Food Stamps: Evidence and Implications

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Lecture goals

- An important (and relatively under-studied) social safety net program:
  - (Although other, smaller nutrition related program like WIC and school lunches have even less work on them)
  - Will discuss (some of the) evidence and open questions
- An application of some of the Redistribution unit concepts, including:
  - Empirical Welfare Analysis (MVPFs)
  - Take up and Targeting
  - In Kind Transfers
- A peak / introduction to some of the concepts that will come up more under Social Insurance, including:
  - Behavioral Public Finance
  - Valuing In-Kind Transfers

Lecture Overview

1. Program Overview
2. Framework for welfare analysis
3. Some of the empirical literature
   - Causal estimates of impact of food stamp receipt
   - MPC food out of food stamps vs. out of cash
   - Paternalistic rationale for food stamps
4. Empirical welfare analysis of food stamps
   - Based on existing work
   - Time permitting: new estimates fron Finkelstein, Notowidigo Rafkin (in progress)

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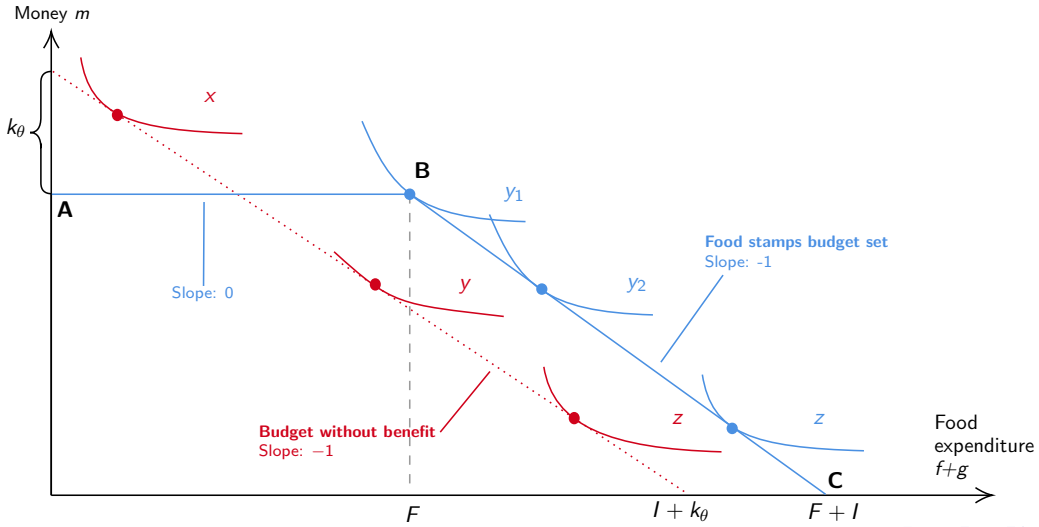
Food stamps are vouchers

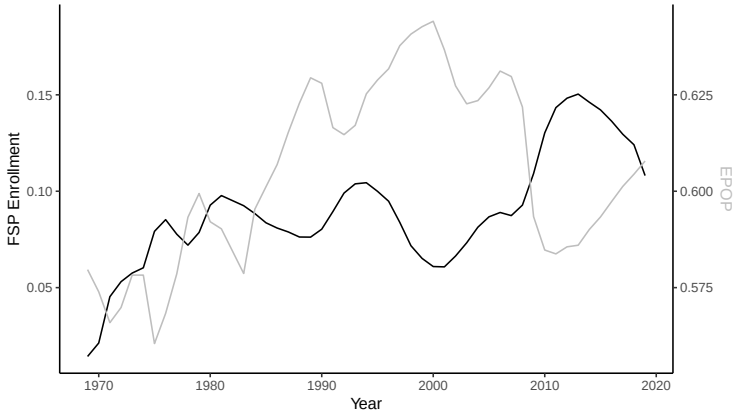


Current Program

- Food stamps are vouchers
  - Provide 100% food subsidies up to a max government transfer
  - After that, can buy more at market price (i.e. "top up")
- Household benefit
  - Eligibility depends on income (gross and net) and assets
  - Applicants must provide documentation and participate in an interview
  - Recertification
- Second largest means-tested program in the US
  - Only means-tested program for whom eligibility is nearly universal
  - During Great Recession, one-in-seven Americans were on food stamps

Enrollment is Highly Counter-Cyclical

Figure: National Trends in Food Stamp Enrollment and Employment-to-Population Ratio



Some Facts about Current Food Stamp Program

- Most recipients are **infra-marginal**: In absence of program, they would spend more on food than the amount of the government transfer
  - Estimates that 75-95% of enrollees are inframarginal (see Hastings and Shapiro 2018 and cites therein)
- Incomplete takeup:
  - Around 80% in 2011; much lower for elderly
  - Reasons for low takeup include information and transacation costs (see prior lecture)

