When Free Lunch Is No Longer a Proxy for Student Poverty: Effects of the Community Eligibility Provision on State K–12 Funding*

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Abstract

States have historically used students' eligibility for the free and reduced-price meal program (FRP) to define student economic disadvantage. The count of economically disadvantaged students is used to allocate K-12 funding in many states. The Community Eligibility Provision (CEP), a universal free school meal program, can lower the count of economically disadvantaged students due to a reduction in applications. This can skew state K-12 funding if not actively monitored. I find that CEP reduced meal applications by 7.6 percentage points (a 27 percent decline) and lowered state funding by approximately $286 per pupil annually, or 2 percent. These effects are concentrated in states with high CEP exposure and in those that rely on alternative income measures to supplement FRP data. As universal free school meals continue to expand, this paper highlights the importance of monitoring FRP data and its downstream effects on school finance.

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1 Introduction

Education researchers and state policymakers have long used eligibility for the free and reduced-price meal program (FRP) as a proxy for student poverty. Eligibility is set at an income threshold of 185 percent of the federal poverty line (currently $60,000 for a family of four). This measure is widely used for accountability monitoring, program evaluation, and the allocation of resources to "economically disadvantaged" students, with more than 30 states incorporating FRP into their poverty measures (EdBuild, 2020).

However, the introduction of the Community Eligibility Provision (CEP) has weakened the usefulness of FRP eligibility as a proxy for student poverty. Implemented nationwide in 2014, CEP allows relatively high-poverty schools to provide free meals to all students without collecting individual FRP applications. Once a school adopts CEP, all students are automatically enrolled for free meals. As roughly half of schools have adopted CEP (Hysom and FitzSimons, 2024), FRP enrollment has increasingly drifted from students' underlying economic circumstances (see Figure 1). Prior to CEP, FRP participation closely tracked the share of children living in families with incomes below 185 percent of the federal poverty line. After CEP's introduction, however, FRP participation remained elevated while poverty rates declined. This growing gap suggests that FRP participation no longer provides a reliable measure of student economic disadvantage.

This divergence has implications for school district finance, since FRP-based measures are widely used to allocate state K–12 funding to economically disadvantaged students. Yet despite growing concern over how CEP affects the measurement of student poverty (Chingos, 2016, 2018; Gutierrez and Blagg, 2026), little is known about its consequences for state funding to school districts. This paper fills this gap by examining how CEP affects state funding using linked administrative data on school meal applications, CEP adoption, and school district finances. I employ two complementary research designs. The first is a difference-in-differences design comparing earlier-adopting districts with later-adopting ones. The second is a triple-difference design comparing CEP schools in states that allocate funding based on student disadvantage with CEP schools in states that do not.

I find that CEP adoption reduced meal applications by 7.6 percentage points, or 27 percent relative to pre-CEP mean. This decline has downstream consequences for state funding: according to the triple-difference design, CEP reduced state funding by $286 per student annually, a 2 percent decline. These effects are concentrated in states with high CEP exposure.

Next, I investigate potential mechanisms. The magnitude of the funding decline depends on how states

replace the FRP application data lost under CEP, and in particular on whether the replacement relies on family-reported forms or on administrative records. Declines are concentrated in states that rely on *alternative income forms*—surveys distributed in CEP schools that ask families to report household income, similar to the FRP application but decoupled from meal eligibility.[1] Because completing these forms no longer secures a meal benefit, families have little incentive to return them, and the resulting non-response produces a hidden undercount of low-income students that lowers state K–12 funding to the districts those students attend. By contrast, I find no statistically significant declines in states that recover the count from administrative records. Because such counts derive from program-enrollment records rather than voluntary forms, they are not eroded by non-response: a state can scale *direct-certification* counts (students automatically certified for free meals through their household's enrollment in means-tested programs such as SNAP and Medicaid) by a fixed multiplier to approximate the FRP-eligible share.

This paper contributes to three strands of literature: the effects of school meal programs, the measurement of student economic disadvantage, and administrative burden in safety net programs. First, it adds to a growing body of work on the effects of CEP, which has largely focused on student outcomes and yielded mixed findings. Cohen et al. (2021) review recent work across disciplines and document a range of positive associations between school meal programs and student outcomes. By contrast, Ayllón and Lado (2025), focusing on the economics literature, find that school meal programs in high-income countries have minimal causal effects on students' behavior, health, and educational outcomes after accounting for publication bias. Rothbart, Schwartz and Gutierrez (2023) show that CEP raised food-service revenues in New York State but do not examine school finances beyond food service. This paper instead studies the spillover effects of CEP on non-food state funding allocated to school districts.

Second, it contributes to the literature on FRP data as a measure of student poverty. This paper shows that CEP-induced changes to FRP data can be financially consequential for districts, and it evaluates alternatives such as direct certification and income forms. FRP has long been recognized as an imperfect measure of student poverty (Harwell and LeBeau, 2010; Michelmore and Dynarski, 2017; Domina et al., 2018): some eligible families do not participate (Gleason, 2008) and income reported on school meal applications is not rigorously verified (Harwell and LeBeau, 2010). However, it captures student disadvantage (Domina et al., 2018) and remains a widely used measure of student poverty. A few studies specifically examine how CEP

[1] The state income forms in use are slightly simpler than the federal free or reduced price meal form. See Appendix B for an example.

changes FRP data. Koedel and Parsons (2021) show that CEP alters the information conveyed by school-level FRP rates, and policy reports have raised related concerns about a growing disconnect between FRP participation and student poverty (Chingos, 2016, 2018; Gutierrez and Blagg, 2026). Spiegel et al. (2025), using linked administrative tax records, find that alternatives—particularly direct certification—may provide more accurate estimates of student poverty.

Third, this paper relates to the literature on administrative burden and safety net program participation. Herd and Moynihan (2025) emphasize how administrative burdens, including learning, compliance, and psychological costs, can reduce take-up of public benefits. Rafkin, Solomon and Soltas (2023) show potential welfare gains from shifting targeted school meals to universal provision by reducing ordeals. This paper highlights unintended consequences of reducing administrative burdens in school meal programs. Unlike other safety net programs, school meal data are deeply intertwined with the education system. On the one hand, CEP expands access to free school meals and reduces administrative burdens. On the other hand, it also changes the FRP data that policymakers have historically used to target education resources.

2 Background

2.1 School Meals Data and State K–12 Funding Allocation

School meal programs are deeply integrated with the K–12 education system. Although the primary goal of the National School Lunch and School Breakfast Programs is to provide nutrition assistance, the data they generate also drive state funding. About 35 states allocate additional funding to "economically disadvantaged" students, defined in most of these states as students eligible for free or reduced-price meals—those with family income below 185 percent of the federal poverty line. Because the U.S. K–12 system is highly decentralized, funding levels and formulas towards economically disadvantaged students vary substantially: states apply per-student multipliers ranging from modest (Nevada's 1.03) to large (Maryland's 1.91), while others provide flat supplements (New Hampshire's $1,900 per disadvantaged student) (EdBuild, 2020).

To expand access to free meals and reduce administrative burden, the federal government introduced CEP, under which all students at participating schools are automatically eligible for free meals. Adoption is decided at the district level and can apply to an entire district or a subset of its schools. Since CEP schools no longer collect FRP applications, adoption changes how student poverty is measured—and, in turn, district funding in states that rely on FRP-based counts of economically disadvantaged students. The funding-

relevant count of economically disadvantaged students can go down. Identifying a student as economically disadvantaged still requires an application, a direct-certification match, or a returned income form — and CEP removes the application while the substitute form goes unreturned.

States differ in how they respond to this change:

- Alternative income form: On top of direct certification, states distribute an alternate income form (the Family Income Inquiry form) in CEP schools to collect household income from students not already identified through direct certification.
- Direct certification through other means-tested programs: States replace FRP with direct certification as the poverty measure in both CEP and non-CEP schools, based on enrollment in programs such as SNAP, TANF, Medicaid, and foster care.
- Direct certification $\times$ multiplier: States take the direct-certification count as a share of total enrollment and apply a multiplier (typically 1.6) to scale it up to rates roughly comparable to FRPL rates in non-CEP schools.
- Freeze existing FRPL data: States freeze FRPL data at a point in time—for either CEP schools or all schools—and keep using those pre-CEP rates (a hold-harmless approach).
- Title I / Census poverty data: States substitute an independent poverty measure, such as the Census Bureau's annually updated Small Area Income and Poverty Estimates (SAIPE).
- No poverty-based funding: Some states do not allocate any funding to low-income students.

