Medicaid Generosity and Food Hardship Among Children

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Motivation

- In 2019, 14.6% of all children were food insecure and in 2020 that number increased to 16.1% (Colemen-Jensen et al., 2021)
  - Did not have the resources for dependable access to enough food for healthy lifestyle
- However, overall rate of household food insecurity remained unchanged from 2019 to 2020 at 10.5%
- Are traditional food support programs enough to shield children from food hardship?

Research Question

- How does Medicaid generosity affect food hardship among households with children?
  - Including food hardship experienced by children.
- Using data from 2001-2019 we find that having a Medicaid eligible child reduces rates of food insecurity by 16-23%
  - The effects are stronger among non-White households and for households with a child under the age of 6
- Contributes to the literature on the spillover effects of Medicaid and the emerging literature of the relationship between non-food support programs and food security (Schmidt et al., 2015; Moellman, 2020; Corman et al., 2021; Lenhart, 2021)

Food Hardship

- A household's food security level is determined by the number of affirmative responses to a 12 month retrospective, 18 item questionnaire.
  - 10 if no children are in the household
- Questions measure a wide range of hardship indicators
  - From simply worrying that food would run out to skipping meals or not eating for a whole day
  - And if a child had to skip a meal or didn't eat for a whole day.
- Official food security statistics are reported annually by the USDA and are derived from the December supplement of the Current Population Survey (CPS FSS)

All Questions

Food Security Levels

Table 1: Categories of Food Security

USDA Classification	**Number of Affirmative Responses**	**Food Hardship**
Food Secure	0	Had enough food at all times
Food Insecure	3 or more	Low or very low food security
Low Food Security	3-5	Reduced quality, variety, and desirability of diets
Very Low Food Security	6 or more (households without children) 8 or more (households with children)	Eating patterns disrupted and food intake reduced
Food Insecurity Among Children	2 or more child-focused questions	Reduced quality, variety, and desirability of diets or eating patterns disrupted among children
Very Low Food Security Among Children	5 or more child-focused questions	Eating patterns disrupted and food intake reduced among children

Food Insecurity and Children

- Food insecurity is an especially harmful condition for children.
  - Childhood food insecurity is associated with lower overall health quality, more hospitalizations, and more chronic health conditions
  - Children who are food insecure have lower cognitive development and worse school performance
  - Food insecurity can also hinder a child's socio-emotional development in the form of more internalizing behavior, poorer social skills, and more aggressive behavior
- Importantly, these effects can still be present if the child is not food insecure but resides in a food insecure household (Whitaker et al., 2006; Ashiabi and O'Neal, 2007; Zaslow et al., 2009)

Food Support Programs

- The United States has multiple food support programs, with some explicitly targeted towards children.
  - Supplemental Nutrition Assistance Program (SNAP)
  - National School Breakfast and Lunch Programs (NSBP and NSLP)
  - Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- Each has been shown to reduce the prevalence of food insecurity with benefits used to acquire food (WIC, SNAP) or by providing meals directly (NSBP, NSLP).
- However, the literature has shown that numerous factors besides income can affect whether a household is food insecure
  - Including health status and healthcare coverage

Medicaid

- Medicaid provides health insurance coverage to low-income families with little to no copayment or deductible
- Medicaid coverage is associated with multiple factors that are linked to food insecurity:
  - Increased health care coverage (Courtemanche et al., 2017)
  - Improved self-rated health (Simon et al., 2017)
  - Improved financial well-being (Simon et al., 2017, Hu et al. 2018)
- Medicaid potentially allows households to re-allocate resources from medical needs to food

Medicaid and Food Insecurity

- Existing research on Medicaid and food insecurity has focused on the Affordable Care Act (ACA) expansions of the mid-2010's
  - Himmelstein (2019) ACA expansions reduce the likelihood of very low food security among non-child and non-elderly households by 2 percentage points
  - Moellman (2020) ACA expansions reduced food insecurity amongst all households by 6.5 percentage points
- We consider a broader time frame and overall eligibility instead of a dichotomous measure of expansion
- Also focus on households with children and analyze children specific measures of food insecurity