Program Origins

- Great Depression:
  - Paradox of millions of American suffering from hunger while farmers face glut of crops and livestock that sent agricultural prices plummeting
  - FDR initially paid farmers to destroy their food (while many were hungry)
  - Then Federal Surplus Commodities Corporation purchased excess food and gave to needy (prompting complaints from grocers and food wholesalers)
  - Commodity Distribution Program (CDP) was in place in about 90% of counties when it was replaced by the Food Stamp program
- Voucher program established by the Food Stamp Act of 1964
  - Note that vouchers potentially help farmers, grocers and those who are hungry

History / Some Key Reforms

- Original program rolled out county by county
  - A few pilot counties starting 1961 under Kennedy
  - 1964 Food Stamp Act
  - 'Hunger in America' CBS 1968 documentary
  - Congressional expansions to benefits and eligibilty (1971)
  - Congress requires all counties to have program by mid 1974 (1973)
- 1979 reform: elimination of purchase requirement
  - Original program required participants to buy their stamps ("purchase requirement") with the requirement increasing with household income
  - On average, 60% subsidy
  - 1979 reform eliminated purchase requirement: 100% subsidy still in effect today
- 1980s: states move from in person pick up to mailing food stamps (would be really nice to study...)
- 1988-2004: Move to Electronic Benefit Transfer (some work on; also EITC and UI)
- 2008 Farm Bill renames program to Supplemental Nutrition Assistance Program to combat stigma

Program Goals

- Explicit goal of increasing recipient households' food purchases
  - Johnson declares at bill signing that the program would "enable low-income families to increase their food expenditures"
  - Food and Nutrition Service of USDA currently says it is important for "helping families put food on the table"
  - Food for thought: Given government messaging around "healthy diets", is encouraging food on the margin still a goal?
- Political economy: Food vouchers (vs direct food provision from CDP) may simultaneously address hunger, help farmers, and help food sellers
- Should we evaluate it as a program designed to
  - Designed to reduce hunger / improve nutrition
  - Redistribute, but 'constrained' for political economy reasons to food
  - Help farmers/food sellers (and redistribute or address hunger)?

Some economic questions raised by program

- What is the social welfare value of food stamps?
  - Key focus / organizing question for today's lecture
- What is the optimal design of in-kind transfers of food? Rich variation within the program in design (that hopefully someone can study):
  - Initial direct transfer of food (CDP)
  - Then a voucher (with subsidy amount increasing with 1979 reform)
  - Possible reductions in transaction costs (mailing stamps) and stigma (EBT)?

What the literature has examined

- Causal impacts of food stamps
  - On infant health (and long run impacts on these infants' adult outcomes)
    - Under what conditions is this welfare relevant?
  - On labor supply
    - Where does this enter welfare analysis?
- How does MPC food out of food stamps compare to MPC food out of cash?
  - Simple economic theory predicts same (because most recipients inframarginal)
  - Recent evidence suggests MPC food out of food stamps is >>> out of cash due to mental accounting
  - Normative implications depend on goal (e.g. redistribution vs. help farmers vs. (paternalistically) increase food consumption)
- Paternalistic argument for food stamps
  - Chorniy, Finkelstein, Notowidigdo in progress
  - See also literature on 'labeled cash'
- Empirical welfare analysis of food stamps (MVPF)
  - Conceptual framework (Finkelstein-Noto-Rafkin, in progress)
  - Estimates from HSK (2020), Bailey et al (2024), FNR (in progress)

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Conceptual Framework for Welfare Analysis

$$\text{MVPF} = \frac{\text{WTP}}{1 + \text{FE}} = \frac{(\text{V+D})}{1 + \text{FE}}$$

- $V \in [0, 1]$ is the revealed valuation of a dollar of food stamps
  - How much household would be willing to pay for for food stamps if offered in a market
  - Why could it be 0? 1?
- $D \lessgtr 0$ denotes any distortions that lead V to depart from how much household "should" be willing to pay based on their normative utility
  - Externalities (e.g. parents do not internalize positive effects on children)
  - 'Internalities' - i.e. mistakes or behavioral biases
- Note: absent distortions, any causal impacts of food stamps on recipients (e.g. improvements in health, test scores, subsequent earnings etc.) do not enter WTP
  - They are internalized by the household and reflected in V.

Social Welfare

$$W = \frac{\int_{\Theta} \lambda_\theta (\mathrm{V}_\theta + \mathrm{D}_\theta) dG_{\mathrm{FSP}}}{\int_{\Theta} (1 + \mathrm{FE}_\theta) dG_{\mathrm{FSP}}}.$$

- Heterogeneous types $\theta \in \Theta$ may differ in their social marginal welfare weight λ_θ, valuation V_θ, distortion D_θ, and fiscal externality FE_θ.
- $\theta \sim G_{\mathrm{FSP}}$ denotes distribution of types conditional on taking up Food Stamps, with corresponding density $g_{\mathrm{FSP}}(\theta)$

Empirical Objects for Welfare Analysis

$$W = \frac{\int_{\Theta} \lambda_\theta (\mathrm{V}_\theta + \mathrm{D}_\theta) dG_{\mathrm{FSP}}}{\int_{\Theta} (1 + \mathrm{FE}_\theta) dG_{\mathrm{FSP}}}.$$

