

The Long-Term Effects of Universal Free School Meal Policies: Evidence from the Community Eligibility Provision

Lexin Cai
PhD Candidate in Economics
Cornell University

June 15, 2026

School Meals Are a Key Source of Child Nutrition in the U.S.

- ▶ Federally subsidized meals reach 30 million children with a \$24 billion budget
- ▶ Eligibility is based on family income (\$60K for a family of 4)
- ▶ 50% of students qualify for subsidized school meals



Photo: Peter D. White. American children are about twice as often overweight as in other nations. (AP/Wide World)

Shift From Targeted Provision to Universal Free Meals

- ▶ The Community Eligibility Provision (CEP) is a federal policy that aims to reduce child hunger, paperwork, and stigma in high-poverty schools
- ▶ CEP removes individual student income eligibility and meal applications
- ▶ Nine states have expanded universal free school meals statewide by supplementing federal CEP funding [map](#)
- ▶ 50% of public schools have adopted CEP

The Promises of Universal Free School Meals

“By delivering universal free meals, this administration is making sure no student feels stigmatized or ashamed for accessing the food they need.”

– Healey–Driscoll Administration



Source: Mass.gov, Boston Herald

The Promises of Universal Free School Meals

“[Universal free meal] makes a huge difference in the moment for those students, and we know in the long run it’ll make a difference in achievement and the well-being of those students.”

– Governor Tim Walz of Minnesota



Source: Washington Post, Minnesota Reformer

This Paper

▶ **Research Question**

- How does the availability of universal free school meals through CEP affect students' short- and long-term outcomes compared to subsidized meal policies with income-based eligibility criteria?

This Paper

▶ **Research Question**

- How does the availability of universal free school meals through CEP affect students' short- and long-term outcomes compared to subsidized meal policies with income-based eligibility criteria?

▶ **Empirical Strategy**

- Difference-in-differences design that exploits the rollout of CEP in Texas

This Paper

▶ **Research Question**

- How does the availability of universal free school meals through CEP affect students' short- and long-term outcomes compared to subsidized meal policies with income-based eligibility criteria?

▶ **Empirical Strategy**

- Difference-in-differences design that exploits the rollout of CEP in Texas

▶ **Data**

- Administrative data from Texas that follow students from K–12 through college and into the workforce

Preview of Results

▶ **Meal Participation**

- ↑ annual school meal consumption by 20 meals per student (10%)
- Higher-income students previously ineligible for free meals are more responsive to CEP than low-income students who were already eligible

Preview of Results

▶ **Meal Participation**

- ↑ annual school meal consumption by 20 meals per student (10%)
- Higher-income students previously ineligible for free meals are more responsive to CEP than low-income students who were already eligible

▶ **Short-Term Effects (up to 4 years)**

- I find no improvements in achievement, attendance, or suspensions overall or across subgroups

Preview of Results

▶ **Meal Participation**

- ↑ annual school meal consumption by 20 meals per student (10%)
- Higher-income students previously ineligible for free meals are more responsive to CEP than low-income students who were already eligible

▶ **Short-Term Effects (up to 4 years)**

- I find no improvements in achievement, attendance, or suspensions overall or across subgroups

▶ **Long-Term Effects (up to 10 years)**

- I find no improvements in high school graduation or college enrollment

Contribution

1 Long-term effects of school meal policies

- In the mid-20th century: US (Hinrichs 2010), Sweden (Lundborg, Rooth, and Alex-Petersen 2022)
⇒ Evaluate universal school meals relative to means-tested meals

Contribution

1 Long-term effects of school meal policies

- In the mid-20th century: US (Hinrichs 2010), Sweden (Lundborg, Rooth, and Alex-Petersen 2022)
⇒ Evaluate universal school meals relative to means-tested meals

2 Effects of CEP on previously unstudied short-term outcomes

- Grades 3–8 test scores (Bernstein et al. 2004; Schanzenbach and Zaki 2014; Gordanier et al. 2020; Leos-Urbel et al. 2013; Ruffini 2022), suspensions (Gordon and Ruffini 2021; Domina et al. 2024)
⇒ Test score estimates rule out some earlier estimates
⇒ Extend analysis to outcomes in pre-K, kindergarten, and high school

Contribution

1 Long-term effects of school meal policies

- In the mid-20th century: US (Hinrichs 2010), Sweden (Lundborg, Rooth, and Alex-Petersen 2022)
⇒ Evaluate universal school meals relative to means-tested meals

2 Effects of CEP on previously unstudied short-term outcomes

- Grades 3–8 test scores (Bernstein et al. 2004; Schanzenbach and Zaki 2014; Gordanier et al. 2020; Leos-Urbel et al. 2013; Ruffini 2022), suspensions (Gordon and Ruffini 2021; Domina et al. 2024)
⇒ Test score estimates rule out some earlier estimates
⇒ Extend analysis to outcomes in pre-K, kindergarten, and high school

3 Long-term effects of childhood access to safety net

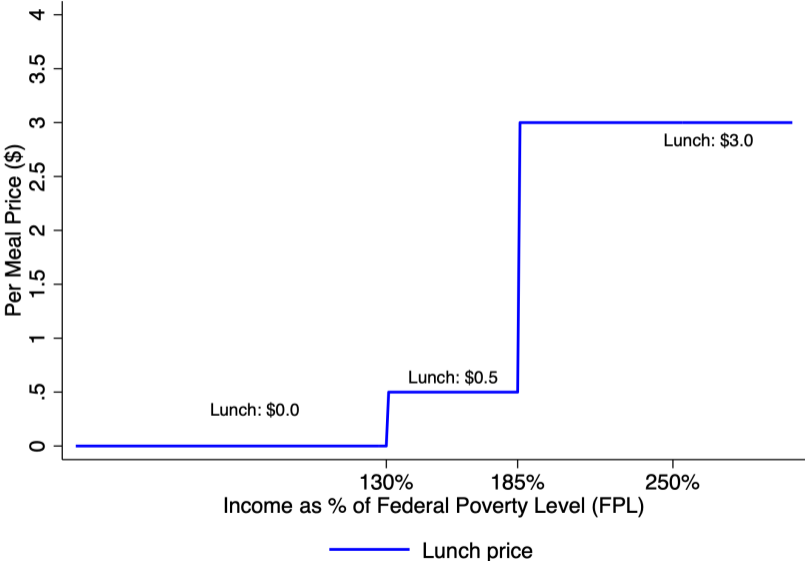
- SNAP (Hoynes, Schanzenbach, and Almond 2016; Bailey et al. 2024), Medicaid (Goodman-Bacon 2021), housing assistance (Chetty, Hendren, and Katz 2016)
⇒ Show that access to free school meals for children aged 8–17 has no discernible long-term effects

Roadmap

- ▶ Background and Framework
- ▶ Data and Sample
- ▶ Empirical Results
 - Short-Term Outcomes
 - Long-Term Outcomes
- ▶ Empirical Welfare Analysis
- ▶ Policy Implications

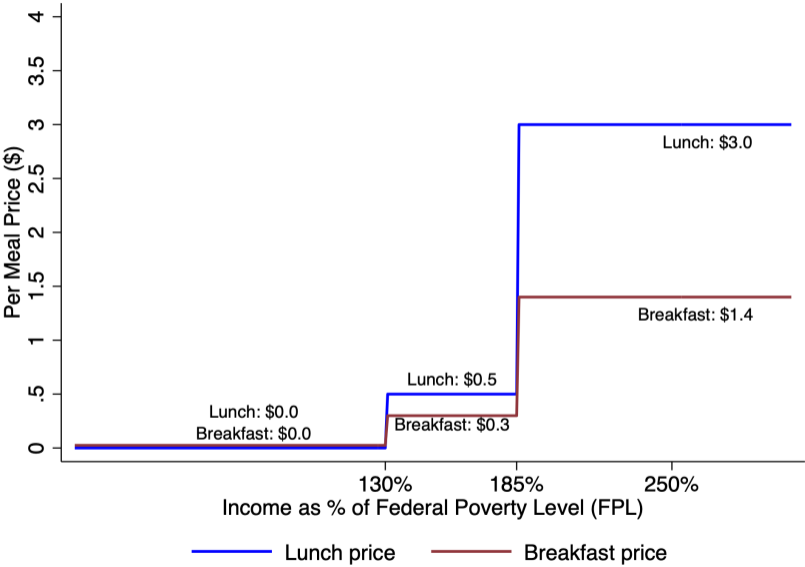
Background and Framework

School Meal Prices



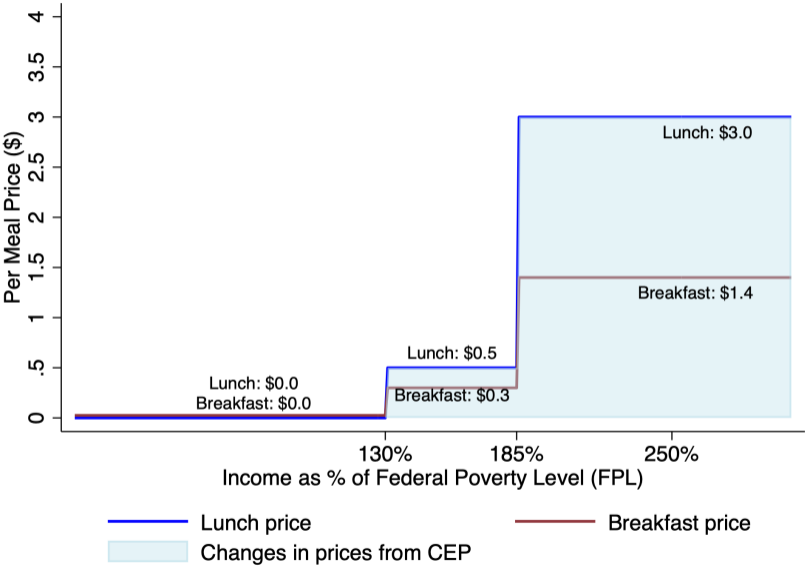
Notes: For a family of 4, 130% of the FPL is \$40K, and 185% of the FPL is around \$60K. CEP eligibility threshold for schools and districts: at least 40% of students are directly certified for free school meals through SNAP, cash welfare, or Medicaid.

