Fighting Crime in the Cradle: The Effects of Early Childhood Access to Nutritional Assistance

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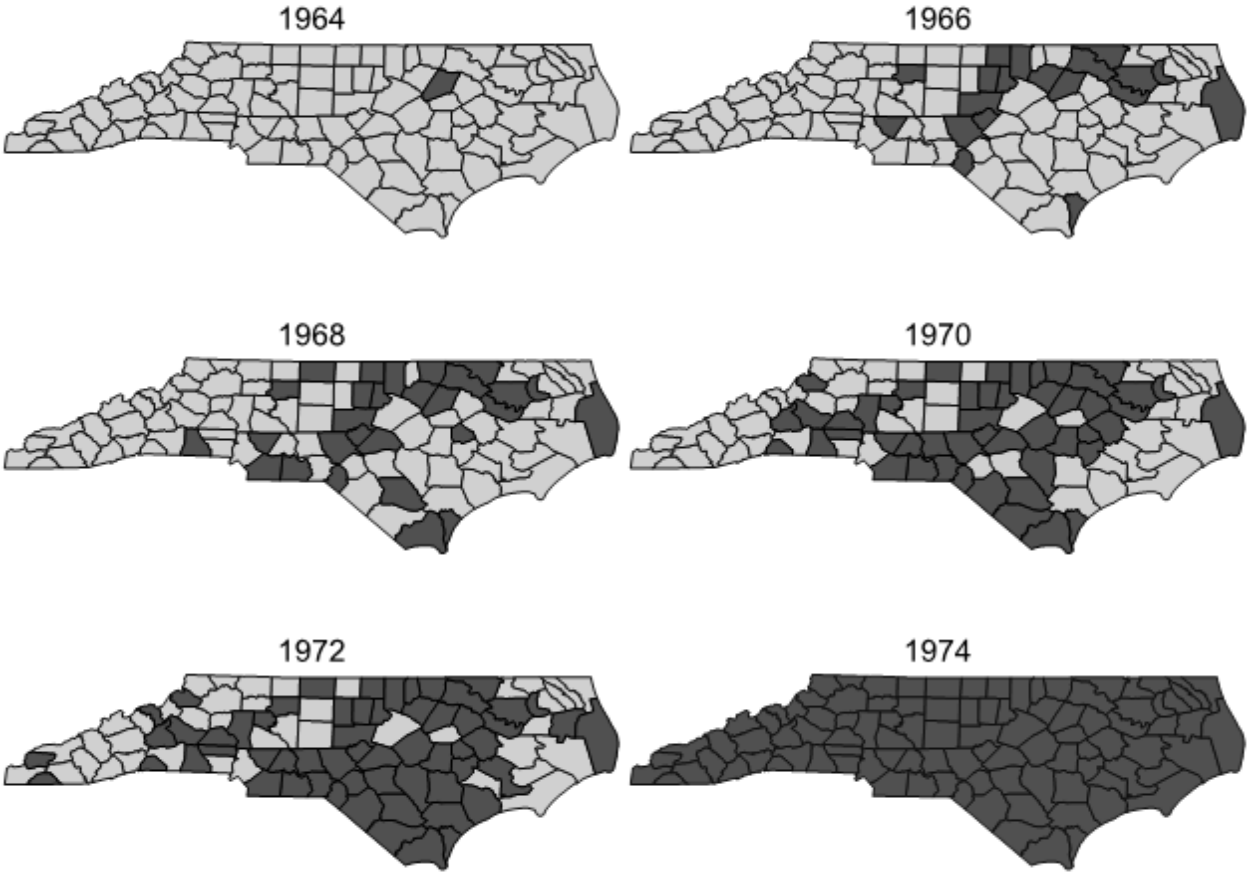
Online Appendix

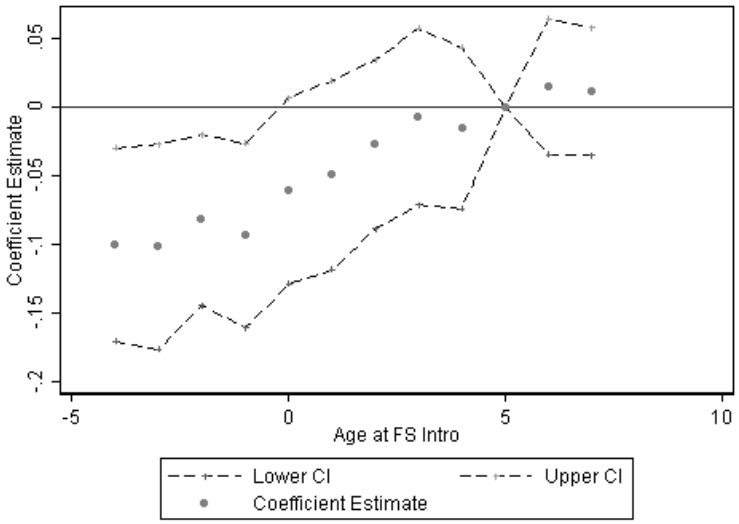
Online Appendix A: Supplementary Figures and Tables

Figure A1: North Carolina County Food Stamp Availability by Year



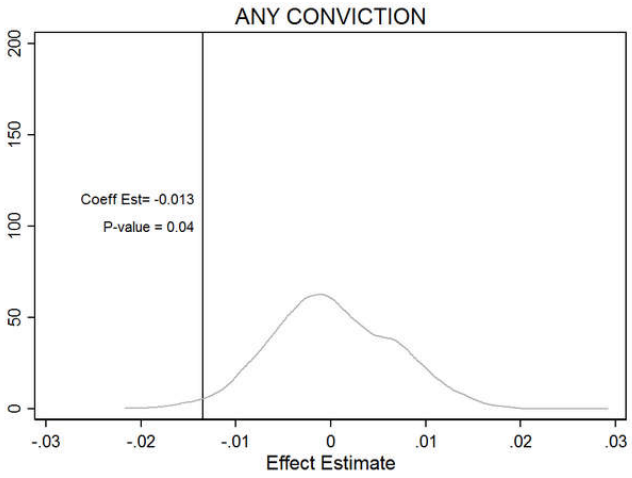
Note: Dark grey counties are those with a FSP in the given year according to FSP administrative data obtained from Hoynes and Schanzenbach (2009).

Figure A2: Event Study for Violent Crimes from UCR



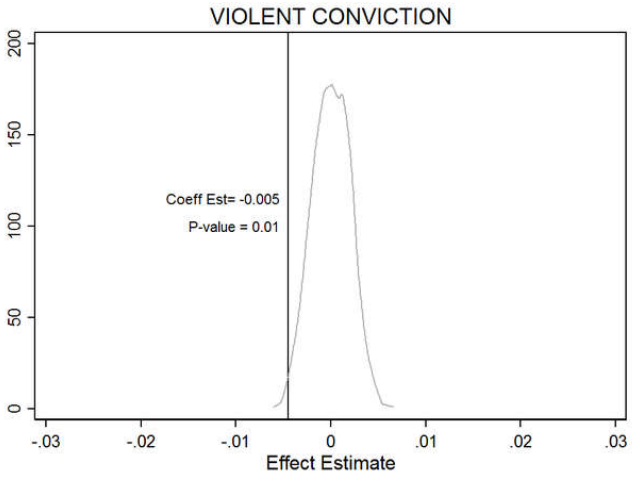
Note: Circles indicate coefficients on indicator variables for a cohort's implied age at FSP introduction in a county. Observations are at the county by birth cohort by age level. The dependent variable is the number of arrests per 100 individuals in a county cohort who are arrested at a particular age. All specifications include birth year, age, and county fixed effects as well as baseline county characteristics (1960) interacted with a trend in birth year. Baseline county characteristics include: percent of land in farming, perent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent employment in agriculture. Standard errors are clustered at the county level. The sample is restricted to individuals age 18-24. Sample restricted to agencies accounting for at least 20% of a county's population.

Figure A3: All Crimes: Randomization Inference (NC Data)



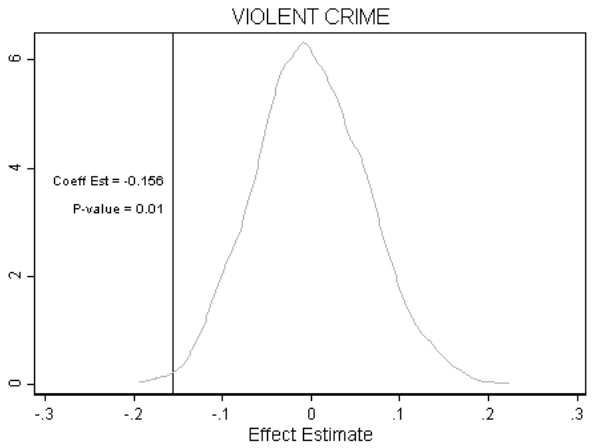
Note: The figure plots the smoothed distribution of coefficient estimates of 0-5 FS Exposure for 1000 random assignments of the timing (start month and year) of the introduction of Food Stamps in each county. The vertical line indicates the coefficient estimate using the actual timing of Food Stamp introduction in each county. P-value presented is the two-tailed statistic calculated as the share of coefficient estimates obtained under random assignment of Food Stamp introduction timing that are larger in absolute magnitude than the estimate using the actual timing of introduction.

Figure A4: Violent Crimes: Randomization Inference (NC Data)



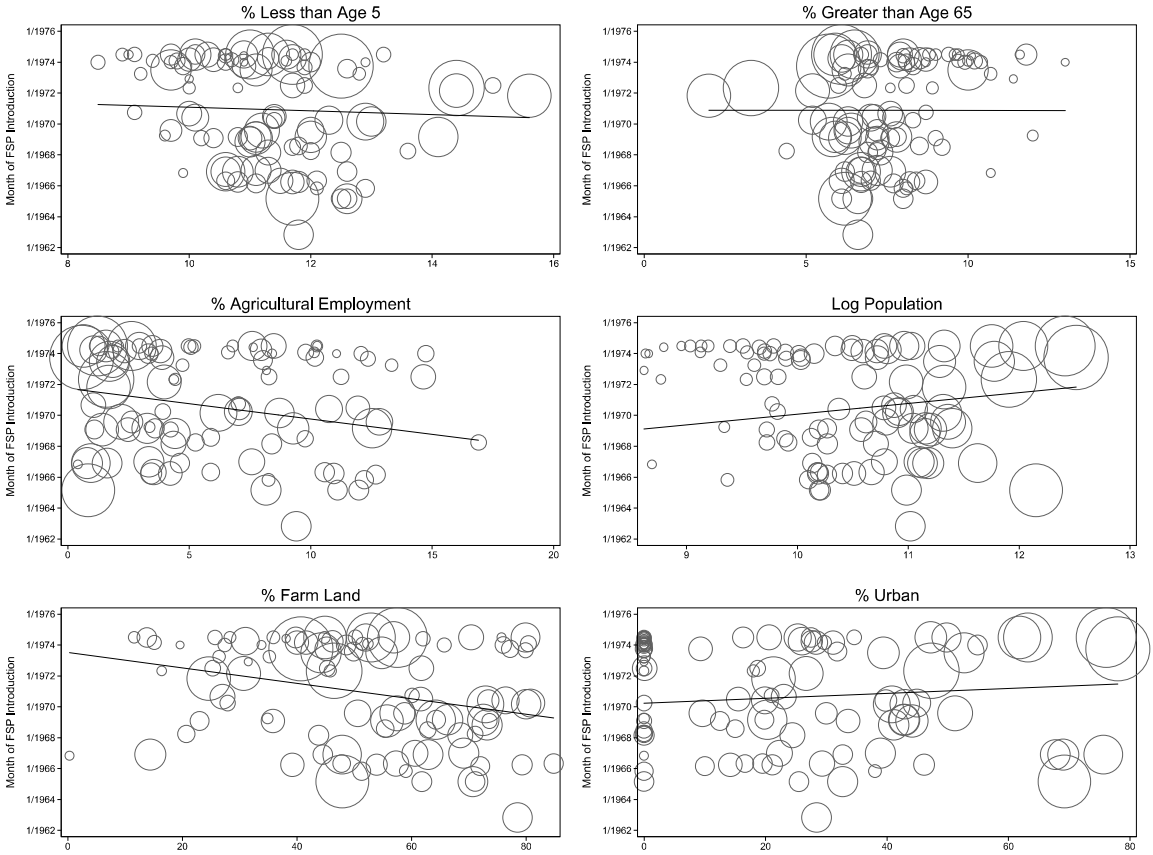
Note: The figure plots the smoothed distribution of coefficient estimates of 0-5 FS Exposure for 1000 random assignments of the timing (start month and year) of the introduction of Food Stamps in each county. The vertical line indicates the coefficient estimate using the actual timing of Food Stamp introduction in each county. P-value presented is the two-tailed statistic calculated as the share of coefficient estimates obtained under random assignment of Food Stamp introduction timing that are larger in absolute magnitude than the estimate using the actual timing of introduction.

