Is the Social Safety Net a Long-Term Investment? Large-Scale Evidence from the Food Stamps Program

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Overview

- Stagnating wages for low skill workers have put upward pressure on child poverty over the past decades
- Government policy – social safety net programs and tax policy – are central for reducing child poverty
- Decades of research document how these programs affect parental labor supply and family income (poverty)
- With recent research we are learning about how and whether these programs affect the life trajectory of children.
- Here I present work on the long run effects of the food stamp program – a central element of the social safety net

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Safety Net Investments in Children

- A common framework for evaluating preschool and other human capital programs is as an investment: Resources are invested upfront that generate returns over the longer run (education, labor market, health).
- Interestingly, the social safety net is not framed in this way
- Does providing more assistance when children are young lead to changes in their life trajectory? Does age of exposure matter?
- Understanding the long run effects of the social safety net is important to quantify the private and public benefits of redistribution

Existing Research Provides some Answers

- In utero and early childhood exposure to social safety net programs have positive **short-term benefits** for individual health and well-being
  - See e.g.: Currie & Thomas, 1995; Bitler & Currie, 2005; Hoynes, Page & Stevens, 2011; Bailey, 2012; Almond, Hoynes & Schanzenbach, 2011; Miller Hoynes and Simon 2015, Rossin-Slater, 2013; Bailey & Goodman-Bacon, 2015)
- A large literature documents the importance of the **early life environment** for individual well-being throughout the life cycle (*often examine large adverse shocks*)
  - Barker (1990) and reviews by Almond and Currie 2011a, Almond and Currie 2011b, Almond, Currie and Duque 2018
- Studies linking childhood access to U.S. **safety net programs with long-term outcomes** have recently begun to emerge
  - See Hoynes and Schanzenbach 2018 for a review

Important Questions Remain

Are long-term program effects apparent in **large-scale data sets** of U.S. adults with a **wide range of outcomes**?

- Much of the prior work on long-run impacts uses small survey data (e.g., PSID) or data with limited outcomes (e.g., earnings, mortality)

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This Paper

- Studies the long-term effects of childhood exposure to the **Food Stamp Program**, using a newly available data resource:
  - 2000 US Census (long-form 1 in 6 sample) [17% US pop]
  - 2001-2013 American Community Survey (ACS)
  - SSA NUMIDENT file (county of birth, exact DOB, date of death)
  - Linked survey-admin data includes 17.5 million obs.
- Comprehensive set of outcomes for human capital, economic, health, neighborhood quality, mortality and incarceration to evaluate **adult well-being**
- Uses geographic rollout of food stamps across U.S. counties (3,100 of them) over the rollout period (1961-1975)
- Quasi-experimental research design; event study model and more parametric exposure models
- Setting allows us to explore <u>when treatment matters</u>

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Plan for the talk

1. Food Stamps and the Food Stamp Rollout
2. How/why might food stamps have long run effects?
3. Data
4. Design
5. Results

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1. The Food Stamp Program and the Food Stamp Rollout

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Supplemental Nutritional Assistance Program

- Previously known as Food Stamps
- In FY2018, SNAP served 40.3 million people in 20 million households at a cost of $65 billion dollars
- Average monthly benefit $252 per household, About $4 per person per day
- Means tested: eligibility requires gross monthly income to be below 130 percent of poverty; phased out at 30%
- Benefits are vouchers that can be used at grocery stores
  - Now distributed through debit cards
  - Used to purchase most food items available in stores

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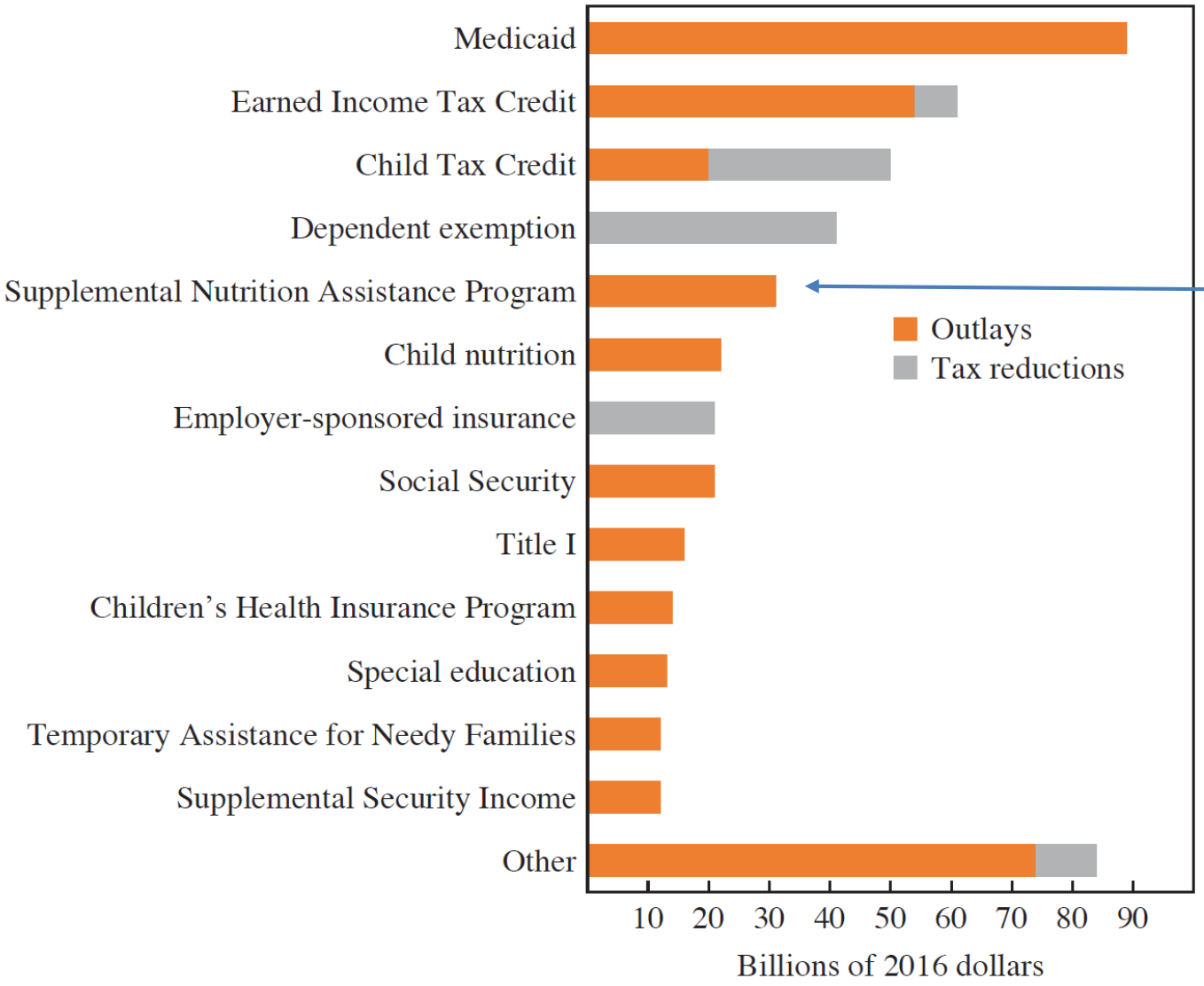
Figure 1. Spending and Tax Programs with the Highest Federal Expenditures on Children, 2016



Food Stamps Today

Major part of social safety net for children

Source: Hoynes and Schanzenbach 2018, adapted from Isaacs et al (2017).

After the EITC, SNAP lifts more children out of poverty than any other program (2015)

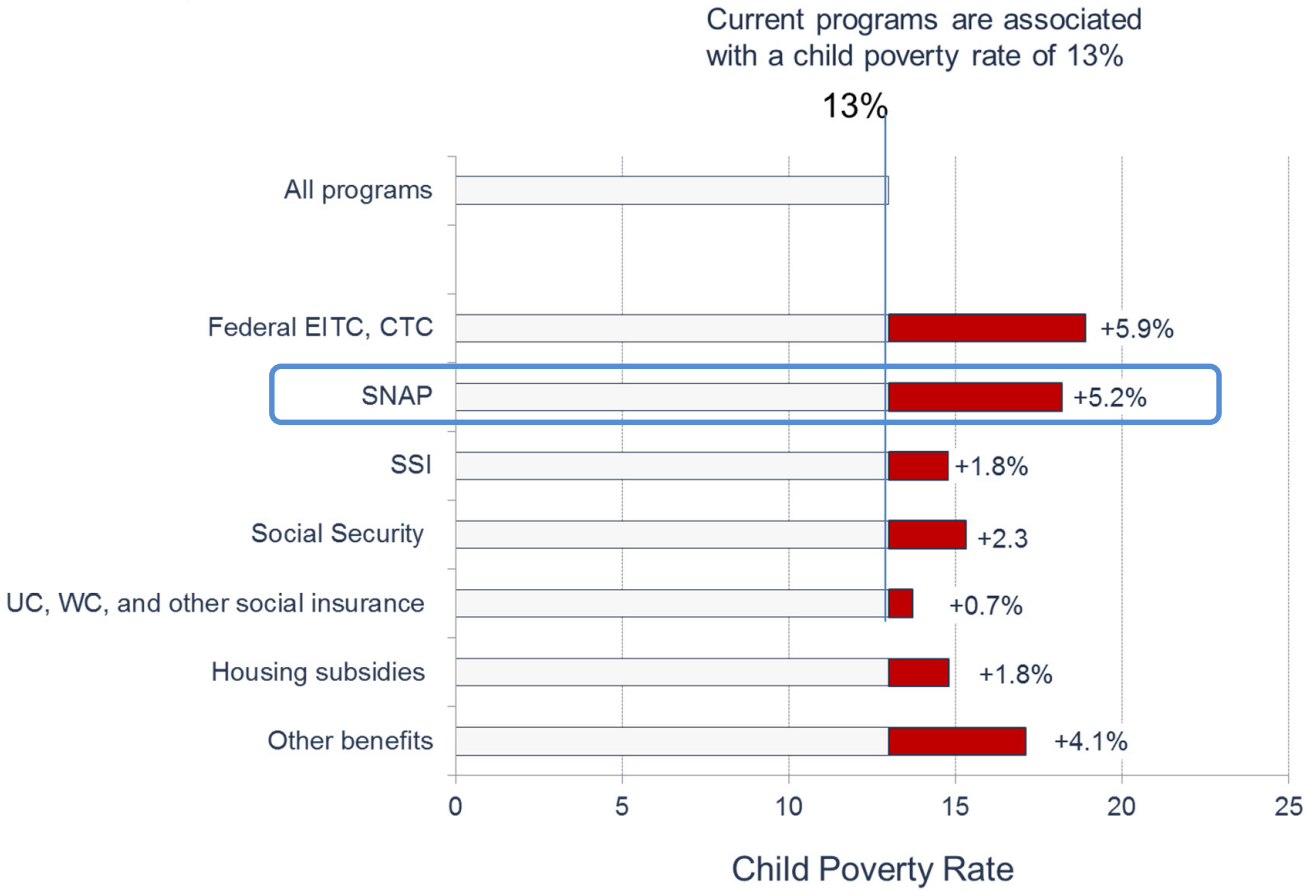


FIGURE 4-9 "What-if" Child Poverty Rates With the Elimination of Selected Federal Programs.

NOTE: Poverty defined as below 100% of the TRIM3 SPM poverty line. Estimates are for 2015 and adjust for underreporting but not for behavioral effects. *Other benefits* include TANF, means-tested veterans benefits, means-tested education assistance, LIHEAP, the National School Lunch Program, and WIC.

Source: A Roadmap to Reducing Child Poverty, NAS, 2019.

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Challenges to causal identification

- Universal program (no ineligible groups)
- Federal program (little variation across states, localities)
- Little variation over time (few reforms)
- Negative selection: SNAP serves people when they need the program – it is difficult to disentangle the (presumably positive) impact of SNAP from the (presumably negative) impact of the circumstances that made a family eligible for the program.

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Strategies for causal identification

- Use available policy variation across states/time (reduced form or IV)
- Leverage sharp time series temporal variation (e.g. expansion and subsequent reduction in benefits from federal stimulus)
- RCTs: Food Stamp "cash out" experiments in 1980s
- Comparisons of the same family pre- and post-SNAP take-up (Hastings and Shapiro 2019)
- Use local price variation ("purchasing power of SNAP") (Bronchetti, Christiansen and Hoynes 2019)
- Program rollout (Almond, Hoynes, Schanzenbach, Bitler and Figinski, this paper)

See reviews by Currie (2003), Hoynes and Schanzenbach (2016), Bitler (forthcoming) for details

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Effects of SNAP on children – in the shorter run

- Increases after tax and transfer income (net of modest labor supply reduction due to benefit and phase-out)
- Increases spending on food
- Reduces food insecurity
- Improves birth outcomes
- Improves child health
- Gains from SNAP fall over “food stamp cycle”

See reviews by Currie (2003), Hoynes and Schanzenbach (2016), Bitler (forthcoming) for details

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The FSP rollout

Research Design: Leverage the County by County Rollout of the Food Stamp Program

- **1961** Pres. Kennedy executive order; established 8 county-level pilot programs; 1962-1963 expanded to 43 counties
- Food Stamp Act of **1964**:
  - Gave local areas the authority to start up FSP in their county
  - Federally funded
- 1973 amendments to Food stamp act: mandated that all counties offer FSP by **1975**
- Result: Rollout over >3,000 counties over 1961-1975.
- While this occurred during the War on Poverty, in practice the programs evolved quite independently from one another.

