- Food Stamps (SNAP)
  - Introduced between 1962 and 1975. County-by-county rollout.
  - Only safety-net program available to *all* income-eligible families (no restriction on family structure, disabled, elderly)
  - In 2012 $74 bn (TANF $29 bn, EITC $64bn)
  - Little cross-state variation.
  - Food Stamp Act of 1964 in response to positive reception of pilot programs.

- Benefits:
  - Essentially makes up the difference between what govt thinks you must spend on food (based on family size) and what you can (30 percent of income)
  - But typically amount to less than family spends on food. Therefore (economic thoery) predicts similar to just a cash transfer.
  - If so, what outcomes (other than health) might we expect? Where is this money going?
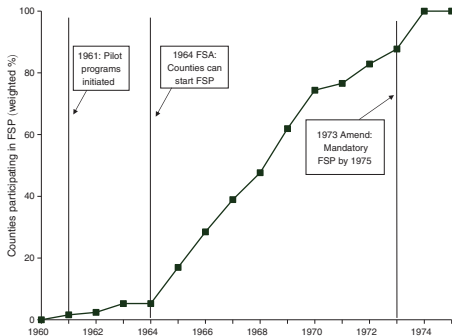
Rollout of FSP by year:

FIGURE 1. WEIGHTED PERCENT OF COUNTIES WITH FOOD STAMP PROGRAM, 1960–1975

Rollout by County:
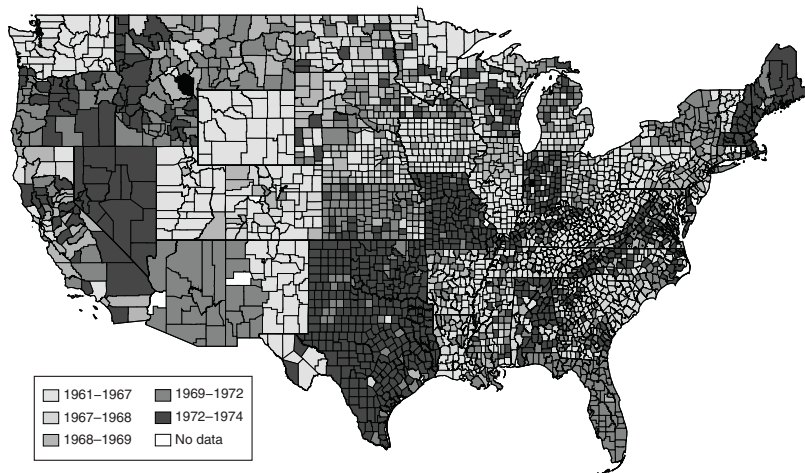
Figure 2. Food Stamp Program Start Date, by County, 1961–1974

Hoynes, Schanzenbach, Almond: Long Run Food Stamps

- Data:
  - Used PSID data to track long-term outcomes of kids.
  - Focus on what county they were living in when FSP introduced.
  - Look at a variety of health outcomes and of economic outcomes (creating an index for both)
  - Focus on families with less than a high school education ("high participation")

Hoynes, Schanzenbach, Almond: Long Run Food Stamps

- Run a diff-in-diff model. Exploiting varation over time in county participation, comparing those born before/after FSP rollout.
- *FSP* measures share of months between 0-5 food stamps available.

$$(1) \quad y_{icb} = \alpha + \delta FSP_{cb} + X_{icb}\beta + \eta_c + \lambda_b + \gamma_t + \theta_s \times b + \varphi CB60_c \times b + \varepsilon_{icb},$$

- A bunch of possible outcomes in data.
- z-scores outcome variables to create health and economic indices.
  - Good for aggregating a bunch of variables measuring roughly the same thing
  - But makes interpretability tougher. Weighs each outcome equally when we may not want to.

TABLE 1—DESCRIPTIVE STATISTICS

	Full sample		High impact sample	
	Observations	Mean	Observations	Mean
FS share age IU–5	60,782	0.370	28,808	0.338
Health outcomes				
Metabolic health index	22,070	−0.079	9,097	0.010
In good health = 1	60,757	0.679	28,833	0.581
Disabled = 1	60,753	0.096	28,827	0.118
Diabetes = 1	22,546	0.041	9,321	0.054
High blood pressure = 1	22,544	0.133	9,319	0.187
Obesity = 1	24,127	0.240	10,209	0.322
Heart disease = 1	22,543	0.019	9,320	0.028
Heart attack = 1	22,548	0.006	9,323	0.008
Healthy weight = 1	24,127	0.408	10,209	0.322
BMI	24,127	26.862	10,209	28.255
Body weight (pounds)	24,645	193.148	10,461	202.688
Height (inches)	24,589	67.760	10,428	67.427
Height below 5th percentile	24,589	0.011	10,428	0.016
Economic outcomes				
Economic outcome index	57,585	−0.051	27,303	−0.304
Education high school plus	60,106	0.903	28,663	0.786
log(total fam. income)	60,599	10.847	28,706	10.435
Earnings (including 0s)	59,136	35,047	27,862	23,473
Employed = 1	60,843	0.864	28,881	0.739
Poverty = 1	60,599	0.184	28,706	0.339
Food stamp receipt	60,665	0.085	28,759	0.157
TANF receipt	60,839	0.033	28,873	0.061
Health behaviors				
Ever smoked	22,548	0.447	9,318	0.522
Drink 3+ per day, now	22,493	0.152	9,300	0.153
Demographics				
Male	60,898	0.462	28,905	0.442
Nonwhite	60,777	0.171	28,823	0.317
High school grad.	60,106	0.390	28,663	0.500
Greater than high school	60,106	0.502	28,663	0.286
Age	60,898	32.135	28,905	32.126

FSP has pretty big effect on health outcomes. -0.3 of a standard deviation.

TABLE 2—METABOLIC SYNDROME INDEX FOR HIGH PARTICIPATION SAMPLE

	Metabolic syndrome (index)	Components of metabolic syndrome index				
		Diabetes	High blood pressure	Obesity	Heart disease	Heart attack
FS share IU–5	−0.294***	−0.032	−0.13	−0.159*	−0.053	−0.031
	(0.107)	(0.048)	(0.086)	(0.086)	(0.027)	(0.019)
Mean of dependent variable	0.01	0.05	0.19	0.33	0.03	0.01
Observations	8,246	8,431	8,430	9,217	8,430	8,432
R^2	0.26	0.19	0.22	0.26	0.13	0.08

Seems like a big (although insignificant) effect on economic outcomes as well.

