.32	0.20	0.10[***]	0.04	0.11	0.34
2018	0.85	0.10	0.23	0.40[b]	0.20	0.20	0.18	0.09	0.15	0.17	0.035	0.05	0.27	0.23	0.06	0.33		0.03***	0.10	0.37	0.10	0.30[f]	0	0.10	0.05	0.08[g]	0.15	0.2083		0.36	0.20	0.10[***]	0.04	0.11	0.34
2019	0.85	0.10	0.23	0.40[b]	0.20	0.20	0.18	0.09	0.15	0.17	0.05	0.05	0.28	0.30	0.06	0.33		0.03***	0.10	0.39	0.17	0.30[f]	0	0.30	0.05	0.08[g]	0.15	0.4167		0.36	0.20	0.10[***]	0.04	0.11	0.34
2020	0.85	0.10	0.23	0.40[b]	0.20	0.20	0.18	0.09	0.15	0.17	0.05	0.12[e]	0.45[d]	0.30	0.06	0.33		0.03	0.10	0.40	0.17	0.30[f]	0	0.30	0.05	0.09[g]	0.15	0.625		0.36	0.20	0.10[***]	0.04	0.11	0.34
2021	0.45	0.10	0.23	0.40[b]	0.20	0.20	0.18	0.09	0.15	0.17	0.05	0.12[e]	0.45[d]	0.30	0.06	0.33	0.10[***]	0.03	0.10	0.40	0.20	0.30[f]	0	0.30	0.05	0.09[g]	0.15	0.8333		0.36	0.20	0.18-0.56[***]	0.04	0.11	0.34
2022	0.45	0.25	0.305	0.70[b]	0.20	0.20	0.18	0.10	0.15	0.17	0.05	0.12[e]	0.45[d]	0.30	0.06	0.33	0.10[***]	0.03	0.10	0.40	0.20	0.30[f]	0	0.30	0.05	0.09[g]	0.15	1.0417	0.15	0.36	0.20	0.18-0.56[***]	0.04	0.11	0.34
2023	0.45	0.25	0.23	0.70[b]	0.20	0.20	0.20	0.10	0.15	0.17	0.05	0.12[e]	0.28	0.30	0.06	0.33	0.10	0.03	0.10	0.40	0.25	0.30[f]	0	0.30	0.05	0.09[g]	0.15	1.25	0.15	0.38	0.15	0.18-0.56[h]	0.04	0.11	0.34

Sources: Leigh(2010); Tax Policy Center (2023): http://www.taxpolicycenter.org/statistics/state-eitc-based-federal-eitc

**Denotes non-refundable credit.

***Announced, but not implemented yet.

a: California has a different range of eligible income than the federal EITC.

b: DC's EITC for childless workers is worth 100% of the federal EITC and has a larger range of eligible income relative to the federal credit.

c: 25% for filers without dependent children.

d: 100% for filers without dependent children. Maryland also has the option of a 50% non-refundable EITC, but tax filers can only claim one credit.

e: Minnesota has a different strucuture to its state EITC that is not a direct share of the federal EITC starting in 2001. The average benefit level is listed from 2001 onward for Minnesota

f: New York City has an additional EITC worth 5% of the federal credit.

g: Higher credit if qualifying child is under 3 (11% from 2017-2019; 12% from 2020 onward)

h: Washington's structure differs from the federal structure and credit will be calculated as a percentage of income, rather than a percentage of the federal EITC

Wisconsin has a different rate depending on the number of children in the household.

Appendix Table 2. Effect of EITC exposure in childhood on poverty in adulthood, using after-tax poverty measure

	(1)	(2)	(3)
Poverty			
Above poverty	0.071*	0.068*	0.076**
	(0.037)	(0.038)	(0.033)
Above 200% of poverty	0.049	0.045	0.042
	(0.030)	(0.029)	(0.035)
State controls		X	X
State-specific time trends			X
Number of observations		26,524	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 3. Effect of EITC exposure in childhood on fraction of years above poverty and receiving public assistance in adulthood

	(1)	(2)	(3)
Poverty			
Above poverty	0.073*	0.065	0.084***
	(0.040)	(0.039)	(0.031)
Above 200% of poverty	0.066	0.059	0.084*
	(0.048)	(0.047)	(0.044)
Public assistance			
TANF/AFDC	-0.005	-0.002	-0.005
	(0.007)	(0.006)	(0.006)
Food Stamps/SNAP	-0.056	-0.044	-0.064*
	(0.041)	(0.039)	(0.033)
WIC	-0.023	-0.015	-0.027
	(0.014)	(0.015)	(0.020)
Other welfare	-0.008	-0.007	-0.009*
	(0.005)	(0.005)	(0.005)
Any welfare program participation	-0.073*	-0.056	-0.083**
	(0.041)	(0.040)	(0.035)
State controls		X	X
State-specific time trends			X
Number of Observations		4,920	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 4. Effect of EITC exposure in childhood on poverty and public assistance receipt in adulthood, including in-utero EITC exposure

