

# Impacts of Earned Income Tax Credit on Wages of Ineligible Workers

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Suggested Citation: Farmand, A. (2019)  
“Impacts of the Earned Income Tax Credit on  
Wages of Ineligible Workers.” Schwartz Center  
for Economic Policy Analysis and Department  
of Economics, The New School for Social  
Research, Working Paper Series 2019-4.

# Impacts of the Earned Income Tax Credit on Wages of Ineligible Workers

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Spring 2019

## 1 Motivation

This paper analyzes the impact of the Earned Income Tax Credit (EITC) payments on labour market behaviors, wages and the tax incidence. The variation in state EITC supplement in the U.S. provides the opportunity to examine the real redistributive impacts of this policy. More specifically, if EITC recipients compete in the same labor markets as others who are ineligible for the credit this can cause wage declines for workers who do not receive offsetting EITC payments. Using a fixed effect model that controls for inter-state heterogeneity this study concludes that based on industry from 1991-2017 older (over age 55) ineligible workers who resided in states with more generous EITC benefits saw significantly less wage growth compared to their counterparts that did not reside in states with generous EITC supplements.

## 2 Literature Review

Empirical studies of the EITC are primarily grouped into two main research areas. First, the impact of the policy on labor force participation rates and second, the effects of the EITC on wages. Studies on the first issue consistently found that the credit increases labor force participation of single mothers at the

extensive margin. Eissa and Liebman (1996) used the expansion in the EITC in 1986 to estimate the labor supply response of single women with children. They compared women without children and those with children before and after the policy change and found that labor force participation rates went up for women with children by about 2.8 percentage points compared with women without children, with higher participation rates for women with less than a high school education. They found no evidence that the EITC decreased hours of work for women already in the labor force. Additionally, Meyer and Rosenbaum (2001) find that a large share of the increase in employment of single mothers since the mid-1980s can be attributed to expansions of the EITC. They find these expansions explain more than half of the substantial increase in employment rates among single mothers over the 1984 to 1996 period; that is, the EITC expansions had a larger effect during this period than all other factors combined in encouraging more single mothers to go to work.

Leigh (2010) and Rothstein (2008) directly examine the effect of the EITC on wages. Leigh uses variation across states' generosity of EITC add-ons and finds a very strong negative effect of the credit on wages. He finds that a 10 percent increase in the generosity of the EITC is associated with a 5 percent fall in the wages of high school dropouts and a 2 percent fall in the wages of those with only a high school diploma, while having no effect on the wages of college graduates. Rothstein uses variation from the 1993 federal credit expansion along the wage distribution and finds that low-skill women's wages actually increased slightly even as their labor force participation increased. He claims that these wage increases were smaller than they would have been with a stable EITC. *Ceteris paribus*, low-skill single mothers keep only 70 cents of every dollar they receive through the EITC. Employers of low-skill labor capture 72 cents, 30 cents from single mothers plus 43 cents from ineligible (childless) workers whose after-tax

incomes fall when the EITC is expanded.

All of these studies have predominantly focused on behaviors and labor market outcomes of prime-aged workers (between 35-54). Most workers who do not belong to this age group do not receive EITC benefits. For instance only 3.2 percent of workers over age 55 received EITC benefits in 2017 compared to 11.4 percent of prime aged workers.

Therefore, unlike previous studies I am going to focus on a broader question. Does the fact that EITC recipients compete in the same labor markets as others who are ineligible for the credit, cause wage declines for workers who do not receive off setting EITC payments? I examine this hypothesis by utilizing the variations between the EITC generosity of each U.S state. My sample of ineligibles are people who did not receive the credit the previous year. Workers are grouped into older workers (over 55 years old) and younger workers (between 16 and 55 years old). Furthermore, workers are categorized in to groups that work for industries that have high or low EITC reciprocity. Table below gives information about the percentage of workers in each industries at the 2-digit level that received EITC benefits in 2017.

2 Digit Industry EITC Reciprocity (1990 Industry-Code Basis)

Industry	% Workers Receiving EITC
PERSONAL SERVICES	20
AGRICULTURE, FORESTRY, AND FISHERIES	17
RETAIL TRADE	14
BUSINESS AND REPAIR SERVICES	13
CONSTRUCTION	13
ENTERTAINMENT AND RECREATION SERVICES	10
PROFESSIONAL AND RELATED SERVICES	9
MANUFACTURING	9
TRANSPORTATION	8
WHOLESALE TRADE	8
FINANCE, INSURANCE, AND REAL ESTATE	6
PUBLIC ADMINISTRATION	5
MINING	5

### 3 Utilizing variation from state EITCs

The main strategy used in this paper to determine the impact of the EITC on wages is to exploit variation in state EITCs. Since state EITC rates act as a supplement to the federal program, they should magnify the overall impact of the EITC on wages. In effect, this analysis estimates the change in labor market conditions specifically hourly wages when a state has a more generous EITC supplement. Generous states are defined as states that offer a refundable add-on credit greater than 20 percent of the federal credit. In addition, some states have reduced their EITC credit over time. For instance in 2010 state of Michigan reduced its credit from 20 percent to 6 percent. These variations could also be used as a source of identification.

