The Rise of the *In-Work* Safety Net: Implications for Families in Strong and Weak Labor Markets

Hilary Hoynes, UC Berkeley

IZA/IFAU Conference on Labor Market Policy Evaluation
October 9, 2014
Overview

• The U.S. social safety net for lower income families has shifted to one based on *in-work* assistance (welfare reform, EITC expansion)

• This has important implications for labor supply incentives and the distribution of income

• Here we review and extend the literature on the EITC and examine impacts on employment, the distribution of income, and family well being more generally

• Additionally, the weak labor market of the Great Recession and its aftermath present an opportunity to gauge the holes in the safety net moving forward
Composition of After-Tax and Transfer Income by Source
(by trough years of 1980 recession and Great Recession)

(b) Below 100% Poverty
(d) Below 200% Poverty

Source: Bitler, Hoynes and Kuka “Child Poverty and the Great Recession”
Roadmap

1. Short policy history in the U.S., the EITC
2. Incentive effects of the EITC
3. Effects of the EITC on employment and the distribution of income
4. Effects of the EITC on health and child well-being
5. Holes in the safety net
6. Conclusion
Roadmap

1. Short policy history in the U.S., the EITC
2. Incentive effects of the EITC
3. Effects of the EITC on employment and the distribution of income
4. Effects of the EITC on health and child well-being
5. Holes in the safety net
6. Conclusion
Evolution of Antipoverty programs in the U.S.

1930s
Social Security
AFDC
Unemployment Insurance

Great Society
1960s-1970s
Food Stamps
Medicare
Medicaid
Disability
Civil Rights Act

1990s
Welfare Reform
Rise of the EITC

2010
Obamacare
The decline of welfare

- Up until the early 1990s the U.S. relied primarily on traditional cash welfare, Aid to Families with Dependent Children
  - The generosity of the program varied across states, but was never funded at a very high level (maximum benefit for average family was never much higher than 40% of poverty)
  - AFDC consisted of a guaranteed income and a high benefit reduction rate (~100%). Eligibility was limited to single mothers.
  - This led to a (longstanding) concern that AFDC discourages work and marriage, and causes long term dependence.
- Federal welfare reform was passed in 1996 which consisted of: lifetime limits for receipt, work requirements, sanctions for noncompliance, and strengthening of work incentives (Temp. Assistance for Needy Families TANF)
Figure TANF 1. AFDC/TANF Families Receiving Income Assistance

Source: U.S. Department of Health and Human Services *Indicators of Welfare Dependence*. 2013
The rise of the EITC

• In-work, tax based assistance
• Refundable tax credit for low income families
• EITC has been expanded through tax acts in 1986, 1990, and 1993 (and smaller expansions in 2001, 2009)
• Must have earned income to be eligible
• Credit varies by number of children (small credit for childless), earnings (and AGI)
• About 60% of EITC filers are single with children, 20% married with children, and 20% childless [but only 2% of $ go to childless]
Source: U.S. Department of Health and Human Services *Indicators of Welfare Dependence*. 2013
How do the EITC and TANF fit into the broader U.S. safety net?

Per Capita Expenditures on the Social Safety Net (2012 dollars)
Children Kept Above Poverty (2012, In Millions)

Federal Spending on Selected Means-Tested Programs and Tax Credits, 2012

(Billions of dollars)

Health Care
$272 Billion

Medicaid
251
Medicare Part D Low-Income Subsidy
21

Cash Assistance
$148 Billion

Earned Income Tax Credit
54
Supplemental Security Income
50
Child Tax Credit
28
Temporary Assistance for Needy Families
17

Nutrition, Housing, and Education
$168 Billion

Supplemental Nutrition Assistance Program
80
Child Nutrition
18
Housing Assistance
36
Pell Grants
34

Source: Congressional Budget Office.
On net, the U.S. has experienced a tremendous change in the social safety net for low income families with children:

- Decline in the *out-of-work* safety net
- Rise of the *in-work* safety net
In-work benefits are prominent in other settings

- More than half of U.S. states offer “add on” EITCs
- A total of 17 OECD countries have in-work credits
  - Past 15 years has seen many countries adopting these policies
  - Particularly relevant in the European context is the interest in counteracting the work disincentives in social assistance and unemployment benefit programs
Roadmap

1. Short policy history in the U.S., the EITC
2. Incentive effects of the EITC
3. Effects of the EITC on employment and the distribution of income
4. Effects of the EITC on health and child well-being
5. Holes in the safety net
6. Conclusion
EITC Eligibility and Benefits

• EITC Eligibility
  – All family types are eligible
  – Primarily provides benefits for those with children
  – Must have earned income; based on family income

