Impact of Tax Policy on Labor Force Participation Rates

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While policymakers often have a social vision that aims to support the wellbeing of each citizen, resource constraints and moral hazard make necessary policies that take into account work incentives when providing assistance to low-income individuals. This concern centers on the relationship between tax policy and work incentives in labor market theory. When policymakers provide workers with a tax cut proportional to the amount of income that they earn, economists model this change as both an income and substitution effect. As income effect, a tax cut increases the worker's effective income and therefore leads the worker to purchase more leisure and spend less time working. As substitution effect, a tax cut that increases for each additional dollar of income earned is effectively a wage raise. This increases the price of leisure relative to time at work and therefore leads the worker to purchase less leisure and spend more time working. Thus, the impact of a tax cut on the number of work hours is a priori ambiguous because the income and substitution effect point in opposite directions. However, for an individual who does not work in the labor force, a tax cut has no income effect because that individual has no income, while the substitution effect still encourages that individual to purchase less leisure and spend more time working. Thus, labor market theory suggests that a tax cut proportional to earned income will increase labor force participation rates.

In the United States, the earned-income tax credit (EITC) represents the largest federal initiative in dollar amount targeted at providing assistance to low-income individuals. The dollar amount of the EITC caps at a flat region between 10,000 and 22,500 dollars of income each year, is directly proportional with income on a phase-in region below 10,000 dollars, and is inversely proportional with income on a phase-out region above 22,500 dollars. This suggests that the EITC is an appropriate variable for modeling our theoretical consideration of tax cuts proportional to earned income. Furthermore, the dollar amount of the EITC varies according to family structure and is highest for single parents with at least one child. In particular, the Center on Budget and Policy Priorities found that the dollar amount of the EITC is greatest for single women who are employed in the labor market. This suggests that we will best see the potential effects of the EITC on number of hours worked if we restrict our population to single mothers. For these reasons, we formulate our research question: How does receiving the EITC change the number of hours that a single mother will work?

To answer this research question, we used the first wave of the 2014 Survey of Income and Program Participation (SIPP) panel data release by the United States Census Bureau. The SIPP interviews households every four months and the first interview of each year is referred to as the first wave. The interview questionnaires cover a variety of topics including the

individual's employment history, tax filing, geographic region, personal identity, education, and family structure. We used the SIPP data as a cross-section in which the head of household was a single woman with children. Restricting the data to observations that satisfied the above parameters, the SIPP provided 15,454 relevant observations.

We specified the following multiple linear regression model of average number of hours worked per week on receiving the EITC:

$$twkhrsavg = \beta_0 + \beta_1 eitc + \beta_2 midwest + \beta_3 south + \beta_4 west + \beta_5 black + \beta_6 asian + \beta_7 otherrace + \beta_8 highschool + \beta_9 somecollege + \beta_{10} undergrad + \beta_{11} grad + \beta_{12} rfrelu18 + u$$

where *twkhrsavg* is the weekly average of the total number of hours worked in the first five weeks of 2014 and *eitc* is a dummy variable for whether the individual received the EITC. The dummy variables *midwest*, *south*, *west* with left-out group *north* represent controls for geographic region. Furthermore, we also used dummy variables *black*, *asian*, *otherrace* with left-out group *white* to control for individual race. Finally, we used dummy variables *highschool*, *somecollege*, *undergrad*, *grad* with left-out group *nohighschool* to control for education level. The variable *rfrelu18* represents the number of children under 18 in the household and ranges from zero to ten.

We found that the coefficient $\hat{\beta}_1 = -.0868$ with t-statistic $t_{\hat{\beta}_1} = -.41$. This implies that receiving the EITC is on average associated with a .0868 decrease in the total number of hours worked per week for a single mother. To make the causal interpretation that receiving the EITC on average leads to a .0868 decrease in the total number of hours worked for a single mother, we argue that the zero conditional mean assumption $E[u|x] = E[u] = 0$ holds. In particular, we believe that we have accounted for the most important factors in the error term u that are correlated with EITC and labor force participation. These controls were geographic region, individual race, level of education, and number of children. But this difference is not statistically significant because the magnitude of the t-statistic .41 on 15,454 observations is less than the critical value 1.960 of the two-tailed t-test on infinite observations at the .05 significance level. Thus, we conclude that we have not found evidence that receiving the EITC has an impact on the total number of hours worked per week for a single mother.

Confirming the labor market theory prediction that a tax cut proportional to earned income has an ambiguous effect on number of hours worked, we were unable to reject the null hypothesis that receiving the EITC does not have an impact on the total number of hours worked per week for a single mother. For policymakers, this suggests that the EITC is a sound policy for providing assistance to low-income individuals without reducing work incentives.