

The EITC and the Extensive Margin: A Reappraisal

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Outline

- 1 Introduction and summary
- 2 Institutional details
- 3 Previous literature
- 4 Data
- 5 Findings
- 6 Conclusion
- 7 Limitations and next steps

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Introduction

Research question

What are the effects of the Earned Income Tax Credit (EITC) on labor supply at the extensive margin?

- EITC: large U.S. program for redistributing income (details later)
- Consensus on labor supply effects on the extensive margin
 - ▶ Leads to bipartisan support of the EITC
- Particularly relevant in light of the recent transition from welfare to “workfare” in the U.S.
 - ▶ Supporting the working poor instead of the welfare poor

Kleven (2019): Approach

- Consensus in literature: EITC has sizable extensive margin impacts
 - ▶ Literature uses difference-in-difference designs with variation from presence or number of children
 - ▶ Focus on federal reforms in '80s and '90s
 - ▶ Focus on single women with and without children
- This paper uses the same data as previous studies but re-evaluates the EITC by:
 - ▶ Taking a long-run approach and analyzing all federal and state reforms since the EITC's inception in 1975
 - ▶ Using event studies for each individual reform and pooled
 - ▶ Looking at confounding factors

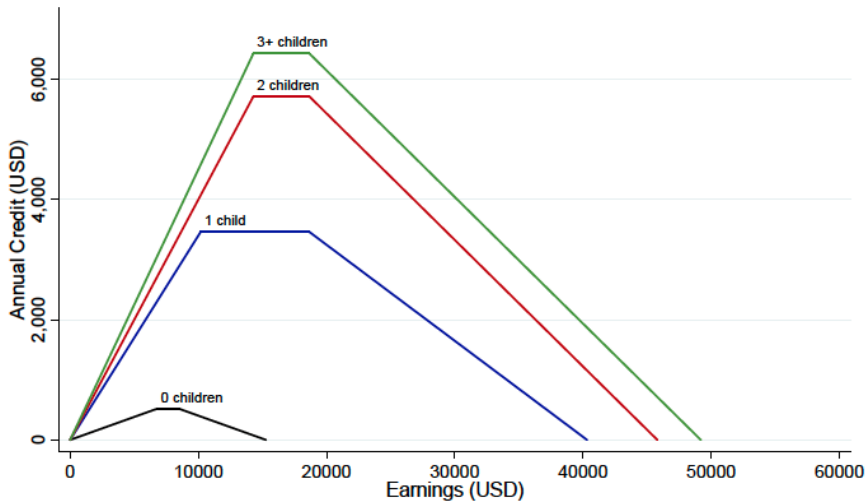
This paper challenges the existence of extensive margin labor supply effects of EITC

- Event studies: no effect on extensive margin except with 1993 reform
 - ▶ Explanation #1: With optimization frictions, 1993 reform will have a larger effect because it is larger
 - ▶ Explanation #2: Other confounders in mid-'90s
- Implied elasticity is implausibly high if effect solely due to EITC
- Evidence in favor of important confounders in '90s
 - ▶ Focus on welfare reforms and strong macroeconomic conditions
- Stacked event study with all reforms: precise zero

