Designing Effective Welfare Programs: Lessons from SNAP's BBCE Expansion

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Table of Content

Intro
0●00

BBCE
0000000

State Adoption
000000

Data and Sample
000000000

Methodology
000000

Results
0
000000
00000

Conclude
0000

Optimal Program Design

- Transfer programs are often designed with restrictive rules.

  ➢ Beneficiaries are required to meet certain income and asset limits, and provide proof of them.

- The objective of such requirements is to target the truly needy people and prevent fraud.

- In economic theories, an optimal program design does feature imposing restrictions, but it must balance between the targeting purposes and the costs that come with it (Kleven & Kopczuk, 2011; Nichols & Zeckhauser, 1982).

  ➢ Implementing rules can be costly for the administration.

  ➢ The truly needy people could be falsely screened out.

Intro
oooo

BBCE
ooooooo

State Adoption
oooooo

Data and Sample
ooooooooo

Methodology
oooooo

Results
o
oooooo
ooooo

Conclude
oooo

Empirical Examination of Program Designs

- Empirical evidence suggests that re-certification requirements are generally not effective.

  ➢ Benefit recipients must periodically re-certify their eligibility, but many eligible people dropped out due to this process (Gray, 2019; Homonoff & Somerville, 2021; Unrath, 2021).

- Most studies focus on helping eligible people take up through providing aids and information (Aizer, 2003; Currie, 2006; Finkelstein & Notowidigdo, 2019).

- However, not many other studies are specifically on the program rules. This paper aims to contribute to the literature on this front.

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.

- **Effects on state administration:** state administrative costs were significantly reduced, and fraudulent benefits decreased.

- **Effects on eligible households:** only increased eligible households by 2-3%.
  - ➢ Some suggestive evidence that the already-eligible households increased program take-up.

  - → **These results show that the pre-BBCE rules are not optimal.**

Intro
OOOO

BBCE
●OOOOOO

State Adoption
OOOOOO

Data and Sample
OOOOOOOOO

Methodology
OOOOOO

Results
O
OOOOOO
OOOOO

Conclude
OOOO

Table of Content

Intro
0000

BBCE
0●00000

State Adoption
000000

Data and Sample
000000000

Methodology
000000

Results
0
000000
00000

Conclude
0000

Existing 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
        * Net income $\leq$ 100% FPL
        * Countable assets $\leq$ \$2000 (\$3500 for members with disabilities or are elderly)
    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))
        * These programs cover very poor families and are usually restrictive to specific
          family types such as single mothers or out-of-wedlock pregnancies.

The Broad-Based Categorical Eligibility (BBCE)

- In 2000, USDA allowed states to expand categorical eligibility to households eligible for *noncash benefits* that are funded by TANF/MOE.

  ➢ There is considerable flexibility for states in designing these noncash benefits: from child care and toll-free numbers to program brochures.

- States generally set more generous eligibility rules for these noncash benefits, effectively expanding SNAP beyond the federal rules.

  ➢ The most common practices are relaxing the income and asset limits.

  ➢ States can also select the households to apply BBCE rules. If applied to all households, the prior regulations are entirely nullified.

Intro
0000

BBCE
000●000

State Adoption
000000

Data and Sample
000000000

Methodology
000000

Results
○
000000
00000

Conclude
0000

Changes of Eligibility Rules by BBCE

I define the treatment of BBCE in two ways:

1. The general BBCE ("**BBCE**"): adopting any BBCE

2. The most generous BBCE ("**BBCE Max**"): gross income limit above 130%
   FPL plus no net income test and no asset test on all households

No BBCE	Gross income limit $\leq$ 130% FPL **and** Net income limit $\leq$ 100% FPL **and** Asset limit $\leq$ $2000
BBCE Max	Gross income limit $>$ 130% FPL **and** ~~Net income limit$\leq$ 100% FPL~~ **and** ~~Asset limit$\leq$ $2000~~
BBCE	Gross income limit $>$ 130% FPL **and/or** Net income limit $\leq$ 100% FPL **and/or** Eliminate/Higher Asset limits **and/or** conditional on a subset of households

Intro
0000

BBCE
0000●00

State Adoption
000000

Data and Sample
000000000

Methodology
000000

Results
0
000000
00000

Conclude
0000

Expected Effects of BBCE on State Operations

1. Reduce administrative costs
   - ➢ 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).

2. Ambiguous effects on fraud
   - ➢ BBCE could induce more fraud because less information to falsify
   - ➢ But it is also easier for caseworkers to detect fraud upon application, reducing fraudulent benefit disbursements.

Intro
0000

BBCE
0000000

State Adoption
000000

Data and Sample
000000000

Methodology
000000

Results
0
000000
00000

Conclude
0000

Expected Effects of BBCE on Households

1. Expansion to those who were not eligible under the federal rules $\rightarrow$ We care about who they are
   - My study and previous studies consistently found this group to be small.
     * I find the eligible population only expanded by about 2-3%.
     * Cunnyngham (2016) found that 1.2 percent of all the benefits issued go to the newly-eligible group
   - $\rightarrow$ This paper only looks at the descriptive statistics of this group

Expected Effects of BBCE on Households

2. Increase program take-up of the already-eligible households
   - ➢ Reduce application costs (Herd & Moynihan, 2018)
     - ✳ Compliance costs: do not need to provide asset information if asset limits removed
     - ✳ Learning costs: increase program awareness when informing the new policy
     - ✳ Psychological costs: higher income limits could potentially reduce stigma and appeal to misinformed households
3. Increase labor supply for the already-eligible households
   - ➢ Higher income limits allow more room for earnings without losing eligibility.

