Tax Policy and Inequality
Applications

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What is the EITC?

Life's a little easier with eITC
earned income tax credit
What is the EITC?

- Income tax policy aimed at low-income wage earners
- Subsidizes wages in order to: (1) redistribute income and (2) increase labor supply
- Single largest cash anti-poverty program
- Over an initial phase-in: the more you earn, the more you get
- Credit plateaus: credit remains constant as you earn more
- Over a phase-out range: the more you earn, the lower your credit
What is the EITC?

- For TY 2015: 26M households received the EITC
- EITC credits totalled $65.6B
- Average EITC amount was $2,482
- EITC participation rate is about 80% (TY 2013)
- 2017 Max Earnings: $15,010 (single + no kids) - $53,930 (married + 3 kids)
What are the effects of EITC?

- Labor supply incentives are ambiguous
  - Makes working more attractive, relative to not working
  - Could make increasing hours more attractive, or less

- Empirical Evidence (Nichols and Rothstein, 2016)
  - Influences people to work more
  - Some secondary earnings may scale back

- More subtle effect:
  - Could lower wages for non-EITC recipients
What are the effects of EITC?

- General evidence suggests EITC raises many out of poverty (Hoynes and Patel, 2017)
  - Official poverty measures may overstate poverty by 15-25% by not including EITC
- In general, positive effects on:
  - health, mental health
  - children’s health, educational outcomes
What are the effects of EITC?

- General evidence suggests EITC raises many out of poverty
  - Official poverty measures may overstate poverty by 15-25% by not including EITC

- In general, positive effects on:
  - health, mental health
  - children’s health, educational outcomes
Political Economy

- Rare transfer to low-income workers that has support across political spectrum
- Could be in part based on the notion that the working poor are more deserving than the non-working poor
  - Could be due to norms, or due to positive spillovers of working
  - Potentially ignore value of home production (e.g. parenting)
- Those who cannot work do not receive the EITC (no safety net)
- Some barriers to expansion based on stigma of government benefits and stereotypes of usage patterns
Figure 5. EITC Recipients as a Percentage of Total Returns by Zip Code, TY 2001
The Path Act included a delay in delivering the EITC, for fear of tax evasion

- One of the largest sources of incorrect claiming: dependents (20%)
- Commonly thought to be driven by misinformation, but anecdotes of optimal claiming exist

However, another 20% don’t claim the EITC even though they are eligible (Bhargava and Manolie, 2015)

Another clear source of incorrect claiming: self-employed
Overview: EITC

Compliance

Aggregate Earnings Distributions for EITC-Eligible Tax Filers

a) All Households with Children in 2008

Percent of Tax Filers

Total Earnings (Real 2010 $)

$0 $10K $20K $30K $40K

0% 1% 2% 3% 4% 5%

Two or More Children

One Child

One Child

Two or More Children
Take-Up (Kneebone (MPP '03) and Murray, 2017)
## Take-Up (Maggie Jones, 2014)

<table>
<thead>
<tr>
<th>Group</th>
<th>2005</th>
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<tbody>
<tr>
<td>Women</td>
<td>80%</td>
<td>82%</td>
</tr>
<tr>
<td>Men</td>
<td>72%</td>
<td>76%</td>
</tr>
<tr>
<td>White</td>
<td>77%</td>
<td>78%</td>
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<tr>
<td>Black</td>
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<td>82%</td>
</tr>
<tr>
<td>Other</td>
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<td>82%</td>
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<tr>
<td>Non-Hispic</td>
<td>76%</td>
<td>81%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>82%</td>
<td>72%</td>
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</table>
Outline

Overview: EITC

Refunds and Withholding

Advance EITC
Refunds and Withholding

Pop Quiz: Why Withholding?

Salute to WALT DISNEY for "THE NEW SPIRIT"

The Donald Duck U. S. Treasury Department picture, which every exhibitor in America will be proud to play, and which will help gross billions of dollars for Uncle Sam.

