The Effectiveness of Employment-Based Tax Credits Under Labor Market Frictions: Evidence from the Child Tax Credit

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Motivation and Research Questions

**Motivation:**
- Over $119 billion in federal spending (2019 tax year) on the Child Tax Credit (CTC)
- Little is known on the effectiveness of employment-based tax credits on their impact on labor supply, let alone, when the individual faces labor market frictions.
- Unauthorized mothers are eligible for the CTC and deal with extreme labor market frictions.
- 2.3 million unauthorized workers claimed $4.2 billion in refundable CTC (2010).

**Research Question:**
Do unauthorized single mothers respond to the 2008-09 expansion of the CTC?

**Contribution:**
- First to study the response of unauthorized immigrants to tax incentives.
- First to study the effectiveness of employment-based tax credits under labor market frictions.

Data

**American Community Survey (ACS) 1-Year:**
- Nationally representative samples of 1% of households.
- Data on employment, earnings, education, and demographics.

**Sample:**
- Sample period: 2005-2012 survey years.
- Sample individuals: single unauthorized women aged 20-50.

Identifying Unauthorized Mothers in the ACS

\textsuperscript{1} Residual Method proposed by Borjas and Cassidy (2019)
\textsuperscript{2} Assign all immigrant women as having authorized status if:
- that person arrived before 1980;
- that person is a citizen;
- that person receives Social Security benefits, SSI, Medicaid, Medicare, or Military Insurance;
- that person is a veteran, or currently in the Armed Forces;
- that person works in the government sector;
- that person was born in Cuba;
- that person’s occupation requires some form of licensing (such as physicians, registered nurses, and lawyers);
- that person’s spouse or parent is a legal immigrant or citizen.

Effect of CTC on Unauthorized Mothers Over Time

![Figure 1. Federal Expenditure on the CTC and the EITC](image1)

What is the Child Tax Credit?

- Employment-based tax credit program implemented in tax year 1998
- Provides tax credit of up to $1,000 per child as of tax year 2017 ($2,000 beginning in 2018) for those who have a qualifying child
- Eligibility depends on earnings: "minimum earned income threshold"
- Partially refundable: Additional CTC (ACTC)
- Changes in the generosity and eligibility took place in 2001, 2003, 2008-09, 2018
- Temporary expansion of the CTC for the 2021 tax year: $3,000 - $3,600 per child and fully refundable

The 2008-09 Child Tax Credit Expansion

- In 2008 and 2009, the minimum threshold to claim the CTC was reduced
- Increased the number of low-income mothers eligible for the CTC

Model: Difference-in-Differences

\begin{equation}
Y_{kst} = \alpha + \beta_0 \text{kids}_{st} + \beta_1 \text{kids}_{st} \times \text{post}_{st} + \beta_2 \text{kids}_{st} + \beta_3 \text{post}_{st} + X_{st}'1 + Z_{st}'\phi + \text{kids}_{st} + Z_{st}'\theta + \lambda_s + \lambda_t + \epsilon_{kst}
\end{equation}

- \(Y_{kst}\): labor market outcomes of individual \(i\) in year \(t\)
- \(\text{kids}_{st}\): indicator variable if the single unauthorized woman has at least one qualifying child
- \(\text{post}_{st}\): indicator equal to 1 for years 2009 to 2012 and zero otherwise
- \(X_{st}\): demographics characteristics
- \(Z_{st}\): vector of immigration policies enacted at the state level as well as the unemployment rate
- \(\lambda_s\) and \(\lambda_t\): state and time fixed effects
- \(\beta_1\): average change in the outcome of interest of unauthorized mothers relative to the change experienced by their childless counterparts after the expansion of the CTC

Labor Market Response of the CTC by Unauthorized Mothers

<table>
<thead>
<tr>
<th></th>
<th>Working</th>
<th>Labor Force: Self-employed in School</th>
</tr>
</thead>
<tbody>
<tr>
<td>kids post</td>
<td>0.092*</td>
<td>0.007* (0.022)</td>
</tr>
<tr>
<td></td>
<td>0.016*</td>
<td>0.009* (0.011)</td>
</tr>
<tr>
<td>kids</td>
<td>-0.075***</td>
<td>-0.074*** (0.022)</td>
</tr>
<tr>
<td></td>
<td>0.024***</td>
<td>0.008*** (0.013)</td>
</tr>
<tr>
<td>Mean of (R^2)</td>
<td>0.55</td>
<td>0.63</td>
</tr>
<tr>
<td>ME</td>
<td>0.66</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Conclusion

\textsuperscript{1} Tax credits that incentivize work are effective in promoting employment and labor force participation.
\textsuperscript{2} These incentives work even when individual phases severe labor market frictions.
\textsuperscript{3} The 2008-09 expansion of the CTC increased the labor market supply of unauthorized single mothers relative to unauthorized single women.
\textsuperscript{4} Labor supply increase led to a large decrease in school attendance.
\textsuperscript{5} Suggestive evidence that unauthorized mothers use the informal market initially to compensate for labor market frictions in the formal labor market.