Impact of Earned Income Tax Credit on Female Labor Force Participation Rate

Analysis of Rural vs. Urban Counties

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Abstract

Since 1975, the Earned Income Tax Credit (EITC) has been used as a mean of transferring income to the poor working class and their families. Within the past 40 years, the EITC has been expanded five times, paving the way for this program to be one of the largest anti-poverty tools currently in use. While research has been done on the impact that the EITC has on labor force participation rates, minimal work has been done on the labor force participation rates of women, and even less so on the impact of living in rural or urban counties. To address this issue, this study examined 3,138 counties (and county-equivalents) in the United States between the years of 2011 and 2014. It is found that while the EITC does contribute positively towards the labor force participation rate of single women with children, the results are not found to be statistically significant within rural counties. Similar results can be seen with married women who choose to leave the labor force due to the EITC that their partner receives; urban counties produce statistically significant results, while rural counties do not. These results have important policy implications, as upcoming tax reform discussions need to focus on incentives to work that better align with the characteristics of the labor force in rural counties.

Introduction

The Earned Income Tax Credit (EITC) was established in 1975 by the Ford Administration with the intent to offset the social security taxes paid by low income workers. Since its inception, the EITC has been expanded five times by five separate administrations, with the largest expansion taking place in 1986 by the Reagan Administration. President Reagan stated that the EITC was "the best anti-poverty, the best pro-family, the best job creation measure to come out of Congress [4]."

While many researchers have been working diligently to prove the validity of President Reagan's claim, most notably has been Nada Eissa who is currently an Associate Professor of Public Policy and Economics at Georgetown University. Her research has been fundamental in providing empirical evidence that the EITC increases the labor force participation rate of single women with children [3], while subsequently decreasing the labor force participation rate of married women [2]. This study will branch off of Eissa's work by comparing how the EITC affects the labor force participation rate of women in rural and urban counties (and county-equivalents). I use the 2013 Rural-Urban Continuum Codes (RUCC) provided by the United States Department of Agriculture (USDA) to determine if a county is considered rural or urban.

Emperical Model

Data was collected on 3,138 counties (and county-equivalents) from the Current Population Survey (CPS) and from the Internal Revenue Service's annual Statistics of Income (SOI) for the years 2011 to 2014. Tax related variables (including average EITC received) was collected from the SOI, while all other variables (poverty, education, race, and labor force participation rate) were collected from the CPS. Dummy variables regarding a county's type (urban or rural, and farming dependent) were collected from the USDA.

To address the inherent endogeneity issues, I have employed a two-stage least squares model. The instrumental variable I have chosen is the percentage of all women that have their own children, consistent with the previous literature [3]. Using this information, I estimated the following equation:

$$Y_i(rural_i = 1) = \beta_1 + \beta_2 X^* + \beta_3 Z + e \tag{1}$$

where $rural_i$ is a dummy equal to one if the county in question is a rural county; X^* is the prediction of X using the instrument in the first stage; Z is a vector of control variables, including average EITC received, farming dependence dummy, race, poverty, and education.

Results

Variables	**(1)** b/se	**(2)** b/se	**(3)** b/se	**(4)** b/se	**(5)** b/se
Average EITC (thousands of $)	27.431***	8.912	17.807*	10.397	11.674
	(9.04)	(5.78)	(8.87)	(7.11)	(7.13)
Farming Dependent (dummy)	-	6.007***	3.707***	3.607***	2.300***
		(0.82)	(0.73)	(0.65)	(0.69)
Non-White (%)	-	-	-0.219**	-0.118*	-0.063
			(0.07)	(0.06)	(0.04)
Poverty of Single Women w/ Children (%)	-	-	-	-0.314***	-0.248***
				(0.03)	(0.02)
Female Education under HS Graduate (%)	-	-	-	-	-0.688***
					(0.14)
Constant	19.711	57.456***	41.378*	71.425***	75.471***
	(19.92)	(12.97)	(18.68)	(13.62)	(12.47)

* p<0.05, ** p<0.01, *** p<0.001

Table 1: Single Women with Children Labor Force Participation Rate — **Rural Counties**

As seen in Table 1 and Table 2, single women with children who live in urban counties are impacted significantly more than demographically similar women in rural counties.