RKO RADIO PICTURES
California’s Withholding Increase

- On November 1, 2009, California increased wage withholdings by 10 percent
- There was no concurrent increase in actual tax liability
- This amounted to an interest free “payday loan” to the state government
- Many taxpayers did not know that they could opt out of the contract
The California example highlights 3 observations

1. Income tax withholdings are not very salient to a significant share of taxpayers
2. Lawmakers can use this fact to reach certain policy goals
3. The effect of these policies can vary dramatically depending on one’s awareness and knowledge of the withholding system
Refunds and Withholding

The U.S. Income Tax Withholding System

- Since 1943, income taxes have been "paid-as-you-earn"
  - Increased compliance
  - Reduce the "pain" of raising war time taxes
- Withholdings can be adjusted by the employee, using a W-4 form
- Overwithholding is not paid back interest, but underwithholding is charged a penalty
  - Withholding is a balancing act
Refunds and Withholding

Policy Implications

- Private Sector Responses
  - Raise prices
  - Subprime car loans
  - Tax preparation and financial products

- Nonprofit Response
  - Savings encouragement
  - Bundling of services
  - Free tax preparation

- Research Response
  - Data-rich environment
  - Large stake decisionmaking
  - Surveys, experiments, etc.
Empirical Facts about Withholding

▶ 73% of taxpayers received refunds in 2016, on average $2,857
▶ Overwithholding is a "safe" but costly bet
  ▶ Forgo interest or incur finance charges on debt
  ▶ Have less cash on hand for emergencies
▶ Possible explanations include risk aversion and forced savings
▶ Taxpayers do not frequently adjust their withholdings
  ▶ Policies such as the one in California are likely to "stick"
Distribution of Refunds
What’s Driving Withholding

- Most theories of withholding involve an active decision
- However, how active are tax payers with respect to withholdings?
- We can test for this by looking at shock to the incentive to overwithhold
  - Change in dependents
  - Change in exogenous policy
- Jones (2012), ”Inertia and Overwithholding: Explaining the Prevalence of Income Tax Refunds”
Withholding and Dependents

Adjusted Tax Liability

Loss of a Dependent

Gain of a Dependent

Liability

Year

Point Estimate

95% Confidence Interval
Refunds and Withholding

Withholding and Dependents

Adjusted Prepayments

Loss of a Dependent

Gain of a Dependent

Prepayments

Year

Adjusted Prepayments

Point Estimate

95% Confidence Interval

Jones

Tax Policy: Part 3
Refunds and Withholding

Withholding-Based Policies

- 1992 Presidential Executive Order reduced withholdings, with no change in tax liability
  - The hope was that this may spur consumption
  - Survey evidence suggests that this was partially true

- ARRA 2009: Making Work Pay Credit
  - Alternative to stimulus rebate checks
  - Hypothesis is that this less salient stimulus would be spent more than a one-time payment
  - Recent survey suggests that this may not have been the case, but is not conclusive
Disproportionate Burden

- The effects of withholdings policies will be largest for the groups that exhibit the most inertia
- Evidence suggest that lower income households are more inert
- Ironically, this is the group for whom it may be the most costly to overwithhold
Disproportionate Burden

EITC Level vs. Prepayments

EITC

Prepayments

Year

1980 1990 2000

1980 1990 2000

0 500 1000 1500 2000

0 500 1000 1500 2000

2 Kids 1 Kid No Kids Poor Ineligible

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Tax Policy: Part 3
Additional Explanations of Refunds

- **Forced Savings?**

- **Loss Aversion**
  - Rees-Jones (2017): Those with a balance due are more likely to engage in tax avoidance and evasion behavior
Outline

Overview: EITC

Refunds and Withholding

Advance EITC
Advance EITC

Advance Earned Income Tax Credit

- Receive a portion of the EITC early, with each pay check
- Up to 60% of the max for one child
- Remainder is paid with tax refund
- If ineligible ex post, must pay back
Reasons for Low Take-up

- Take-up rates 2-4%
- Possible reasons
  - Transaction costs, stigma, information, risk aversion, forced savings
IRS Experiment

- 6 million taxpayers in an RCT
- Treatment group twice as likely to use AEITC
  - Take-up from 0.5% to 1.3%
72.5% expected to receive a refund
44.5% use to pay off past bills
30% aware of the Advance EITC
90% still prefer a lumpy refund
Expect to use future refund to again pay off past bills?
Advance EITC Experiment 2006

- Large employer (80K employees, retail sector)
- Vary information and ease of enrollment
- Offer subset option to open 401(k) as well
Advance EITC Experiment 2006

Get Next Year’s REFUND In This Week’s PAYCHECK

What is the Advance EITC?
Boost your take home pay by as much as $30 each week by filing for the Advance EITC! This tax credit allows associates who are raising at least one child to get a part of their tax refund earlier, with each paycheck. You receive the rest when you file your tax return.