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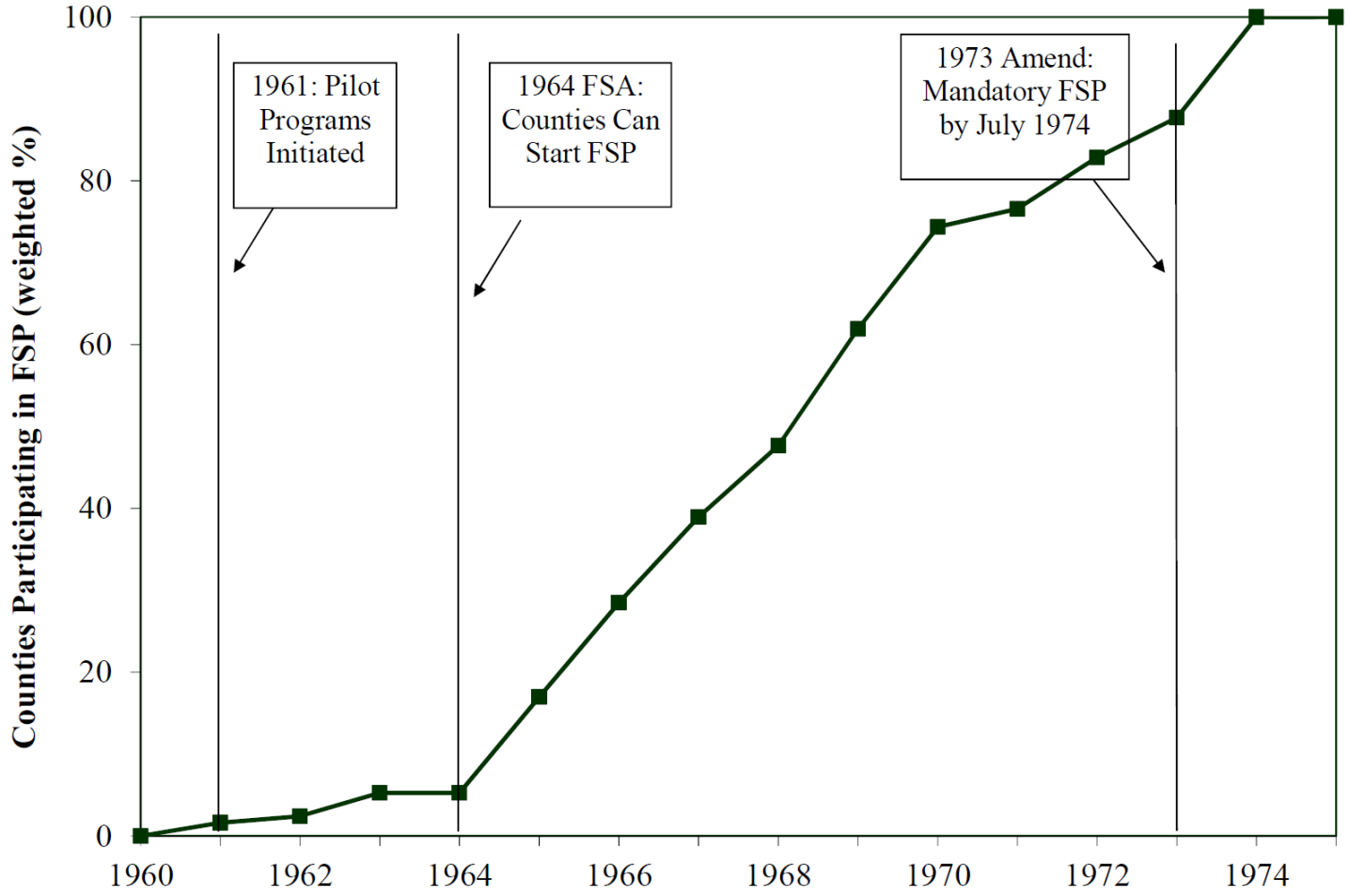
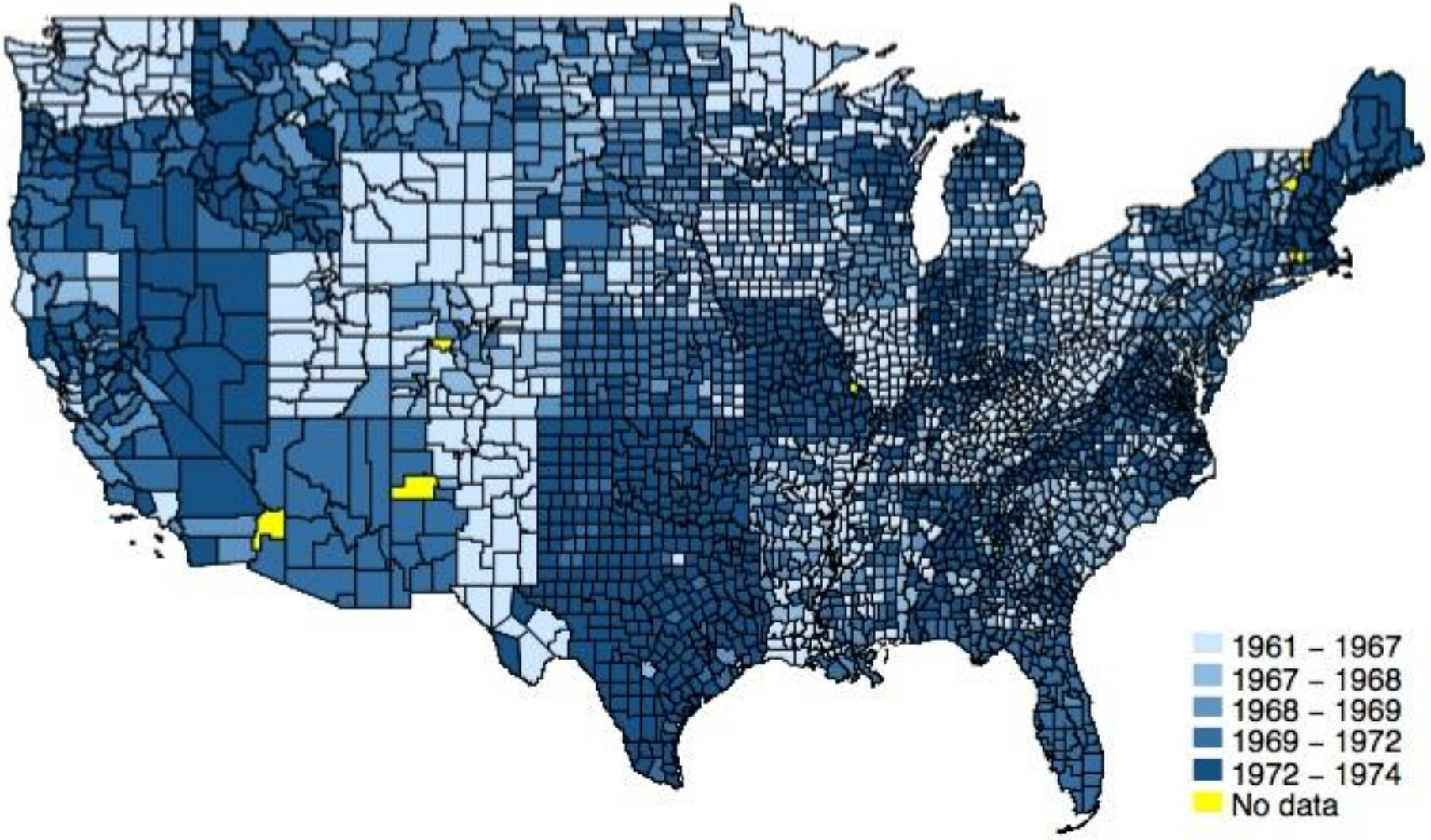
Key legislative markers and population rollout of Food Stamps



Source: Hoynes and Schanzenbach's (2009) tabulations based on administrative data from the U.S. Department of Agriculture in various years.

Geographic Rollout by County



Source: Hoynes and Schanzenbach's (2009) tabulations based on administrative data from the U.S. Department of Agriculture in various years.

Using the Rollout to Identify LR Effects of SNAP

- Rollout occurred between 1961-1975
- In our data if we know **where** (what county) and **when** a person was born, we can assign them the age they were first exposed to SNAP
- Using variation across cohorts with varying degree of exposure, we can identify the effects of childhood exposure in the long run (e.g. ages 30s-50s).
- Difference in difference approach – across counties and birth cohorts
- We present results using event study and early life exposure (% of time between conception and age 5)

2. How/why might food stamps have long run effects?

Upstream: How are Food Stamps spent?

- Food stamps increases household resources (net of a modest reduction in labor supply, Hoynes and Schanzenbach 2012); food spending increased by 21 percent with FS rollout (Hoynes and Schanzenbach 2009)
- Some debate as to whether SNAP benefits are spent in the same manner as equivalent cash transfer
  - Hoynes and Schanzenbach (2009) use the food stamp rollout and find they are (also see Schanzenbach 2007, Beatty and Tuttle 2012, Bruich 2014), Hastings and Shapiro (2018) find SNAP yields more spending on food
- Either way, one channel for long run impacts is to increase the quantity and quality of food consumption
- By freeing up resources, may also operate through increases in income outside channel of food consumption (we know less about composition of other spending increases)

Why might SNAP affect adult outcomes?

- FSP leads to increases in income and nutrition. Early life nutrition and resources may translate to later life economic and health outcomes
- HEALTH OUTCOMES: Evidence from "Fetal origins" hypothesis (see, e.g. Barker 1990) establishes that better early life nutrition (*pre & post natal*) leads to improvements in adult health.
- ECONOMIC OUTCOMES: Many settings show that investments during early life leads to improved outcomes in adulthood. Investments early may yield higher returns than investments later
- Additional resources through FS may also reduce stress, which is an additional pathway for improving long run outcomes (Aizer et al 2015, Black et al 2016, Evans and Garthwaite 2014, Fernald and Gunnar 2009, Haushofer et al 2012, Persson and Rossin-Slater 2018)
- Implication: more food stamps in childhood → better outcomes in adulthood.

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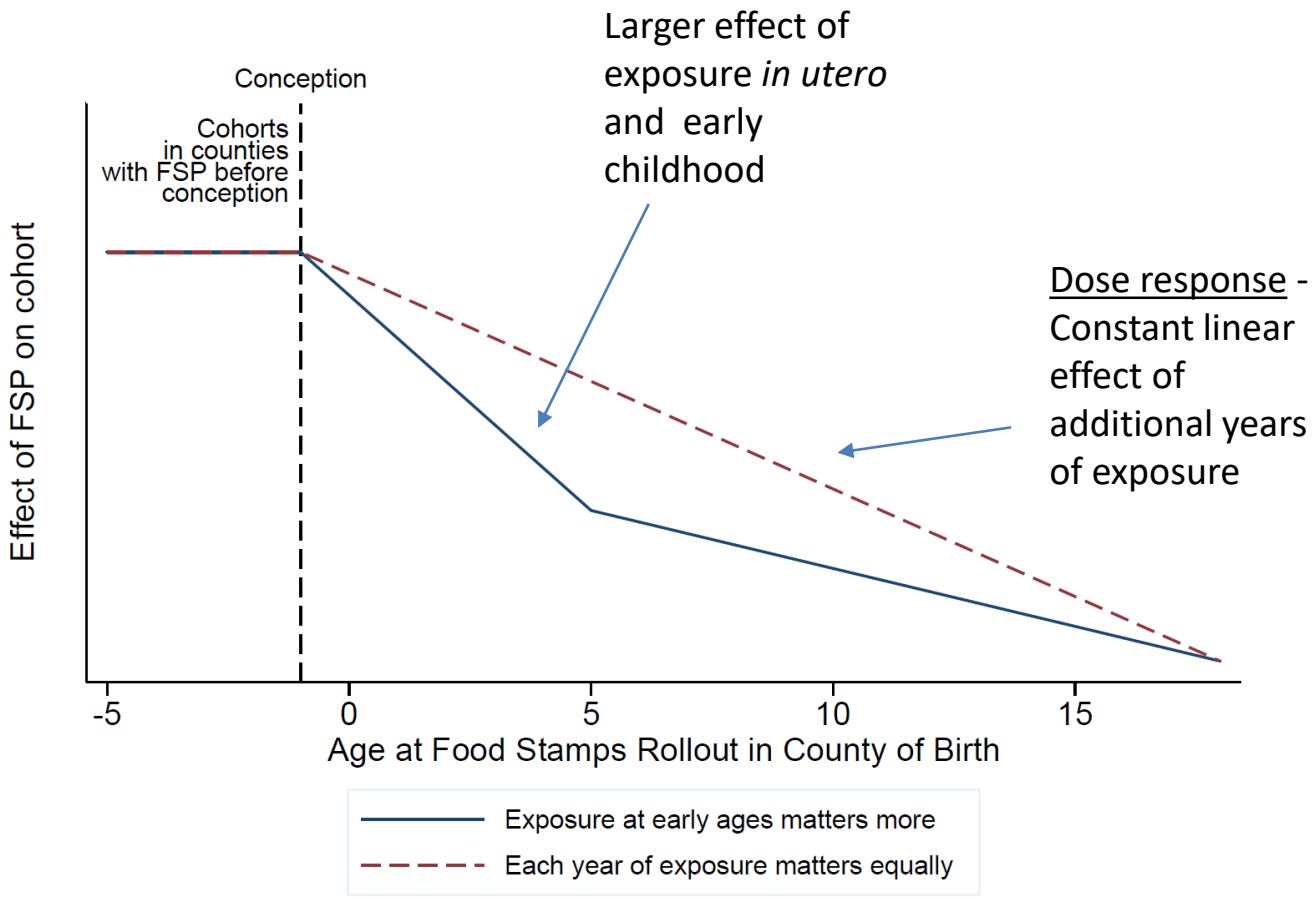
Figure 2: Expected ITT Effects of Food Stamps on Adult Well-Being by Age of the Cohort when the Program Began



LR effects of childhood exposure to the social safety net

(See Hoynes and Schanzenbach 2018 for review)

Policies that increase resources

- *Cash welfare:* early 20th century program leads to improvements in longevity, educational attainment, nutritional status, and income in adulthood (Aizer et al 2016)
- *EITC:* increases children's cognitive outcomes (Dahl and Lochner 2012, 2017, Chetty et al. 2011) and educational attainment and employment in young adulthood (Bastian and Michelmore 2018).

Other safety net programs:

- *Medicaid:* improves educational attainment (Brown et al. 2015, Miller and Wherry 2018, Cohodes et al. 2016), earnings (Brown et al. 2015), mortality (Goodman-Bacon 2016, Wherry and Meyer 2015, Brown et al. 2015), and the health of the next generation (East et al. 2017).
- *Head Start:* improves adult health and labor market outcomes (Bailey et al 2019, Barr and Gibbs 2018, Garces et al 1996, Deming 2011)
- *Public Housing:* public housing demolitions (Chyn 2018) and Moving to Opportunity (Chetty et al 2016) improve adult labor market outcomes

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Prior studies on LR effects of rollout of Food Stamps

- Hoynes et al (2016) use the Panel Study of Income Dynamics and find greater exposure to FS before age 4-5 leads to a reduction in **adult metabolic syndrome** (obesity, high blood pressure, diabetes, heart disease) and improvements in economic self sufficiency for women
- Bitler and Figinski (2018) use data from the Social Security Administration's Continuous Work History Sample (administrative earnings for 1 percent of US born pop) and find that FS before age 5 leads to increases in **adult earnings** for women; no effects on employment.