School Meal Prices



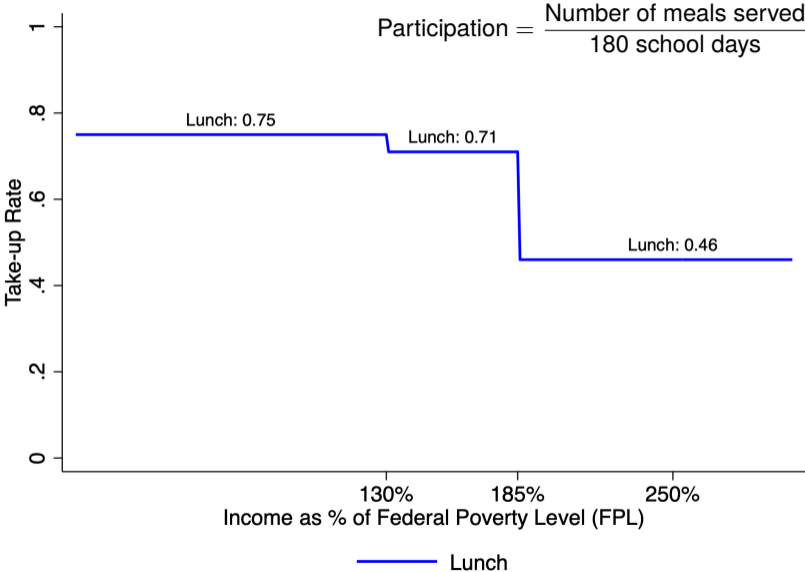
Notes: For a family of 4, 130% of the FPL is \$40K, and 185% of the FPL is around \$60K. CEP eligibility threshold for schools and districts: at least 40% of students are directly certified for free school meals through SNAP, cash welfare, or Medicaid.

School Meal Prices



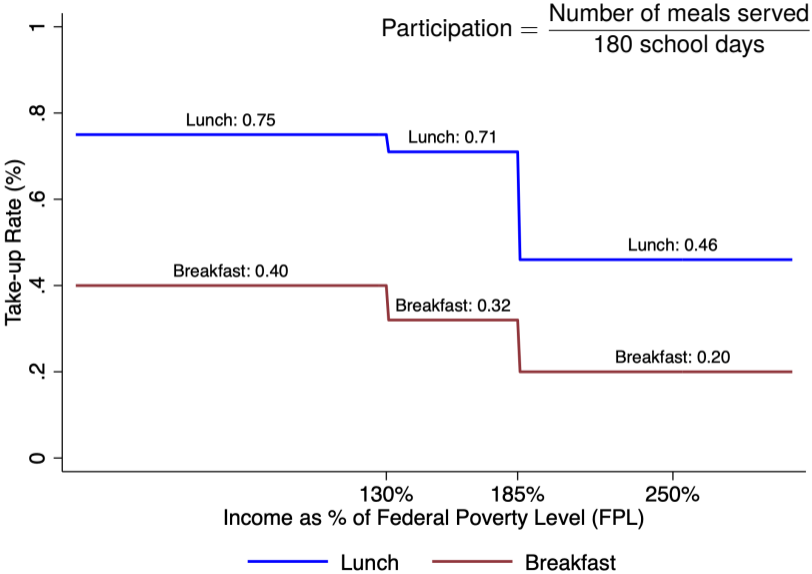
Notes: For a family of 4, 130% of the FPL is \$40K, and 185% of the FPL is around \$60K. CEP eligibility threshold for schools and districts: at least 40% of students are directly certified for free school meals through SNAP, cash welfare, or Medicaid.

Average Daily Participation



Notes: The data show 2011 averages for Texas schools that were eligible for CEP.

Average Daily Participation



Notes: The data show 2011 averages for Texas schools that were eligible for CEP.

Expected Effects of Universal Free School Meals

- ▶ ↑ Take-up, ↓ stigma, paperwork, price

Expected Effects of Universal Free School Meals

▶ \uparrow Take-up, \downarrow stigma, paperwork, price

▶ Potential channels

- Nutrition ($-$, 0 , $+$)
- Family resources ($+$)
- Behavior ($-$, 0 , $+$)

Data and Sample

Data

- ▶ Texas Department of Agriculture
 - School-level meal participation and federal subsidies

- ▶ UT Dallas Education Research Center
 - Restricted-use student-level data
 - Short-Term: test scores, absence, and suspension records from pre-K through high school
 - Long-Term: SAT scores, high school graduation, college enrollment, and earnings

Sample

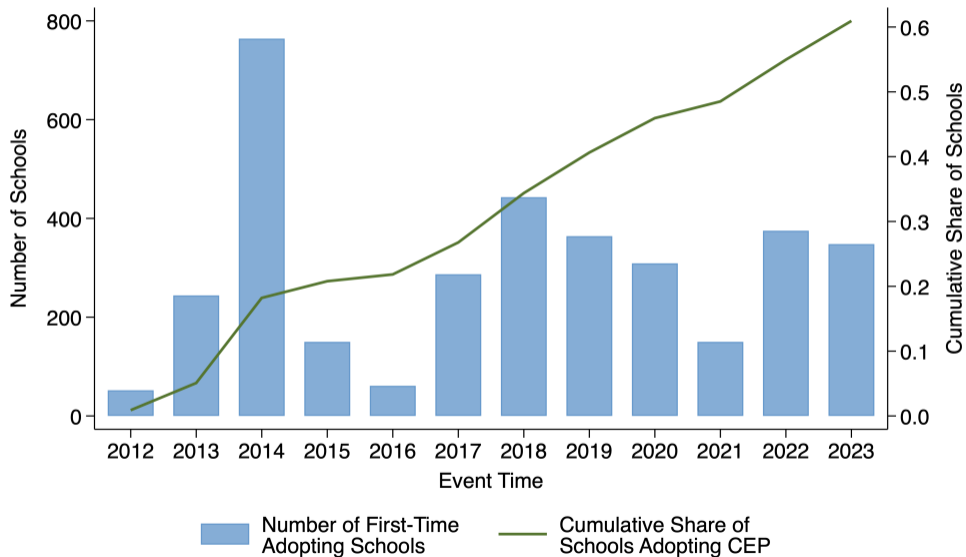
- ▶ Short-term
 - Ever-treated schools (2011–2018)

- ▶ Long-term
 - Ever-treated districts (1995–2023)
 - Students born between 1986 and 2006

- ▶ Robustness Checks
 - Eligible schools and districts

Short-Term Effects

Distribution of CEP Event Time in Texas



Summary Statistics

	Adopted 2012–2014	Adopted 2015–2018	Eligible not adopted by 2018
Income-eligible for subsidized meals	0.85	0.73	0.49
Nonwhite	0.89	0.76	0.52
Avg. daily meal participation rate	0.65	0.58	0.44

Summary Statistics

	Adopted 2012–2014	Adopted 2015–2018	Eligible not adopted by 2018
Income-eligible for subsidized meals	0.85	0.73	0.49
Nonwhite	0.89	0.76	0.52
Avg. daily meal participation rate	0.65	0.58	0.44
Test score index (std)	-0.27	-0.15	0.12
Days absent	6.77	6.68	6.23
Suspensions per 100 students	0.27	0.43	0.24
N of Schools	1,000	900	3,700

Identification Strategy

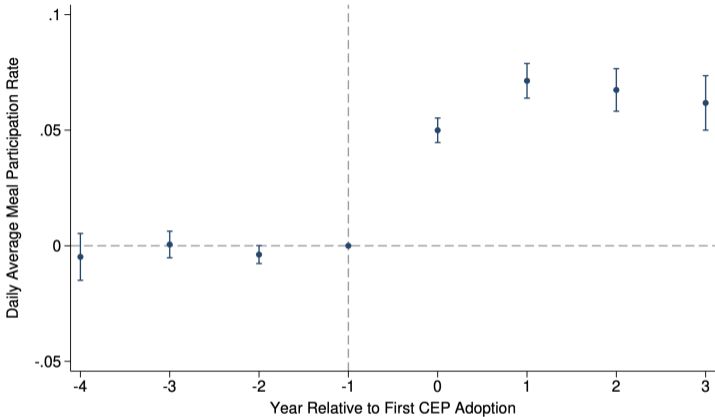
- ▶ Estimate the following specification pooling all grades, and separately for grades K-5, 6-8, and 9-12 with the estimator from Callaway and Sant'Anna (2021)

$$Y_{gst} = \beta CEP_{gst} + \theta_g + \delta_s + \alpha_t + \varepsilon_{gst} \quad (1)$$

- Y_{gst} is an outcome for grade g in school s during school year t
 - CEP_{gst} is a binary treatment indicator
 - θ_g , δ_s , and α_t denote grade, school, and year fixed effects
- ▶ Key Assumptions: No anticipation, parallel trends

First Stage

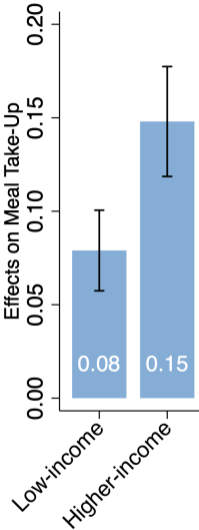
Average Daily Participation



CEP 0.062***
 (0.004)
 [8.7%, 11.3%]