Appendix Table A.1 lists the state for each category.

2.2 Conceptual Framework

I develop a simple framework to illustrate how the adoption of CEP may affect state education funding through changes in the measured share of economically disadvantaged students.

2.2.1 Setup of a Simple Model

State Funding Allocation. Consider a state that allocates additional aid to school districts according to the share of low-income students. Let F denote per-pupil state funding. Each district receives a base allocation

$B > 0$ for every student and an additional weight $w \geq 1$ applied to students classified as economically disadvantaged. Let $s \in [0,1]$ denote the true share of low-income students in the district.

Prior to CEP adoption, eligibility for free or reduced-price lunch provides the primary measure of economic disadvantage. Per-pupil funding is therefore given by the following equation where funding is linear in the measured low-income share.

$$F_0 = B\big[(1-s) + ws\big] = B\left[1 + (w-1)s\right] \tag{1}$$

CEP and Poverty Measurement. Under CEP, traditional household application forms are no longer collected. As a result, the observed measure of student disadvantage may differ from the underlying poverty rate. Let s^{CEP} denote the measured low-income share under CEP participation. CEP may induce measurement error in the observed poverty share if administrative certification does not fully capture economically disadvantaged students previously identified through FRP applications. In practice, s^{CEP} likely reflects the direct certification rate, supplemented in states that collect alternative household income forms by the responses to those forms.

Let $c \in [0,1]$ denote the share of districts in the state adopting CEP. Post-CEP funding is then

$$F_1 = (1-c)B\left[1 + (w-1)s\right] + cB\left[1 + (w-1)s^{\text{CEP}}\right] \tag{2}$$

The first term represents funding for non-adopting districts, while the second term represents funding for CEP-adopting districts. The change in per-pupil funding induced by CEP adoption is

$$\begin{aligned} \Delta F &= F_1 - F_0 \\ &= B(w-1)c\left(s^{\text{CEP}} - s\right) \end{aligned} \tag{3}$$

Equation 3 highlights the central mechanism of the framework: funding changes arise when CEP alters the measured share of economically disadvantaged students relative to the pre-CEP benchmark. If CEP lowers measured disadvantage ($s^{\text{CEP}} < s$), funding declines. Conversely, if administrative certification captures additional students or improves reporting accuracy, funding may increase. This can happen if states inflate s^{CEP}.[2]

[2] In Mississippi, all students in CEP schools are counted as eligible for free meals for at-risk funding purposes. In five other states, the share of students directly certified for free meals is multiplied by a factor (typically 1.6) to determine funding.

Comparative Statics. The framework delivers several straightforward comparative statics.

First, differentiating with respect to the low-income funding weight w gives

$$\frac{\partial \Delta F}{\partial w} = Bc\left(s^{\text{CEP}} - s\right) \tag{4}$$

States with larger compensatory weights experience larger funding effects from a given change in measured disadvantage.

Second, differentiating with respect to CEP adoption c gives

$$\frac{\partial \Delta F}{\partial c} = B(w-1)\left(s^{\text{CEP}} - s\right) \tag{5}$$

As CEP participation expands, the per-pupil funding effect grows in magnitude.

Illustrative Example. To illustrate the magnitude of the mechanism, consider the following parameterization:

$$B = 8000, \qquad w = 1.25, \qquad s = 0.60, \qquad s^{\text{CEP}} = 0.40, \qquad c = 0.50$$

Substituting these values into Equation 3

$$\Delta F = 8000(0.25)(0.5)(0.4 - 0.6) = -200$$

In this example, CEP adoption reduces per-pupil state funding by approximately $200. This example is not intended to replicate the full complexity of state school-finance systems, which frequently incorporate hold-harmless provisions, categorical grants, enrollment adjustments, and multiple measures of student need. Rather, the exercise demonstrates how CEP can affect funding allocations through changes in the observed count of economically disadvantaged students.

3 Data and Sample

In this paper, I use four district-level datasets: school meal applications, CEP take-up, school district finances, and the National Center for Education Statistics (NCES) Common Core of Data.

3.1 Data

School Meal Applications. First, I use school meal application data collected by the U.S. Department of Agriculture (USDA) to identify how CEP affects application burdens. The data is drawn from form FNS-742 (the School Food Authority Verification Collection Report), which reports the district-level number of students found eligible for free school meals through the application process. I obtained the data for school years 2013–2014 through 2021–2022 via a public information request. For the rest of the paper, I refer to each school year by its starting calendar year (e.g., 2013 denotes the 2013–2014 school year).

CEP Participation Status. The CEP participation data for school years 2013 through 2023 is obtained from the Food Research & Action Center (FRAC). FRAC compiled the universe of schools from state Department of Education websites. This universe includes public, charter, and private schools, all of which are eligible for the traditional school meal programs or CEP. For each school, the data contains the share of students directly certified for free meals (known as the Identified Student Percentage, ISP), student enrollment, and CEP participation status. I collapse the school-level data to the district level, defining a district as a CEP participant if at least one of its schools participates in CEP.

School District Finance Data. I obtained school district finance data from the NCES Common Core of Data School District Finance Survey (F-33) for fiscal years 2009–2023. The F-33 is a comprehensive source of financial information on public elementary and secondary school districts, including both traditional public and charter school districts. My primary outcome variable is state revenue per pupil.

Common Core of Data (CCD). The Common Core of Data (CCD) is an NCES dataset that collects information annually from public schools and school districts. I obtain district-level characteristics such as the share of students by race and ethnicity, the share eligible for subsidized meals, the share of English language learners, and total enrollment. Note that how the share of students eligible for subsidized meals is measured has changed since the introduction of CEP.[3]

I link the school district finance and CCD data through a unique district identifier. However, this identifier is not available in the USDA meal application and FRAC participation data. I therefore link these two

[3]Four jurisdictions reported solely the number of directly certified students (Delaware, the District of Columbia, Massachusetts, and Tennessee). The remaining jurisdictions were split: about half reported solely the number of FRPL students for each school, and the other half reported both FRPL and direct certification for each school (or FRPL for some schools and direct certification for others). See `https://nces.ed.gov/learn/blog/understanding-school-lunch-eligibility-common-core-data`.

datasets to the others manually, using a combination of state and district names.

3.2 Sample Construction

I construct a district-year panel spanning 2009 to 2023. My main sample comprises school districts that adopted CEP by 2023. Although I rely primarily on later-treated districts as controls, the 2023 adoption cohort effectively serves as a never-treated group in the revenue analysis: because I observe revenue only through 2022, these districts are never observed after adoption. I also drop Wyoming from the sample.[4]

Table 1 lists the number of school districts that adopted CEP for the first time in each year from 2013 to 2023. By the end of 2023, over 6,000 school districts had adopted CEP—roughly half of all school districts in the United States. The table also shows that earlier-adopting districts have a higher share of students eligible for subsidized meals and a larger share of non-White students, although state revenue per pupil shows no consistent trend, aside from somewhat higher levels among the most recent (and smallest) cohorts.

Table 2 provides summary statistics for the full sample, by year of first CEP adoption (2013–2019 vs. 2020–2023), and by state poverty funding status (with and without funding for economically disadvantaged students). In the difference-in-differences design, I compare earlier- to later-treated districts. The table shows that earlier-treated districts are more disadvantaged, although state revenue per pupil is similar across the two groups. In the triple-difference design, I additionally compare states with and without poverty funding: state revenue per pupil is roughly $2,000 higher in states that provide funding to economically disadvantaged students.

4 Empirical Strategy

4.1 Difference-in-Differences (DiD)

I estimate the causal effect of CEP adoption using the difference-in-differences estimator of Callaway and Sant'Anna (2021), comparing earlier-adopting to later-adopting districts. A district is treated if at least one of its schools adopts CEP. The comparison group consists of not-yet-treated districts—those that eventually adopt CEP but have not done so by year t—together with the 2023 cohort, which is effectively never treated because revenue is observed only through 2022.