The first thing we see in these results is that many of the coefficients from Table 1 are not statistically significant. This means there is no evidence that the EITC increases (or decreases) the labor force participation rate (LFP) of single women with children who live in rural counties. This is a huge finding because prior research that has focused on the United States as a whole has found that the EITC does support the increase of the LFP rate of single women [3] [1]. While this finding does not diminish the importance of the EITC as an anti-poverty program, it does bring into question whether or not rural citizens are aware of benefits of filing for the EITC, or if they are aware that they must continue working to receive the credit during the following years tax season.

Variables	**(1)** b/se	**(2)** b/se	**(3)** b/se	**(4)** b/se	**(5)** b/se
Average EITC (thousands of $)	25.180***	25.783***	26.891***	24.713***	26.442***
	(1.34)	(1.35)	(1.33)	(1.12)	(1.69)
Farming Dependent (dummy)	-	-1.123***	-2.449***	-1.884***	-1.813***
		(0.34)	(0.33)	(0.31)	(0.31)
Non-White (%)	-	-	-0.223***	-0.180***	-0.185***
			(0.01)	(0.01)	(0.01)
Poverty of Single Women w/ Children (%)	-	-	-	-0.166***	-0.160***
				(0.01)	(0.01)
Female Education under HS Graduate (%)	-	-	-	-	-0.097**
					(0.04)
Constant	-31.676***	-32.966***	-31.605***	-20.160***	-22.910***
	(3.04)	(3.07)	(2.08)	(1.95)	(2.85)

* p<0.05, ** p<0.01, *** p<0.001

Table 2: Single Women with Children Labor Force Participation Rate — **Urban Counties**

However, when we look at the results from Table 2, we see that they are consistent with previous findings. When the average EITC received increases by one unit ($1,000), the LFP rate or single women with children increases by 26.442 percentage points. Especially considering this coefficient is highly significant at p<0.001, this provides great support that the EITC does positively impact the LFP of single women with children in urban counties.

I also ran a similar regression on the LFP rate of households with children where the husband works and the wife does not, and received similar results to those received in the regression on the LFP of single women with children. Looking at the results from Table 3, we can see that when a 2SLS regression (same treatment) is run on rural and urban counties, we obtain non-statically significant coefficients on the average EITC variable for rural counties. This means that there is no evidence supporting that the EITC increases (or decreases) the LFP of married women with children in rural counties. However, we do find that the urban results produce statistically significant results of the average EITC at p<0.001. This means that as the average EITC received goes up by one unit ($1,000), the percentage of households with children where the husband works and the wife does not work increase by 20.114 percentage points. This is consistent with previous findings [2].

Variables	**Rural** b/se	**Urban** b/se
Average EITC (thousands of $)	-1.523	20.114***
	(3.48)	(1.26)
Farming Dependent (dummy)	-2.190***	-2.037***
	(0.47)	(0.29)
Non-White (%)	-0.082***	-0.109***
	(0.02)	(0.01)
Poverty of Families w/ Children (%)	0.140***	-0.275***
	(0.04)	(0.02)
Female Education Under HS Graduate (%)	0.387***	0.106***
	(0.06)	(0.03)
Constant	21.401***	-14.311***
	(6.07)	(2.23)

* p<0.05, ** p<0.01, *** p<0.001

Table 3: Housholds with Children where Husband is in the Labor Force and Wife is not — **Rural & Urban Counties**

Policy Implications

Policy makers may want to consider this evidence during upcoming tax reform discussions to make sure that rural families are getting the anti-poverty support that they need. While it is shown that the EITC does not have a statistically significant impact on the labor force participation rate of rural women with children, it is unclear what this is caused by. Policy makers may want to reconsider anti-poverty efforts; possibly by implementing educational programs regarding taxes (and tax credits), or creating (expanding) job opportunity building zones (similar to Minnesota's JOBZ program). Policy makers also need to focus on creating incentives to work that better align with the characteristics of the labor force in rural counties.

Conclusion

- There is no evidence that the EITC increases (or decreases) the labor force participation rate of single women with children in **rural counties**.
- However, this research does support previous findings that the EITC does positively impact the labor force participation rate of single women with children in **urban counties**.
- The EITC is shown to increase the number of households with children where the husband participates in the labor force and the wife does not in **urban counties**. There is no statistically significant evidence for **rural counties**.
- Policy makers may want to reconsider anti-poverty efforts for **rural counties** during upcoming tax reform discussions.

References

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