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EITC design



Federal EITC reforms

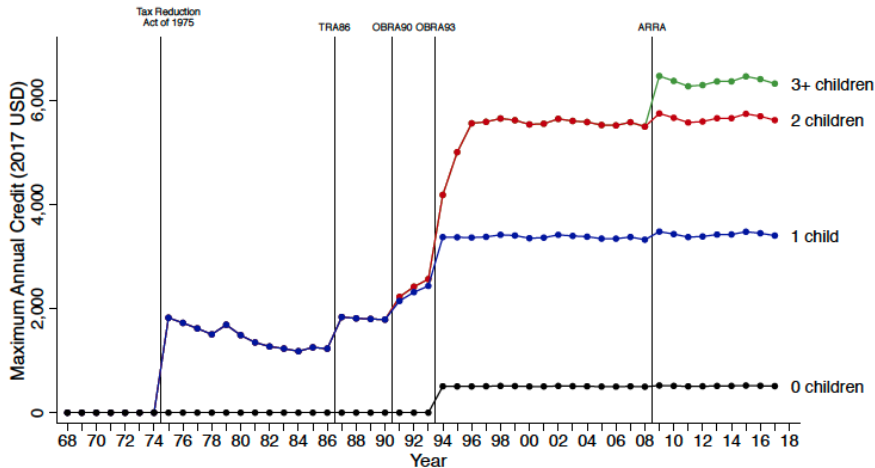


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Previous evidence: differences-in-differences

- Eissa and Liebman (1996): 1986 reform in CPS
 - ▶ 2.8pp increase in employment for single mothers
- Meyer and Rosenbaum (2001): 1986, 1990, and 1993 reforms in CPS
 - ▶ Tax changes account for 60% of increase in single mothers' employment
- Hotz et al. (2006): 1993 reform, administrative panel data
 - ▶ 3.4pp increase in employment for women with 2+ children
- Hoynes and Patel (2018): 1993 reform in CPS, focus on poverty
 - ▶ 6.1pp increase in employment for single mothers
- Bastian (2018): 1975 EITC introduction, also CPS data
 - ▶ 4.5pp increase in employment for single mothers
- Gelber and Mitchell (2011): confirm above findings using PSID data
- Some contrarians: Cancian and Levinson (2005) and Looney and Manoli (2016)

Previous evidence: other estimates

- Chetty et al. (2013): look at child births in years 2000-2005 (no reform-based design)
 - ▶ Compute the pre-post difference in employment at birth of first child
 - ▶ Compare this in places with high vs. low EITC knowledge
 - ★ Knowledge/informational frictions measured as excess bunching at the first kink by self-employed
 - ▶ Extensive margin elasticity estimate: 0.2
- Many randomized studies find extensive margin effects of work incentives
 - ▶ Focus on time limits, work requirements, job search and training, which do not feature in EITC
- Evidence from other countries for similar programs
 - ▶ Large response to Working Tax Credit (WTC) in UK (see Brewer and Hoynes, 2020)

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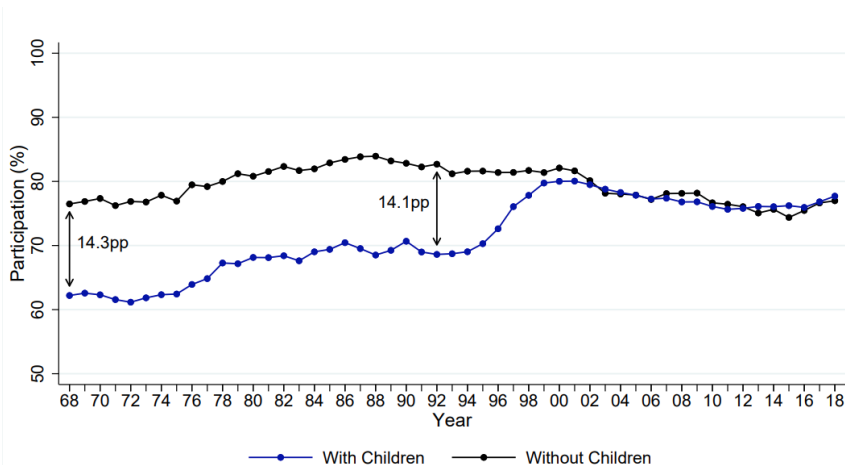
Data

- Linked CPS March (Annual Social and Economic Supplement) and basic monthly files
 - ▶ March files contain data on annual income in previous year
 - ▶ Literature generally uses the March files alone
- Can look at employment vs. participation, weekly vs. annually
 - ▶ Baseline analyses use weekly employment (less measurement error, larger sample, less non-response)
 - ▶ Employment more sensitive to business cycle than participation
- Focus on single women aged 20-50