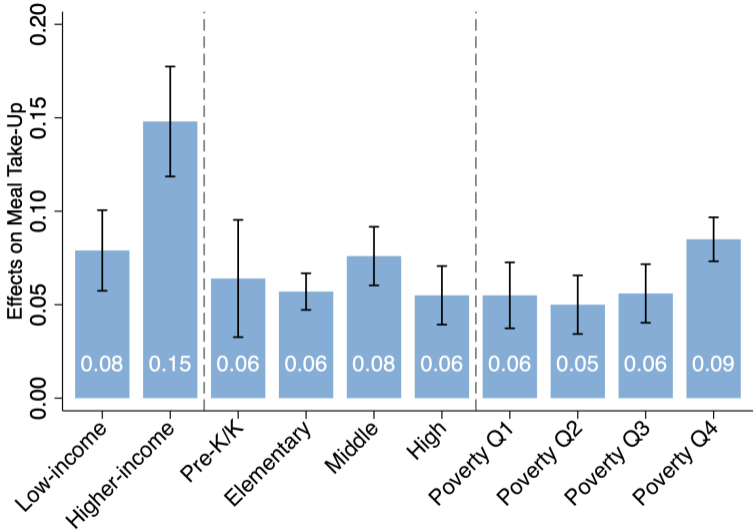
Robustness

Meal Participation by Subgroup



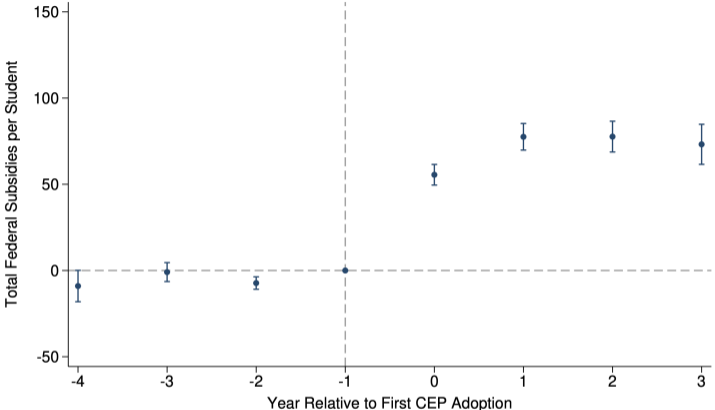
Notes: The subgroup analysis by student eligibility for subsidized meals is based on a sample of 244 schools for which such data are available.

Meal Participation by Subgroup



Notes: The subgroup analysis by student eligibility for subsidized meals is based on a sample of 244 schools for which such data are available.

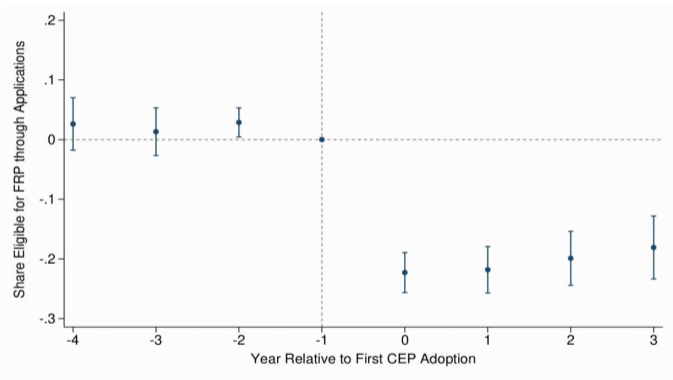
Annual Federal Subsidies per Student



CEP	69.968***
	(3.738)
	[10.5%, 12.9%]

Administrative Burden

Share of students submitting an application for subsidized school meals

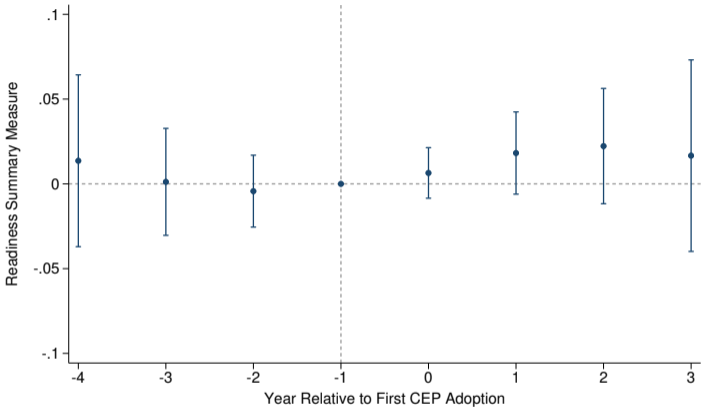


CEP -0.209^{***}
(-0.018)

Notes: Prior to CEP, children in families receiving SNAP benefits or cash welfare were already automatically enrolled for subsidized school meals.

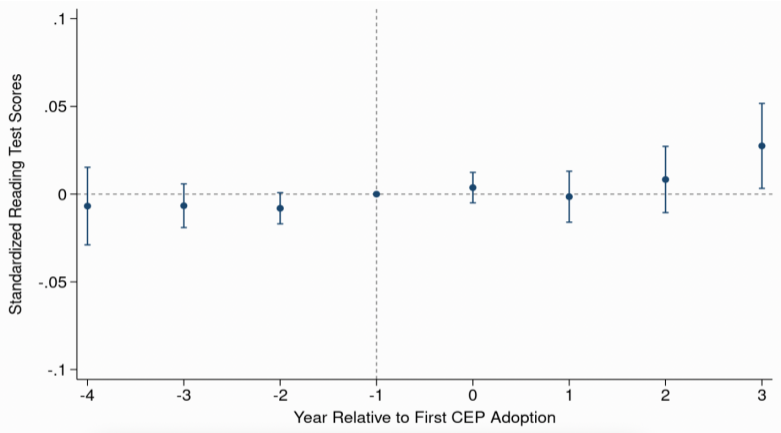
Academic Outcomes

Pre-K Assessment Index



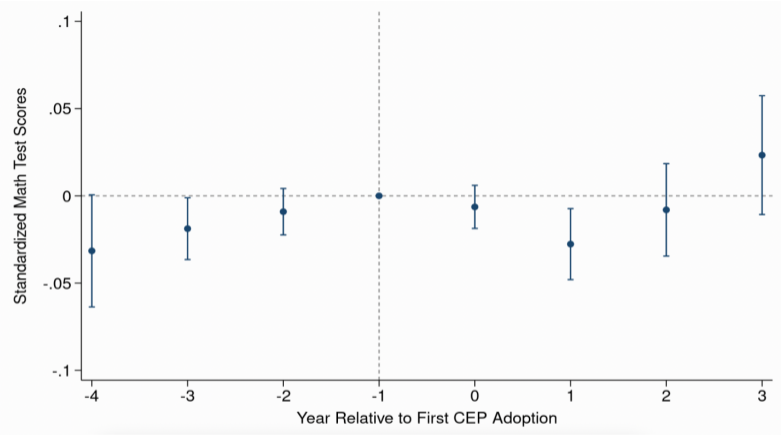
CEP	0.014
	(0.010)
	[-0.006 SD, 0.034 SD]

Grades 3–8 Reading Test Scores



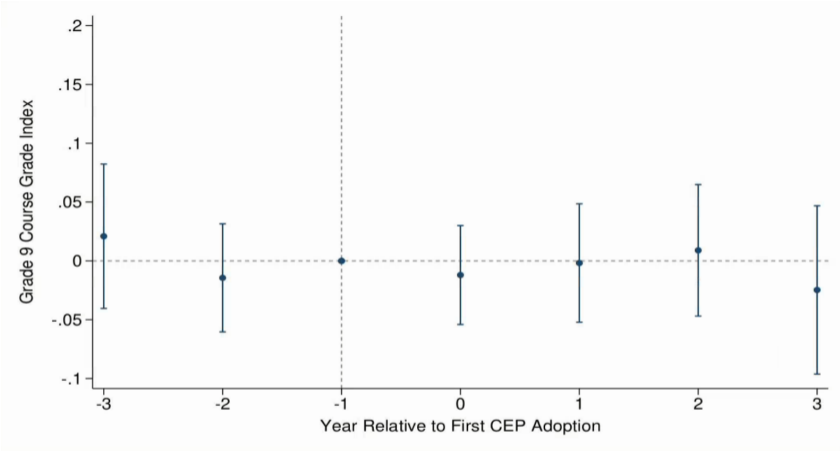
CEP	0.008
	(0.007)
	[-0.006 SD, 0.022 SD]

Grades 3–8 Math Test Scores



CEP -0.006
 (0.010)
 [-0.026 SD, 0.014 SD]

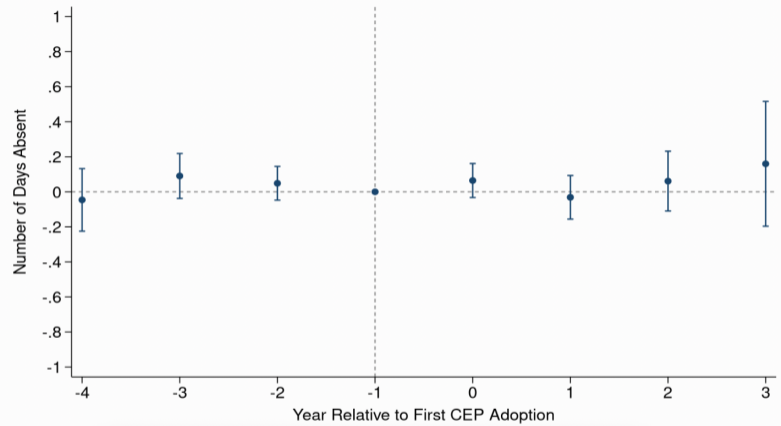
High School Course Grades Index



CEP	0.007
	(0.023)
	[-0.038 SD, 0.052 SD]

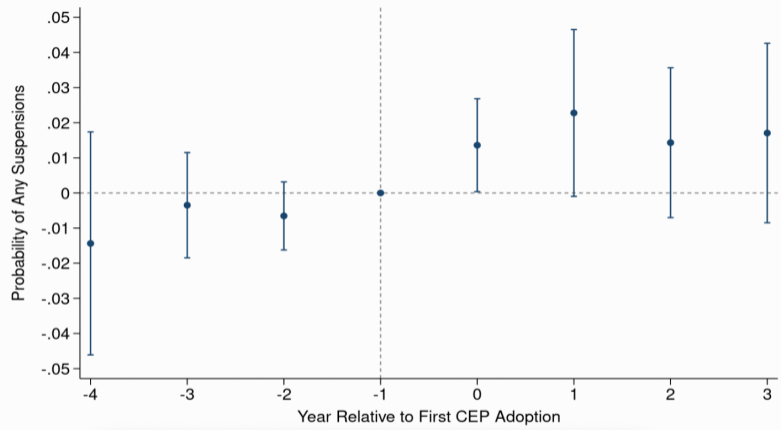
Behavioral Outcomes

Absences



CEP	0.060
	(0.077)
	[-1.4%, 3.3%]