Medicaid Eligibility

- Our measure of Medicaid generosity is derived from the Medicaid eligibility status of children.
- Historically, states have been much more generous in Medicaid coverage for children than for adults.
  - In most states, non-disabled adults were not eligible until the ACA expansions in 2014
- Eligibility for children can still vary substantially based on year, state, age, and family income
- Use this variation to identify the effect of childhood Medicaid eligibility on food hardship

Medicaid Eligibility - Examples

- Children aged 0-1 were eligible for Medicaid in Wisconsin if their families were less than 185% of the federal poverty line (FPL) in 2001, or less than 306% FPL in 2019
- Wisconsin children aged 6-18 were eligible only if their families were less than 156% FPL in 2019
- Eligibility for children aged 0-1 varied from 146% FPL (Alabama) to 380% FPL (Iowa) in 2019
  - 380% is the highest threshold observed and is used to limit our sample.
- These income eligibility criteria give us more variation to identify the effect of Medicaid on food hardship compared with previous studies

Empirical Model

The baseline regression model for our analysis is:

$$\text{Food Hardship}_{ist} = \beta_1 \text{Medicaid Eligible Child}_{ist} + X'\beta_2 + \delta_s + \delta_t + \varepsilon_{ist} \quad (1)$$

- Food Hardship$_{ist}$ - Food hardship outcomes
- Medicaid Eligible Child$_{ist}$ - binary measure=1 if household has a Medicaid eligible child
  - Eligibility varies by state, time, age of child, and household income
  - β_1 is the coefficient of interest and is an intent to treat estimate
- X - Individual and state controls
- δ_s - State fixed effects
- δ_t - Year fixed effects

SNAP and Income Controls

- SNAP use is correlated with observable characteristics but also unobservable traits such as latent health and self-care, potentially biasing the estimated effect.
- Moellman (2020) finds that with regards to ACA expansions, controlling for the endogeneity of SNAP does not alter the results
- While program participation is endogenously determined with income, households with the same income could have differing eligibility based on state, year, and family composition
- We control for income to isolate the effect of eligibility while holding income constant
  - Income is reported in bins and we use the midpoint of the bin as an estimate for household income

Alternative Models

- We consider an alternative specification where the household eligibility measure is broken out by the age of the eligible child:

$$\begin{aligned}\text{Food Hardship}_{ist} = \gamma_1 \text{Medicaid Eligible Child (0-1)}_{ist} + \gamma_2 \text{Medicaid Eligible Child (1-5)}_{ist} \\ + \gamma_3 \text{Medicaid Eligible Child (6-18)}_{ist} + X' \gamma_4 + \lambda_s + \lambda_t + \epsilon_{ist}\end{aligned} \tag{2}$$

- We also separate the sample by race to see if there are differential effects
- Also explore the sensitivity of our results to alternative income specifications and %FPL cutoff points

Data

- Household demographics and food security information come from the 2001-2019 waves of the CPS Food Security Supplement, fielded in December of each year
- Have food security of the household and of the children in the household
- Our analysis sample consists of households with children who are under 380% of the FPL
  - 380% is the highest Medicaid threshold observed in the data
- Medicaid eligibility comes from the Kaiser Family Foundation
- State controls come from the University of Kentucky Center for Poverty Research, SNAP policy database, the Tax Policy Center, and the Bureau of Labor Statistics