1. Transfer value (V)
2. Causal effects of food stamps not internalized by household's valuation (D)
3. Fiscal externalities from food stamp receipt (FE)
   - e.g. Reductions in adult earnings to qualify for food stamps
4. Targeting: Extent to which enrollment is concentrated in individuals with high social welfare weights or willingness to pay (i.e. $\mathrm{cov}(g_{\mathrm{FSP}}(\theta), \lambda_\theta \mathrm{WTP}_\theta)$

Existing literature through lens of welfare analysis

- Transfer Value (V)
  - Resale price of food stamps (Whitmore 2002)
  - Impacts of food stamps on consumption + a model of behavior (Hoynes and Schanzenbach 2009; Hastings and Shapiro 2018; Song 2022)
  - Willingness of adults to distort their labor supply to qualify for food stamps (HSK 2020)
- Distortions (D): Causal effects of food stamps on children's health and long run benefits as adults (e.g. Almond et al 2011; Bailey et al. 2024)
  - Implicit assumption of a distortion if use for welfare analysis (e.g Bailey et al.)
  - Could be justified with evidence of internalities such as mental accounting and present bias by food stamp participants (eg Hastings and Shapiro 2018; Chorniy, Finkelstein and Notowidigdo 2025) or agency problems within family
- Fiscal externalities (FE): Reduction in adult earnings to qualify for food stamps (Hoynes and Schanzenbach 2012)
- Targeting: consumption distribution of enrollees relative to eligibles (Rafkin, Soltas and Soloman 2023; Fink and Noto 2019)

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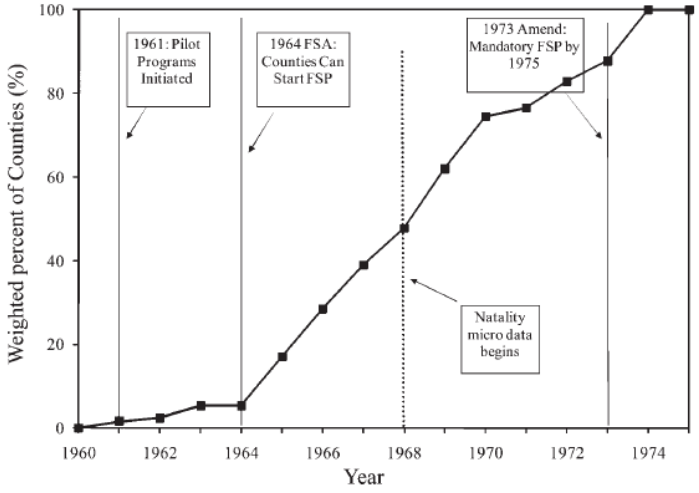
Causal effects of food stamp receipt

- Focus has been on:
  - Improvements in infant/child health and long run consequences of infant / child exposure for adults
  - Labor force participation of recipients
- Note: Most estimates come from the county-by-county roll out of the program 1964-1975
  - Some of which are quite noisy due to data limitations (e.g. earnings)
- Relatively few other causal estimates:
  - Child health:
    - variation in local food prices (Bronchetti et al. JHE 2019)
    - changes in immigrant eligibility (East JHE 2020)
  - (Lack of) impacts on labor force participation:
    - Work requirements (Gray et al. AEJ 2023; Cook and East 2024)
    - Examiner design (Cook and East 2023)

Staggered Roll Out

FIGURE 1.—WEIGHTED PERCENTAGE OF COUNTIES WITH A FOOD STAMP PROGRAM, 1960–1975



Authors' tabulations of food stamp administrative data (U.S. Department of Agriculture, various years). Counties are weighted by their 1960 population.

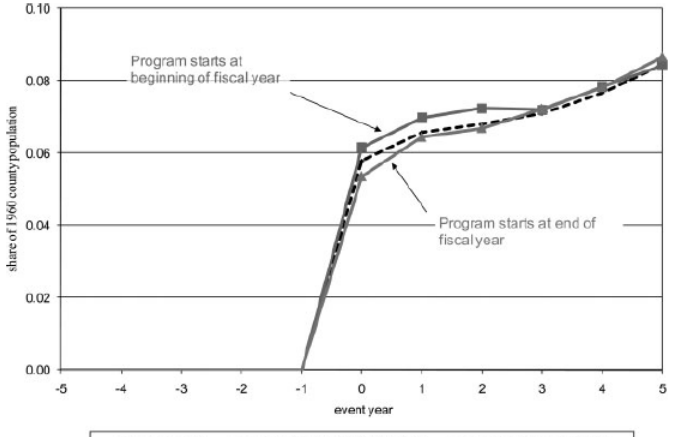
Graph from Douglas Almond, Hilary W. Hoynes, Diane Whitmore Schanzenbach; Inside the War on Poverty: The Impact of Food Stamps on Birth Outcomes. The Review of Economics and Statistics 2011; 93 (2): 387–403. doi: https://doi.org/10.1162/REST_a_00089

Research Using Roll Out

- Impacts
  - Short run improvements in infant health (Almond, Hoynes, Shanzenbach 2011)
  - Long run estimates on adults education, earnings, health etc (Bailey, Hoynes, Rossin-Slater and Walker 2024; Hoynes, Schanzenbach, Almond 2016)
  - Reduced (contemporaneous) adult earnings (Hoynes and Schanenbach 2012)
- Has been extremely influential in policy discussions (e.g. National Academy of Sciences 2019 report)
- Some questions
  - Are the impacts due to receipt of cash (recall inframarginality) or food stamps?
    - Relevant for economic theory and for policy
    - This is one motivation for literature on MPC food out of food stamps vs cash
  - Would impacts be similar in more recent period with less hunger / better nutrition?

