

How Earned Income Tax Credit Affects Labor Supply: The Case of New Hampshire and Connecticut

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1 Introduction

The Earned Income Tax Credit (EITC) is a refundable credit that supports workers while potentially impacting labor supply by changing work incentives. This study will examine how state-level EITC influences the number of hours worked by employing a Difference-in-Differences (DiD) approach to compare a state that has implemented EITC with a state that has not.

We will use New Hampshire and Connecticut as case studies given their similarities in terms of population size, poverty rate, unemployment rate, and other labor force statistics. By comparing these two states, we will determine whether state-level EITC encourages workers to increase their hours worked or whether it leads to a reduction in labor force participation. Using DiD models and regression analysis, we will evaluate whether state-level EITC increases the number of hours worked by low-income workers. With the DiD approach, we will compare changes in labor supply and the number of hours worked between Connecticut (state with EITC) and New Hampshire (state without EITC) with 2011 being the time of divergence between both states. With the regression analysis, we will incorporate controls such as family structure to account for potential confounder variables.

Comparing the labor force statistics of Connecticut and New Hampshire before and after 2011 will provide a strong case of causality for the results we find. This is because the similarities between Connecticut and New Hampshire allow us to experimentally minimize or reduce bias and other effects. This, in turn, will allow us to directly attribute any change in the workforce from 2011 onward to the adoption of EITC by Connecticut.

2 Literature Review

Meyer (2002) provides insights into how the Earned Income Tax Credit (EITC) influences labor supply decisions, particularly among single mothers. Meyer (2002) finds that the EITC significantly increases labor force participation at the extensive margin, encouraging non-working individuals to enter the workforce by changing the budget constraint faced by single parents. However, contrary to standard labor supply models and EITC theory, he observes no reduction in hours worked even though most recipients are on the plateau of phase-out portions of the credit schedule. The findings of Meyer (2002) challenge traditional simulations of labor supply responses to EITC expansions and suggest that policymakers may overestimate concerns about work disincentives in the credit's phase-out region. Further, Meyer (2002) explains that EITC expansions and welfare reform had very large effects on the employment rates of single mothers. While the EITC increased financial incentives to enter the workforce, welfare reform reduced the possibility of relying solely on government assistance. This reinforced the extensive margin effects of the EITC as shown in the empirical findings. Meyer's study highlights the importance of extensive margin responses when evaluating the labor supply effects of EITC, by showing that labor supply

adjustments of single mothers occur at the extensive margin (participation).

Eissa and Hoynes (2006) provide an analysis of the impact of EITC expansions on the labor supply of married couples between 1984 and 1996. While the EITC is widely credited with encouraging labor force participation among single mothers, the authors highlight its differential effects on married couples, focusing particularly on secondary earners. Using both a quasi-experimental approach and instrumental variables estimates of reduced form labor supply methods, Eissa and Hoynes (2006) find that while primary earners (typically husbands) experience little to no change in labor supply, secondary earners (typically wives) reduce their hours worked in response to the credit. Their estimates show that married women decrease their labor supply by 1-4% (11-81 hours), with the most significant reductions (3-17%) occurring among women in the phase-out region of the credit. These results imply that the EITC subsidizes married mothers to stay at home, highlighting the potential work disincentives of the EITC when applied to married couples. Eissa and Hoynes (2006) contribute to the broader literature on tax policy and labor supply by showing how income-based credits can generate heterogeneous responses depending on household composition.

Chetty et al. (2012) estimates the impact of the knowledge of EITC on earnings by using "bunching" (where individuals report earnings at the EITC refund-maximizing threshold) as a proxy for local knowledge about the tax credit. They find significant variation in this "bunching" across ZIP codes, suggesting differences in awareness of the EITC. In other words, in areas with high knowledge of EITC, individuals adjust their earnings to maximize EITC refunds. Conversely, in ZIP codes with low bunching scores, it can be assumed that the residents are not aware of the EITC refunds, allowing these ZIP codes to be perfect control groups. Thus, comparing the earnings between high-bunching areas and low-bunching areas, the authors were able to estimate the causal impact of EITC on earnings. They found that high knowledge of EITC leads to an increase in earnings, but high-bunching households within the "phase-in region" of the income scale (where earnings increase leads to higher refunds) experience a much higher increase in earnings than households in the "phase-out region." Namely, the wages of high-bunching households in the phase-in region increase by \$14.2 compared to low-bunching households in the phase-in region; additionally, high-bunching households in the phase-out region increase by only \$5.2 compared to low-bunching households in the phase-out region.