TABLE 4—ECONOMIC SELF-SUFFICIENCY IN THE HIGH PARTICIPATION SAMPLE

	Economic self sufficiency (index)	Components of economic self-sufficiency index						
		High school plus	Not poor	Not on food stamps	Not on TANF	Employed	Earnings	log(family income)
FS share IU–5	0.182	0.184*	0.052	0.032	0.023	−0.007	3,610	0.247
	(0.124)	(0.108)	(0.067)	(0.052)	(0.026)	(0.056)	(5,064)	(0.165)
Y-mean	−0.25	0.80	0.70	0.86	0.95	0.76	24,495	10.52
Observations	20,115	21,197	21,209	20,115	21,347	21,348	20,529	21,160
R^2	0.38	0.29	0.30	0.38	0.16	0.18	0.34	0.37

Notes: Each parameter is from a separate regression of the outcome variable on FSP exposure (share of months between conception and age five that FSP is in the county). The sample comes from the 1968–2009 PSID and includes heads and wives born between 1956 and 1981 who are between ages 18 and 53 (or 24–53 for economic outcomes). The high participation sample includes those born into families where the head had less than a high school education. Estimates are weighted using PSID weights and clustered on county of birth. The models control for individual demographics, family background, and fixed effects for year of birth, year of interview, county, state-specific linear cohort, and 1960 county characteristics interacted with linear cohort. Standard errors in parentheses.

Bigger health effects among men, economic effects among women.

TABLE 5—METABOLIC SYNDROME AND ECONOMIC SELF-SUFFICIENCY IN THE HIGH PARTICIPATION SAMPLE, BY GENDER

	Women			Men		
	Metabolic syndrome (index)	Good health	Economic self-sufficiency (index)	Metabolic syndrome (index)	Good health	Economic self-sufficiency (index)
FS share IU–5	−0.312**	0.336***	0.306*	−0.526**	−0.077	0.005
	(0.130)	(0.100)	(0.164)	(0.251)	(0.112)	(0.168)
Mean of dependent variable	0.03	0.53	−0.37	−0.01	0.66	−0.11
Observations	5,062	15,702	12,208	3,184	10,036	7,907
R^2	0.37	0.22	0.43	0.32	0.18	0.46

Notes: Each parameter is from a separate regression of the outcome variable on FSP exposure (share of months between conception and age five that FSP is in the county). The sample comes from the 1968–2009 PSID and includes heads and wives born between 1956 and 1981 who are between ages 18 and 53 (or 24–53 for economic outcomes). The high participation sample includes those born into families where the head had less than a high school education. Estimates are weighted using PSID weights and clustered on county of birth. The models control for individual demographics, family background, and fixed effects for year of birth, year of interview, county, state-specific linear cohort, and 1960 county characteristics interacted with linear cohort. Standard errors in parentheses.

- Placebo group (high education) does not find statistically significant effects.
- Although economic outcome seems high?
- And sample size seems low?

TABLE 7—METABOLIC SYNDROME AND ECONOMIC SELF-SUFFICIENCY FOR HIGH EDUCATION
GROUP (*Placebo Test*)

	Metabolic syndrome (index)	Economic self-sufficiency (index)
FS share IU–5	−0.013	0.073
	(0.060)	(0.087)
Y-mean		
	−0.17	0.22
Observations		
R^2	5,398	10,180
	0.24	0.33
"Right" signed components	obesity, high blood pressure	employed, earnings, TANF
"Wrong" signed components	good health, disability, diabetes, heart disease	education, family income, food stamps

Notes: Each parameter is from a separate regression of the outcome variable on FSP exposure (share of months between conception and age five that FSP is in the county). The sample comes from the 1968–2009 PSID and includes heads and wives born between 1956 and 1981 who are between 18 and 53 years old (or 24–53 for economic outcomes). The sample includes those born into families where the head had a high school education or more. Estimates are

Then uses a triple-difference, incorporating probability of receiving food stamps. Splits households into groups (by education ,race, marital status) and finds participation rates.

$$(2) \qquad y_{icb} = \alpha + \varphi FSP_{cb} + \delta FSP_{cb}P_g + X_{icb}\beta + \eta_c$$

$$+ \lambda_b + \gamma_t + \mu_g + \theta_s \times b + \varphi CB60_c \times b + \varepsilon_{icb}.$$

This yields larger effects:

TABLE 9—TRIPLE-DIFFERENCE ESTIMATES FOR METABOLIC SYNDROME AND ECONOMIC
SELF-SUFFICIENCY, FULL SAMPLE

	Metabolic syndrome (index)	Good health	Economic self-sufficiency (index)
FS share IU–5 $\times p_g$	−0.438**	0.292**	0.400
	(0.204)	(0.133)	(0.323)
FS share IU–5	−0.032	−0.021	−0.045
	(0.073)	(0.051)	(0.083)
Mean of dependent variable	−0.08	0.68	0.69
Observations	19,948	54,787	43,117
R^2	0.20	0.13	0.35

Hoynes, Schanzenbach, Almond: Long Run Food Stamps

Lastly calculates timing effects. Little-to-no health effects if only treated from age 4 and beyond.
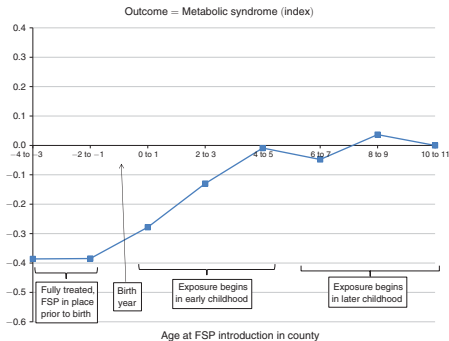

Figure 3. Event Study Estimates of the Impact of FSP Exposure on Metabolic Syndrome Index
(*High Participation Sample*)

Notes: The figure plots coefficients from an event-study analysis. Event time is defined as age when FSP is implemented in the birth county. The models are estimated for the sample of individuals born into families where the head has less than a high school education. Age 10–11 is the omitted year so estimates are relative to that point. See the text for a description of the model.

