Designing Efficient Welfare Programs: Evidence from SNAP's BBCE Expansion

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Optimal Program Design

- Transfer programs often restrict eligibility to people with certain observable characteristics to target potentially needy people (Akerlof, 1978).

- Conflicting points of view on restrictions between theories and empirics:

  ➢ (Neoclassical) Theories suggest more restrictions target better (Kleven & Kopczuk, 2011; Lieber & Lockwood, 2019; Nichols & Zeckhauser, 1982).

  ➢ Empirical/Behavioral findings suggest higher friction for needier people to overcome the restrictions (Bertrand, Mullainathan, & Shafir, 2004; Currie & Gahvari, 2008; Deshpande & Li, 2019; Finkelstein & Notowidigdo, 2019; Selden, Banthin, & Cohen, 1998)

- Policy-makers are also concerned about the trade-off between administrative costs and fraud prevention, which are less studied in academics.

- Despite the vigorous debates, there are very few evaluations on the eligibility rules which are currently in force.

This Paper

- Studies a SNAP state option for eligibility expansion, the "Broad-Based Categorical Eligibility (BBCE)", which allows states to relax the income and asset requirements for all households.

- I leverage the state-year variation of BBCE adoptions from 1996 to 2007 with an event study specification.

Main Findings:

1. State administrative costs were significantly reduced by almost 20%. There is no evidence of increases in eligibility fraud.

2. Total eligible population only expanded by 2-3%.

3. Suggestive evidence on increased program take-up and earnings among always-eligible households.

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Contribution to Literature

1. **Literature on administrative burdens deterring program participation**
   - ➢ Public administration literature have documented the learning, compliance, and psychological burdens that individuals experience when interacting with government
     (Heinrich, Camacho, Henderson, Hernández, & Joshi, 2022; Herd & Moynihan, 2018; Moynihan, Herd, & Ribgy, 2016).

   - ➢ Causal evidence on burdens affecting participation:
     - ✳ Re-certification requirements cause eligible households to drop out (Cherlin, Bogen, Quane, & Burton, 2002; Gray, 2019; Homonoff & Somerville, 2021; Unrath, 2021; Wu & Meyer, 2023).

     - ✳ In-person interview requirements (Homonoff, Rino, & Somerville, 2022)

     - ✳ Information interventions alleviate unawareness/confusion/mis-perception on program rules (Bhargava & Manoli, 2015; Currie, 2006; Domurat, Menashe, & Yin, 2021; Ko & Moffitt, 2022; Stuber & Bradley, 2005).

$\rightarrow$ *This paper identifies the burdens from the most common income and asset restrictions encountered by all households.*

$\rightarrow$ *Also one of the first to consider burdens on state agencies.*

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Contribution to Literature

2. **Literature on BBCE evaluations:** studies evaluating BBCE on participation

(Anders & Rafkin, 2022; Dickert-Conlin, Fitzpatrick, Stacy, & Tiehen, 2021; Kabbani & Wilde, 2003; Ratcliffe, Mckernan, & Finegold, 2008).

> ➢ Generally find increases in participation by BBCE

> ➢ Look at total population or a very poor subset of population

   $\rightarrow$ *I study the SNAP-eligible population and can interpret the result as program take-up instead of number of caseloads.*

   $\rightarrow$ *I am among the first to distinguish the already versus newly eligible populations, and I can identify the mechanisms of the increase in take-up as a reduced administrative burden.*

> ➢ Consider state policies as quasi-random directly

   $\rightarrow$ *I am also one of the first to examine the exogeneity of BBCE adoptions carefully.*

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Contribution to Literature

3. **Literature on optimal program design:** mostly theoretical and structural
   ➢ Focused on minimizing behavioral distortions from high earnings individuals (shirking), therefore generally support imposing income/asset restrictions (Golosov & Tsyvinski, 2006; Wellschmied, 2021)

$\rightarrow$ *I provide empirical evidence on minimal distortions by showing a virtually fixed eligible population and increased earnings.*

$\rightarrow$ *I also show a significant decrease in administrative costs, which is rarely considered in theoretical settings.*

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Eligibility Requirements of SNAP

- By Federal law, a household can qualify for SNAP through two pathways:
    1. **Income and assets below thresholds:** Gross income $\leq$ 130% FPL and Net income $\leq$ 100% FPL and Countable assets $\leq$ \$2000

    2. **Categorical eligibility:** Eligible for *cash assistance* from other programs (Supplemental Security Income (SSI), General Assistance (GA), Temporary Assistance for Needy Families (TANF), and state maintenance-of-effort (MOE))
       $\rightarrow$ These programs cover very poor families who would pass the first pathway anyway.

- In 2000, USDA allowed states to expand categorical eligibility to households eligible for *non-cash benefits* funded by TANF/MOE.
    - ➢ Considerable flexibility in non-cash benefits: From child care to program pamphlets
    - ➢ Eligibility for these benefits are called "Broad-Based Categorical Eligibility (BBCE)".
    - ➢ States can choose to apply BBCE rules to all households.
      $\rightarrow$ Effectively expand beyond the federal first pathway.

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Changes of Eligibility Rules by BBCE

I define the treatment of BBCE in two ways:

1. General BBCE ("**BBCE**"): Adopting any BBCE

2. Expansive BBCE ("**BBCE Max**"): Gross income limit above 130% FPL and no net income test and no asset test on all households

	No BBCE	BBCE	BBCE Max
Gross Income Limit	130%	130% or above	above 130%
Net Income Limit	100%	100% or none	none
Asset Limit	$2000-$3500	$2000-$15,000 or none	none
Households	all	all or a subset	all

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Expected Effects of BBCE/BBCE Max

1. Reduce administrative costs for state agencies
   - ➤ Fewer "tests" to conduct, less information to collect and verify
     - ✳ Asset tests are especially costly because they require cooperation from banks, who sometimes even charge fees for documentation (GAO, 2012).
     - ✳ Calculations of income and assets are hard for caseworkers to learn and conduct (Dean & Rosenbaum, 2002).

2. Reduce administrative burdens for households to take-up
   - ➤ Less documentation required, shorter forms to fill (Holcomb, Tumlin, Koralek, Capps, & Zuberi, 2003)
   - ➤ Less information frictions from simplified rules (Anders & Rafkin, 2022)
   - ➤ Higher income limits could potentially reduce stigma (Currie, 2006)

3. Could induce more fraud due to easier information falsification

4. Could expand eligibility to more well-off households, leading to poorer targeting

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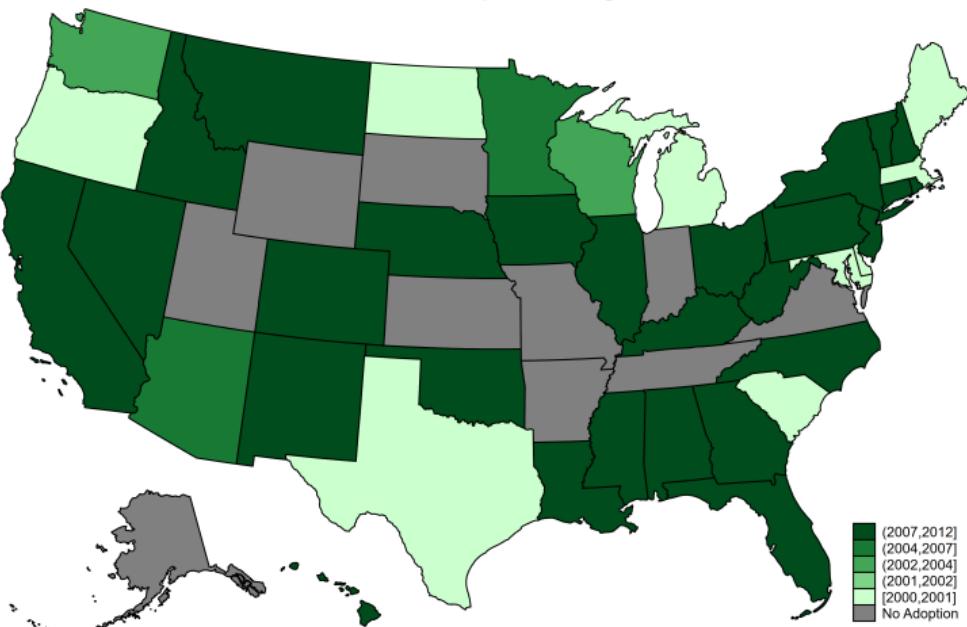
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No specific geographical correlation in adoption timing

Study period covers 96 to 07. 13 states adopted BBCE (6 BBCE max). Comparison is 28 states in darkest green.

Year of BBCE adoption through 2015

(2007,2012]
(2004,2007]
(2002,2004]
(2001,2002]
[2000,2001]
No Adoption

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Exogeneity of BBCE Adoption

Two models to explain adoption variations:

1. Pre-2000 characteristics of demographics, economy, political preferences, state finances, and SNAP operations.

$$adopt_s = \alpha + X_s^{Pre} + u_s \tag{1}$$

$adopt_s = \{0, 1\}$, where 1 indicates ever adopts by 2007, and 0 otherwise.