Table of Content

Intro
0000

BBCE
0000000

State Adoption
0●0000

Data and Sample
000000000

Methodology
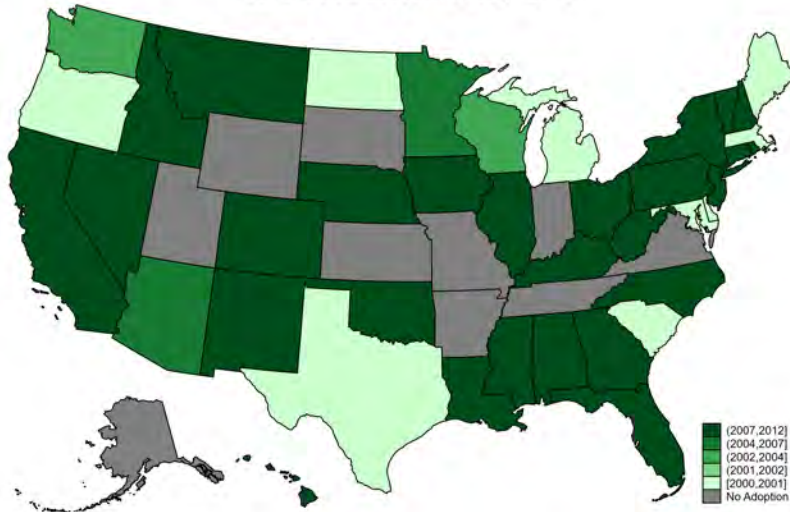000000

Results
0
000000
00000

Conclude
0000

State Adoptions Over Years

Study periods cover 1996 to 2007. 13 states treated for BBCE, 6 for BBCE Max, 28 in the comparison group.
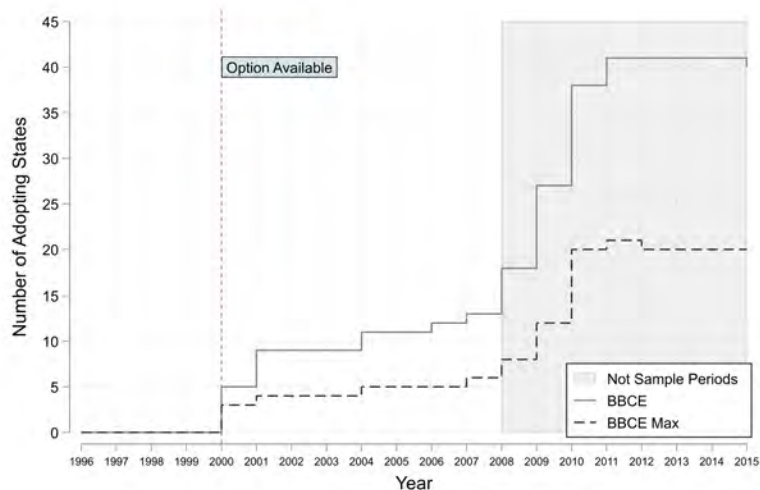
No specific geographical correlation in adoption timing

Year of BBCE adoption through 2015

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

Exogeneity of BBCE Adoption

1. Pre-2000 characteristics do not predict the adoption choices:

$$adopt_s = \alpha + X_s^{Pre} + u_s \qquad (1)$$

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

X includes demographics, economy, political attitudes, state finances, and SNAP operations.

2. Monthly observations with time-varying characteristics and fixed effects also do not explain adoption choices:

$$adopt_{st} = \alpha + X_{st} + \theta_y + \sigma_s + u_{st} \qquad (2)$$

where θ_y is year fixed effect and σ_s is state fixed effect.

16

Intro
0000

BBCE
0000000

State Adoption
000●0

Data and Sample
000000000

Methodology
000000

Results
○
000000
00000

Conclude
0000

Table: Predicting Adoption Choice Using 1996-1999 Characteristics

Selected Characteristics	BBCE		BBCE Max	
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

Figure: Predicting Adoption Using Monthly Observations
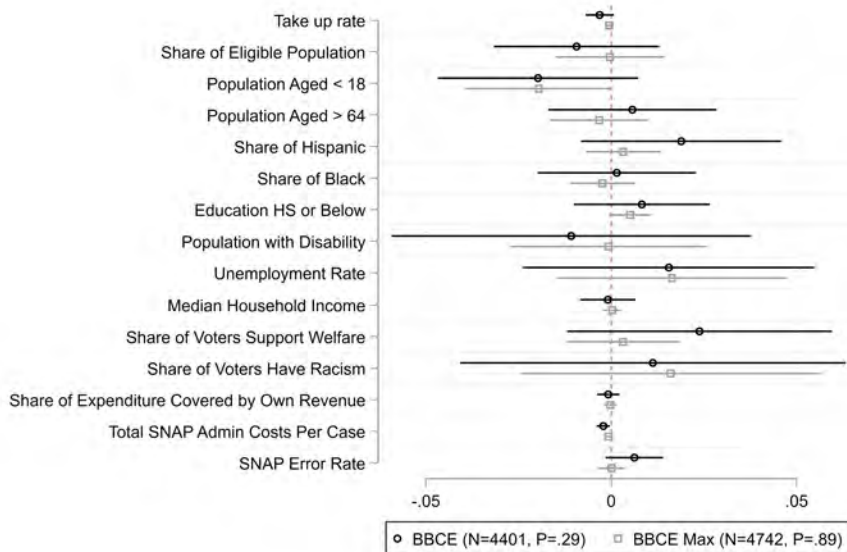
Table of Content