• EITC Benefits
  – Phase-in (constant subsidy rate on earnings)
  – Flat
  – Phase-out (constant benefit reduction rate)

• The phase-out rate is relatively low (21%) compared to social assistance benefit reduction rates
• The phase-in rate can get quite high (> 40%)
EITC Schedule 2014

- 3 or more Children
- 2 Children
- 1 Child
- No Children

Expanded flat and phase-out for married couples

Annual Earnings

EITC Credit (annual)
Labor supply incentives

- Due to the conditioning on earnings, employment increases with the EITC
- Earnings conditional on work is ambiguous but on net would be expected to decrease (negative in flat and phase-out, opposing income and substitution effects in phase-in)
  - The intensive margin labor supply incentives are muted due to the (relatively) low phase-out tax rate
- Labor supply predictions are more complicated for married couples; secondary earners may reduce labor supply due to new income transfer to primary earner (both income and substitution effects)
- After tax incomes can increase due to increases in earned income as well as the credit.
EITC in the broader OECD policy context

- The design of an in-work credit will reflect a country’s value on the tradeoffs between poverty alleviation and work incentives
- The US credit is one of several with large credits that are more targeted (high withdrawal, high credit) [IRL, UK, BEL, NZ]
- Low withdrawal, low credit [CAN, FR, ESP]
- Low withdrawal, higher credit [DEN, SWE, NLD]
The design of an in-work credit will reflect a country’s value on the tradeoffs between poverty alleviation and work incentives.

- **High withdrawal, high credit** [IRL, UK, BEL, NZ] → focus on employment
- **Low withdrawal, low credit** [CAN, FR, ESP] → focus on lowering marginal tax rates
- **Low withdrawal, higher credit** [DEN, SWE, NLD] → focus on poverty alleviation
Figure 2.7. Targeting of in-work credits in OECD countries (for single parent with two children), 2010


Source: OECD (2011), Taxation and Employment, OECD Tax Policy Studies, No. 21,
Figure 2.8. Maximum credit size of in-work tax credit schemes (for single parent with two children), 2010¹

Figure 2.9. Primary phase-out rates of in-work tax credit schemes (for single parent with two children), 2010¹

Source: OECD (2011), Taxation and Employment, OECD Tax Policy Studies, No. 21,
EITC, Employment, Income and Well-being

- EITC Expansion
- Employment [+]
  - Earnings
- Credit Received [+]
- Income [+]
  - Earnings [+]
  - Credit [+]
  - Welfare [−]
- Fertility Family structure
- Health and wellbeing ?
EITC, Employment, Income and Well-being

- EITC Expansion
- Employment [+] Earnings
- Credit Received [+]  
- Income [+ Earnings, [+ Credit, [-] Welfare]
- Fertility Family structure
- Health and wellbeing ?

SOURCE: UNIVERSITY OF CALIFORNIA

EITC, Employment, Income and Well-being

- EITC Expansion
- Employment [+] Earnings
- Credit Received [+]  
- Income [+ Earnings, [+ Credit, [-] Welfare]
- Fertility Family structure
- Health and wellbeing ?
Roadmap

1. Short policy history in the U.S., the EITC
2. Incentive effects of the EITC
3. Effects of the EITC on employment and the distribution of income
4. Effects of the EITC on health and child well-being
5. Holes in the safety net
6. Conclusion
Prior evidence on labor supply and distribution of income

• For single mothers, consistent evidence that an expansion in the EITC leads to increased employment (Eissa and Liebman QJE 1996, Meyer and Rosenbaum QJE 2001, Grogger RESTAT)
• For married couples, there is little effect on men but women reduce labor supply modestly (Eissa and Hoynes 2004)
• Little evidence of a reduction in earnings for those in the labor market (intensive margin response).
• Those with self-employment income bunch at the first EITC kink; unclear if this is a reporting response or intensive margin response in real economic activity (Saez 2010, Chetty and Saez 2013, Chetty, Friedman and Saez 2013)
• No prior research on the impact of the EITC on the distribution of income
New evidence on the effects of EITC  
(Hoynes and Patel 2014)

- We update the literature on labor supply, using event study models
- We extend the literature to examine effects on the distribution of income
- In our work we focus on single mothers because they account for the vast majority of the costs of the program.