2. Monthly observations with time-varying characteristics and fixed effects
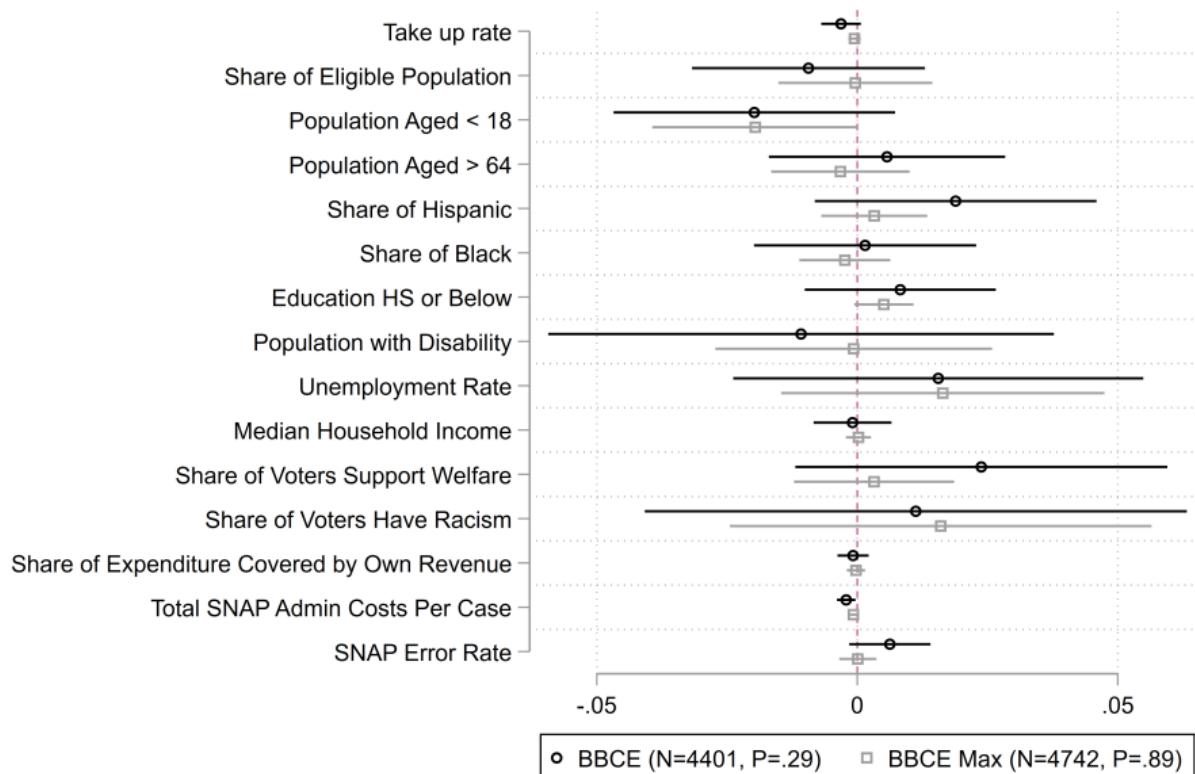
$$adopt_{st} = \alpha + X_{st-12} + \theta_y + \lambda_s + u_{st} \tag{2}$$

where t represents year-month. X lagged by one year. θ_y is year fixed effect and λ_s is state fixed effect.

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Table: Predicting Adoption Choice Using 1996-1999 Characteristics

	BBCE		BBCE Max	
Selected Characteristics	b	SE	b	SE
Take up rate	0.0216	(0.0235)	0.0143	(0.0177)
Share of Eligible Population	0.0579	(0.222)	-0.0905	(0.168)
Population Aged < 18	-0.394	(0.290)	-0.363	(0.219)
Population Aged ≥ 65	-0.275	(0.176)	-0.194	(0.133)
Share of Hispanic	0.0233	(0.0282)	0.0255	(0.0213)
Share of Black	-0.0163	(0.0201)	0.0111	(0.0152)
Education HS or Below	-0.0434	(0.0454)	-0.00150	(0.0342)
Unemployment Rate	-0.273	(0.253)	-0.235	(0.191)
Share of Voters Support Welfare	-0.0304	(0.0680)	-0.105	(0.0513)
Share of Voters Have Racism	0.0190	(0.0387)	-0.0216	(0.0292)
Share of Expenditure Covered by Own Revenue	-0.00312	(0.0202)	-0.0142	(0.0153)
Total SNAP Admin Costs Per Case	0.00559	(0.0120)	0.0109	(0.00908)
SNAP Error Rate	-0.0343	(0.0469)	0.0403	(0.0354)
Observations	41		41	
	$R^2 = 0.500$,	P = 0.411	$R^2 = 0.385$,	P = 0.789

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Figure: Predictors of Adoption Timing, Monthly Data

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Sun and Abraham (2021) Event Study Estimator

$$y_{ist} = \alpha + \sum_{c \in C} \sum_{k \neq -1} \pi_{c,k} 1(\tau_{st} = k) \cdot Cohort_s^c + \theta_s + \lambda_t + \mathbf{X_{ist}}\mathbf{\Gamma} + \mathbf{W_{st}}\mathbf{\Phi} + e_{ist} \quad (3)$$

- y_{ist}: household i is participating SNAP in state s in year t

- $1(\tau_{st} = k)$: event indicator, 1 if state s in year t is k years apart from adoption year

- θ_s, σ_t: state fixed effects, year fixed effects

- $\mathbf{X_{ist}}$: **household characteristics** (unit size, # and share of elderly, # and share of members with disabilities, # and share of ABAWD members, # and share of children aged 0-4, 5-17, have SSI/TANF cash benefits, SNAP income standard deduction, SNAP maximum benefits); **household head characteristics** (age, gender, race/ethnicity, education, citizenship, disability status, marital status)

- $\mathbf{W_{st}}$: adoption of other SNAP policies (application aids, recertification periods, vehicle limits, outreach spending, EBT issuance), unemployment rate (t, t-1, t-2, t-3), minimum wage rate

- Clustered standard errors at the state level. Weighted by household sampling weight.

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Sun and Abraham (2021) Event Study: State-Year Outcomes

$$y_{st} = \alpha + \sum_{c \in C} \sum_{k \neq -1} \pi_{c,k} 1(\tau_{st} = k) \cdot Cohort_s^c + \theta_s + \lambda_t + \mathbf{X_{st}\Gamma} + e_{st} \qquad (4)$$

- y_{st}: administrative costs, fraud cases for state s in year t

- $\mathbf{X_{st}}$: adoption of other SNAP policies (application aids, recertification periods, vehicle limits, outreach spending, EBT issuance)

- Weighted by the size of already-eligible population

- Clustered standard errors at the state level

- Number of observations: 492 for BBCE, 408 for BBCE Max

Identifying Assumptions

1. **Parallel trends:** the comparison group represents the potential outcome for the treated group without treatment
   - ➢ There is no systematic difference in state characteristics or household characteristics between BBCE/BBCE Max state-year and the comparison state-year.
   - ➢ In the following section, the pre-event coefficients are not significant.
     - ✳ The estimator is robust to heterogeneous effects by treatment timing groups.

2. **No anticipatory effects:** no treatment effect in pre-periods
   - ➢ State agencies cannot practice new rules before the formal effective date (need to be approved by USDA).
   - ➢ No reason for the already-eligible households to pre-respond when the new rules are not yet in place.

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State SNAP Policies, Administrative Costs, and Fraud Cases

- SNAP Administrative Expenditures, Fraud Cases and Amounts (Novel data)
  - ➢ USDA Food and Nutrition Services - State Activity Reports
    - ✳ States report administrative costs for reimbursement, and are also obligated to report fraud.

- SNAP Policies
  - ➢ USDA Economic Research Service - The SNAP Policy Database
    - ✳ Surveys by USDA's Food and Nutrition Service (FNS), national and State policy research organizations, State policy manuals, and news articles.

  - ➢ Mathematica Policy Research Report - *Programs Conferring Categorical Eligibility for SNAP: State Policies and the Number and Characteristics of Households Affected (Laird & Trippe, 2014)*

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Sample of Eligible Households

The Transfer Income Model, Version 3 (TRIM3)

- A micro-simulation model developed by the Urban Institute

- The model simulates eligibility and participation for various public programs based on CPS ASEC samples.

- Advantages of using TRIM3:

  1. Detailed policy parameters: Covers state variation and program interactions

  2. Corrects for under-reporting of program participation

  3. Provides monthly eligibility (CPS ASEC observed at annual level)

     $\rightarrow$ Allows me to analyze by whether the households are eligible for at least 1 month in the year, for at most 6 months, and for 12 months

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Determining Newly and Already Eligible Households

- **Base Sample:**
  - ➢ SNAP households who are eligible for nonzero benefits
  - ➢ Household head at least 15 years old and the unit has at least one citizen member
  - ➢ Sample 1996-2007, annual

- **Main Analyses: Already-Eligible Households**
  - ➢ Definition: those who pass the federal income and asset tests regardless of BBCE
  - ➢ Problem: observed income and asset are endogenous to BBCE adoption
    i.e. Those who are observed to fail the tests in a BBCE state could have behaved differently and passed the tests had BBCE not been adopted.
  - ➢ Solution: use predicted behavior

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Predicting Who Is Always Eligible

$$pass_{ist}^m = \alpha + \textbf{head}_{ist} + \textbf{unit}_{ist} + \textbf{economy}_{st} + \textbf{policy}_{st} + \theta_s + \lambda_t + \epsilon_{ist} \quad (5)$$

- $pass_{ist}^m$: whether household i passed federal income and asset tests for m months in year y, $m \in \{\geq 1, \leq 6, 12\}$.