Similar story for economic outcomes. Effects concentrated among youngest ages:

Outcome = Economic self-sufficiency (index)
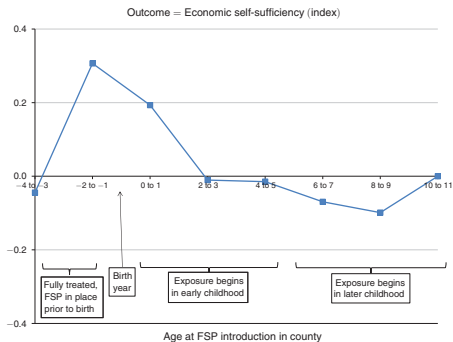
Age at FSP introduction in county

FIGURE 4. EVENT STUDY ESTIMATES OF THE IMPACT OF FSP EXPOSURE ON ECONOMIC SELF-SUFFICIENCY
(*High Participation Sample*)

Notes: The figure plots coefficients from an event-study analysis. Event time is defined as age when FSP is implemented in the birth county. The models are estimated for the sample of individuals born into families where the head has less than a high school education. Age 10–11 is the omitted year so estimates are relative to that point. See the text for a description of the model.

- Takeaways:
  - Appears that food stamps have somewhat large effects on health and economic outcomes.
  - These effects are primarily concentrated among youngest years. (Validation for WIC program?)
  - Hard to do cost-benefit analysis as is.
  - Mortality?

SNAP and Food Expenditures: Evaluating the Effects of California's Cash-out Policy

Erik Hembre, Katherine McElroy, and Shogher Ohannessian

May 26, 2022

Introduction

- In-Kind vs. Cash Transfers:
  - $\frac{2}{3}^{rds}$ of means-tested transfers are in-kind (SNAP, Medicaid, Housing, Pell Grants, WIC)
  - Budget distortions? Good or bad?
  - Should we (researchers) treat it as cash?

Introduction

- SNAP Evaluation Challenge:
  - Minimal cross-state variation
  - Broad eligibility and take-up

Introduction

- SNAP Evaluation Challenge:
    - Minimal cross-state variation
    - Broad eligibility and take-up
    - Solution: CA Cash-out Policy

Introduction

- California Cash-out Policy:
  - California SSI recipients were ineligible for SNAP benefits (dating back to 1972)
  - Only state with cash-out policy (since 1981)
  - Ended in June 2019
  - Policy increased SNAP benefits for single-person HHs, ambiguous for others

Introduction

- Research Question:
    - How do SNAP benefits affect food expenditures?
        - Substitution?
        - Infra- vs. Extra-marginal?

Introduction

- Methodology:
    - Consumer Expenditure Survey (CEX)
    - DID Framework:
        - CA vs. Non-CA, pre- vs. post-
        - Sample: single-person HHs

Introduction

- Related Literature:
  - 1990s Cash-out experiments: (R. Moffitt 1989; T. M. Fraker, Martini, and Ohls 1995; T. M. Fraker, Martini, Ohls, and Ponza 1995; Levedahl 1995; R. V. Breunig and Dasgupta 2002; Whitmore et al. 2002; R. Breunig and Dasgupta 2005)
    - Low Marginal Propensity to Consume Food (MPCF)
    - 0.11-0.26 for Food Stamps, similar to cash
    - Negligible MPCF for single-adult HHs
    - Evidence of a Food Stamp black market

Introduction

- Related Literature:

  - Benefit Changes

  - Original SNAP introduction (H. W. Hoynes and Diane Whitmore Schanzenbach 2009): MPCF: 0.16

  - Great Recession bump (Beatty and Tuttle 2015; Bruich 2014; Hastings and Shapiro 2018): Higher MCPF: 0.48, 0.37,0.5-0.6

    - Why? H. Hoynes and Diane Whitmore Schanzenbach 2015 report most are infra-marginal?
    - SNAP ↑ more likely extra-marginal
    - Mental accounting model

Introduction

- Contribution:

    - Recent natural experiment

    - SSI important group, very-low income

    - Large benefit change: $192 vs. $26

    - CEX (category substitution)

    - More likely to be infra-marginal dollars

Introduction

- Preview of Findings:

    - Jump in food expenditures after cash-out policy:

        - Food at home increases by $120-$206 per quarter
        - MPCF $\sim$ 0.45-0.78

    - Substitution away from eating out

    - Driven by extra-marginal HHs

Policy Details

- SNAP:

    - Food voucher program:

        - For "groceries", not "hot" foods, alcohol, non-food items

    - Broad eligibility (130% FPL)

    - Single-person HH: Max-$192, Min-$15

Policy Details

- SNAP Max for 1-person: \$192, 2-person:\$ (Diff = \$161)

  $$SNAP_{ijt} = \max\{Max_{jt} - 0.3 * \max\{Gross_{ijt} - Deductions_{ijt}, 0\}, Min_{jt}\}$$

- If Income #2 > \$713 (\$177 StDed), $SNAP \downarrow$

Policy Details

- SSI:

  - $\sim$ 7.5M recipients ($\sim$5% of HHs)

  - Restrictive means-testing eligibility

  - Disability requirement if < 65

  - 2019 cash benefit: \$771 per month

  - Categorical eligibility for SNAP

 - State supplements ($<$10% of total benefits)

Policy Details

- Cash-out Policy:

    - If state SSI supplement $> \$10$, can exclude SSI recipients from SNAP

        - Benefit/cost to cash-out depends on HH size & recipient income

    - Unambiguously non-negative for single-person HHs

    - Rescinded in June 2019

Introduction
○○○○○○○○○

Policy Details
○○○○●

Theory
○○

Data
○○○○○

Methodology
○○

Results
○○○○○○○○

Conclusions
○

Policy Details

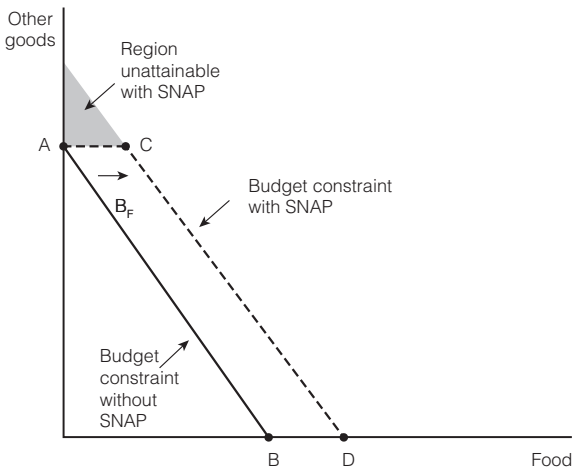- Cash-out policy clearly had an effect on CA SNAP caseloads:

SNAP Caseloads for CA vs Non-CA
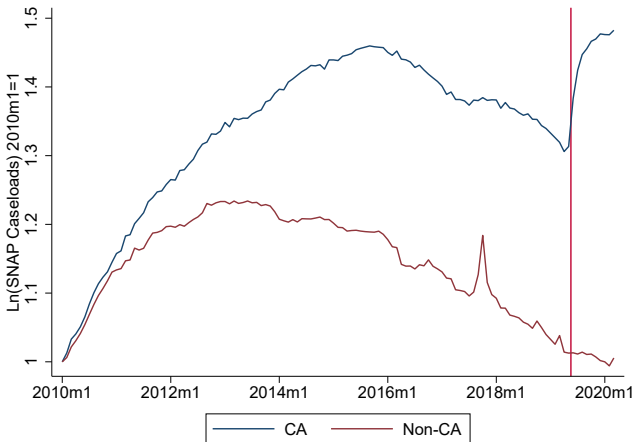
Theory

- In-Kind Transfer Budget Constraint:

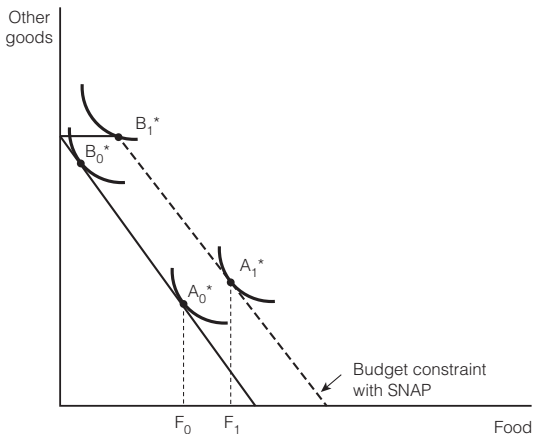**a. Impact of SNAP on budget constraints**

Theory

- Extra-marginal vs. Intra-marginal HHs:

b. Consumption decisions in response to SNAP

Data

- CEX Interview Survey, 2003-2020:

    - National survey of 10,000 HHs ($\sim$ 6,000 respond)

    - Rotating panel, 4 quarters

    - Focus expenditures, broad categories

   - Demographic and economics variables (including SNAP and SSI receipt)

Data

- Single-person SSI households: Pre/Post, Non-CA, CA

  - CA SSI: more likely older, female

|	Non-CA Pre	Non-CA Post	CA Pre	CA Post	Full
SNAP	0.53	0.56	0.04	0.26	0.48
	(0.50)	(0.50)	(0.20)	(0.44)	(0.50)
SNAP Amount	655.99	825.14	68.59	331.14	605.15
	(881.03)	(923.28)	(364.51)	(702.65)	(865.47)
Age >= 65	0.32	0.31	0.42	0.40	0.33
	(0.47)	(0.46)	(0.49)	(0.49)	(0.47)
Age	57.70	58.61	60.64	62.23	58.15
	(15.21)	(13.94)	(15.78)	(12.12)	(15.16)
Male	0.41	0.43	0.35	0.38	0.40
	(0.49)	(0.50)	(0.48)	(0.49)	(0.49)
Food (Home)	19.89	17.98	18.53	19.45	19.58
	(12.54)	(12.11)	(12.05)	(12.82)	(12.47)
Food (Away)	3.11	3.17	3.95	2.28	3.19
	(5.73)	(5.51)	(6.05)	(4.39)	(5.73)
Housing	50.12	46.55	52.21	49.57	50.02
	(17.48)	(18.20)	(17.79)	(17.52)	(17.62)
Alcohol	0.47	0.51	0.57	0.36	0.49
	(1.77)	(1.51)	(1.95)	(1.06)	(1.76)
Apparel	1.93	1.32	1.82	1.35	1.86
	(3.19)	(2.38)	(2.44)	(2.37)	(3.05)
Transportation	6.62	8.32	6.38	7.01	6.75
	(9.71)	(11.57)	(9.24)	(7.97)	(9.83)
Total Expenditures	3,954.75	4,733.90	4,819.07	4,807.18	4,123.42
	(2,747.46)	(3,078.69)	(3,538.31)	(3,262.70)	(2,894.82)
Observations	6,264	486	910	91	7,751

Data

- Increase in CA SSI SNAP participation following cash-out:
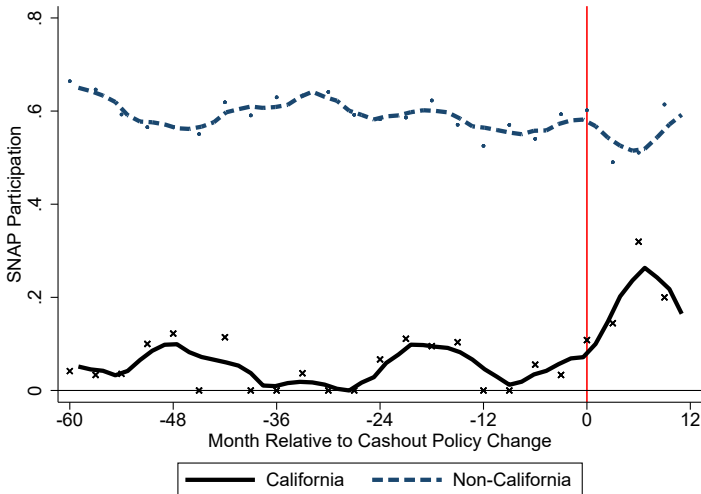
Data