Figure A5: Violent Crimes: Randomization Inference (UCR Data)



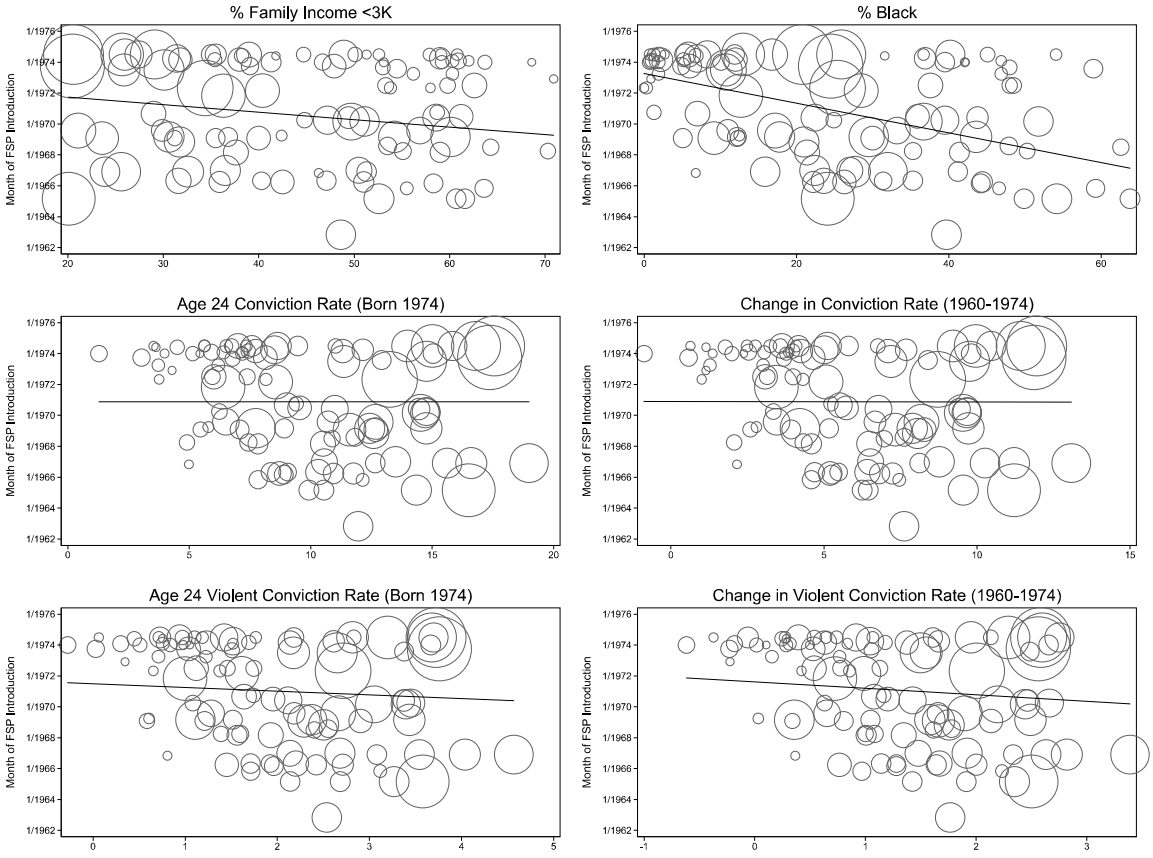
Note: The figure plots the smoothed distribution of coefficient estimates of 0-5 FS Exposure for 1000 random assignments of the timing (start year) of the introduction of Food Stamps in each county. The vertical line indicates the coefficient estimate using the actual timing of Food Stamp introduction in each county. P-value presented is the two-tailed statistic calculated as the share of coefficient estimates obtained under random assignment of Food Stamp introduction timing that are larger in absolute magnitude than the estimate using the actual timing of introduction.

Figure A6: Exploring Endogeneity of Month of Food Stamp Adoption



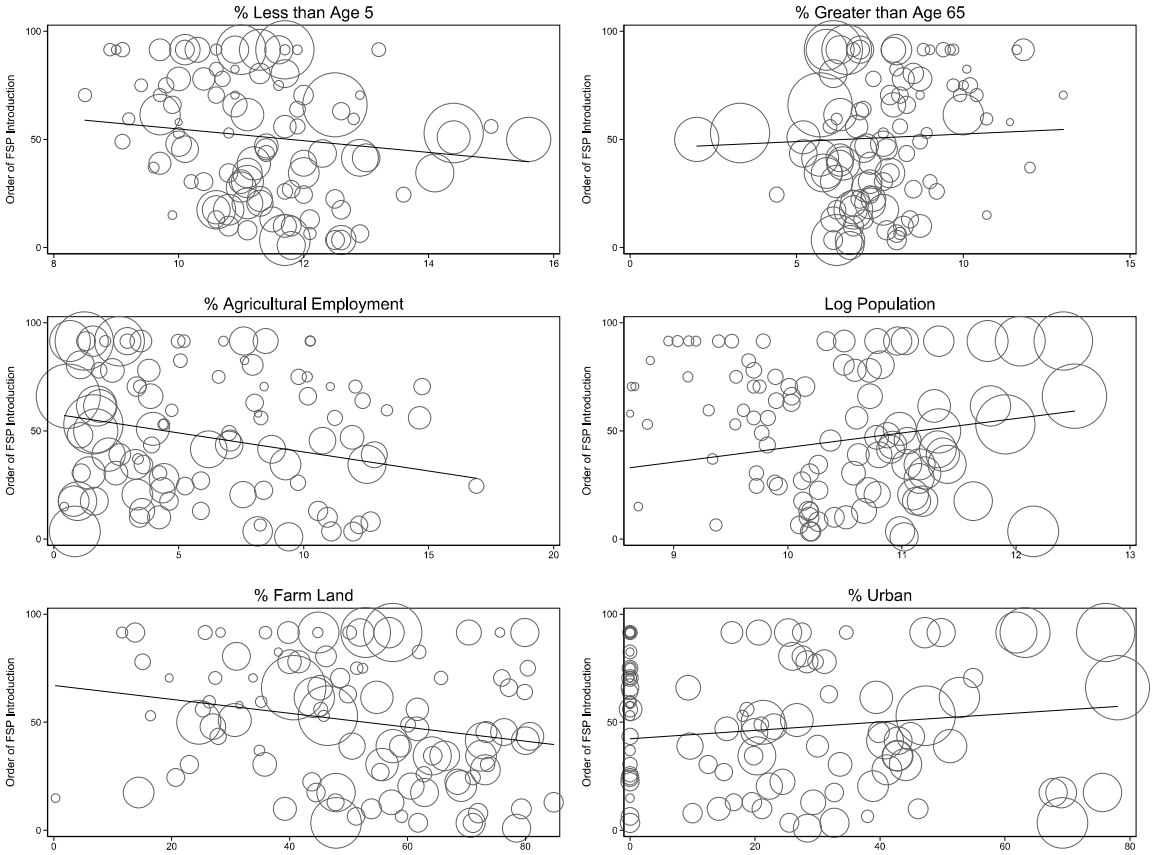
Note: Each scatter plot shows the relationship between baseline (1960) county characteristics and the month of FSP introduction in that county. The data are at the county-level and contain 99 (out of 100) counties in North Carolina for which the relevant information was available. Bubble size and fitted line are weighted by number of births in each county in 1960.

Figure A7: Exploring Endogeneity of Month of Food Stamp Adoption



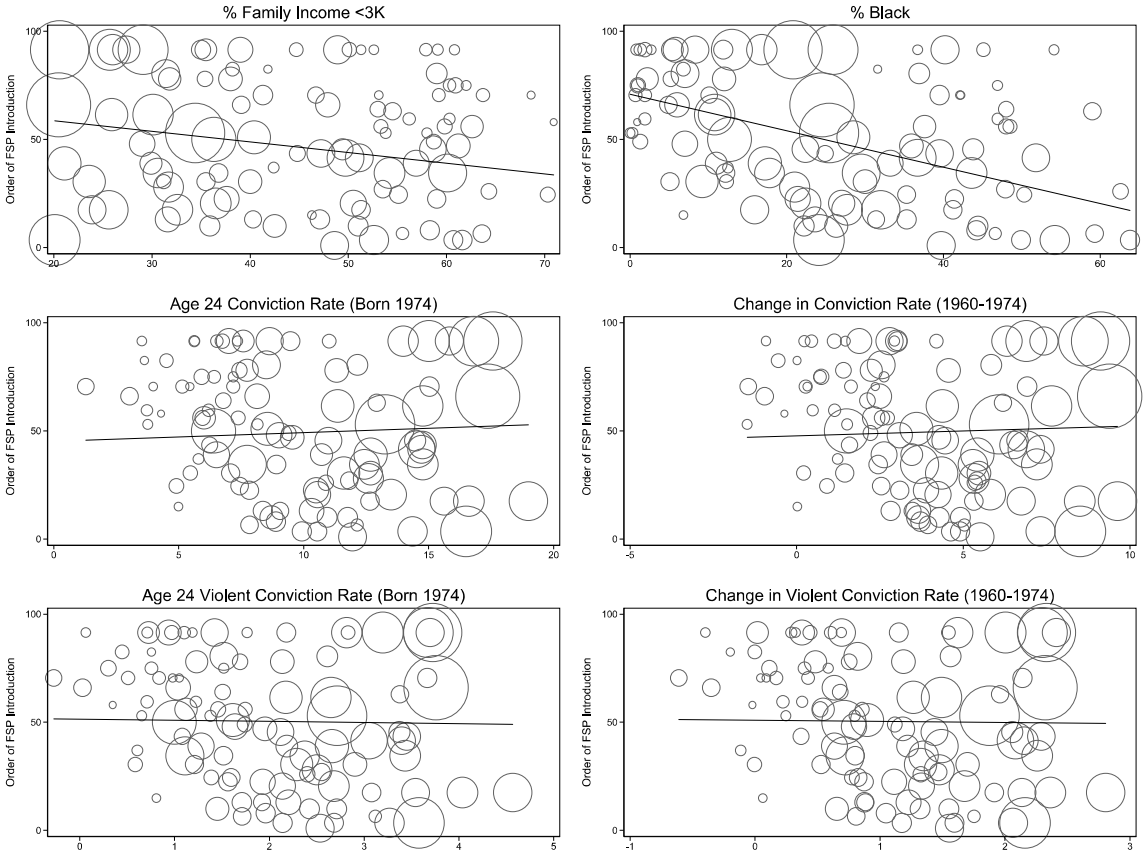
Note: Each scatter plot shows the relationship between baseline (1960) county characteristics and the month of FSP introduction in that county. The data are at the county-level and contain 99 (out of 100) counties in North Carolina for which the relevant information was available. The conviction rate (or change in conviction rate) variables are indexes predicted by baseline county characteristics. Bubble size and fitted line are weighted by number of births in each county in 1960.

Figure A8: Exploring Endogeneity of Order of Food Stamp Adoption



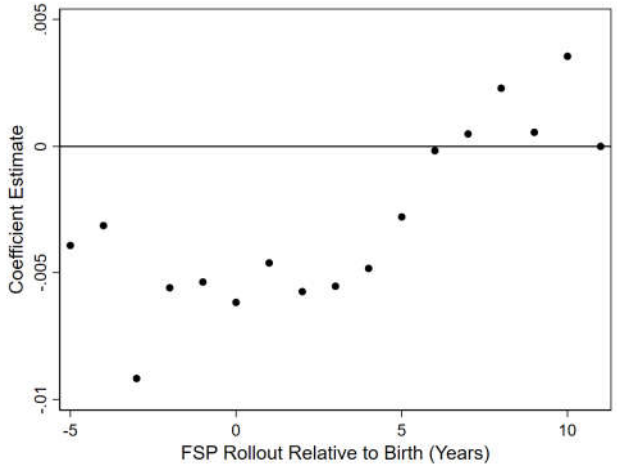
Note: Each scatter plot shows the relationship between baseline (1960) county characteristics and the *order* of FSP introduction in that county. The data are at the county-level and contain 99 (out of 100) counties in North Carolina for which the relevant information was available. Bubble size and fitted line are weighted by number of births in each county in 1960.