Things to Remember:
- If you become ineligible for the Advance EITC, you must hand in another W-5 form to stop the payments.
- You can only receive Advance EITC payments from one employer.
- If you are married, and your spouse is working, you both must hand in a W-5 form.
- If you receive the Advance EITC, you must file a tax return next year.
- You must renew the Advance EITC at the beginning of every year if you wish to continue the payments.
- Bottom line, be sure that you are eligible. You will have to pay the money back to the IRS if you incorrectly receive payments!

Advance EITC Checklist
- You expect to earn less than $32,000 this year or $34,000 if you are married filing jointly.
- You have at least one qualifying child (See attached W-5 form).
- You expect to qualify for the EITC (See attached W-5 form).

How do I sign up?
1. Verify your eligibility
2. Complete the attached W-5 form
3. Submit the W-5 form to your Operations Manager
You can sign up for the Advance EITC at anytime.

Get Next Year’s REFUND In This Week’s PAYCHECK & Start Saving For RETIREMENT

What is the Advance EITC?
Boost your take home pay by as much as $30 each week by filing for the Advance EITC! This tax credit allows associates who are raising at least one child to get a part of their tax refund earlier, with each paycheck. You receive the rest when you file your tax return.

PLUS: Put your Advance EITC payment into a 401(k) Savings Plan and start saving for retirement without lowering your paycheck!

Things to Remember:
- If you become ineligible for the Advance EITC, you must hand in another W-5 form to stop the payments.
- You can only receive Advance EITC payments from one employer.
- If you are married, and your spouse is working, you both must hand in a W-5 form.
- If you receive the Advance EITC, you must file a tax return next year.
- Once you have enrolled in the 401(k) Savings Plan, you remain in the program, while you wish to continue the Advance EITC at the beginning of every year.
- Bottom line, be sure that you are eligible. You will have to pay the money back to the IRS if you incorrectly receive payments!

Advance EITC Checklist
- You expect to earn less than $32,000 this year or $34,000 if you are married filing jointly.
- You have at least one qualifying child (See attached W-5 form).
- You expect to qualify for the EITC (See attached W-5 form).

401(k) Checklist
- You are at least 21 years old.
- You have worked at least 1,000 hours in a given year from the first day of your employment.

How do I sign up?
1. Verify your eligibility
2. Complete the attached W-5 and Easy Enrollment forms
3. Submit the forms to your Operations Manager
You can sign up for the Advance EITC at anytime.
Advance EITC Experiment 2006

Figure 2. Advance EITC Participation by Treatment Group
Advance EITC Experiment 2006
Advance EITC

CEP Periodic Payment Pilot 2014-2015

- CEP recruited CHA residents
- Offered a subset a periodic payment of EITC
- High reported value of periodic payment
- Issues with defaulting on the advance payment
Thank you for participating in the Chicago Refund Study. We will contact you for a follow up survey in May, September, and December of 2017. Please check back here for future updates.

You may email any questions to ChiRefund@chicago.edu.

This study is conducted by the University of Chicago, in collaboration with the Center for Economic Progress.
Preliminary Evidence

Preference - lump sum vs monthly

Baseline:
- Lump-sum: 96%
- Monthly: 4%

May wave:
- Lump-sum: 88%
- Monthly: 12%

September:
- Lump-sum: 76%
- Monthly: 24%
Preliminary Evidence

Preference - lump sum vs quarterly with framing

- Baseline: 75% (Lump-sum), 25% (Quarterly)
- May wave: 68% (Lump-sum), 32% (Quarterly)
- September: 67% (Lump-sum), 33% (Quarterly)
Other Proposals