- Large, immediate jump in SNAP aligns with SNAP QC data:

SNAP Participation —Quality Control Data
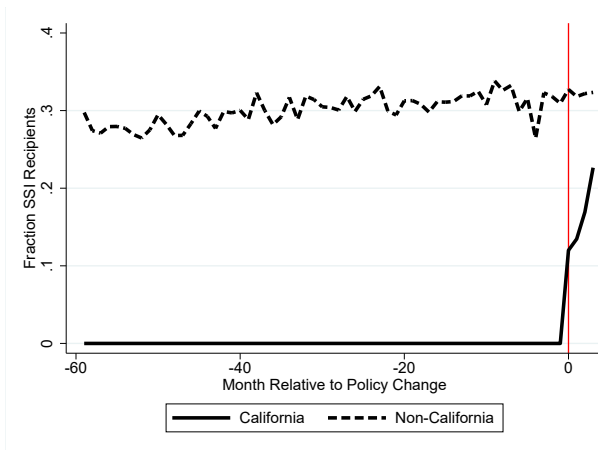
Data

- Changes to budget shares following cash-out policy:
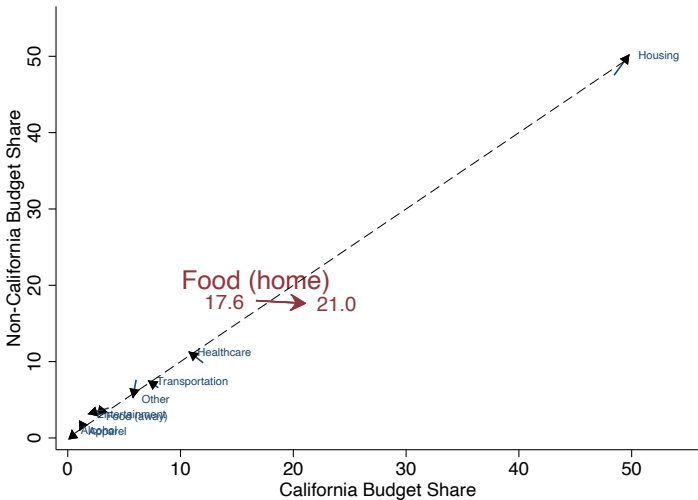
Methodology

- DID Model:

$$Y_{it} = \beta_0 + \beta_1 CA_{it} + \beta_2 Post_t + \beta_3 CA_{it} * Post_t + \beta_4 ln(TotExp_{it}) + \beta_5 l$$
$$\beta_6 X_{it} + \delta_y + (\theta_i) + \epsilon_{it}$$

- Y_{it}: Expenditure share on good Y

- CA: Ind for California

- $Post$: Post-June 2019 Ind

- Year (δ_y) and HH (θ_i) FEs, Log expenditures

- β_3: Coefficient of interest

Methodology

- Concern: Differential CA shocks

- Triple Difference Model:

$$
\begin{aligned}
Y_{it} = \quad & \beta_0 + \beta_1 CA_{it} + \beta_2 Post_{it} + \beta_3 CA_{it} * Post_{it} + \beta_4 Treat_{it} + \\
& \beta_5 Treat_{it} * Post + \beta_6 Treat_{it} * CA + \beta_7 CA_{it} * Treat_{it} * Post_{it} + \\
& \beta_8 ln(TotExp_{it}) + \beta_9 ln(TotExp_{it}) + \beta_1 0 X_{it} + \delta_y + (\theta_i) + \epsilon_{it}
\end{aligned}
$$

- Treat: Dummy for single-person HHs (or SSI HHs)

- Sample: All SSI HHs (or All single-person HHs)

Results

- First Stage: DID on SNAP Participation

	(1)	(2)	(3)	(4)
CA × Post	0.182***	0.180***	0.187***	0.193***
	(0.037)	(0.038)	(0.047)	(0.046)
CA	-0.464***	-0.461***		
	(0.024)	(0.025)		
Post	-0.100**	-0.096**	-0.075*	-0.077*
	(0.049)	(0.048)	(0.043)	(0.043)
Ln(TotExp)	1.853***	1.733***	-0.262	-0.247
	(0.441)	(0.420)	(0.214)	(0.217)
Ln(TotExp)^2	-0.124***	-0.116***	0.014	0.013
	(0.028)	(0.027)	(0.013)	(0.013)
Age		0.000		0.007
		(0.001)		(0.005)
Age >= 65		-0.073**		0.105***
		(0.035)		(0.032)
Male		-0.052**		0.093
		(0.020)		(0.063)
=HS		-0.096***		0.024
		(0.031)		(0.047)
> HS		-0.064**		-0.061
		(0.024)		(0.081)
Hispanic		0.120***		-0.006
		(0.027)		(0.029)
Black		0.044*		-0.017
		(0.023)		(0.063)
Other Race		0.014		0.161
		(0.033)		(0.123)
HH FE	No	No	Yes	Yes
Mean	0.478	0.478	0.479	0.479
Obs	7,557	7,557	7,557	7,557

Results

- Cash-out policy leads to a 2.5-4.3% rise in food at home budget share

- $120-$206, MPCF: 0.45-0.78

	(1)	(2)	(3)	(4)
CA × Post	4.313***	4.344***	2.510**	2.537**
	(0.952)	(0.943)	(1.196)	(1.206)
CA	-0.056	-0.139		
	(0.299)	(0.424)		
Post	0.180	0.157	1.060	0.997
	(1.170)	(1.213)	(1.287)	(1.294)
Ln(TotExp)	43.442***	39.640***	31.172***	30.523***
	(8.779)	(8.677)	(9.068)	(9.043)
Ln(TotExp)^2	-3.060***	-2.803***	-2.139***	-2.100***
	(0.519)	(0.516)	(0.549)	(0.546)
Controls	No	Yes	No	Yes
HH FE	No	No	Yes	Yes
Mean	19.571	19.571	19.568	19.568
Obs	7,557	7,557	7,557	7,557