Figure A9: Exploring Endogeneity of Order of Food Stamp Adoption



Note: Each scatter plot shows the relationship between baseline (1960) county characteristics and the *order* of FSP introduction in that county. The data are at the county-level and contain 99 (out of 100) counties in North Carolina for which the relevant information was available. The conviction rate (or change in conviction rate) variables are indexes predicted by baseline county characteristics. Bubble size and fitted line are weighted by number of births in each county in 1960.

Figure A10: Extended Event Study for Any Conviction by Age 24 (NC Data)



Note: Circles indicate coefficients on indicator variables for a cohort's implied age at FSP introduction in a county (negative ages reflect cohorts that were born after FSP introduction). Observations are at the birth county by birth month level. The dependent variable is the fraction of individuals born in a particular county and birth cohort who were convicted of a crime by age 24. Regressions include birth month cohort and county fixed effects. Standard errors are clustered at the birth county level. Confidence intervals are excluded as all coefficient estimates are imprecisely estimated.

Table A1: Impacts of FSP Introduction on Infant Low Birth Weight in NC

	All (1)	White (2)	Non-White (3)	HS Dropout (4)
FSP Access	-0.0019	-0.0005	-0.0050	-0.0039
	(0.0019)	(0.0024)	(0.0041)	(0.0031)
Percent of Mean	*-2.1%*	*-0.7%*	*-3.7%*	*-3.5%*
Mean	0.09	0.07	0.14	0.11
Obs	636,817	446,661	190,073	216,656

Note: Each column represents a separate OLS regression. The estimation sample includes observations at the individual level for 1968-1974 (years when detailed birth information is available) for births in North Carolina. FSP Access reflects whether FSP is available at birth for a given county-month cohort. The dependent variable is an indicator for low birth weight. All specifications include birth county and birth month fixed effects as well as baseline county characteristics (1960) interacted with a trend in birth month. Baseline (1960) birth county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. Standard errors clustered at the birth county-level are in parentheses. Significance levels indicated by: * (p <0.10) **(p <0.05), ***(p <0.01).

Table A2: Foodstamps in Early Childhood and Rate of Crime Conviction in NC by Age 35

	Any Crime		Violent Crime		Property Crime	
	(1)	(2)	(3)	(4)	(5)	(6)
Any Conviction	-0.015*	-0.013*	-0.008**	-0.006**	-0.003	-0.004
	(0.009)	(0.008)	(0.003)	(0.002)	(0.003)	(0.003)
Mean	0.144	0.144	0.032	0.032	0.036	0.036
Felony Conviction	-0.011**	-0.010**	-0.003*	-0.003**	-0.002	-0.003**
	(0.005)	(0.005)	(0.002)	(0.001)	(0.001)	(0.001)
Mean	0.068	0.068	0.010	0.010	0.013	0.013
Obs	13,173	13,173	13,173	13,173	13,173	13,173
Birth County Chars. (1960) x Trend	N	Y	N	Y	N	Y

Note: Each cell represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the birth county by birth month level and are weighted by the number of births in each county in 1964. The dependent variable is the fraction of individuals in a given birth county-birth month cohort that are later convicted of a crime or particular crime type in NC by age 35. Columns indicate crime types (any, violent, property) and rows indicate severity (any conviction or felony). Mirroring FBI Part I definitions, violent crimes are defined only as offenses containing the words "murder", "assault", or "robbery" (rape is not included). Property crimes are defined only as offenses containing the words "burglary" or "larceny". All specifications include birth county and birth month fixed effects as well as baseline county characteristics interacted with a time trend in birth cohort. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. The sample is restricted to cohorts who were born between 1964 and 1974. Significance levels indicated by: * ($p<0.10$), ** ($p<0.05$), *** ($p<0.01$).

Table A3: Impacts of FSP Introduction: Alternative Specification of Treatment

	Any Crime		Violent Crime		Property Crime	
	(1)	(2)	(3)	(4)	(5)	(6)
FSP Access IU-Birth	-0.018**	-0.014**	-0.007***	-0.005***	-0.004*	-0.004
	(0.007)	(0.007)	(0.003)	(0.002)	(0.002)	(0.003)
FSP Access Age 0-2	-0.014**	-0.012**	-0.005**	-0.004***	-0.003*	-0.003*
	(0.006)	(0.005)	(0.002)	(0.001)	(0.002)	(0.002)
FSP Access Age 3-5	-0.007**	-0.008***	-0.003***	-0.003***	-0.002**	-0.003**
	(0.004)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
Mean	0.091	0.091	0.016	0.016	0.023	0.023
Obs	13,173	13,173	13,173	13,173	13,173	13,173
Birth County Chars. (1960) x Trend	N	Y	N	Y	N	Y

Note: Each column represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the birth county by birth month level and are weighted by the number of births in each county in 1964. Each row represents a mutually exclusive indicator variable for the timing of first exposure to FSP access: In-utero to birth, birth to age 2, or age 3 to 5. The dependent variable is the fraction of individuals in a given birth county-birth month cohort that are later convicted of a crime or particular crime type in NC by age 24. All specifications include birth county and birth month fixed effects. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. The sample is restricted to individuals born between 1964 and 1974. Significance levels indicated by: * ($p<0.10$), **($p<0.05$), ***($p<0.01$).

Table A4: Exploring Endogeneity of Month of Food Stamp Adoption

Dependent Variable (1)	Mean (2)	FSP Month Coeff (3)	% of Mean (4)
County Characteristics (1960)			
% Family Income <3K	37.4	-0.075	-0.2%
		(0.057)	
% Black	24.6	-0.141***	-0.6%
		(0.034)	
% Less than Age 5	11.7	-0.002	-0.0%
		(0.003)	
% Greater than Age 65	6.6	-0.000	-0.0%
		(0.004)	
% Agricultural Employment	4.3	-0.025*	-0.6%
		(0.014)	
Log Population	11.2	0.004	0.0%
		(0.004)	
% Farm Land	52.5	-0.103**	-0.2%
		(0.047)	
% Urban	40.3	0.076	0.2%
		(0.109)	
Indexes Constructed from County Characteristics			
Age 24 Conviction Rate (Born 1974)	11.5	-0.007	-0.1%
		(0.011)	
Δ Conviction Rate (1964-1974)	5.1	-0.004	-0.1%
		(0.008)	
Age 24 Violent Conviction Rate (Born 1974)	2.4	-0.003	-0.1%
		(0.004)	
Δ Violent Conviction Rate (1964-1974)	1.4	-0.002	-0.1%
		(0.003)	

Note: Estimates show the relationship between baseline (1960) county characteristics and the month of FSP introduction in that county. Each cell represents a separate regression, weighted by number of births in 1964, where the variable in column 1 is the dependent variable and the calendar month (normed to zero in January 1960) of FSP introduction is the sole independent variable. The data are at the county-level and contain 99 (of 100) counties in North Carolina for which the relevant information was available. The indexes are constructed by regressing the crime measure on county characteristics and using those coefficient estimates to predict the crime measure for each county. Robust standard errors are in parentheses.

Table A5: Exploring Endogeneity of Order of Food Stamp Adoption

Dependent Variable (1)	Mean (2)	FSP Order Coeff (3)	% of Mean (4)
County Characteristics (1960)			
% Family Income <3K	37.4	-0.111	-0.3%
		(0.074)	
% Black	24.6	-0.187***	-0.8%
		(0.047)	
% Less than Age 5	11.7	-0.007*	-0.1%
		(0.004)	
% Greater than Age 65	6.6	0.003	0.0%
		(0.004)	
% Agricultural Employment	4.3	-0.033*	-0.8%
		(0.017)	
Log Population	11.2	0.006	0.1%
		(0.005)	
% Farm Land	52.5	-0.104*	-0.2%
		(0.062)	
% Urban	40.3	0.134	0.3%
		(0.145)	
Indexes Constructed from County Characteristics			
Age 24 Conviction Rate (Born 1974)	11.5	-0.002	-0.0%
		(0.015)	
Δ Conviction Rate (1964-1974)	5.1	-0.002	-0.0%
		(0.012)	
Age 24 Violent Conviction Rate (Born 1974)	2.4	-0.002	-0.1%
		(0.005)	
Δ Violent Conviction Rate (1964-1974)	1.4	-0.001	-0.1%
		(0.004)	

Note: Estimates show the relationship between baseline (1960) county characteristics and *order* of FSP introduction in that county. Each cell represents a separate regression, weighted by number of births in 1964, where the variable in column 1 is the dependent variable and the calendar month (normed to zero in January 1960) of FSP introduction is the sole independent variable. The data are at the county-level and contain 99 (of 100) counties in North Carolina for which the relevant information was available. The indexes are constructed by regressing the crime measure on county characteristics and using those coefficient estimates to predict the crime measure for each county. Robust standard errors are in parentheses.

Table A6: Food Stamps in Early Childhood and Rate of Crime Conviction in NC: Additional Robustness

	Any Crime		Violent Crime		Property Crime	
	(1)	(2)	(3)	(4)	(5)	(6)
FSP IU-5 Exposure	-0.015*	-0.016*	-0.005***	-0.006**	-0.004	-0.004
	(0.008)	(0.009)	(0.002)	(0.003)	(0.003)	(0.003)
Mean	0.091	0.093	0.016	0.016	0.023	0.024
Obs	13,173	8,298	13,173	8,298	13,173	8,298
Birth County Chars. (1960) x Month-Year FE	Y	N	Y	N	Y	N
Consol. Statistical Area x Month-Year FE	N	Y	N	Y	N	Y

Note: Each column represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the birth county by birth month level and are weighted by the number of births in each county in 1964. The dependent variable is the fraction of individuals in a given birth county-birth month cohort that are later convicted of a crime or particular crime type in NC by age 24. All specifications include birth county and birth month fixed effects. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. Consolidated Statistical Areas (CSA) are defined by the U.S. Census Bureau and consist of two or more adjacent metropolitan and micropolitan statistical areas that have substantial employment interchange. Sample size changes result from some counties in North Carolina not being included in a CSA. Results are robust to combining these counties into an additional CSA. The sample is restricted to birth cohorts between 1964 and 1974. Significance levels indicated by: * ($p<0.10$), **($p<0.05$), ***($p<0.01$).

Table A7: Impacts of FSP Introduction: Counties with Pre-existing CDP Program

	Any Crime		Violent Crime		Property Crime	
	(1)	(2)	(3)	(4)	(5)	(6)
FSP IU-5 Exposure	-0.018**	-0.010	-0.006**	-0.004*	-0.002	-0.002
	(0.008)	(0.006)	(0.003)	(0.002)	(0.002)	(0.003)
Mean	0.090	0.090	0.015	0.015	0.023	0.023
Obs	11,985	11,985	11,985	11,985	11,985	11,985
Birth County Chars. (1960) x Trend	N	Y	N	Y	N	Y

Note: Each column represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the birth county by birth month level and are weighted by the number of births in each county in 1964. The sample is restricted to birth cohorts between 1964 and 1974 *in the 91 counties with a pre-existing commodity distribution program (CDP).* A county is determined to have had a CDP if it is mentioned in Federal Outlay Files, Aid to Families with Dependent Children surveys of case workers, or other documents from the National Archives and Records Administration (this information was obtained from Marianne Bitler). The dependent variable is the fraction of individuals in a given birth county-birth month cohort that are later convicted of a crime or particular crime type in NC by age 24. All specifications include birth county and birth month fixed effects. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. Significance levels indicated by: * ($p<0.10$), **($p<0.05$), ***($p<0.01$).