Neumark and Shirley (2020) utilizes the Panel Study of Income Dynamics (PSID) to analyze the labor supply that women provide when given significant economic support by an EITC. Specifically, Neumark and Shirley (2020) studies how the introduction of an EITC changes the labor supply of women from early adulthood (age 22) to "maturity" (defined as at age 40), measured in annual hours, according to their marital status and the number of children they have. Because of these two characteristics, the authors utilize a difference-in-difference approach to find the causal impact that the EITC has on labor supply. Neumark and Shirley (2020) find convincing evidence that the EITC does affect the labor supply of women; however, this effect depends

significantly on the woman’s marital status and the number of children she has. Neumark and Shirley (2020) find that for unmarried women with older children, an EITC increases their annual hours by a statistically significant degree - by about 66-77 hours. Conversely, for married women with young children, an EITC decreases the amount of annual hours they work by about 80 hours. For all other combinations of marital status, age of children, and number of children, there does not seem to be a statistically significant effect of EITC on annual hours.

Bellafore (2019) indicate that increases in EITC benefits lead to higher workforce participation, more hours worked, and greater income for recipients, especially those with young children. However, the effects of the EITC extend beyond paid employment, influencing time use and caregiving responsibilities. While single mothers work more due to EITC expansions, research suggests they do not significantly reduce time spent on activities that contribute to child development. At the same time, broader demographic shifts such as delayed childbirth and increased life expectancy mean that many low income workers, especially women, face “sandwiched” caregiving responsibilities, balancing childcare and eldercare. The relationship between caregiving and labor supply varies based on caregiving intensity, with high-intensity caregivers more likely to leave the workforce, while those with lower burdens adjust work hours instead. Some evidence suggests that rising earnings from EITC benefits lead families to substitute unpaid caregiving with paid alternatives, though high costs limit this option for many. Women, particularly unmarried mothers from lower socioeconomic backgrounds, are the primary providers of unpaid care, further complicating their economic mobility. Additionally, research has explored how the EITC affects multigenerational living arrangements, with findings suggesting that higher benefits reduce co-residence among younger unmarried mothers, though impacts on older recipients remain unclear. Overall, the EITC plays a key role in shaping employment, income, and caregiving dynamics, but further research is needed to fully understand its broader effects on family well-being and economic stability.

Bellafore (2019) explains that the EITC works in three stages: the phase-in, where earnings increase the credit amount; the plateau, where workers receive the maximum benefit; and the phaseout, where the credit gradually decreases, sometimes discouraging additional earnings. While the EITC is highly effective at lifting families out of poverty and boosting labor force participation, especially among single mothers, it has its challenges. Its complexity leads to administrative errors, and the way the credit phases out can create disincentives to work more or even discourage marriage. To improve the EITC, Bellafore suggests simplifying eligibility rules, reducing the marriage penalty, and expanding benefits for childless workers. These changes could enhance the credit’s impact, but policymakers must also consider the financial trade-offs. Overall, Bellafore highlights the EITC’s vital role in promoting economic mobility while emphasizing the need for thoughtful reforms to make it even more effective.