We contribute to this literature by being the first to:

- Examine a comprehensive set of outcomes: human capital, economic well-being, neighborhood quality, disability, mortality, incarceration
- For a very large (>17 million) sample of linked survey-administrative data

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3. Data

Census/ACS Linked to SSA NUMIDENT File

- 2000 Long Form Census and the 2001-2013 American Community Surveys linked using Census Personal Identification Key (PIK) to SSA NUMIDENT file
  - 2000 Census: 1-in-6 sample, 17 million households, 43 million people
  - 2001-2013 ACS: 600K/yr until 2004, 2+ million/yr 2005+
  - Social Security Administration *NUMIDENT* file: population file, dates and place of birth, and date of death if deceased
- NUMIDENT place of birth is a string; we use a matching algorithm to translate string to county FIPS codes >90% matched (building on Isen et al 2017, Black et al 2015)
- Survey and administrative data are linked using Census internal identifier – Personal Identification Key (PIK)

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Estimation Sample

- Individuals born in the U.S. between 1950 and 1980 observed at ages 25-54
  - We use only observations with non-allocated, non-missing value for all outcome variables (consistent sample for disclosure)
  - Drop those without a valid PIK and/or valid string for place of birth
  - 17.5 million observations
- Collapse to means in cell, using birth-county x birth-year [and sometimes birth-month] x survey-year
- Use county and year-month of birth to assign treatment
- Examine subgroups by gender x race
- Limitation [Census data]: don't know anything about family background, can't identify high impact sample (who grows up poor)
- Caveat [time period]: youngest cohorts still relatively young for economic outcomes (youngest birth cohort [1980] is 33 by 2013)

Main outcomes: 4 standardized indices

[And a **composite index** = unweighted average of these four indices]

Productivity and Human Capital	Economic Self Sufficiency	Neighborhood Quality	Physical Ability and Health
years of schooling	in labor force	Log(home value)	no work disability
high school or GED	worked last year	Log(gross rent)	no ambulatory difficulty
any college	weeks worked last year	home ownership	no cognitive difficulty
college or more	usual hours per week	single family residence	no indep living difficulty
professional degree	log(labor income)	log(income-to-poverty) (TRACT)	no vision/hearing difficulty
professional occup.	log(oth inc nonpublic)	(-) teen pregnancy (TRACT)	no self-care difficulty
	log(inc-to-poverty)	(-) share single-headed (TRACT)	
	not in poverty	(-) child poverty (TRACT)	
	(-) log(oth inc public)	share home owners (TRACT)	
	labor income>0	log(median house value) (TRACT)	
	oth inc nonpublic>0	log(median gross rent) (TRACT)	
	oth inc public=0	mobility score (Chetty et al 2014) (COUNTY)	
		house value>0	
		income-to-poverty>0 (TRACT)	

2000-2007 only

Because of multiple outcomes, we use an index; equal weighted average of standardized outcomes using mean and SD of untreated cohorts (born 1950-1954) [Kling et al 2007]

$$y_i = \frac{1}{J}\sum_j \frac{y_{ij} - \mu_j}{\sigma_j}$$

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Additional Variables

Survival to 2012 – from administrative data on deaths (NUMIDENT)

- Full population sample, not limited to linkages with Census/ACS

Not Incarcerated – constructed using group quarters variable

- Data separately identifies institutions (**correctional**, mental, nursing) and non-institutions (military, college dorm, etc)
- Available only in ACS for years 2006-2013

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Other Data / county controls

- County FSP rollout (Hoynes and Schanzenbach 2009)
- Other war on poverty programs – Head Start, Community Health Centers (Bailey and Goodman-Bacon 2015), WIC (Hoynes et al 2011)
- BEA Regional Economic Information System (1959, 1962, 1965-1980): per capita transfers
- BEA REIS per capita income (1969-1980)
- BEA REIS employment (1969-1980)
- Population (1959-1980)
- NCHS county adult mortality and infant mortality (1959-1980)
- 1960 Census county characteristics

4. Research Design

Research Design I – Event Study

- Use birth-county x birth-cohort variation in rollout:

$$Y_{cbt} = \theta_c + \delta_{s(c)b} + \psi_t + X_{cb}\beta + Z_{c60}b\eta + \sum_{a=-5[a\neq 10]}^{a=17} \pi_a 1[b - FS_c = a] + \epsilon_{cbt} \qquad (1)$$

- for each cohort born in county *c* in state *s(c)*, and year *b*, and observed in survey year *t*

  FS_c = year in which FS was first available in county *c*
  a = event time, age at which FS was first introduced ($a = b - FS_c$)
  θ_c = fixed effects for the birth county
  $\delta_{s(c)b}$ = fixed effects for birth-state x birth-year
  ψ_t = fixed effects for survey year
  $Z_{c60}b$ = 1960 Census county controls, interacted with a linear birth cohort
  X_{cb} = birth-county x birth-year and birth-cohort-varying controls ← In robustness

- The event-study coefficients π_a capture the effect of access to FS beginning at age *a* (relative to the omitted age, 10) on outcome, Y_{cbt}.
- Clustered by county and weighted using counts in cell

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Research Design II – Linear Spline
(Lafortune et al 2018)

- Four linear segments
  - ω_1 = FS prior to conception (pre-trend test)
  - ω_2 = FS *in utero* to age 5 (early childhood)
  - ω_3 = FS ages 6 to 11
  - ω_4= FS ages 12 to 17

$$Y_{cbt} = \theta_c + \delta_{s(c)b} + \psi_t + X_{cb}\beta + Z_{c60}b\eta + \omega_1 1[b - FS_c < -1] * (b - FS_c) +$$

$$\omega_2 1[-1 \leq b - FS_c < 6] * (b - FS_c) + \omega_3 1[6 \leq b - FS_c < 11] * (b - FS_c) +$$

$$\omega_4 1[11 \leq b - FS_c] * (b - FS_c) + \epsilon_{cbt} \qquad (2)$$

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Research Design III – Summary Exposure Model
(Hoynes et al 2016)

- Summary exposure measure uses share of time between conception and age 5

$$Y_{cbt} = \theta_c + \delta_{s(c)b} + \psi_t + X_{cb}\beta + Z_{c60}b\eta + \kappa ShareFS_{cb}^{IU-5} + \upsilon_{cbt} \qquad (3)$$

- $ShareFS_{cb}^{IU-5}$ = share of months between conception and age 5 with FS exposure

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Validity of Design

- County adoption was voluntary (until mandated in 1975). Political battle between farm interests and advocates for the poor
- Concern is not about county differences (fixed effects will take care of that) but whether adoption is correlated with *different county trends*
- To address this we:
  - Test directly for possible confounders (balance test)
  - Test sensitivity to adding birth-county x birth-year controls (population, other war on poverty rollouts, mortality rates)
  - Control for birth-state x birth-year fixed effects
  - Flexibly examine results in context of event study model to examine pre-trends (as well as spline)
- Results robust to these specifications

5. Results

Balance test

- Estimate IU 0-5 exposure model where dependent variable is county-birth year control

$$Y_{cbt} = \theta_c + \delta_{s(c)b} + \psi_t + X_{cb}\beta + Z_{c60}b\eta + \kappa ShareFS_{cb}^{IU-5} + \upsilon_{cbt} \qquad (3)$$

- All models include birth-state x birth-year FE, 1960 county variables x linear time

<u>Findings</u>

- Insignificant impacts on other war on poverty programs, per capita income, employment, adult or infant mortality
- Small negative impacts on REIS other transfers (bias would work in opposite direction)
- Small positive impact on population (larger areas adopt sooner). Previously discussed in Hoynes and Schanzenbach (2009)
- Results robust to adding these as controls

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Balance test (Table 1)

	Beta	SE	MDV	Beg Year	End Year	R2	N_cells
Other War on Poverty							
WIC	-0.076	0.053	0.389	1970	1980	0.776	348,000
Head Start	0.020	0.021	0.500	1959	1980	0.798	722,000
Community Health Center	-0.025	0.029	0.063	1959	1980	0.468	722,000
REIS Transfer Spending (real per capita, in $1000)							
Retirement and DI	**-0.209**	0.060	1.003	1959	1980	0.665	725,000
Medicare / Military Health	**-0.028**	0.005	0.177	1959	1980	0.821	725,000
AFDC / SSI / GA	**-0.053**	0.019	0.242	1959	1980	0.695	725,000
Total Transfers	0.028	0.029	2.266	1969	1980	0.984	382,000
Income, Employment and Population							
Real personal inc. per capita ($1000s	-0.071	0.197	19.960	1969	1980	0.980	382,000
Log Population	**0.050**	0.008	12.340	1959	1980	0.999	722,000
Log Employment	-0.001	0.016	11.710	1969	1980	0.999	382,000
Mortality (per 1000 pop)							
Adult Mortality Rate	-1.242	3.130	866.700	1959	1980	0.890	722,000
Infant Mortality Rate	0.015	0.181	20.110	1959	1980	0.631	711,000
Neonatal Mortality Rate	0.090	0.145	14.620	1959	1980	0.541	711,000
Post-neonatal Mortality Rate	-0.075	0.099	5.495	1959	1980	0.495	711,000

Main Results for Composite Index
For full sample

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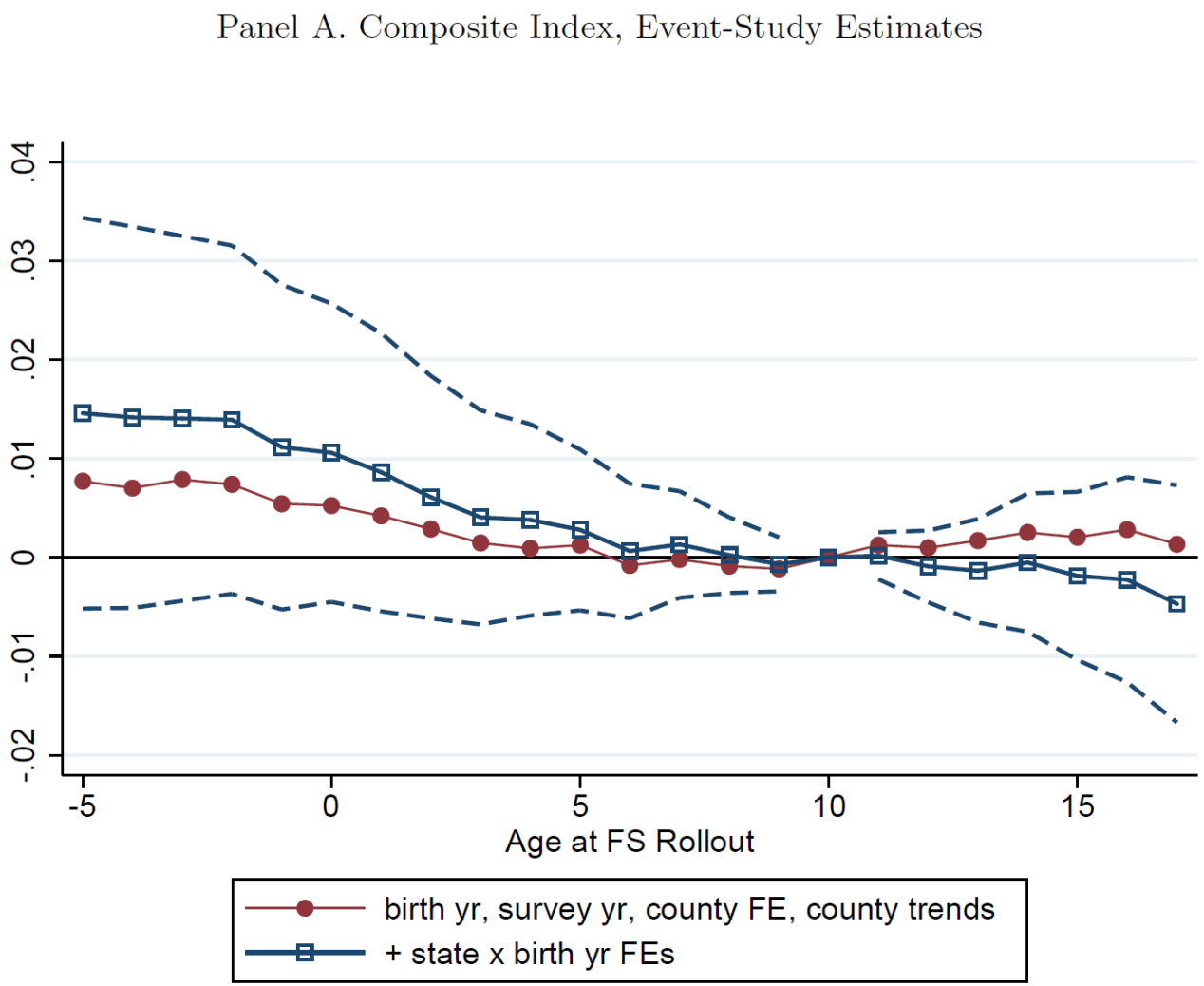


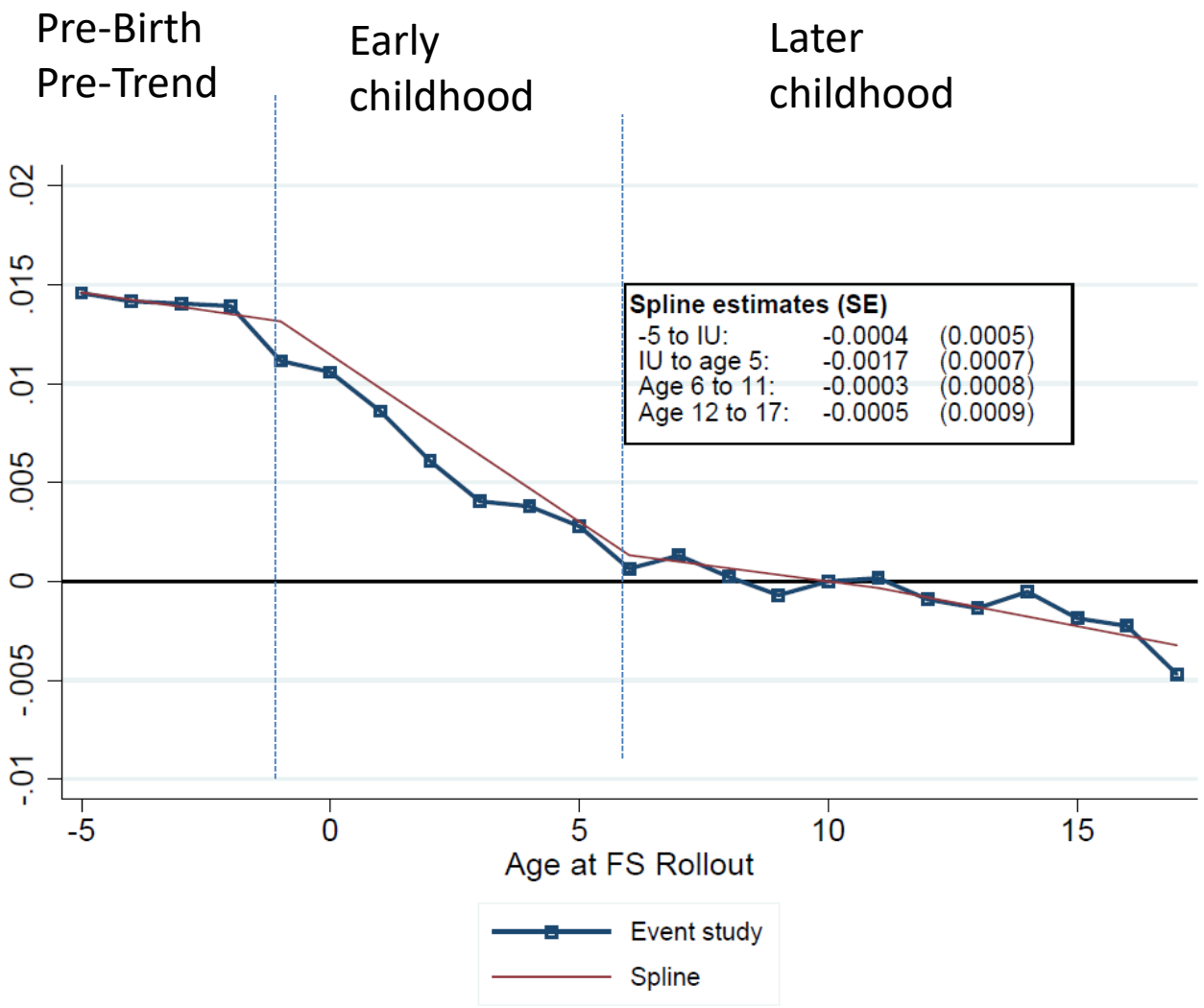
Qualitatively similar results with and without state x year FE

Going forward our base specification is the fully saturated model.