Figure 1: Households with Children

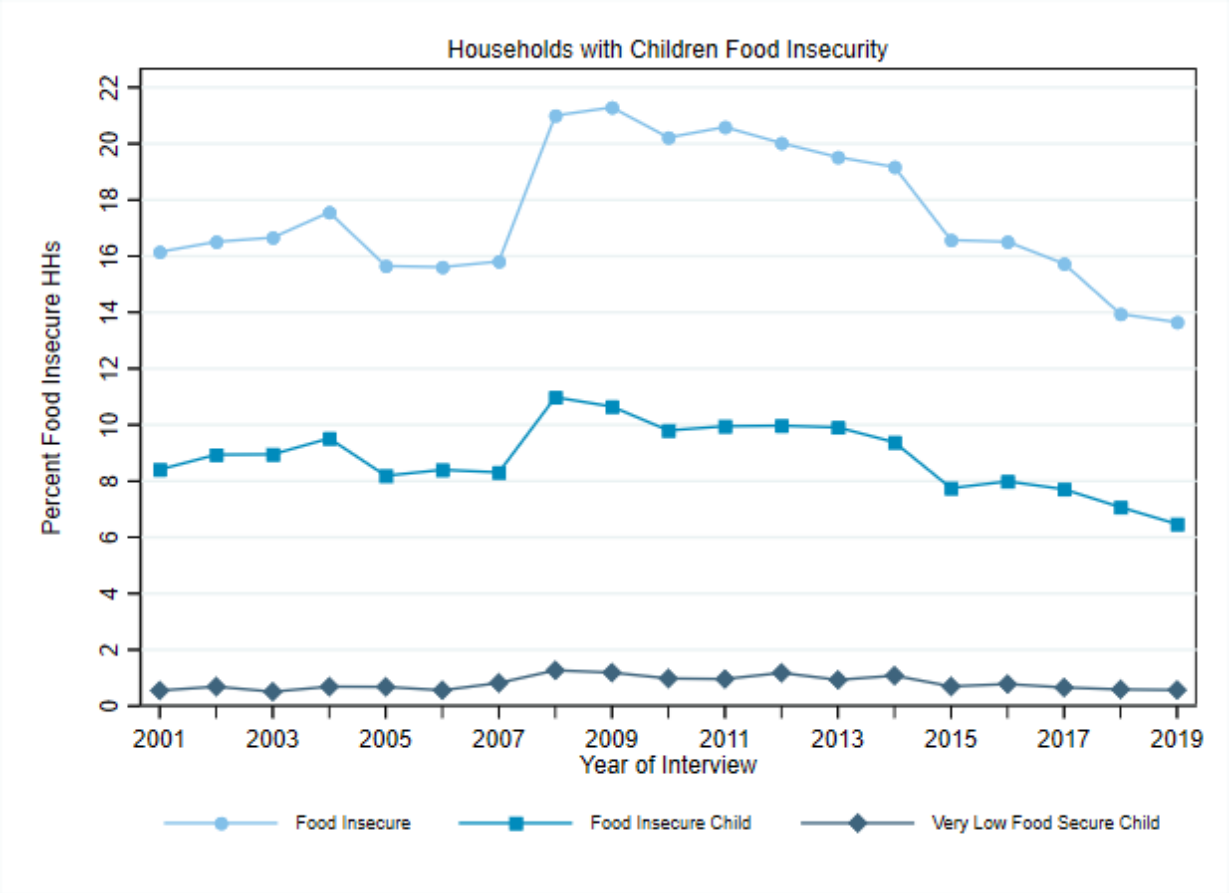


Table 2: Summary Statistics - Outcomes & Eligibility

	Households with Children	Households with Children Under 3.8 FPL
Food Hardship		
Food Ins.	0.18	0.25
Low FS	0.13	0.18
Very Low FS	0.05	0.07
FI Children	0.09	0.13
Very Low FS Children	0.01	0.01
Eligibility		
Median Inc/Pov Thresh	3.11	1.80
Minimum Inc/Pov Thresh	2.67	1.60
Maximum Inc/Pov Thresh	3.54	2.00
MC Elig. Thresh 0-1	2.00	2.00
MC Elig. Thresh 1-5	1.64	1.64
MC Elig. Thresh 6-18	1.48	1.48
SCHIP Elig. Thresh	2.44	2.43
Med. % Child MC Elig.	0.54	0.76
Min. % Child MC Elig.	0.58	0.81
Max. % Child MC Elig.	0.51	0.71
Obs.	265,672	169,484

Note: Household survey weights used.

Table 3: Summary Statistics - Controls

	Households with Children	Households with Children Under 3.8 FPL
Demographics		
Age	40.23	39.15
Female	0.53	0.57
White	0.77	0.75
Black	0.15	0.18
Married	0.68	0.60
Number of Children	1.88	1.98
Less than High School	0.13	0.18
High School	0.27	0.33
Some College	0.29	0.31
College	0.31	0.18
Metro	0.72	0.70
SNAP	0.29	0.31
State Controls		
Unemployment Rate	6.02	6.08
Minimum Wage	8.09	8.08
Governor is Democrat	0.44	0.43
Medicaid Beneficiaries	27.02	27.10
SNAP Access Index	0.65	0.66
Max EITC	4860	4971
State EITC Rate	0.08	0.08
Employment Ratio	60.83	60.57
Obs.	265,672	169,484

Note: Household survey weights used.