Table A8: Foodstamps in Early Childhood and Rate of Crime Conviction in NC by Age 24 (Unweighted)

	Any Crime		Violent Crime		Property Crime	
	(1)	(2)	(3)	(4)	(5)	(6)
Any Conviction	-0.019*	-0.009	-0.008***	-0.005**	-0.003	-0.002
	(0.010)	(0.010)	(0.003)	(0.003)	(0.003)	(0.003)
Mean	0.080	0.080	0.013	0.013	0.020	0.020
Felony Conviction	-0.012**	-0.005	-0.003***	-0.002**	-0.002	-0.001
	(0.005)	(0.005)	(0.001)	(0.001)	(0.001)	(0.001)
Mean	0.033	0.033	0.004	0.004	0.006	0.006
Obs	13,173	13,173	13,173	13,173	13,173	13,173
Birth County Chars. (1960) x Trend	N	Y	N	Y	N	Y

Note: Each cell represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the birth county by birth month level and are *not weighted*. The dependent variable is the fraction of individuals in a given birth county-birth month cohort that are later convicted of a crime or particular crime type in NC by age 24. Columns indicate crime types (any, violent, property) and rows indicate severity (any conviction or felony). Mirroring FBI Part I definitions, violent crimes are defined only as offenses containing the words "murder", "assault", or "robbery" (rape is not included). Property crimes are defined only as offenses containing the words "burglary" or "larceny". All specifications include birth county and birth month fixed effects as well as baseline county characteristics interacted with a time trend in birth cohort. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. The sample is restricted to cohorts who were born between 1964 and 1974. Significance levels indicated by: * ($p<0.10$), **($p<0.05$), ***($p<0.01$).

Table A9: FSP in Early Childhood and Rate of Crime Conviction in NC: Robustness (Non-White Only)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Any Conviction	-0.031*	-0.023	-0.020	-0.030	-0.038**	-0.034*	-0.030	-0.038	-0.039	-0.051*
	(0.018)	(0.020)	(0.020)	(0.024)	(0.017)	(0.019)	(0.022)	(0.026)	(0.026)	(0.030)
Violent Conviction	-0.008	-0.004	-0.003	-0.005	-0.009*	-0.009	-0.009	-0.014	-0.014	-0.020*
	(0.006)	(0.007)	(0.008)	(0.009)	(0.005)	(0.006)	(0.007)	(0.009)	(0.009)	(0.011)
Property Conviction	-0.009*	-0.007	-0.006	-0.005	-0.011**	-0.008	-0.003	-0.005	-0.005	-0.012
	(0.005)	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)	(0.007)	(0.007)	(0.008)
Obs	9,737	7,221	7,221	6,108	9,737	9,737	7,221	7,221	7,221	6,108
Birthyears: 1964-1974	Y	N	N	N	Y	Y	N	N	N	N
Birthyears: 1968-1974	N	Y	Y	Y	N	N	Y	Y	Y	Y
Birth County Chars. (1960) x Trend	N	N	N	N	Y	Y	Y	Y	Y	Y
Addl. Birth County Chars. (1960) x Trend	N	N	N	N	N	Y	N	Y	Y	Y
County Natality Chars. (Monthly)	N	N	Y	Y	N	N	N	N	Y	Y
WOP Measures	N	N	N	Y	N	N	N	N	N	Y

Note: Each cell represents a separate OLS regression with each row denoting a different dependent variable and each column denoting a different specification. The dependent variable is the fraction of individuals in a given birth county-birth month cohort that are later convicted of a crime or particular crime type in NC by age 24. All specifications include birth county and birth month fixed effects. Baseline (1960) birth county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. "Additional Birth County Chars." (also interacted with a trend in birth cohort) include population density, median income, median education, percent of adults with less than 5 years education, unemployment rate, per capita government expenditure, and democratic vote margin in 1960 presidential campaign. Observations are at the birth county by birth month level and are weighted by the number of births in each county in the initial year of the sample period. The sample is restricted to cohorts who were born 1964-1974 or 1968-1974 as noted. The latter sample enables the inclusion of time-varying county characteristic controls (birth county by birth month level) constructed from natality files. These "County Natality Chars." include mean mother's age, fraction of births to married parents, fraction white births, and fraction of births with an attending physician in a hospital. War on Poverty controls include access to WIC (at birth) and Head Start (at age 4), as well as per capita expenditures on Public Assistance Transfers, Medicaid, Community Health Centers, and Community Action Agencies. Standard errors clustered at the birth county-level are in parentheses. Significance levels indicated by: * ($p<0.10$), **($p<0.05$), ***($p<0.01$).

Table A10: FSP in Early Childhood and Rate of Crime Conviction in NC: Robustness (White Only)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Any Conviction	-0.005	-0.001	-0.002	-0.002	-0.005	-0.003	-0.007	-0.008	-0.008	-0.013**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Violent Conviction	-0.002*	-0.002	-0.002	-0.001	-0.003**	-0.002	-0.003**	-0.004**	-0.004**	-0.004**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Property Conviction	-0.001	-0.002	-0.002	-0.002	-0.002	-0.001	-0.005*	-0.005*	-0.005*	-0.007**
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Obs	9,795	8,289	8,248	7,083	9,795	9,795	8,289	8,289	8,248	7,083
Birthyears: 1964-1974	Y	N	N	N	Y	Y	N	N	N	N
Birthyears: 1968-1974	N	Y	Y	Y	N	N	Y	Y	Y	Y
Birth County Chars. (1960) x Trend	N	N	N	N	Y	Y	Y	Y	Y	Y
Addl. Birth County Chars. (1960) x Trend	N	N	N	N	N	Y	N	Y	Y	Y
County Natality Chars. (Monthly)	N	N	Y	Y	N	N	N	N	Y	Y
WOP Measures	N	N	N	Y	N	N	N	N	N	Y

Note: Each cell represents a separate OLS regression with each row denoting a different dependent variable and each column denoting a different specification. The dependent variable is the fraction of individuals in a given birth county-birth month cohort that are later convicted of a crime or particular crime type in NC by age 24. All specifications include birth county and birth month fixed effects. Baseline (1960) birth county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. "Additional Birth County Chars." (also interacted with a trend in birth cohort) include population density, median income, median education, percent of adults with less than 5 years education, unemployment rate, per capita government expenditure, and democratic vote margin in 1960 presidential campaign. Observations are at the birth county by birth month level and are weighted by the number of births in each county in the initial year of the sample period. The sample is restricted to cohorts who were born 1964-1974 or 1968-1974 as noted. The latter sample enables the inclusion of time-varying county characteristic controls (birth county by birth month level) constructed from natality files. These "County Natality Chars." include mean mother's age, fraction of births to married parents, fraction white births, and fraction of births with an attending physician in a hospital. War on Poverty controls include access to WIC (at birth) and Head Start (at age 4), as well as per capita expenditures on Public Assistance Transfers, Medicaid, Community Health Centers, and Community Action Agencies. Standard errors clustered at the birth county-level are in parentheses. Significance levels indicated by: * ($p<0.10$), **($p<0.05$), ***($p<0.01$).

Table A11: FSP Exposure Predicting Other War on Poverty Program Exposure

	Head Start (1)	WIC (2)	PAT (3)	Medicaid (4)	CHC (5)	CAP (6)	Health (7)
FSP IU-5 Exposure	-0.121*	-0.050	-7.740	-21.309*	-403.220	-1846.232	-169.455
	(0.067)	(0.084)	(8.225)	(11.959)	(2191.346)	(4188.040)	(1328.511)
Mean	0.493	0.007	129.136	53.123	986.461	13776.947	1450.037
Obs	13,173	11,329	13,173	13,173	13,173	13,173	13,173

Note: Each column represents an OLS regression on a different dependent variable denoting exposure to another War on Poverty program. These outcomes include indicators of access to WIC (at birth) and Head Start (at age 4), as well as per capita expenditures on Public Assistance Transfers (PAT), Medicaid, Community Health Centers (CHC), and Community Action Program administration (CAP) and health (Health). All specifications include birth county, birth month fixed effects, and baseline (1960) birth county characteristics. Significance levels indicated by: * (p<0.10), **(p<0.05), ***(p<0.01).

Table A12: FSP Exposure Predicting Mother/Birth Characteristics

	Age (1)	White (2)	Educ (3)	Married (4)	In Hospital (5)
FSP IU-5 Exposure	0.091	-0.001	0.004	0.006	0.015**
	(0.106)	(0.010)	(0.066)	(0.009)	(0.007)
Mean	23.699	0.689	11.271	0.860	0.981
Obs	8,373	8,373	7,153	8,332	8,373

Note: Each column represents an OLS regression on a different dependent variable denoting exposure to another War on Poverty program. Outcome variables are birth cohort by county means of continuous (Age and years of education) or indicator (married, in-hospital birth, and white) variables. These outcomes are not observed prior to 1968. All specifications include birth county, birth month fixed effects, and baseline (1960) birth county characteristics. Significance levels indicated by: * (p<0.10), **(p<0.05), ***(p<0.01).

Table A13: Summary Statistics of Conviction Rates in NC, by Crime

	Rate (1)	Frac. of Total (2)
A) Primary Classification		
PROPERTY CRIME	***0.023***	***0.255***
Larceny	0.022	0.250
Burglary	0.001	0.008
VIOLENT CRIME	***0.015***	***0.171***
Assault	0.011	0.118
Robbery	0.004	0.047
Murder & Manslaughter	0.002	0.017
B) Alternate Classification		
ACQUISITIVE CRIME	***0.053***	***0.585***
Larceny	0.022	0.250
Burglary	0.001	0.008
Robbery	0.004	0.047
B & E	0.020	0.220
Shoplift	0.003	0.031
Stolen Goods	0.006	0.068
Fraud	0.007	0.080
Drug Sale	0.010	0.110
NON-ACQUISITIVE CRIME	***0.041***	***0.458***
Assault	0.011	0.118
Murder & Manslaughter	0.002	0.017
Rape	0.001	0.010
Drug Possession	0.011	0.118
DWI	0.015	0.171
Speeding/Reckless Driving	0.002	0.019
Other Driving Violation	0.010	0.110

Note: Column 1 shows the fraction of individuals in a given birth county-birth month cohort that are later convicted of a given crime type in NC by age 24. Column 2 shows the rate as a fraction of the rate of any crime conviction ion NC by age 24. Panel A shows our primary classification of crimes between property and violent crimes (mirroring FBI Part I definitions, but excluding rape). Panel B shows an alternative, and more expansive, classification between Acquisitive and Non-Acquisitive crime. The sample is restricted to cohorts who were born between 1964 and 1974.

Table A14: FSP in Early Childhood and Rate of Non-Acquisitive Conviction in NC by Age 24

	Non-Acq Any	Murder	Assault	Rape	Drug Possess	DWI	Speeding	Other Driv.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FSP IU-5 Exposure	-0.009**	0.000	-0.003*	0.000	-0.005***	-0.001	0.000	-0.002
	(0.004)	(0.000)	(0.002)	(0.000)	(0.002)	(0.001)	(0.000)	(0.002)
Frac. of Mean	-0.22	0.09	-0.29	0.20	-0.47	-0.05	0.08	-0.25
Mean	0.042	0.002	0.011	0.001	0.011	0.015	0.002	0.010
Obs	13,173	13,173	13,173	13,173	13,173	13,173	13,173	13,173

Note: Each cell represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the birth county by birth month level and are weighted by the number of births in each county in 1964. The dependent variable is the fraction of individuals in a given birth county-birth month cohort that are later convicted of a particular crime type in NC by age 24. "Non-Acq Any" is a category defined as any of the individual crimes listed in the other columns of the table. All specifications include birth county and birth month fixed effects as well as baseline county characteristics interacted with a time trend in birth cohort, and baseline (1960) county characteristics. The sample is restricted to cohorts who were born between 1964 and 1974. Significance levels indicated by: * ($p<0.10$), **($p<0.05$), ***($p<0.01$).