Meyer (2010) analyzes the effects of EITC through the lenses of whether it may have unintentional consequences relating to negative effects on hours of

work, marriage, and tax system compliance. First, Meyer lays the groundwork that the EITC “unequivocally makes work more attractive” (see Meyer, 2010, p. 163) for single parents, establishing that it will always be beneficial to choose work over unemployment. However, through a study established from 1986-2007, he finds that there is a negative income and substitution effect on hours of work for single parents (see Meyer, 2010, p. 168). The income effect often discourages work, and in couples, a study from Heim (2006) finds that there is often a reduction in labor participation by wives. Although Meyer explains there are caveats that could be related to the inability of workers to freely vary hours, measurement inaccuracy, and poor perception of marginal rates, he maintains that “the theoretical prediction is sufficiently clear that we think it is likely to happen.” (see Meyer, 2010, pp. 169). Ultimately, the EITC has sharply increased the fraction of single mothers who work, while the direct correlation is much less clear-cut in couples. However, the EITC has overall pushed more than 4 million people above the poverty line, with expansions including the American Recovery and Reinvestment Act (ARRA) of 2009 expected to push another additional half a million individuals above the line. This study provides an effective foundation for the expected outcomes that are derived from the EITC regarding hours worked.

Hoynes and Patel (2018) examine the impact of EITC on poverty and income of single mothers with children. The study discovers that across income levels, the income-increasing effects of EITC are concentrated between the group of individuals at the 75% to 150% of income-to-poverty, with little effect at the lowest and higher income levels. Specifically, Hoynes and Patel discover their results are specifically concentrated on single mothers with less than a college degree. Among single parents, the EITC leads to an increase in the extensive margin of labor supply, in which employment for single parent families is substantially increased. Previous studies by Meyer and Rosenbaum (2001) find that the EITC raised labor force participation by 7.2% points for the single mother demographic between 1984 and 1996. Eligibility rates for EITC vary across degrees of education — amongst single women with a high-school degree, 71% are eligible, compared to 60% with less than a high-school degree, 68% with some college degree, and only 47% for those with a college degree. Ultimately, the EITC is an efficient US safety net that has reliably raised family income and moved families out of income — specifically, in the scope of this paper, on single family women with children.

Bastian and Michelmore (2018) investigate the long-term impact of the EITC on children’s education and employment outcomes, leveraging four decades of variation in both federal and state EITC policies. Their study finds that exposure to EITC expansions during adolescence plays a crucial role in shaping future economic mobility. Specifically, they report that “a \$1,000 increase in EITC exposure between ages 13 and 18 leads to a 1.3% increase in high school graduation, a 4.2% increase in college graduation, and a 1.0% increase in employment in adulthood” (p. 1130). Additionally, they find that this increase in EITC exposure translates into a 2.2% rise in earnings later in life. While their study primarily focuses on educational and employment outcomes, their find-

ings suggest that EITC expansions significantly alter household labor dynamics. Notably, their results indicate that the EITC increases household earnings, in part, by influencing parental labor supply. Bastian and Micheltore (2018) note that “the EITC has consistently been shown to increase the labor supply of single mothers” (see Bastian and Micheltore, 2018, p. 1128), particularly by incentivizing work through its phase-in structure. Overall, the research on EITC on children’s education and employment outcomes sheds light on the long-term impact of EITC on the future aggregate labor supply market.

Schanzenbach and Strain (2020) provide a comprehensive analysis of the long-term employment effects of the EITC, studying all federal EITC expansions since the program’s inception in 1975. They found “robust evidence that EITC expansions increase the extensive margin of labor supply” (p. 2), meaning that the policy successfully encourages non-workers to enter the labor force. Their research utilizes difference-in-differences models and event-study methods to isolate the impact of the effects of five major EITC expansions. A key finding is that a \$1,000 increase in the maximum EITC benefit is associated with a 3.0 to 3.3 percentage point increase in employment among unmarried mothers with low education levels (see Schanzenbach and Strain, 2020, p. 22). Their study also highlights that “the EITC is a policy that operates on an annual frequency,” making it well-suited for evaluating long-term labor supply trends (see Schanzenbach and Strain, 2020, p. 6). Furthermore, they show that both federal and state-level EITC expansions have a positive impact, estimating a 2.6 to 2.9 percentage point increase in employment when considering both levels of policy intervention (see Schanzenbach and Strain, 2020, p. 23). Schanzenbach and Strain (2020) findings can be further built and expanded upon by analyzing how state-level EITC programs influence the number of hours worked by families.