Results

- By Category:
  - Food away from home decreased
  - Few other statistically significant changes

	Food (Home)	Food (Away)	Alcohol	Housing	Transportation	Apparel	Healthcare	Entertainment	Other
DID									
CA x Post	4.344***	-1.288***	-0.141	-1.420	0.138	-0.027	-1.477	-1.556***	2.285*
	(0.943)	(0.352)	(0.141)	(2.043)	(0.643)	(0.217)	(1.062)	(0.304)	(1.236)
DID + HH FE									
CA x Post	2.537**	-1.679*	-0.191	1.786	1.563	-0.264	-2.197**	-0.556	-0.628
	(1.206)	(0.999)	(0.185)	(2.024)	(1.064)	(0.237)	(0.925)	(0.494)	(1.027)
Mean	19.571	3.191	0.488	50.153	6.717	1.870	5.957	4.192	7.294
Obs	7,557	7,557	7,557	7,557	7,557	7,557	7,557	7,557	7,557

Results

- Comparison to DDD Results:

	Food (Home)	Food (Away)	Alcohol	Housing	Transportation	Apparel	Healthcare	Entertainment	Other
DID									
CA x Post	4.344***	-1.288***	-0.141	-1.420	0.138	-0.027	-1.477	-1.556***	2.285*
	(0.943)	(0.352)	(0.141)	(2.043)	(0.643)	(0.217)	(1.062)	(0.304)	(1.236)
DID + HH FE									
CA x Post	2.537**	-1.679*	-0.191	1.786	1.563	-0.264	-2.197**	-0.556	-0.628
	(1.206)	(0.999)	(0.185)	(2.024)	(1.064)	(0.237)	(0.925)	(0.494)	(1.027)
DDD: Multi-person									
CA x Single x Post	4.294***	-1.799***	-0.151	-1.885	-0.319	0.058	-1.182	-1.438***	3.985***
	(1.207)	(0.389)	(0.164)	(2.015)	(1.009)	(0.231)	(1.041)	(0.315)	(1.479)
DDD: Muli-person + HH FE									
CA x Single x Post	3.645**	-0.454	-0.289	0.746	-2.254	-0.848*	-1.215	1.078**	-0.272
	(1.800)	(0.770)	(0.198)	(2.199)	(1.358)	(0.484)	(1.409)	(0.516)	(2.093)
DDD: Non-SSI Single-person									
CA x SSI x Post	3.129***	-1.420***	-0.137	-1.805	0.750	-0.131	-2.088*	-1.250***	3.644***
	(0.898)	(0.306)	(0.144)	(2.034)	(0.630)	(0.218)	(1.083)	(0.360)	(1.318)
DDD: Non-SSI Single-person + HH FE									
CA x SSI x Post	1.430	-1.585	-0.368	0.306	0.824	0.023	-1.557	-0.024	1.703
	(2.237)	(1.638)	(0.442)	(3.610)	(2.584)	(0.787)	(1.833)	(1.180)	(3.058)
Mean	19.571	3.191	0.488	50.153	6.717	1.870	5.957	4.192	7.294
Obs	7,557	7,557	7,557	7,557	7,557	7,557	7,557	7,557	7,557

Results

- Split into "Infra-marginal" and "Extra-marginal" HHs

- Response concentrated among Extra-marginal

	Food (Home)	Food (Away)	Alcohol	Housing	Transportation	Apparel	Healthcare	Entertainment	Other
Inframarginal									
CA x Post	-0.256	-1.480***	-0.368**	0.449	2.215**	0.340	-2.896	-2.879***	5.218***
	(1.058)	(0.412)	(0.147)	(1.584)	(0.879)	(0.232)	(1.764)	(0.587)	(1.229)
Extramarginal									
CA x Post	4.568***	-2.293***	0.407	-1.960	0.737	0.682**	-1.801	1.173**	-0.929
	(1.369)	(0.668)	(0.259)	(4.318)	(1.780)	(0.319)	(1.828)	(0.553)	(2.742)

Results

- Functional form assumption of income effect has minimal effect:

	Food (Home)	Food (Away)	Alcohol	Housing	Transportation	Apparel	Healthcare	Entertainment	Other
QUAIDS									
CA × Post	4.344***	-1.288***	-0.141	-1.420	0.138	-0.027	-1.477	-1.556***	2.285*
	(0.943)	(0.352)	(0.141)	(2.043)	(0.643)	(0.217)	(1.062)	(0.304)	(1.236)
AIDS									
CA × Post	4.228***	-1.291***	-0.143	-1.489	0.161	-0.036	-1.505	-1.575***	2.406*
	(0.950)	(0.352)	(0.141)	(2.036)	(0.641)	(0.216)	(1.065)	(0.310)	(1.269)
Linear									
CA × Post	4.575***	-1.353***	-0.157	-1.664	-0.126	-0.035	-1.663	-1.574***	2.429*
	(0.948)	(0.350)	(0.141)	(2.008)	(0.650)	(0.215)	(1.054)	(0.312)	(1.233)
None									
CA × Post	6.129***	-1.498***	-0.186	-1.213	-0.991	0.017	-1.781*	-1.486***	1.147
	(0.935)	(0.347)	(0.139)	(1.967)	(0.642)	(0.219)	(1.045)	(0.317)	(1.173)

Additional Analysis

- Longer horizon: Two-way FE model

- Compare MPCF of SSI to SNAP benefits:

  $Y_{ijst} = \beta_0 + \beta_1 SSI_{st} + \beta_2 SNAP_{jst} + \beta_3 ln(TotExp_{it}) + \beta_4 X_{ist} + \delta_y + \lambda_s + \epsilon_{ijst}$

Results

- TWFE Results:

	(1) Food (Home)	(2) Food (Away)	(3) Alcohol	(4) Housing	(5) Transportation	(6) Apparel	(7) Health care	(8) Entertainment	(9) Other
Dollars									
SSI Amount	0.151	0.012	-0.070***	0.577***	-0.120	0.014	-0.114*	-0.025	-0.278**
	(0.091)	(0.072)	(0.011)	(0.127)	(0.117)	(0.029)	(0.058)	(0.025)	(0.125)
SNAP Amount	0.398***	-0.057***	-0.021***	-0.426***	0.013	0.030***	-0.016	-0.018**	-0.096**
	(0.013)	(0.012)	(0.003)	(0.046)	(0.023)	(0.005)	(0.015)	(0.008)	(0.036)
t-test(SSI-SNAP=0)	-0.248**	0.069	-0.048***	1.002***	-0.133	-0.015	-0.098	-0.007	-0.182
Budget Shares									
SSI Amount (%)	-0.156***	0.002	0.000	0.007	0.079***	-0.002	0.040***	-0.022***	-0.087***
	(0.027)	(0.007)	(0.001)	(0.024)	(0.012)	(0.004)	(0.011)	(0.006)	(0.011)
SNAP Amount (%)	0.223***	-0.032***	-0.008***	-0.253***	0.025*	0.012***	0.019**	-0.013***	0.026*
	(0.019)	(0.007)	(0.001)	(0.027)	(0.013)	(0.004)	(0.009)	(0.005)	(0.015)
t-test(SSI-SNAP=0)	-0.379***	0.034***	0.008***	0.260***	0.054***	-0.014**	0.022*	-0.009	-0.113***

- SNAP MPCF higher for *food at home*

- SNAP MPCF lower for *food away from home*

Conclusions

- Cash-out policy provided unique variation in SNAP benefits

- Evidence of high MPCF from SNAP

- Possible substitution of food away from home

- Welfare implications?

Research Findings I: SNAP and Food Insecurity

- Consistent evidence using different designs that SNAP reduces food insecurity

- Comparisons of the same family pre- and post-SNAP takeup (Mabli et al 2013, Mabli and Ohls 2015)

- Variation in state implementation policies that generates differences in take-up across states over time (Mykerezi & Mills 2010; Ratcliffe et al. 2011 Shaefer & Gutierrez 2013; Yen et al. 2008)

- Expansions in benefits from federal stimulus (Nord and Prell 2011)

- Variation in local food prices (Bronchetti, Christiansen and Hoynes 2019)

Food Insecurity – measurement
10 questions asked of all households

Questions Used To Assess the Food Security of Households in the CPS Food Security Survey

1. "We worried whether our food would run out before we got money to buy more." Was that often, sometimes, or never true for you in the last 12 months?

2. "The food that we bought just didn't last and we didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?

3. "We couldn't afford to eat balanced meals." Was that often, sometimes, or never true for you in the last 12 months?

4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food? (Yes/No)

5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Yes/No)

7. In the last 12 months, were you ever hungry, but didn't eat, because there wasn't enough money for food? (Yes/No)

8. In the last 12 months, did you lose weight because there wasn't enough money for food? (Yes/No)

9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? (Yes/No)

10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

If a household answers yes to 3 or more of these questions, then designated as having Low Food Security, or being Food Insecure.

Food Insecurity – measurement
8 questions asked of households with children

(Questions 11-18 were asked only if the household included children age 0-17)

11. "We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food." Was that often, sometimes, or never true for you in the last 12 months?

12. "We couldn't feed our children a balanced meal, because we couldn't afford that." Was that often, sometimes, or never true for you in the last 12 months?

13. "The children were not eating enough because we just couldn't afford enough food." Was that often, sometimes, or never true for you in the last 12 months?

14. In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food? (Yes/No)

15. In the last 12 months, were the children ever hungry but you just couldn't afford more food? (Yes/No)

16. In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food? (Yes/No)

17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

18. In the last 12 months did any of the children ever not eat for a whole day because there wasn't enough money for food? (Yes/No)

Very Low Food Security Among Children – yes to 5 or more of the child specific questions

Research Findings II: The SNAP Benefit "Cycle"

- Consistent evidence that benefits of SNAP decline over the monthly *food stamp cycle*

- Most benefits redeemed early in the month (Hastings and Washington 2010, Castner and Henke 2011, Smith et al 2015)

- Calorie intake declines by 10-25% over the month (Shapiro 2005)

- Admissions for hypoglycemia increase over the month (Seligman et al 2014)

- School disciplinary actions grow over the month (Gennetian et al 2015, Gassman-Pines & Bellows 2016)

- Unclear results for test scores (Gassman-Pines & Bellows 2015)

Figure 9: Hospital Admissions for Hypoglycemia Rise at the End of the Month Among Low-income Patients

Hospitalizations per million admissions

Week of the Month
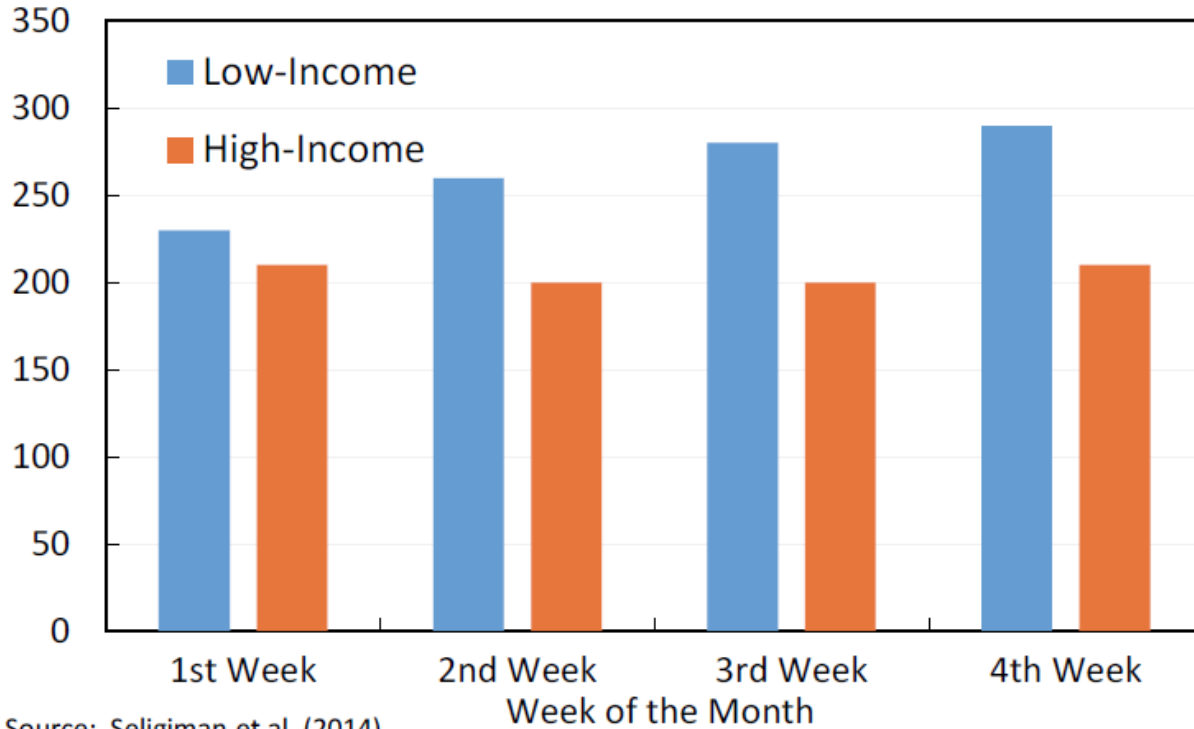
Source: Seligiman et al. (2014)