Intro
0000

BBCE
0000000

State Adoption
000000

Data and Sample
0●0000000

Methodology
000000

Results
○
000000
00000

Conclude
0000

Data for State Operations

- SNAP Policies
  - ➢ USDA Economic Research Service - The SNAP Policy Database
  - ➢ Mathematica Policy Research Report - *Programs Conferring Categorical Eligibility for SNAP: State Policies and the Number and Characteristics of Households Affected (Laird & Trippe, 2014)*
- SNAP Administrative Expenditures, Fraud Cases, and Amounts
  - ➢ USDA Food and Nutrition Services - State Activity Reports
- State Finance
  - ➢ US Census Bureau - Annual Survey of State and Local Government Finances

Data for 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

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

        $\rightarrow$ Allows me to analyze heterogeneous responses by: eligible for at least 1 month in the year, at most 6 months, and 12 months

Data appendix

Separating Newly and Already Eligible Households

- **Base Sample:**
  - ➢ SNAP households who are eligible for nonzero benefits
  - ➢ Household head at least 15 years old and have at least one citizen member
  - ➢ Data periods 1996 - 2007, annually

- **Main Analyses: Already-Eligible Households**
  - ➢ Definition: those who pass the three federal 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 if BBCE were not in place.
  - ➢ Solution: use predicted behavior

Prediction Model for Always Eligible Identifiers

$$pass_{ist}^m = \alpha + \textbf{head}_{ist} + \textbf{unit}_{ist} + \textbf{economy}_{st} + \textbf{policy}_{st} + \theta_s + \sigma_t + \epsilon_{ist} \qquad (3)$$

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

- $head_{ist}$: unit head age, age^2, female, race, education, marital status, has disabilities, employment status

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

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

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

23

Constructing Always-Eligible Identifiers

- Run equation (3) over state-years without BBCE, and predict $\hat{pass}_{ist}^m$ for all samples.

Eligible Households	Pre Periods	Post Periods
Treatment States	In-Sample	NA
Comparison States	In-Sample	In-Sample

- Equation (3) 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 the newly-eligible households: observed to be eligible and predicted to be not always eligible.

  ➢ I also identified a similar profile for the newly-eligible with the literature

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

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 the Profile of the Always Eligible Groups

$$adopt_{st} = \alpha + X_{ist} + economy_{st} + policy_{st} + \theta_s + \sigma_t + e_{ist} \tag{4}$$

	≥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

Table of Content

Intro
0000

BBCE
0000000

State Adoption
000000

Data and Sample
000000000

Methodology
0●0000

Results
0
000000
00000

Conclude
0000

Sun and Abraham (2021) Event Study: Household Level
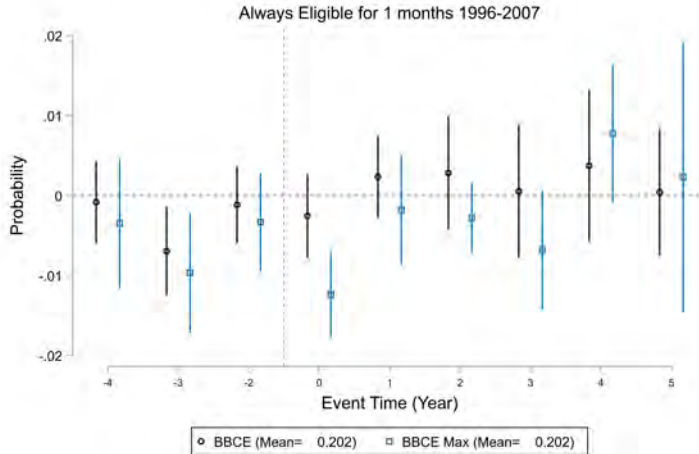
$$y_{ist} = \alpha + \sum_{c \in C} \sum_{k \neq -1} \pi_{c,k} 1(\tau_{st} = k) \cdot Cohort_s^c + \theta_s + \sigma_t + \mathbf{X_{ist}\Gamma} + \mathbf{W_{st}\Phi} + e_{ist} \quad (5)$$

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

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

- $\mathbf{X_{ist}}$: **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

29

Intro
oooo

BBCE
ooooooo

State Adoption
oooooo

Data and Sample
ooooooooo

Methodology
ooｅooo

Results
o
oooooo
ooooo

Conclude
oooo

Sun and Abraham (2021) Event Study: State Level

$$y_{st} = \alpha + \sum_{c \in C} \sum_{k \neq -1} \pi_{c,k} 1(\tau_{st} = k) \cdot Cohort_s^c + \theta_s + \sigma_t + \mathbf{X_{st}\Gamma} + e_{st} \quad (6)$$

- $\mathbf{X_{st}}$: 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

Methodology appendix

Identifying Assumptions

1. **Parallel trends:** the comparison group represents the potential outcome for the treated group without treatment

   ➢ In previous sections, there is no systematic difference in state characteristics or household characteristics between BBCE/BBCE Max state-year and the comparing state-year.

   ➢ In the following section, the pre-event coefficients are not significant.

2. **No anticipatory effects:** no treatment effect in pre-periods

   ➢ State agencies cannot implement 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.

Intro
0000

BBCE
0000000

State Adoption
000000

Data and Sample
000000000

Methodology
000000

Results
0
000000
00000

Conclude
0000

Event Study on the Size of Always Eligible Population

Always Eligible for 1 months 1996-2007

This figure runs equation (5) over the entire population with the always-eligible identifier as the outcome. No systematic shift in the always-eligible population in post-periods.