Table A15: FSP in Early Childhood and Rate of Acquisitive Conviction in NC by Age 24

	Any Acquisitive (1)	Robbery (2)	Burglary (3)	Larceny (4)	B & E (5)	Shoplift (6)	Stolen Goods (7)	Drug Sale (8)	Fraud (9)
FSP IU-5 Exposure	-0.006	-0.002*	0.000	-0.003	-0.004**	0.001	-0.002	-0.003	-0.001
	(0.004)	(0.001)	(0.000)	(0.003)	(0.002)	(0.000)	(0.001)	(0.002)	(0.001)
Frac. of Mean	-0.12	-0.45	0.12	-0.14	-0.18	0.26	-0.24	-0.26	-0.19
Mean	0.053	0.004	0.001	0.023	0.020	0.003	0.006	0.010	0.007
Obs	13,173	13,173	13,173	13,173	13,173	13,173	13,173	13,173	13,173

Note: Each cell represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the birth county by birth month level and are weighted by the number of births in each county in 1964. The dependent variable is the fraction of individuals in a given birth county-birth month cohort that are later convicted of a particular crime type in NC by age 24. "Non-Acq Any" is a category defined as any of the individual crimes listed in the other columns of the table. All specifications include birth county and birth month fixed effects as well as baseline county characteristics interacted with a time trend in birth cohort, and baseline (1960) county characteristics. The sample is restricted to cohorts who were born between 1964 and 1974. Significance levels indicated by: * ($p<0.10$), **($p<0.05$), ***($p<0.01$).

Table A16: FSP and Fertility

	Log(Births)		Births	
	(1)	(2)	(3)	(4)
FSP Access	0.013	0.010	0.435	0.485
	(0.015)	(0.013)	(1.077)	(1.089)
Mean	3.8	3.8	78.1	78.1
Obs	13,173	13,173	13,173	13,173
Birth County Chars. (1960) x Trend	N	Y	N	Y

Note: Each column represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the birth county by birth month level. The dependent variable is the number of births or log of the number of births. FSP Access reflects whether FSP is available in a given county-month. All specifications include birth county and birth month fixed effects. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture.

Table A17: Foodstamps and Rate of Crime Conviction of Non-Native NC Residents

	(1) Any	(2) Violent	(3) Property
Conviction by Age 24	0.010	0.002	0.005**
	(0.008)	(0.002)	(0.002)
Mean	0.124	0.015	0.026
Conviction by Age 30	-0.002	-0.000	0.004
	(0.011)	(0.002)	(0.003)
Mean	0.201	0.027	0.037
Observations	1,100	1,100	1,100

Note: Each cell represents a separate OLS regression with standard errors clustered at the county level in parentheses. Observations are at the county by birth year level. The dependent variable for county c and birth cohort t is the number of individuals born outside of NC in year t who are convicted of a particular type of crime in county c (by age a) divided by the total number of individuals born outside of NC in year t that reside in county c at age a. It is constructed using population counts by age, county, and year from SEER, along with the fraction of county residents born out-of-state from the 1990 census. All specifications include county and birth year fixed effects as well as baseline (1960) county characteristics interacted with a trend in birthyear. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, percent of employment in agriculture. The sample is restricted to individuals born between 1964 and 1974. Significance levels indicated by: * ($p<0.10$) **($p<0.05$), ***($p<0.01$).

Table A18: Food Stamps in Early Childhood and Likelihood of Living in State of Birth (Census)

	(1)	(2)	(3)	(4)
	Weighted FS Exposure at Birth		Weighted 0-5 FS Exposure	
	18-24	18-30	18-24	18-30
All	-0.006	-0.009	-0.025	-0.012
	(0.008)	(0.011)	(0.016)	(0.014)
White	-0.008	-0.010	-0.028*	-0.014
	(0.009)	(0.010)	(0.017)	(0.013)
Non-white	0.016	0.004	0.010	0.017
	(0.019)	(0.019)	(0.031)	(0.040)
Male	-0.007	-0.007	-0.022	-0.008
	(0.008)	(0.011)	(0.015)	(0.014)
White	-0.008	-0.007	-0.025	-0.009
	(0.009)	(0.011)	(0.017)	(0.013)
Non-white	0.009	0.001	0.018	0.019
	(0.015)	(0.020)	(0.027)	(0.039)

Note: Each cell represents a separate OLS regression with standard errors clustered at the state of birth level (in parentheses). Observations are at the individual level from the 1990 and 2000 Census. Age restrictions indicated by columns. The dependent variable is whether an individual is currently living in his or her state of birth (nationwide mean is 70 percent versus 78 percent in North Carolina). The key explanatory variables are measures of Food Stamp availability for a birth cohort in a particular state. In columns 1 and 2, this is calculated as the share of a state's population with Food Stamp availability during an individual's year of birth. In columns (3) and (4) it is the weighted average of the FS exposure variable across counties in a state, where the weights are the number of births in each county in 1960. All specifications include birth state and birth year fixed effects as well as indicators for race, age, and sex. Significance levels indicated by: * ($p < 0.10$) **($p < 0.05$), ***($p < 0.01$).

Table A19: Food Stamps and Likelihood of Residing in One's County of Birth (NLSY 79)

VARIABLES	(1) Moved (79)	(2) Moved (80)	(3) Moved (81)	(4) Moved (82)
0-5 FS Exposure	-0.030	-0.029	-0.006	0.008
	(0.040)	(0.045)	(0.046)	(0.047)
Observations	5,420	5,215	5,243	5,219
Mean	0.444	0.465	0.475	0.490

Note: Each column represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the individual level. The dependent variable is indicated by the column title. For example, "Moved (79)" indicates an individual living outside of his or her birth county in 1979. Given the birth cohorts included in the NLSY 79 (1957-64), this includes individuals aged 15 to 22. Similarly, "Moved (82)" includes individuals aged 18 to 25. All specifications include birth county and birth year fixed effects; indicators for race, age, and sex; and baseline (1960) county characteristics interacted with a birth year time trend. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, percent of employment in agriculture. Significance levels indicated by: * (p <0.10) **(p <0.05), ***(p <0.01).

Table A20: Food Stamps in Early Childhood and Migration out of State (NLSY 79)

Panel A:	(1) Resides Out (79)	(2) Resides Out (80)	(3) Resides Out (81)	(4) Resides Out (82)
0-5 FS Exposure	-0.018	-0.002	-0.029	-0.049
	(0.030)	(0.031)	(0.032)	(0.033)
Mean	0.236	0.248	0.254	0.271
Panel B:	Years Out (18-24)	Years Out (18-29)	Years Out (79-89)	Years Out (79-94)
0-5 FS Exposure	0.009	-0.038	-0.384	-0.455
	(0.161)	(0.368)	(0.347)	(0.499)
Mean	1.238	2.810	2.777	4.234
Panel C:	Ever Out (18-24)	Ever Out (18-29)	Ever Out (79-89)	Ever Out (79-94)
0-5 FS Exposure	0.015	-0.022	-0.045	-0.032
	(0.046)	(0.050)	(0.045)	(0.051)
Mean	0.362	0.444	0.440	0.477

Note: Each cell represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the individual level. The dependent variable is indicated by the column title. Panel A includes binary variables that indicate if an individual is observed residing out of his state of birth in a particular year of the NLSY 79, Panel B includes measures of the number of years an individual is observed out of his state of birth (the range of ages and years is indicated in parentheses), and Panel C includes binary variables that indicate if an individual was ever observed residing out of his state of birth (the range of ages and years is indicated in parentheses). For example, "Resides Out (79)" indicates an individual living outside of his or her birth county in 1979. Given the birth cohorts included in the NLSY 79 (1957-64), this includes individuals aged 15 to 22. Similarly, "Resides Out (82)" includes individuals aged 18 to 25. "Years Out (18-24)" indicates the number of years an individual lived outside of his or her birth county between ages 18 and 24. Similarly, "Years Out (79-89)" indicates the number of years an individual lived outside of his or her birth county between 1979 and 1989. All specifications include birth county and birth year fixed effects; indicators for race, age, and sex; and baseline (1960) county characteristics interacted with a birthyear time trend. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, percent of employment in agriculture. Significance levels indicated by: * ($p<0.10$) ** ($p<0.05$), *** ($p<0.01$).

Table A21: Foodstamps and Rate of Crime Conviction in *Non-Birth* County in NC

Dependent Variable	(1) Any	(2) Any	(3) Violent	(4) Violent	(5) Felony	(6) Felony
0-5 FS Exposure	-0.014***	-0.011**	-0.008***	-0.006**	-0.003**	-0.004***
	(0.005)	(0.005)	(0.006)	(0.003)	(0.001)	(0.001)
Birth County Characteristics (1960) x Time Trend		X		X		X
Observations	13,173	13,173	13,173	13,173	13,173	13,173
Outcome Mean (1964 Birth Cohort)	0.039	0.039	0.005	0.005	0.015	0.015

Note: Each column represents a separate OLS regression with standard errors clustered at the birth county-level in parentheses. Observations are at the birth county by birth month level. The dependent variable is the fraction of individuals in a given birth cohort that are later convicted of a particular crime type in a NC different than their birth county by age 24. All specifications include birth county and birth month fixed effects. Baseline (1960) county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, percent of employment in agriculture. The sample is restricted to individuals born between 1964 and 1974. Significance levels indicated by: * ($p<0.10$) **($p<0.05$), ***($p<0.01$).

Table A22: Estimates of the Welfare Loss from the FSP (1964-1974) in Millions of $2015

				Work Disincentive DWL			
		Transfer DWL		$\Delta h = -138, \Delta w = 1.70$		$\Delta h = -238, \Delta w = 3.07$	
Year	FSP Cost	$MDWL^G = 0.17$	$MDWL^G = 0.56$	$\epsilon_s = 0.1$	$\epsilon_s = 0.3$	$\epsilon_s = 0.1$	$\epsilon_s = 0.3$
1964	229	59	148	310	150	576	452
1965	256	66	165	1,033	501	1,919	1,505
1966	505	130	326	1,708	828	3,172	2,487
1967	809	208	523	2,423	1,175	4,499	3,527
1968	1,260	323	815	3,047	1,477	5,658	4,436
1969	1,602	411	1,036	4,049	1,964	7,520	5,895
1970	3,525	905	2,279	4,669	2,264	8,672	6,798
1971	9,176	2,355	5,934	5,139	2,492	9,543	7,481
1972	10,825	2,778	6,999	5,760	2,793	10,697	8,385
1973	11,787	3,025	7,622	6,549	3,176	12,162	9,534
1974	13,678	3,510	8,844	8,252	4,002	15,326	12,015
TOTAL	**53,651**	**13,768**	**34,692**	**42,939**	**20,822**	**79,745**	**62,514**

Min(Transfer DWL + Work Disincentive DWL) = 34,591
Max(Transfer DWL + Work Disincentive DWL) = 114,437

Note: The table shows back-of-the-envelope calculations of the welfare losses from FSP's contemporary work disincentives, program administrative costs, and distortionary taxes needed to raise government revenue. $FSPCOST_\tau$ is the total program cost in year τ, obtained from the Office of Management and Budget. $MDWL^G$ is the marginal deadweight loss from an additional $1 of government revenue. We use the range of $MDWL^G$ reported by Ballard, Shoven, and Whalley (1985) of $0.17 - 0.56$. Δh and Δw are the change in average hours worked and the change in average wage for female household heads with children, reported in Table 2 of Hoynes and Schanzenbach (2012). Finally, ϵ_s is the elasticity of labor supply for single women which ranges between 0.1 and 0.3, following a literature review by the Congressional Budget Office (McClelland and Mok, 2012). See Online Appendix C for details of the calculations and the sources for each parameter.

Table A23: Welfare Change from FSP (1964-1974) in Millions $2015
Transfer & Labor Mkt Losses vs. Crime Reduction Gains (13-40 Year Olds)

Social		Welfare Loss		Δ Welfare		Gain-Loss Ratio	
Discount Rate	Welfare Gain	(Min)	(Max)	(Min)	(Max)	(Min)	(Max)
McCollister, French, and Fang (2010) Crime Cost Estimates:							
0%	1,207,142	34,591	114,437	1,172,551	1,092,705	34.9	10.5
3%	628,090	34,591	114,437	593,500	513,653	18.2	5.5
5%	419,068	34,591	114,437	384,477	304,631	12.1	3.7
7%	285,755	34,591	114,437	251,165	171,318	8.3	2.5
Low Crime Cost Estimates:							
0%	538,368	34,591	114,437	503,778	423,931	15.6	4.7
3%	280,305	34,591	114,437	245,714	165,868	8.1	2.4
5%	187,074	34,591	114,437	152,484	72,638	5.4	1.6
7%	127,583	34,591	114,437	92,993	13,147	3.7	1.1

Note: The table presents the estimates of welfare gains from crime reduction due to FSP implementation and the range of estimates of the welfare losses due to the program as in Table 7, but assuming proportional effects for individuals aged 13 to 40. "Min" and "Max" column titles correspond to the minimum and maximum estimates of welfare loss. "Min" ("Max") welfare loss uses the low (high) end of the range of marginal deadweight loss from government revenue reported by Ballard, Shoven, and Whalley 1985, the smaller (larger) estimates of hours and wage changes from Hoynes and Schanzenbach (2012), and the low (high) end of the range of elasticity of labor supply estimates reported by McClelland and Mok (2012). See the description of Table 7 in the text and Online Appendix C for details.