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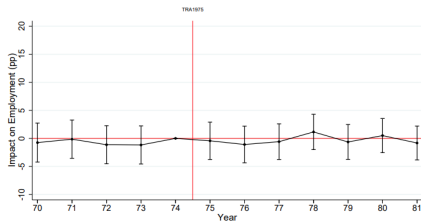
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Single women trends in participation converge in the '90s with a large increase for those with children

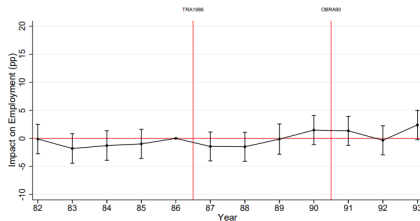


There is only one event study of federal reforms that shows a positive effect

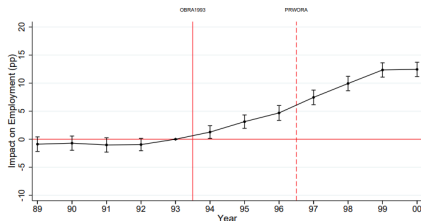
A: 1975 Reform, With vs Without Children



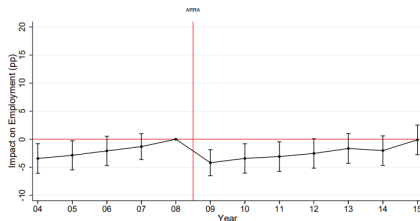
B: 1986 and 1990 Reforms, With vs Without Children



C: 1993 Reform, With vs Without Children



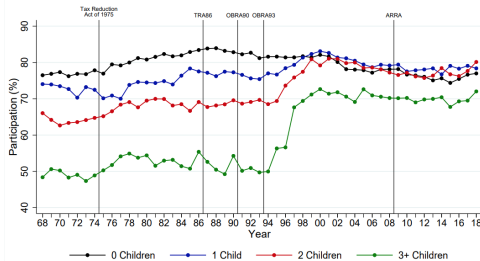
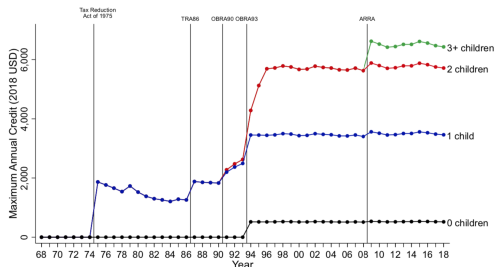
D: 2009 Reform, 3+ vs Without Children



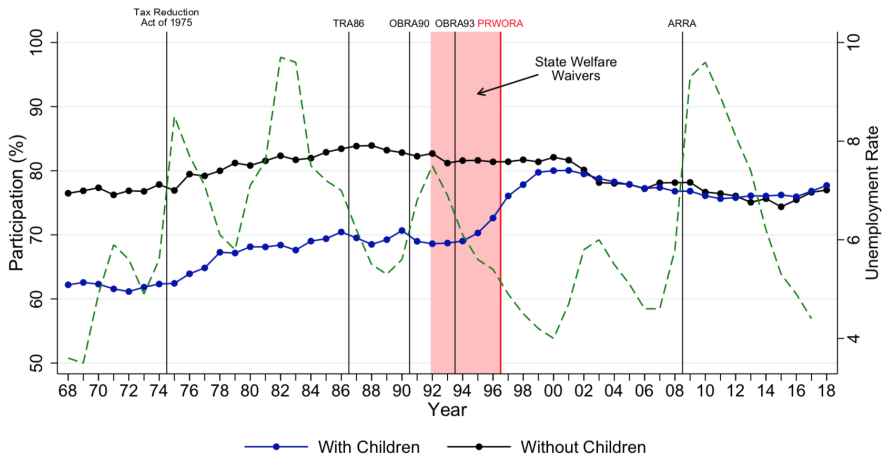
Attributing employment/participation effects to the EITC implies unreasonable elasticities