	(1)	(2)	(3)
Poverty			
Above poverty	0.076**	0.072**	0.085***
	(0.034)	(0.034)	(0.026)
Above 200% of poverty	0.067*	0.064*	0.066*
	(0.037)	(0.037)	(0.038)
Public assistance			
TANF/AFDC	-0.008	-0.003	-0.002
	(0.013)	(0.011)	(0.011)
Food Stamps/SNAP	-0.032	-0.023	-0.032
	(0.038)	(0.037)	(0.033)
WIC	-0.016	-0.009	-0.022*
	(0.010)	(0.010)	(0.012)
Other welfare	-0.013*	-0.013*	-0.012*
	(0.008)	(0.007)	(0.007)
Any welfare program participation	-0.046	-0.033	-0.047
	(0.040)	(0.038)	(0.031)
State controls		X	X
State-specific time trends			X
Number of observations		26,800	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. In-utero exposure measured as the maximum federal and state EITC available given the year, state, and number of children in the household in the year prior to the focal individual's birth. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 5. Effect of EITC exposure in childhood on public assistance and employment in adulthood, by parental marital status

	Always married	Not always married
Poverty		
Above poverty	0.056**	0.078
	(0.026)	(0.061)
Above 200% of poverty	0.041	0.066
	(0.038)	(0.058)
Public assistance		
TANF/AFDC	-0.003	-0.004
	(0.015)	(0.013)
Food Stamps/SNAP	-0.009	-0.012
	(0.029)	(0.057)
WIC	0.004	-0.020
	(0.012)	(0.024)
Other welfare	-0.015*	-0.008
	(0.009)	(0.009)
Any welfare program participation	-0.011	-0.039
	(0.034)	(0.056)
State controls	X	X
Number of observations	15,692	11,108

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. Always married parents represent those married in all years between the individual's birth and age 15; all else are considered not alaways married. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. The regression also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 6. Effect of EITC exposure in childhood on marriage and childbearing in last observed year in PSID

	(1)	(2)	(3)
Ever married	-0.012	-0.007	-0.020
	(0.048)	(0.050)	(0.061)
Ever have a birth	-0.020	-0.012	-0.040
	(0.051)	(0.057)	(0.072)
Total number of births	-0.080	-0.060	-0.182
	(0.132)	(0.138)	(0.162)
State controls		X	X
State-specific time trends			X
Number of observations		4,923	

Notes: Individuals born between 1967 and 1992. One observation per person, outcomes measured in the last year individual is observed in the data, or age 45, whichever comes first. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 7. Effect of the EITC on parental labor force participation when resopndents were children (birth to age 15, one observation per person-year)

Average annual hours worked by head and spouse	0.16
	(10.59)
Average annual after tax earnings by head and spouse	1,295.16***
	(400.76)
Average annual after tax family income	1,124.66***
	(391.46)
Estimated EITC benefits	104.07***
	(10.02)
State controls	X
State-specific time trends	
Number of Observations	66,603

Notes: Individuals born between 1967 and 1992; observed between birth and age 15. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. Regression models the outcome of interest in a given year between the respondents' birth and age 15 on a lagged measure of the maximum federal and state EITC given the year, state, and number of children in the household. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. The regression also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 8. The effect of EITC exposure in childhood on income mobility, using individual or family income

	Head income only			Head and spouse income		
	(1)	(2)	(3)	(1)	(2)	(3)
Child and parent rank difference	0.027	0.017	0.020	-0.015	-0.021	-0.027
	(0.034)	(0.032)	(0.038)	(0.030)	(0.030)	(0.036)
Child has higher income rank	0.010	0.004	0.001	-0.024	-0.029	-0.038
	(0.050)	(0.047)	(0.058)	(0.044)	(0.046)	(0.057)
Child and parent income difference	1,511.555	250.265	-1,463.712	-2,369.219	-3,508.842	-4,114.076
	(3,926.519)	(3,732.587)	(4,762.645)	(4,865.200)	(5,283.643)	(6,944.789)
Child has higher income	-0.014	-0.022	-0.024	-0.052	-0.057	-0.045
	(0.047)	(0.044)	(0.054)	(0.042)	(0.042)	(0.048)
State controls		X	X		X	X
State-specific time trends			X			X
Number of observations			4,531			

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Income rank measured when child and parents are each between 25 and 35 years old. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 9. Effect of EITC exposure in childhood on public assistance receipt in adulthood, excluding top 10% of parental income distribution

	(1)	(2)	(3)
Poverty			
Above poverty	0.082**	0.082**	0.089***
	(0.033)	(0.033)	(0.027)
Above 200% of poverty	0.072*	0.072*	0.077**
	(0.037)	(0.037)	(0.036)
Public assistance			
TANF/AFDC	-0.007	-0.003	-0.003
	(0.010)	(0.008)	(0.008)
Food Stamps/SNAP	-0.038	-0.029	-0.038
	(0.040)	(0.039)	(0.033)
WIC	-0.018	-0.012	-0.027**
	(0.012)	(0.012)	(0.014)
Other welfare	-0.015*	-0.014*	-0.014*
	(0.008)	(0.007)	(0.007)
Any welfare program participation	-0.052	-0.041	-0.057*
	(0.042)	(0.041)	(0.032)
State controls		X	X
State-specific time trends			X
Number of Observations		25,080	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 10. Effect of EITC exposure in childhood on poverty and public assistance receipt in adulthood, restricted to those who do not move across states