Household Results

Table 4: Medicaid Eligibility on Household Food Hardship

	Food Insecure	Low Food Secure	Very Low Food Secure
Medicaid Eligible Child	-0.07***	-0.04***	-0.03***
	(0.01)	(0.01)	(0.01)
Sample Mean	0.36	0.26	0.10
Percent Change	-19.09	-16.77	-25.12
Obs.	111,508	111,508	111,508

Note: standard errors clustered at the state level, * p <0.10, ** p <0.05, *** p <0.01. Household survey weights used. Income less than 380% FPL. Controls include income, gender, household size, number of children, marital status, age, age squared, race, education, SNAP Participation, urban/rural status, number of Medicaid beneficiaries in the state, state minimum wage, Governor political affiliation, state EITC rate, max federal EITC, employment ratio, SNAP access index, and the unemployment rate.

Child Results

Table 5: Medicaid Eligibility on Child Food Hardship

	Food Insecure Child	Very Low Food Secure Child
Medicaid Eligible Child	-0.039*** (0.008)	-0.004*** (0.001)
Sample Mean Percent Change	0.19 -20.4	0.02 -18.09
Obs.	111,497	111,497

Note: standard errors clustered at the state level, * p <0.10, ** p <0.05, *** p <0.01. Household survey weights used. Income less than 380% FPL. Controls include income, gender, household size, number of children, marital status, age, age squared, race, education, SNAP Participation, urban/rural status, number of Medicaid beneficiaries in the state, state minimum wage, Governor political affiliation, state EITC rate, max federal EITC, employment ratio, SNAP access index, and the unemployment rate.

Effect Size Context

- Can be difficult to put effect sizes into context with other results given different programs and analysis samples
- Moellman (2020) found that the ACA expansions reduced the probability a household is food insecure by 19.7%
- Himmelstein (2019) finds an 11% reduction in very low food security among childless, non-elderly adults
- Gundersen et al. (2017) find that SNAP reduces food insufficiency by 75%
- Our results are large, but are within the scope of existing literature

Table 6: Household Food Hardship By Race

	Food Insecure	Low Food Secure	Very Low Food Secure
White Non-Hispanic			
Medicaid Eligible Child	-0.041***	-0.032***	-0.010
	(0.010)	(0.009)	(0.006)
Sample Mean	0.33	0.23	0.10
Percent Change	-12.58	-13.88	-9.57
Obs.	62,411	62,411	62,411
Black Non-Hispanic			
Medicaid Eligible Child	-0.092***	-0.045**	-0.047***
	(0.017)	(0.019)	(0.013)
Sample Mean	0.43	0.29	0.13
Percent Change	-21.39	-15.39	-36.43
Obs.	16,303	16,303	16,303
Hispanic			
Medicaid Eligible Child	-0.151***	-0.093***	-0.058***
	(0.029)	(0.015)	(0.014)
Sample Mean	0.37	0.27	0.09
Percent Change	-40.87	-34.5	-64.52
Obs.	25,234	25,234	25,234

Note: standard errors clustered at the state level, * p $<$0.10, ** p $<$0.05, *** p $<$0.01. Household survey weights used. Income less than 380% FPL.

Table 7: Child Food Hardship By Race

	Food Insecure Child	Very Low Food Secure Child
White Non-Hispanic		
Medicaid Eligible Child	-0.021***	-0.002
	(0.007)	(0.001)
Sample Mean	0.16	0.01
Percent Change	-13.22	-24.07
Obs.	62,405	62,405
Black Non-Hispanic		
Medicaid Eligible Child	-0.050***	0.006
	(0.016)	(0.005)
Sample Mean	0.23	0.03
Percent Change	-21.52	18.99
Obs.	16,302	16,302
Hispanic		
Medicaid Eligible Child	-0.087***	-0.009***
	(0.015)	(0.002)
Sample Mean	0.21	0.02
Percent Change	-41.52	-45.55
Obs.	25,231	25,231

Note: standard errors clustered at the state level, * p $<$0.10, ** p $<$0.05, *** p $<$0.01. Household survey weights used. Income less than 380% FPL.