Despite these large samples, our event study models coefficients have large standard errors. → also use more parsimonious models

Scaled in standard-deviation units, event study coefficients relative to age 10 = 0.

Composite Index, Full Sample, with Spline



Results:
Pre-trend good
Gains concentrated at youngest ages (omitted year age 10)

The spline estimates provide qualitatively similar findings and are more precisely estimated.

Fully saturated model including fixed effects for YOB, county of birth, state of birth x YOB, calendar year, 1960 county characteristics x linear cohort.

Composite Index, Full Sample, Exposure models

	(1)	(2)	(3)
%IU - Age 5	0.0042	0.0075	0.0087
	(0.0025)	(0.0027)	(0.0025)
FE county, year	X	X	X
Cty_60 x linear cohort		X	X
state x year FE			X
N_obs	17,400,000	17,400,000	17,400,000
N_cells	4,272,000	4,272,000	4,272,000
N_counties	3000	3000	3000
R sq	0.229	0.231	0.232

Fully saturated model: exposure in utero through age 5 leads to a 0.009 standard-deviation increase in the composite index (ITT)

Note: exposure model cells are YOB-MOB-County of birth-survey year.

Magnitudes – Similar across three models

	% early life exposure	Spline in initial exposure year
%IU - Age 5	0.009	
	(0.003)	
spline pre-conception (age -2 to -5)		0.0004
		(0.0005)
spline early childhood (age -1 to +5)		0.0017
		(0.0007)
spline later childood ages 6 to 11		0.0003
		(0.0008)
spline later childood ages 12-17		0.0005
		(0.0009)
county, birth year, calendar year FE	X	X
Cty_60 x linear birth cohort	X	X
state x birth year FE	X	X
N_obs	17,400,000	17,400,000
N_cells	4,272,000	832,000
N_counties	3000	3000
R sq	0.232	0.5500

Exposure Model:

Full exposure IU-age 5 → +0.009 SD (ITT)

FS participation rate, 16% for young children
→ 0.06 SD increase in composite index (TOT)

Similar magnitude for spline model
(5.75yrs x 0.0017 = 0.0098)

Participation rates calculated from PSID using years post-FSP rollout (1975-1977)

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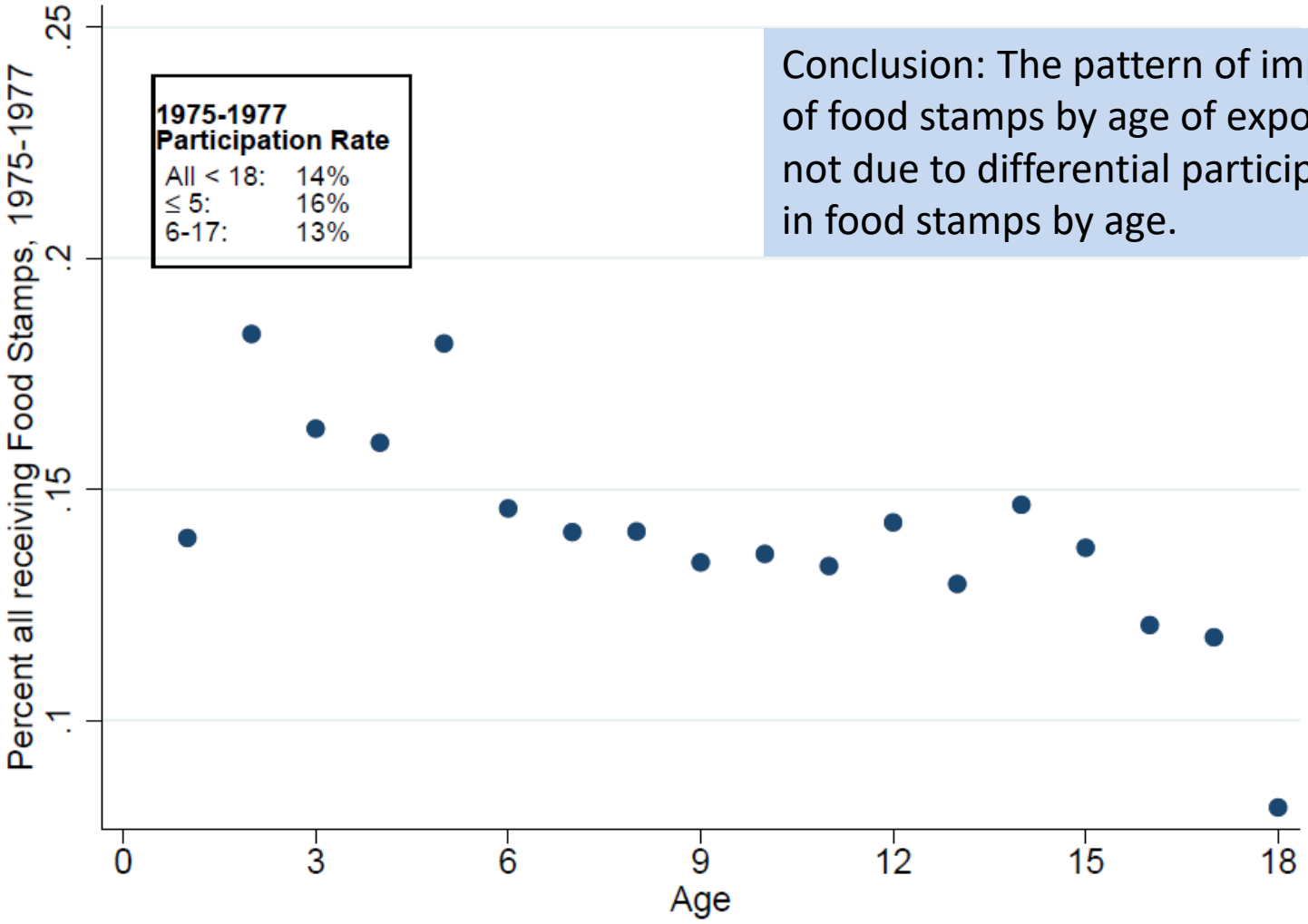
Appendix Figure 2: Child Participation Rates in Food Stamps, by Age



Conclusion: The pattern of impacts of food stamps by age of exposure is not due to differential participation in food stamps by age.

Source: Panel Study of Income Dynamics pooling calendar years 1975-1977. Participation is at the household level, but data is tabulated on a sample of children.

Results for Other Outcomes
(Full sample)

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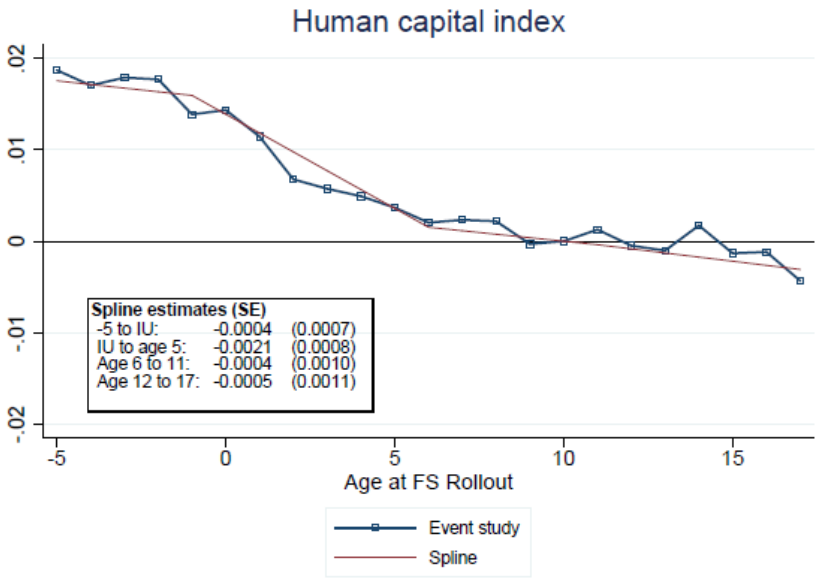

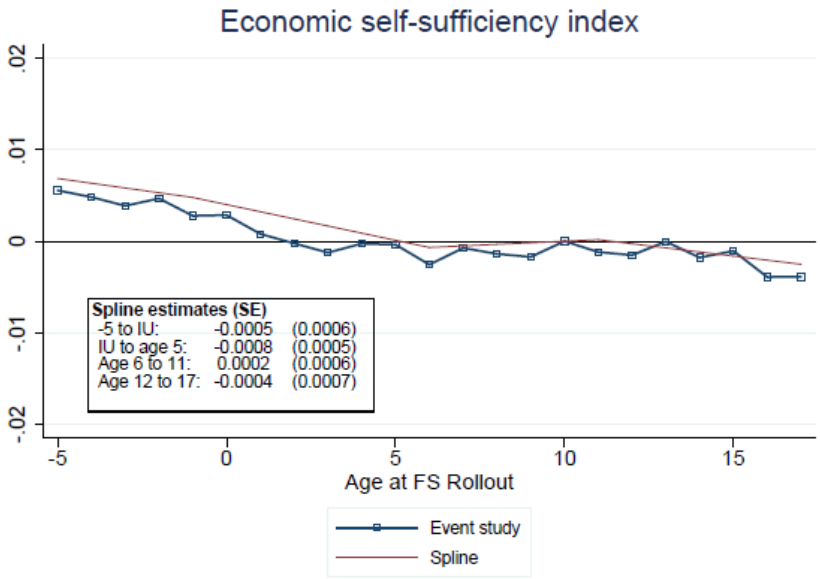

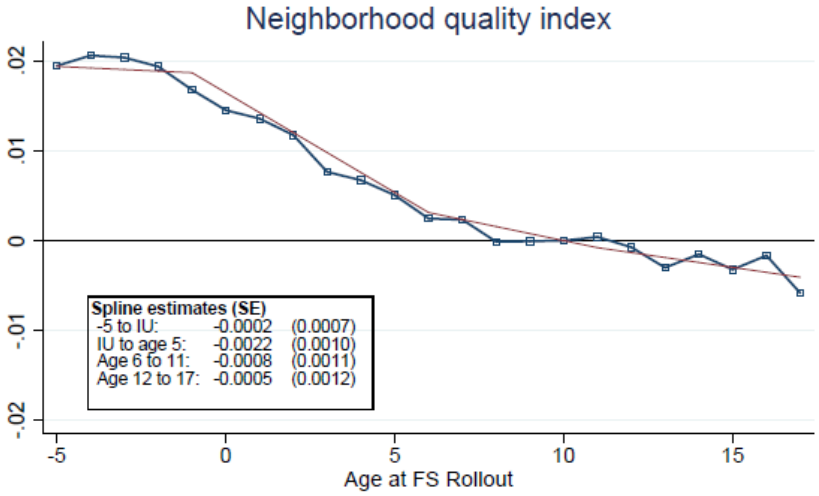

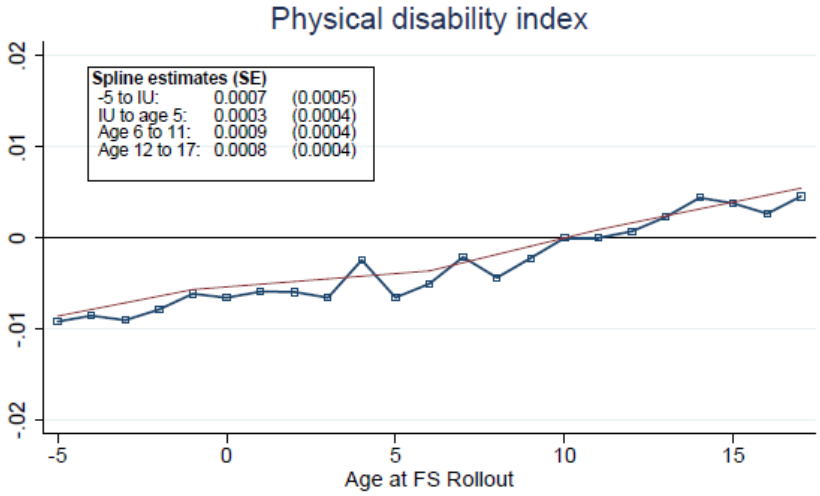

All in standard deviation units

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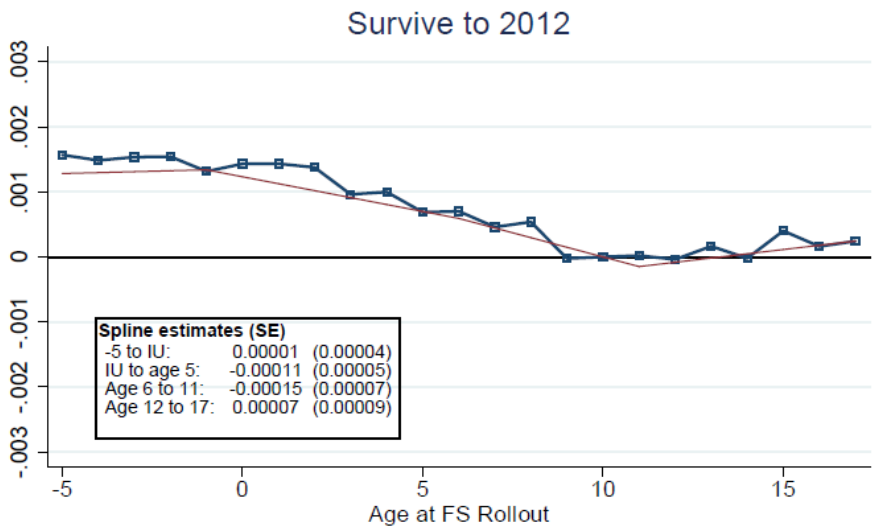

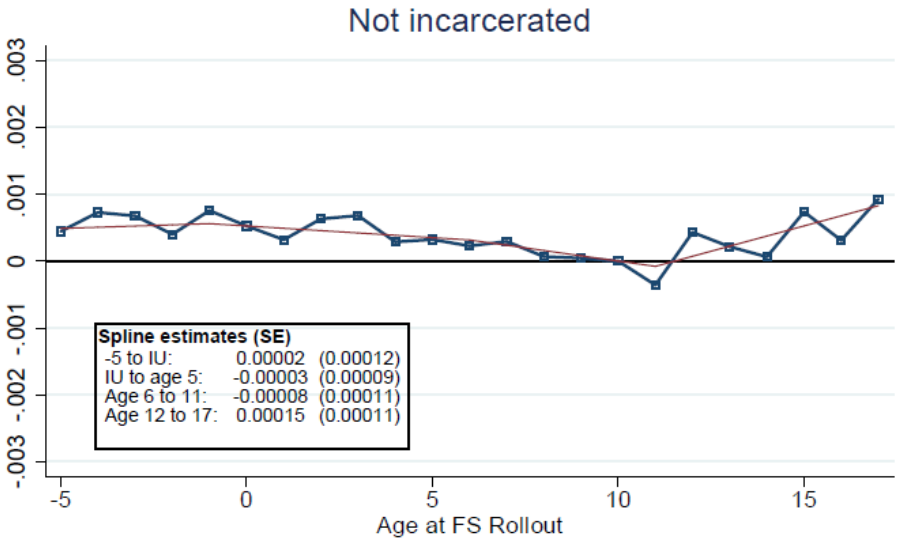

Percentage point units.