<table>
<thead>
<tr>
<th></th>
<th>% Dist. of Recipients</th>
<th>% Dist. of Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single, with children</td>
<td>58.7%</td>
<td>74.1%</td>
</tr>
<tr>
<td>Married, with children</td>
<td>19.4%</td>
<td>23.2%</td>
</tr>
<tr>
<td>No Children</td>
<td>21.9%</td>
<td>2.7%</td>
</tr>
</tbody>
</table>
New evidence on the effects of EITC (cont)

• We present two related estimation strategies in the paper:
  – Difference-in-difference and event study of OBRA93, the largest EITC expansion (analyzes years 1991-1998)
  – Generalized DD leveraging expansions throughout the period 1984-2012 (uses simulated EITC to parameterize generosity)
  – For both approaches, identification comes from differences in the generosity of the credit across family size (number of children) and year (tax reform)
• Here I show the results for the OBRA93 expansion
• We use the Current Population Survey, and examine annual employment rates as well as after-tax and transfer-income.
  – Our main estimation sample includes single women, ages 24-48, with some college or less
Maximum benefits by number of children (2012 $)
Trends in Employment Rates for Single Women, by number of children

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Event Study Specification

\[ y_{it} = \alpha + \sum_{j=t^0}^{T} \beta_j [I(t = j) \times \text{treat}] + \eta_t + \gamma_c + \Phi X_{it} + \gamma Z_{st} + \varepsilon_{it}, \]

- Treat is 1+ children (compared to no children), 2+ and 1 separately (compared to no children), or 2+ compared to 1
- Demographic controls: age, education, race, ethnicity, divorced status
- Other controls: FE for children and year, AFDC/TANF benefit generosity and welfare reform policy variables (interacted with anykids), state-year unemployment rates (interacted with anykids)
- Clustered on state
Event Study Estimates of the Effects of OBRA1993

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Event Study Estimates of the Effects of OBRA1993

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Event Study Estimates of the Effects of OBRA1993

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Event Study Estimates of the Effects, full period

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Magnitudes for labor supply effects

• Our results show that a $1000 increase in (potential) Earned Income Tax Credit leads to a 7.5-8.5 percentage point increase in employment for single mothers
• Extensive margin elasticities range from 0.35-0.45
• These estimates are in line with the older literature and make a contribution by evaluating the validity of the design (e.g., event study models) and in showing that the effects operate through the 1990s and 2000s.
Other dimensions of labor supply

• This sort of quasi-experimental approach finds little effect on intensive margin of labor supply
  – This may reflect in part lack of knowledge about marginal incentives

• Chetty et al (2013) using the universe of U.S. tax filers find evidence of clustering at the first EITC kink
  – This occurs only for those with self employment income, which is self-reported and easy to manipulate (and may not reflect real economic activity)
  – They use extensive spatial variation in the clustering at kink as a proxy for local knowledge about marginal incentives and find that behavior adjusts with moves across areas
Panel A. All households with children in 2008

Source: Chetty et al, “Knowledge and Impacts of the EITC on Earnings” AER 2013.
Panel B. Wage earners with children in 2008

Source: Chetty et al, “Knowledge and Impacts of the EITC on Earnings” AER 2013.
Fraction of Tax Filers Who Report SE Income that Maximizes EITC Refund in 2008

Source: Chetty et al, “Knowledge and Impacts of the EITC on Earnings” AER 2013.
Event Study of Sharp Bunching Around Moves

Effect of Moving to 10th Decile = 1.93 (0.15)

Effect of Moving to 1st Decile = -0.41 (0.13)

Source: Chetty et al, “Knowledge and Impacts of the EITC on Earnings” AER 2013.
Chetty et al on intensive margin

- They use a movers analysis and birth of a first child to identify intensive margin responses for wage earners
  - Elasticity 0.31 in phase-in and 0.14 in phase-out
Effects of the EITC on the distribution of income
(Hoynes and Patel 2014)

• We estimate similar event study and difference-in-difference models to estimate how the EITC affects after-tax and transfer income (ATTI)
• We are particularly interested where in the income distribution the credit has its effects
• We construct a series of dichotomous outcome variables, $= 1$ if $\text{ATTI} \geq x\%$ of the federal poverty threshold
Event Study Estimates of EITC on 100% poverty, OBRA93

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Event Study Estimates of EITC on 100% poverty, OBRA93

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Event Study Estimates of EITC on 100% poverty, OBRA93

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Magnitudes for 100% poverty effects

- The 1993 expansion led to a 7.9 percentage point increase in the share of single mother families with ATTI above poverty.
- Over the full period, a $1000 increase in (potential) Earned Income Tax Credit leads to a 8.1-8.6 percentage point increase in the share of single mother families with ATTI above poverty.
- We can extend this to look at other cuts of the distribution of income to poverty.
Difference-in-Difference Estimates of EITC on income to poverty, OBRA93

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Difference-in-Difference Estimates of EITC on income to poverty, OBRA93