[4]Only 5 percent of Wyoming's students attend CEP schools, and its per-pupil K–12 funding is both high and highly variable across years, likely reflecting the small enrollments of its districts.

The estimator first computes cohort-time average treatment effects on the treated, $ATT(g,t)$, where a cohort g is the year a district first adopts CEP, using a series of two-group, two-period comparisons. It then aggregates these into summary effects, weighting by cohort size. Because it never uses already-treated districts as controls, this approach avoids the negative-weighting problem that can arise in two-way fixed-effects (TWFE) estimation of staggered DiD designs.

Let $G_i \in \{2013, \ldots, 2023\}$ denote the year district i first adopts CEP. For $t \geq g$, the cohort-time average treatment effect on the treated is

$$ATT(g,t) = \mathbb{E}[Y_t - Y_{g-1} \mid G_i = g] - \mathbb{E}[Y_t - Y_{g-1} \mid D_t = 0,\ G_i \neq g], \tag{6}$$

where Y_{g-1} is the outcome in the period just before cohort g is treated, the first term is the outcome change for cohort g, and the second is the change for districts not yet treated by year t. Identification requires parallel trends: absent CEP, the average outcome for cohort g would have evolved like that of the not-yet-treated districts.[5] I restrict the event-study window to relative years -7 to 7 for revenue outcomes and -6 to 6 for application outcomes, where the coefficient at -1 is normalized to zero by construction and year 0 corresponds to the year a school district adopts CEP.

4.2 Triple Differences (DDD)

The DiD strategy above compares districts that adopt CEP earlier to those that adopt later, before and after adoption. This comparison may be biased if earlier-adopting districts differ systematically from later-adopting districts in ways that also affect state funding trends, such as underlying poverty levels or other district characteristics. Alternatively, one could compare CEP-adopting districts in poverty-funding states to CEP-adopting districts in non-poverty-funding states. This comparison may also be biased if states differ in broader economic conditions, education spending trends, or statewide fiscal policies unrelated to CEP.

The triple-difference design addresses both concerns by comparing how the funding gap between earlier- and later-adopting districts evolves in poverty-funding states relative to how the same gap evolves in non-

[5] The analogous TWFE event-study specification is

$$Y_{it} = \alpha_i + \alpha_t + \sum_{\substack{k=-7 \\ k \neq -1}}^{7} \delta_k D_{it}^k + u_{it},$$

where Y_{it} is the outcome for district i in year t, α_i and α_t are district and year fixed effects, D_{it}^k equals 1 if district i is k years from its CEP adoption ($k = -1$ omitted as the reference period), and the δ_k are the coefficients of interest.

poverty-funding states. Under the identifying assumption that, absent CEP-related funding mechanisms, the relative funding trends between earlier- and later-adopting districts would have evolved similarly across the two groups of states, the estimator isolates the effect of CEP adoption on state funding that operates through poverty-based funding formulas.

The treatment states are those with poverty-based school funding formulas, where CEP adoption can plausibly affect state education aid through changes in poverty measurement; the control states are those without such formulas, where CEP adoption should not substantially affect state funding allocations. Intuitively, I compare how revenue evolves around CEP adoption—for districts that adopt earlier relative to those that adopt later—and ask whether that change differs between states with and without poverty-based funding.

I estimate the following event-study specification:

$$Y_{it} = \gamma_i + \gamma_{st} + \sum_{\substack{k=-7 \\ k\neq -1}}^{7} \lambda_k E_{it}^k + \sum_{\substack{k=-7 \\ k\neq -1}}^{7} \beta_k \left(E_{it}^k \cdot F_s\right) + u_{it}, \tag{7}$$

where Y_{it} is the outcome for district i in year t; γ_i and γ_{st} are district and state-by-year fixed effects; E_{it}^k equals 1 if district i is k years from its CEP adoption ($k = -1$ omitted as the reference period); and F_s equals 1 if state s allocates funding to low-income students. The λ_k trace the CEP event-study path in control (non-poverty-funding) states, and the triple-difference coefficients β_k measure the additional effect in poverty-funding states. State-by-year fixed effects absorb state-level shocks, including statewide fiscal policy, so β_k is identified from the differential timing of CEP adoption across districts within states.

I also estimate a static triple-difference specification and a heterogeneity-robust version following Ortiz-Villavicencio and Sant'Anna (2025). The triple-difference design applies only to the revenue outcome, since the poverty-based funding mechanism affects state revenue but not application behavior.

5 Results

5.1 Effects on FRP Applications and Revenues

I first present event-study estimates. Figure 2 displays the share of students submitting an application for subsidized meals. Although there is some evidence of a pre-trend, the share of students submitting applications declines sharply following CEP adoption, with a clear discontinuity between the pre- and post-adoption

periods. Table 3, Panel A, Column 1, presents the DiD estimates. CEP adoption reduced the share of students applying for free and reduced-price meals by 7.6 percentage points, representing a 27 percent decline relative to the pre-adoption baseline. The drop in application is the upper bound on how much information CEP removed, since some of the lost applications would be picked up by expansion of direct certification to include Medicaid data matching.

The share of NCES reported number of FRP eligible students show similar patterns. Figure 3 plots the share of students income-eligible for free and reduced-price lunch as reported in NCES across the 16 states that consistently report these data. The income-eligible count drops only 2–5 points, significant only at event years 2–4, and the decline is smaller than Figure 2. It indicates that direct certification absorbs most of the application collapse: the large majority of students who stop applying are still picked up through SNAP/Medicaid matches, so the funding-relevant undercount is far smaller than the behavioral response.

Next, I examine annual state revenue per pupil. Figure 4 shows parallel pre-treatment trends for both the DiD and DDD estimates. Following CEP adoption, both specifications indicate a decline in state revenue per pupil. Panel B of Table 3 reports the corresponding estimates. According to the DDD specification, state revenue per pupil declined by $286, or approximately 2.5 percent relative to the pre-adoption baseline. The DiD estimate indicates a larger decline of $358, or about 3 percent. In contrast, food-service revenue per pupil increased by $13 under the DiD specification, and the estimated increase is larger in magnitude under the DDD specification.

5.2 Subgroups

The effects may vary depending on the extent to which CEP is implemented within a state. Figure A.1 presents event-study estimates for high- and low-CEP-exposure states. High exposure is defined as the 25 states in which at least 37 percent of students are enrolled in CEP schools, while the remaining states are classified as low-exposure states. Table 4 presents the corresponding regression estimates. The effects are concentrated among high-exposure states. The DiD estimates indicate a decline in state revenue per pupil of $469, equivalent to 4 percent of the baseline mean, while the DDD estimates indicate a decline of $287, or 2 percent of the baseline mean. In contrast, both the DiD and DDD estimates for low-exposure states are statistically insignificant.

5.3 Mechanisms

Next, I explore potential mechanisms by splitting the sample according to how states respond to the loss of FRP data following CEP adoption. In Table 5, I examine heterogeneity in the effects of CEP adoption based on how states incorporate FRP-related information into funding allocations.

Panel A shows a decline in subsidized meal applications across all categories of states. States that rely on alternative income forms, direct certification through other means-tested programs, or Title I/Census data experience declines of approximately 8 to 12 percentage points. In contrast, states that use the most recent FRPL data, a direct-certification multiplier, or provide no poverty-based funding exhibit declines of roughly 20 percentage points. This pattern suggests that districts in the latter group may have weaker incentives to encourage students and families to submit income information once CEP is adopted.

Panel B reports the effects on state revenue per pupil. Among states that use alternative income forms, CEP adoption is associated with a statistically significant decline of $1,045 per pupil, equivalent to approximately 8 percent of the pre-adoption mean. States that rely on Title I/Census data experience a similarly sized decline ($960 per pupil), which is statistically significant at the 10 percent level. By contrast, the estimated effects for the remaining categories are not statistically distinguishable from zero. Moreover, the point estimates are positive for states that use direct certification, the most recent FRPL data, or a direct-certification multiplier, though they are not statistically distinguishable from zero, suggesting that these approaches may better mitigate potential funding losses associated with CEP adoption. The corresponding event-study graphs are presented in Appendix Figure A.2.