Suspensions

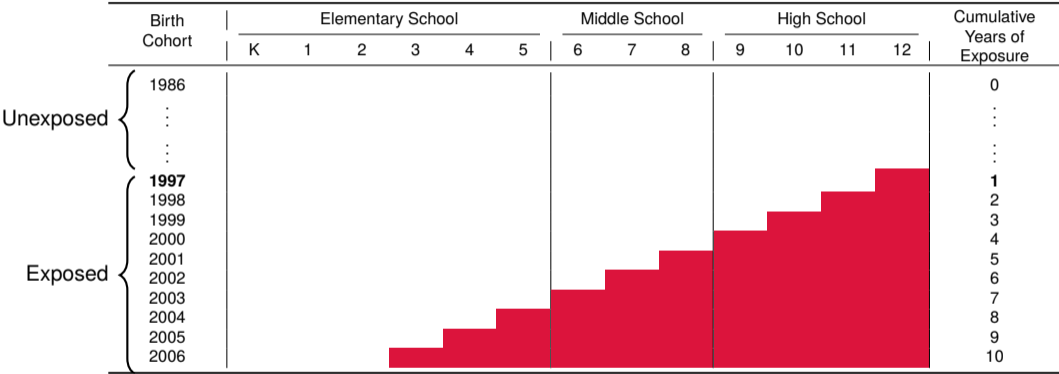


CEP 0.017*
 (0.009)
 [-0.2%, 8.9%]

Long-Term Effects

Treatment Assignment

For a District That Adopted CEP in 2014



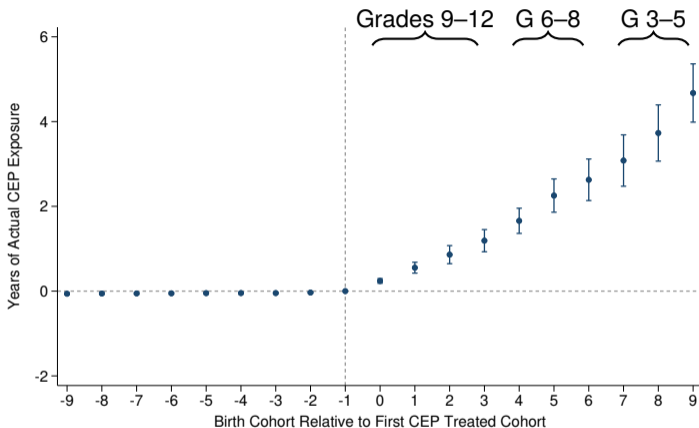
1997 Birth Cohort = Oldest CEP Cohort ■ Grades exposed to CEP

Identification Strategy

$$Y_{db} = \sum_{k=-9}^9 \beta_k \mathbf{1}[b - \text{OldestCEPcohort}_d = k] + \lambda_d + \rho_b + \varepsilon_{db} \quad (2)$$

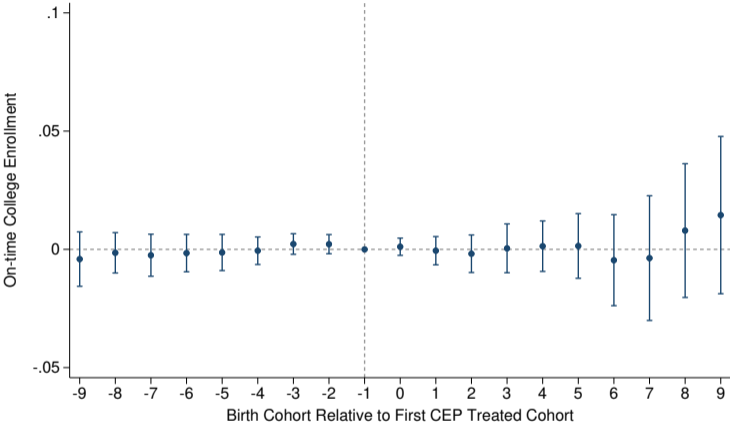
- Y_{db} is an outcome for district d and birth cohort b
 - OldestCEPcohort_d was the 12th-grade cohort at the time of CEP adoption
 - $\mathbf{1}[b - \text{OldestCEPcohort}_d = k]$ is an indicator for event time k
 - λ_d, ρ_b denote district and cohort fixed effects
- ▶ **Key Assumptions:** No anticipation, parallel trends, and no contemporaneous shocks (Callaway and Sant'Anna 2021)
- ▶ **Identification Threat:** Texas lowered high school graduation requirements

Years of CEP Exposure



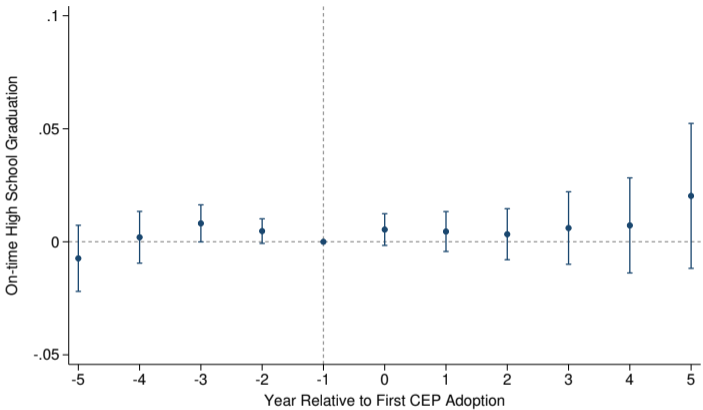
	G 9-12	G 6-8	G 3-5
CEP exposure	0.7***	2.1***	3.8***
	(0.078)	(0.190)	(0.328)

On-Time College Enrollment



	G 9–12	G 6–8	G 3–5	Magnitude
CEP exposure	-0.000	-0.000	0.006	Full K–12 CEP exp
	(0.003)	(0.007)	(0.013)	2 pp increase
	[−1.4%, 1.4%]	[−3.3%, 3.3%]	[−4.6%, 7.5%]	cost \$15K/student

On-Time High School Graduation (Birth Cohorts 2000 to 2006)

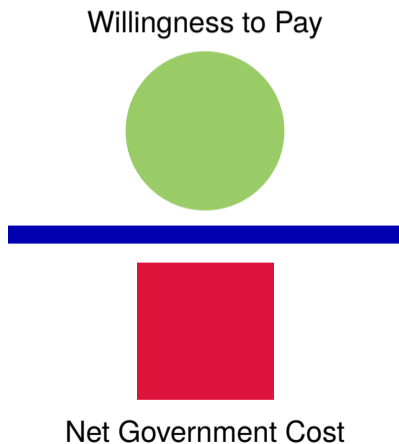


	G 9–12	G 6–7	Magnitude
CEP exposure	0.005 (0.005) [-0.8%, 2.3%]	0.006 (0.006) [-1.6%, 5.0%]	Full K-12 CEP exp 4 pp increase cost \$15K/student

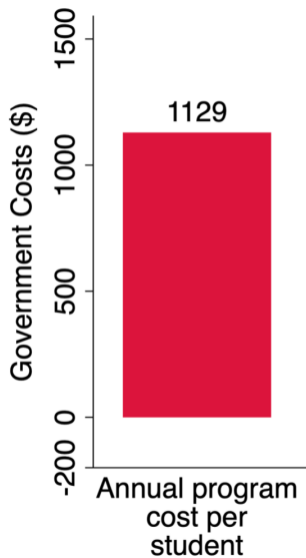
Empirical Welfare Analysis

Marginal Value of Public Funds

The Marginal Value of Public Funds (MVPF) measures the “bang for the buck” (Hendren and Sprung-Keyser 2020)

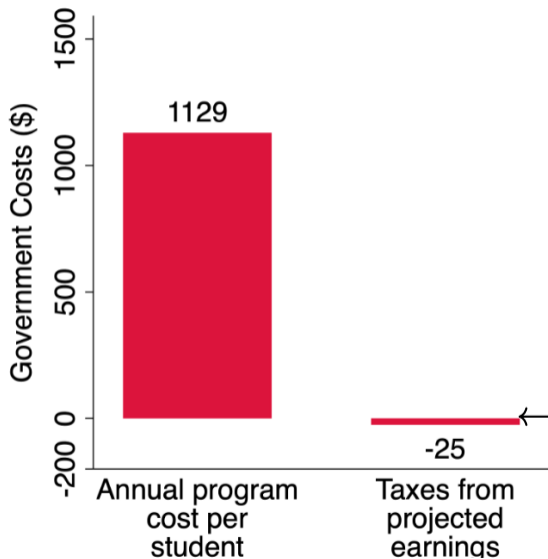


Net Government Cost



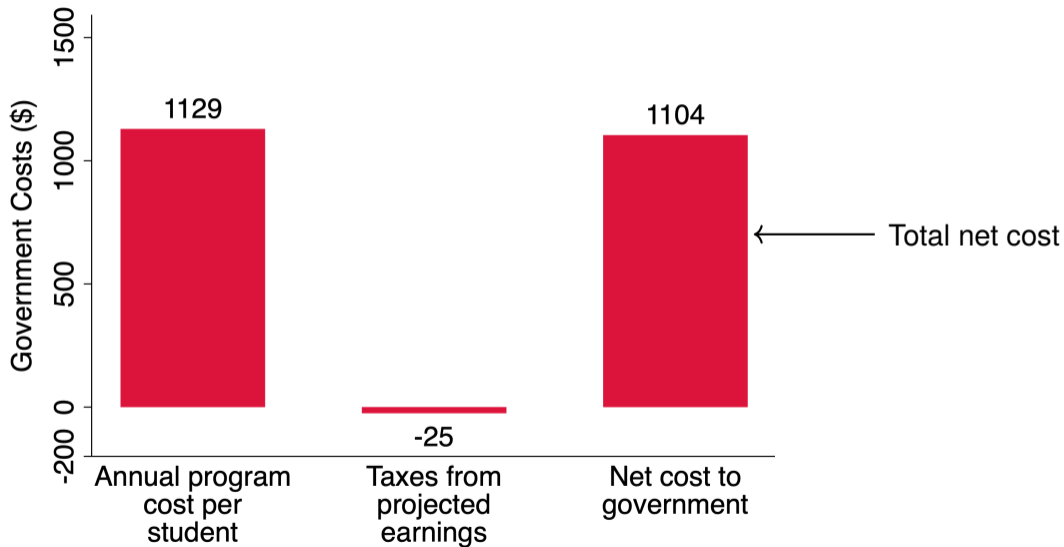
← Scale the intent-to-treat estimate of the increase in federal subsidies by the first-stage take-up rate