'First Stage'

FIGURE 4.—PERCENTAGE OF COUNTY POPULATION ON FOOD STAMPS BY NUMBER OF YEARS SINCE PROGRAM START



The graph is an unweighted regression of county-year food stamp caseloads on a series of dummy variables tracking year relative to county FSP implementation year. County caseload is expressed as a share of the 1960 population. Source for caseload data is USDA (various years).

Graph from Douglas Almond, Hilary W. Hoynes, Diane Whitmore Schanzenbach; Inside the War on Poverty: The Impact of Food Stamps on Birth Outcomes. The Review of Economics and Statistics 2011; 93 (2): 387–403. doi: https://doi.org/10.1162/REST_a_00089

Regression Equation

$$y_{ct} = \alpha + \delta FSP_{ct} + \eta_c + \delta_t + \gamma X_{ct} + \beta CB60_c \times t + \mu_{st} + \epsilon_{ct}$$

- estimate on county-quarter data 1968-1977
- y_{ct} is a measure of infant health
- FSP_{ct} is an indicator variable for whether county c has a food stamp program in place at time t
  - quarterly timing; turned on if FSP in place by third trimester of pregnancy
- standard county and year fixed effects
- X_{ct} include real-period income
- $CB60_c$ are county characteristics in 1960 interacted with linear trend (log pop, percentage of land farmed, share black, urban, below 5, agbove 65, income less than 3k...)
- Also explore sensitivity to state-year unemployment, county-specific linear trends (not shown)
- estimate by race (supress race subscripts)
- regressions weighted by number of births in county-race-quarter, standard errors are clustered by county

Birthweight Results

TABLE 1.—IMPACTS OF FOOD STAMP INTRODUCTION ON BIRTH OUTCOMES, BY RACE

	(5)	(6)	(7)	(8)
	Fraction below 2,500 Grams			
	A: Whites			
Average FSP (0/1)	−0.0006	−0.0006	−0.0006	−0.0006
	(0.0003)*	(0.0003)*	(0.0003)*	(0.0004)
% impact (coef/mean)	−1.02%	−1.02%	−0.97%	−0.97%
Estimate inflated	−0.0047	−0.0047	−0.0045	−0.0045
% impact inflated	−7.82%	−7.82%	−7.44%	−7.44%
Observations	97,785	97,785	97,785	97,785
R^2	0.17	0.17	0.18	0.19
Mean of dependent variable	0.06	0.06	0.06	0.06
	B: Blacks			
Average FSP (0/1)	−0.0015	−0.0016	−0.0019	−0.0009
	(0.0010)	(0.0010)	(0.0012)	(0.0012)
% impact (coef/mean)	−1.13%	−1.22%	−1.49%	−0.68%
Estimate inflated	−0.0113	−0.0122	−0.0149	−0.0068
% impact inflated	−8.70%	−9.41%	−11.48%	−5.21%
Observations	27,374	27,374	27,374	27,374
R^2	0.15	0.15	0.17	0.18
mean of Dependent variable	0.13	0.13	0.13	0.13
1960 CCDB × linear time	X	X	X	
REIS controls	X	X	X	X
County per capita real income	X	X	X	X
Year quarter fixed effects	X	X	X	X
County fixed effects	X	X	X	X
State × linear time		X		
State × year fixed effects			X	
County × linear time				X

Each parameter is from a separate regression of the outcome variable on the food stamp implementation dummy. The treatment is assigned as of three months prior to birth (proxy for beginning of the third trimester). The estimation sample includes means by race-county-quarter for years including 1968–1977 where cells with fewer than 25 births are dropped. In addition to the fixed effects, controls include 1960 county variables (log of population, percentage of land in farming, percentage of population black, urban, age below 5, age above 65, and with income less than $3,000), each interacted with a linear time trend, per capita county transfer income (public assistance, medical care, and retirement and disability benefits), and county real per capita income. Estimates are weighted using the number of births in the cell and are clustered on county. Standard errors are in parentheses. Inflated impacts divide the parameter estimate by an estimate of the food stamp participation rate for the regression sample.