5.4 Robustness checks

Table 6 presents a series of robustness checks for the main estimates of the effect of CEP adoption on state revenue per pupil. Across specifications, the results consistently indicate a decline in state revenue following CEP adoption. The unweighted estimate in Column (1) implies a reduction of $866 per pupil. Weighting observations by enrollment attenuates the estimate to $385 per pupil, but it remains statistically significant at the 1 percent level. Restricting the sample to a balanced panel of districts (Column 3) yields an even larger decline of $952 per pupil, while limiting the sample to districts with at least 50 percent FRP-eligible students (Column 4) produces an estimate of $794 per pupil. The triple-difference specification in Column (5) generates a smaller and statistically insignificant estimate. Finally, Column (6) shows that CEP adoption

reduces state revenue per pupil by approximately 4.8 percent, broadly in line with the level specifications. Overall, these results suggest that the negative effect of CEP adoption on state revenue is robust to alternative weighting schemes, sample restrictions, and model specifications. The corresponding event-study graphs are presented in Appendix Figure A.3.

6 Discussion and Conclusion

This paper examines how CEP, by allowing high-poverty schools to offer universal free meals without collecting household applications, affects the free and reduced-price meal data that many states use to direct funding toward economically disadvantaged students. Using linked administrative data, I find that CEP adoption reduces the share of students applying for subsidized meals by 27 percent, easing the administrative burden the program was designed to relieve. This reduction, however, degrades a measure of disadvantage embedded in many state funding formulas: on average, CEP adoption lowers state revenue per pupil by approximately $286, or about 2.4 percent of the pre-adoption mean, with effects concentrated among districts in high-exposure states.

The funding consequences depend on how states measure disadvantage once application-based counts become unavailable. States that continue to rely on alternative income forms or on Title I/Census data experience the largest revenue declines, whereas states that draw on direct certification or the most recent available meal data show no statistically detectable losses. This heterogeneity points to the underlying mechanism: the revenue effects arise not from CEP itself, but from the disruption it introduces to the poverty proxies that states feed into their funding formulas.

These findings carry direct policy relevance as universal free school meals continue to expand. They suggest that decoupling funding allocations from meal-application data—by adopting direct certification measures—can preserve the administrative benefits of CEP without eroding resources for disadvantaged students.

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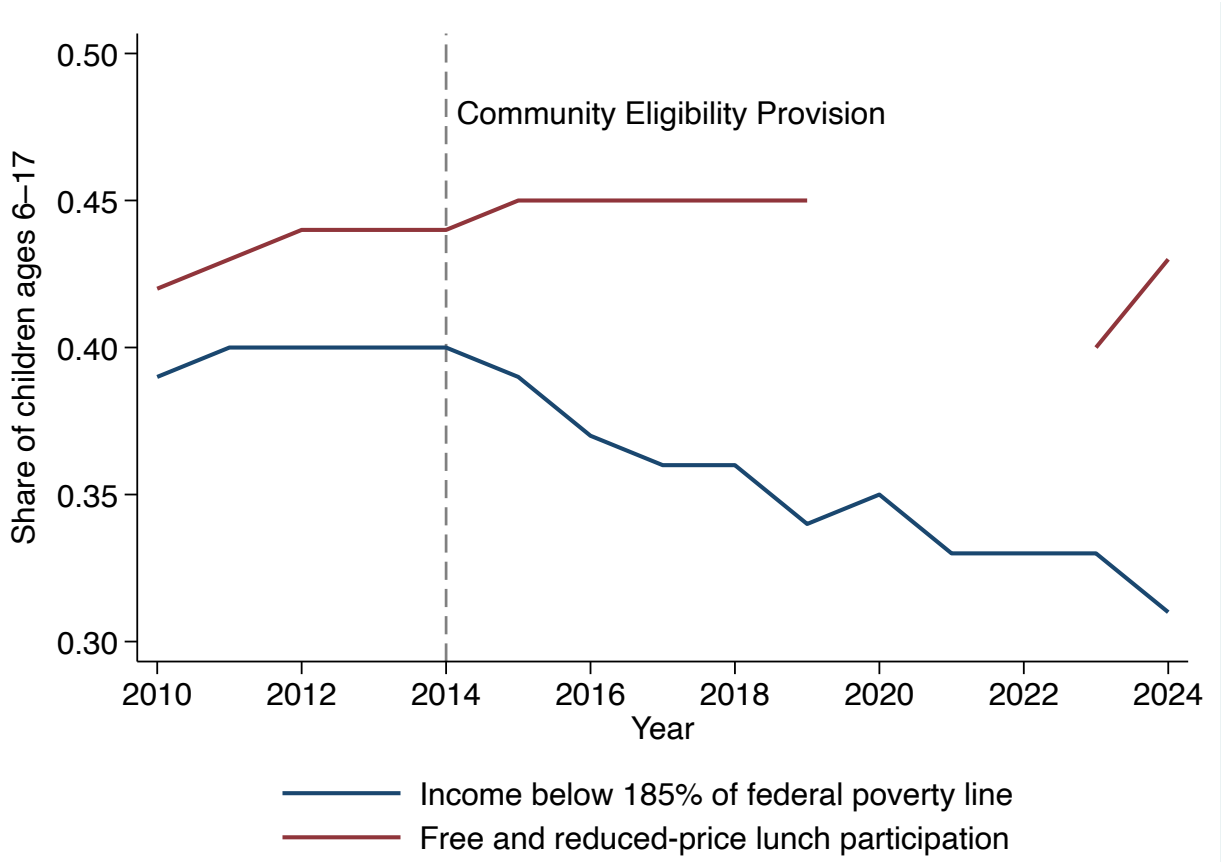
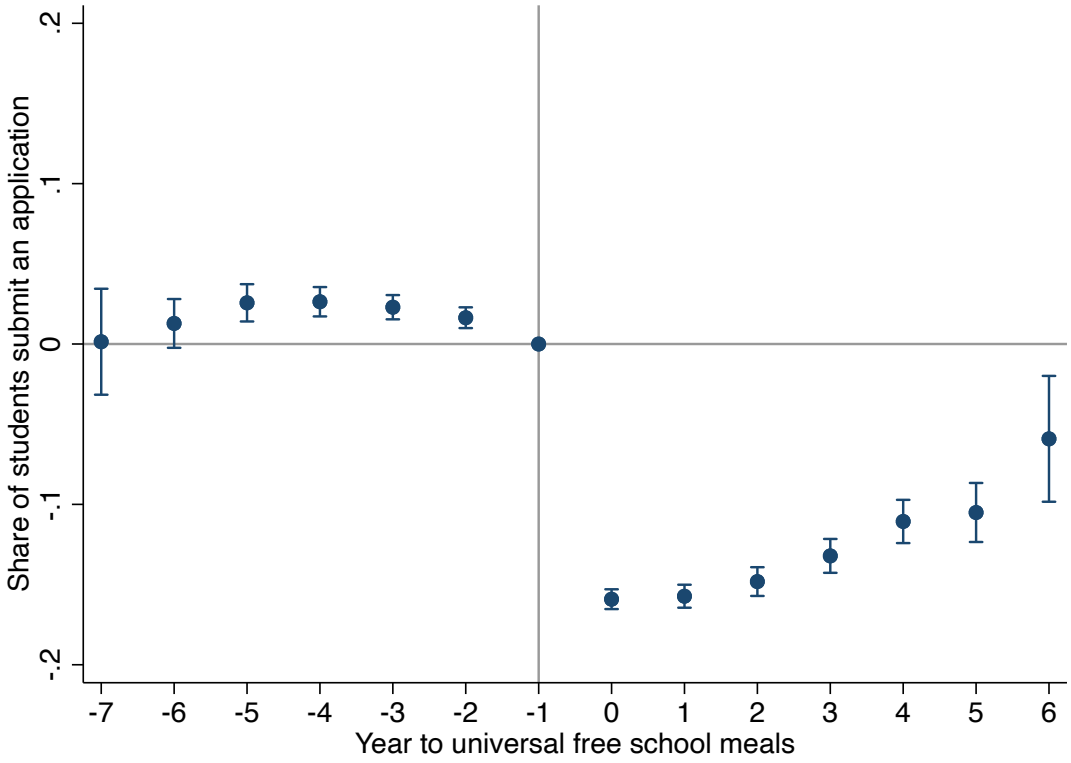
Spiegel, Michelle, Leah R Clark, Thurston Domina, Vitaly Radsky, Paul Y Yoo, and Andrew Penner. 2025. "Measuring School Economic Disadvantage." *Educational Evaluation and Policy Analysis*, 47(2): 413–435.