- $head_{ist}$: household head age, age^2, female, race, education, marital status, disabled, employment status

- $unit_{ist}$: household size, household composition, has SSI/TANF cash recipients, decile rank of unearned income, standard deduction of income

- $economy_{st}$: state unemployment rate lag 0-3

- $policy_{st}$: other state SNAP policies that affect eligibility (short certification period, non-citizen eligibility, vehicle policies), state minimum wage rate, SNAP error rates, SNAP administrative expenditures

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Predicting Who Is Always Eligible

- Run equation (5) over state-years without BBCE, and predict $\widehat{pass_{ist}^m}$ for all *ist*.
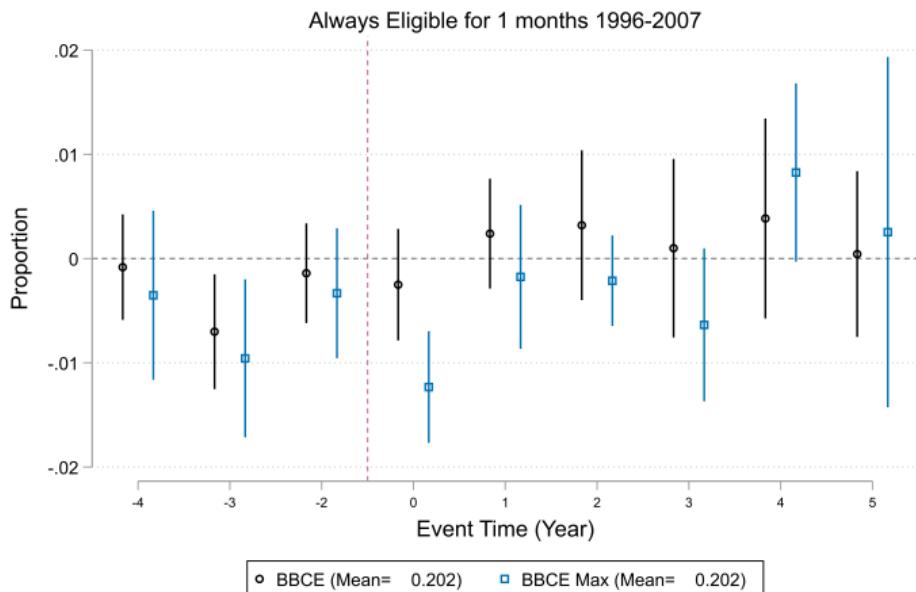
Eligible Households	Pre-Periods	Post-Periods
Treatment States	In-Sample	NA
Comparison States	In-Sample	In-Sample

- Equation (5) is able to identify 96.8% of the 1 month group consistently with In-Sample.

  ➢ 77.9% for the 12 months group and 83.6% for the 6 months group

- Define "Always-Eligible" households by predicted to likely pass the federal tests, and "Newly Eligible" to be non-always-eligible but observed as eligible in TRIM3.

Table: Mean Characteristics for At Least 1 Month Always-Eligible versus Newly-Eligible

	Always-Pre	Always-Post	Newly-Post
Take-up rate	0.510	0.569	0.642
Gross Income	1414.8	1387.4	3435.3
Eligible Benefit	147.9	149.8	148.3
Age of Head	46.41	46.88	42.90
Head Female	0.616	0.620	0.739
Head White	0.710	0.741	0.800
Head HS or below	0.708	0.681	0.488
Head unemployed	0.804	0.824	0.841
Head married	0.363	0.350	0.286
Unit Size	2.293	2.218	3.026
Have Earnings	0.582	0.580	0.631
Has Disabled Member	0.152	0.154	0.124
Has Elderly Member	0.293	0.300	0.161
Has Children 0-4	0.224	0.217	0.206
Has Children 5-17	0.339	0.324	0.579
Observations	125839	23591	478

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Always Eligible Population Not Changed by BBCE

Always Eligible for 1 months 1996-2007

This figure runs equation (3) over the entire population with the always-eligible identifier as the outcome. **No systematic shift in the always-eligible population in post-periods.** table

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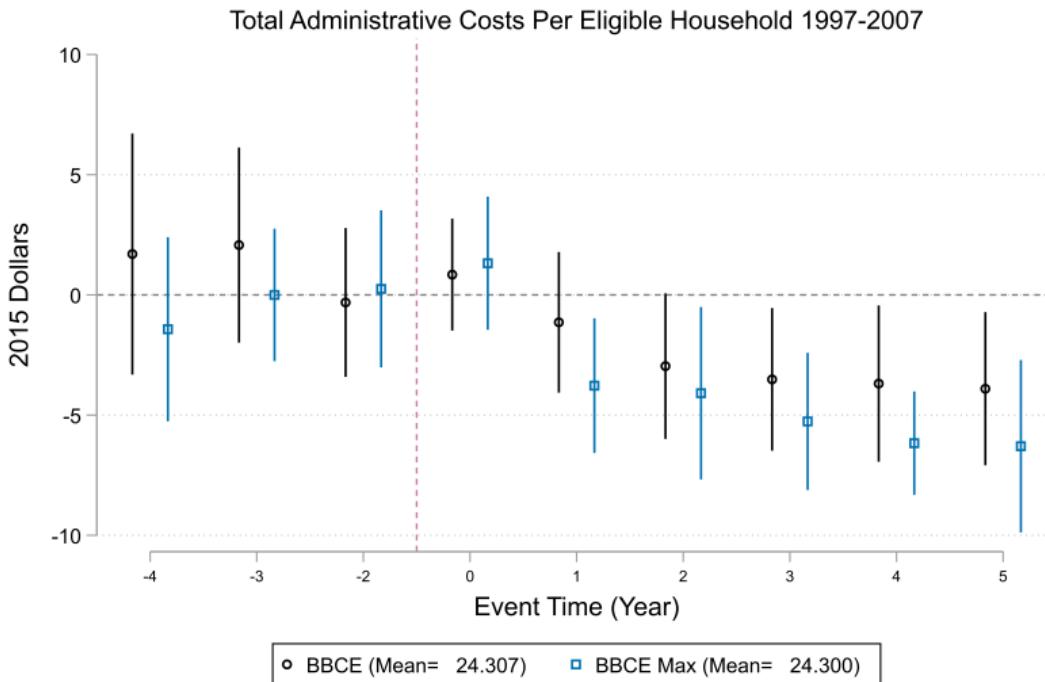
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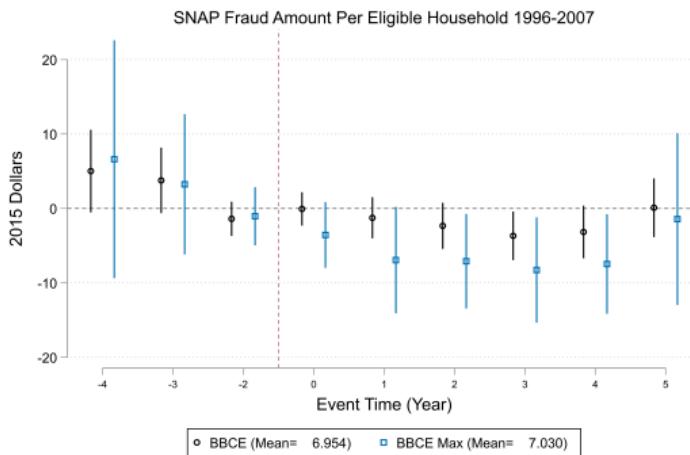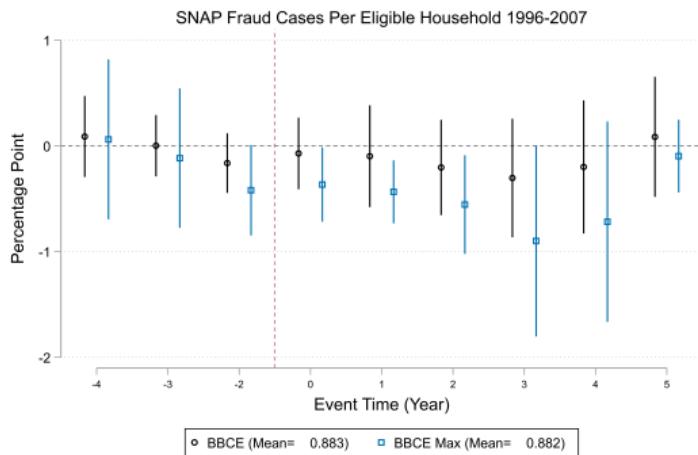
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State Spending on SNAP Administration Decreased

Total Administrative Costs Per Eligible Household 1997-2007

○ BBCE (Mean= 24.307)   □ BBCE Max (Mean= 24.300)

Aggregate   Balanced   Federal Admin Costs

*Divided by the size of always-eligible population

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No Increase in Detected Fraud Cases or Fraud Amount

SNAP Fraud Cases Per Eligible Household 1996-2007

BBCE (Mean= 0.883)   BBCE Max (Mean= 0.882)

