Growing Up and Getting Less:

The Effect of the Earned Income Tax Credit on Labor Force Participation Using an Individual Level Fixed Effects Model

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Abstract

Prior research has utilized difference-in-differences to study the effect of the Earned Income Tax Credit (EITC) on labor supply. We instead employ an individual-level fixed effects model to assess the program's efficacy by using variation in the EITC driven by children "aging out" of qualifying child eligibility. Focusing on those most eligible (unmarried, less educated mothers) we find evidence of a 17 and 24.2 percentage point increase in labor force participation for one and two qualifying children compared to none, respectively. The paper also provides evidence for using the number of qualifying children as an instrument for EITC generosity.

Keywords

Labor Supply, EITC, Fixed Effects

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1 Introduction

In an effort to promote work among low-income families (especially those with children), the Federal Earned Income Tax Credit (EITC) program has grown to become the largest cash transfer poverty reduction program in the United States. There is a growing body of research that finds empirical evidence of the program's demonstrated success at increasing labor supply among those eligible for the EITC (Eissa & Liebman, 1996; Ellwood, 2000; Meyer & Rosenbaum, 2001; Hotz & Scholz, 2003; Eissa & Hoynes, 2004; Eissa et al., 2008). Research has shown that this success is most notable along the extensive margin of labor supply (labor force participation—LFP) for unmarried mothers with less than a high school education. The impact of this program along the intensive margin (weeks worked) for the eligible population and even along the extensive margin for married households with children, however, is more varied and unclear.

A large portion of the existing scholarship has employed between-group comparisons centered on one of the program's many expansions to identify the effect on labor supply. As each of these authors makes clear, the validity of the difference-in-differences research design used for these analyses centrally rests on the composition of a sufficient control group and an exogenous policy shock. Although these previous studies have presented robust estimates, the methodological hurdles inherent in this research design are open to criticism given the threat of selection bias.

To circumvent this potential design issue, we employ a within comparison research design to estimate the differential effect of the EITC on labor supply by comparing individuals to themselves rather than comparing different groups (mothers to non-mothers for instance). More specifically, using the U.S. Bureau of Labor Statistics' National Longitudinal Survey of Youth 1979 (NLSY79) we examine the effect of the EITC program on the labor supply of households with children who "age out" of the EITC qualifying child eligibility. For the majority of EITC recipients, change in family composition offers an exogenous, fully anticipated, lump-sum variation in tax liability; thus estimates can be interpreted as a pure substitution effect (Looney & Singhal, 2006). This alternative research design does not solely rely on comparing a treated and control group based on their eligibility status; this reduces potential threats related to selection bias. This approach offers a robust and unique perspective for examining the effect of the EITC on the labor supply decisions of eligible households. Further, prior work focused on the

expansion of the EITC program while this paper is not limited to such events and instead utilizes a shock that results in loss of the EITC. This analysis offers a more recent assessment of the EITC program and the estimates are useful in understanding labor supply activity after the EITC credit has expired.

2 Background and Literature Review

Initially enacted in 1975, the EITC has undergone a number of expansions. This program is designed to increase the labor supply of low-income households, with an emphasis on households with children. The size of the credit depends on the structure of the household—determined by household income and the number of qualifying children who have met certain age, relationship, and residency tests. While the EITC program does provide support for individuals without qualifying children, the amount of the credit is much smaller and the income threshold is significantly lower than for those whose eligibility is contingent on qualifying children.[2] The vast majority of eligible recipients comprise households with qualifying children; thus, this study—along with most EITC studies—examines the effect of the program for this larger group of EITC participants.

Broadly speaking, the scholarship on the EITC program falls into two categories—one that focuses on the effect of the program on labor supply and the other on consumption, marriage, living arrangements, and human capital decisions. The scholarship on the former is disaggregated looking at either the extensive or intensive labor supply margins. We follow the larger literature and focus our analysis on the extensive margin of LFP.

We also follow the previous EITC studies by stratifying by marital status and education, and focusing on the impact of the program on the labor supply of unmarried mothers, especially those with less than a high school education. Considerable research has been placed on this sub-group as they represent the largest group of taxpayers that are eligible for the EITC. They are also the most relevant group for studying whether the EITC reduces welfare dependency. Lastly, unmarried mothers are those for which we can most plausibly ignore the joint labor supply decisions of other family members and accordingly derive simple predictions from labor supply theory (Meyer & Rosenbaum, 2001).

[2] Roughly 8% of all households are eligible for EITC, while 30% of households with children are eligible (Census Bureau).

In their literature review of the EITC program on labor market outcomes, Hotz and Scholz (2003) highlight three prominent trends. First, research has found that the EITC program positively affects labor supply along the extensive margin for single-parent households—single mothers in particular (Eissa & Hoynes 2006, 2004; Dickert et al., 1995; Ellwood, 2000; Meyer & Rosenbaum, 2001; Rothstein, 2005). In their evaluation of the program's 1986 expansion comparing single mothers to a control group of single women without children, Eissa and Leibman (1996) found an increase in LFP—with the largest increase among single women with less than a high school education of 6.1 percentage points. Meyer and Rosenbaum (2001) employed a similar difference-in-differences research design and compared the effect of the EITC program to federal welfare programs. They attributed 60 percent of the increase in LFP among single mothers to the EITC program with smaller shares of the increase due to welfare benefit reductions, waivers, and childcare expenses.

Second, given that the design of the program is predicated on the earnings of the household rather than on an individual earner exclusively, for married households there is evidence that the EITC has a modest, and even negative effect for secondary workers. The difference in the treatment effect for this group compared to households with single mothers is attributed to the different set of incentives regarding labor activity for the married population. Using a research design similar to Eissa and Liebman (1996), comparing eligible married couples with children to married couples without children (and therefore ineligible for the program), Eissa and Hoynes (2004) found that the EITC expansions reduced total family labor supply. This reduction is attributed to the design of the program being contingent on household rather than individual income (Eissa & Hoynes, 2006). For households with income near the upper bound of the EITC income threshold, there is evidence to suggest that the EITC program may be effectively subsidizing the secondary earners—who are often married mothers—to stay home rather than enter the workforce.