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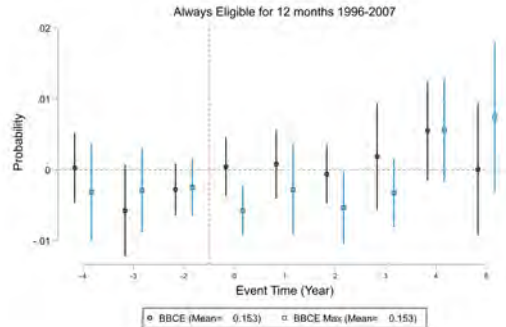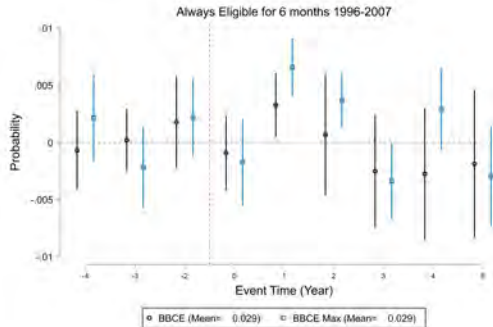
	$\geq$ 1 mo.		At most 6 months		12 months	
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
Diff Pre 2-4	-0.00419	-0.00324	0.00112	-0.000128	-0.00410	-0.00215
vs. Post 0-5	(0.00319)	(0.00354)	(0.00141)	(0.00179)	(0.00238)	(0.00276)

Table of Content

Table of Content

State Spending on SNAP Administration Decreased

Total Administrative Costs Per Eligible Household 1997-2007

o BBCE (Mean= 24.307)   □ BBCE Max (Mean= 24.300)
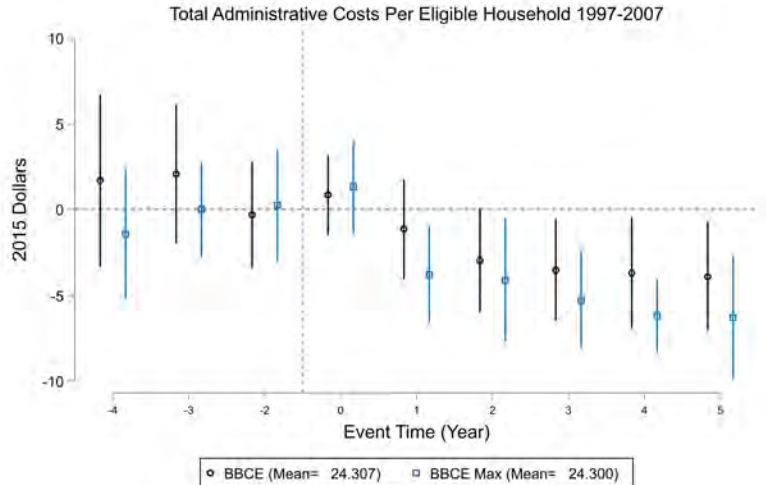
Increase in Fraud Cases, Decrease in Fraud Amount

SNAP Fraud Cases Per Eligible Household 1996-2007

SNAP Fraud Amount Per Eligible Household 1996-2007
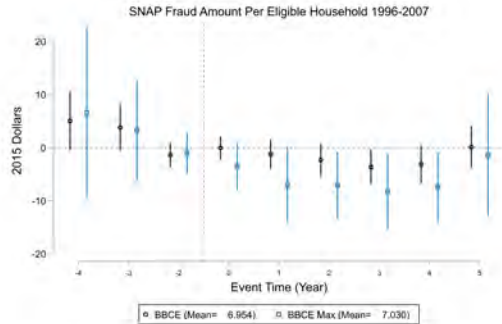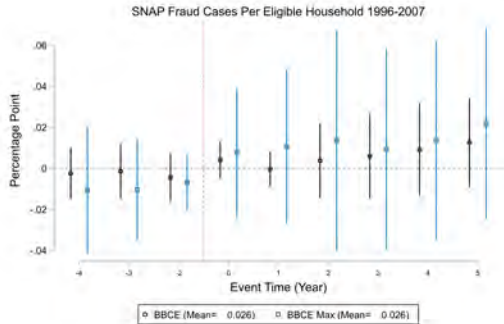
$\rightarrow$ This suggests although more fraud was intended, they were detected before benefits were issued.

Aggregate

*Divided by the size of always-eligible population

No Increase in Outreach Expenditures

SNAP Outreach Expenditure Per Eligible Household 1996-2007

Legend: o BBCE (Mean= 0.065)   □ BBCE Max (Mean= 0.064)

Aggregate

*Divided by the size of always-eligible population   38

Intro
oooo

BBCE
ooooooo

State Adoption
oooooo

Data and Sample
ooooooooo

Methodology
oooooo

Results
o
ooooo●o
ooooo

Conclude
oooo

More Benefits Issued

Monthly Benefit Issuance Per Eligible Household 1996-2007

Intro
0000

BBCE
0000000

State Adoption
000000

Data and Sample
000000000

Methodology
000000

Results
O
00000●
00000

Conclude
0000

Aggregate Estimates

	Pre 2-4		Post 3-5		Post 0-5	
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
Total Admin Cost	1.152	-0.393	-3.703*	-4.432***	-2.395*	-4.047***
	(1.859)	(1.357)	(1.443)	(0.807)	(1.152)	(0.986)
Federal Admin Costs	0.338	-0.887	-2.012*	-2.872***	-1.252	-2.626**
	(0.835)	(0.516)	(0.798)	(0.537)	(0.705)	(0.994)
Fraud Cases	-0.00289	-0.00942	0.00904	0.0112	0.00570	0.0127
	(0.00579)	(0.0113)	(0.0105)	(0.0170)	(0.00799)	(0.0207)
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)
Outreach	-0.0203	-0.0194	0.000524	0.00280	0.00667	0.0111
	(0.0112)	(0.0107)	(0.0146)	(0.0105)	(0.00897)	(0.0105)
Benefits Issued	13.86	77.71	47.08	149.6***	12.00	139.0***
	(37.08)	(60.27)	(62.85)	(33.16)	(43.96)	(35.93)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Admin Costs Fraud Outreach Benefits Aggregate appendix