SNAP Fraud Amount Per Eligible Household 1996-2007

BBCE (Mean= 6.954)   BBCE Max (Mean= 7.030)
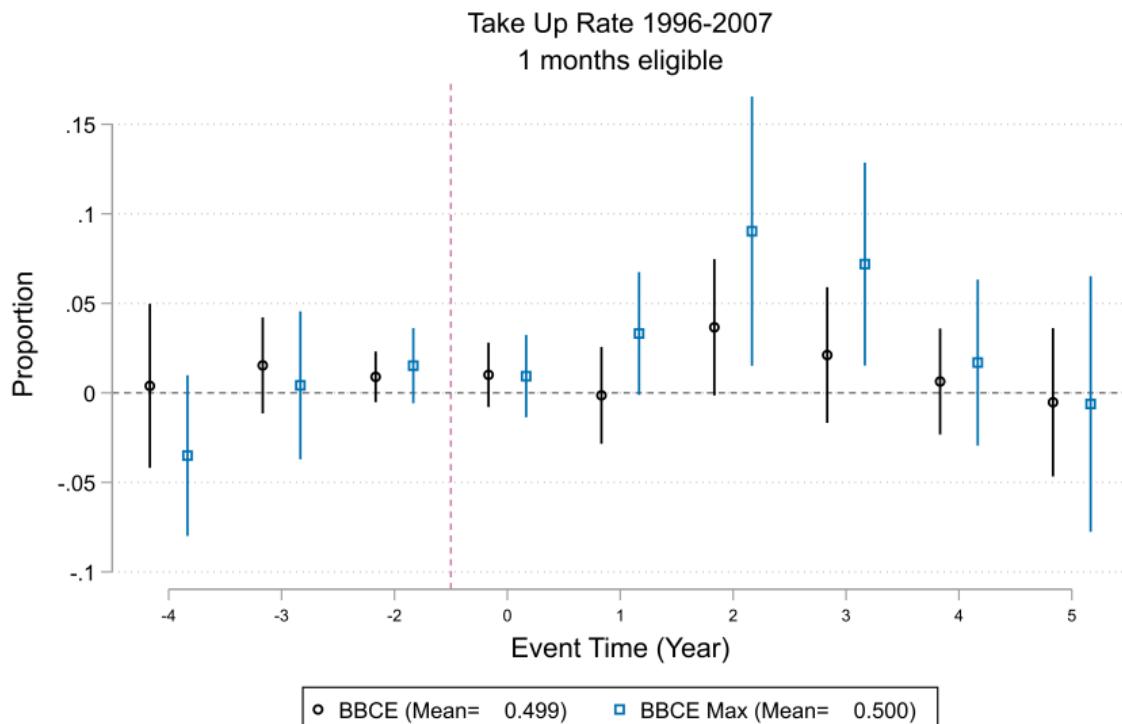
$\rightarrow$ The number of fraud investigations did not show the same pattern and had positive point estimates.
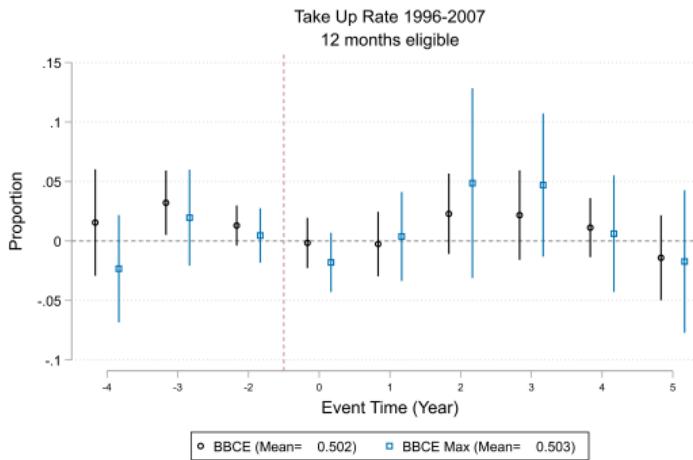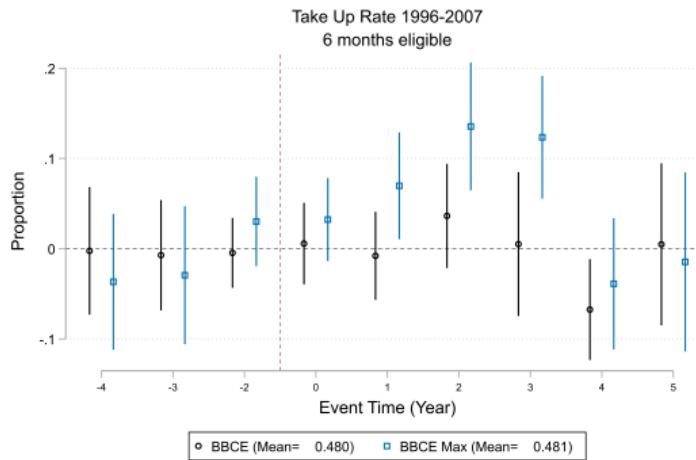
Aggregate   Investigations

*Divided by the size of always-eligible population

Increase in Take-up for Already Eligible Households

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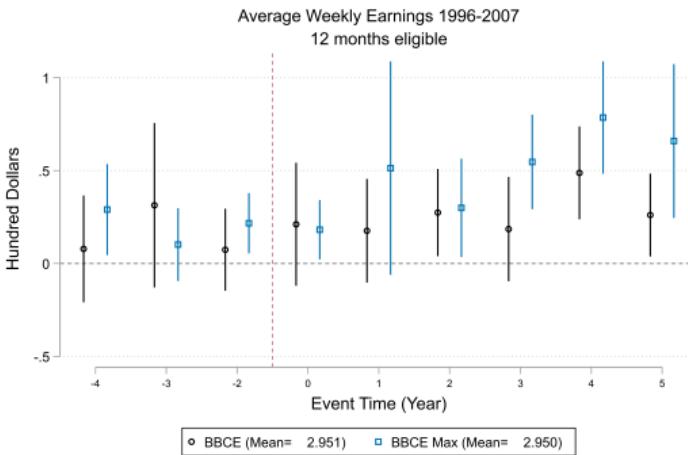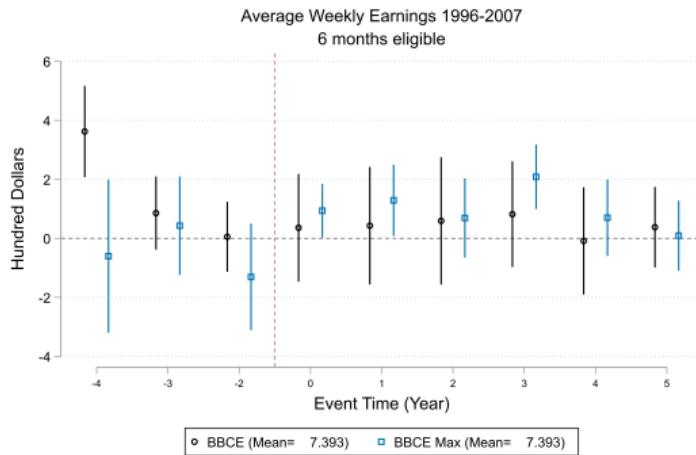
Increase in Take-up Larger for the 1-6 mo. Group

- The 1-6 months always eligible households are more able to work (younger, less disabled, more educated) but are more likely to be unemployed.

- This suggests that these households are experiencing temporary joblessness, and BBCE Max allows them to sign up for the program in a timely manner.

Aggregate   Balanced

Earnings Seem to Increase for Already Eligible Households

- For the 12-month group, the aggregate effects from years 3-5 for BBCE Max is about 65 dollars per week, or 260 dollars per month, which is more than the average eligible benefits (160 dollars per month).

Aggregate

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Conclusion and Implications

- In this paper, I find that removing some income and asset limits for SNAP reduces administrative costs and increases program take-up while still targeting similar populations and maintaining fraud prevention.

- These findings provide potential policy solutions in balancing the trade-off between targeting efficiency and administrative burdens and between administrative costs and fraud prevention.