Third, results from analyses on the intensive margin for both married and unmarried households are ambiguous (Eissa & Liebman, 1996; Eissa & Hoynes, 2006). Only a small number of papers have examined the impact of the EITC on weeks worked given that this estimation strategy poses a greater empirical challenge. Not only do researchers find it difficult to deal with the selection of individuals into the labor force and the difficulty of altering weeks worked—both for those in the treated and control groups—it is also hard to identify the

empirical change in the number of weeks worked given the aggregated comparison-of-means approach typically used (Eissa & Hoynes, 2006). Thus, results are inconclusive at the intensive margin.[3]

While this body of scholarship has examined the EITC program from a multitude of perspectives and identified a range of outcomes, many of these analyses share a common feature in the research design. Most notably, much of the scholarship utilizes a reduced form estimation strategy employing a difference-in-differences research design, comparing a group eligible for the EITC program to a comparable control group that is ineligible for the program. The control group is typically comprised of households with no qualifying children, with considerable effort put forth in matching the two groups on other observable measures. Despite these efforts to match, this approach comes with methodological shortcomings. Not only do unobservable factors pose a challenge for researchers as they define the treatment and control groups, Blundell and MaCurdy (1999) stress that women without children participate in the work force closer to their upper bound compared to single mothers since they do not have the constraints that come with raising a child. They highlight that "this is really a failure of the common trends assumption since such [childless] women may not, therefore, be able to absorb an upward common trend to labor supply on the participation margin" (p. 1616). Our paper in contrast utilizes the loss of the credit rather than the expansion, so the issues associated with a LFP "ceiling" may be less problematic since it is likely that LFP will be falling away from the ceiling rather than increasing towards the ceiling. Ellwood (2000) raises another concern, noting that difference-in-differences research designs centered around program expansions are problematic for the childless control group:

> "The temporal trends in labor force participation of the mothers with and without children are often different before the enactment of the EITC, so drawing inferences from differential trends afterwards is troubling" (p. 13).

We do not intend to discount those studies that employ a difference-in-differences research design, but we do want to highlight the methodological shortcomings inherent in this approach. Unfortunately, precise identification of all the factors that account for labor supply is a theoretical and methodological hurdle that scholars may never be able to overcome. There

[3] We have estimated the impact on intensive margin, however as with prior research, our estimates are noisy and non-conclusive so we omit the estimates in this paper.

remains the risk of overlooking unobservable factors in using a control group that is ineligible for the EITC program due to the household requirement. We take a different approach by building upon a series of studies that rely on exogenous and anticipated tax changes contingent on the household requirement—individuals with children who "age out" of the EITC qualifying child eligibility—to mitigate selection bias (Feldman, Katuscak & Kawano, 2013; Looney & Singhal, 2006; Mulligan, 1998).

3 Research Design

Utilizing the NLSY79 longitudinal data, we estimate the effect of the EITC on labor force participation by relying on an individual-level fixed effects model using the income and household requirements specified by the EITC program. To capture the income portion of the requirements, we follow the existing literature and stratify our sample by education, marital status, and the interaction of marital status and education.

Given that EITC program eligibility for the majority of participants is contingent on the "qualifying children" requirement, we use the child's age to assess if the program has an effect on the parent's (or parents') labor supply. For households whose eligibility is contingent on both income and "qualifying children," they lose eligibility when either their youngest child turns 19 or 25—the latter is contingent on meeting full-time education status.[4] As Looney and Singhal (2006) highlight, estimating program eligibility based on the "qualifying children" component offers an exogenous and fully anticipated variation in tax liability, making the "qualifying children" indicator variables a useful instrument for EITC participation. The validity of this design is subject to exclusion restrictions resting on the assumption that the variation in the parents' labor force activity during the time period when their children age out of the program depends solely on the EITC program, which we address in section 3.2.1.

By using these indicators after including a set of individual controls and individual-level fixed effects, we are able to assess the differential effect of the program on labor supply. Additionally, because the EITC amount is determined by the number of qualifying children, we

[4] To remain eligible beyond 18 years old, the child must enroll full time in a tertiary education program, or the child must meet permanent disability requirements.

are able to assess the marginal effect of the program on the labor supply of the parent(s) in households with two children as their older and then younger child lose eligibility.[5]

Another benefit of relying on a fixed effects model is the added flexibility of examining the EITC program at different stages in the program's tenure. Previous studies that employ a difference-in-differences research design were limited to exploiting expansions in the program—1986, 1990, 1993,[6] and 2001 (Eissa & Liebman, 1996; Ellwood, 2000; Hotz & Scholz, 2003; Meyer & Rosenbaum, 2001; Eissa & Hoynes, 2004; Eissa et al., 2008). Life-cycle wealth effects confound such studies centered on a policy expansion, whereas the empirical analysis used in this paper allows for the estimation of substitution elasticities (Looney & Singhal 2006). In addition, this paper offers a more recent assessment of the program on the period of the program after the most recent major expansion (1996 to 2010).

3.1 Data: The National Longitudinal Survey of Youth, 1979

This paper uses the NLSY79 dataset, a nationally representative survey conducted by the Bureau of Labor Statistics.[7] The survey initially used multiple respondent households where all eligible individuals aged 14 to 21 in the household at the end of 1978 were included as individual respondents.[8] Respondents were then interviewed each survey year with information collected on their current spouse and children. Information on other individuals in the family unit after the base year survey is recorded under the respondent's identification number, not as a separate record. After the initial survey in 1979, individuals were interviewed about themselves and their family members annually until 1994, and biennially thereafter with all time-varying questions referring to the previous calendar year. All the data that we utilize for this analysis were collected biennially.

[5] We are interested in households with two children, so we refer to the "older" and "younger" children throughout this paper. We have estimated effects for families with one child and three children and do not find statistically significant results. This may be due to the smaller number of observations or because families that choose to have more or less children than the average American do so for reasons that are related to labor supply.
[6] The 1993 EITC expansion was phased in over FY94 and FY95. (Evans & Garthwaite, 2011)
[7] In 1979 the NLSY79 surveyed 12,686 men and women between the ages of 14 and 22 in three subsamples. The largest was comprised of 6,111 individuals representative of the US non-institutionalized civilian youth population; the second consisted of 5,295 individuals with an oversample of civilian Hispanic, black, and economically disadvantaged non-black/non-Hispanic youths; and the third surveyed 1,280 military youths enlisted in the armed forces.
[8] While most of the households with multiple respondents were comprised of siblings, there were also 334 respondents that were spouses in the same household.

3.1.1 The Sample

We use the NLSY79 data after the most recent major expansion to the EITC from 1996 to 2010. We limit the sample to include two child households when their two children were between the ages of seven and 25, resulting in an unbalanced panel.[9] We exclude observations for respondents with any children under the age of seven due to the expected additional time constraints of having young children (Gelbach, 2002). Children over the age of 25 were excluded because they do not help their parents qualify for EITC and are generally no longer household dependents.

We limit the sample to households with only two children for a number of reasons. First, families who meet the income requirements and have two children are eligible to receive the largest share of EITC. As noted above, households with no children would have to earn a very low income to be eligible,[10] while households with more than two children received no additional benefit until 2009.[11] Families with two children also represent the largest proportion of American households with children and account for 40% of households with children in our dataset.[12]

Since we are primarily interested in the effect on females, we expand the sample by including data on the female spouses of male respondents as additional observations. In the initial survey there were 167 spouses included with their own individual records. These individuals were removed from our sample to avoid double counting spouses. Complete case analysis was then used to provide a sample size of 85 to 2,405 unique individuals, depending on the stratification employed.

The primary dependent variable used for analysis is the extensive margin of labor supply or LFP. LFP is derived from the respondents' reported number of weeks worked in the previous calendar year as one if a respondent worked any weeks, and zero otherwise. In 2000, the NLSY79 also began collecting the self-reported amount of EITC received by respondents. We

[9] We ran a series of specification tests to test for possible outliers – specifically women who fall at the extreme ends of the age distribution – but found the results to be robust. Thus we ultimately include all respondents in the analysis.