	Earnings and Tax Parameters			Employment Effects			Participation Effects		
	Earnings	τ	$\Delta(1 - \tau)$	P	ΔP	ϵ	P	ΔP	ϵ
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Any Children:	14,685	0.283	0.077	0.606	0.130	2.0	0.690	0.129	1.7
1 Child:	16,197	0.338	0.034	0.680	0.085	2.4	0.756	0.083	2.1
2 Children	14,703	0.280	0.105	0.610	0.138	1.6	0.697	0.137	1.4
3 Children:	12,110	0.192	0.124	0.474	0.196	2.7	0.570	0.202	2.3
4+ Children:	8,327	0.067	0.159	0.300	0.262	5.1	0.400	0.252	3.7

Optimization frictions? 1 child vs 2+ children



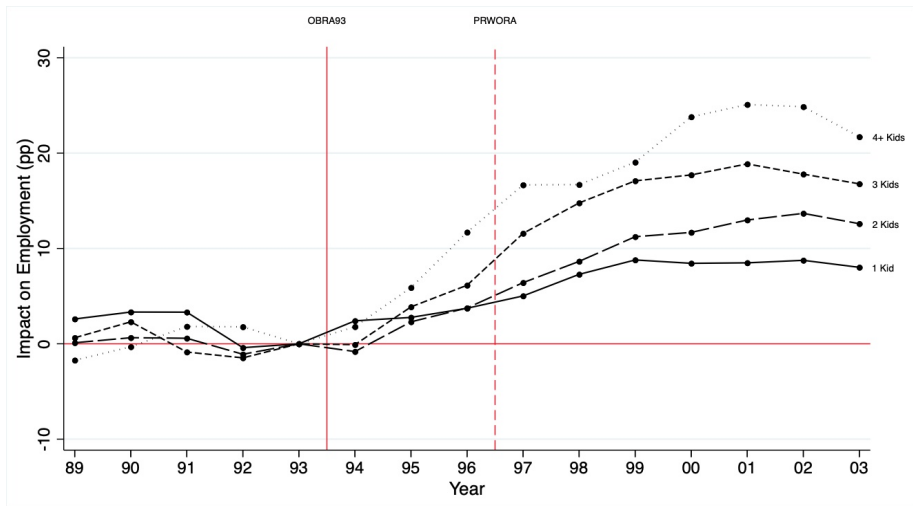
Confounders: welfare reform and strong macroeconomy