The 1993 expansion led to a 7.9 percentage point increase in the share of single mother families with ATTI above 100% poverty

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
Effects of a $1000 increase in simulated EITC benefits on income to poverty (uses variation across number of children, 1984-1998)

Source: Hoynes and Patel “The Earned Income Tax Credit and the Distribution of Income”
### EITC claimants by bins of income to poverty threshold (IRS Admin Data)

<table>
<thead>
<tr>
<th></th>
<th>Less than .5 times FPT</th>
<th>Between .5 and 1 of FPT</th>
<th>Between 1 and 1.5 of FPT</th>
<th>Between 1.5 and 2 times FPT</th>
<th>More than 2 times FPT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Singles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With 1 child</td>
<td>0.12</td>
<td>0.40</td>
<td>0.29</td>
<td>0.15</td>
<td>0.04</td>
</tr>
<tr>
<td>With 2 or more children</td>
<td>0.10</td>
<td>0.24</td>
<td>0.43</td>
<td>0.19</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Married filing joint</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With 1 child</td>
<td>0.07</td>
<td>0.27</td>
<td>0.33</td>
<td>0.27</td>
<td>0.06</td>
</tr>
<tr>
<td>With 2 or more children</td>
<td>0.06</td>
<td>0.26</td>
<td>0.39</td>
<td>0.25</td>
<td>0.04</td>
</tr>
</tbody>
</table>
Roadmap

1. Short policy history in the U.S., the EITC
2. Incentive effects of the EITC
3. Effects of the EITC on employment and the distribution of income
4. Effects of the EITC on health and child well-being
5. Holes in the safety net
6. Conclusion
Effects of the EITC on other family outcomes

• We know that the EITC leads to increases in employment and net income
• Does this package of income and employment effects show benefits in other domains?
• A relatively recent literature seeks to quantify effects of safety net programs beyond labor supply and income
• In this setting (the EITC), it is difficult to identify the particular channel for the effects
• Yet quantifying these effects is important for estimating the full benefits of this program (and of redistribution more generally)
Recent studies and their effects

- EITC leads to an increase in test scores (Dahl and Lochner, 2012)
- Hoynes, Miller and Simon (2014) find that EITC expansions lead to reductions in low birth weight births (some evidence that this may operate through reductions in smoking and increases in prenatal care)
- Expansion of the EITC is associated with a reduction in risky biomarkers in mothers (Evans and Garthwaite 2011).
  - This suggests that increases in income can reduce cortisol.
  - Chronic elevations of cortisol can lead to dysfunction in metabolic and immune systems
Effect of OBRA93 on low birth weight
Single women with <=12 years of education

Source: Hoynes, Miller and Simon “Income, the Earned Income Tax Credit, and Infant Health”, forthcoming AEJ Policy
Magnitude of birth weight improvement lines up with predicted treatment

OUTCOME = Low birthweight, DD1

Source: Hoynes, Miller and Simon “Income, the Earned Income Tax Credit, and Infant Health”, forthcoming AEJ Policy
Roadmap

1. Short policy history in the U.S., the EITC
2. Incentive effects of the EITC
3. Effects of the EITC on employment and the distribution of income
4. Effects of the EITC on health and child well-being
5. Holes in the safety net
6. Conclusion
• The research summarized and presented here shows that the EITC leads to increases in employment and after tax and transfer income as well as improvements in health and cognitive outcomes.

• With the decline of *out-of-work* assistance (e.g., welfare reform) accompanying the increase in *in-work* assistance, are there holes in the safety net? The Great Recession provides an excellent setting for examining this issue.
Hole #1: Insurance against job loss
Features of a safety net

1. Increase income at the bottom of the distribution, reduce poverty

2. Provide protection in times of economic need: insurance, smooth income (and hence consumption)
   - For example a negative shock to family earnings is mitigated by social insurance (e.g. UI), public assistance (e.g. food stamps) and for higher income families the progressive tax system.
   - Kniesner and Ziliak (2002) refer to this as “explicit” (transfers) and “implicit” (taxes) income smoothing

• We know a lot about (1) but little about (2).
  - It seems clear that income insurance is not an explicit goal of the EITC
  - But in this new era of income redistribution (less welfare, more in-work tax credits) it is important to examine this issue
• We explore in recent work how the EITC responds to cycles (Bitler, Hoynes and Kuka “Do In-Work Tax Credits Serve as a Safety Net?”)