- Some evidence also hints at improved welfare through the consumption smoothing utility for the short-term eligible group (1-6 months) and the increased earnings for the long-term (12 months) eligible group.
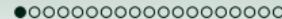
Thank You!

joulin@ucdavis.edu

https://www.jouchunlin.com

Distribution of Different BBCE Policies

Legend:
- High Income & No Asset Limits
- High Income Limits Only
- No Asset Limits Only
- More Restrictive BBCE

X-axis: Year
Y-axis: Number of Adopting States
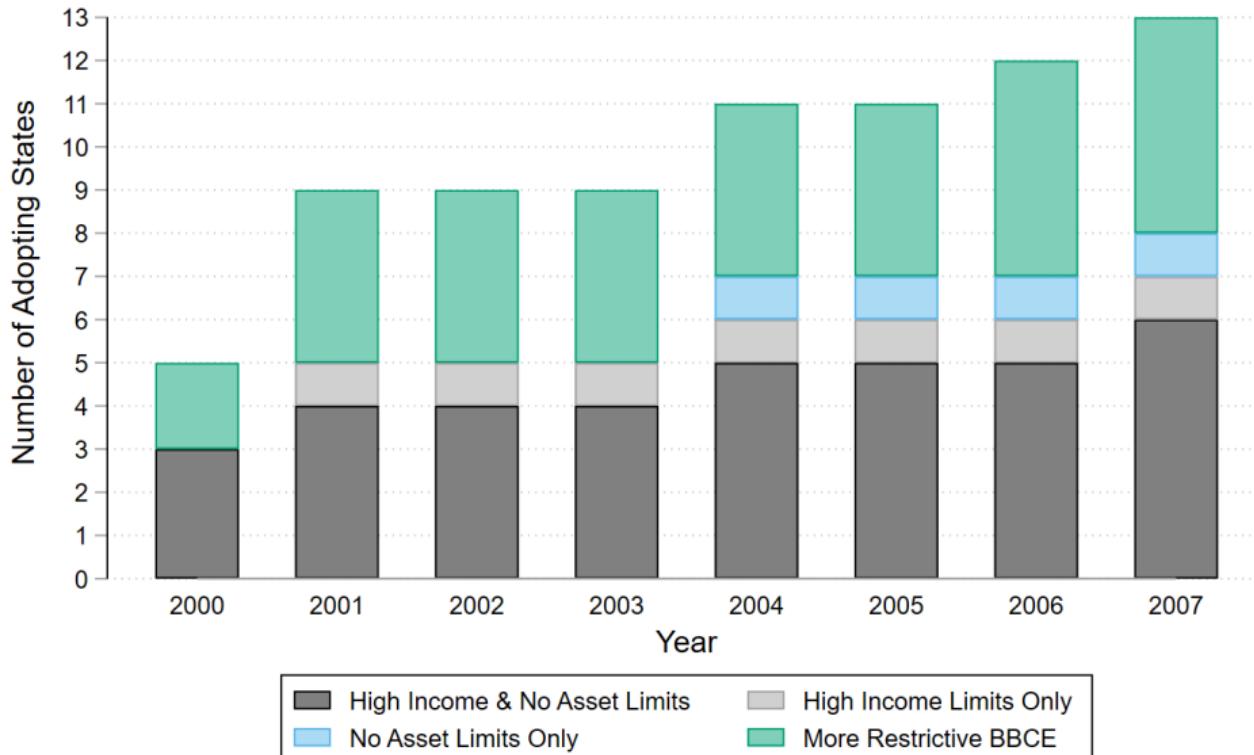
Table: Mean Characteristics: Always-Eligible for 12 Months versus 1-6 Months
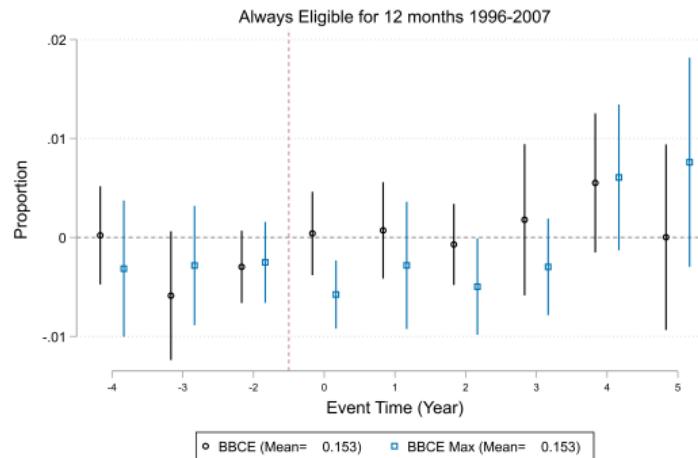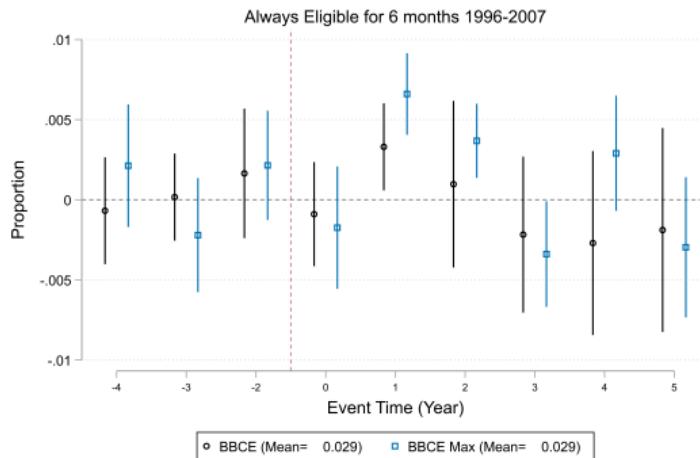
	12 mo.		1-6 mo.	
	Pre	Post	Pre	Post
Take-up rate	0.525	0.550	0.464	0.598
Gross Income	1160.0	1144.6	2462.5	2215.8
Eligible Benefit	157.4	159.2	103.3	106.6
Age of Head	50.43	50.68	37.07	36.91
Head Female	0.680	0.677	0.401	0.410
Head White	0.680	0.716	0.824	0.838
Head HS or below	0.793	0.772	0.424	0.406
Head unemployed	0.794	0.801	0.951	0.966
Head married	0.344	0.344	0.408	0.361
Unit Size	2.252	2.208	2.199	2.118
Have Earnings	0.470	0.479	0.860	0.848
Has Disabled Member	0.211	0.209	0.0111	0.0110
Has Elderly Member	0.413	0.410	0.00987	0.00882
Has Children 0-4	0.242	0.233	0.127	0.132
Has Children 5-17	0.352	0.334	0.234	0.234
Observations	94183	17447	18587	4029

Testing Difference in Characteristics of the Always Eligible HH by BBCE

$$adopt_{st} = \alpha + X_{ist} + economy_{st} + policy_{st} + \theta_s + \lambda_t + e_{ist} \tag{6}$$
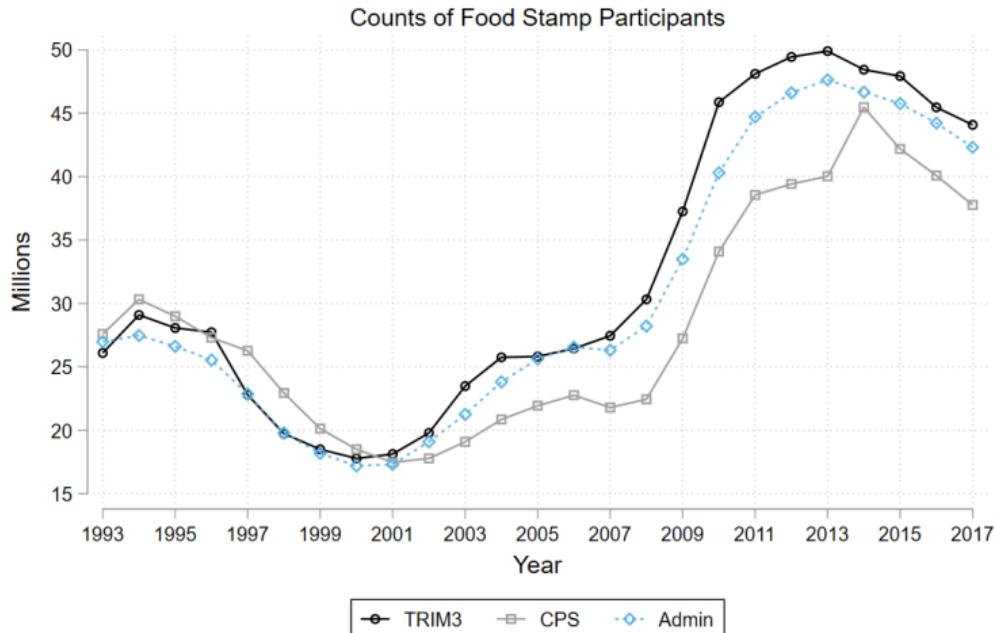
	≥1 mo.		1-6 mo.		12 mo.	
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
Age of Head	-0.0000834	-0.0000153	-0.000475*	-0.0000862	0.00000583	-0.0000182
Head Female	0.000876	-0.000793	-0.00574*	-0.00412	0.00196	0.000423
Head Black	0.00319	0.00148	0.00136	0.00182	0.00294	0.00160
Head Hispanic	0.00153	0.000129	0.00130	-0.000910	0.00171	0.0000615
Head HS or below	-0.000319	-0.0000229	-0.00502	-0.00340	0.00111	0.00123
Head married	-0.00167	-0.000400	-0.00124	-0.00333	-0.00153	0.0000751
Head Disabled	0.0106***	0.00693*	0.0175	0.0376	0.0101**	0.00568*
Head unemployed	0.00234	0.000723	0.00482	0.00781	0.00337	0.000634
Unit Size	0.000528	-0.000434	-0.000159	-0.0000546	0.000969	-0.000278
Has Disabled Member	-0.00172	-0.00128	-0.0231	-0.0304	-0.00225	-0.000728
Has ABAWD Member	0.000417	0.00124	0.00177	0.00560	-0.00119	0.000157
Has Elderly Member	0.00443	0.00336	0.0168	-0.00625	-0.000269	0.00197
Has Children 0-4	-0.000332	0.000423	-0.00444	0.00461	-0.00171	-0.00216
Has Children 5-17	-0.000566	0.00295	0.00416	0.00632	-0.000763	0.00184
Observations	149430	124375	22616	18720	111630	93306
P	0.0539	0.5075	0.1361	0.5016	0.0338	0.6681