Net Government Cost

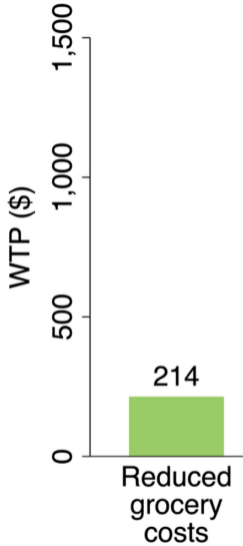


Account for fiscal externalities using projected earnings based on test scores from pre-K through high school

Net Government Cost

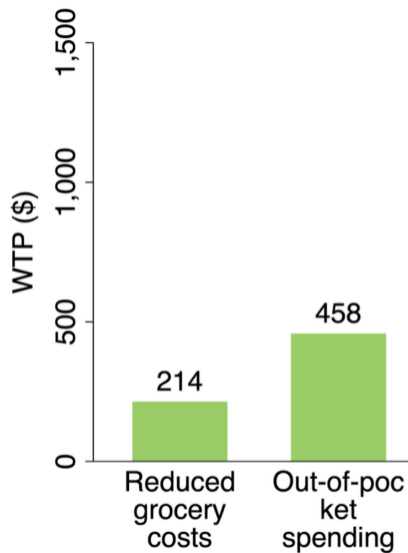


Willingness to Pay



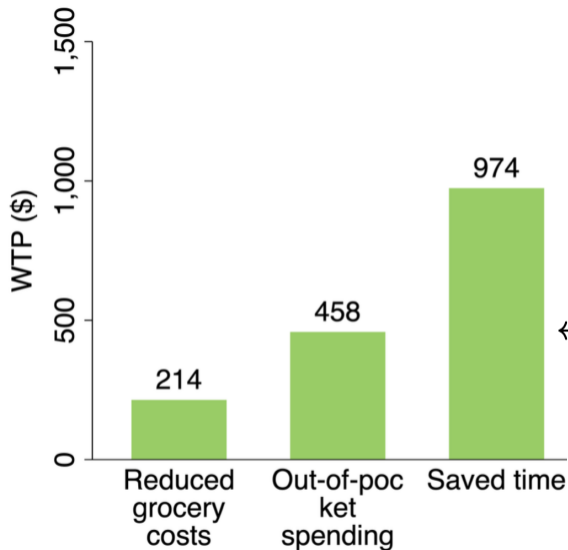
← Handbury and Moshary (2021) find that when a school adopts CEP, household grocery spending falls by 7%.

Willingness to Pay



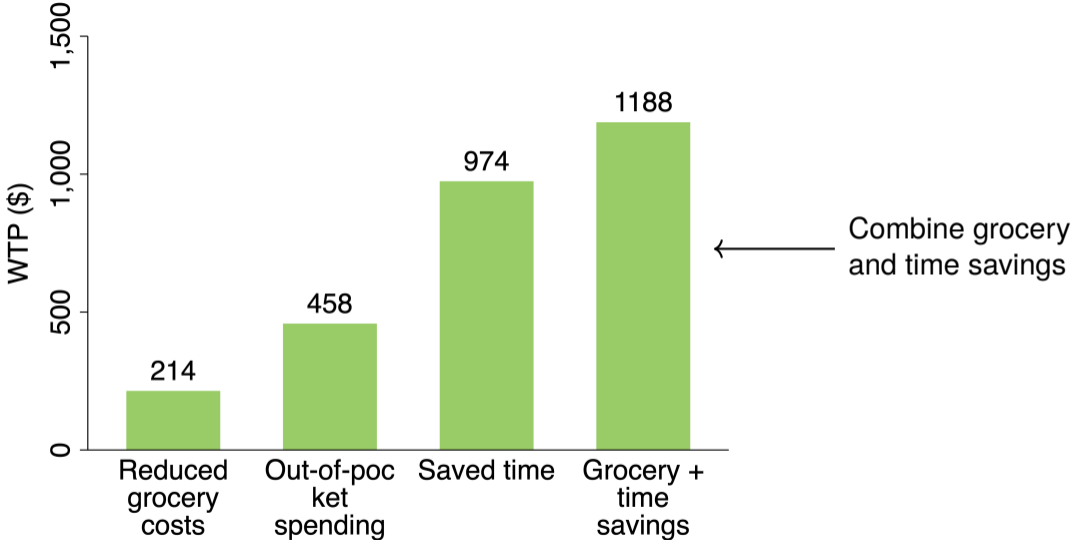
← Before CEP, students who were ineligible for subsidized meals spent \$458 on school meals.

Willingness to Pay

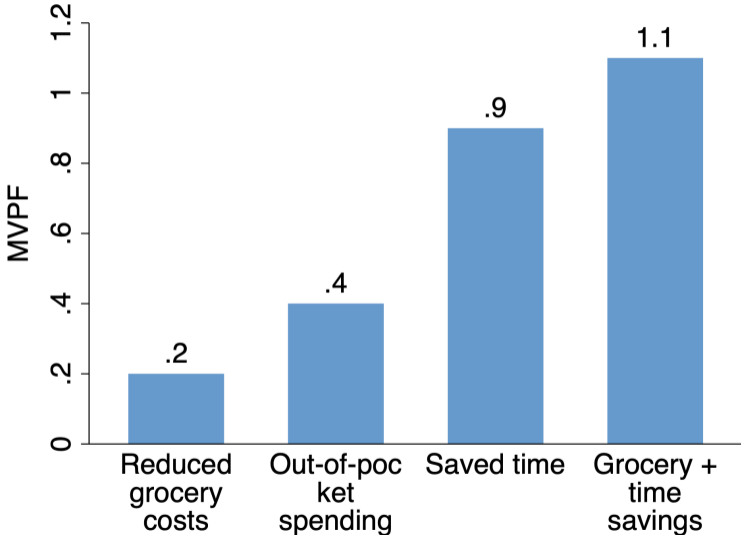


Guthrie and McClelland (2009) show that school-provided meals save parents 72 hours per year. I add one additional hour from eliminating meal applications, valued at \$13.50 per hour.

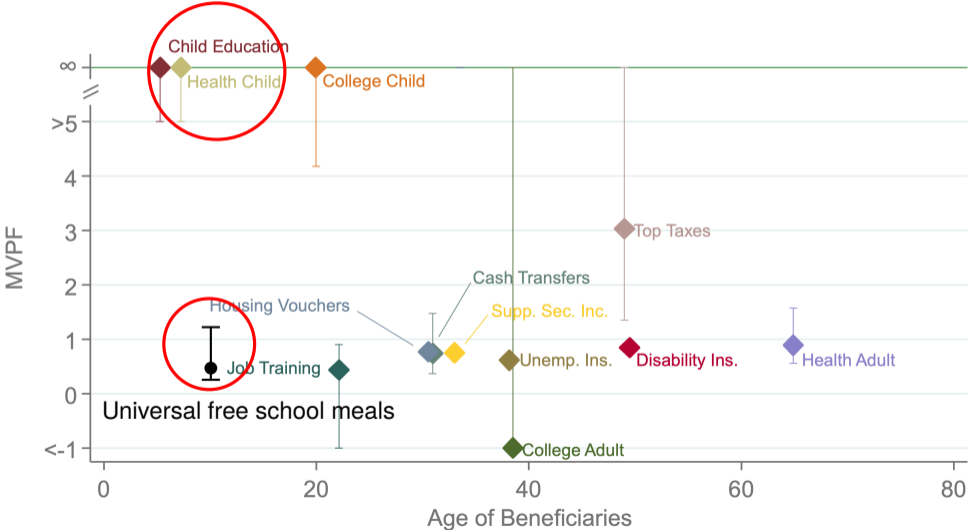
Willingness to Pay



Under most assumptions, CEP's costs exceed its benefits



CEP has lower MVPFs than other child education and child health insurance policies



Source: Hendren and Sprung-Keyser (2020)

Discussion and Policy Implications

Potential Reasons for Null Effects

- ▶ Universal free school meals largely displace food consumption from home rather than increase total nutrition intake (Bernstein et al. 2004; Schanzenbach and Zaki 2014)
- ▶ Stigma may not be salient in high-poverty schools, or reductions in stigma may not translate into measurable outcomes
- ▶ CEP reduces family grocery costs by about \$200 per year (Handbury and Moshary 2021; Marcus and Yewell 2022), which could be too small to move the needle

Policy Implications

- ▶ The increase in take-up among low-income students already eligible for free meals suggests a reduction in administrative burden and stigma
- ▶ Universal free school meal policy does not seem to deliver its promise on increasing achievement
- ▶ Making meals free for all American schoolchildren would require an additional \$10–\$15 billion annually (1.1–1.6% of total K–12 spending)

References I

- Bailey, Martha, Hilary Hoynes, Maya Rossin-Slater, and Reed Walker. 2024. "Is the Social Safety Net a Long-Term Investment? Large-Scale Evidence from the Food Stamps Program." *Review of Economic Studies* 91 (3): 1291–1330.
- Bernstein, Lawrence S., Joan E. McLaughlin, Mary Kay Crepinsek, and Lynn M. Daft. 2004. "Evaluation of the School Breakfast Program Pilot Project: Final Report. Special Nutrition Programs. Report Number CN-04-SBP. Nutrition Assistance Program Report Series." *U.S. Department of Agriculture*.
- Callaway, Brantly, and Pedro H. C. Sant'Anna. 2021. "Difference-in-Differences with Multiple Time Periods." *Journal of Econometrics* 225 (2): 200–230.
- Chetty, Raj, Nathaniel Hendren, and Lawrence F. Katz. 2016. "The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment." *American Economic Review* 106 (4): 855–902.
- Domina, Thurston, Leah Clark, Vitaly Radsky, and Renuka Bhaskar. 2024. "There Is Such a Thing as a Free Lunch: School Meals, Stigma, and Student Discipline." *American Educational Research Journal* 61 (2): 287–327.
- Goodman-Bacon, Andrew. 2021. "The Long-Run Effects of Childhood Insurance Coverage: Medicaid Implementation, Adult Health, and Labor Market Outcomes." *American Economic Review* 111 (8): 2550–2593.