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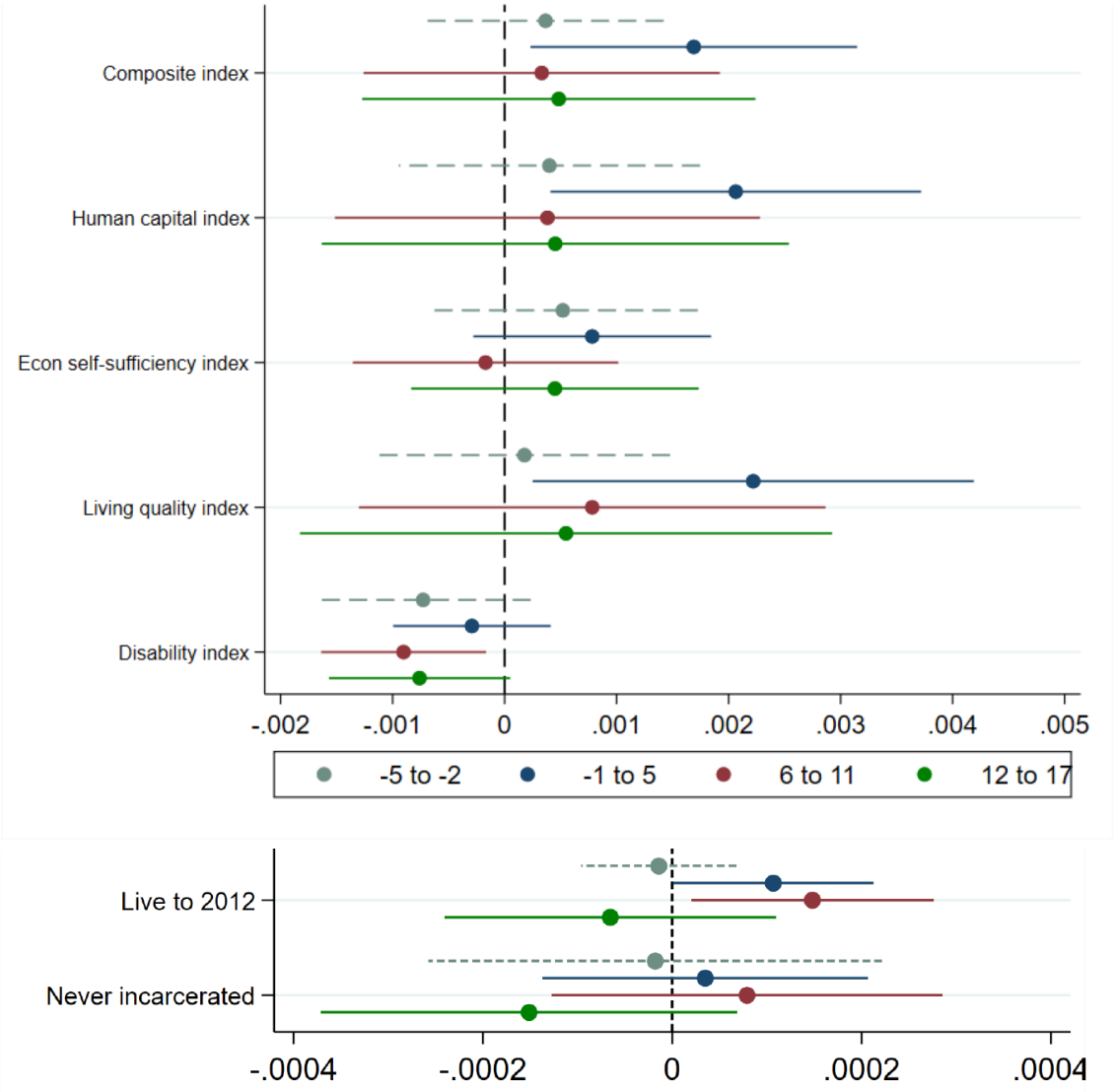
Spline Estimates, Full Sample



<u>Results:</u>

Pre-trend consistently good (dashed line)

Where significant, gains concentrated at youngest ages (blue line)

Largest effects on human capital, living quality

Exposure Model, Full Sample

	Indices					
	Human capital	Economic self sufficiency	Neighborhood quality	Physical disability	Survive to 2012	Not incarcerated
%IU - Age 5	0.0103	0.0043	0.0115	0.0013	0.0007	0.0008
	(0.0035)	(0.0016)	(0.0036)	(0.0013)	(0.0003)	(0.0004)
FE county, year	X	X	X	X	X	X
Cty_{60} x linear cohort	X	X	X	X	X	X
State x year FE	X	X	X	X	X	X
Number of observations	17,400,000	17,400,000	17,400,000	16,800,000	114,000,000	7,705,000
Number of cells	4,272,000	4,272,000	4,272,000	2,796,000	943,000	2,591,000
Number of counties	3000	3000	3000	3100	3000	3000
Mean dependent variable	0.012	0.036	0.000	0.024	0.956	0.984
R^2	0.127	0.058	0.379	0.053	0.696	0.027

<u>Magnitudes: Simulating effect of full exposure (IU-Age 5):</u>

Human capital: 0.010/0.16 = 0.06 SD TOT

Economic Self Sufficiency: 0.004/0.16 = 0.03 SD TOT

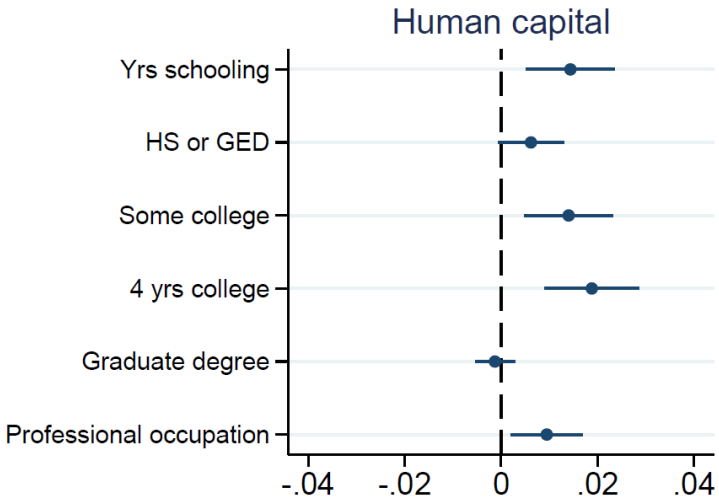
Neighborhood quality: 0.012/0.16 = 0.07 SD TOT

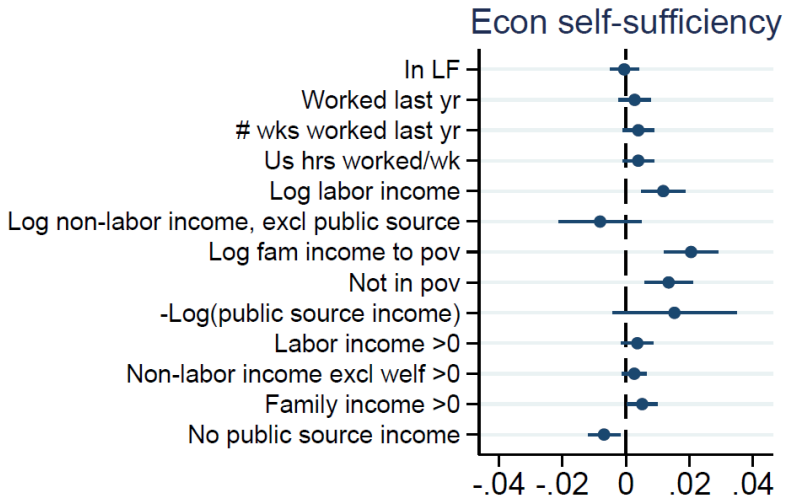
Survival to 2012: 0.07 pp ITT or 0.4 pp TOT (11% relative to mean nonsurvival of 0.04)

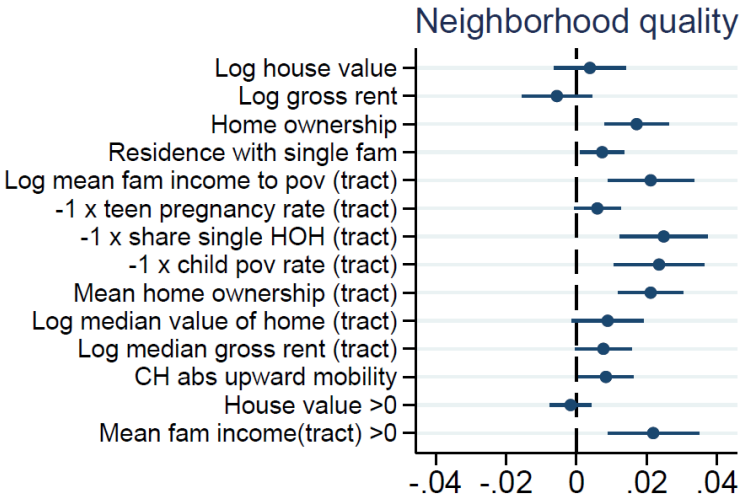
Not incarcerated: 0.08 pp ITT or 0.5 pp TOT

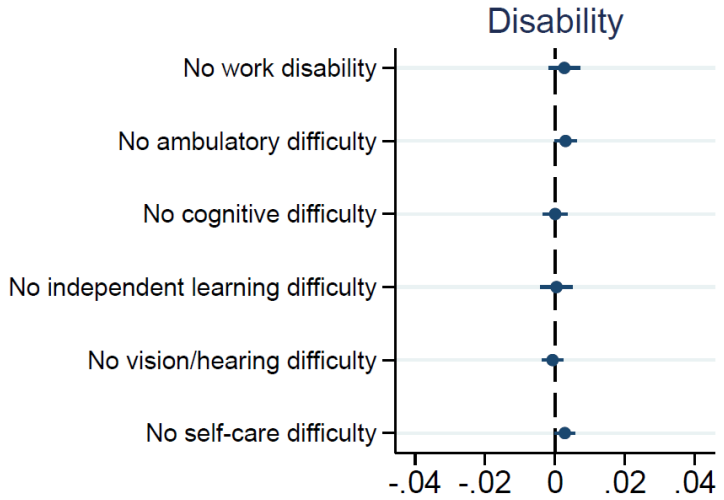
Note: Smaller cell counts for disability index (2000-2006) and incarceration (2007-2013). Larger for survival (full pop, one yr)

Full sample, Sub-indices, Exposure model (SD units)