- Wealth Tax (i.e. Piketty)
- Land Value Tax
- Open up to immigration
- Less IP protection
- Closing offshore tax loopholes
- Urban zoning reform
- Antitrust, both in product markets and labor markets
- Financial regulation
- Sovereign wealth funds
- Universal Basic Income (UBI)
Universal Basic Income

- Unconditional cash transfer to everyone in a geographic/political territory, on regular/long-term basis
- Renewed policy interest: Obama, Hillary Clinton, Benoit Hamon, experiments in Finland, Canada, and bill in Hawaii
- One concern of UBI: Labor Market Impact
  - Evidence that income transfers lead to labor supply reductions (income effect)
  - Macro impact of a UBI may be different
- Jones and Marinescu (2018): Evidence from Alaska Permanent Fund Dividend
  - Look at Alaska before and after PFD introduction
  - Compare to a "synthetic control," i.e. average of comparable states
Income Effects: Prior Literature

► Pure income effect of unconditional cash transfers: 10% increase in unearned income reduces earned income by about 1% (overview in Marinescu, 2017)
  ▶ Negative Income Tax Experiments in the US in the 1970s (e.g. Robins, 1985; Price and Song, 2016 for long-term effects)
  ▶ Lottery winners (Imbens et al., 2001; Cesarini et al., 2015)

► In many cases, no income effect on labor supply is detected:
  ▶ Most effects estimated from NIT insignificant, and overestimated due to income misreporting and selective attrition (Ashenfelter and Plant, 1990)
  ▶ Eastern Band of Cherokees (Akee et al., 2010)
  ▶ Experiments in developing countries (Banerjee et al., 2015; Haushofer & Shapiro, 2016)
Income Effects: Prior Literature

- Cash transfers are not universal within a territory: limited, if any, macro effects.
- Generally, cash transfers are temporary: e.g. NIT experiments lasted 3 to 5 years.
- Eastern Band of Cherokees natural experiment is a permanent cash flow, though only mid-term effects are known.
Research Questions

- What are the impacts of universal and permanent income transfers on labor market outcomes?
  - Employment rates (extensive margin)
  - Full-time versus part-time (intensive margin)
- Why do aggregate impacts differ from micro effects of cash transfers on labor supply?
- Use Alaska Permanent Fund Dividend to answer these questions
1970s: Alaska experienced large uptick in revenue from oil extraction on state-owned land

$900 million sale of an oil lease in 1969 was mostly spent down by the state in subsequent years

Alaska Permanent Fund created in 1976 to diversify income stream, constrain government spending, and share revenue with future generations

The Alaska personal income tax was also abolished in 1980

Dividend disbursement started June 14, 1982

Hsieh (2003) and Kueng (2015) have used the dividend payment to test permanent income hypothesis
Method: Synthetic Control

- Abadie, Diamond, & Hainmueller (2010)
- Panel of $S + 1$ states, Alaska is $s = 0$
- $T$ time periods, with $t = T_0$ last pre-treatment period
- Potential outcomes framework:

\[
y_{st}(0) = \delta_t + \theta_t Z_s + \lambda_t \mu_s + \epsilon_{st}
\]

\[
y_{st}(1) = \alpha_{st} + y_{st}(0)
\]
The treatment effect for Alaska ($s = 0$) in period $t$ is calculated as:

$$\hat{\alpha}_{0t} = y_{0t} - \sum_{s=1}^{S} w_s^* \cdot y_{st}$$

- Weights are constrained to add to 1
- Weights are chosen to minimize distance between Alaska and controls in pre-treatment characteristics and outcomes
- We match on average outcome, share of women, education, age, and industry mix
Method: Synthetic Control

- We report the average difference between the treatment unit and the synthetic controlover the post period:

\[
\hat{\alpha}_0^{SD} = \frac{1}{T - T_0} \sum_{t=T_0+1}^{T} \hat{\alpha}_{ot}
\]

- We use a permutation method to assess quantitative significance and construct confidence intervals.