[10] On average, households without children who are eligible for the EITC grant earn roughly 60% less than those eligible households with eligible children. Source: IRS Publication 596

[11] In 2009, the EITC was expanded to provide an additional benefit to families with three children. Since this would only affect the most recent year of the sample and result in different income cutoffs, families with three or more children are excluded.

[12] 2010 U.S. Census data reports that of U.S. households with children, 36% have two children. Source: http://www.census.gov/compendia/statab/2012/tables/12s0064.pdf

created a variable for EITC receipt that is equal to one if the individual reported a positive EITC amount and zero if they reported zero or non-receipt.

The key independent variables of interest are the presence of qualifying children. These variables are used as a proxy for the respondent's receipt and generosity of the EITC in the reduced form estimations. In the final analysis we use this variable as an instrument for access to the EITC in an instrumental variables model. The number of EITC qualifying dependent children was calculated as the number of children between the ages of 7 and 18. Respondents provided year of birth, and if applicable, year of death of each child. With this information the age of each child was computed from year of birth and survey year.

3.2 Methods

Equation 1 is an individual level fixed effects model estimating the impact of the number of EITC qualifying children on three outcomes Y_{it} (labor force participation, receipt of EITC, and amount of EITC).

$$Y_{it} = \alpha_i + \beta_1 OneQChild_{it} + \beta_2 TwoQChild_{it} + Year_t + Married_{it} + \varepsilon_{it} \qquad (1)$$

We control for general macroeconomic shocks to the labor market using a survey year fixed effect, $Year_t$. The year fixed effects also captures the effect of aging on the respondent's LFP because age and year are collinear.[13] We also control for marital status when not stratifying by marital status using a married indicator variable, $Married_{it}$. Because of time-invariant inter-class correlation in the error term, we use robust standard errors clustered at the individual level.

$OneQChild_{it}$ is an indicator variable equal to 1 when the household has one child under 18 and another over 18, resulting in one qualifying child. $TwoQChild_{it}$ is an indicator variable equal to 1 when both of the household's children are between 7 and 18, resulting in two qualifying children for the EITC. The omitted category is when both of the household's children are over 18, resulting in no qualifying children. Thus, β_2 estimates the effect of having two EITC qualifying children compared to zero and β_1 estimates the effect of having one EITC qualifying child compared to zero.

[13] The average age for the entire sample is 47.6 and the average age when the second child becomes ineligible for the EITC is 44.6 with the 99th percentile only age 55, so there is no concern of aging into conventional retirement ages affecting our estimates.

As previously mentioned, most papers investigating EITC find an increase in female LFP when the household experiences an increase in the generosity of the credit, from a program expansion. If the response is also similar when using time varying, within household variation in the generosity of the program then we expect the coefficient β_2 to be larger than the coefficient β_1 because the EITC is larger for two qualifying children than one. We anticipate that both, however, should reflect positive effects on labor supply. The marginal effect between two and one eligible children can be calculated by taking the difference between β_2 and β_1.

We chose to use two binary variables[14] to account for qualifying children as opposed to using one count variable of number of qualifying children. The latter implies a linear relationship, which we do not think is the correct fit given the non-linear rates of EITC for income by number of eligible children.[15] We use a Linear Probability Model (LPM) with individual level fixed effects to estimate the impact on our two binary outcomes (LFP and EITC receipt). We use a LPM rather than a logit fixed effects model due to the ease of interpreting marginal effects and out-of-range predictions did not pose an empirical concern.[16]

3.2.1 Excludability of "Eligible Children": a consideration of confounding factors

While a fixed effects model is able to circumvent the potential threats inherent in selection bias that comes with matching a control group to the treated group, this design comes with its own limitations that must be addressed. By relying on a within comparison, there may be confounding factors that affect the parents' labor supply when the household loses eligibility—specifically changes in family structure as children enter adulthood. If such factors exist, they need to be controlled for, or we risk attributing more to the EITC program than is warranted.

The primary confounding threat for this analysis is changes to family structure that might affect our outcome variable of interest—parental labor supply. Unless the younger child remains

[14] We have also used a single indicator variable equal to one for any eligible children and get consistent estimates.
[15] There is a large difference in the amount of the credit from no children to one child and smaller increase from one to two. In 2009 the EITC was expanded to include a small increase from two to three children. See *http://www.irs.gov/Individuals/EITC-Income-Limits,-Maximum-Credit--Amounts-and-Tax-Law-Updates* for more information on the EITC.
[16] There were no out-of-range predictions using the LPM model for LFP outcomes with the exception of the unmarried greater than high school sample, which exhibited 2.9% of out of sample predictions, with the largest prediction equal to 1.012.

eligible due to the education or disability requirements,[17] for the large majority of cases when the youngest child turns 19 the household no longer qualifies for the program based on the income requirement alone. Moreover, in the case that the older child ages out of eligibility, the size of the credit decreases since the number of qualifying children decreases from two to one. If the change in family structure—as defined by the change in age for the youngest or oldest child—affects the parents' labor supply through any other channel than the reduction in EITC, then our model will be biased. We draw from existing scholarship and present a series of empirical tests to demonstrate that the "qualifying children" indicator variables are plausibly excludable and only affect the parental labor supply through the EITC program.

Although there is a sizeable literature that examines the effects of family planning, early childhood care, and elementary education on parental labor supply (Averett et al., 1997; Angrist & Evans, 1998; Gelbach, 2002), we found no studies that explicitly examined whether the aging of children from adolescence to adulthood affects their parents' labor supply. Rather, the growing literature on *emerging adulthood*—moving from late adolescence to early adulthood—focuses on the personal and social changes of the individual child rather than the greater family unit (Arnett, 2000; Shanahan, 2000). A related line of research, however, focuses on the economic relationship between young adult children and their parents and has found consistency in the family dynamics as children age into adulthood (Goldscheider et al., 2001). Specifically, Aquilino (2005) found evidence to suggest that midlife parents continue to provide economic support to their children into the child's early years of adulthood. This suggests that the family dynamics—specifically those that pertain to the demands of the parental labor supply—remain unchanged as the child enters adulthood. What research has found is that the amount of extended economic support to young adult children does not significantly diminish on the child's 18th birthday. Aquilino (2005) finds that both single and married parents intend to support their children into adulthood, though the commitment is greater among households with married parents..

A number of studies have employed methods similar to this analysis offering convincing evidence that parental labor supply does not change directly as children enter adulthood (Feldman, Katuscak & Kawano, 2013; Looney & Singhal, 2006; Mulligan, 1998). In estimating

[17] NLSY79 provides information on education for qualifying children; however, no information is available regarding disability status. Thus, we were not able to incorporate this into our model. We recognize that this data limitation may result in noisier estimates.

life cycle effects for families who lose AFDC eligibility, Mulligan (1998) justifies the use of a "qualifying child" indicator arguing that the 18th birthday of the youngest child is not associated with changes in health, "tastes", productivity, or other variables for the parents. Looney and Singhal (2006) examine the effect of EITC participation among married households by exploiting variation in program eligibility based on the "qualifying child" requirement as well. In both papers, they justify their approach by relying on empirical evidence from a series of comparisons demonstrating that parental labor supply does not change among control groups at a time when they are not subject to the policy.