Table of Content

Some Suggestive Increase in Take-up

Take Up -2007
1 months eligible

BBCE (Mean= 0.499)   BBCE Max (Mean= 0.500)
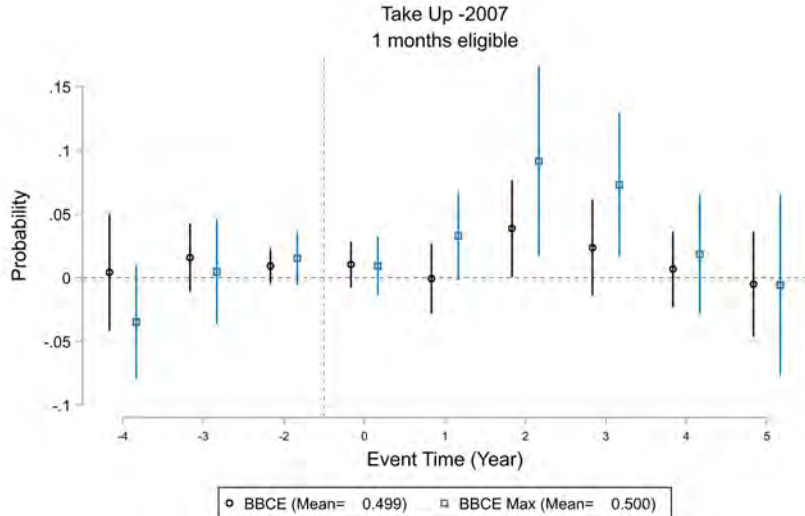
Increase in Take-up More Salient for the $\leq$ 6 mo. Group
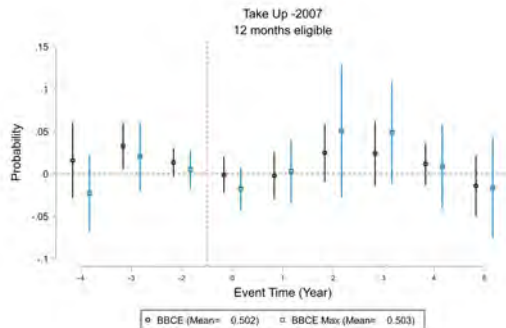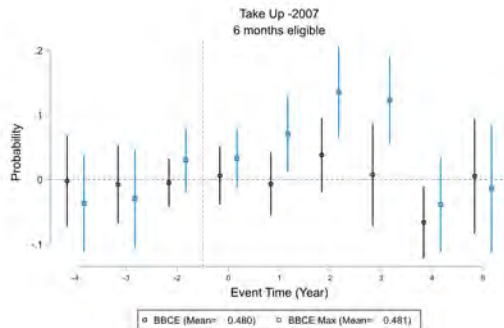
Aggregate Estimates: Take-up

| | Pre 2-4 | | Post 3-5 | | Post 0-3 | |
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
1 mo.	0.00969	-0.00497	0.00832	0.0284	0.0179	0.0516*
	(0.0131)	(0.0148)	(0.0165)	(0.0283)	(0.0130)	(0.0217)
6 mo.	-0.00512	-0.0123	-0.0181	0.0234	0.0110	0.0902***
	(0.0245)	(0.0253)	(0.0287)	(0.0381)	(0.0251)	(0.0234)
12 mo.	0.0205	0.000595	0.00705	0.0134	0.0112	0.0211
	(0.0138)	(0.0166)	(0.0153)	(0.0276)	(0.0132)	(0.0242)
Balanced Panel						
1 mo.	0.0178	-0.0303	0.0225	0.0306	0.0348	0.0639*
	(0.0322)	(0.0209)	(0.0228)	(0.0298)	(0.0195)	(0.0279)
6 mo.	-0.0238	-0.0719*	0.00431	0.0251	0.0408	0.102***
	(0.0607)	(0.0319)	(0.0300)	(0.0396)	(0.0429)	(0.0292)
12 mo.	0.0454	-0.0181	0.0337	0.0163	0.0358	0.0324
	(0.0334)	(0.0241)	(0.0251)	(0.0292)	(0.0217)	(0.0316)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Balanced

Intro
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BBCE
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State Adoption
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Data and Sample
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Methodology
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Results
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Conclude
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Suggestive Evidence on Earnings Increase
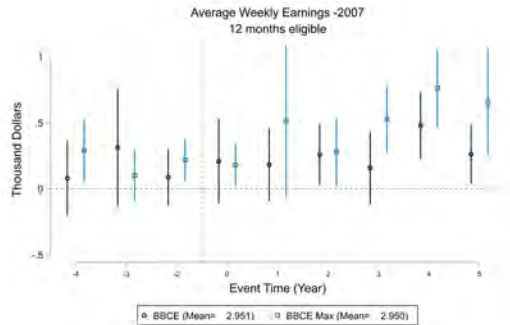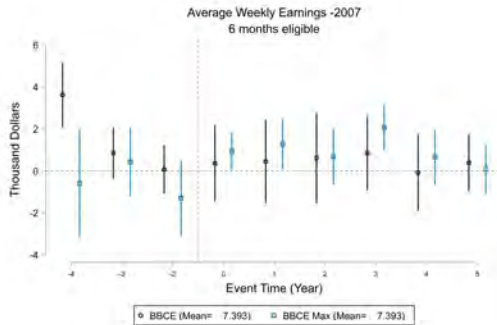
- For the 12-month group, the aggregate effects from year 3-5 for BBCE Max is about 65 dollars per week, or 260 dollars per month, which is more than the average eligible benefits (160 dollars per month).

- I also find an increase in earnings for SNAP participants.

Aggregate

Table of Content

Summary

- In this paper, I find the federal income and asset limits for SNAP are incurring many administrative costs while not ruling out many people and potentially preventing take-up from the always-eligible households.