• We use administrative tax data and estimate state panel data models

• Our models leverage variation in the timing and severity of economic cycles across U.S. states

• Our main specification uses the state unemployment rate to capture the local labor market

• The main findings are:
  – For single parent families, the EITC has no statistical relationship to the cycle (point estimates suggest weakly pro-cyclical); provides no additional assistance in times of “need”
  – For married couples, the EITC has some countercyclical response, reflecting possibility that a earnings shock will move people in to eligibility range
One percentage point increase in UR →

- 6.1 percent increase in recipients/tax unit for married w/ children
- insignificant 1 percent decrease for single w/ children

[Dollars show similar pattern]
Tabulations of Tax Filers [1,$60,000] in 2006

(c) Single, One Child

(d) Married, One Child

(e) Single Two+ Children

(f) Married, Two+ Children

Notes:
- Share (E<0) = .024, Share (E>60K) = .092
- Share (E<0) = .021, Share (E>60K) = .533
- Share (E<0) = .011, Share (E>60K) = .552
Graphical version of main results
2000-2008 ΔUR against %ΔEITC caseload/pop

Figure 5: EITC Recipients and Unemployment Rates (2000-2008 Changes), By State

(a) All
(b) Childless
(c) Single with Children
(d) Married with Children
How does the cyclicality of EITC compare to other programs?

<table>
<thead>
<tr>
<th></th>
<th>(1) EITC All</th>
<th>(2) EITC Children</th>
<th>(3) Food Stamps</th>
<th>(4) UI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>0.163** (0.068)</td>
<td>0.108* (0.063)</td>
<td>0.285*** (0.061)</td>
<td>0.135*** (0.012)</td>
</tr>
<tr>
<td>Mean Y</td>
<td>0.072</td>
<td>0.058</td>
<td>0.034</td>
<td>0.009</td>
</tr>
<tr>
<td>Percent Impact</td>
<td><strong>2.2</strong></td>
<td><strong>1.8</strong></td>
<td><strong>8.4</strong></td>
<td><strong>14.5</strong></td>
</tr>
<tr>
<td>Observations</td>
<td>663</td>
<td>663</td>
<td>663</td>
<td>663</td>
</tr>
</tbody>
</table>

Much smaller response for the EITC compared to Food Stamps and UI.  

→ More explicit income smoothing through transfer system than implicit income smoothing through tax system.

All models use state-year data, 1996-2008, population denominators, weighted using population.
Hole #2: No safety net for extreme poverty
• The reform of welfare has led to a large reduction in the number of families receiving TANF (out-of-work assistance)

• In new work we explore how TANF has responded to the need in the Great Recession and how this compares to earlier cycles (Bitler and Hoynes, “The More Things Change, the More They Stay the Same? The Safety Net and Poverty in the Great Recession”)

• We also examine the implications for the cyclicality of extreme poverty (<50% poverty) [and 100% poverty, 200% poverty]

• The analysis uses administrative program data and the Current Population Survey to estimate state panel data models. Local labor markets are captured with the state unemployment rate

• We leverage variation in the timing and severity of economic cycles across U.S. states

• Main results:
  – TANF did not respond to need in the Great Recession
  – Extreme poverty increased by more than would have been expected from the historical relationship
• Graphical version of results for TANF: $\Delta UR$ against $\%\Delta$ TANF caseload/pop
• Little relationship between changes in state labor market conditions and TANF in GR

2007-2009

1979-1982
Effects of UR on Welfare and Extreme Poverty, Great Recession versus early 1980s Recession

<table>
<thead>
<tr>
<th></th>
<th>AFDC/TANF per capita</th>
<th>Extreme ATTI poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR x 1980s</td>
<td>0.086***</td>
<td>0.124***</td>
</tr>
<tr>
<td></td>
<td>(0.024)</td>
<td>(0.037)</td>
</tr>
<tr>
<td>UR x GR</td>
<td>0.003</td>
<td>0.208***</td>
</tr>
<tr>
<td></td>
<td>(0.031)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>% Impact, 1980s</td>
<td>7.2%</td>
<td>4.4%</td>
</tr>
<tr>
<td>% impact, GR</td>
<td>0.3%</td>
<td>7.4%</td>
</tr>
<tr>
<td>p-value, GR = 1980s</td>
<td>0.05</td>
<td>0.09</td>
</tr>
</tbody>
</table>


Note coefficient on “rest of period” omitted here.
Effects on extreme poverty of zeroing out main safety net programs, Great Recession versus early 1980s Recession

Conclusions

• The EITC is an important component of the tax-and transfer social safety net

• It has been very successful in increasing employment and reducing inequality (below two times the poverty line)

• Additionally, these gains translate into better health and cognitive outcomes, implying that benefits of safety net are broader than previously thought. Positive external benefits to taxpayers

• However, further protection is needed for those at the very bottom of the income distribution