Figure 1: Divergence between Subsidized Lunch Participation and Student Poverty



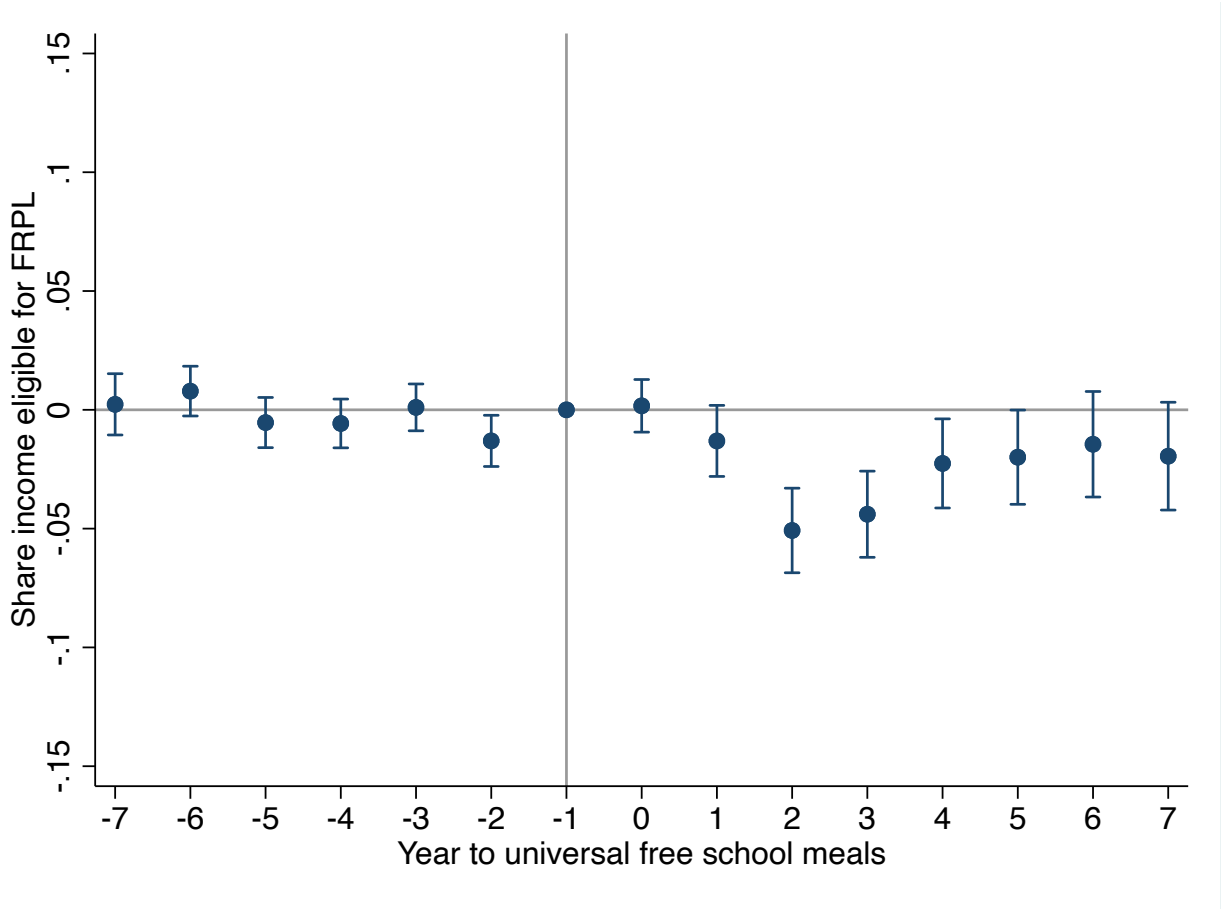
Notes: The share of children ages 6–17 with family income below 185 percent of the federal poverty line is from the Census Bureau American Community Survey (ACS) 1-Year Estimates, Detailed Table B17024. Free and reduced-price lunch participation data is from the U.S. Department of Agriculture; the rates shown here are calculated as the number of children receiving free and reduced-price lunch divided by the total number of children ages 6–17 from the Census Bureau. FRPL participation is omitted for school years 2020–2021 and 2021–2022: federal pandemic waivers made school meals free for all students, and only 35% and 22% of children received lunch in person in those years, respectively, with the rest receiving pandemic electronic benefits (P-EBT) for missed meals. The dashed line marks the 2014 nationwide rollout of the Community Eligibility Provision (CEP).

Figure 2: Share of Students Submitting an Application for Subsidized Meals



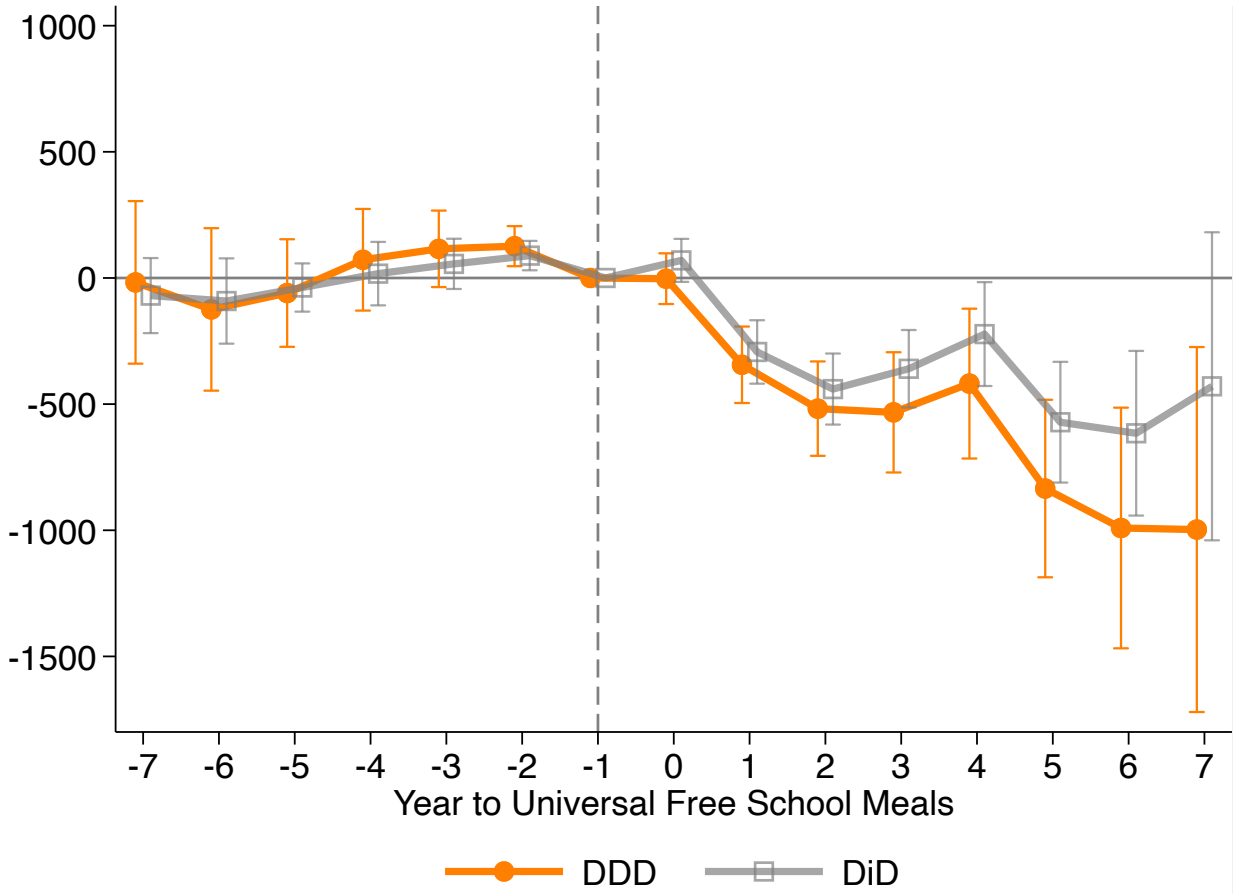
Notes: This figure plots event-study estimates from Equation (6), where the outcome is the share of students submitting an application for subsidized meals. The application data is available only for school years 2013–2014 through 2021–2022, so the sample comprises school districts that adopted the Community Eligibility Provision (CEP) between 2014 and 2021. Event time -1 is the omitted reference period. All estimates are weighted by district enrollment. Bars show 95% confidence intervals.