Research Findings III: SNAP and Take-up

- SNAP is an area with much interest in increasing take-up: (a) important program, (b) administered at state level (so in their control) but paid for federally (so state doesn't incur cost of benefits)

- SNAP takeup has increased a lot over the past two decades

- This seems to be related to states reducing barriers to signing up for the program: online application, less recertification

- New research on SNAP and take-up:

  – Finkelstein and Notowidigdo (2018): RCT with information and assistance

  – Homonoff and Somerville (2020): Hassles and take-up

  – Unrath (2021): Hassles and take-up

Testing information and assistance
Finkelstein and Notowidigdo (2018)

- Food stamp take-up particularly low among elderly (40% compared to 80% overall)
- They partner with Benefits Data Trust (wants to increase take-up)
- Sample group - on Medicaid (and not SNAP), likely income eligible
- Experimental design (30,000 elderly)
  - 10,000 "High Touch" (Info + Assistance) [mailer plus access to concierge service facilitates enrollment and elig determination]
  - 10,000 "Low Touch" (Info only) [mailer]
  - 10,000 not contacted (control)

Finkelstein and Notowidigdo - RESULTS

- Assistance matters, information isn't enough
- Treatment increases enrollment (+5pp info only) more with assistance (+12pp info + assistance)
- Intervention *decreases* targeting: lowering administrative hurdles brings in an, on average, less disadvantaged population (less sick, higher income, more likely white, english speaking)
- Elderly population: could part of this be cognitive?

Recertification as administrative hurdle

- Most programs require regular recertification to maintain eligibility
- Part of incomplete take up comes from dropping off a program even though eligible
- Recertification is the time when this typically happens

Source: Matt Unrath, CPL

FIGURE 1: CalFresh enrollment lengths
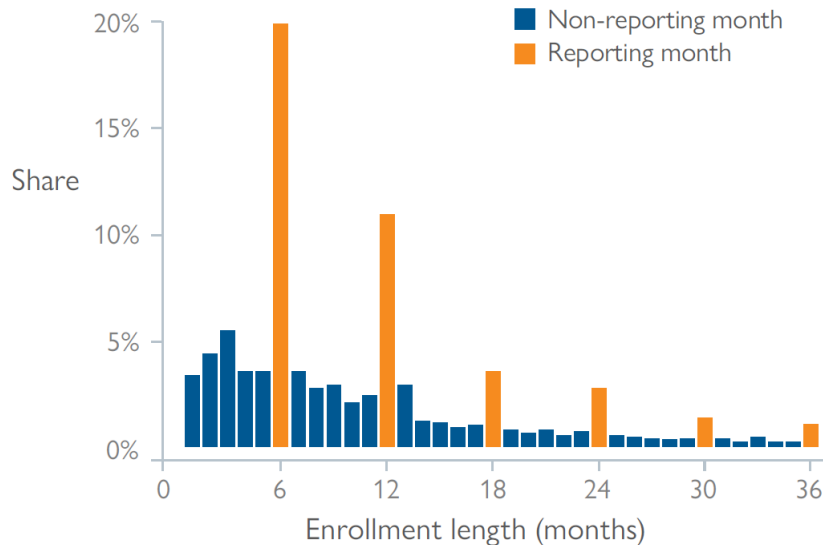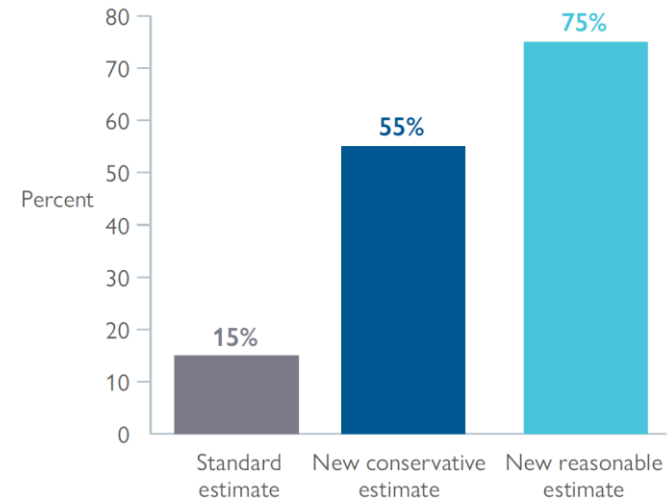
Paperwork due every six months (2013–18)

FIGURE 2: Share of cases that leave CalFresh but appear income-eligible using alternative definitions, 2014–19

Notes. The current standard estimate is the 90-day churn rate — the share of cases leaving in a recertification month that re-enroll within 90 days. The new measures identify the share of all cases who leave despite appearing income eligible using wage records. The conservative measure assigns all quarterly income to the month that the case exits. The more reasonable estimate divides income equally among all three months in the quarter.

Source. CalFresh enrollment data analysis (2014–19).