Table 8: Medicaid Eligibility on Household Food Hardship By Age

	Food Insecure	Low Food Secure	Very Low Food Secure
Age 0-1 Eligible Child	-0.04***	-0.02**	-0.02***
	(0.01)	(0.01)	(0.00)
Age 1-5 Eligible Child	-0.04***	-0.01***	-0.02***
	(0.01)	(0.00)	(0.00)
Age 6-18 Eligible Child	-0.01	-0.01**	0.00
	(0.01)	(0.01)	(0.00)
Sample Mean	0.36	0.26	0.10
Obs.	111,508	111,508	111,508

Note: standard errors clustered at the state level, * p <0.10, ** p <0.05, *** p <0.01. Household survey weights used. Income less than 380% FPL. Controls include income, gender, household size, number of children, marital status, age, age squared, race, education, SNAP Participation, urban/rural status, number of Medicaid beneficiaries in the state, state minimum wage, Governor political affiliation, state EITC rate, max federal EITC, employment ratio, SNAP access index, and the unemployment rate.

Table 9: Medicaid Eligibility on Child Food Hardship By Age

	Food Insecure Child	Very Low Food Secure Child
Age 0-1 Eligible Child	-0.045***	-0.007***
	(0.005)	(0.002)
Age 1-5 Eligible Child	-0.030***	-0.009***
	(0.004)	(0.001)
Age 6-18 Eligible Child	0.013**	0.002
	(0.005)	(0.001)
Sample Mean	0.19	0.02
Obs.	111,497	111,497

Note: standard errors clustered at the state level, * p <0.10, ** p <0.05, *** p <0.01. Household survey weights used. Income less than 380% FPL. Controls include income, gender, household size, number of children, marital status, age, age squared, race, education, SNAP Participation, urban/rural status, number of Medicaid beneficiaries in the state, state minimum wage, Governor political affiliation, state EITC rate, max federal EITC, employment ratio, SNAP access index, and the unemployment rate.

Robustness

- If the min or max of each income bin is used instead of the median, results are largely unchanged

  Household Child

- Use differing %FPL cutoffs in defining our analysis sample. Household food insecurity results are stable for any cutoff point at or above 230% FPL

  FPL Cutoffs

- In addition to differences by race, also explore differences by sex of household head. Find no meaningful difference

  Household Child

Conclusion

- This paper is part of an emerging literature on examining the effect of non food support programs on food hardship
- First to examine general Medicaid eligibility on food hardship rather than a specific expansion
- Show Medicaid eligibility reduces food insecurity by 19%, and reduces very low food security by as much as 25%
- Medicaid eligibility reduces food insecurity among children by 20% and very low food security among children by 18%
- The effects are strongest for households with young children and those households headed by non-White heads.

Appendix

Table 10: Household Food Security Module Questions

Q1	We worried whether our food would run out before we got money to buy more. Was that often, sometimes, or never true for you in the last 12 months?
Q2	The food that we bought just didn't last and we didn't have money to get more. Was that often, sometimes, or never true for you in the last 12 months?
Q3	We couldn't afford to eat balanced meals. Was that often, sometimes, or never true for you in the last 12 months?
Q4	In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food?
Q5	(If yes to question 4) How often did this happenalmost every month, some months but not every month, or in only 1 or 2 months?
Q6	In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?
Q7	In the last 12 months, were you ever hungry, but didn't eat, because there wasn't enough money for food?
Q8	In the last 12 months, did you lose weight because there wasn't enough money for food?
Q9	In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?
Q10	(If yes to question 9) How often did this happenalmost every month, some months but not every month, or in only 1 or 2 months?
Q11	We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food. Was that often, sometimes, or never true for you in the last 12 months?
Q12	We couldn't feed our children a balanced meal, because we couldn't afford that. Was that often, sometimes, or never true for you in the last 12 months?
Q13	The children were not eating enough because we just couldn't afford enough food. Was that often, sometimes, or never true for you in the last 12 months?
Q14	In the last 12 months, did you ever cut the size of any of the childrens meals because there wasn't enough money for food?
Q15	In the last 12 months, were the children ever hungry but you just couldn't afford more food?
Q16	In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food?
Q17	(If yes to question 16) How often did this happen almost every month, some months but not every month, or in only 1 or 2 months?
Q18	In the last 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food?