Table from Douglas Almond, Hilary W. Hoynes, Diane Whitmore Schanzenbach; Inside the War on Poverty: The Impact of Food Stamps on Birth Outcomes. The Review of Economics and Statistics 2011; 93 (2): 387–403. doi: https://doi.org/10.1162/REST_a_00089

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adjusted for FSP rates for women with children under 5 in 1980 CPS

Table from Douglas Almond, Hilary W. Hoynes, Diane Whitmore Schanzenbach; Inside the War on Poverty: The Impact of Food Stamps on Birth Outcomes. The Review of Economics and Statistics 2011; 93 (2): 387–403. doi: https://doi.org/10.1162/REST_a_00089

Other impacts using roll-out design

- Long run (adult) impacts for young child recipients (Bailey et al 2024 Restud)
  - 2000 Census and 2001-2013 ACS linked to NUMIDENT file (data and place of birth)
  - Use staggered county roll out + exposure based on age of kid at time of roll out
  - Children exposed to FSP before age 5 have better outcomes as adults (increased education / earnings, decreased mortality and crime etc).
- Labor supply distortions for adult recipients (Hoynes and Schanzenbach 2012 JpubEc)
  - Special county-level PSID data
  - Find reductions in employment and hours, concentrated among families headed by single women
  - Precision challenges if want earnings (for MVPF / fiscal externality) and for full population: HSK (2020) use the estimate of an average decline in annual earnings among participants of $3,650 (standard error $16,100) from this paper

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MPC food out of food stamps vs. cash

- What do we expect?
  - Neoclassical theory: since most participants are inframarginal, MPC(food) out of food stamps or cash should be same
  - With mental accounting however MPCs could differ
- Why do we care?
  - Understanding human behavior
  - Understanding program impact relative to goals
    - That of course requires being clear on goal
  - Key for policy: Are we learning about causal effects of food stamps or of cash transfers?

Estimating MPC food out of food stamps vs. cash

- Key challenges
  - Want causal effects of food stamps vs. cash *in same population* with enough statistical power to distinguish
  - Challenges with measuring consumption

- Some Evidence
  - Hoynes and Schanzenbach (AEJ 2009) use roll-out and food consumption from PSID and compare to OLS relationship between food consumption and income
    - Consistent with neoclassical theory (recall participants are inframarginal) cannot reject MPCs are same
  - Hastings and Shapiro (2018 AER) use retail panel data from a large US grocer (much improved precision but one retailer)
    - Variation in SNAP from SNAP adoption, SNAP exit (recertification) and increase in SNAP benefits and variation in income coming from changes in gas prices (time series)
    - Find MPCF out of SNAP of 0.5 to 0.6 while MCPF out of income is much smaller
    - Use to calibrate a model of mental accounting (utility cost of deviating from a default level of food spending that moves one-for-one with SNAP benefits)

Implications if MPCF out of food stamps is much greater than out of cash

- Policy: Causal impacts of cash transfers may be very different than causal impacts of food stamps
- Departure from neoclassical model (e.g. mental accounting) should affect / be incorporated into welfare analysis of food stamps
  - A (real) utility cost of deviating from mental account could reduce transfer value (V) of food stamps relative to cash
  - But if private choice of food is sub-optimally low from social planner perspective, then food stamps may provide benefits in excess of cash (recall D term in welfare analysis)
    - Motivates a paternalistic rationale for food stamps (vs. cash)

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Paternalism and Food Stamps (or In Kind Transfer)

- Social planner wants to increase amount of food consumption above what individual would choose
- Most natural way to do that is via the budget set - provide more food transfers than individual would consume ▸ Currie & Gahvari
- But food stamps are inframarginal for most recipients
  - With mental accounting however, can still generate MPCF out of food stamps that is higher than out of cash

Paternalistic model for food stamps

- Based on Hastings/Shapiro (2018) and Chorniy/Fink/Noto (2025)
- Empirical context: Chorniy et al. finds MPC (drugs and alcohol) out of cash is greater than out of SNAP (data = ER visits for drug and alcohol use)
- Key elements
  - Consumers:
    - Allocate their budget over food, non-food, and a 'bad' (e.g. drugs and alcohol)
    - Have self-control / present bias problems that lead them to over-consume temptation goods ("bads")
    - Engage in "mental accounting" which can break fungibility of SNAP and cash
  - Social planner's problem: divide a fixed transfer budget between cash and SNAP
- Alert: if problem is over-consumption of bads, isn't optimal instrument a Pigouvian tax on bad?

Model overview

- We develop a model with two key features:
  1. Consumers have self-control problems which lead them to over-consume temptation goods ("bads") like drugs and alcohol
  2. Consumers may engage in "mental accounting" which breaks the fungibility of SNAP and cash

- Comparative statics of the model match the empirical evidence on non-fungibility:
  1. $MPCb^{Cash} > MPCb^{SNAP}$ (consumption of "bads" responds more to cash)
  2. $MPCn^{Cash} > MPCn^{SNAP}$ (consumption of non-food goods responds more to cash)
  3. $MPCf^{SNAP} > MPCf^{Cash}$ (consumers treat SNAP as "food money")