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Already Eligible Populations Comparable

Always Eligible for 6 months 1996-2007

Always Eligible for 12 months 1996-2007

	≥ 1 mo.		At most 6 months		12 months	
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
Diff Pre 2-4	-0.00419	-0.00324	0.00112	-0.000128	-0.00410	-0.00215
vs. Post 0-5	(0.00319)	(0.00354)	(0.00141)	(0.00179)	(0.00238)	(0.00276)

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TRIM3 Adjusts For Under-Reporting

Counts of Food Stamp Participants
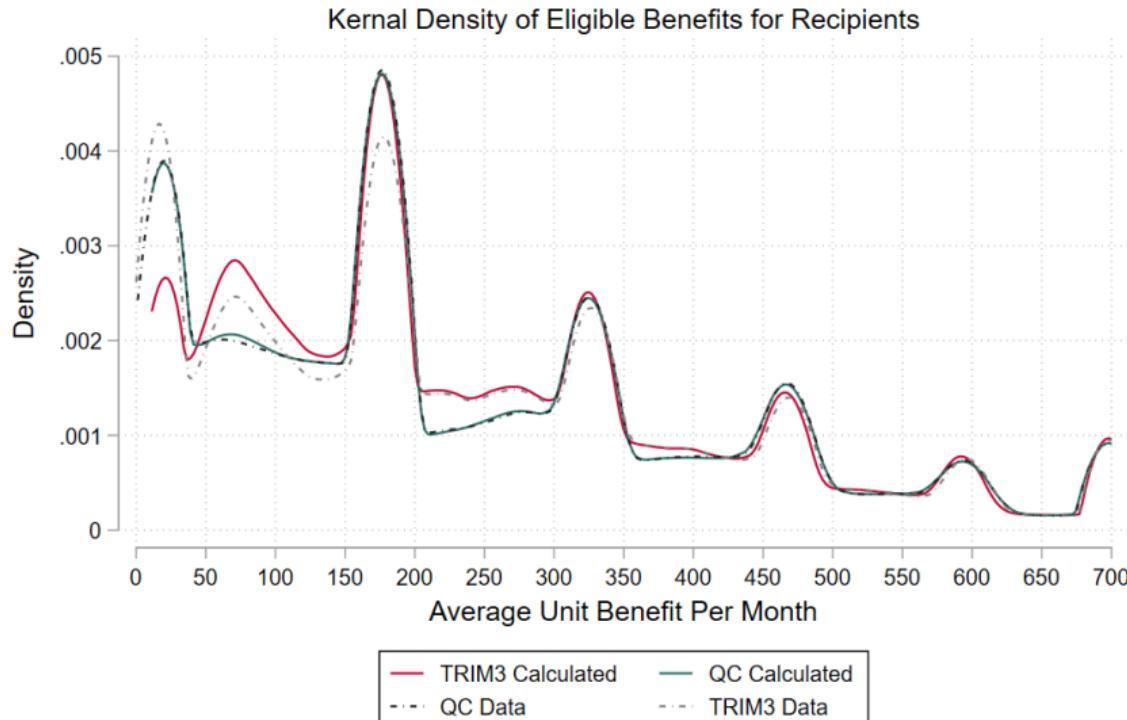
TRIM3 Captures Representative SNAP Participants

- The SNAP Quality Control Data (QC): a nationally-representative sample of SNAP participants published by USDA each year.

- I use QC as a benchmark to evaluate the performance of TRIM3:

	(1) TRIM Recipient	(2) QC
Monthly Benefits	231.5	241.7
	(188.7)	(185.3)
Gross Income	959.5	626.7
	(2691.7)	(448.7)
Net Income	375.6	328.1
	(475.4)	(351.8)
Unit Asset	151.8	133.6
	(4927.4)	(697.4)
Unit Size	2.463	2.335
	(1.548)	(1.536)
Unit with Elder Members	0.190	0.183
	(0.393)	(0.386)
Unit with Disabled Members	0.248	0.241
	(0.432)	(0.428)
Unit with Kids	0.576	0.547
	(0.494)	(0.498)
Age of Head	42.15	41.04
	(17.53)	(18.56)
Observations	968606	573856

TRIM3 Captures Similar Benefit Distribution As QC

Kernal Density of Eligible Benefits for Recipients

Constructing Disability Measure

I identify the following individuals as having disabilities:
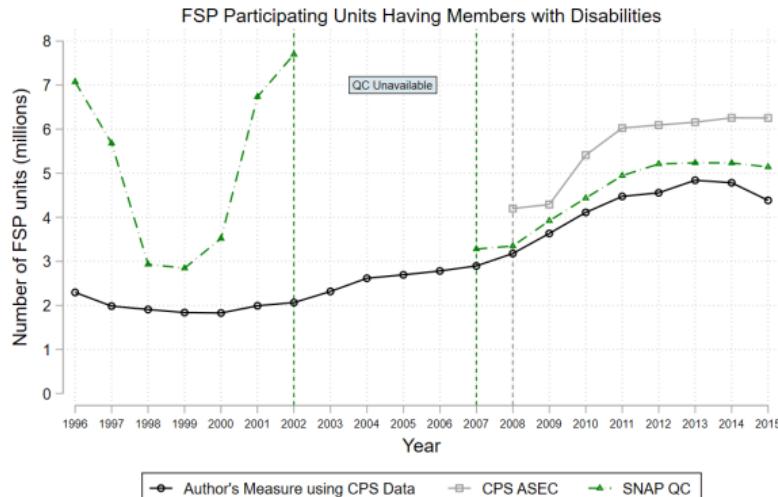
1. Nonelderly SSI recipients

2. Individuals working < 30 hrs a week or not in the labor force, and is receiving social security/worker's compensation/veteran's compensation

3. Unit has medical expense deduction and no elderly in unit and:

   ➢ work < 30 hrs per week or not in the labor force

   ➢ has social security, veteran's benefits, or worker compensation

This method is learned from the 2015 Technical Documentation of the SNAP Quality Control Data.

$\rightarrow$ The SNAP QC team develops this algorithm because personal disability status is not collected during the applications.
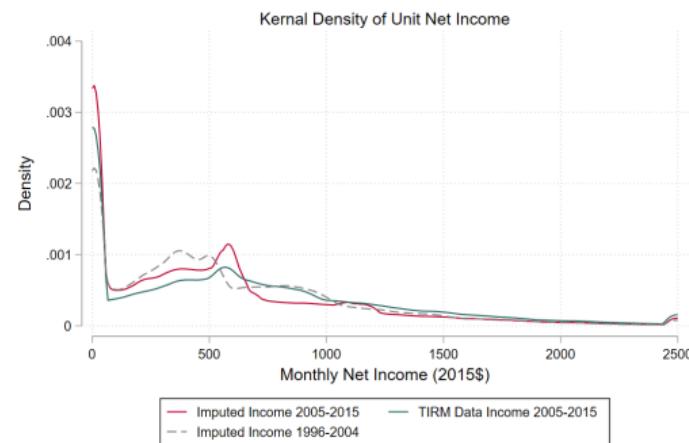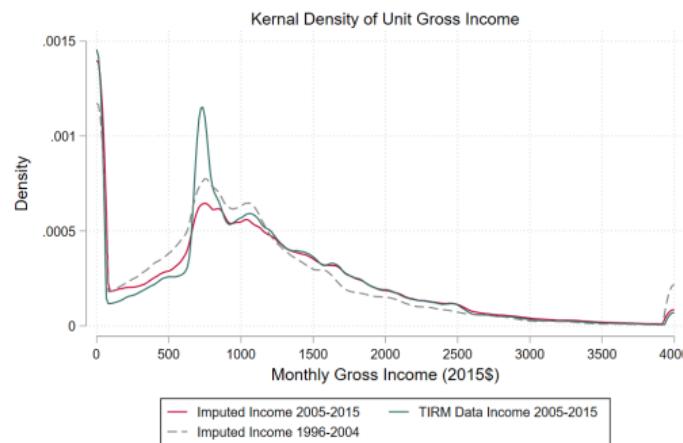
Constructing Disability Measure

- My measure is smooth over time, and is very close to the administrative imputation (SNAP QC) in recent years.

- The self-reported measure in CPS ASEC likely includes individuals not classified as having disabilities in the SNAP rules.

FSP Participating Units Having Members with Disabilities
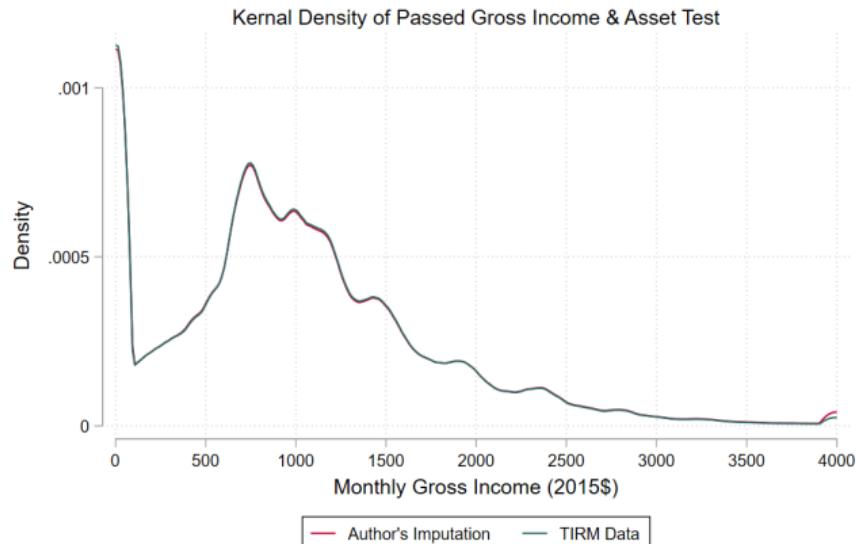
Calculating missing income data

Because TRIM3 does not provide food stamp gross income and net income in years earlier than 2005, I refer to their technical documentation and re-construct the income for missing years.