Food Hardship

Table 11: Medicaid Eligibility on Household Food Hardship By Income

	Food Insecure	Low Food Secure	Very Low Food Secure
Min. Income			
Medicaid Eligible Child	-0.06***	-0.04***	-0.02***
	(0.02)	(0.01)	(0.00)
Sample Mean	0.36	0.25	0.10
Percent Change	-17.98	-16.26	-24.1
Obs.	114,709	114,709	114,709
Max. Income			
Medicaid Eligible Child	-0.05***	-0.03***	-0.02***
	(0.01)	(0.01)	(0.00)
Sample Mean	0.36	0.26	0.11
Percent Change	-14.39	-12.55	-17.42
Obs.	108,116	108,116	108,116

Note: standard errors clustered at the state level, * p $<$0.10, ** p $<$0.05, *** p $<$0.01. Household survey weights used. Income less than 380% FPL. Controls include income, gender, household size, number of children, marital status, age, age squared, race, education, SNAP Participation, urban/rural status, number of Medicaid beneficiaries in the state, state minimum wage, Governor political affiliation, state EITC rate, max federal EITC, employment ratio, SNAP access index, and the unemployment rate.

Robustness Checks

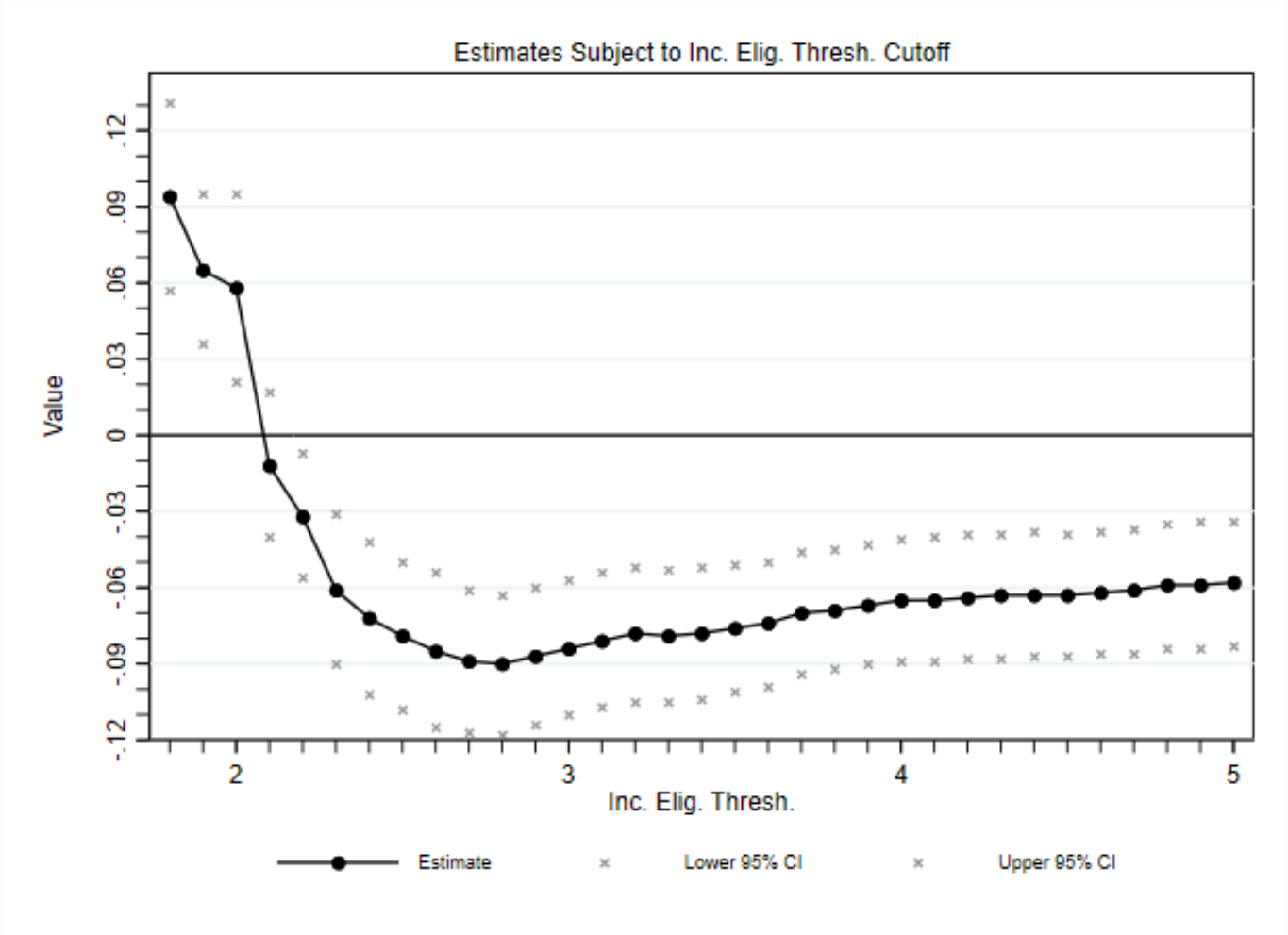
Table 12: Medicaid Eligibility on Child Food Hardship By Income