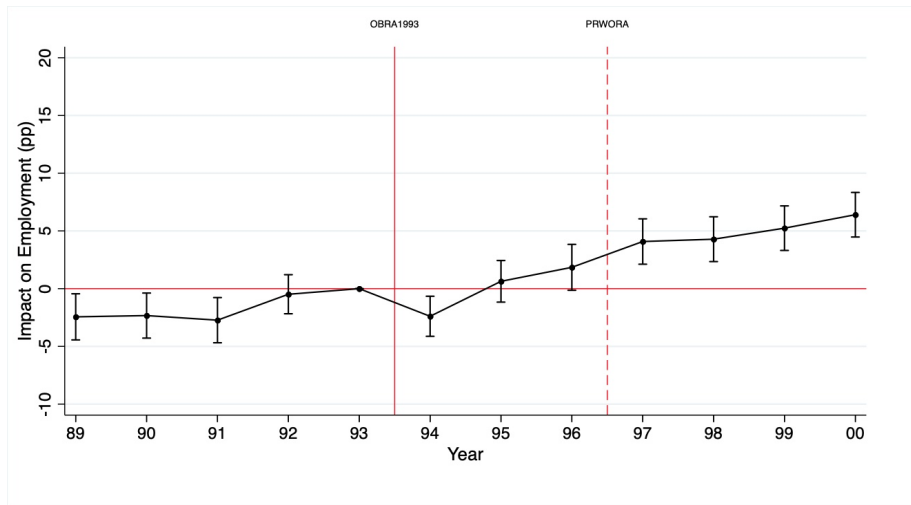
Background on welfare reform

- EITC reform of 1993 coincided with large welfare reform (PRWORA) of 1996
 - ▶ Replaced Aid to Families with Dependent Children (AFDC) with Temporary Assistance for Needy Families (TANF)
- Starts in late 1980s-early 1990s as *state waivers*
 - ▶ Permission from the federal government for state governments to experiment with the design of state welfare programs
 - ▶ Imposed restrictions on benefit duration, work requirement limits, benefit caps, participation in job training/search
- AFDC benefits monotonically increase in number of children
- Key insight: AFDC benefits did not change under reform, but imposed harsher constraints to obtaining those benefits
 - ▶ Implies that costs of welfare reform vary with family size, and thus predicted effect of welfare reform is increasing in family size

Fanning out by number of children inconsistent with EITC



Additional analyses: event study 1 vs 2+ children for 1993 reform

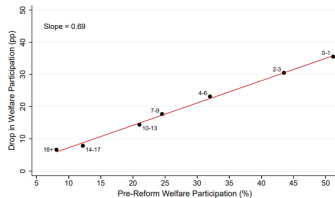


Proxy for predicted AFDC participation

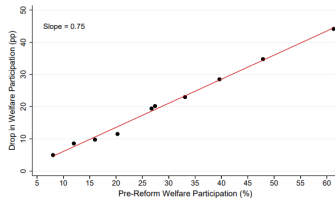
- Kleven and previous literature show that age of youngest child is highly correlated with AFDC receipt
 - ▶ Mechanically, so is number of children
- Use age of youngest child as proxy for welfare treatment
- Use predicted pre-reform AFDC probability as another proxy
 - ▶ Use demographics, age of youngest child, number of kids, and state as covariates

Employment effects monotonic in age of youngest child and predicted AFDC participation

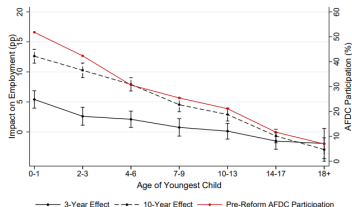
A: Pre-Reform AFDC Participation Predicts Drop



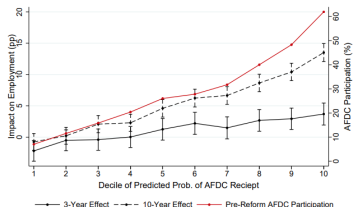
B: Pre-Reform AFDC Participation Predicts Drop