References II

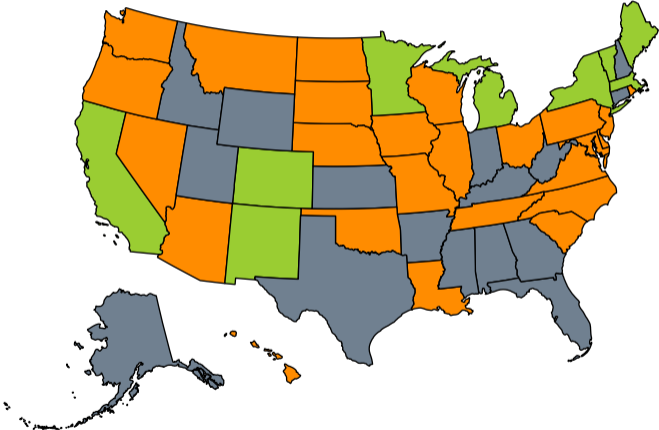
- Gordanier, John, Orgul Ozturk, Breyon Williams, and Crystal Zhan. 2020. "Free Lunch for All! The Effect of the Community Eligibility Provision on Academic Outcomes." *Economics of Education Review* 77:101999.
- Gordon, Nora, and Krista Ruffini. 2021. "Schoolwide Free Meals and Student Discipline: Effects of the Community Eligibility Provision." *Education Finance and Policy* 16 (3): 418–442.
- Guthrie, Joanne, and Ket McClelland. 2009. "Working Parents Outsource Children's Meals." U.S. Department of Agriculture, Economic Research Service. Accessed October 3, 2025, March.
<https://www.ers.usda.gov/amber-waves/2009/march/working-parents-outsource-children-s-meals>.
- Handbury, Jessie, and Sarah Moshary. 2021. *School Food Policy Affects Everyone: Retail Responses to the National School Lunch Program*. Technical report. National Bureau of Economic Research.
- Hendren, Nathaniel, and Ben Sprung-Keyser. 2020. "A Unified Welfare Analysis of Government Policies." *Quarterly Journal of Economics* 135 (3): 1209–1318.
- Hinrichs, Peter. 2010. "The Effects of the National School Lunch Program on Education and Health." *Journal of Policy Analysis and Management* 29 (3): 479–505.
- Hoynes, Hilary, Diane Whitmore Schanzenbach, and Douglas Almond. 2016. "Long-Run Impacts of Childhood Access to the Safety Net." *American Economic Review* 106 (4): 903–934.

References III

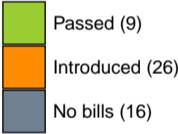
- Leos-Urbel, Jacob, Amy Ellen Schwartz, Meryle Weinstein, and Sean Corcoran. 2013. "Not Just for Poor Kids: The Impact of Universal Free School Breakfast on Meal Participation and Student Outcomes." *Economics of Education Review* 36:88–107.
- Lundborg, Petter, Dan-Olof Rooth, and Jesper Alex-Petersen. 2022. "Long-Term Effects of Childhood Nutrition: Evidence from a School Lunch Reform." *Review of Economic Studies* 89 (2): 876–908.
- Marcus, Michelle, and Katherine G. Yewell. 2022. "The Effect of Free School Meals on Household Food Purchases: Evidence from the Community Eligibility Provision." *Journal of Health Economics* 84:102646.
- Ruffini, Krista. 2022. "Universal Access to Free School Meals and Student Achievement: Evidence from the Community Eligibility Provision." *Journal of Human Resources* 57 (3): 776–820.
- Schanzenbach, Diane Whitmore, and Mary Zaki. 2014. *Expanding the school breakfast program: Impacts on children's consumption, nutrition and health*. Technical report. National Bureau of Economic Research.

Appendix

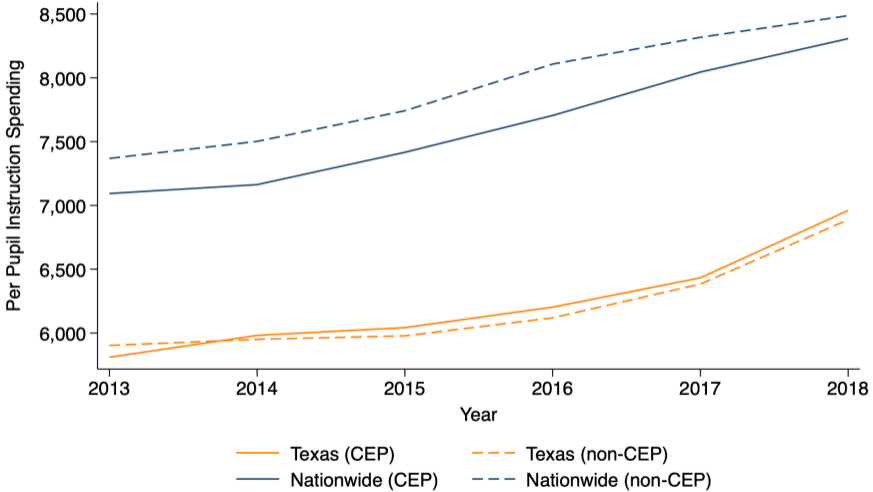
The Future of School Meals



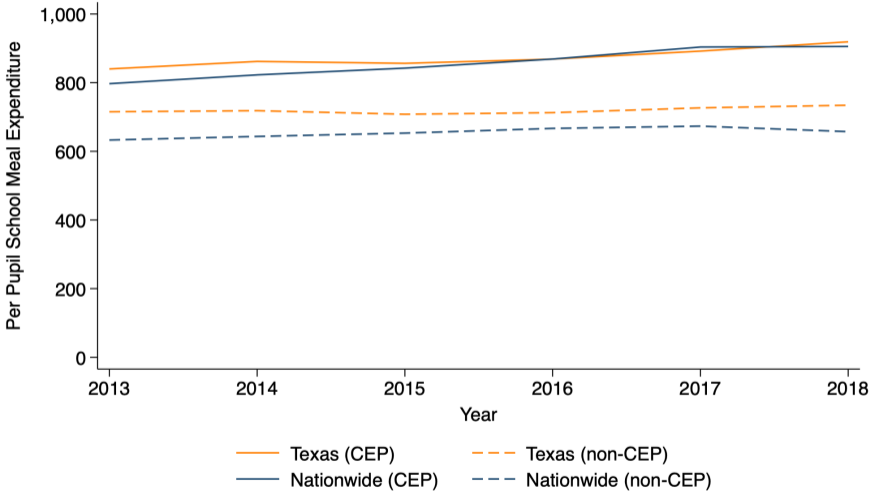
Universal Meals Legislation Status



Per-Pupil Instruction Expenditures



Per-Pupil Food Expenditures



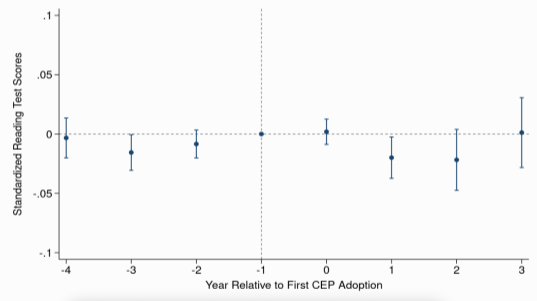
Meal Participation Robustness Checks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CEP	0.062*** (0.004)	0.075*** (0.005)	0.065*** (0.003)	0.068*** (0.004)	0.055*** (0.004)	0.062*** (0.003)	0.075*** (0.005)
Mean of Dependent Variable	0.62	0.65	0.62	0.50	0.58	0.61	0.50
Number of Observations	13,086	4,451	13,086	44,302	25,500	16,470	57,093
Number of Schools	1,871	1,113	1,871	5,529	2,834	2,060	4,744
Years of Data	2011–2018	2011–2018	2011–2018	2011–2018 and 2022–2024	2011–2018 and 2022–2024	2011–2018 and 2022–2024	2011–2018 and 2022–2024
Weights	Weighted	Weighted	Not weighted	Not weighted	Weighted	Weighted	Weighted
Control Schools	Later treated	Later treated w/ balanced group	Later treated	Matched	Later treated	Later treated w/ balanced group	Matched

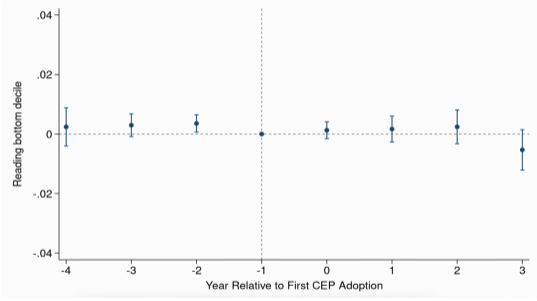
[Back](#)

Grades 3-8 Reading Test Scores Robustness Checks

Matching



In the Bottom Decile



[Back](#)

Grades 3-8 Test Score Index Robustness Checks

	(1)	(2)	(3)	(4)
CEP	0.001 (0.008)	-0.021** (0.010)	0.009 (0.006)	0.003 (0.008)
Mean of the dependent variable	-0.22	-0.07	-0.16	-0.22
Number of observations	31,395	141,648	91,643	45,828
Number of students	157,960	312,759	211,205	126,550
Number of schools	1,521	3,122	2,170	1,350
Years of data	2011–2018	2011–2018	2011–2018 & 2020–2022	2011–2018 & 2022–2024
Weights	Weighted	Not weighted	Weighted	Weighted
Control schools	Later treated	Matching	Later treated	Later treated w/ balanced group