Figure 3: Share of Students Income-Eligible for Free and Reduced-Price Lunch (NCES)



Notes: This figure plots the event-study estimates from Equation (6), where the outcome is the share of students in a district income-eligible for free and reduced-price lunch as reported in National Center for Education Statistics (NCES). The sample consists of school districts that adopted CEP by the 2023-2024 school year in the 16 states that consistently reported Free and Reduced-Price Lunch data (Arkansas, Hawaii, Indiana, Iowa, Kansas, Louisiana, Maryland, New Hampshire, New Mexico, New York, North Carolina, Oklahoma, Rhode Island, Vermont, Washington, and Wisconsin), using a district-year panel spanning 2009-2022. Event time -1 is the omitted reference period. Estimates are not weighted by district enrollment. Bars represent 95% confidence intervals.

Figure 4: Annual State Revenue per Pupil



Notes: This figure plots the event-study estimates from Equations (6) and (7), where the outcome is annual state revenue per pupil. The triple-difference (DDD) estimates are shown as solid circles, while the difference-in-differences (DiD) estimates are shown as square markers. The sample consists of school districts that adopted CEP by the 2023–2024 school year, using a district-year panel spanning 2009–2022. Event time -1 is the omitted reference period. All estimates are weighted by district enrollment. Bars represent 95% confidence intervals.

Table 1: School District Characteristics by Year of First CEP Adoption

Year first adopted CEP	Number of school districts	Share of students eligible for subsidized meals	Share non-White	State revenue per pupil
2013	431	0.72	0.49	10273
2014	1049	0.70	0.51	10385
2015	546	0.68	0.48	10905
2016	537	0.67	0.50	10717
2017	398	0.63	0.48	11276
2018	503	0.62	0.47	10792
2019	526	0.60	0.46	9574
2020	272	0.57	0.35	9739
2021	134	0.55	0.37	15365
2022	748	0.55	0.37	12420
2023	893	0.48	0.24	11437
Total	6037	0.62	0.43	10965

Notes: This table presents statistics by the year in which school districts first adopted CEP. All years refer to the start of the school year (e.g., 2013 denotes the 2013–2014 school year). CEP was rolled out nationwide in 2014 but was piloted in some states beginning in 2011. Because 2013 is the earliest year for which I collected data, the 2013 category includes all districts that had adopted CEP by 2013 — that is, in 2013 or any earlier year, including early adopters in pilot states; subsequent rows reflect each district's year of first adoption.

Table 2: Summary Statistics

	Full Sample	Year first adopted CEP		State poverty funding	
		2013-2019	2020-2023	With	Without
School District Characteristics					
Share eligible for subsidized school meals	0.58	0.62	0.48	0.58	0.60
Share enrolled in CEP schools by 2022	0.60	0.66	0.38	0.59	0.65
Share White, non-Hispanic	0.42	0.39	0.53	0.42	0.44
Share Black	0.20	0.23	0.12	0.19	0.27
Share Hispanic	0.29	0.31	0.26	0.31	0.24
Share other race	0.09	0.09	0.10	0.09	0.07
Share English language learners	0.12	0.12	0.10	0.12	0.08
Number of schools in district	73	86	30	67	109
Student enrollment	54530	63765	23339	48478	87583
Per pupil revenues					
Total revenue	15957	15842	16344	16381	13636
Total state revenue	7742	7767	7659	8051	6055
Total local revenue	6566	6305	7450	6704	5814
Total federal revenue	1648	1770	1235	1626	1767
Observations					
Number of school districts	6037	3990	2047	5488	549

Notes: The full sample consists of school districts with at least one school that adopted the Community Eligibility Provision (CEP) by the 2023–2024 school year (a district is classified as a CEP adopter if at least one of its schools adopts CEP). "Without poverty funding" denotes states that do not provide additional funding for economically disadvantaged students, namely Alabama, Alaska, Arizona, Florida, Georgia, Idaho, South Dakota, and West Virginia. All statistics are measured in 2012 — the last year before any district in the sample adopts CEP — and are weighted by student enrollment. Per-pupil revenues are in 2023 dollars.

Table 3: Estimated Effects on School Meal Applications and Revenues

	Difference-in-Differences (1)	Triple Differences (2)
Panel A: Share of students applying for subsidized meals		
CEP	-0.0755*** (0.0147)	
Mean of dependent variable	0.282	
Number of districts	3927	
Number of observations	30103	
Panel B: State revenue per pupil		
CEP	-357.8*** (94.79)	-286.1*** (80.71)
Mean of dependent variable	12133	11816
Number of districts	6037	6037
Number of observations	84507	84507
Panel C: Food revenue per pupil		
CEP	12.82** (5.525)	41.31*** (5.284)
Mean of dependent variable	657	678
Number of districts	6037	6037
Number of observations	84507	84507

Notes: This table presents estimates of the effect of CEP adoption on the outcomes indicated in each panel, using Equation (6) (column 1) and Equation (7) (column 2). The outcomes are the share of students applying for subsidized meals (Panel A), state revenue per pupil (Panel B), and food revenue per pupil (Panel C). The triple-difference specification (column 2) is estimated only for the revenue outcomes. The sample comprises school districts that adopted CEP by school year 2023–2024; the application sample in Panel A is smaller because the data are available for fewer districts and only from 2013 to 2021, whereas the other outcomes are available from 2009 to 2022. All estimates are weighted by district enrollment. The mean of the dependent variable is calculated over the pre-adoption period. Significance levels are denoted by *, **, and ***, corresponding to the 10, 5, and 1 percent levels, respectively.

Table 4: Estimated Effects on School Meal Applications and Revenues by CEP Exposure

	Difference-in-Differences		Triple Differences	
	High Impact Sample (1)	Low Impact Sample (2)	High Impact Sample (3)	Low Impact Sample (4)
Panel A: Share of students applying for subsidized meals				
CEP	-0.0819***	-0.0633***		
	(0.0175)	(0.0142)		
Mean of dependent variable	0.277	0.296		
Number of districts	2587	1340		
Number of observations	19962	10141		
Panel B: State revenue per pupil				
CEP	-469.2***	107.6	-286.8***	185.2
	(109.0)	(179.1)	(90.56)	(135.6)
Mean of dependent variable	12434	11098	12089	10869
Number of districts	4521	1516	4521	1516
Number of observations	63287	21220	63287	21220
Panel C: Food revenues per pupil				
CEP	14.66**	2.157	42.02***	40.07***
	(6.158)	(10.81)	(6.171)	(9.337)
Mean of dependent variable	647.1	689.6	672	701
Number of districts	4521	1516	4521	1516
Number of observations	63287	21220	63287	21220

Notes: This table presents estimates of the effect of CEP adoption, by CEP exposure, on the outcomes indicated in each panel, using Equation (6) in Columns 1–2 and Equation (7) in Columns 3–4. The high-exposure sample comprises school districts in the 25 states where at least 37 percent of students were enrolled in CEP schools; the low-exposure sample comprises school districts in the remaining states. The outcomes are the share of students applying for subsidized meals (Panel A), state revenue per pupil (Panel B), and food-service revenue per pupil (Panel C). The triple-difference specification is estimated only for the revenue outcomes. The sample consists of school districts that adopted CEP by school year 2023–2024. The sample in Panel A is smaller because application data are available for fewer districts and only from 2013 to 2021, whereas the revenue outcomes are available from 2009 to 2022. All estimates are weighted by district enrollment. The mean of the dependent variable is calculated over the pre-adoption period. Significance levels are denoted by *, **, and ***, corresponding to the 10, 5, and 1 percent levels, respectively.