- Implications for paternalistic social planner splitting (exogenous) transfer between cash and SNAP when consumer has self-control problems:
  1. Optimal transfer involves strictly positive amounts of SNAP
  2. Optimal SNAP share weakly increasing w/ self-control problems and weakly decreasing w/ mental accounting
  3. With heterogeneous agents, SNAP can dominate Pigouvian tax on temptation

Setup

- Two-period model
  - in $t = 1$, social planner allocates a fixed budget ($\bar{y}$) between cash (y_1), which can be spent on anything, and SNAP (b_1), which can only be spent on food
  - consumer allocates budget over: food, non-food, and temptation good
- Food and non-food consumed each period:
  - total food consumption: $f \equiv f_1 + f_2$
  - total non-food consumption: $n \equiv n_1 + n_2$
- Temptation good ("bad"):
  - consumed in first period (c_1^b)
  - negative utility consequences in second period ($t = 2$)

Setup

The individual's budget constraints (normalizing $p_n = 1$), are the following:

$$p_f * f + n + p_b * c_1^b \leq y_1 + b_1$$
$$n + p_b * c_1^b \leq y_1$$

The second constraint follows from the fact that SNAP benefits (b_1) can only be spent on food (f), creating the familiar "kinked" budget set

Consumer utility

- Per-period utility functions are given by

$$\begin{aligned} U_1 &= \alpha_g \alpha_f \log(f_1) + \alpha_g(1-\alpha_f)\log(n_1) + (1-\alpha_g)\log(c_1^b) \\ U_2 &= \alpha_g \alpha_f \log(f_2) + \alpha_g(1-\alpha_f)\log(n_2) - \gamma(1-\alpha_g)\log(c_1^b) \end{aligned}$$

  - $0 < \gamma < 1$ scales the period 2 negative health consequences of consuming temptation good in period 1

- Total utility is given by:

$$U = U_1 + \beta U_2 - \kappa[(\phi_0 y_1 + b_1) - p_f(f_1 + f_2)]^2$$

  - $0 < \beta \leq 1$ is individual's subjective discount factor between the two periods
  - $\kappa \geq 0$ governs the strength of the individual's mental accounting of SNAP benefits

Mental accounting

- Per-period utility given by

$$\begin{aligned} U_1 &= \alpha_g \alpha_f \log(f_1) + \alpha_g(1-\alpha_f)\log(n_1) + (1-\alpha_g)\log(c_1^b) \\ U_2 &= \alpha_g \alpha_f \log(f_2) + \alpha_g(1-\alpha_f)\log(n_2) - \gamma(1-\alpha_g)\log(c_1^b) \end{aligned}$$

- Total utility is given by:

$$U = U_1 + \beta U_2 - \kappa[(\phi_0 y_1 + b_1) - p_f(f_1 + f_2))]^2$$

  - $\kappa \geq 0$ governs the strength of the individual's mental accounting of SNAP benefits.
  - ϕ_0 captures the share of the individual's budget that she would choose to spend on food in the absence of mental accounting (i.e., $\kappa = 0$); it is a function of preference parameters (α_g, α_f, β, γ).
  - Mental accounting: quadratic utility cost from gap between actual food consumption ($p_f(f_1 + f_2)$) and "target" food consumption ($\phi_0 y_1 + b_1$)

Definitions

- **Inframarginal SNAP benefits** are below the amount the consumer would have chosen to spend on food in the absence of mental accounting, or equivalently if the planner had allocated the entire transfer in cash:
  - $b_1 < \frac{\phi_0}{1-\phi_0} y_1$
  - recall ϕ_0 captures the share of the individual's budget that she would choose to spend on food in the absence of mental accounting (i.e., $\kappa = 0$)

- **Marginal Propensities to Consume:**

$$MPCx^{cash} \equiv \frac{d(x^*)}{dy_1} \text{ and } MPCx^{SNAP} \equiv \frac{d(x^*)}{db_1}$$

where x denotes f, n or b and x^* indicates the consumer's choice of expenditure on good x.

Mental accounting and non-fungibility

- When SNAP benefits are inframarginal, mental accounting ($\kappa > 0$) is necessary and sufficient for SNAP to be non-fungible.
- Moreover, for $\kappa > 0$,
  - $MPCf^{Cash} < MPCf^{SNAP}$
  - $MPCn^{Cash} > MPCn^{SNAP}$
  - $MPCb^{Cash} > MPCb^{SNAP}$

Planner's problem

Consider paternalistic social planner choosing y_1 and b_1 to maximize consumer's utility **evaluated at** $\beta = 1$ **and** $\kappa = 0$:

$$\begin{aligned} \max_{y_1, b_1} \quad & U^{SP}(\beta = 1, \kappa = 0) \\ \text{s.t.} \quad & y_1 + b_1 \leq \bar{y} \\ & \text{consumer maximizes } U \text{ given } y_1 \text{ and } b_1 \end{aligned} \tag{1}$$