E: With Controls

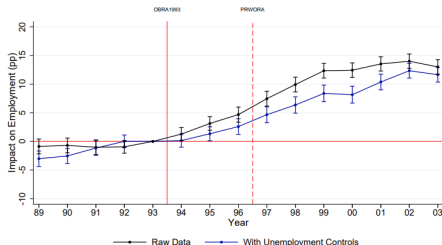


F: With Controls

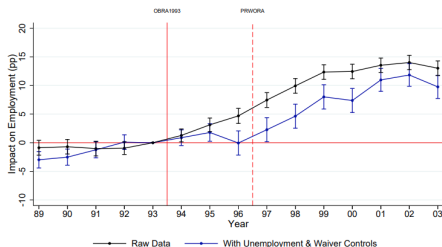


Controlling for unemployment and state waivers removes all effects in 1994-1996

A: Controlling for Unemployment



B: Controlling for Unemployment and Waivers



Stacked event study gives a precise zero

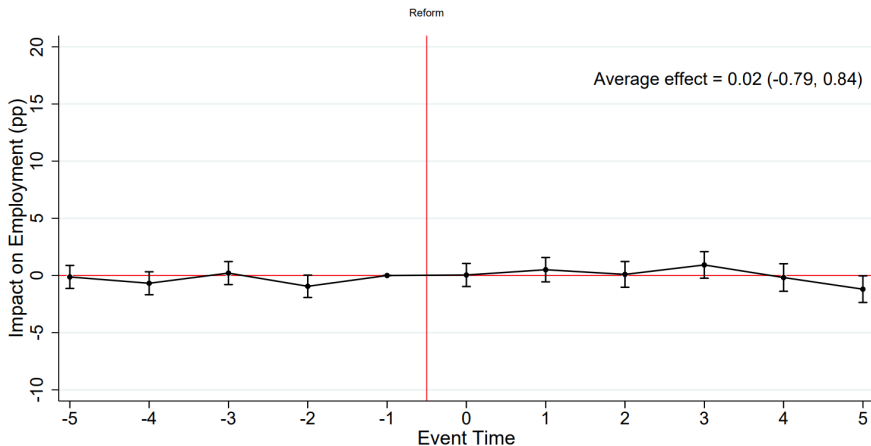


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Main takeaways

- A long-run view of all EITC reforms seems to imply that the extensive margin response estimated in this way has been zero (so far)
 - ▶ Reforms other than '93 show 0 effect
 - ▶ Contemporaneous booming macroeconomy and welfare reform ("perfect storm") make it difficult to assess the '93 reform, upon which the consensus in the literature is built
 - ▶ Possible confounders were already known, but this paper contributes to shift the burden of proof on those who claim large effects of the '93 reform
- Potential explanations offered by Kleven (2019) for zero effects:
 - ▶ Extensive margin labor supply elasticity to EITC is really zero
 - ▶ Informational frictions play a huge role: see Chetty et al. (2013)

Note on informational frictions

- Informational frictions (low awareness of EITC, its design, eligibility, and how to claim) abound in the EITC setting
- Generally thought that informational frictions only matter for intensive margin effects since only need to know about the program to get extensive margin effects
- Theory in Kleven and Kreiner (2006) suggests that informational frictions matter for both intensive and extensive margin
 - ▶ In a model where costs of working are fixed per child, EITC provides incentives for entering work at the revenue-maximizing point
 - ▶ This requires knowledge of *where* this point is, not just knowledge of the program
- Experimental evidence
 - ▶ Bhargava and Manoli (2015): RCT providing information about EITC and opportunity to re-file, shows effects on takeup

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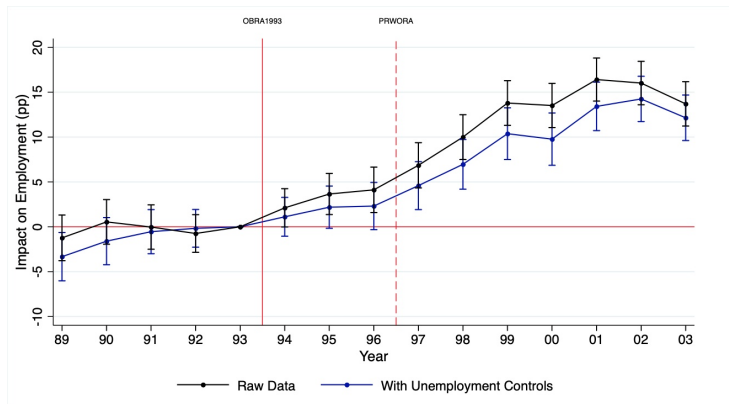
Limitations, part 1

- Data limitations:
 - ▶ Focus on weekly employment, but policy-relevant measure is annual employment (since EITC based on annual income)
 - ▶ Results similar across all participation/employment measures, but annual data too noisy in CPS
 - ▶ Measurement error and non-response since CPS is a survey
 - ▶ Not longitudinal – could be affected by compositional changes of the sample (e.g., who is a single mom)
 - ▶ Patterns of entry/exit – cannot distinguish between the two
 - ▶ All of these solved by panel data and/or administrative tax data
- Do not observe who actually claims
 - ▶ Range of income of single women in sample is largely in range of EITC-eligible income, but do not know who claimed
- Look at states with no state waivers or places where welfare reform happened before 1993