[Back](#)

Grades 3-8 Test Score Index by Grade

	Full Sample (1)	Elementary School (2)	Middle School (3)
CEP	0.001 (0.008) [-0.015 SD, 0.017 SD]	0.000 (0.008) [-0.016 SD, 0.016 SD]	0.000 (0.015) [-0.029 SD, 0.029 SD]
Mean of Dependent Variable	-0.22	-0.20	-0.28
Number of Observations	31,395	23,394	8,001
Number of Students	157,960	91,123	74,114
Number of Schools	1,521	1,180	460

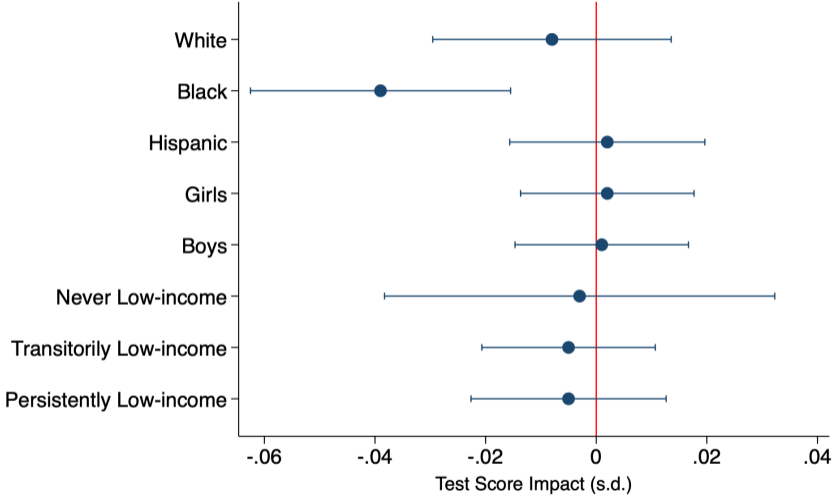
Notes: Based on Chetty, Friedman, and Rockoff (2014), the 95% CI implies an effect on age-25 earnings of about \pm \$30.

Back

Grades 3-8 Test Score Index by Grade and School Poverty

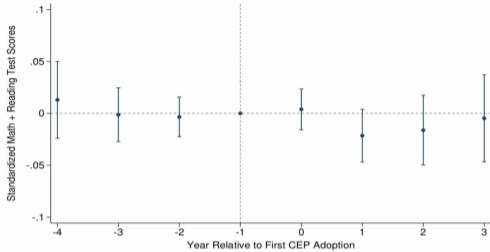
	Full Sample (1)	Elementary School (2)	Middle School (3)
Panel A: Poverty below Medium			
CEP	-0.002 (0.011) [-0.023 SD, 0.019 SD]	-0.005 (0.011) [-0.027 SD, 0.017 SD]	0.002 (0.018) [-0.033 SD, 0.037 SD]
Mean of Dependent Variable	-0.12	-0.07	-0.20
Number of Observations	14,357	9,303	5,054
Number of Students	77,823	38,523	44,605
Number of Schools	691	484	293
Panel B: Poverty above Medium			
CEP	-0.013 (0.013) [-0.038 SD, 0.012 SD]	-0.013 (0.012) [-0.037 SD, 0.011 SD]	-0.009 (0.030) [-0.068 SD, 0.050 SD]
Mean of Dependent Variable	-0.31	-0.28	-0.43
Number of Observations	17,038	14,091	2,947
Number of Students	80,137	52,600	29,509
Number of Schools	830	696	167

Grades 3-8 Test Scores Index by Student Characteristics

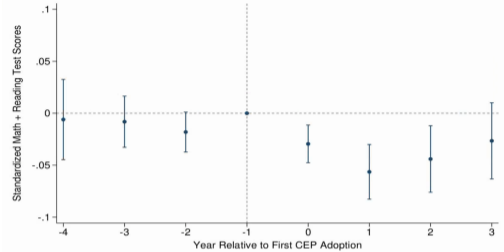


Grades 3-8 Test Scores Index Subgroup Event Study

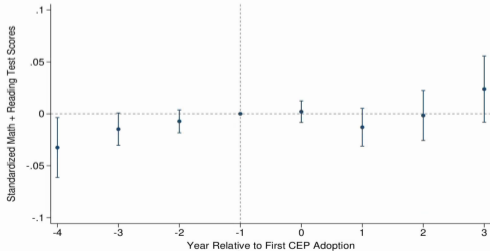
White, Weighted



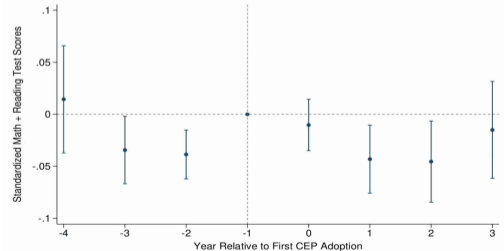
Black, Weighted



Hispanic, Weighted

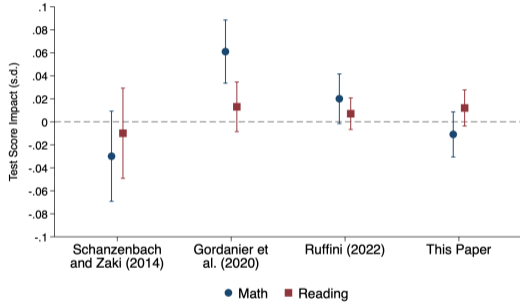


Black, Not Weighted

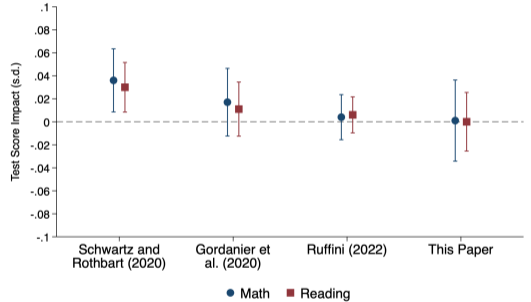


Effects on Grades 3-8 Test Scores across Studies

Grades 3-5



Grades 6-8



[Details on data, sample, first-stage](#) [Back](#)

Estimates of Universal Free School Meals on Take-Up and Test Scores Across Studies

Paper	Context	Years	Grades	Policy	Sample characteristics	Effect on meals per student / yr	Effect on federal subsidies / yr
Schanzenbach & Zaki (2014)	6 districts in 6 states	1999–2003	2–6	breakfast	54% FRP, 38% non-White	34 breakfasts	\$75
Schwartz & Rothbart (2020)	New York City	2010–2013	6–8	lunch	92% FRP, 88% non-White	L: 10 lunches H: 20 lunches	L: \$35 H: \$70
Ruffini (2022)	Nationwide, 9 states	2009–2017	3–8	CEP	H: 45% FRP, 24% non-White F: 49% FRP, 40% non-White	20 breakfasts; 13 lunches	\$89.50
Gordanier et al. (2020)	South Carolina	2014–2016	3–5	CEP	62.3% FRP, 46.5% non-White	29 lunches	\$101.50
This paper	Texas	2011–2018	3–8	CEP	80% FRP, 83% non-White	12 breakfasts and 8 lunches	\$70

[Back](#)

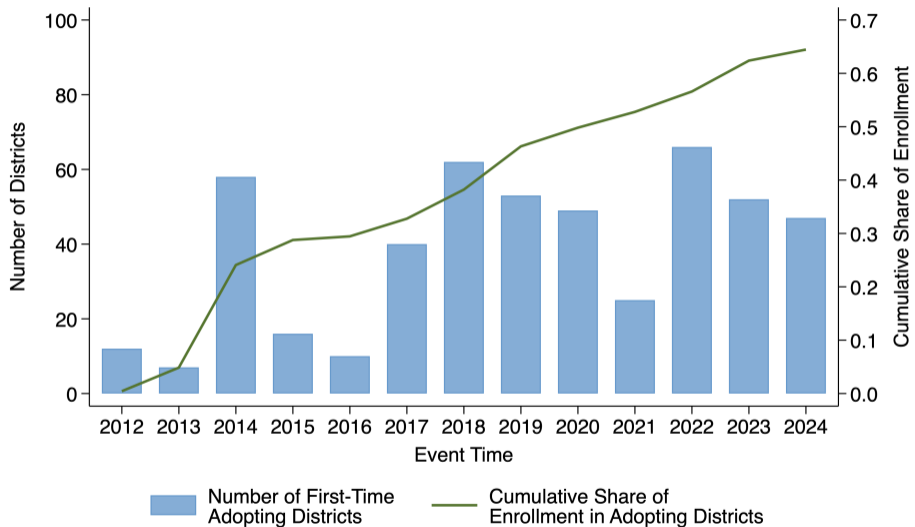
Effects on Number of Days Absent by Grade

	Full Sample (1)	Elementary School (2)	Middle School (3)	High School (4)
CEP	0.060 (0.077) [-1.4%, 3.3%]	0.060 (0.039) [-0.3%, 2.3%]	0.210* (0.114) [-0.2%, 6.4%]	-0.062 (0.280) [-6.4%, 5.1%]
Mean of Dependent Variable	6.45	5.86	6.80	9.55
Number of Observations	64,323	47,733	8,477	8,113
Number of Students	285,150	129,280	94,150	75,886
Number of Schools	1,878	1,280	484	302

Effects on Suspensions by Grade

	Full Sample (1)	Elementary School (2)	Middle School (3)	High School (4)
CEP	0.017* (0.009) [-0.2%, 8.9%]	0.005 (0.007) [-4.4%, 9.4%]	-0.009 (0.017) [-4.1%, 2.4%]	0.064* (0.035) [-0.5%, 14.9%]
Mean of Dependent Variable	0.39	0.20	1.03	0.89
Number of Observations	64,414	47,775	8,498	8,141
Number of Students	285,541	129,430	94,208	76,089
Number of Schools	1,879	1,281	485	303