Although we employ the same instrument used in Looney and Singhal's (2006) paper, we provide additional evidence to show that labor supply does not change among a series of comparable control groups. In particular, we stratify by education and martial status—looking at married mothers with less than a high school education and unmarried mothers with a high school education—and find that LFP remains relatively stable as the women age, and when the former group's children lose eligibility.

As with the use of any instrument, it is impossible to empirically show that the instrument is not correlated with the error term and in turn only affects the outcome variable through the endogenous explanatory variable—EITC participation/amount. Thus, scholars must rely on theory and sound argument. The literature provides supportive evidence to suggest that the change in a child's age from 18 to 19 has a limited effect on parental labor activity; this is complemented by the empirical results presented in the Results section, which includes estimates for the aforementioned groups that are not eligible for the EITC. Thus, in following Looney and Singhal (2006) we argue that the "qualifying children" indicator only affects our outcome variable of interest through the EITC program and is thus excludable. Even if there is some leakage in the effect of changing family dynamics on labor force participation, theory would suggest that it would actually bias us from finding positive effects of EITC qualifying children on labor force participation since it seems likely that women will have more time to pursue a career following their children's exit from the home, resulting in a negative, rather than positive, coefficient on the qualifying children variables.

3.2.2 Stratify by Marital Status and Education

In following with the existing literature, we stratify by marital status and education. The education level of respondents is used to provide a proxy for the EITC income eligibility since stratifying by contemporaneous income is endogenous with our primary dependent variable, LFP. We specifically focus on the estimates from the sub-sample of individuals with less than a high school education. There is ample research to show that lower educational attainment is highly correlated with lower income and it is this group for which the EITC was designed. We provide estimates in Appendix Table 1, which are stratified by a less endogenous measure of income (a proxy for expected income), which we calculate as the median of total family income from 1996 to 2010. The estimates from this stratification on income are consistent with estimates presented in the results section, finding strong effects for those with low income and income just below the EITC income threshold and null findings for those above.

Marital status is also a key variable in identifying the effect of EITC on labor supply. This is due to incentives that vary for single and married households because the income eligibility depends on household income (not the primary earner's income). Theory would suggest that single-parent households would have an incentive to join the labor force when the EITC becomes more generous. However, the impact of the EITC for the secondary earner for married couples will depend on the relative level of household income and how far they are from the EITC phase out region. The effect of the program varies depending on current income. In some cases, the secondary earner may be incentivized to work, but in other cases, when the household income is near the upper threshold, the secondary earner may be incentivized to remain out of work to remain eligible for the credit (Eissa & Hoynes, 2004, 2006). Based on this previous research and theory, we expect to find larger effects for unmarried women, smaller or negative effects for married women, and negligible effects for men.

3.3 Summary Statistics by Marital Status & Education

Table 1 reports the descriptive statistics of several key variables stratified by education and marital status. Our primary education sub-sample consists of women with less than a high-school education. In following with the results of other EITC studies, we find evidence that less educated females are less likely to work than females in the full sample (76 percent compared to 90 percent), and more likely to report receiving EITC (16 percent compared to 6 percent). They

are also less likely to be married (58 percent compared to 75 percent) and more likely to be using government assistance programs (14 percent use food stamps compared to 4 percent). When stratifying on education and marital status, we find that unmarried women with less than a high-school degree are less likely to work than their married counterpart (69 percent compared to 80 percent), more likely to be black (37 percent compared to 10 percent), receive government assistance (28 percent use food stamps compared to only 5 percent), receive the EITC (29 percent compared to 7 percent), receive a larger amount of EITC ($640 compared to $203), and have much lower income ($19,768 compared to $60,692). Descriptive statistics broken down by marital status for the other education categories also differ substantially, especially on variables related to EITC, race, and income.

Looking more closely at the descriptive statistics stratified by marital status, we find evidence that the mean family income for married households (specifically those that have less than a high school education) fall significantly *above* the income threshold to qualify for the EITC program. Eissa and Hoynes (2004) found similar results—only around 60 percent of their sample of married households with less than a high school education were eligible for the program. We emphasize this statistic given that identification of EITC eligibility by marital status based solely on educational attainment would be problematic.

4 Results

4.1 Estimates Stratified by Education

The existing literature has found strong effects of the EITC program for less educated groups—especially single mothers—along the extensive margin. Table 2 reports the coefficients from equation 1 for women, stratifying the sample by education.[18] The effect of having EITC qualifying children on labor force participation and EITC amount are statistically significant and the expected sign for the full sample of females. Having one EITC qualifying child increases LFP by 2 percentage points and 2.5 percentage points for two children for all women compared to having no qualifying children. These women are also similarly likely to receive the EITC—an

[18] The estimates for the male sample are not significant results for labor supply, as theory and previous literature would expect. These results are in Table 2 of the Appendix. We estimated the effect on outcomes of intensive margins of labor supply (weeks worked), but did not find statistically significant results. We also estimated the use of welfare programs (food stamps and TANF) and found small, but statistically significant results for the full female sample, less than high school and the more than high school sample, but statistically insignificant results for all other subsamples.

increase of 2.9 percentage points for one child and two children. These effects are relatively small, but this sample includes a large portion of women with incomes that fall significantly above the EITC income eligibility threshold.

Focusing on females that are more likely to have income that falls below the EITC income threshold (those with less than a high school education) reveals effects that are much larger than the full sample and in most cases statistically significant, even considering the relatively small sample size. The estimated effect for less educated women with one qualifying child in comparison to no qualifying children is to increase female LFP by a statistically significant 10.4 percentage points and 11.9 percentage points for two qualifying children. The difference between these effects however is not statistically significant so we do not find a statistically significant marginal effect between two and one eligible child on LFP, though this may be due to the small sample size. These individuals are also more likely to report receiving the EITC (an increase of 9.9 percentage points for one and 24.8 for two children), and receive much larger amounts of the EITC (an increase of $430.88 more for one child and $588.86 for two).

Consistent with prior research and providing evidence that changing family structure is not the driving force of the effect, the high school educated and college educated female subsamples reflect small effects that are not statistically significant. The only exception is that women with more than a high school education report a statistically significant, but small increase in receiving the EITC. This may be due to the much larger sample size of the more than high school educated women.