- The results contribute to the **literature on optimal program design** by empirically examining theoretical predictions.

  - ➢ Golosov and Tsyvinski (2006) proposes asset tests for the Social Security Disability Insurance (SSDI) program because theoretically, adjusting savings would make falsification too costly.

  - ➢ I do find some increase in fraud cases, but in general the fraudulent amount and total administrative costs decreased.
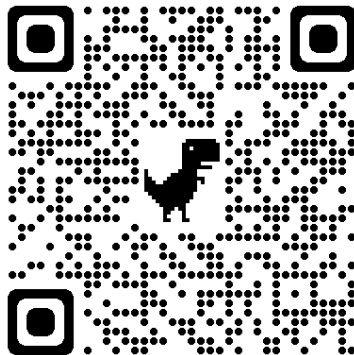
Contribution

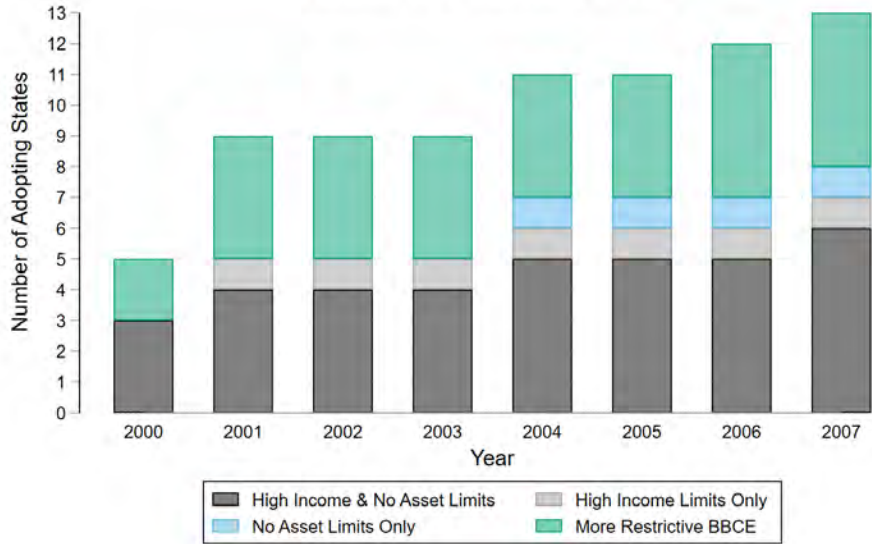This paper also contributes to two other strands of literature:

1. **Literature on incomplete take-up:** income and asset limits have been
   discussed to potentially affect take-up, but few empirical evidence on it.
   - ➢ I also show that the already eligible households react to eligibility expansions,
     adding another evidence to the "welcome-mat effect" literature (Frean, Gruber, &
     Sommers, 2017; Hamersma, Kim, & Timpe, 2019; Sommers & Epstein, 2011).

2. **Literature on BBCE evaluations:** there have been studies on whether
   BBCE increases program participation (Anders & Rafkin, 2022; Dickert-Conlin,
   Fitzpatrick, Stacy, & Tiehen, 2021; Kabbani & Wilde, 2003; Ratcliffe, Mckernan, & Finegold, 2008).
   - ➢ I am one of the first who carefully examined the exogeneity of BBCE adoptions
   - ➢ I look at the already-eligible population, while previous studies look at state
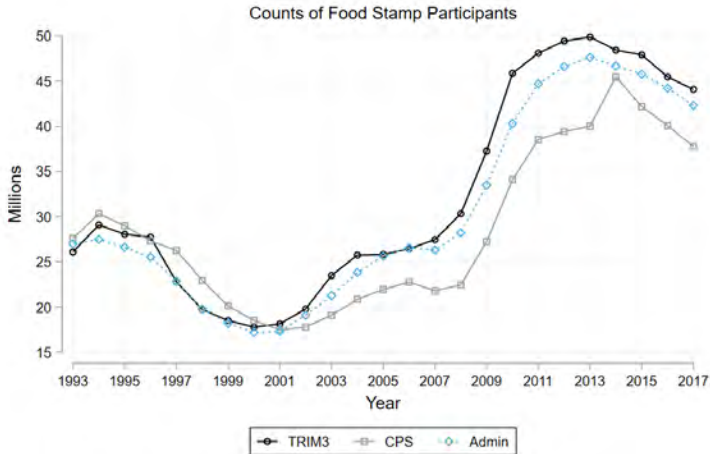   populations or a subset of very poor households.

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BBCE
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State Adoption
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Data and Sample
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Methodology
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Results
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Conclude
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Thank You!

My Website and Info:

Distribution of Different BBCE Policies

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
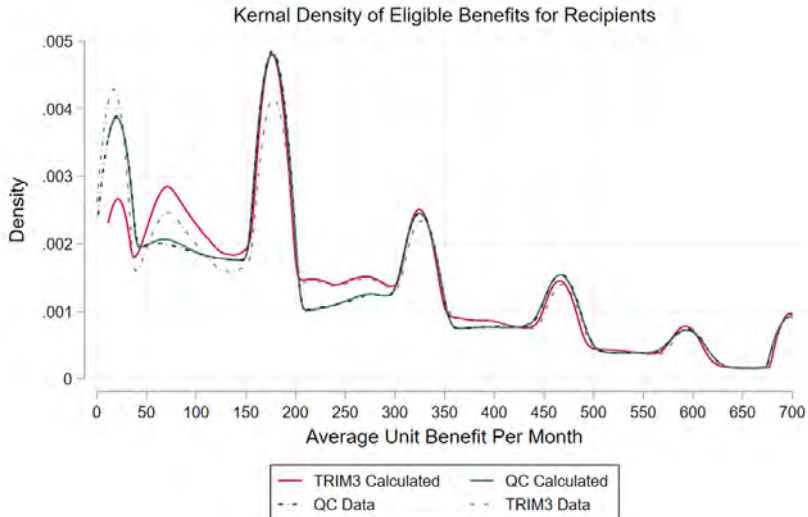
Constructing Disability Measure