Online Appendix B: UCR Data Restrictions and Robustness to Alternative Specifications

Because the UCR records are derived from the self-reported crime statistics of more than 10,000 city, county, and state law enforcement agencies, there are questions about the quality of the data. In addition to underreporting, variation in collection or categorization methods across agencies is a major concern. Despite these issues, prior research suggests that the UCR arrest data can be leveraged to produce unbiased estimates of the effects of policies on crime (e.g., Lochner and Moretti 2004; Gould et al. 2002; Bondurant et al. 2018).For this measurement error to explain our results, it would have to be the case that counties that received a FSP a few years earlier also began underreporting arrests fifteen to twenty years later, when young children who were exposed to the FSP were old enough to commit crimes. For example, a county that got a FSP in 1968 would have to increasingly underreport arrests between 1981 and 1994 (when those who were exposed in early childhood were between 18 and 24). Given that all counties eventually get a FSP, the underreporting (or measurement error) would have to consistently show up fifteen to twenty years after adoption of a FSP to account for our results. There is no reason to believe that the measurement error for certain cohorts of individuals is associated with the presence of Food Stamps in a county fifteen to twenty years prior. Furthermore, our UCR estimation strategy incorporates arrest measures for different birth cohorts in a county in the same year (but at different ages). To explain our results (which show up across ages), the change in reporting would also have to affect reporting of arrests differently across a narrow range of ages in the same year. In summary, it is unlikely that measurement error in the UCR data can account for our results. That said, we prioritize our North Carolina estimates as they do not suffer from the reporting concerns associated with the UCR.

UCR arrest data are compiled from Uniform Crime Reporting Program Data [United States]: Arrests by Age, Sex, and Race, Summarized Yearly, and downloaded from ICPSR. We restrict the data to local police agencies that have at least a 20 percent overlap with the counties in our Food Stamp rollout data. After imposing these restrictions, the data include 2,010 agencies. For each outcome, we restrict the agencies to those that report for at least 6 of the 11 years relevant to the 18 year old birth cohort. This results in 1,704 agencies. We use the county by age arrest counts combined with birth counts from the National Center for Health Statistics to construct arrest counts by age per 100 individuals for birth cohorts of individuals born in each county in the UCR.[66] Our main estimates rely on these measures based on the reported data with no attempts to correct for outliers or errors. While this has the advantage of relying on actual data and the associated noise, it has the disadvantage of allowing errors to contribute to our identified estimates as well as compositional effects contributing to the identification of year fixed effects.

We have explored the robustness of the results to alternative choices. To identify outliers (and potential errors in the data), we follow a procedure similar to Evans and Owens (2007) and Mello (2019). For each agency and crime rate, we fit the time series using a local linear regression of the two nearest non-missing observations. We then compute the percent error as the difference between the actual and the predicted value divided by the predicted value. We code an observation as an outlier if it (1) falls in the top X% of the percent error distribution and above the agency-specific

[66]For example, if 50 18 year-old individuals were arrested in county c in 1980, we would divide 50 by the number of births in county c in 1963 and multiply by 100 in order to generate an arrest count per 100 individuals for the 1963 birth cohort in county c.

80th percentile of observations, or (2) falls in the bottom X% of the percent error distribution and below the agency-specific 20th percentile of observations.[67] As we have little intuition for our choice of X, we code outliers as extremely large (top or bottom 1%), very large (top or bottom 5%), or large (top or bottom 10%).

In Online Appendix Tables B1-B5, we present estimates of the effect of FSP availability under various methods of dealing with outliers and missing values. First, we simply drop outliers. Second, we interpolate outliers and missing values. In other words, if a value is missing for 1967 but not 1966 or 1968, the 1967 value is linearly interpolated. We do not extrapolate. Finally, we interpolate outliers and missing values *and* fill arrest rates forwards and backwards with the first and last observed arrest rate respectively. For example, if a county's first year of reported arrests for a particular crime and age is in 1967, then we set 1964, 1965, and 1966 equal to the arrest rate in 1967. These choices are displayed in the rows of Online Appendix Tables B1-B5 and have little influence on the point estimates.

In the columns of Tables B1-B5, we illustrate the robustness of the results to progressively restrictive choices on the set of agencies included in the analysis. As one moves across the columns we restrict to agencies that report more often.

[67]The agency-specific conditions primarily correct for situations in which an agency frequently, but not always, reports zero arrests for a particular crime type.

Table B1: UCR Results: Robustness to Imputation: Violent

	(1)	(2)	(3)	(4)	(5)	(6)
Years Agency is in Sample	6	7	8	9	10	11
Raw Data	-0.156***	-0.149**	-0.138**	-0.171***	-0.203***	-0.199**
	(0.056)	(0.058)	(0.058)	(0.062)	(0.069)	(0.090)
Observations	30,568	27,729	24,397	20,303	15,343	9,830
Drop Extreme Errors (1%)	-0.167***	-0.162***	-0.151***	-0.184***	-0.204***	-0.199**
	(0.055)	(0.057)	(0.057)	(0.060)	(0.069)	(0.091)
Observations	30,156	27,397	24,144	20,135	15,254	9,781
Interpolate Missing and Extreme Errors (1%)	-0.164***	-0.162***	-0.152***	-0.185***	-0.204***	-0.199**
	(0.054)	(0.056)	(0.056)	(0.060)	(0.069)	(0.090)
Observations	34,829	30,334	25,894	21,118	15,551	9,881
Interpolate Missing and Extreme Errors (1%) and Fill	-0.162***	-0.161***	-0.150***	-0.184***	-0.204***	-0.200**
	(0.054)	(0.056)	(0.056)	(0.060)	(0.068)	(0.090)
Observations	34,997	30,460	25,973	21,159	15,569	9,888
Drop Very Large Errors (5%)	-0.170***	-0.164***	-0.153***	-0.184***	-0.205***	-0.200**
	(0.055)	(0.057)	(0.057)	(0.060)	(0.069)	(0.091)
Observations	29,446	26,828	23,687	19,799	15,059	9,688
Interpolate Missing and Very Large Errors (5%)	-0.166***	-0.164***	-0.154***	-0.185***	-0.205***	-0.200**
	(0.053)	(0.056)	(0.056)	(0.060)	(0.069)	(0.090)
Observations	34,827	30,332	25,892	21,118	15,551	9,881
Interpolate Missing and Very Large Errors (5%) and Fill	-0.165***	-0.162***	-0.152***	-0.184***	-0.205***	-0.200**
	(0.053)	(0.056)	(0.056)	(0.060)	(0.068)	(0.090)
Observations	34,997	30,460	25,973	21,159	15,569	9,888
Drop Large Errors (10%)	-0.174***	-0.167***	-0.154***	-0.185***	-0.205***	-0.200**
	(0.056)	(0.057)	(0.057)	(0.061)	(0.069)	(0.091)
Observations	28,659	26,148	23,125	19,382	14,793	9,550
Interpolate Missing and Large Errors (10%)	-0.170***	-0.167***	-0.155***	-0.185***	-0.205***	-0.198**
	(0.053)	(0.055)	(0.056)	(0.059)	(0.068)	(0.090)
Observations	34,827	30,332	25,892	21,118	15,551	9,881
Interpolate Missing and Large Errors (10%) and Fill	-0.168***	-0.165***	-0.153***	-0.185***	-0.205***	-0.198**
	(0.053)	(0.055)	(0.056)	(0.059)	(0.068)	(0.090)
Observations	34,997	30,460	25,973	21,159	15,569	9,888

Note: Each cell present the coefficient from a separate OLS regression with standard errors clustered at the county-level in parentheses. Rows indicate different procedures for dealing with outliers. Columns indicate different restrictions on the number of years (out of 11) an agency must report to be included in the sample. Observations are at the county by birth cohort by age level and are weighted by the number of births in each county in 1964. The dependent variable is the number of individuals per 100 within a given county cohort who are arrested at a particular age. All specifications include birth year, age, and county fixed effects as well as baseline county characteristics (1960) interacted with a trend in birth year. Baseline county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. The sample is restricted to individuals age 18-24 unless otherwise noted. Sample restricted to agencies accounting for at least 20% of a county's population. Significance levels indicated by: * ($p<0.10$) **($p<0.05$), ***($p<0.01$).

Table B2: UCR Results: Robustness to Imputation: Property

	(1)	(2)	(3)	(4)	(5)	(6)
Years Agency is in Sample	6	7	8	9	10	11
Raw Data	-0.043	-0.022	-0.013	-0.030	-0.051	-0.009
	(0.103)	(0.106)	(0.110)	(0.117)	(0.125)	(0.158)
Observations	82,253	77,073	70,066	60,003	47,755	30,059
Drop Extreme Errors (1%)	-0.052	-0.034	-0.021	-0.039	-0.045	-0.008
	(0.101)	(0.104)	(0.107)	(0.114)	(0.125)	(0.158)
Observations	78,217	73,356	66,757	57,207	45,623	28,721
Interpolate Missing and Extreme Errors (1%)	-0.049	-0.030	-0.018	-0.036	-0.045	-0.009
	(0.100)	(0.103)	(0.107)	(0.114)	(0.124)	(0.157)
Observations	88,472	81,616	73,212	61,861	48,520	30,216
Interpolate Missing and Extreme Errors (1%) and Fill	-0.044	-0.025	-0.015	-0.033	-0.041	-0.007
	(0.100)	(0.103)	(0.106)	(0.113)	(0.124)	(0.156)
Observations	88,839	81,876	73,398	61,979	48,569	30,241
Drop Very Large Errors (5%)	-0.054	-0.036	-0.024	-0.043	-0.045	-0.005
	(0.101)	(0.104)	(0.108)	(0.114)	(0.125)	(0.158)
Observations	76,824	72,137	65,760	56,458	45,099	28,482
Interpolate Missing and Very Large Errors (5%)	-0.051	-0.031	-0.020	-0.040	-0.046	-0.006
	(0.100)	(0.103)	(0.107)	(0.114)	(0.124)	(0.157)
Observations	88,469	81,615	73,211	61,861	48,520	30,216
Interpolate Missing and Very Large Errors (5%) and Fill	-0.046	-0.027	-0.016	-0.037	-0.042	-0.005
	(0.100)	(0.103)	(0.106)	(0.113)	(0.124)	(0.157)
Observations	88,839	81,876	73,398	61,979	48,569	30,241
Drop Large Errors (10%)	-0.052	-0.034	-0.023	-0.043	-0.047	-0.000
	(0.102)	(0.105)	(0.108)	(0.115)	(0.125)	(0.159)
Observations	75,105	70,570	64,379	55,316	44,244	28,026
Interpolate Missing and Large Errors (10%)	-0.045	-0.026	-0.015	-0.036	-0.048	-0.002
	(0.101)	(0.104)	(0.108)	(0.115)	(0.124)	(0.157)
Observations	88,469	81,615	73,211	61,861	48,520	30,216
Interpolate Missing and Large Errors (10%) and Fill	-0.040	-0.022	-0.011	-0.033	-0.044	-0.000
	(0.100)	(0.104)	(0.107)	(0.114)	(0.124)	(0.156)
Observations	88,839	81,876	73,398	61,979	48,569	30,241

Note: Each cell present the coefficient from a separate OLS regression with standard errors clustered at the county-level in parentheses. Rows indicate different procedures for dealing with outliers. Columns indicate different restrictions on the number of years (out of 11) an agency must report to be included in the sample. Observations are at the county by birth cohort by age level and are weighted by the number of births in each county in 1964. The dependent variable is the number of individuals per 100 within a given county cohort who are arrested at a particular age. All specifications include birth year, age, and county fixed effects as well as baseline county characteristics (1960) interacted with a trend in birth year. Baseline county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. The sample is restricted to individuals age 18-24 unless otherwise noted. Sample restricted to agencies accounting for at least 20% of a county's population. Significance levels indicated by: * ($p<0.10$) **($p<0.05$), ***($p<0.01$).