Kernal Density of Unit Gross Income

Kernal Density of Unit Net Income

Imputing Asset Test
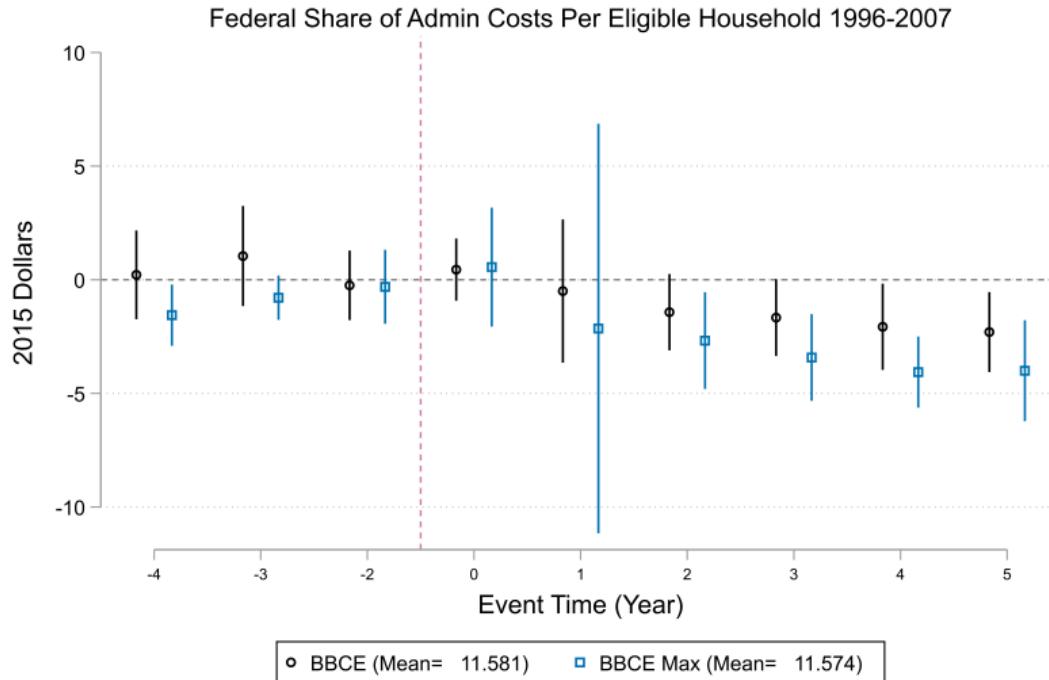
TRIM3 only provide their simulation of a household passing both the income and asset tests instead of individual tests, I refer to their methodology for calculating asset and construct a passed asset test indicator.


Kernal Density of Passed Gross Income & Asset Test
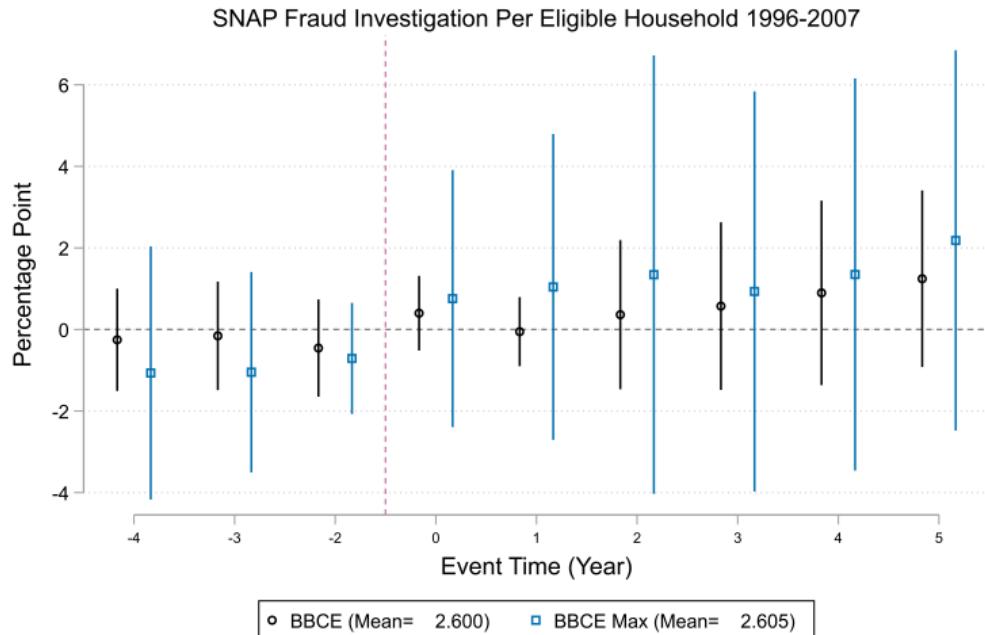
Sun & Abraham 2021: IW Estimator

- Sun & Abraham 2021 pointed out that the linear TWFE coefficient for an event time k is a weighted average of the difference in trends from 1) its own event time, 2) from other event time $k' \neq k$ in the regression, and 3) from other event time excluded from the regression, where the weights sum to 1, 0, and -1 for these groups, respectively.

- Even the assumptions for TWFE holds (parallel trends, no anticipatory effects, and homogeneous treatment effect across timing groups), we still need to correct for the weights, otherwise the pre-period coeffcients still have post-treatment effects in it.

- **Interaction-weighted Estimator (IW Estimator)**: estimate cohort c's (timing group) average treatment effect (CATT) at event time k with postive weights that sum to 1:

  1. Estimate cohort c's event study coefficients (get $CATT_{c,k}$)

  2. Estimate weights using sample share of each cohort in event time k

  3. Calculate the weighted average of event time k coefficients

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Federal Share of SNAP Administration Costs

Federal Share of Admin Costs Per Eligible Household 1996-2007

Legend: ○ BBCE (Mean= 11.581)   □ BBCE Max (Mean= 11.574)

*Divided by the size of always-eligible population
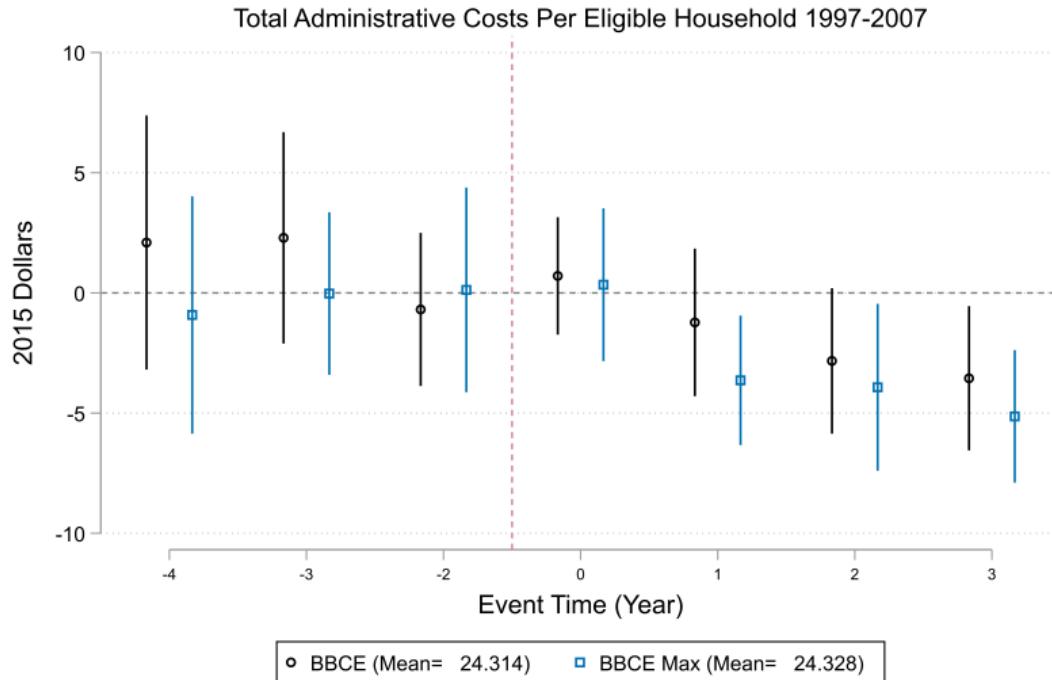
No Decrease in Fraud Investigations

SNAP Fraud Investigation Per Eligible Household 1996-2007

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*Divided by the size of always-eligible population