4.2 Estimates Stratified by Education and Marital Status

Table 3 presents the results of equation 1 on the samples stratified by all the combinations of marital status and educational attainment.[19] As shown in the summary statistics in Table 1, unmarried women with less than a high school education are the most likely to have income that will result in the largest EITC, so we should see the largest effect for this group. Looking at the target treatment population, the sub-group of unmarried mothers with less than a

[19] We have also estimated equation 1 stratifying by just marital status. While the estimates for unmarried women (2.1 percentage points for one child and 2.7 for two children) were larger than for married (1.6 and 2.1), the estimates were not statistically significant so we have omitted them from the discussion. As previously mentioned, stratifying by marital status alone does not guarantee a sample with income eligible for the EITC.

high school education in the top left, we find large, positive and significant estimates. The results suggest that having one eligible child as compared to none, increases labor force participation for unmarried women with less than a high school education by 17 percentage points and by 24.2 percentage points when they have two eligible children compared to zero. The estimated effect on EITC receipt (increased 12.9 percentage points for one child and 38.9 for two) and EITC amount (increase of $673 for one child and $856 for two) are also larger than the entire less than high school sample.

As expected, the more educated stratifications within the unmarried section (bottom two left sections) who have more income on average than the less than high school sample and are less likely to be eligible for the EITC, experience much smaller effects on LFP. The unmarried high school sample experience a not statistically significant increase of only 3.2 percentage points for one child and 2.5 percentage points for two children. The effect on EITC receipt and amount are also much smaller and less significant in comparison to the unmarried less than high school sample. The unmarried, more than high school sample actually reflects negative effects on LFP, but the estimates are not statistically significant.

Previous studies have found evidence that the program effectively subsidizes married mothers to stay home rather than enter the workforce. Our estimates for married women in the right section of Table 3 find no significant effect of qualifying children on LFP, EITC receipt or amount for married women regardless of education status – aside from a small increase in LFP for the more than high school sample that is significant at only the 10% level. The stratifications in Table 3 provide useful counterfactuals to help us understand the impact of changing family dynamics on LFP for groups that are likely ineligible for the EITC. The estimates suggest that if anything the changing family dynamics have a negligible or even negative impact on LFP.[20]

4.3 Regression Discontinuity

To test whether the reduction in LFP is a continual reduction or a discontinuous drop following the loss of EITC eligibility, we estimate the instantaneous impact of the youngest child aging out EITC eligibility on female LFP using a regression discontinuity design. For the

[20] Robustness checks were done to remove college-attending children, which changes eligibility standards, and children living with other relatives who may be claimed as dependents by others, resulting in similar or larger effects. Estimates can be found in Table 3 of the Appendix.

regression discontinuity we only include observations when the oldest child is over age 18 to retain the impact of the EITC.

$$FemaleLFP_{it} = \alpha_i + \beta \mathbf{1}(YoungerChildAge \geq 20)_{it} + \delta_1(YoungerChildAge - 20)_{it} + \delta_2(YoungerChildAge - 20)_{it} \times \mathbf{1}(YoungerChildAge \geq 20)_{it} + \varepsilon_{it} \quad (2)$$

We use equation 2 above to estimate a standard two-trend regression discontinuity. Due to the small sample size and use of biennial survey data, the younger child age variable (*YoungerChildAge*) was created by combining two ages together, so the indicator for age 18 includes ages 18 and 17 while age 20 includes ages 20 and 19. It is for this reason that equation 2 for the regression discontinuity references age 20 as the discontinuity rather than age 19. The coefficient δ_1 estimates the slope or relationship between the younger child's age and the mother's LFP while δ_2 estimates how that relationship changes after the child is no longer eligible for the EITC. β estimates the vertical distance or discontinuity between the two trends at the EITC age cutoff or the instantaneous effect of losing EITC eligibility on female LFP.

The estimates from this strategy can be seen in Figure 1, which are stratified in the same manner as in Table 3. The largest decline in LFP, a statistically significant 14 percentage point reduction, is consistent with the estimates in Table 3 for unmarried women with less than a high school degree (top left panel). The closest group in terms of income to the target group is the unmarried high school group (middle left panel), who exhibit a statistically insignificant three percentage point reduction. Lending further evidence that the EITC primarily drives the LFP reduction, none of the other groups who have income that put them out of EITC eligibility exhibit visual or quantitative reductions in LFP at the cutoff.

4.4 Instrumental Variables

Thus far we have estimated the reduced form impact of the number of EITC qualifying children on LFP and show evidence that the effect is due to exogenous variation in the generosity of the EITC. Our results and discussion above indicate that the "aging out" of qualifying children may be a suitable instrument for variation in the EITC since it does not appear that children turning 19 change the LFP of their parents through any other mechanism than the EITC.

$$EITC_{it1} = \alpha_i + \gamma_1 OneQChild_{it} + \gamma_2 TwoQChild_{it} + Year_t + Married_{it} + \varepsilon_{it1} \quad (3)$$

$$LFP_{it2} = \alpha_i + \delta_1 EITC_{it1} + Year_t + Married_{it} + \varepsilon_{it2} \quad (4)$$

Equations 3 and 4 present the two-stage least squares (2SLS) method estimating the impact of the EITC on LFP with qualifying children as an instrument for EITC receipt and EITC amount, respectively. We include the same set of controls –*Year* and *Married*– as presented in Equation 1. With any IV estimation it is important to note that we are estimating the local average treatment effect; and in this specific case, the elasticities are likely larger for women with young children compared to women with older children who are aging out of the program. Use of an IV model allows us to estimate the effect of EITC receipt and, potentially more importantly, the effect of an additional EITC dollar on female LFP.

Results from the IV model for all women with less than a high school degree and unmarried women with less than a high school degree are presented in Table 4. The first two columns of Table 4 display the IV estimates using variation in the EITC amount driven by the number of qualifying children. The first stage indicates that a single eligible child increases the EITC by $430.88 and two children increase the amount by $588.86 in comparison to no eligible children. Using this variation, we estimate the effect of each additional dollar of EITC on LFP as an increase of 0.013 percentage points, however this second stage coefficient is statistically insignificant. The last two columns include IV estimates of the effect of EITC receipt on LFP. The estimated effects are to increase LFP by 22.1 percentage points for the entire less than high school sample or 37.4 percentage points for the less than high school unmarried sample, but these estimates are also statistically insignificant.

It is important to note that the first stages for the full and unmarried samples generally reflect statistically significant coefficients on the instruments, but the F-statistics are below the standard of 10 proposed by Bound, Jaeger, and Baker (1995). The potential weak instrument problem is most likely the result of our reliance on a small dataset, as we are only able to include at most 173 respondents. We conclude that we are not able to estimate a reliable causal effect of EITC receipt or amount on LFP using Instrumental Variables, however Instrumental Variables appears to be a legitimate estimation strategy. To address this shortcoming a larger longitudinal dataset including EITC receipt, EITC amount, labor force participation, and children's ages is required.

5 Discussion

This analysis applies an individual level fixed effects model to evaluate the effectiveness of the EITC program—paying particular attention to labor supply activity among the sub-group of less educated unmarried mothers. By using a within-comparison research design, we find supportive evidence to suggest that the EITC program increases labor force participation for women with two children. Our results support existing literature when stratified by education and marital status and provide evidence of an even greater effect for unmarried mothers with two children who have less than a high school education. Previous analyses have shown that the EITC essentially provides a subsidy for secondary wage earners to stay home with children and thus deters work. Although we do not find an effect of the EITC program on LFP for married women, we emphasize that the results from our descriptive statistics indicate that a large portion of this group do not qualify for the program.