Table B3: UCR Results: Robustness to Imputation: Murder

	(1)	(2)	(3)	(4)	(5)	(6)
Years Agency is in Sample	6	7	8	9	10	11
Raw Data	-0.029*	-0.028*	-0.028	-0.026	-0.028	-0.034
	(0.016)	(0.017)	(0.017)	(0.019)	(0.021)	(0.029)
Observations	32,288	29,331	25,203	20,723	15,613	9,907
Drop Extreme Errors (1%)	-0.028*	-0.027	-0.026	-0.025	-0.026	-0.034
	(0.016)	(0.017)	(0.017)	(0.018)	(0.021)	(0.028)
Observations	30,977	28,116	24,110	19,816	14,914	9,429
Interpolate Missing and Extreme Errors (1%)	-0.028*	-0.027*	-0.027	-0.026	-0.027	-0.034
	(0.015)	(0.016)	(0.017)	(0.018)	(0.021)	(0.028)
Observations	37,426	32,654	27,031	21,648	15,853	9,963
Interpolate Missing and Extreme Errors (1%) and Fill	-0.027*	-0.027*	-0.027	-0.025	-0.026	-0.034
	(0.015)	(0.016)	(0.017)	(0.018)	(0.021)	(0.028)
Observations	37,571	32,785	27,101	21,691	15,871	9,965
Drop Very Large Errors (5%)	-0.028*	-0.027	-0.027	-0.026	-0.027	-0.033
	(0.016)	(0.017)	(0.017)	(0.019)	(0.021)	(0.029)
Observations	29,930	27,156	23,315	19,170	14,431	9,120
Interpolate Missing and Very Large Errors (5%)	-0.028*	-0.027*	-0.027	-0.025	-0.027	-0.033
	(0.015)	(0.016)	(0.017)	(0.018)	(0.021)	(0.028)
Observations	37,426	32,654	27,031	21,648	15,853	9,963
Interpolate Missing and Very Large Errors (5%) and Fill	-0.027*	-0.027	-0.026	-0.025	-0.026	-0.033
	(0.015)	(0.016)	(0.017)	(0.018)	(0.021)	(0.028)
Observations	37,571	32,785	27,101	21,691	15,871	9,965
Drop Large Errors (10%)	-0.029*	-0.028	-0.028	-0.027	-0.029	-0.036
	(0.017)	(0.017)	(0.018)	(0.019)	(0.022)	(0.030)
Observations	29,008	26,281	22,499	18,460	13,864	8,727
Interpolate Missing and Large Errors (10%)	-0.028*	-0.027*	-0.028*	-0.027	-0.028	-0.035
	(0.015)	(0.016)	(0.017)	(0.018)	(0.021)	(0.028)
Observations	37,426	32,654	27,031	21,648	15,853	9,963
Interpolate Missing and Large Errors (10%) and Fill	-0.028*	-0.027*	-0.028*	-0.027	-0.028	-0.035
	(0.015)	(0.016)	(0.017)	(0.018)	(0.021)	(0.028)
Observations	37,571	32,785	27,101	21,691	15,871	9,965

Note: Each cell present the coefficient from a separate OLS regression with standard errors clustered at the county-level in parentheses. Rows indicate different procedures for dealing with outliers. Columns indicate different restrictions on the number of years (out of 11) an agency must report to be included in the sample. Observations are at the county by birth cohort by age level and are weighted by the number of births in each county in 1964. The dependent variable is the number of individuals per 100 within a given county cohort who are arrested at a particular age. All specifications include birth year, age, and county fixed effects as well as baseline county characteristics (1960) interacted with a trend in birth year. Baseline county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. The sample is restricted to individuals age 18-24 unless otherwise noted. Sample restricted to agencies accounting for at least 20% of a county's population. Significance levels indicated by: * (p<0.10) **(p<0.05), ***(p<0.01).

Table B4: UCR Results: Robustness to Imputation: Aggravated Assault

	(1)	(2)	(3)	(4)	(5)	(6)
Years Agency is in Sample	6	7	8	9	10	11
Raw Data	-0.076**	-0.079**	-0.076**	-0.102***	-0.120***	-0.111**
	(0.034)	(0.035)	(0.035)	(0.036)	(0.040)	(0.049)
Observations	96,264	91,495	83,951	73,356	58,732	36,595
Drop Extreme Errors (1%)	-0.082**	-0.086**	-0.083**	-0.108***	-0.123***	-0.110**
	(0.034)	(0.035)	(0.035)	(0.036)	(0.040)	(0.048)
Observations	91,679	87,111	79,975	69,909	56,002	34,893
Interpolate Missing and Extreme Errors (1%)	-0.081**	-0.085**	-0.082**	-0.107***	-0.120***	-0.108**
	(0.033)	(0.034)	(0.034)	(0.035)	(0.039)	(0.048)
Observations	100,077	94,240	85,868	74,579	59,208	36,636
Interpolate Missing and Extreme Errors (1%) and Fill	-0.080**	-0.083**	-0.080**	-0.107***	-0.120***	-0.108**
	(0.033)	(0.034)	(0.034)	(0.035)	(0.039)	(0.048)
Observations	100,463	94,569	86,075	74,695	59,256	36,660
Drop Very Large Errors (5%)	-0.082**	-0.085**	-0.082**	-0.108***	-0.123***	-0.110**
	(0.034)	(0.035)	(0.036)	(0.037)	(0.041)	(0.048)
Observations	89,173	84,775	77,848	68,118	54,656	34,127
Interpolate Missing and Very Large Errors (5%)	-0.080**	-0.083**	-0.081**	-0.106***	-0.120***	-0.108**
	(0.033)	(0.034)	(0.034)	(0.035)	(0.039)	(0.048)
Observations	100,077	94,240	85,868	74,579	59,208	36,636
Interpolate Missing and Very Large Errors (5%) and Fill	-0.078**	-0.082**	-0.079**	-0.106***	-0.119***	-0.108**
	(0.033)	(0.034)	(0.034)	(0.035)	(0.039)	(0.048)
Observations	100,463	94,569	86,075	74,695	59,256	36,660
Drop Large Errors (10%)	-0.083**	-0.087**	-0.084**	-0.110***	-0.124***	-0.112**
	(0.034)	(0.035)	(0.036)	(0.037)	(0.041)	(0.049)
Observations	87,491	83,148	76,369	66,794	53,560	33,489
Interpolate Missing and Large Errors (10%)	-0.082**	-0.085**	-0.083**	-0.108***	-0.120***	-0.110**
	(0.033)	(0.034)	(0.034)	(0.035)	(0.039)	(0.048)
Observations	100,077	94,240	85,868	74,579	59,208	36,636
Interpolate Missing and Large Errors (10%) and Fill	-0.081**	-0.084**	-0.081**	-0.108***	-0.120***	-0.109**
	(0.033)	(0.034)	(0.034)	(0.035)	(0.039)	(0.048)
Observations	100,463	94,569	86,075	74,695	59,256	36,660

Note: Each cell present the coefficient from a separate OLS regression with standard errors clustered at the county-level in parentheses. Rows indicate different procedures for dealing with outliers. Columns indicate different restrictions on the number of years (out of 11) an agency must report to be included in the sample. Observations are at the county by birth cohort by age level and are weighted by the number of births in each county in 1964. The dependent variable is the number of individuals per 100 within a given county cohort who are arrested at a particular age. All specifications include birth year, age, and county fixed effects as well as baseline county characteristics (1960) interacted with a trend in birth year. Baseline county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. The sample is restricted to individuals age 18-24 unless otherwise noted. Sample restricted to agencies accounting for at least 20% of a county's population. Significance levels indicated by: * ($p<0.10$) **($p<0.05$), ***($p<0.01$).

Table B5: UCR Results: Robustness to Imputation: Robbery

	(1)	(2)	(3)	(4)	(5)	(6)
Years Agency is in Sample	6	7	8	9	10	11
Raw Data	-0.037**	-0.031**	-0.023*	-0.027*	-0.036**	-0.038**
	(0.015)	(0.015)	(0.014)	(0.014)	(0.015)	(0.017)
Observations	58,689	54,115	49,269	41,135	32,669	21,001
Drop Extreme Errors (1%)	-0.031*	-0.024	-0.016	-0.020	-0.025	-0.024
	(0.017)	(0.017)	(0.015)	(0.016)	(0.018)	(0.019)
Observations	56,216	51,788	47,125	39,301	31,216	20,073
Interpolate Missing and Extreme Errors (1%)	-0.034**	-0.028*	-0.021	-0.024*	-0.029*	-0.030*
	(0.015)	(0.015)	(0.014)	(0.014)	(0.016)	(0.017)
Observations	64,024	57,384	51,508	42,203	32,996	21,037
Interpolate Missing and Extreme Errors (1%) and Fill	-0.034**	-0.028*	-0.020	-0.024	-0.029*	-0.030*
	(0.015)	(0.015)	(0.014)	(0.014)	(0.016)	(0.017)
Observations	64,199	57,503	51,600	42,259	33,023	21,044
Drop Very Large Errors (5%)	-0.031*	-0.025	-0.017	-0.020	-0.026	-0.025
	(0.017)	(0.017)	(0.015)	(0.016)	(0.018)	(0.019)
Observations	54,634	50,390	45,878	38,309	30,486	19,655
Interpolate Missing and Very Large Errors (5%)	-0.035**	-0.029*	-0.021	-0.025*	-0.030*	-0.030*
	(0.015)	(0.015)	(0.014)	(0.014)	(0.016)	(0.017)
Observations	64,023	57,383	51,507	42,202	32,995	21,036
Interpolate Missing and Very Large Errors (5%) and Fill	-0.034**	-0.028*	-0.021	-0.024*	-0.030*	-0.030*
	(0.015)	(0.015)	(0.014)	(0.014)	(0.016)	(0.017)
Observations	64,199	57,503	51,600	42,259	33,023	21,044
Drop Large Errors (10%)	-0.030*	-0.025	-0.016	-0.020	-0.025	-0.024
	(0.017)	(0.017)	(0.016)	(0.016)	(0.018)	(0.019)
Observations	53,555	49,400	45,013	37,594	29,921	19,301
Interpolate Missing and Large Errors (10%)	-0.034**	-0.028*	-0.021	-0.024*	-0.029*	-0.030*
	(0.015)	(0.015)	(0.014)	(0.014)	(0.016)	(0.017)
Observations	64,023	57,383	51,507	42,202	32,995	21,036
Interpolate Missing and Large Errors (10%) and Fill	-0.033**	-0.028*	-0.020	-0.024*	-0.029*	-0.030*
	(0.015)	(0.015)	(0.014)	(0.014)	(0.016)	(0.017)
Observations	64,199	57,503	51,600	42,259	33,023	21,044

Note: Each cell present the coefficient from a separate OLS regression with standard errors clustered at the county-level in parentheses. Rows indicate different procedures for dealing with outliers. Columns indicate different restrictions on the number of years (out of 11) an agency must report to be included in the sample. Observations are at the county by birth cohort by age level and are weighted by the number of births in each county in 1964. The dependent variable is the number of individuals per 100 within a given county cohort who are arrested at a particular age. All specifications include birth year, age, and county fixed effects as well as baseline county characteristics (1960) interacted with a trend in birth year. Baseline county characteristics include: percent of land in farming, percent of people living in families with less than $3,000, percent of population in urban area, percent black, percent less than age 5, percent greater than age 65, and percent of employment in agriculture. The sample is restricted to individuals age 18-24 unless otherwise noted. Sample restricted to agencies accounting for at least 20% of a county's population. Significance levels indicated by: * (p<0.10) **(p<0.05), ***(p<0.01).

Online Appendix C: Welfare Calculations

In this section we provide the details of the calculations underlying our discussion of the welfare implications of the rollout of the FSP. First, we calculate back-of-the-envelope estimates of the dollar value of increased social welfare implied by our estimates of the reduction in violent crime due to FSP access in early childhood. Second, we compare these future benefits of the program to the potential contemporaneous efficiency costs of the program under various assumptions.