- We focus on outcomes for which a reasonable pre-period fit (RMSE) is attainable.
Data

- Alaska only available as separate state in basic CPS since 1977
- IPUMS CPS 1977-2014 for employment to population, active labor force participation, and part-time work
- NBER CPS MORG 1979-2015 for hours worked last week among the employed
- Yearly data, July to June since first dividend payment was on June 14, 1982. E.g. 1979 is July 1979 to June 1980
- Data is collapsed by year and state, using weights
**Employment Results**

**Table:** State Weights for Synthetic Alaska: Employment

<table>
<thead>
<tr>
<th>State</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Utah</td>
<td>0.428</td>
</tr>
<tr>
<td>Wyoming</td>
<td>0.342</td>
</tr>
<tr>
<td>Washington</td>
<td>0.092</td>
</tr>
<tr>
<td>Nevada</td>
<td>0.079</td>
</tr>
<tr>
<td>Montana</td>
<td>0.034</td>
</tr>
<tr>
<td>Minnesota</td>
<td>0.025</td>
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Universal Basic Income: Jones and Marinescu (2018)
## Employment Results

### Table: Synthetic Control Estimates, Average Difference 1982-2014

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
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<tbody>
<tr>
<td></td>
<td>Employment Rate</td>
<td>Labor Force</td>
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<tr>
<td></td>
<td></td>
<td>Participation</td>
</tr>
<tr>
<td>$\hat{\alpha}_0$</td>
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<td>0.012</td>
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<tr>
<td>$p$-value</td>
<td>0.942</td>
<td>0.335</td>
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<td>95% CI</td>
<td>[-0.031, 0.032]</td>
<td>[-0.021, 0.042]</td>
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<tr>
<td>Number of placebos</td>
<td>1,836</td>
<td>1,836</td>
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<tr>
<td>Pre-Period RMSE</td>
<td>0.0053</td>
<td>0.0125</td>
</tr>
<tr>
<td>RMSE Percentile</td>
<td>0.095</td>
<td>0.568</td>
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### Table: State Weights for Synthetic Alaska: Part-Time Workers

<table>
<thead>
<tr>
<th>State</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Nevada</td>
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<td>Wyoming</td>
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<tr>
<td>Louisiana</td>
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<tr>
<td>Maryland</td>
<td>0.033</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>0.019</td>
</tr>
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</table>
Universal Basic Income: Jones and Marinescu (2018)

The chart illustrates the part-time rate from 1977 to 2014, comparing Alaska to a synthetic Alaska. The part-time rate fluctuates over the years, with notable peaks and troughs. The synthetic data line, indicated by a dashed line, closely mirrors the actual data from Alaska, suggesting a similar trend.
### Part-time Results

**Table:** Synthetic Control Estimates, Average Difference 1982-2014

<table>
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<tr>
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<td></td>
<td>Part-Time Rate</td>
<td>Hours Worked Last Week</td>
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<tr>
<td>$\hat{a}_0$</td>
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<td>-0.617</td>
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<tr>
<td><em>p</em>-value</td>
<td>0.025</td>
<td>0.156</td>
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<tr>
<td>95% CI</td>
<td>[0.004, 0.032]</td>
<td>[-1.577, 0.324]</td>
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<td>Number of placebos</td>
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<tr>
<td>Pre-Period RMSE</td>
<td>0.0027</td>
<td>0.3613</td>
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<tr>
<td>RMSE Percentile</td>
<td>0.105</td>
<td>0.279</td>
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## Tradeable vs. Non-tradeable Sectors

### Table: Synthetic Control Estimates, Average Difference 1982-2014, by tradability

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<td><strong>Tradable</strong></td>
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<td>Employment Rate</td>
<td>Part-Time Rate</td>
<td>Employment Rate</td>
<td>Part-Time Rate</td>
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<tr>
<td>$\hat{\alpha}_0$</td>
<td>-0.047</td>
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<tr>
<td>$p$-value</td>
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</tr>
<tr>
<td>95% CI</td>
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<td>[-0.007, 0.046]</td>
<td>[-0.016, 0.027]</td>
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<tr>
<td>Number of placebos</td>
<td>51</td>
<td>51</td>
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<tr>
<td>Pre-Period RMSE</td>
<td>0.0621</td>
<td>0.0109</td>
<td>0.0441</td>
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<tr>
<td>RMSE Percentile</td>
<td>1.000</td>
<td>0.804</td>
<td>1.000</td>
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