Optimal benefit mix: Theorem 1

- Without self-control problems ($\beta = 1$), planner's optimal transfer is all cash
- With self-control problems ($\beta < 1$), planner uses SNAP to increase food consumption, thereby reducing over-consumption of the temptation good.
  - With mental accounting ($\kappa > 0$), $MPCb^{cash} > MPCb^{SNAP}$, so planner swaps some of the cash for SNAP
  - Without mental accounting ($\kappa = 0$), planner increases SNAP above the inframarginal threshold, directly increasing food consumption
- Self-control problems are necessary and sufficient for optimal SNAP share > 0
  - Mental accounting is neither necessary nor sufficient

Optimal benefit mix: Theorem 2

- With $\beta < 1$, optimal SNAP share of transfer is (weakly) decreasing in mental accounting (κ) and (weakly) increasing in self-control problems (i.e., decreasing in β)
  - As β decreases, individual's choices get further away from social planner's preferred choices, so planner chooses larger SNAP share to "distort" choices more
  - As κ increases, need smaller SNAP benefit to induce a given increase in food consumption
  - For κ sufficiently small, planner hits infra-marginality constraint and switches to increasing food consumption directly through kink in budget constraint
- Implication: If mental accounting is sufficiently strong ($\kappa > \kappa^*$), the planner will choose a SNAP benefit share that preserves the infra-marginality of SNAP benefits.

Alternative policy instruments

- With no heterogeneity (i.e., representative agent):
  - Optimal Pigouvian tax on the temptation good (i.e., the "bad") outperforms SNAP
  - Optimal linear food subsidy is equivalent to optimal "SNAP and cash"

- With heterogeneity across consumers in κ and β, SNAP can outperform optimal Pigouvian tax on the "bad"
  - Intuition comes from considering extreme case with two types: self-control problems, mental accounting and no self-control problem, no mental accounting
    - Optimal uniform Pigouvian tax can't achieve first best (Diamond 1973)
    - Inframarginal SNAP transfer provide a way to only distort behavior of those with self-control problems

Lecture Overview

1. Overview of Food Stamp Program
2. Framework for welfare analysis
3. Some of the empirical literature
   - Causal estimates of impact of food stamp receipt
   - MPC food out of food stamps vs. out of cash
   - Paternalistic rationale for food stamps
4. **Empirical welfare analysis of food stamps**
   - Based on existing work
   - Time permitting: new estimates fron Finkelstein, Notowidigdo Rafkin (in progress)

Empirical Welfare Analysis

$$\text{MVPF} = \frac{\text{WTP}}{1 + \text{FE}} = \frac{(\text{V}+\text{D})}{1 + \text{FE}}$$

$$W = \frac{\int_{\Theta} \lambda_{\theta}(\text{V}_{\theta} + \text{D}_{\theta}) dG_{\text{FSP}}}{\int_{\Theta}(1 + \text{FE}_{\theta}) dG_{\text{FSP}}}.$$

- Estimates of MVPF from HSK (2020) and Bailey et al (2024)
- Targeting estimates from Rafkin et al. (2024) and Fink/Noto (2019)

Empirical Welfare Analysis

$$\text{MVPF} = \frac{\text{WTP}}{1 + \text{FE}} = \frac{(\text{V+D})}{1 + \text{FE}}$$

- Most of the high-profile empirical estimates (short and long-run benefits to kids) relate to D
  - Earnings gains as adults (from Bailey et al.)
  - Increased life expectancy and assumed VSLY (from Bailey et al.)
- Note: Implicit assumption of some distortion (would be nice to explore more)

$$\text{MVPF} = \frac{\text{WTP}}{1 + \text{FE}} = \frac{(\text{V+D})}{1 + \text{FE}}$$

- Estimates of V:
  - For inframarginal consumers who don't change their behavior to be eligible for food stamps should be 1
    - But can have behavioral distortions to qualify, take-up costs, or consumption distortions due to mental accounting which reduce below 1
  - Resale value of food stamps + demand curve $--> 0.65$ (Whitmore 2002)
  - Willingness of adults to distort labor supply to qualify for food stamps $--> 0.62$ (HSK 2020)
    - Note: assumes anyone who did not distort labor supply to qualify values dollar for dollar (take up costs? distorted consumption due to mental accounting?)

Empirical Welfare Analysis

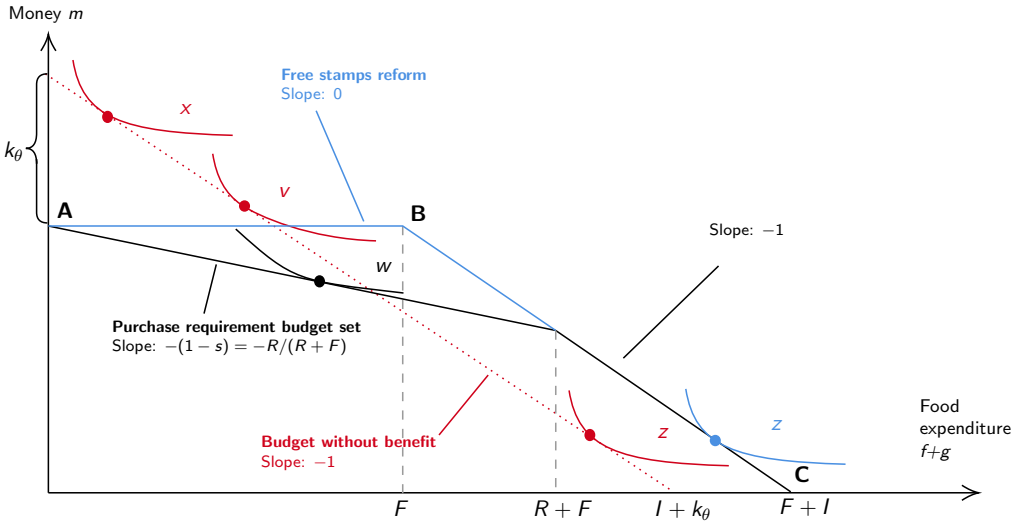
$$\text{MVPF} = \frac{\text{WTP}}{1 + \text{FE}} = \frac{(\text{V}+\text{D})}{1 + \text{FE}}$$