State	Percentage of Federal Credit	Eligibility Expansions Beyond the Federal Credit
California	85% of federal credit, up to 50% of the federal phase-in range	Workers without children in the home 18 and older
Connecticut	23%	
District of Columbia	40%/100%	Adults without dependent children with incomes up to twice the poverty line, and non-custodial parents
Maryland	28%	Workers without children in the home under age 24
Massachusetts	30%	Survivors of domestic abuse who would otherwise be ineligible
Minnesota	Avg. 34%	Workers without children in the home 21-24
New Jersey	40%	
New York	30%	
Vermont	36%	
Wisconsin	4% - one child 11% - two children 34% - three children No credit - childless workers	

Source: <https://www.cbpp.org/research/state-budget-and-tax/states-can-adopt-or-expand-earned-income-tax-credits-to-build-a>

### 4 Data

The data used in this paper come from the Current Population Survey (CPS), a nationally representative monthly survey of approximately 60,000 households. I use two types of the CPS data, the March CPS Files and the merged Outgoing Rotation Group (ORG) data. During each interview household members

are asked whether they worked last week and their hours worked, as well as many other questions. In the March interviews, individuals are asked to provide detailed retrospective information including hours, earnings, and weeks unemployed during the previous year.

## 5 Model

My main empirical approach exploits the discrepancy between different levels of state EITC benefits. A fixed effect model is proposed in order to remove the effect of time-invariant characteristics of each state so the net effect of the predictors on the hourly wages could be inferred. The assumption is that those time-invariant characteristics are unique to each state and should not be correlated with other states.

Then the equation for the fixed effects model becomes:

$$\ln(W) = \beta_0 + \beta_1 GENR + \beta_2 YEAR + \beta_3 YEARGENR + \beta_4 UNEMP + u \quad (1)$$

Where:

- $\ln(w)$ : Is the natural logarithm of real hourly wages (or annual wages)
- $GENR$ : Is an independent binary variable indicating whether a state is generous or not
- $YEAR$ : Is the normalized time from 1992 to 2018
- $YEARGENR$  is the interreaction term that represents the wage growth over time for generous and non-generous states
- $UNEMP$ : Is the mean number of weeks people in the sample were unemployed last year in each U.S. state( it is a control for the fluctuations in

the business cycle)

- u is the error term

## 6 Results

The table below reports the results of the fixed effect model for each age and industry group from 1991 to 2017. In industries with low EITC reciprocity ineligible older workers in non-generous states have seen an increase of almost 1 percent per year in their real hourly wages from 1991 to 2017 but during the same time period real hourly wages for older ineligible workers who resided in generous states only grew by 0.6 percent annually.

In industries with high EITC reciprocity ineligible older workers in non-generous states saw an increase of almost 1.3 percent per year in their real hourly wages from 1991 to 2017. But hourly wages for older ineligible workers who resided in generous states only grew by 0.4 percent annually.

The results are not conclusive for workers below age 55.

VARIABLES	Industries with Low Reciprocity				Industries with High Reciprocity			
	Eligible Younger Workers	Eligible Older Workers	Ineligible Younger Workers	Ineligible Older Workers	Eligible Younger Workers	Eligible Older Workers	Ineligible Younger Workers	Ineligible Older Workers
l.genr	0.0361 (0.0603)	-0.0100 (0.161)	0.118*** (0.0305)	0.0510 (0.0624)	-0.00954 (0.0586)	0.341** (0.166)	0.0935*** (0.0334)	0.0145 (0.0913)
year1	0.00199** (0.000824)	-0.000997 (0.00272)	0.0102*** (0.000444)	0.0104*** (0.000971)	0.00164** (0.000762)	0.00501* (0.00271)	0.00937*** (0.000454)	0.0138*** (0.00139)
l.genr#c.year1	-0.000636 (0.00149)	0.000804 (0.00510)	-4.07e-06 (0.000769)	-0.00362** (0.00168)	0.000966 (0.00135)	-0.00130 (0.00488)	-0.000689 (0.000812)	-0.00888*** (0.00248)
unemp	-0.000271 (0.00267)	0.00969 (0.00811)	-0.00898*** (0.00141)	-0.00944*** (0.00301)	0.00585** (0.00232)	0.00979 (0.00993)	0.000176 (0.00146)	0.000217 (0.00434)
Constant	2.423*** (0.0251)	2.423*** (0.0674)	2.862*** (0.0135)	3.170*** (0.0275)	2.254*** (0.0225)	2.183*** (0.0778)	2.473*** (0.0137)	2.826*** (0.0381)
Observations	40,340	4,574	197,450	50,862	46,260	4,004	180,077	23,899
R-squared	0.006	0.018	0.018	0.016	0.008	0.019	0.017	0.019

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Figure 1: Fixed Effect Model: Log Hourly Wages

## 7 Conclusion

In summary, it is important to note that by many standards the EITC has reached its redistributive goals. For many eligible workers the EITC has raised living standards by supplementing low wages and encouraging higher labor force participation among low-income women. But as researchers predicted, since EITC recipients compete in the same labor markets as others who are ineligible for the credit, wage declines extend to many workers who do not receive off setting EITC payments. Moreover, in the standard model, EITC-induced labor supply increases lead to lower wages, allowing employers to capture a portion of the intended transfer. These unintended transfers limit the EITC's capacity to redistribute income and it further weakens workers' ability to bargain for better wages and working conditions. One policy recommendation that could remedy this shortcomings is that employers whose workers are eligible for EITC should be subject to a higher minimum wage and other constraints on low wages.

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