Eissa and Liebman (1996) examine the effects of the EITC on labor supply, focusing specifically on single mothers as a key demographic. The authors analyze how EITC expansions affect both labor force participation (extensive margin) and hours worked (intensive margin). Their findings indicate that EITC significantly increases labor force participation, as non-working single mothers are incentivized to enter the workforce. However, they find little evidence that EITC increases hours worked among those who are already employed, suggesting that while the program encourages employment, it does not necessarily lead to longer work hours. The study’s results highlight that EITC’s primary impact is on workforce entry rather than on adjustments in hours worked, which raises important policy questions about whether EITC acts as a work subsidy or simply a wage supplement. This study serves as an important foundation for evaluating EITC’s impact on labor supply, especially for low-income households, and directly relates to our research question on how state-level EITC implementation affects hours worked.

Dahl and Lochner (2017) investigate how EITC-induced changes in family income impact household decision-making, particularly in terms of parental labor supply and child outcomes. Using a quasi-experimental design that leverages tax policy changes over time, the study finds that increases in EITC benefits

lead to labor redistribution within households. Specifically, when families receive higher EITC benefits, one parent often increases their labor supply while the other reduces their work hours, creating a shift in total household work dynamics. This suggests that studies analyzing only individual labor responses to EITC may overlook intra-household adjustments, where total family work hours may not increase uniformly across all members. The study further finds that EITC exposure is associated with long-term economic benefits, as children in families that receive higher EITC benefits tend to have better educational and employment outcomes later in life. These findings are significant for our research because they suggest that state-level EITC policies may not only influence individual hours worked but also affect broader household labor supply decisions, an aspect that should be considered in our analysis of Connecticut and New Hampshire.

3 Data

This paper uses the Current Population Survey Merged Outgoing Rotation Group (CPS MORG) for the years 2003 to 2023 and was obtained through the NBER website. The CPS MORG is survey data collected from 50,000 households that includes detailed information on variables like earnings, hours worked, occupation, and union membership for individuals.¹

Wages are in 2023 dollars and Consumer Price Indexes were obtained from the Federal Reserve Bank of Minneapolis. The sample includes individuals ages 18 to 64 and excludes those who are self-employed.²

¹Cahn (2022)

²Cahn (2022)

Table 1: Summary Statistics for Connecticut Before and After 2011

Variable	Before 2011			After 2011		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max
Wage	5.03 (5.32)	0	12.50	5.68 (5.80)	0	15.61
Age	36.83 (13.59)	18	64	37.59 (14.03)	18	99
Female	0.54 (0.50)	0	1	0.56 (0.50)	0	1
Education	13.12 (2.68)	0	17.92	13.39 (2.57)	0	18
Experience	17.59 (13.27)	0	48	18.13 (13.78)	0	48
Non-White	0.18 (0.38)	0	1	0.21 (0.41)	0	1

Note: Table 1 presents summary statistics for individuals in Connecticut before and after 2011, limited to those in the bottom quintile of the wage distribution. While the average wage increased slightly after 2011, other characteristics such as age, education, and experience remain mostly stable across the two periods. The relatively small sample size reflects the deliberate focus on lower-wage workers, which is central to the empirical analysis.

Table 2: Summary Statistics for New Hampshire Before and After 2011

Variable	Before 2011			After 2011		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max
Wage	5.41 (5.18)	0	12.50	6.80 (5.56)	0	15.61
Age	35.68 (13.88)	18	64	36.28 (14.76)	18	64
Female	0.58 (0.49)	0	1	0.57 (0.50)	0	1
Education	13.39 (2.26)	0.32	17.88	13.44 (2.18)	0.31	18
Experience	16.32 (13.41)	0	48	16.90 (14.41)	0	48
Non-White	0.04 (0.21)	0	1	0.06 (0.24)	0	1

Note: Table 2 reports summary statistics for individuals in New Hampshire before and after 2011, focusing on those in the bottom quintile of the wage distribution. The data show a modest increase in average wages following 2011, while demographic characteristics such as age, education, and experience remain largely consistent across the two periods. The relatively small sample size reflects the deliberate focus on lower-wage workers, which is central to the empirical analysis.