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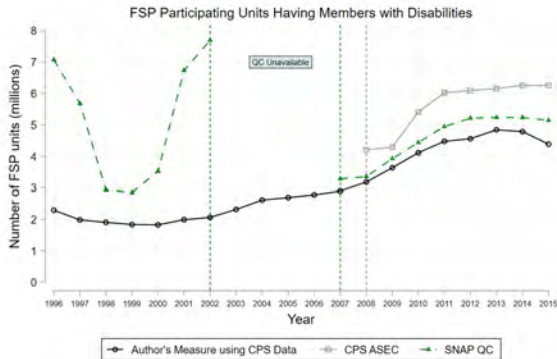
1. Nonelderly SSI recipients

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

QC Unavailable

Legend: Author's Measure using CPS Data — CPS ASEC — SNAP QC

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.
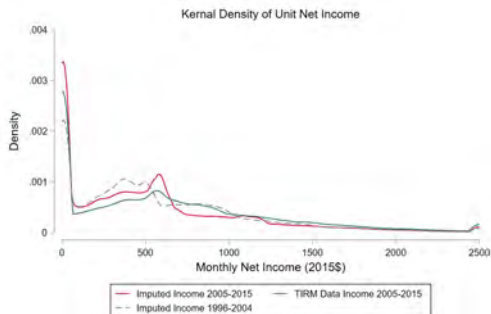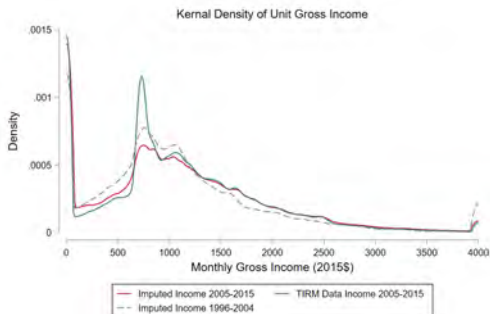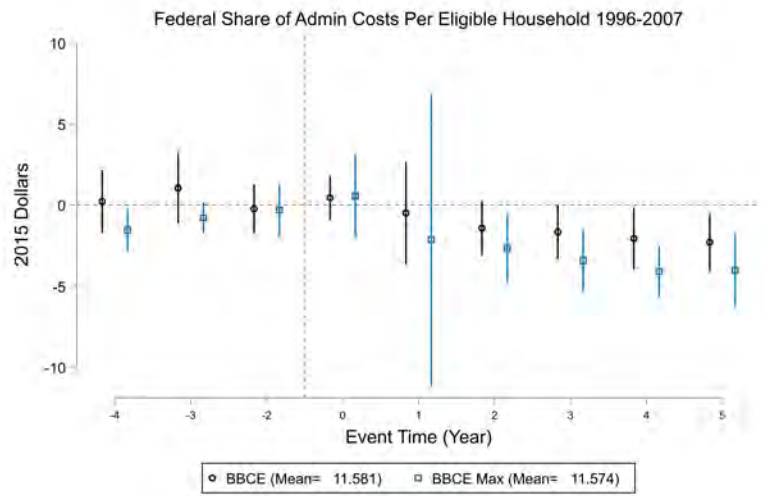
Imputing Asset Test

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.
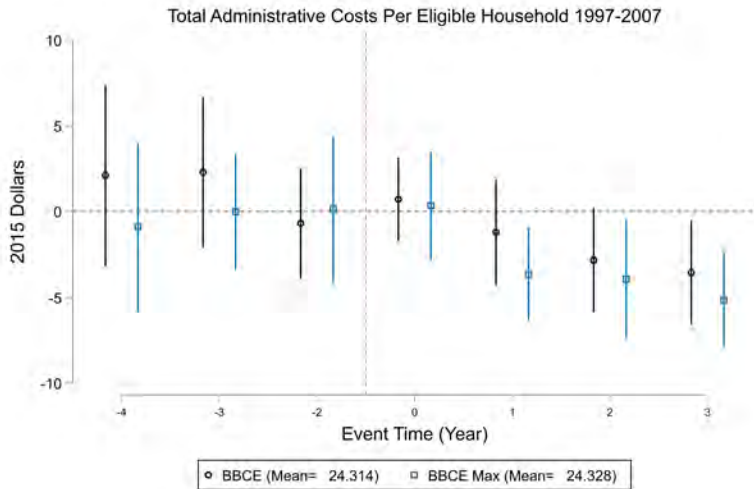

Kernal Density of Passed Gross Income & Asset Test
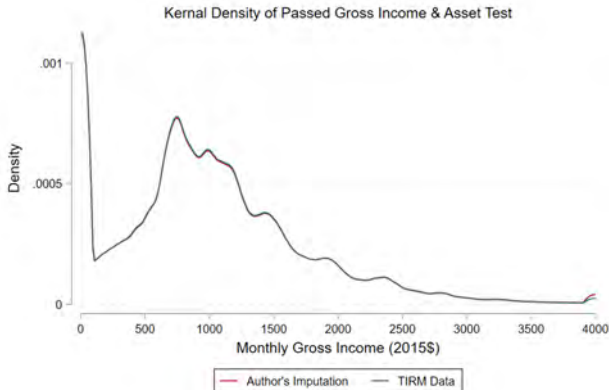
Sun & Abraham 2021: IW Estimator