	Food Insecure Child	Very Low Food Secure Child
Min. Income		
Medicaid Eligible Child	-0.035***	-0.006***
	(0.010)	(0.002)
Sample Mean	0.18	0.02
Percent Change	-19.67	-29.02
Obs.	114,698	114,698
Max. Income		
Medicaid Eligible Child	-0.027***	-0.004**
	(0.006)	(0.002)
Sample Mean	0.19	0.02
Percent Change	-14.19	-20.04
Obs.	108,105	108,105

Note: standard errors clustered at the state level, * p $<$0.10, ** p $<$0.05, *** p $<$0.01. Household survey weights used. Income less than 380% FPL. Controls include income, gender, household size, number of children, marital status, age, age squared, race, education, SNAP Participation, urban/rural status, number of Medicaid beneficiaries in the state, state minimum wage, Governor political affiliation, state EITC rate, max federal EITC, employment ratio, SNAP access index, and the unemployment rate.

Robustness Checks

Figure 2: Effect of Medicaid Income Eligibility for Children on Food Insecurity for Varying Sample Income Cutoffs



Robustness Checks

Table 13: Medicaid Eligibility on Household Food Hardship By Sex

	Food Insecure	Low Food Secure	Very Low Food Secure
Male			
Medicaid Eligible Child	-0.07***	-0.04***	-0.03***
	(0.02)	(0.01)	(0.01)
Sample Mean	0.30	0.22	0.08
Percent Change	-23.03	-18.06	-36.71
Obs.	44,253	44,253	44,253
Female			
Medicaid Eligible Child	-0.07***	-0.05***	-0.02***
	(0.01)	(0.01)	(0.01)
Sample Mean	0.40	0.27	0.12
Percent Change	-18.02	-18.17	-19.19
Obs.	67,255	67,255	67,255

Note: standard errors clustered at the state level, * p $<$0.10, ** p $<$0.05, *** p $<$0.01. Household survey weights used. Income less than 380% FPL. Controls include income, race, household size, number of children, marital status, age, age squared, education, SNAP Participation, urban/rural status, number of Medicaid beneficiaries in the state, state minimum wage, Governor political affiliation, state EITC rate, max federal EITC, employment ratio, SNAP access index, and the unemployment rate.

Robustness Checks

Table 14: Medicaid Eligibility on Child Food Hardship By Sex

	Food Insecure Child	Very Low Food Secure Child
Male		
Medicaid Eligible Child	-0.037***	-0.007***
	(0.009)	(0.002)
Sample Mean	0.15	0.01
Percent Change	-24.84	-72.65
Obs.	44,243	44,243
Female		
Medicaid Eligible Child	-0.042***	-0.001
	(0.008)	(0.002)
Sample Mean	0.21	0.02
Percent Change	-19.99	-5.17
Obs.	67,254	67,254

Note: standard errors clustered at the state level, * p $<$0.10, ** p $<$0.05, *** p $<$0.01. Household survey weights used. Income less than 380% FPL. Controls include income, race, household size, number of children, marital status, age, age squared, education, SNAP Participation, urban/rural status, number of Medicaid beneficiaries in the state, state minimum wage, Governor political affiliation, state EITC rate, max federal EITC, employment ratio, SNAP access index, and the unemployment rate.

Robustness Checks