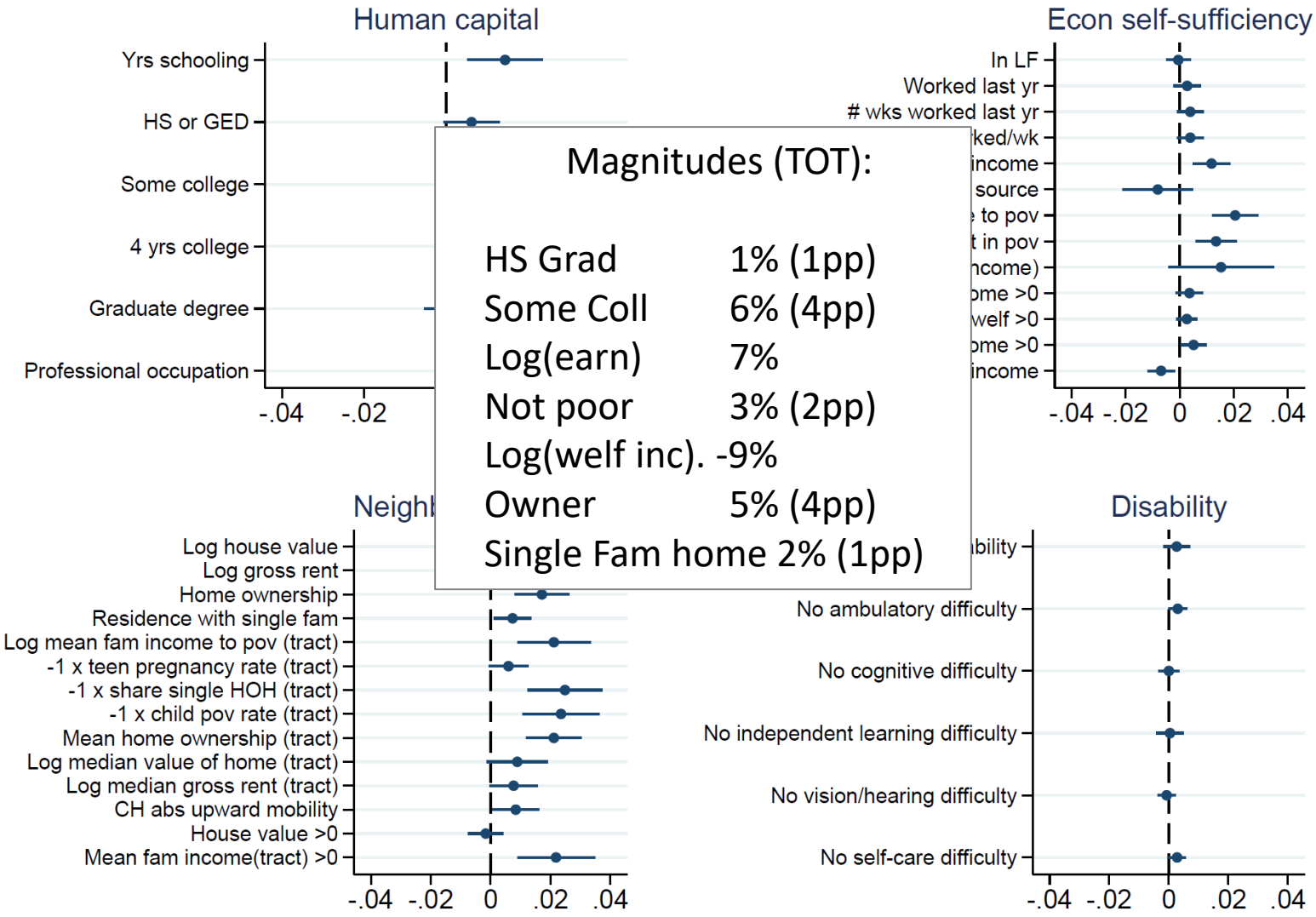






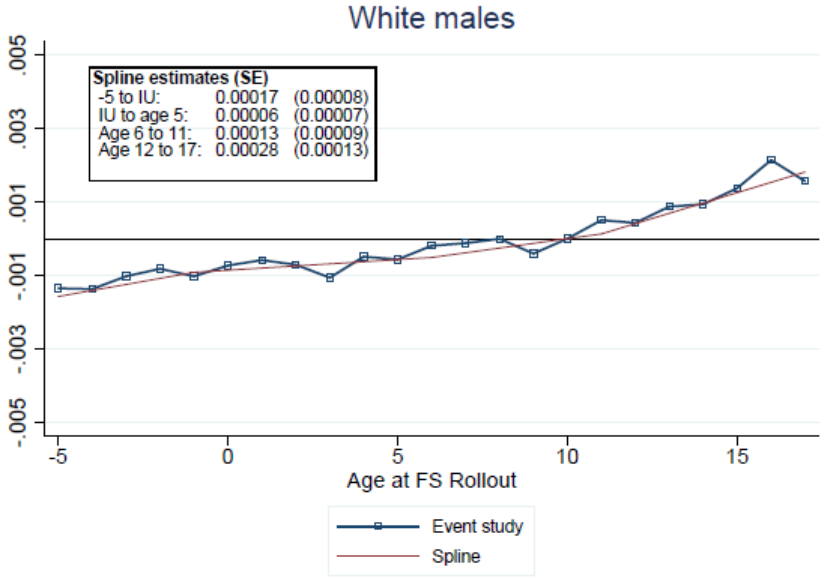


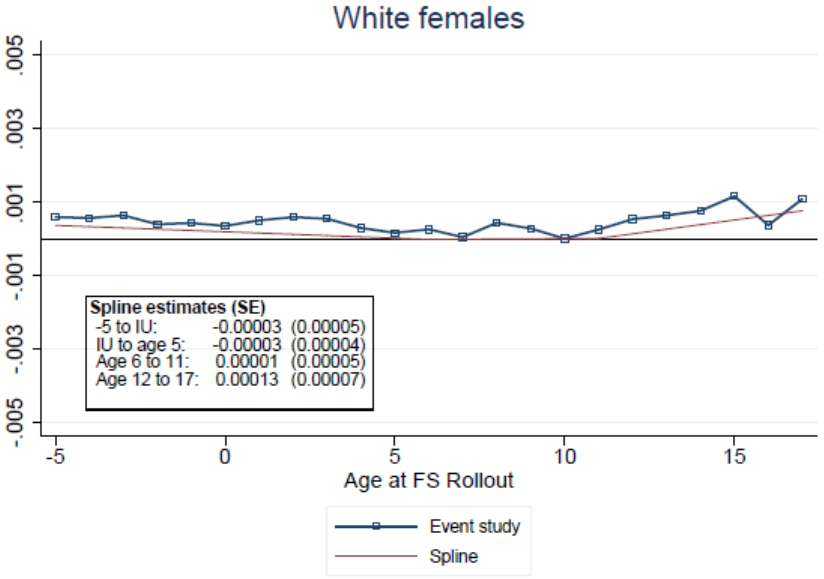
Full sample, Sub-indices, Exposure model (SD units)

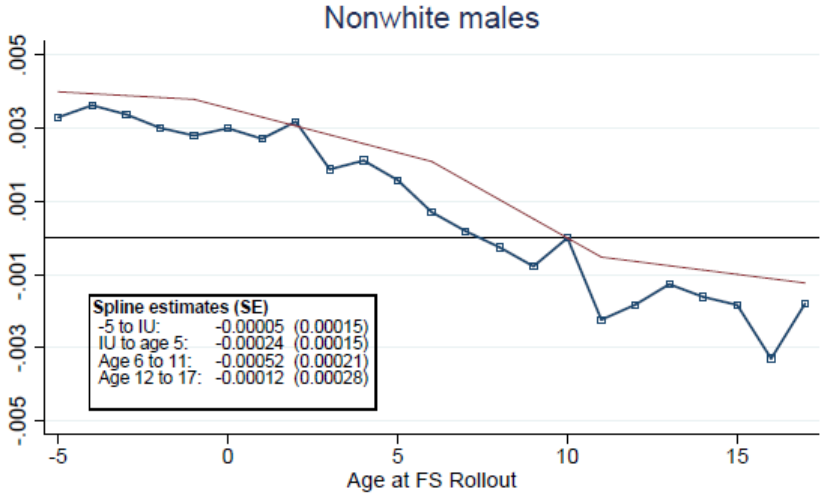


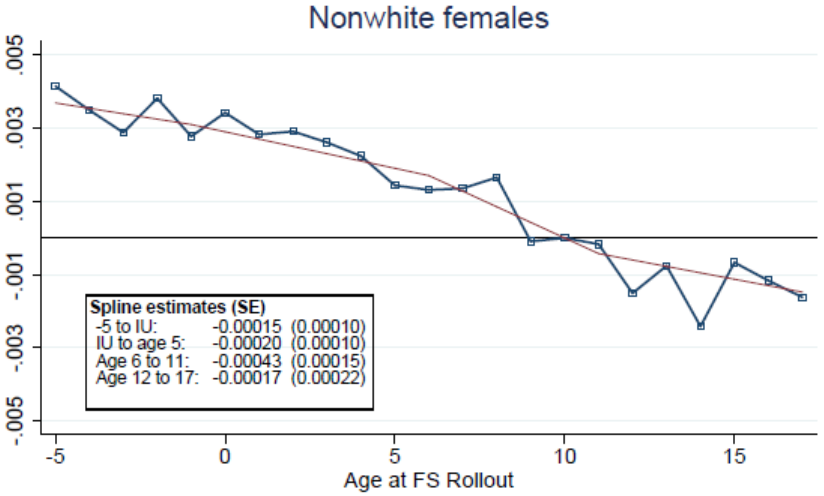
Results for Subgroups

Gains in survival concentrated among nonwhites

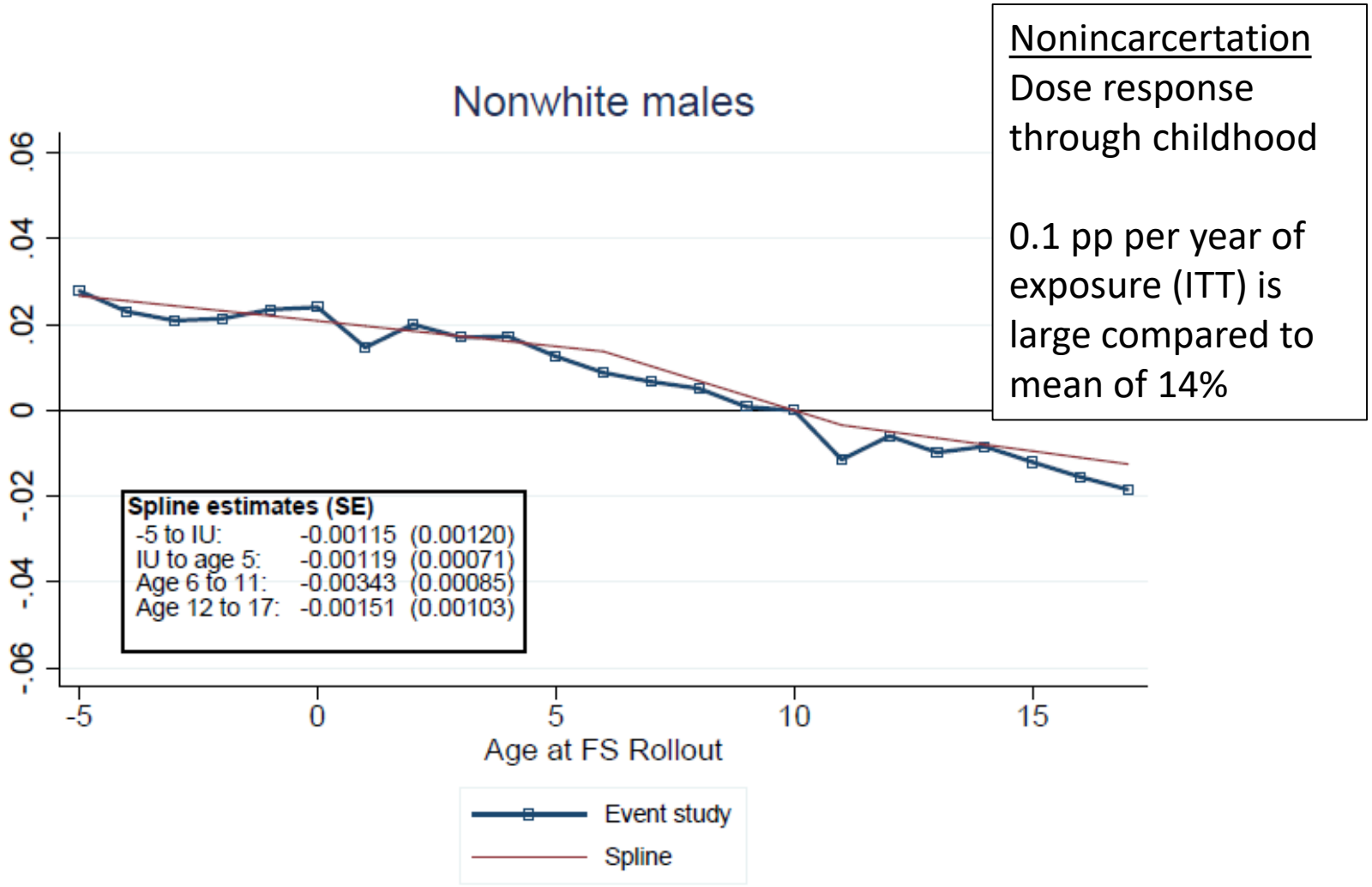








Reductions in incarceration for nonwhite men (and not other race x gender groups)

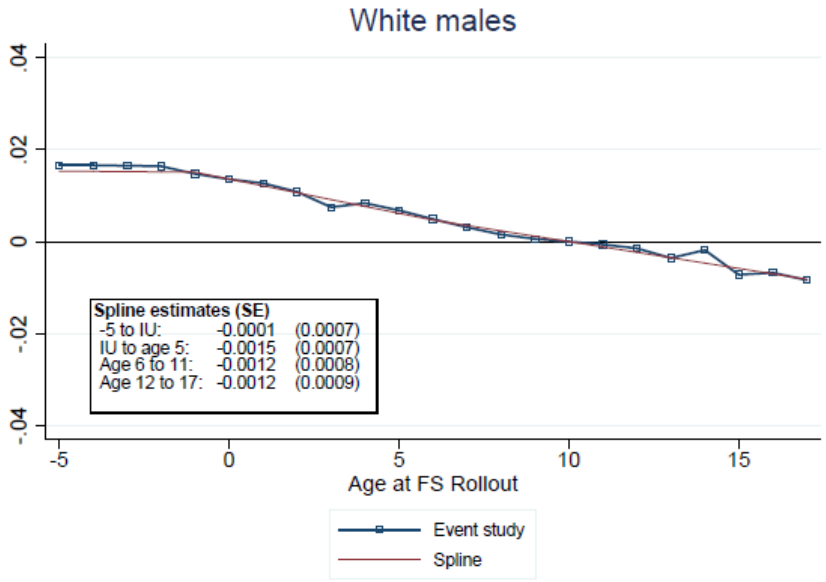


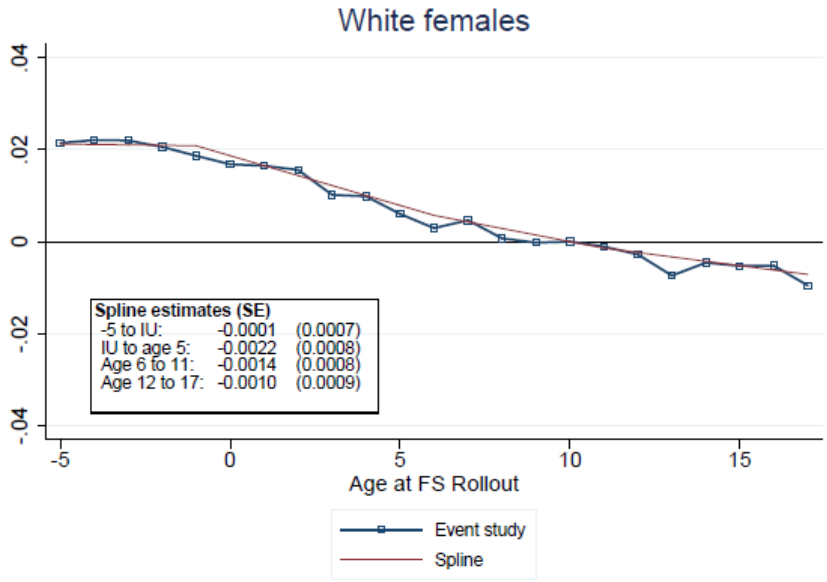
Nonincarcertation
Dose response through childhood

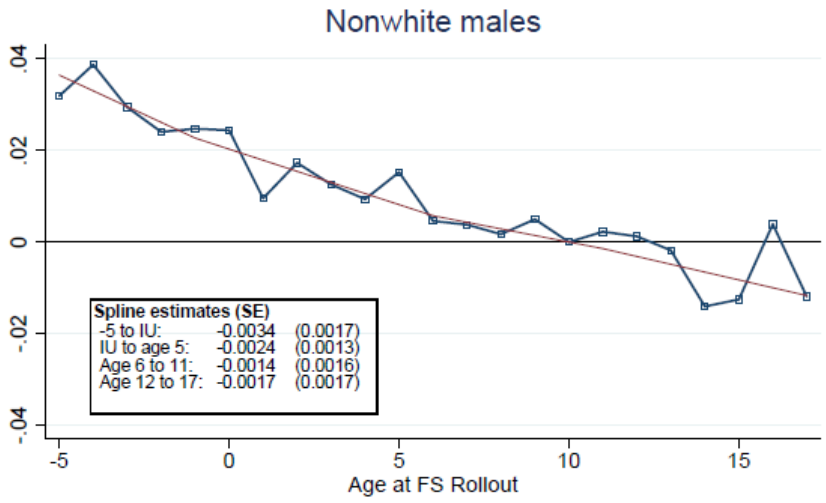
0.1 pp per year of exposure (ITT) is large compared to mean of 14%

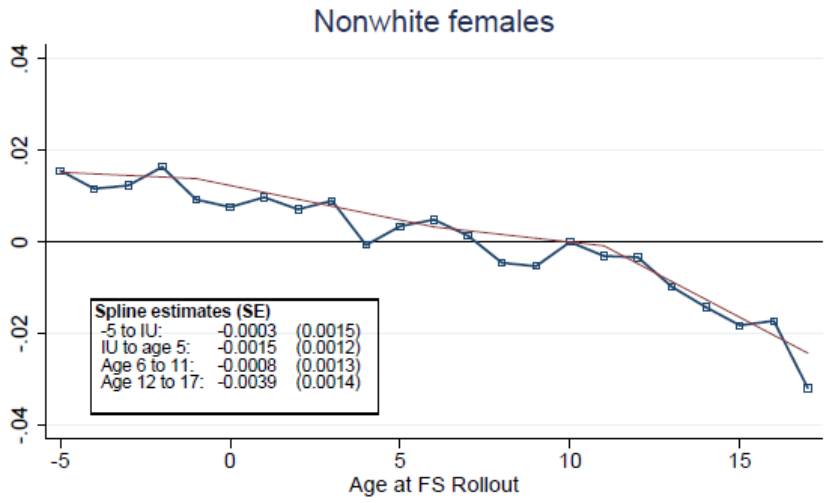
Also gains in labor income and intensive margin labor supply for this group.