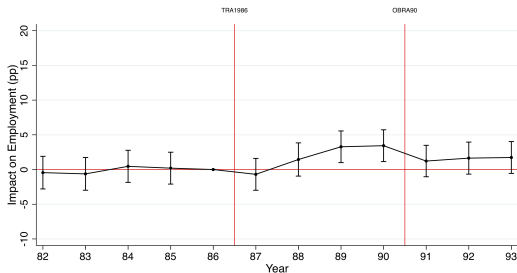
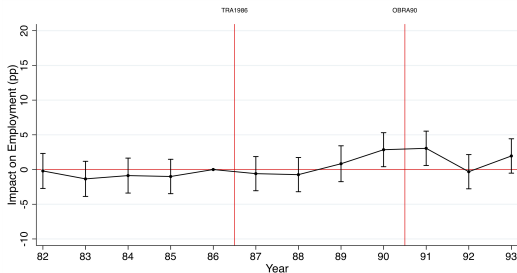
Limitations, part 2

- Elasticity calculation limitations:
 - ▶ Need to predict income for women who did not enter labor force in order to calculate change in effective tax rate – could be affected by unobservables
 - ▶ Inframarginal individuals included in calculation
- Any of these reforms, not just 1993 reform, could be affected by confounders
 - ▶ Business cycle or other government programs could have reduced EITC response in years other than 1993
 - ▶ For example, we see a negative EITC response in 2009
- What welfare reforms mattered most?
 - ▶ Would be interesting to know what type of “workfare” resulted in the largest responses and if consistent with experimental literature

Additional analyses: states without waivers



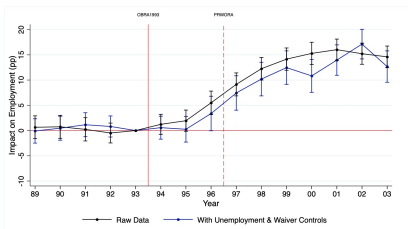
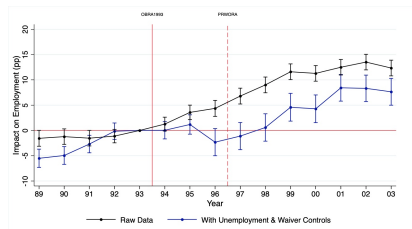
Reconciling these results with Eissa and Liebman (1996)



Reconciling these results with Chetty et al. (2013)

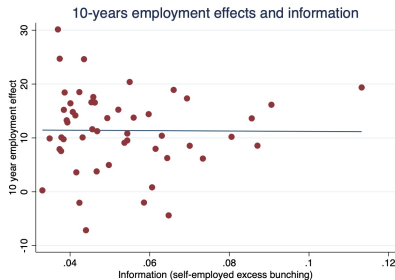
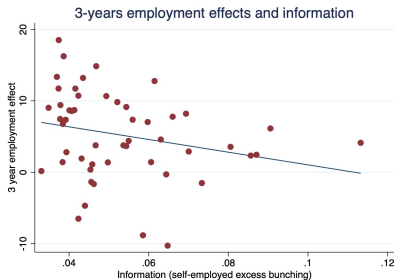
- Recall: Chetty et al. (2013) finds an extensive margin elasticity of 0.2, not using a reform-based diff-in-diff
- Chetty et al. (2013) conducted much later
 - ▶ Evidence that information on EITC spread over time, so informational frictions high in mid-1990s
- Extensive margin response attenuated due to low information in 1990s

Additional analyses: high vs. low information states



- In the baseline specification, the year 1995 in low information region is not statistically significant
- Pre-trends in high-information regions
- Not very informative results: probably picking up state-level variation not related to information

Additional analyses: state-level correlation



- Large variation in value of effects: state-level weights would be needed
- Information data used from 1996, need 1993 data
- If graph was reliable, data would suggest information does not matter so extensive margin response zero?