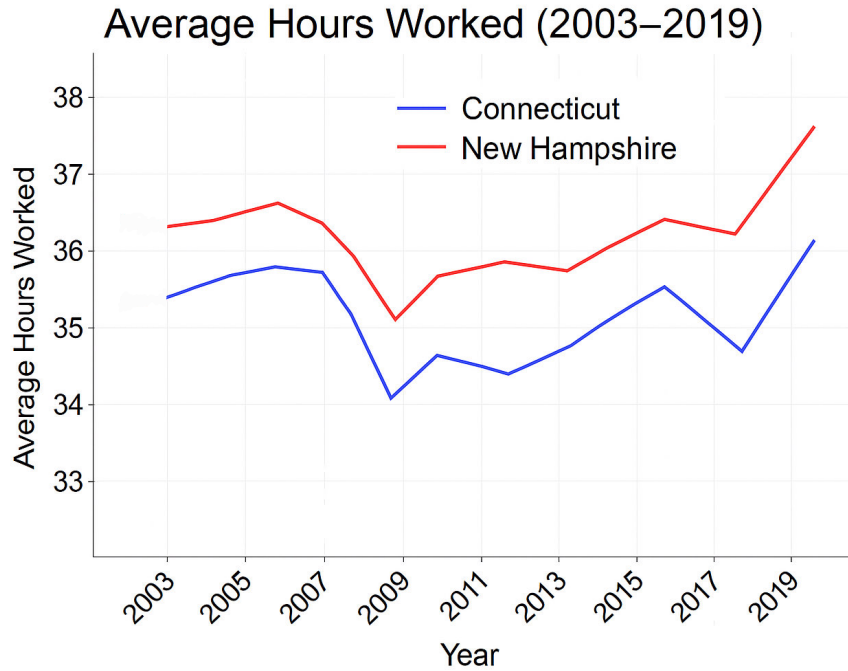


Figure 1: Connecticut and New Hampshire Hours Worked Growth

4 Methodology

To estimate the causal impact of the EITC on labor supply dynamics (hours worked by individuals), we implemented a Difference-in-Differences (DiD) regression, leveraging divergence in policy between Connecticut and New Hampshire. In 2011, Connecticut introduced a state-level EITC policy, while New Hampshire chose not to adopt. This difference allowed for a natural experiment to assess the policy’s effect on weekly hours worked, specifically targeting individuals in the bottom income quintile. These workers are likely the most affected by the EITC, and creates a scenario to measure any labor supply ef-

fects. The selection criteria for these two states depended on their demographic, population, and poverty level similarities, in order to minimize any bias that could confound our DiD analysis.

We utilized DiD methodology in order to compare the change in average hours worked in Connecticut before (pre-2011) and after policy intervention (post-2011) against the same change in New Hampshire, which is the control group for this policy. We estimated a linear regression model with robust standard errors where our outcome of interest is usual hours worked per week.

The DiD model is estimated using the following specification:

$$\begin{aligned} uhours_i = & \beta_0 + \beta_1 \cdot post_i + \beta_2 \cdot did_i + \beta_3 \cdot age_i + \beta_4 \cdot female_i + \beta_5 \cdot educ_i \\ & + \beta_6 \cdot exper_i + \beta_7 \cdot nonwhite_i + \varepsilon_i \end{aligned} \quad (1)$$

Here, $uhours_i$ is the usual number of hours worked per week by individual i . $post_i$ is a binary indicator equal to 1 if the observation falls in the post-treatment period, and 0 otherwise. did_i is a binary variable equal to 1 if the individual is in the treatment group (Connecticut) during the post-treatment period, and 0 otherwise. age_i , $female_i$, $educ_i$, $exper_i$, and $nonwhite_i$ are individual-level controls for age, gender, years of education, work experience, and race, respectively. Finally, ε_i is the error term.