Table 5: Estimated Effects of CEP Adoption on School Meal Applications and Revenue, by State Responses to Changes in School Meal Data

	Alternative income form (1)	Direct certification through other means-tested programs (2)	Most recent free and reduced-price meal data (3)	Direct certification x Multiplier (4)	Title I/Census data (5)	No funding for poverty (6)
Panel A: Share of students applying for subsidized meals						
CEP	-0.107***	-0.083***	-0.208***	-0.202***	-0.121***	-0.194***
	(0.009)	(0.019)	(0.017)	(0.018)	(0.015)	(0.012)
Mean of dependent variable	0.29	0.24	0.3	0.3	0.21	0.31
Number of districts	2249	310	322	225	436	387
Number of observations	17573	2311	2204	1781	3318	2929
Panel B: State revenue per pupil						
CEP	-1,045**	312	434	198	-960.1*	-395
	(409)	(298)	(503)	(198)	(537)	(254)
Mean of dependent variable	13689	9442	8967	7421	11654	9446
Number of districts	3491	760	284	271	682	549
Number of observations	48868	10638	3975	3794	9548	7684
Number of states	20	7	5	6	5	8

Notes: This table presents estimates of the effect of CEP adoption, by how states handle the loss of free and reduced-price meal data, using the difference-in-differences specification in Equation (6). Appendix Table A.1 lists the states in each category. The outcomes are the share of students applying for subsidized meals (Panel A) and state revenue per pupil (Panel B). The sample consists of school districts that adopted CEP by school year 2023–2024. The sample in Panel A is smaller because application data are available for fewer districts and only from 2013 to 2021, whereas the revenue outcomes are available from 2009 to 2022. All estimates are weighted by district enrollment. The mean of the dependent variable is calculated over the pre-adoption period. Significance levels are denoted by *, **, and ***, corresponding to the 10, 5, and 1 percent levels, respectively.

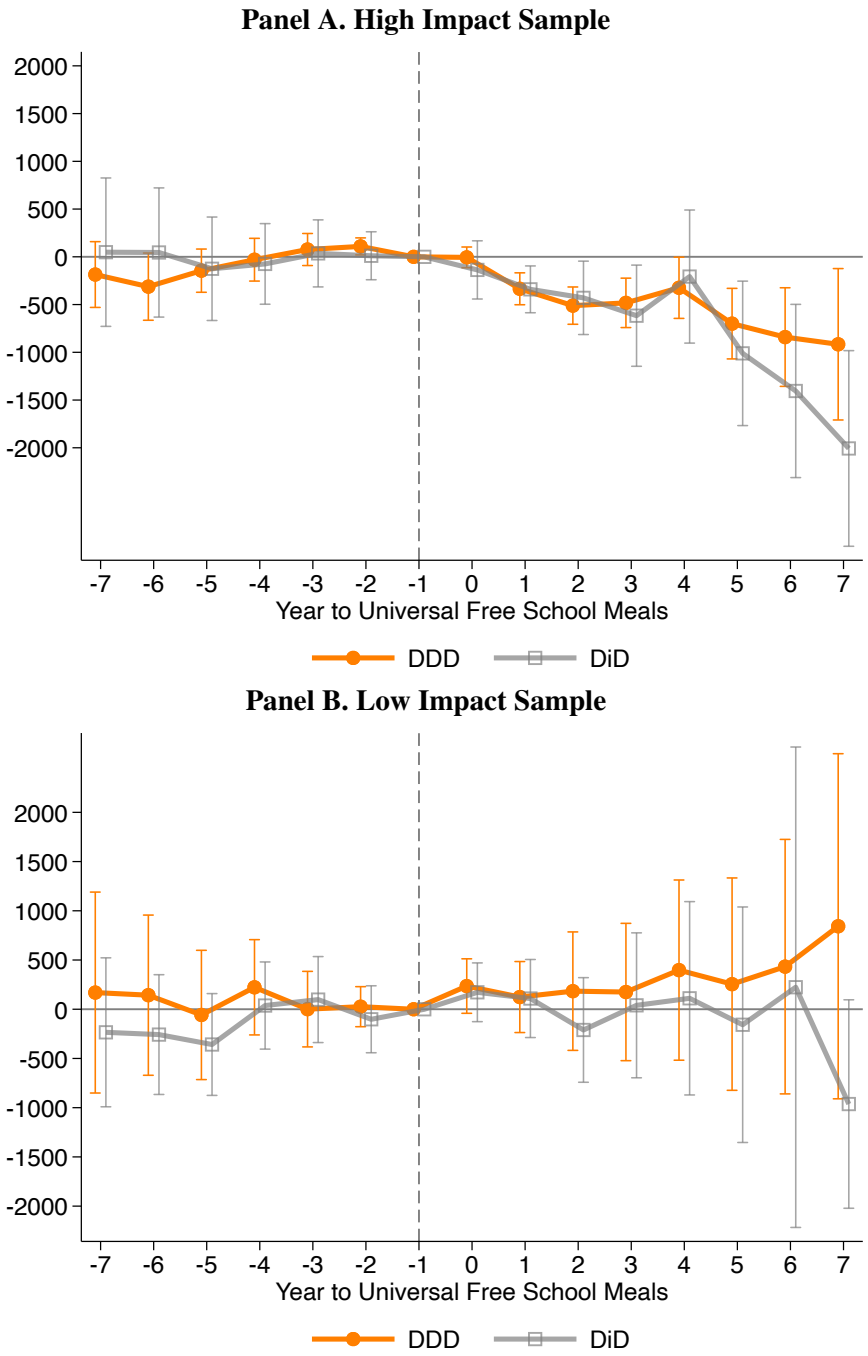
Table 6: Robustness Checks

	State revenue per pupil					Log state revenue per pupil
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A:						
1 to 7 years prior to CEP	-42	-132***	408	-513		0.009
	(239)	(51)	-256	(387)		(0.006)
Panel B:						
0-7 years post CEP	-866***	-385***	-952***	-794**	-104	-0.048***
	(260.9)	(100.3)	(334)	(332.7)	-226	(0.009)
Mean of dependent variat	12133	12133	11152	12398	11816	9
Number of districts	6037	6037	3464	4356	6037	5864
Number of observations	84507	84507	31175	60975	84507	81869
Weighted by enrollment	N	Y	N	N	N	N
Method	DiD	DiD	DiD	DiD	DDD	DiD
Sample	Treated by 2023	Treated by 2023	Balanced -4 to 4 event times	At least 50% FRP students	Treated by 2023	Treated by 2023

Notes: This table reports robustness checks for the estimated effect of CEP adoption on state revenue per pupil. The sample consists of school districts that adopted CEP by school year 2023–2024. Panel A reports estimates for the 1–7 years prior to CEP adoption as a test for pre-trends, and Panel B reports estimates for the 0–7 years following adoption. Column (1) presents unweighted estimates from Equation (6). Column (2) weights observations by district enrollment. Column (3) restricts the sample to a balanced panel of districts observed from four years before to four years after CEP adoption. Column (4) limits the sample to districts in which at least 50 percent of students are eligible for free and reduced-price meals. Column (5) reports estimates from the triple-difference specification in Equation (7). Column (6) uses the logarithm of state revenue per pupil as the outcome variable. The mean of the dependent variable is calculated over the pre-adoption period. Significance levels are denoted by *, **, and ***, corresponding to the 10, 5, and 1 percent levels, respectively.