- Estimates of fiscal externalities (*FE*)
  - Negative: reduced earnings (and hence taxes) for recipients to qualify (from Hoynes and Schanzenbach 2012)
  - Positive: increased tax revenue from lifetime earnings among those exposed in childhood + decreased costs of incarceration (Bailey et al. 204)
  - nets out to about 1
- MVPF estimates:
  - HSK and Bailey et al use very similar (often identical) inputs and get very different MVPFs: 1.04 vs 62
  - Why? MVPF of food stamps vs MVPF of food stamps for families with young children

Purchase requirement reform

- Current program provides a food subsidy of 100% up to the max transfer F
- Original program had "purchase requirement" which made the subsidy $< 100\%$
  - Had to 'purchase' (pay cash to government) food stamps
  - Pay R in cash and get $R + F$ in food stamps
  - $R + F$ constant across households but R increasing in income (0 for poorest) and F decreasing in income
  - Average subsidy was 60 cents
- 1979 reform eliminated purchase requirement R while leaving F unchanged
  - On average increased subsidy from 0.6 to 1

Purchase requirement reform



Identifying variation

- Geographic variation in exposure to reform arising from variation in pre-reform share of population eligible for but not enrolled in food stamps
- First stage: Estimate that on average this reform increased enrollment rate by of about 3 percentage points (50 percent increase in enrollment)

Using the elimination of purchase requirement to estimate W

- Reform as instrument for participation, allows new estimates of D and FE
- Take-up response to reform can:
  - Tighten revealed preference bounds on V
    - Intuition: under 100% subsidy bounds on V for enrollees are from 0 to 1
    - We now know that 2/3 of these enrollees would enroll with a 60% subsidy while 1/3 would not
    - Always takers value between 0.6 and 1
    - Compliers value between 0 and 0.6
    - Given their shares, bounds on V now "tightened' from (0,1) to (0.4, 0.9)
  - Provide estimates of targeting: differences in characteristics between always takers and compliers

Some potentially fruitful research areas

- Welfare analysis
  - Estimates of key objects
    - Especially with more precision
    - Especially in more recent times (e.g. nutrition levels have changed)
    - Universal program but focus has been on infant/child recipients
  - Welfare value *relative to equivalent cash transfer*?
  - Optimal design:
    - Voucher vs direct provision
    - Active vs. auto-enrollment
- Nutrition research
  - Other nutritional programs: WIC, school lunches
  - Understanding nutritional choices
    - Hastings, Kessler Shapiro (AEJ 2021) look at causal effect of SNAP on composition and nutrition of food and find SNAP effect is small relative to income gradient
    - Several states will eliminate unhealthy foods (soda, candy) from SNAP eligibility starting in 2026 - goalposts have shifted from hunger to "healthy diets" (Allcott, Finkelstein, Grummon, Noto in "progress")

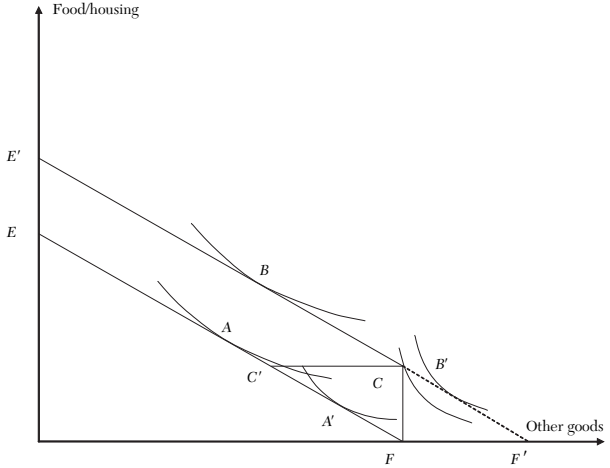


Figure 1. An Individual's Potential Choices before and after Receiving Food Stamps or Free Housing

Back Figure from Currie, Janet, and Firouz Gahvari. 2008. "Transfers in Cash and In-Kind: Theory Meets the Data." Journal of Economic Literature 46 (2): 333–83. https://www.aeaweb.org/articles?id=10.1257/jel.46.2.333