The coefficient of interest is β_2 , which captures the average treatment effect of the EITC implementation on usual hours worked. In other words, it captures the difference in labor supply trends between Connecticut and New Hampshire after the policy change. An important assumption of this DiD model is that, in the absence of the policy implementation, labor supply trends in Connecticut and New Hampshire would have followed parallel trajectories.

5 Results

In our paper, How the Earned Income Tax Credit Affects Labor Supply: The Case of Connecticut and New Hampshire, we set out to better understand how changes in state-level EITC policies actually impact the behavior of low-income workers. Connecticut’s decision to expand its EITC in 2011 gave us a unique opportunity to compare outcomes with New Hampshire, a neighboring state with no EITC. We used CPS MORG data from 2003 to 2023 and focused our analysis on workers in the bottom quintile of the wage distribution. What stood out most in our findings was that after Connecticut’s policy change, labor force participation among less-educated single mothers a group the EITC is designed to support, actually declined. This result pointed us toward the complex reality of policy impacts: while the EITC is meant to encourage work, it can also create subtle disincentives when benefits start to phase out.

This project pushed us to think more critically about the way social programs are structured and the ways in which those structures shape real behavior. Going into the research, we anticipated clear evidence of increased labor supply

after all, that’s one of the core goal of the EITC. But as we dug deeper, we began to see how the credit’s design, especially the steep phase-out region, can lead some individuals to reduce their hours or exit the labor force altogether once their benefits begin to shrink. These unintended effects have big implications for policymakers. If the goal is to support low-income workers while promoting upward mobility, then tweaks to the EITC-like smoothing out the phaseout or extending the eligibility range might make the program more effective. For us, this research was not just about data and regression models; it was about unpacking how policies play out in the lives of real people.

Table 3: Effect of EITC on Usual Hours Worked

Variable	Coefficient	Std. Error
post	3.249**	(1.511)
did	-4.103**	(1.723)
age	-1.008**	(0.027)
female	1.916**	(0.676)
educ	-0.137	(0.096)
exper	0.941**	(0.017)
nonwhite	1.979**	(0.765)
Constant	37.578**	(1.992)
Observations	19,260	
R-squared	0.0305	
** p<0.05, * p<0.1		

The results of the regression reveal that the coefficient on the *did_i* interaction term is -4.10. With a standard error of 1.723, this yields a t-stat of 2.38, indicating statistical significance ($p = 0.017$). After adjusting for demographic controls, this demonstrates that low-income earners in Connecticut worked an average of 4.1 fewer hours per week, as compared to similar earners in New Hampshire. Qualitatively, this finding is consistent with the fact that rather than encouraging increased labor participation, the EITC offers an alternative for individuals to reduce working hours while supplementing work with income from the credit. Workers may be reallocating their time to education, health, or other personal priorities. Ultimately, the results of the DiD analysis suggest that there are strong statistical and economic implications of state-level EITC policies.

To validate the regression values, it was important for us to explore situations that could expose spurious results. In this case, it was necessary to introduce two similar states that did not decide to implement state-level EITC in their respective borders. Here, we decided to choose North and South Dakota — states that likely share similar fixed variables — as subjects for our regression. If there were still statistically significant results for these two states, this would

detriment the effects of our own study. We utilized the same regression, and tested this in Table 4.

Table 4: Effect of EITC on Usual Hours Worked in South and North Dakota

Variable	Coefficient	Std. Error
post	-2.383**	(0.351)
did	0.330	(0.499)
age	1.284**	(0.206)
female	-3.079**	(0.254)
educ	-0.665	(0.175)
exper	-1.172***	(0.207)
nonwhite	-1.162**	(0.364)
ND	-.225	(0.363)
Constant	-9.064**	(1.959)
Observations	16,709	
R-squared	0.364	
** p<0.05, * p<0.1		

As seen from Table 4, the *did* variable was 0.330, leaving it greater than a p-value of 0.05 when the t-stat is calculated ($t = 0.51$). Therefore, the values are not statistically significant and do not represent any direction of impact from state-implemented EITC. Although it is impossible to conclusively decide that there was no impact, as North and South Dakota are different states from New Hampshire and Connecticut, we are less worried that the results of our initial regression were spurious.

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