	(1)	(2)	(3)
Poverty			
Above poverty	0.112**	0.112**	0.128***
	(0.051)	(0.051)	(0.038)
Above 200% of poverty	0.093*	0.093*	0.081*
	(0.049)	(0.049)	(0.043)
Public assistance			
TANF	-0.015	-0.010	-0.012
	(0.016)	(0.013)	(0.012)
Food Stamps	-0.040	-0.029	-0.053
	(0.055)	(0.054)	(0.043)
WIC	-0.010	-0.003	-0.013
	(0.015)	(0.015)	(0.014)
Other welfare	-0.012	-0.011	-0.012
	(0.009)	(0.007)	(0.007)
Any welfare program participation	-0.046	-0.032	-0.052
	(0.057)	(0.055)	(0.043)
State controls		X	X
State-specific time trends			X
Number of Observations		18,587	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 11. Effect of EITC exposure in childhood on poverty and public assistance receipt in adulthood, different model specifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Poverty							
Above poverty	0.072**	0.068**	0.080***	0.079***	0.082***	0.073***	0.065**
	(0.034)	(0.033)	(0.027)	(0.027)	(0.027)	(0.024)	(0.026)
Above 200% of poverty	0.066*	0.063*	0.065*	0.063	0.066	0.061*	0.028
	(0.037)	(0.036)	(0.038)	(0.038)	(0.041)	(0.034)	(0.041)
Public assistance							
TANF/AFDC	-0.007	-0.003	-0.004	-0.002	-0.002	-0.003	-0.008
	(0.009)	(0.008)	(0.007)	(0.011)	(0.011)	(0.012)	(0.014)
Food Stamps/SNAP	-0.0310	-0.022	-0.03	-0.030	-0.031	-0.028	-0.026
	(0.038)	(0.037)	(0.033)	(0.034)	(0.034)	(0.030)	(0.031)
WIC	-0.016	-0.009	-0.023*	-0.023*	-0.017	-0.013	0.008
	(0.010)	(0.011)	(0.012)	(0.012)	(0.013)	(0.015)	(0.012)
Other welfare	-0.014*	-0.013*	-0.013*	-0.013*	-0.013**	-0.013*	-0.015**
	(0.008)	(0.007)	(0.007)	(0.007)	(0.006)	(0.006)	(0.007)
Any welfare program participation	-0.045	-0.033	-0.047	-0.048	-0.045	-0.041	-0.026
	(0.040)	(0.038)	(0.031)	(0.032)	(0.032)	(0.029)	(0.033)
State controls		X	X	X	X	X	X
State-specific time trends			X	X	X	X	X
FSP, Medicaid, additional TANF				X			
Birth year time trends*demographics					X		
Birth year*number of siblings FE						X	
Birth year*state FE							X
Number of observations	26,755	26,755	26,755	26,755	26,800	26,800	26,800

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Regressions with state controls include state GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 12. Effect of EITC exposure in childhood on poverty and public assistance receipt in adulthood, federal versus state EITC variation

	Federal	State
Poverty		
Above poverty	0.105***	-0.002
	(0.034)	(0.042)
Above 200% of poverty	0.105***	-0.020
	(0.038)	(0.041)
Public assistance		
TANF	-0.004	0.001
	(0.015)	(0.009)
Food Stamps	-0.042	0.021
	(0.033)	(0.063)
WIC	-0.013	-0.002
	(0.014)	(0.018)
Other welfare	-0.017**	-0.006
	(0.008)	(0.005)
Any welfare program participation	-0.055	0.012
	(0.034)	(0.059)
Number of Observations	26,800	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. The regression also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table 13: Effect of EITC exposure in childhood on food stamp receipt, before and after 2009

	(1)	(2)	(3)
Panel A			
Food Stamps Pre-2009	0.023	0.040	0.051
	(0.058)	(0.056)	(0.061)
State controls		X	X
State-specific time trends			X
Number of Observations		10,919	
Panel B			
Food Stamps Post-2009	-0.070**	-0.063*	-0.073**
	(0.033)	(0.031)	(0.028)
State controls		X	X
State-specific time trends			X
Number of Observations		12,832	

Notes: Individuals born between 1967 and 1992; observed between ages 25 and 45. Effect of the EITC measured in thousands of 2017 dollars. Each cell represents a different regression. All regressions include individual level controls for sex, race, age, age squared, state of birth, average number of siblings between birth and age 15, and birth year fixed effects and parental controls for proportion of years married between the birth of the child and age 15, educational attainment of the parent, and the average age of the head parent between the child's birth and age 15. Models 2 and 3 also includes state policy controls for GDP, Food Stamps/SNAP, AFDC/TANF and minimum wage rate. Model 3 includes state-specific birth year time trends. Standard errors (in parentheses) are clustered at the state level to account for within state correlated error terms. All results are weighted by average childhood PSID weights. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$