Neighborhood quality effects most uniform across groups

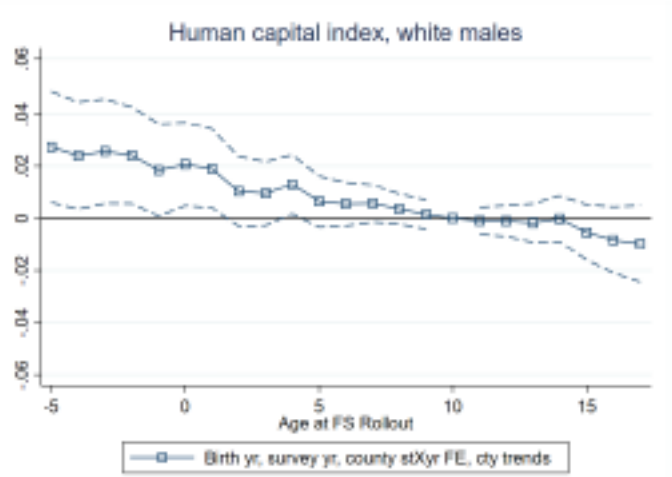


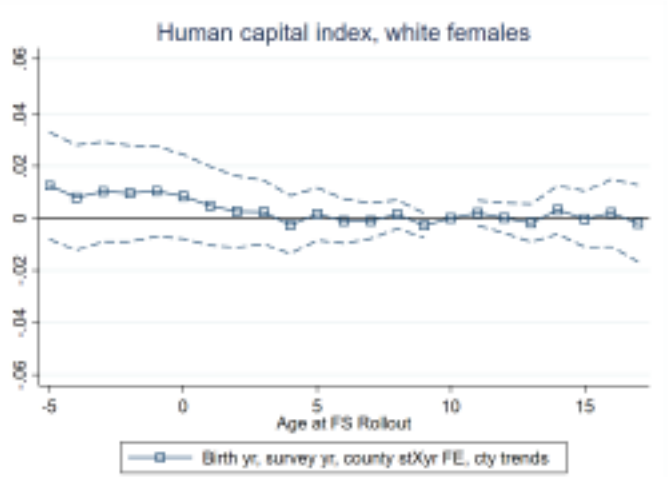


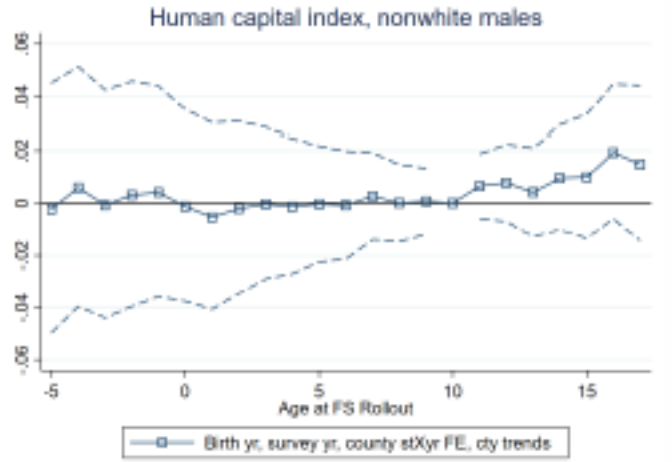


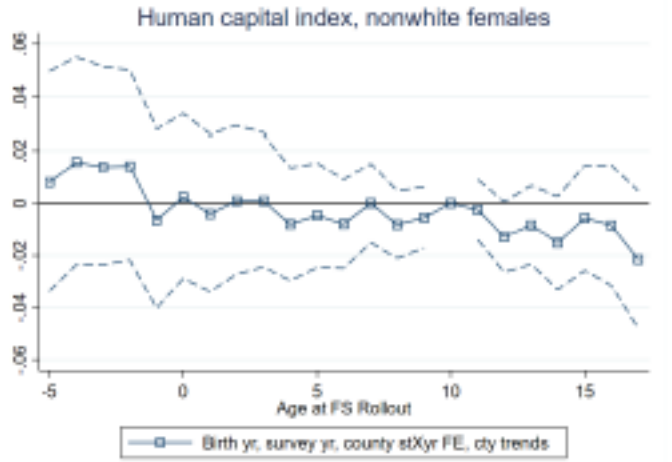


Human capital effects are concentrated among whites, particularly white males









The potential role of mobility

- We observe place of birth (NUMIDENT) as well as residence at the time of the survey
- We can examine impacts on geographic mobility and resulting neighborhood quality
- Results (not yet disclosed) show that FSP increases mobility → at least part of the increased neighborhood quality operates through increased mobility

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Results by stayer/mover status

	Human capital		Economic self-sufficiency		Neighborhood quality	
	Stayers	Movers	Stayers	Movers	Stayers	Movers
%IU - Age 5	0.0113	0.0064	0.0062	0.0031	0.0156	0.0085
	(0.0031)	(0.0021)	(0.0029)	(0.0019)	(0.0035)	(0.0031)
FE county, year	X	X	X	X	X	X
Cty_{60} x linear cohort	X	X	X	X	X	X
State x year FE	X	X	X	X	X	X
Number of observations	5,182,000	12,200,000	5,182,000	12,200,000	5,182,000	12,200,000
Number of cells	2,101,000	3,567,000	2,101,000	3,567,000	2,101,000	3,567,000
Number of counties	2700	3000	2700	3000	2700	3000
Mean dependent variable	-0.115	0.068	-0.0228	0.0533	-0.152	0.0679
R^2	0.283	0.181	0.0662	0.0425	0.538	0.301

Larger effects for stayers

Result could be due to: attenuation due to measurement error (location in early life) or subgroup heterogeneity (stayers are negatively selected)

Robustness

Robustness:

- Estimates robust to most saturated model (adding state x year)
- Robust to adding controls for log(population), War on Poverty programs (HS, CHC) and REIS transfers.
  - Adding population decreases estimate slightly (<20%); adding other controls creates no change in estimate
- Robust to adding additional control for exposure to FS at ages 6-18

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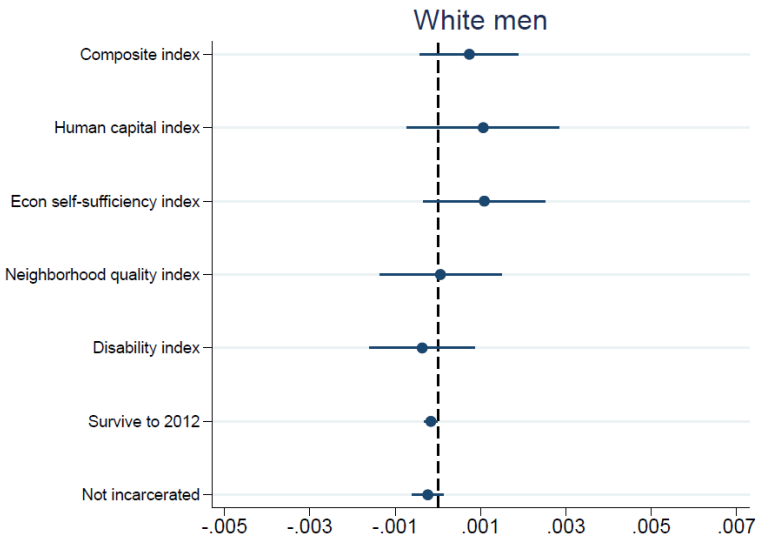
Robustness to adding birth year county controls, Exposure model (limited to cohorts 1959-1980)

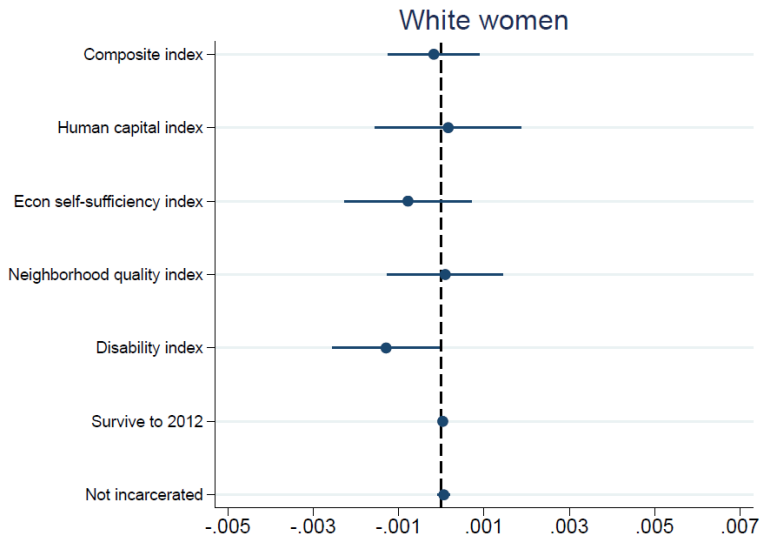
	(1)	(2)	(3)
%IU - Age 5	0.0087	0.0070	0.0074
	(0.0034)	(0.0033)	(0.0029)
FE county, year	X	X	X
Cty_{60} x linear cohort	X	X	X
State x year FE	X	X	X
County population		X	X
Other county controls			X
Number of observations	11,200,000	11,200,000	11,200,000
Number of cells	3,115,000	3,115,000	3,115,000
Number of counties	3000	3000	3000
R^2	0.213	0.213	0.213

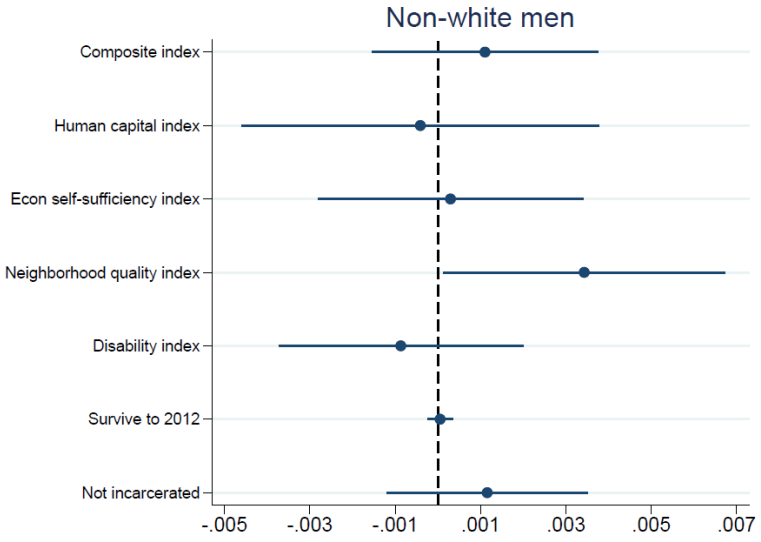
Exposure model results robust to adding exposure ages 6-18

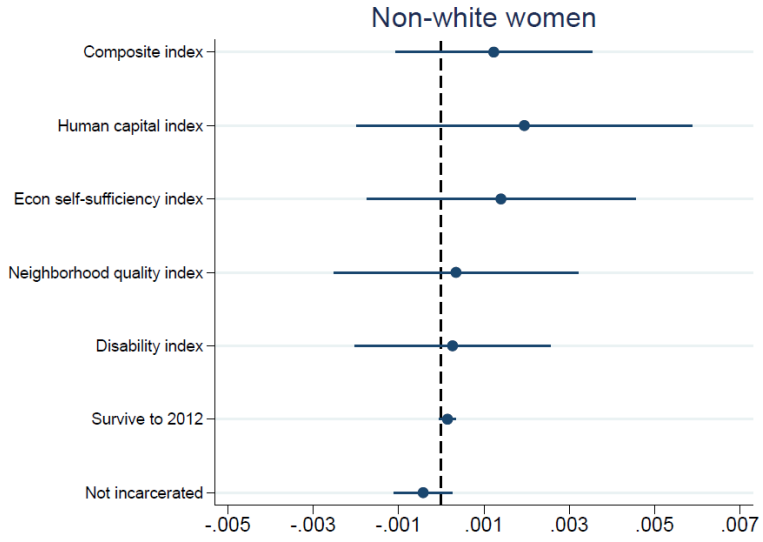
	Indices					
	Human capital	Economic self sufficiency	Neighborhood quality	Physical disability	Survive to 2012	Not incarcerated
%IU - Age 5	0.0092	0.0027	0.0123	-0.0015	0.0010	0.0008
	(0.0047)	(0.0023)	(0.0052)	(0.0016)	(0.0003)	(0.0006)
%6-18	-0.0033	-0.0049	0.0025	-0.0081	0.0012	0.0002
	(0.0112)	(0.0053)	(0.0122)	(0.0031)	(0.0008)	(0.0014)
FE county, year	X	X	X	X	X	X
Cty_{60} x linear cohort	X	X	X	X	X	X
State x year FE	X	X	X	X	X	X
Number of observations	17,400,000	17,400,000	17,400,000	16,800,000	114,000,000	7,705,000
Number of cells	4,272,000	4,272,000	4,272,000	2,796,000	943,000	2,591,000
Number of counties	3000	3000	3000	3100	3000	3000
R^2	0.127	0.058	0.379	0.053	0.696	0.027

More on validity of design – pre-trends splines across all models









Magnitudes

Magnitudes – and the prior research

- Food Stamps
  - Hoynes et al 2016 IU to age 5 → 0.7 TOT SD decrease in index of metabolic syndrome and an insignificant effect on economic self-sufficiency [here: 0.03 SD for economic self sufficiency]
  - Bitler and Figinski 2018 IU to age 5 → 15% TOT increase in earnings for women and insign. for men [here: 7% for all] and no significant effect on employment [here: same]
- Head Start
  - Bailey et al 2018: human capital index 0.10 SD TOT [here: 0.06 SD]
  - Deming 2009: index of HS graduation, college attendance, "idleness," crime, teen parenthood, and health status → 0.23 SD TOT [here: 0.06 SD]
- Medicaid
  - Brown et al 2015: Using their estimates for the effects of years of Medicaid eligibility (X 5.75 years of IU-age5 eligibility) and adjusting for take-up, they find a 8% reduction in mortality for men TOT [here: 11% for all] and a 5% increase in earnings for women TOT [here: 7% for all] and insignificant change in college.