C.1 Quantifying Welfare Gains of FSP Crime Reduction

We convert our estimates of the effect of FSP access on later arrest rates to a dollar value benefit for each year of the FSP rollout from 1964-1974. First, we calculate the changes in the arrest rates, $\Delta R_{jat\tau}$, of offense j by age a individuals in year t that correspond to a given FSP year τ. This is given by,

$$\Delta R_{jat\tau} = \frac{1}{5} \times \eta_a \times \hat{\gamma_j} \times FS_{at\tau}, \tag{2}$$

where $\hat{\gamma_j}$ is the coefficient estimate from Equation 1 for offense j. $FS_{at\tau}$ is the fraction of the cohort aged a in year t that had access to the FSP (and were between age 0 and 5) in year τ. η_a adjusts for differences in the arrest rate between age a individuals and the 18-24 year olds used to estimate Equation 1 (for 18-24 year olds $\eta_a = 1$).[68] $\frac{1}{5}$ reflects the fact that γ_j is the coefficient for the fraction of 5 years of early childhood that a cohort had access to the FSP.

Next, we convert the changes in arrest rates by offense-age-year-FSP year, $\Delta R_{jat\tau}$, to changes in the number of offenses, $\Delta C_{jat\tau}$, as follows:

$$\Delta C_{jat\tau} = \frac{\tilde{C_j}}{\tilde{A_j}} \times \frac{POP_{at}}{100} \times \Delta R_{jat\tau}, \tag{3}$$

where POP_{at}, the age a population in year t, divided by 100 is used to convert a change in arrest per 100 people to a change in the number of arrests. $\frac{\tilde{C_j}}{\tilde{A_j}}$, the ratio of offenses to arrests for crime j, converts the change in the number of arrests to the change in the number of crimes.[69]

Finally, we apply estimates of the dollar value of each offense's social cost and discount the stream of future cost reductions associated with each FSP year τ for the period 1964-1974.

$$BENEFITS = \sum_{\tau=1964}^{1974} \sum_j \sum_a \sum_t \frac{1}{(1+r)^{t-\tau}} \times COST_j \times \Delta C_{jat\tau}. \tag{4}$$

Table 6 presents the resulting back-of-the-envelope social welfare calculations for various choices of discount rate, r, and social costs of crime, $COST_j$, counting only the effects on crimes committed by 18-24 year olds.

[68] η_a is operationalized as the ratio of the national average arrest rates for age a compared to age 18-24 for 1980-2000

[69] $\frac{\tilde{C_j}}{\tilde{A_j}}$ is operationalized conservatively as the minimum of the annual ratio of the total national crimes to arrests for offense j for 1980-2000.

C.2 Quantifying Welfare Losses of the FSP

Economic theory suggests two primary areas where the rollout of the FSP may have had substantial contemporaneous distortionary effects that reduced efficiency. First, while program benefits represent transfers from one group to another that should not themselves reduce social welfare, program administration costs and utilization of government revenue raised from distortionary taxes could lead to efficiency losses from these transfers. Table A22 shows back-of-the-envelope estimates of these welfare losses (DWL^G_τ) in year τ, which total \$14-35 billion (\$2015) during the rollout period. Welfare losses from FSP transfers are calculated as follows:

$$DWL^G_\tau = MDWL^G \times (1 - P^A) \times FSPCOST_\tau + (1 + MDWL^G) \times P^A \times FSPCOST_\tau. \quad (5)$$

$MDWL^G$ is the marginal deadweight loss from an additional \$1 of government revenue. We use the range of $MDWL^G$ reported by Ballard, Shoven, and Whalley (1985) of $0.17 - 0.56$. P^A is the percent of program costs that do not go directly to program benefits for recipients. We use $P^A = 8.7\%$, the maximum that we observe during the rollout period.[70] $FSPCOST_\tau$ is the total program cost in year τ, obtained from the Office of Management and Budget.[71]

Second, the FSP could reduce efficiency through distortions in the labor market. This would occur if Food Stamp receipt disincentivizes work for recipients. Hoynes and Schanzenbach (2012) investigate precisely this question. They find that FSP access reduces annual work hours, but only for female household heads (with children). Hoynes and Schanzenbach report the effect of FSP access on the earnings of these female household heads, however the loss in efficiency may exceed the earnings loss if labor demand is not perfectly elastic. Table A22 shows back-of-the envelope estimates of deadweight loss from the contemporaneous labor market distortions of the FSP in year τ, which total \$63-\$80 billion (\$2015) over the rollout period. We calculate the welfare losses from labor market distortions, using Hoynes and Schanzenbach's estimates, as follows:

$$DWL^L_\tau = \frac{1}{2} \times \left(\frac{w\Delta h}{h\epsilon_s} + \Delta w\right) \times \Delta h \times N_\tau. \quad (6)$$

Where h, w, Δh, Δw are the average hours worked, wage, change in average hours worked, and change in average wage for female household heads with children, estimated in Table 2 of Hoynes and Schanzenbach (2012).[72] N_τ is the number of female household heads with children in counties with the FSP in year τ.[73]. ϵ_s is the elasticity of labor supply for single women which ranges between 0.1 and 0.3, following a literature review by the Congressional Budget Office (McClelland and Mok, 2012).

[70] We use annual total expenditure data by category (benefits vs other) available for $1969 - 1974$ from the USDA to calculate the maximum percent of annual program costs that are not directly transferred to beneficiaries during this period: 9%.

[71] Office of Management and Budget (2014). *Fiscal Year 2016 Historical Tables.* Table 11.3.

[72] w and Δw are constructed from reported hours, earnings, and the change in hours and earnings in Table 2 of Hoynes and Schanzenbach (2012). Our calculation assumes an initially undistorted labor market with simple linear labor supply and demand curves, where the labor supply curve is restricted to non-negative wages.

[73] N_τ is the number of female headed households in the U.S. with children in year τ (obtained from the Current Population Survey), multiplied by the percent of the population with FSP access in year τ (calculated by authors using county populations in 1970)

C.3 Marginal Value of Public Funds

An alternative approach to analyzing the welfare impact of a policy, discussed in detail in recent work by Hendren and Sprung-Keyser (2019), is to calculate the Marginal Value of Public Funds (MVPF). This approach divides the willingness to pay for the benefits of a program (WTP) by the net cost of the program *to the government*. Rather than attempting to measure welfare directly, this approach measures the shadow price to the government of delivering welfare (e.g. a simple non-distortionary transfer would have an MVPF of 1). Hendren and Sprung-Keyser (2019) calculate an MVPF of 1.04 for the impact of the rollout of FSP. [74] Their estimate of the WTP per dollar of government spending ($1.09) incorporates recipients' willingness to pay for the FSP benefits themselves ($0.62), as well as the impacts of the program on infant mortality, longevity, and later adult earnings gains for children ($0.47). Incorporating our estimates of FSP's social benefits in the form of reductions in later violent crime (excluding reductions in the government's criminal justice system expenses) increases WTP to $2.98 to $5.98, (depending on the choice of social crime costs).[75] Hendren and Sprung-Keyser's estimate of the net cost of FSP per dollar of government spending ($1.05) incorporates the direct cost of program ($1.00), reductions in tax revenue due to contemporaneous behavioral responses to the program ($0.16), and increases in tax revenue due to later adult earnings gains for children ($0.11). Incorporating our estimates of FSP's reductions in government criminal justice system expenditures reduces the net cost of the program to the government to $0.77. Put together, our estimates of the long-run effects of FSP on violent crime dramatically increase FSP's MVPF from $1.04 to between $3.86 and $7.74.

[74] Hendren and Sprung-Keyser use FSP effect estimates from Hoynes and Schanzenbach (2012), Almond et al. (2011) and Hoynes et al. (2016) to construct their MVPF estimate.

[75] We use our estimates of the crime reduction benefits of the program discussed in Online Appendix C.1, excluding the government's savings from future criminal justice system cost reductions, and then divide by total cost of the program from 1964-1974. The criminal justice costs per offense are obtained from McCollister, French, and Fang (2010). The total program cost is obtained from the Office of Management and Budget. Following Hendren and Sprung-Keyser, we use a 3 percent discount rate.

Online Appendix D: Analysis of Likely FSP Effects on Food vs. Cash

Figure D1 shows how the FSP would have altered the budget constraint for food (F) and other goods (x) of a household with income m.[76] Households consuming less than $\bar{F}$ in food (the amount of food purchasable at the same cost as the coupons, $\frac{0.3m}{P_f}$) prior to the FSP rollout would increase food expenditures F, but would not increase other expenditures.[77] In contrast, households consuming more than $\hat{F}$ in food (the food provided in coupons) prior to the FSP rollout would increase expenditures on food and other goods in the same way as if they had been given a cash transfer (assuming both F and x are normal goods); for this group, the food assistance is inframarginal. Households consuming between $\bar{F}$ and $\hat{F}$ prior to the FSP rollout would increase food expenditures F and expenditures on other goods x, but they may be constrained by the food coupons and increase food consumption by more than if they had received an equivalent cash transfer. The proportion of FSP-participating households that fall into these different *a priori* food consumption categories provides one indication as to whether any long-run effects are likely to have arisen from direct nutrition improvements. We obtain rough estimates using the 1960-1961 Consumer Expenditure Survey (CES) which allows us to observe a nationally representative sample of food expenditures among soon-to-be-eligible households, shortly before the FSP rollout. [78] With the purchase requirement of roughly 30% of household net income during this period, we find that between 17 and 41% of households in this sample spent less than the purchase requirement on food ($F < \bar{F}$).[79,80] This suggests that a substantial fraction of eligible households would receive purely an increase in food from the program. Similarly, we find that households who would experience the program as a pure cash transfer, estimated as the fraction that spent more on food than the value of the food coupons they would receive under the FSP ($F > \hat{F}$), comprise 36 to 45% of FSP-eligible households.[81]

[76] We normalize the price of other goods x to be one and let P_f represent the relative price of food.

[77] In fact, these households will likely reduce their expenditures on other goods x.

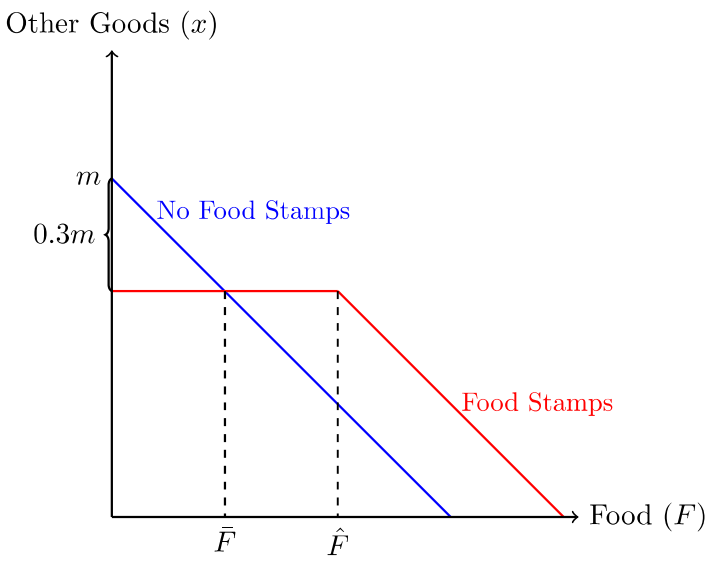
[78] We define the sample that will be FSP-eligible as those in income bins that fall entirely below the relevant state income threshold. CES only reports income in \$500-\$1,000 income bins. We use after-tax income as the closest proxy for net income. State FSP income eligibility thresholds as of 1966 were obtained from Clarkson (1975). We use the purchase requirement and benefit parameters of the 1975 program, which provide a conservative estimate of the fraction of households that would experience a pure increase in food consumption.

[79] The range reflects the fact that income in the CES is only reported in bins.

[80] Mapping food expenditure for household size and \$500-\$1,000 income bin combinations in the CES onto the national distribution of income from the 1960 census (household size and \$100 income bin combinations) suggests that 33% of households spent less than the purchase requirement on food.

[81] We use FSP coupon allotment (by household size) in 1975 reported by Clarkson (1975) and deflate it to 1961 dollars.

Figure D1: Budget Constraint for Food Stamps with Purchase Requirement



Note: The blue line represents the budget constraint of a FSP-eligible household with income m that does not participate in the FSP or does not have access to it. The red line represents the budget constraint of an equivalent household that chooses to participate in the FSP. Until the 1970s, FSP participants were required to pay roughly 30% of income m (the "purchase requirement") to obtain the subsidized food coupons.