Distribution of CEP District Event Time in Texas



Multiple Event Times

Distribution of Number of District Event Times

Number of Event Times in District	Number of District	District Enrollment	Share of Districts	Share of Enrollment
0	331	1,309,452	0.40	0.36
1	352	724,873	0.43	0.20
2	84	244,059	0.10	0.07
3	31	271,122	0.04	0.07
4	13	270,860	0.02	0.07
5	6	324,463	0.01	0.09
6	4	214,228	0.00	0.06
7	5	256,465	0.01	0.07
8	2	69,085	0.00	0.02
Total	828	3,684,607	1.00	1.00

Distribution of Districts by CEP Exposure in Seven Years Post CEP

Distribution of Number of District Event Times

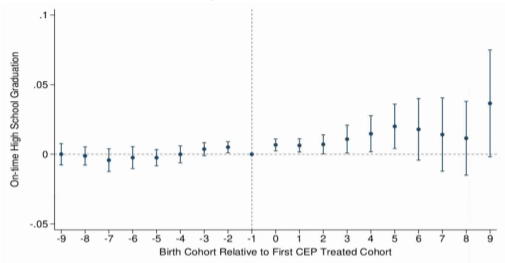
Share of District Enrollment in CEP Schools	Number of Districts	Average Exposure in 7 Years Post CEP Adoption
0.0–0.1	267	0.0
0.11–0.2	8	0.2
0.21–0.3	6	0.3
0.31–0.4	14	0.4
0.41–0.5	22	0.3
0.51–0.6	17	1.3
0.61–0.7	15	1.0
0.71–0.8	24	1.2
0.81–0.9	25	1.1
0.91–1.0	430	1.6
Total	828	1

Effects on On-Time College Enrollment

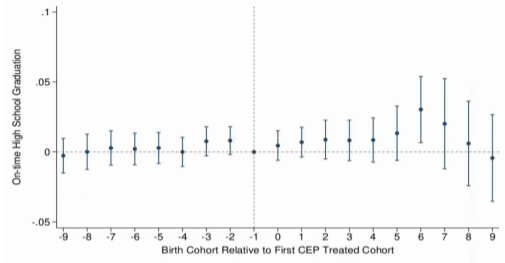
	Full Sample		Birth Cohorts 2000–2006	
	(1)	(2)	(3)	(4)
Exposed in Grades 9–12	-0.000 (0.000) [-0.23%, 0.23%]	-0.001 (0.005) [-2.5%, 2.0%]	-0.002 (0.006) [-3.1%, 2.2%]	-0.001 (0.006) [-2.9%, 2.5%]
Exposed in Grades 6–8	-0.000 (0.007) [-3.3%, 3.3%]	0.006 (0.008) [-2.3%, 5.1%]	-0.003 (0.012) [-6.0%, 4.7%]	0.004 (0.011) [-4.0%, 5.8%]
Exposed in Grades 3–5	0.006 (0.013) [-4.7%, 7.5%]	0.003 (0.014) [-5.7%, 7.1%]		
Mean of Dependent Variable	0.42	0.43	0.44	0.44
Number of Observations	10,341	17,140	2,478	4,792
Number of Students	4,681,713	7,011,310	767,886	1,656,890
Number of Districts	497	828	354	685
Specification	Within District	Matching	Within District	Matching

On-Time High School Graduation

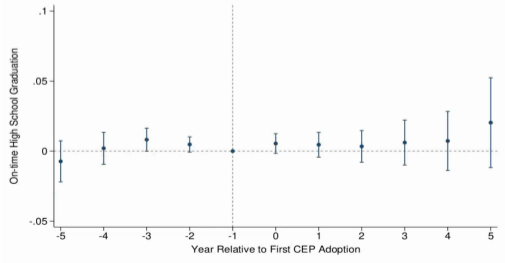
Full Sample, Within District



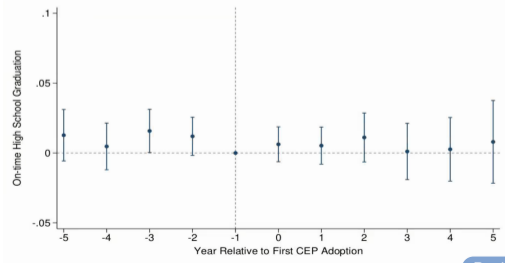
Full Sample, Matching



Birth Cohorts 2000–2006, Within District



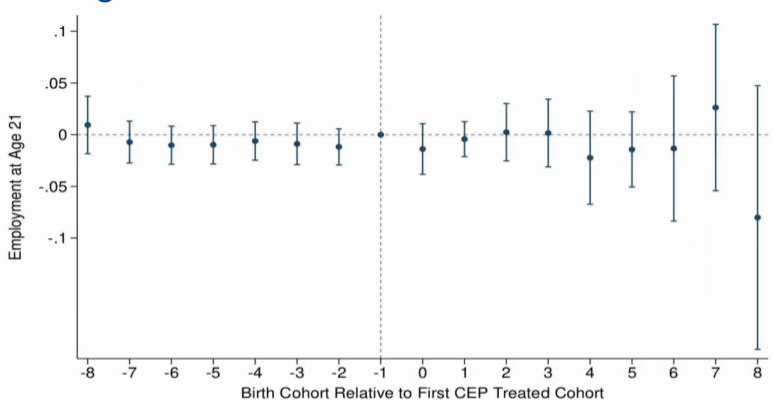
Birth Cohorts 2000–2006, Matching



Effects on On-Time High School Graduation

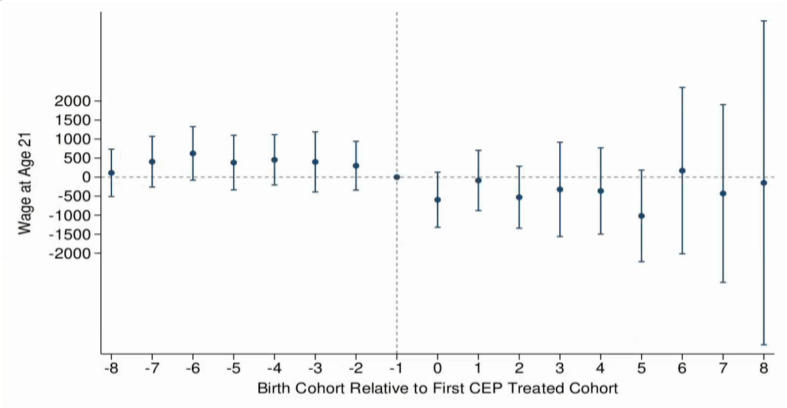
	Full Sample		Birth Cohorts 2000–2006	
	(1)	(2)	(3)	(4)
Exposed in Grades 9–12	0.008*** (0.003) [0.3%, 2.2%]	0.007 (0.005) [−0.5%, 2.7%]	0.005 (0.005) [−0.8%, 2.3%]	0.006 (0.006) [−0.9%, 2.7%]
Exposed in Grades 6–8	0.017** (0.008) [0.1%, 5.2%]	0.015* (0.008) [−0.1%, 4.8%]	0.011 (0.011) [−1.6%, 5.0%]	0.004 (0.011) [−2.7%, 4.0%]
Exposed in Grades 3–5	0.020 (0.014) [−1.1%, 7.5%]	0.008 (0.014) [−3.0%, 5.5%]		
Mean of Dependent Variable	0.63	0.64	0.66	0.66
Number of Observations	10,349	17,140	2,478	4,792
Number of Students	4,681,713	7,011,310	767,886	1,656,890
Number of Districts	497	828	354	685
Specification	Within District	Matching	Within District	Matching

Employment at Age 21



Within Specification	G 9–12	G 6–8	G 3–5
CEP exposure	-0.004 (0.009)	-0.017 (0.019)	-0.081 (0.061)
	[-4.5%, 2.8%]	[-11.3%, 4.2%]	[-41.8%, 8.0%]

Wage at Age 21



	G 9–12	G 6–8	G 3–5
CEP exposure	-24.242	-214.810	-761.464
	(271.538)	(468.279)	(1,343.917)
	[-5.0%, 4.5%]	[-11.3%, 6.3%]	[-30.3%, 16.7%]

Net Government Cost Estimates

- ▶ **Program cost:** The ITT estimate of program cost is \$70 per student per year. Scaling this by the first-stage meal take-up rate (ITT = 0.062) implies a cost of \$1,129 to provide meals to a marginal student.
- ▶ **Taxes from projected children's earnings:**
 - I average the ITT estimates of the test score index across all grades (pre-K to high school), weighting by the share of students in each group. The resulting average test score impact is 0.002. Scaling by the first-stage take-up rate gives 0.03 SD.
 - Assuming a 1 SD gain in test scores increases earnings by 10%, a 0.03 SD effect implies a 0.3% earnings gain. This corresponds to a present discounted lifetime earnings gain of about \$1,650.
 - With a 20% tax rate, this implies a tax revenue gain of \$329.
 - Spread over 13 years of CEP exposure (K–12), this equals a \$25 gain in annual tax revenue per year of CEP.
- ▶ **Net cost to government** $\$1,129 - \$25 = \$1,104$

Willingness to Pay

Value	Type	References and Assumptions
\$214	Grocery expenditure savings	Handbury and Moshary (2021) find that when a school adopts CEP, household grocery spending falls by 7% (about \$14/month in 2016 dollars). Inflated to 2023
\$458	Out-of-pocket school meal spending	Before CEP, 36% of FRP ineligible students ate school breakfast and 57% ate lunch daily. Average price: \$2.0 (breakfast), \$3.20 (lunch)
\$974	Value of time saved on meal prep and packing	Guthrie and McClelland (2009) show when children eat school-provided meals, parents save about 24 minutes each day that would otherwise be spent preparing and packing meals at home. It totals 72 hours per year. Includes 1 additional hour saved from not completing annual school meal applications. Valued at \$13.5/hour
\$1,188	Grocery + time savings	Combines grocery expenditure savings (\$214) and evaluation of time saved (\$974)

[Back](#)