While the effects for the less educated unmarried women may seem large at an increase of 17 percentage points for a one child and 24.2 for two children compared to none, the shock that we utilize is also extremely large. Eissa & Liebman (1996) finds LFP increased 6.1 percentage points for this same group using the 1986 EITC expansion, which increased the maximum EITC credit from $550 to $851 or a difference of $598 in 2010 dollars. In this paper, the loss of the last remaining EITC qualifying child in 2010 for a family with the maximum credit was $3,050, which is more than five times as large as the shock used by Eissa & Liebman. The effect we find is just under three times as large as Eissa & Liebman's, making the effects seem less large in comparison.

Use of an individual level fixed effects model that estimates the effect of the EITC program on parental labor supply activity by relying on variation in qualifying children measures the effect of the program at the point when the credit stops. For families who qualify for the program based on both household income and qualifying children, the children's age defines the time horizon of eligibility and size of the credit. This paper expands upon existing research that relies on time horizons to estimate a policy's efficacy (Feldman, Katuscak & Kawano, 2013; Looney & Singhal, 2006; Mulligan, 1998). Specifically, we contribute to the large body of literature that examines the EITC program by estimating how qualifying children as they age from 18 to 19—which in most cases delimits the time horizon of access to the EITC program—affects labor supply activity. This offers a new approach and a more recent assessment of the

program. The results are robust and the implications are compelling. While the EITC program is successful in promoting work, when the benefits stop, so does the incentive to work.

Although this study is limited by a small sample size, the results are generally consistent with previous research and robust against confounding factors. The individual fixed effects research design provides an alternate robust approach to studying the effects of this popular assistance program in a way that minimizes bias.

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Tables

Table 1: Summary Statistics for Females

		Less the High		More than High	Less than High School		High School		More than High School	
	Full Sample	School	High School	School	Unmarried	Married	Unmarried	Married	Unmarried	Married
Female LFP	0.90	0.76	0.90	0.92	0.69	0.80	0.85	0.91	0.92	0.92
	(0.30)	(0.43)	(0.30)	(0.27)	(0.46)	(0.40)	(0.36)	(0.28)	(0.28)	(0.27)
Female Weeks Worked	47.58	44.31	47.78	47.81	42.64	45.36	47.38	47.92	47.39	47.91
	(10.19)	(13.25)	(9.99)	(9.88)	(14.74)	(12.12)	(11.00)	(9.61)	(10.87)	(9.63)
Male LFP	0.97	0.97	0.96	0.98	0.95	0.98	0.94	0.96	0.97	0.98
	(0.17)	(0.17)	(0.19)	(0.14)	(0.22)	(0.16)	(0.23)	(0.19)	(0.17)	(0.13)
Male Weeks Worked	50.03	48.86	49.88	50.31	48.42	48.94	48.09	50.04	48.51	50.41
	(6.76)	(9.00)	(7.10)	(6.12)	(10.14)	(8.78)	(9.93)	(6.76)	(9.40)	(5.86)
EITC Receipt	0.06	0.16	0.08	0.04	0.29	0.07	0.22	0.03	0.20	0.01
	(0.25)	(0.37)	(0.27)	(0.21)	(0.46)	(0.26)	(0.41)	(0.17)	(0.40)	(0.11)
EITC Amount ($2010)	149	382	177	104	640	203	477	76	463	31
	(708)	(1114)	(775)	(588)	(1401)	(815)	(1206)	(523)	(1184)	(317)
Married	0.75	0.58	0.73	0.81	0	1	0	1	0	1
	(0.43)	(0.49)	(0.45)	(0.39)						
Education	13.55	9.71	12	15.31	9.82	9.64	12	12	14.84	15.42
	(2.36)	(1.68)		(1.80)	(1.62)	(1.71)			(1.74)	(1.80)
Age	41.96	40.06	41.32	42.75	40.44	39.78	41.42	41.28	42.28	42.86
	(4.75)	(4.57)	(4.73)	(4.63)	(4.49)	(4.62)	(4.74)	(4.73)	(4.79)	(4.59)
Black	0.23	0.22	0.24	0.21	0.37	0.10	0.43	0.18	0.42	0.17
	(0.42)	(0.41)	(0.43)	(0.41)	(0.48)	(0.31)	(0.50)	(0.38)	(0.49)	(0.37)
Hispanic	0.18	0.30	0.17	0.16	0.27	0.33	0.18	0.17	0.18	0.16
	(0.38)	(0.46)	(0.38)	(0.37)	(0.45)	(0.47)	(0.39)	(0.37)	(0.38)	(0.36)
Food Stamps	0.04	0.14	0.05	0.02	0.28	0.05	0.14	0.02	0.10	0.01
	(0.20)	(0.35)	(0.22)	(0.15)	(0.45)	(0.21)	(0.35)	(0.14)	(0.30)	(0.08)
TANF	0.02	0.06	0.02	0.01	0.13	0.01	0.05	0.00	0.04	0.00
	(0.12)	(0.25)	(0.12)	(0.09)	(0.34)	(0.12)	(0.21)	(0.06)	(0.19)	(0.04)
Family Income ($2010)	86,738	43,189	67,998	107,464	19,768	60,692	35,172	80,482	43,705	123,205
	(82,457)	(36,103)	(55,040)	(95,698)	(18,535)	(36,130)	(53,326)	(50,352)	(38,765)	(98,981)
Total N	10,440	768	4,201	5,342	325	443	1,143	3,058	1,028	4,314

Data: NLSY 79 including years 1996 to 2010. Summary statistics are for women with only two children and only when both children are between age 7 and 25. Standard deviations are in parenthesis.

Table 2: Effect of EITC Qualifying Children for Females Stratified by Education

Education	# Eligible Children	LFP	EITC Receipt	EITC Amount
Full Sample	One Eligible	0.020**	0.029***	50.446*
		(0.010)	(0.010)	(27.525)
	Two Eligible	0.025**	0.029**	54.747
		(0.013)	(0.013)	(36.496)
	Unique N	2,405	2,269	2,269
	Total N	10,440	7,993	7,993
Less than High School	One Eligible	0.104**	0.099	430.877**
		(0.040)	(0.066)	(204.138)
	Two Eligible	0.119**	0.248***	588.862*
		(0.058)	(0.094)	(315.056)
	Unique N	198	173	173
	Total N	768	484	484
High School	One Eligible	0.018	0.023	23.846
		(0.015)	(0.016)	(43.798)
	Two Eligible	0.015	0.014	54.714
		(0.020)	(0.023)	(66.153)
	Unique N	981	918	918
	Total N	4,201	3,069	3,069
More than High School	One Eligible	0.007	0.022*	24.531
		(0.014)	(0.011)	(29.938)
	Two Eligible	0.020	0.016	1.819
		(0.017)	(0.015)	(36.128)
	Unique N	1,246	1,189	1,189
	Total N	5,342	4,352	4,352