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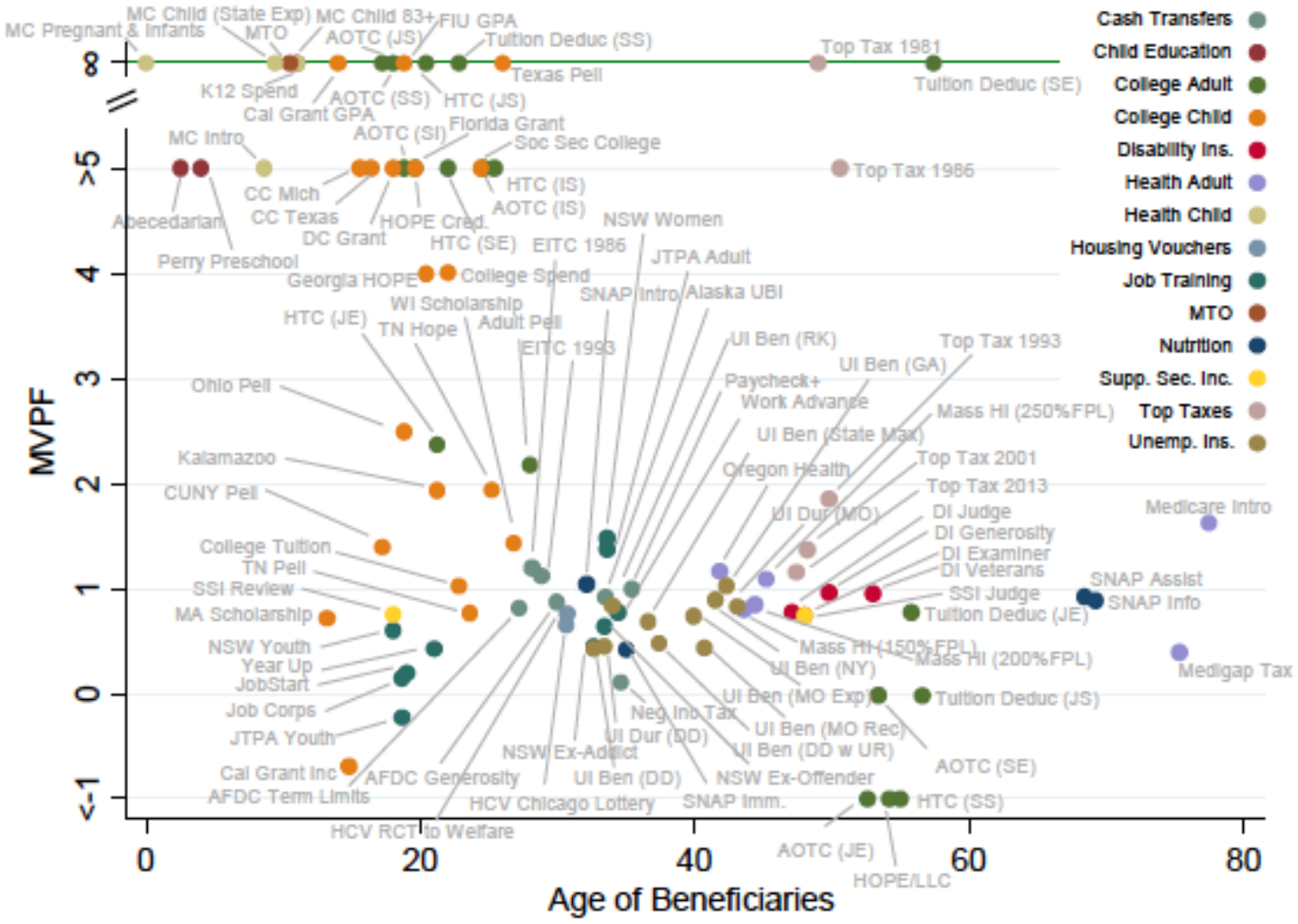
Hendren and Sprung-Keyser (2019) quantify a broad set of interventions showing long run government benefits relative to the costs.

FIGURE III: MVPF Estimates by Age of Policy Beneficiary

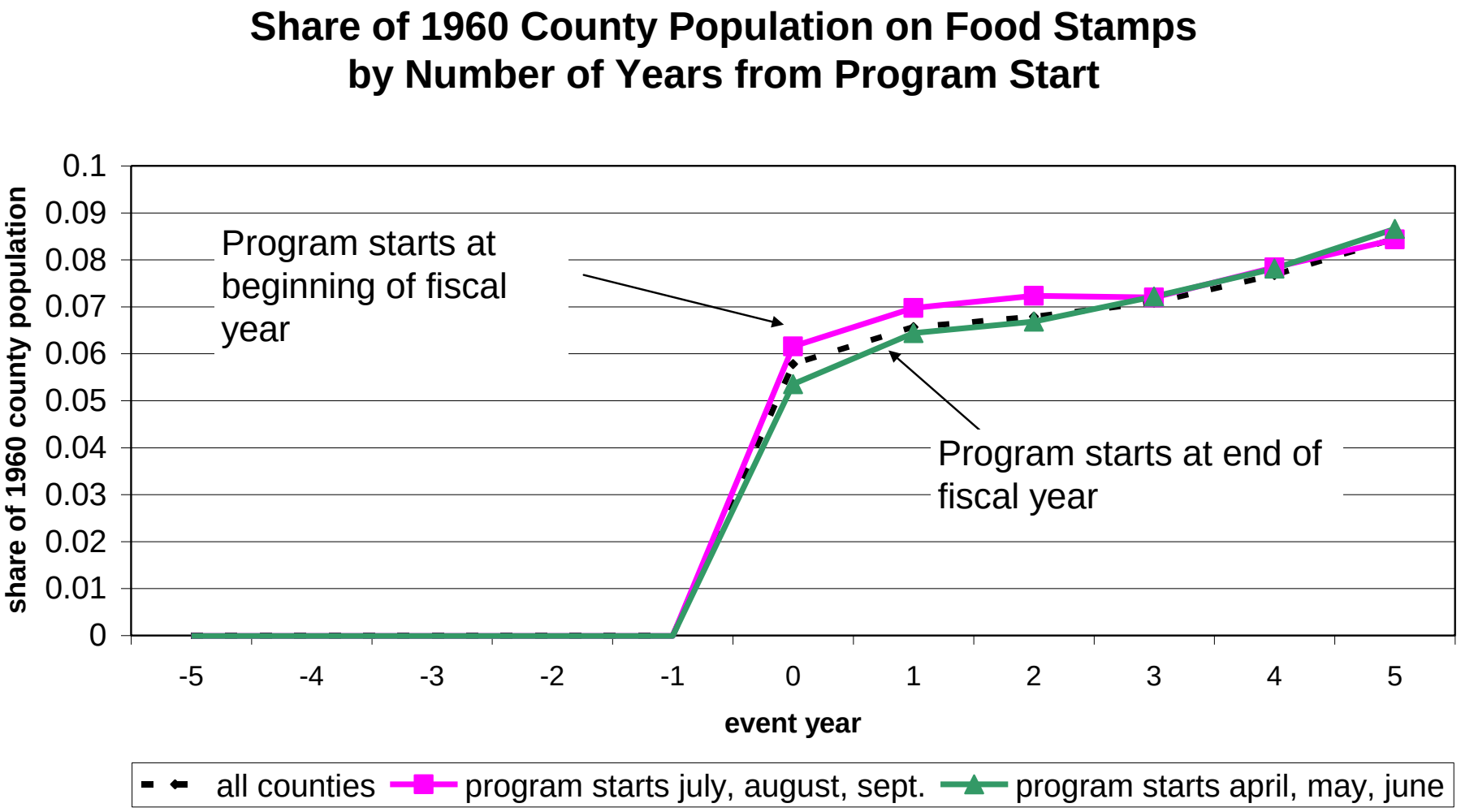


Conclusions

- Food stamps is a central element of the safety net
- Typically, evaluations on the efficacy of the safety net begin by analyzing labor supply and poverty
- Yet increasing incomes at bottom of the distribution may generate substantial benefits to children and families that, to date, have not been explored
- The work summarized here shows that childhood exposure to food stamps leads to improvements in human capital, living quality and mortality. For nonwhite males there is a substantial reduction in incarceration
- Gains are generally larger early in life, but some outcomes continue to have substantial gains in later childhood

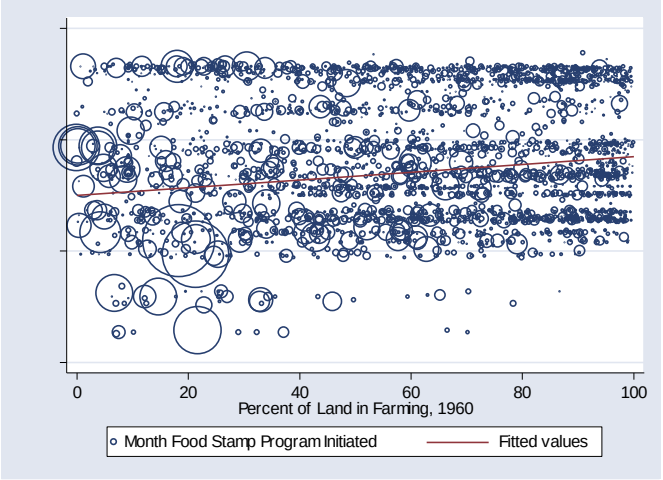
EXTRA SLIDES

County programs appeared to ramp up quickly

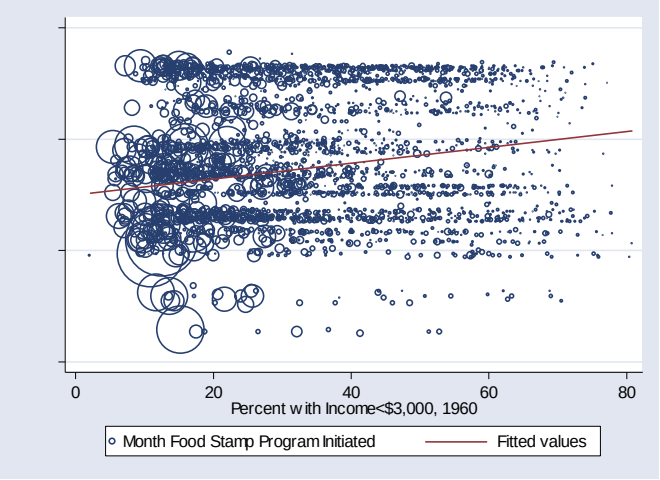


Correlation between 1960 county characteristics and the timing of rollout

% land in farming



% income<$3,000



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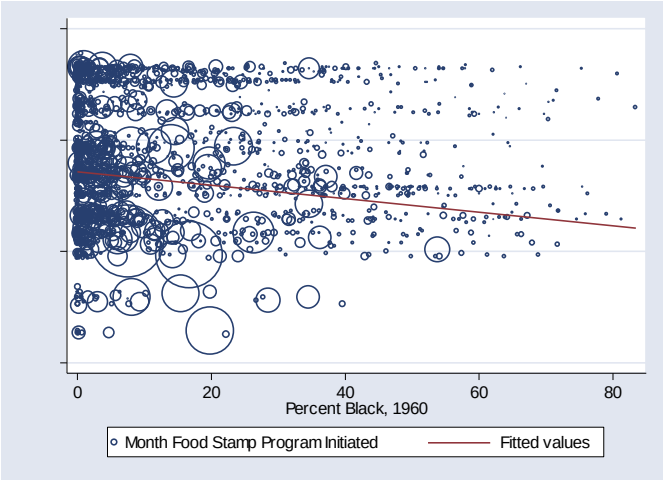
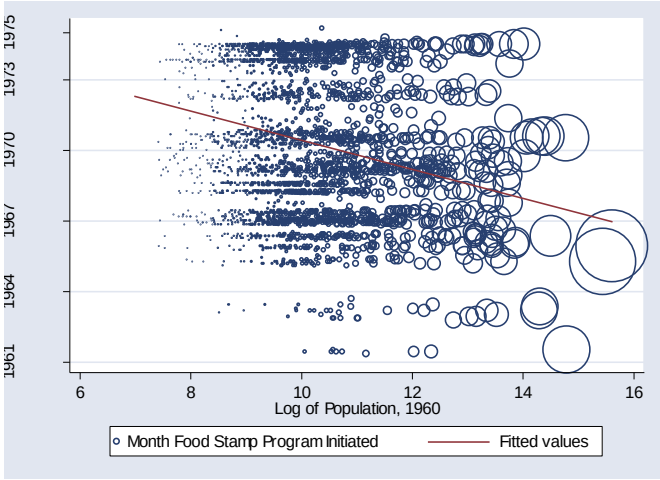


log of population



Source: Hoynes and Schanzenbach (2009).

Table 6: Full sample: Main outcomes, subgroups by race and gender

Exposure model

	All	White males	White females	Nonwhite males	Nonwhite females
Human capital	0.0103	0.0102	0.0078	0.0044	-0.0007
	(0.0035)	(0.0036)	(0.0030)	(0.0067)	(0.0068)
Economic self-sufficiency	0.0043	0.0037	-0.0002	0.0063	0.0038
	(0.0016)	(0.0020)	(0.0027)	(0.0044)	(0.0049)
Living quality	0.0115	0.0048	0.0095	0.0019	-0.0042
	(0.0036)	(0.0024)	(0.0028)	(0.0050)	(0.0046)
Physical disability	0.0013	0.0001	0.0000	0.0083	-0.0035
	(0.0013)	(0.0018)	(0.0016)	(0.0036)	(0.0032)
Survive to 2012	0.0007	0.0006	0.0003	0.0008	0.0001
	(0.0003)	(0.0004)	(0.0002)	(0.0009)	(0.0006)
Never incarcerated	0.0008	0.0004	0.0001	-0.0001	0.0002
	(0.0004)	(0.0006)	(0.0002)	(0.0039)	(0.0011)
FE county, year	X	X	X	X	X
Cty_60 x linear cohort	X	X	X	X	X
state x year FE	X	X	X	X	X
N_obs	17,400,000	7,423,000	7,817,000	951,000	1,204,000
N_cells	4,272,000	2,684,000	2,781,000	561,000	668,000
N_counties	3000	3000	3000	2900	2900