State Spending on SNAP Administration - Balanced Panel

Total Administrative Costs Per Eligible Household 1997-2007

*Divided by the size of always-eligible population

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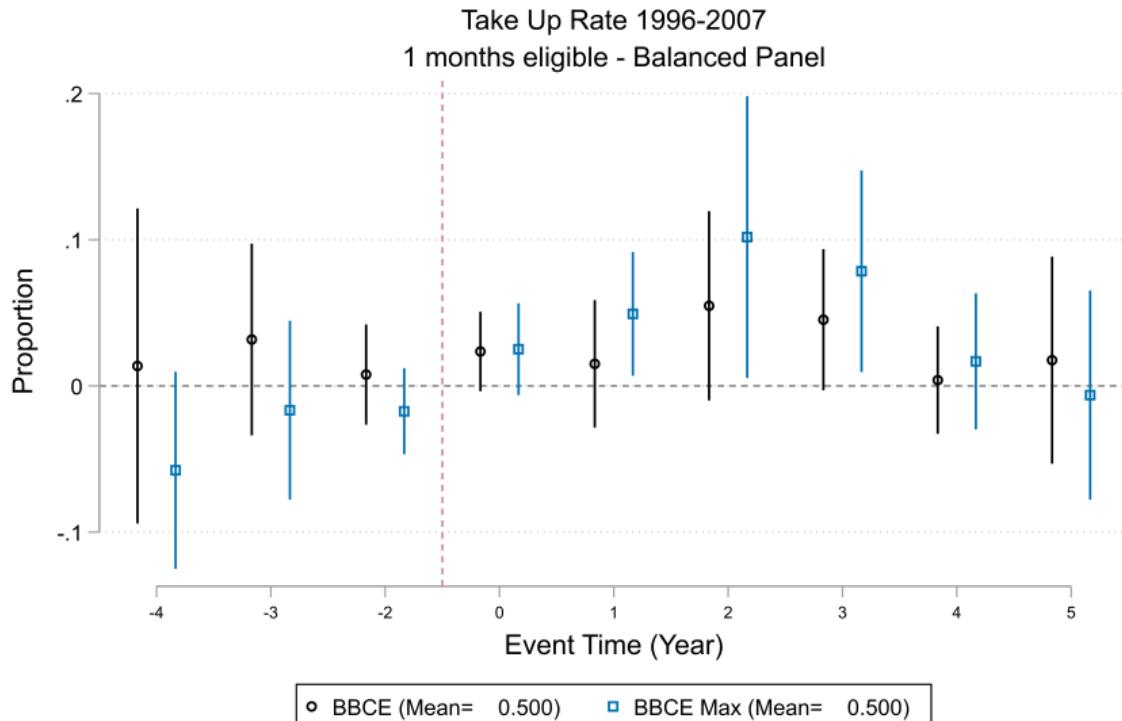
Aggregate Estimates - State Outcomes
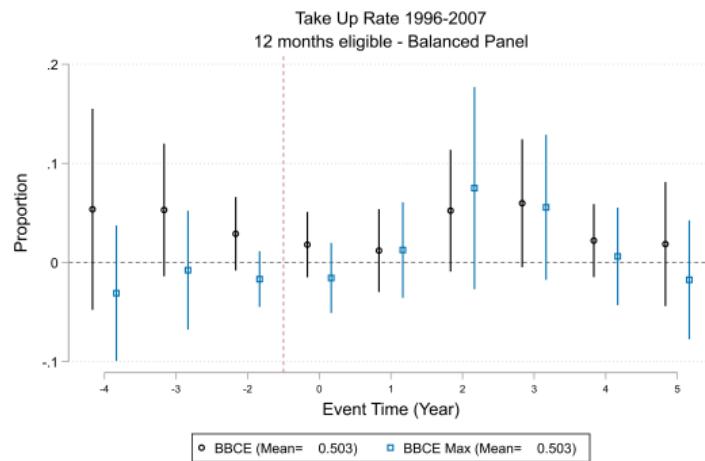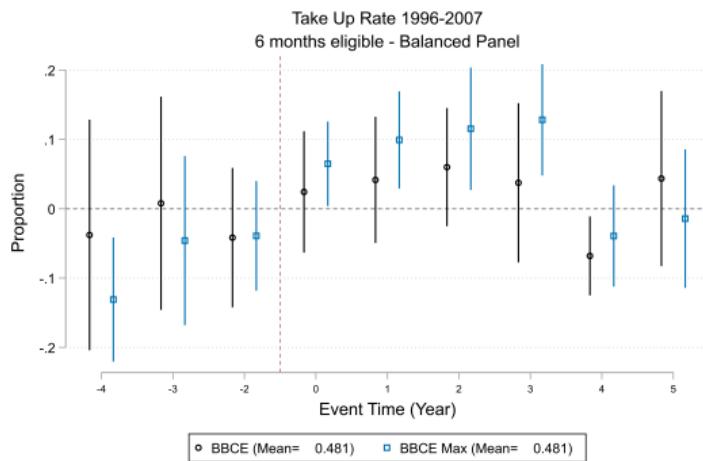
All Observations	Event -4 to -2		Event 3 to 5		Event 0 to 5	
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
Total Administrative Costs	1.153	-0.392	-3.702*	-4.432***	-2.395*	-4.047***
	(1.859)	(1.357)	(1.443)	(0.807)	(1.152)	(0.986)
SNAP Fraud Cases	-0.0237	-0.158	-0.139	-0.428	-0.131	-0.511*
	(0.124)	(0.220)	(0.215)	(0.239)	(0.160)	(0.217)
SNAP Fraud Amount	2.459	2.934	-2.249	-4.293	-1.736	-5.795*
	(1.736)	(3.906)	(1.535)	(2.305)	(1.276)	(2.325)
Balanced Panel	Event -4 to -2		Event 3		Event 0 to 3	
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
Total Administrative Costs	1.233	-0.274	-3.552*	-5.138***	-1.726	-3.091**
	(1.981)	(1.689)	(1.532)	(1.406)	(1.206)	(1.160)
SNAP Fraud Cases	-0.0213	-0.233	-0.351	-0.912*	-0.177	-0.575**
	(0.130)	(0.260)	(0.268)	(0.456)	(0.175)	(0.207)
SNAP Fraud Amount	2.898	4.049	-4.450*	-8.746*	-2.024	-7.066**
	(1.793)	(4.672)	(2.010)	(3.488)	(1.384)	(2.342)

Aggregated Sun & Abraham event study estimates. Standard error in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Admin Costs   Fraud   Aggregate appendix

Take-up – Balanced Panel

Take Up Rate 1996-2007
1 months eligible - Balanced Panel

Take-up – Balanced Panel

Take Up Rate 1996-2007
6 months eligible - Balanced Panel

Take Up Rate 1996-2007
12 months eligible - Balanced Panel

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Aggregate Estimates - Household Outcomes

	Event -4 to -2		Event 0 to 3		Event 0 to 5	
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
Panel A - At least 1 month						
All Observations						
Take up	0.00938	-0.00524	0.0166	0.0512*	0.0112	0.0359
	(0.0131)	(0.0149)	(0.0129)	(0.0217)	(0.0130)	(0.0232)
Average Weekly Earnings	0.479***	0.117	0.117	0.458**	0.148	0.522**
	(0.132)	(0.179)	(0.201)	(0.161)	(0.184)	(0.199)
Balanced Panel						
Take up	0.0177	-0.0305	0.0347	0.0637*	0.0267	0.0442
	(0.0323)	(0.0210)	(0.0194)	(0.0279)	(0.0178)	(0.0268)
Average Weekly Earnings	0.197	0.584*	0.291	0.689**	0.277	0.677**
	(0.251)	(0.241)	(0.267)	(0.225)	(0.246)	(0.239)
Panel B - At most 6 months						
All Observations						
Take up	-0.00470	-0.0120	0.00982	0.0903***	-0.00389	0.0513
	(0.0247)	(0.0255)	(0.0252)	(0.0236)	(0.0222)	(0.0280)
Average Weekly Earnings	1.512**	-0.492	0.551	1.252**	0.417	0.967*
	(0.545)	(0.957)	(0.941)	(0.481)	(0.849)	(0.452)
Balanced Panel						
Take up	-0.0239	-0.0720*	0.0409	0.102***	0.0232	0.0591
	(0.0607)	(0.0320)	(0.0429)	(0.0294)	(0.0291)	(0.0309)
Average Weekly Earnings	-0.532	0.230	0.148	1.584*	-0.309	1.187*
	(0.855)	(0.764)	(0.946)	(0.632)	(0.849)	(0.533)
Panel C - 12 months						
All Observations						
Take up	0.0202	0.000306	0.0101	0.0204	0.00627	0.0117
	(0.0138)	(0.0166)	(0.0128)	(0.0242)	(0.0126)	(0.0241)
Average Weekly Earnings	0.155	0.203*	0.212*	0.385**	0.266**	0.498***
	(0.114)	(0.0910)	(0.106)	(0.135)	(0.102)	(0.144)
Balanced Panel						
Take up	0.0452	-0.0185	0.0355	0.0319	0.0304	0.0194
	(0.0335)	(0.0242)	(0.0216)	(0.0316)	(0.0208)	(0.0285)
Average Weekly Earnings	0.400*	0.716***	0.345*	0.490**	0.445**	0.568***
	(0.185)	(0.129)	(0.160)	(0.162)	(0.154)	(0.161)

Aggregated Sun & Abraham event study estimates. Standard error in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.