- 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

Federal Share of SNAP Administration Costs

Federal Share of Admin Costs Per Eligible Household 1996-2007

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

State Spending on SNAP Administration - Balanced Panel

Total Administrative Costs Per Eligible Household 1997-2007

*Divided by the size of always-eligible population 60

Aggregate Estimates: Balanced Panel

	Pre 2-4		Post 3		Post 0-3	
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
Total Admin Costs	1.232	-0.274	-1.726	-3.090**	-3.552*	-5.137***
	(1.980)	(1.689)	(1.205)	(1.160)	(1.531)	(1.407)
Federal Admin Costs	0.328	-0.976	-0.799	-2.075	-1.682	-3.445***
	(0.883)	(0.680)	(0.776)	(1.321)	(0.877)	(0.960)
Fraud Cases	-0.00267	-0.0123	0.00301	0.0112	0.00635	0.0103
	(0.00642)	(0.0142)	(0.00697)	(0.0213)	(0.0114)	(0.0247)
Fraud Amount	2.898	4.049	-2.024	-7.066**	-4.450*	-8.746*
	(1.793)	(4.672)	(1.384)	(2.342)	(2.010)	(3.488)
Outreach	-0.0197	-0.0184	0.00538	0.0169	-0.00485	0.00666
	(0.0121)	(0.0113)	(0.00888)	(0.0141)	(0.0167)	(0.0323)
Benefits	-23.22	-5.147	-11.20	101.1*	44.66	209.7**
	(34.05)	(53.78)	(42.06)	(42.22)	(81.18)	(78.25)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Aggregate Slide

Take-up - Balanced Panel

Take Up 1996-2007
1 months eligible - Balanced Panel

Take-up - Balanced Panel

Take Up 1996-2007
6 months eligible - Balanced Panel

Take Up 1996-2007
12 months eligible - Balanced Panel

Back
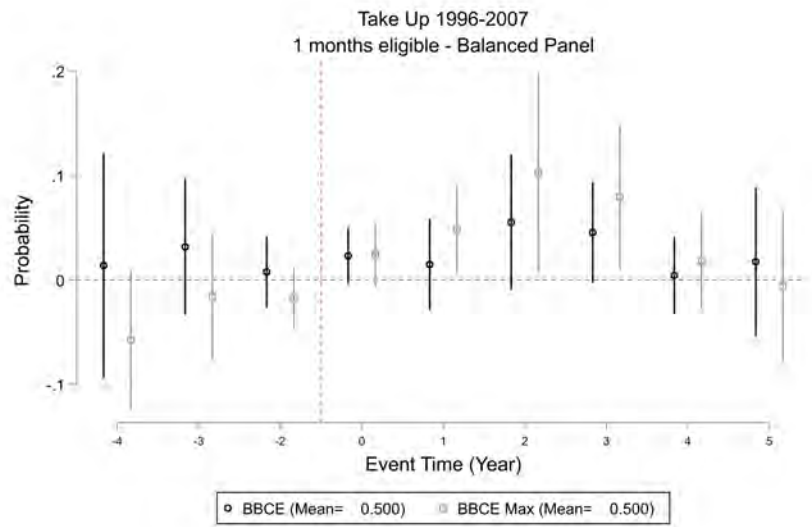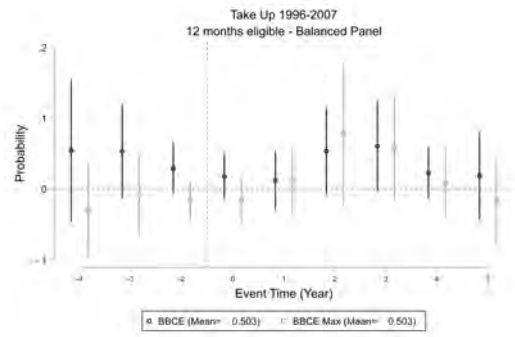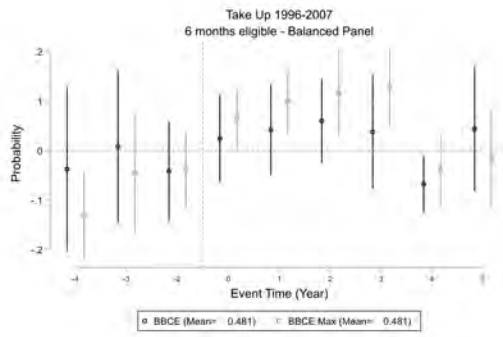
Aggregate Estimates: Average Weekly Earnings

	Pre 2-4		Post 3-5		Post 0-3	
	BBCE	BBCE Max	BBCE	BBCE Max	BBCE	BBCE Max
1 mo.	0.487***	0.119	0.176	0.645**	0.114	0.449**
	(0.133)	(0.179)	(0.184)	(0.247)	(0.199)	(0.157)
6 mo.	1.508**	-0.495	0.376	0.925	0.560	1.235**
	(0.532)	(0.953)	(0.791)	(0.506)	(0.941)	(0.477)
12 mo.	0.159	0.203*	0.300*	0.649***	0.202	0.375**
	(0.114)	(0.0914)	(0.118)	(0.148)	(0.104)	(0.134)
Balanced Panel						
1 mo.	0.195	0.579*	0.293	0.677**	0.288	0.678**
	(0.249)	(0.240)	(0.235)	(0.258)	(0.266)	(0.222)
6 mo.	-0.539	0.219	-0.552	0.952	0.148	1.571*
	(0.854)	(0.763)	(0.870)	(0.551)	(0.944)	(0.626)
12 mo.	0.398*	0.712***	0.535***	0.647***	0.340*	0.480**
	(0.184)	(0.129)	(0.153)	(0.147)	(0.161)	(0.162)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back