Data: NLSY 79 including years 1996 to 2010. Women with only two children are considered and are only included when both children are between age 7 and 25. Coefficients are from an individual level fixed effects model including indicators for number of children that qualify for the EITC. Results are stratified by education. Controls include year fixed effects and marital status. Cluster-robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Effect of EITC Qualifying Children for Females Stratified by Marital Status and Education

		Unmarried			Married		
Education	**# Eligible Children**	**LFP**	**EITC Receipt**	**EITC Amount**	**LFP**	**EITC Receipt**	**EITC Amount**
Less than High School	One Eligible	0.170**	0.129	673.249*	0.041	0.009	134.493
		(0.078)	(0.125)	(386.363)	(0.049)	(0.064)	(252.557)
	Two Eligible	0.242**	0.389**	856.184*	0.004	0.083	366.841
		(0.108)	(0.150)	(514.742)	(0.063)	(0.097)	(396.755)
	Unique N	105	85	85	135	109	109
	Total N	325	199	199	443	285	285
High School	One Eligible	0.032	0.104*	238.445	0.011	-0.006	-33.252
		(0.034)	(0.060)	(148.531)	(0.016)	(0.010)	(26.049)
	Two Eligible	0.025	0.077	403.761*	0.011	-0.003	-13.590
		(0.051)	(0.088)	(242.285)	(0.021)	(0.017)	(43.981)
	Unique N	350	295	295	763	701	701
	Total N	1,143	774	774	3,058	2,295	2,295
More than High School	One Eligible	-0.052	0.050	-28.758	0.019	0.005	6.959
		(0.033)	(0.050)	(135.979)	(0.015)	(0.007)	(17.713)
	Two Eligible	-0.056	-0.011	-250.467	0.036*	0.007	7.225
		(0.040)	(0.077)	(191.225)	(0.019)	(0.009)	(23.715)
	Unique N	299	263	263	1,084	1,019	1,019
	Total N	1,028	734	734	4,314	3,618	3,618

Data: NLSY 79 including years 1996 to 2010. Women with only two children are considered and are only included when both children are between age 7 and 25. Coefficients are from an individual level fixed effects model including indicators for number of children that qualify for the EITC. Results are stratified by education and marital status. Controls include year fixed effects and marital status. Cluster-robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

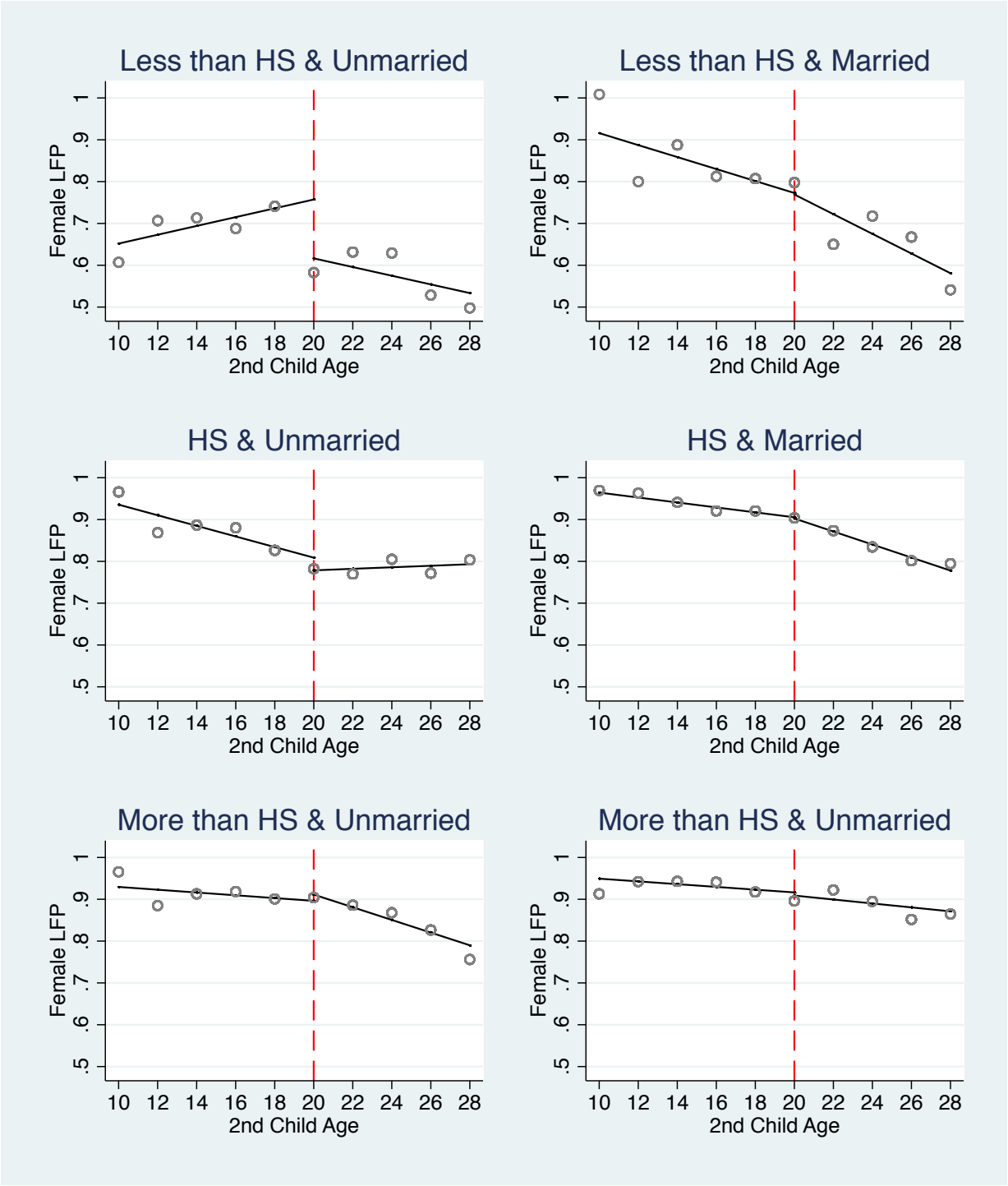
Table 4: Instrumental Variables Approach (Females with Less than High School Education)

		All	Unmarried	All	Unmarried
Second Stage	EITC Amount	0.00013	0.00011		
		(0.00010)	(0.00011)		
	EITC Receipt			0.221	0.374
				(0.288)	(0.351)
First Stage	One Eligible	430.88**	673.25*	0.099	0.129
		(204.14)	(386.36)	(0.066)	(0.125)
	Two Eligible	588.86*	856.18*	0.248***	0.389**
		(315.06)	(514.74)	(0.094)	(0.150)
	Unique N	173	85	173	85
	Total N	484	199	484	199
	F-Stat	2.36	1.86	3.88	3.58

Data: NLSY 79 including years 1996 to 2010. Women with less than 12 years of education and only two children are considered and are only included when both children are between age 7 and 25. Coefficients are from an individual level fixed effects instrumental variables model using indicators for number of children that qualify for the EITC as an instrument for EITC amount and EITC receipt separately. Controls include year fixed effects and marital status. Cluster-robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Figures

Figure 1: Regression Discontinuity - Labor Force Participation by Age of Second Child



Data: NLSY79 including years 1996 to 2010. Women with only two children are considered and are only included when the oldest child is over 18 and the youngest is between 9 and 28. Each child age in the figure is comprised of two ages (10 includes ages 9 and 10 for instance). The figures are created from a standard two-trend regression discontinuity using age 19 and 20 as the cutoff. The sample is stratified by marital status and education, in the same manner as Table 3.

Appendix

Appendix Table 1: Effect of EITC Qualifying Children for Females Stratified by Income

Education	# Eligible Children	LFP	EITC Receipt	EITC Amount	Food Stamps	TANF
$0 to $12,000	One Eligible	0.145**	0.112	156.073	-0.013	0.044
		(0.066)	(0.087)	(218.894)	(0.067)	(0.057)
	Two Eligible	0.191*	0.190	489.790	-0.048	-0.002
		(0.111)	(0.143)	(356.440)	(0.103)	(0.077)
	Unique N	123	110	110	118	121
	Total N	491	315	315	463	469
$12,000 to $30,000	One Eligible	-0.070*	0.079	146.445	0.049	0.037*
		(0.038)	(0.071)	(230.425)	(0.043)	(0.021)
	Two Eligible	-0.067	0.063	-20.433	0.086	0.089**
		(0.047)	(0.086)	(278.229)	(0.071)	(0.039)
	Unique N	285	249	249	285	285
	Total N	1,115	708	708	1,097	1,105
$30,000 to $42,000	One Eligible	0.061**	0.062	102.922	-0.005	-0.016
		(0.030)	(0.055)	(138.552)	(0.024)	(0.012)
	Two Eligible	0.087***	0.117	40.641	0.025	-0.009
		(0.032)	(0.088)	(215.036)	(0.035)	(0.018)
	Unique N	225	202	202	225	225
	Total N	949	634	634	945	948
$42,000 to $54,000	One Eligible	0.013	0.027	85.849	0.007	-0.005
		(0.025)	(0.035)	(55.975)	(0.009)	(0.004)
	Two Eligible	-0.021	0.018	212.197**	0.027	-0.007
		(0.030)	(0.054)	(105.181)	(0.020)	(0.005)
	Unique N	226	214	214	226	226
	Total N	991	711	711	985	989
$54,000 to $66,000	One Eligible	0.019	0.014	22.836	0.012	-0.010
		(0.022)	(0.020)	(39.115)	(0.014)	(0.007)
	Two Eligible	0.030	-0.008	-18.970	0.001	-0.007
		(0.038)	(0.023)	(65.815)	(0.015)	(0.009)
	Unique N	279	266	266	279	279
	Total N	1,259	959	959	1,257	1,258

Data: NLSY 79 including years 1996 to 2010. Women with only two children are considered and are only included when both children are between age 7 and 25. Coefficients are from an individual level fixed effects model including indicators for number of children that qualify for the EITC. Results are stratified by a measure of expected income which is calculated as the median of 2010 base year income from 1996 to 2010. Controls include year fixed effects and marital status. Cluster-robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Discussion of Appendix Table 1:

The original version of this paper stratified the estimates using a measure of income calculated as the median of total family income with a base year of 2010 using biennial survey years 1996 to 2010. The table above is the last remnants of this paper as this stratification is subject to endogeneity since any change to LFP in response to changes in EITC eligibility will alter the family's income. In the current paper we instead use education to stratify because education was determined prior to our dataset and is highly correlated with expected income in the marketplace. The estimates using the median income are still informative and show very similar results to the education stratification. The lowest income groups ($0 to $12,000) like the less than high school sample experienced the largest effects while the upper income groups ($54,000 to $66,000) experience negligible effects. The income group that is on the phase-out region of EITC eligibility ($30,000 to $42,000) exhibits positive effects on LFP, while the income group just above the EITC eligibility cutoff ($42,000 to $54,000) experiences null effects adding evidence that family dynamics are not a driving force of our estimates. There is an interesting negative effect on LFP for those with income between $12,000 and $30,000 that we attributed to substituting Food Stamps and TANF for workplace income when their children were eligible.

Appendix Table 2: Effect of EITC Qualifying Children for Males Stratified by Education

Education	# Eligible Children	LFP	EITC Receipt	EITC Amount
Full Sample	One Eligible	-0.004	0.002	-8.571
		(0.008)	(0.007)	(20.143)
	Two Eligible	-0.005	0.011	17.581
		(0.010)	(0.010)	(29.166)
	Unique N	2,395	2,244	2,244
	Total N	10,491	8,206	8,206
Less than High School	One Eligible	0.016	0.033	100.268
		(0.031)	(0.038)	(88.535)
	Two Eligible	0.004	0.080	246.241*
		(0.040)	(0.056)	(130.428)
	Unique N	292	257	257
	Total N	1,172	841	841
High School	One Eligible	-0.005	-0.009	-54.128
		(0.010)	(0.011)	(35.346)
	Two Eligible	-0.007	-0.011	-70.745
		(0.015)	(0.017)	(51.420)
	Unique N	985	899	899
	Total N	4,374	3,271	3,271
More than High School	One Eligible	-0.017	-0.001	-5.323
		(0.012)	(0.006)	(16.620)
	Two Eligible	-0.017	0.000	16.403
		(0.015)	(0.006)	(28.736)
	Unique N	1,117	1,068	1,068
	Total N	4,739	3,976	3,976

Data: NLSY 79 including years 1996 to 2010. Men with only two children are considered and are only included when both children are between age 7 and 25. Coefficients are from an individual level fixed effects model including indicators for number of children that qualify for the EITC. Results are stratified by education. Controls include year fixed effects and marital status. Cluster-robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 3: Effect of EITC Qualifying Children on Female LFP Restricting by Children's College Attendance and Residency

Marital Status	# Eligible Children	No College	Present in Home
Less than HS Full Sample	One Eligible	0.126***	0.084*
		(0.045)	(0.042)
	Two Eligible	0.154**	0.121**
		(0.063)	(0.059)
	Unique N	164	177
	Total N	622	675
Less than HS Unmarried	One Eligible	0.183**	0.153*
		(0.090)	(0.090)
	Two Eligible	0.282**	0.271**
		(0.125)	(0.110)
	Unique N	92	91
	Total N	283	273
Less than HS Married	One Eligible	0.081*	0.012
		(0.044)	(0.051)
	Two Eligible	0.065	-0.005
		(0.069)	(0.067)
	Unique N	107	122
	Total N	339	402

Data: NLSY 79 including years 1996 to 2010. Women with only two children are considered and are only included when both children are between age 7 and 25. Coefficients are from an individual level fixed effects model including indicators for number of children that qualify for the EITC. Results are stratified by whether either child attended college and whether both children were residents of the respondent's household for at least 80% of the time. Controls include year fixed effects and marital status. Cluster-robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1