A Appendix

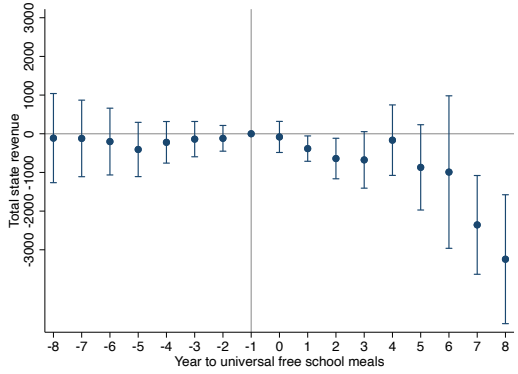
Figure A.1: Annual State Revenue per Pupil by CEP Exposure



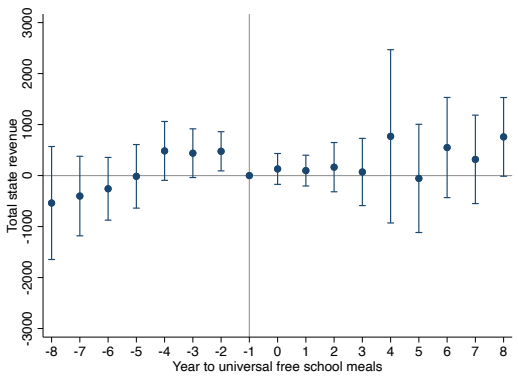
Notes: This figure plots the event-study estimates from Equations (6) and (7), where the outcome is annual state revenue per pupil. The triple-difference (DDD) estimates are shown as solid circles, while the difference-in-differences (DiD) estimates are shown as square markers. The sample consists of school districts that adopted CEP by the 2023–2024 school year, using a district-year panel spanning 2009–2022. The high-impact sample comprises school districts in 25 states where at least 37 percent of students were enrolled in CEP schools. The low-impact sample comprises school districts in the remaining states. Event time -1 is the omitted reference period. All estimates are weighted by district enrollment. Bars represent 95% confidence intervals.

Figure A.2: Estimated Effects of CEP Adoption on State Revenue, by State Responses to Changes in School Meal Data

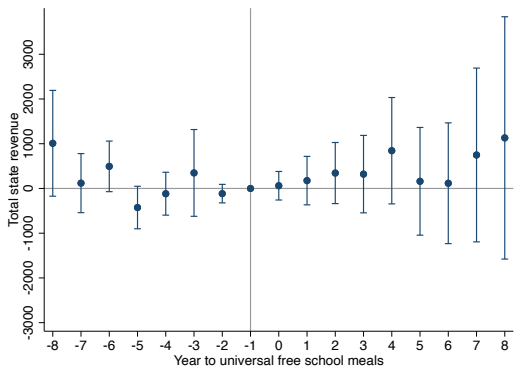
(a) Alternative income form



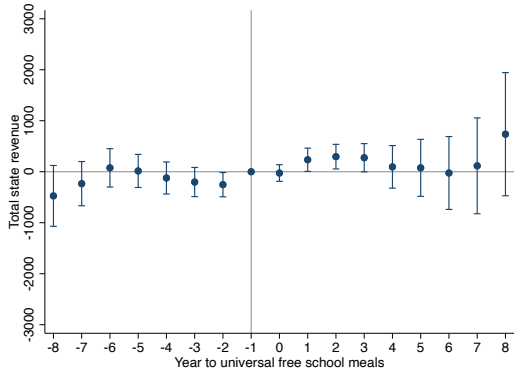
(b) Direct certification through other means-tested programs



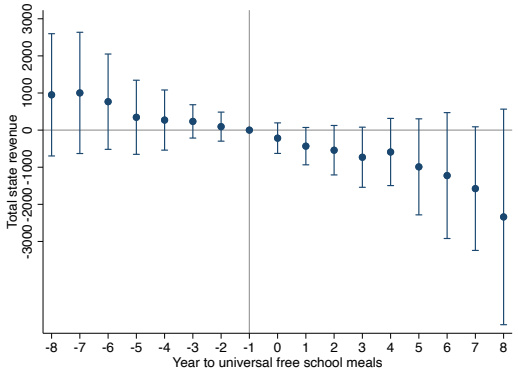
(c) Most recent free and reduced-price meal data



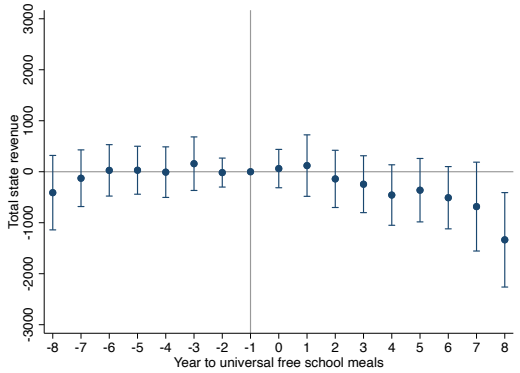
(d) Direct certification × Multiplier



(e) Title I/Census data

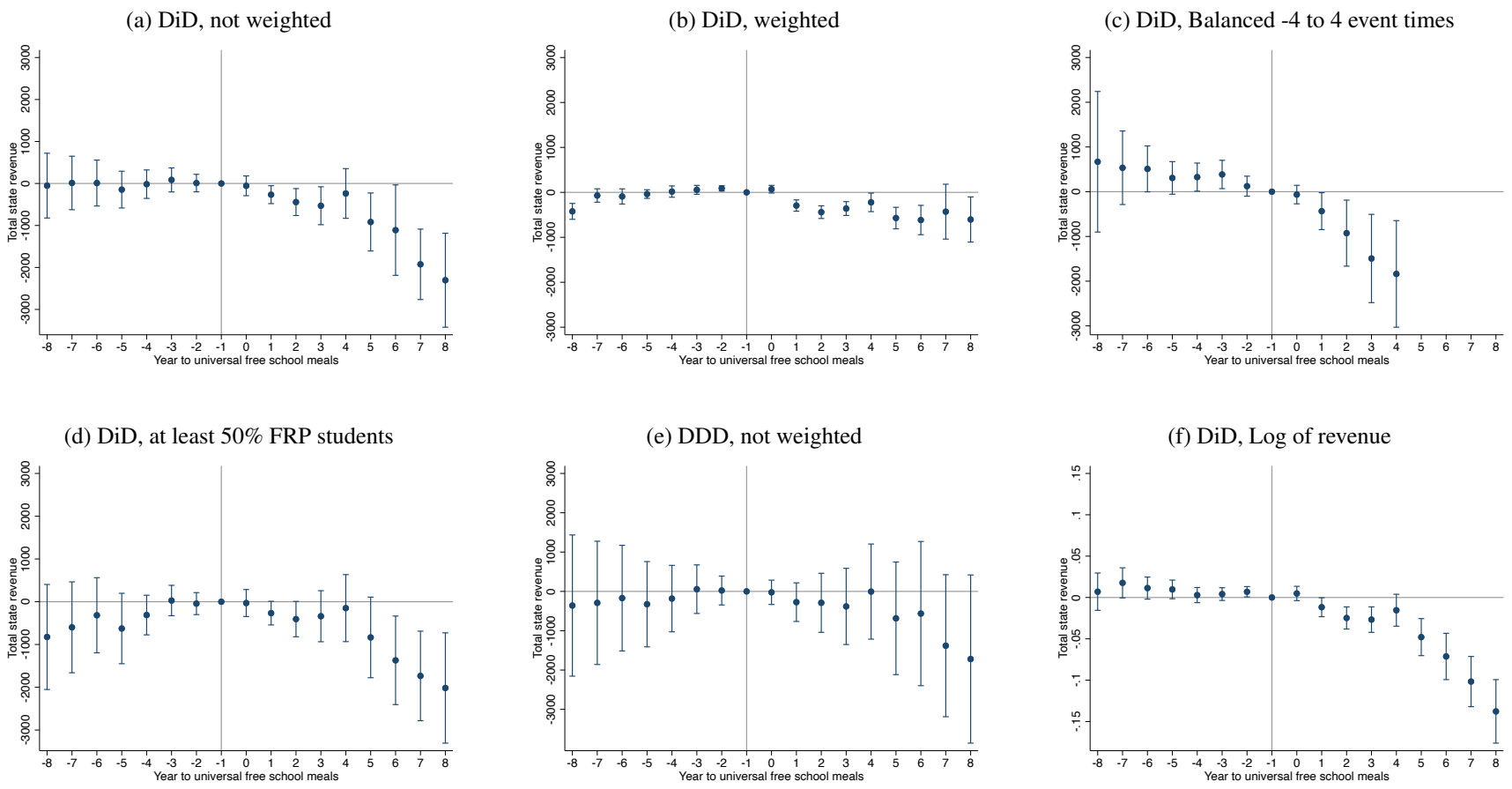


(f) No funding for poverty



Notes: This figure presents event-study estimates of the effect of CEP adoption on state revenue per pupil by how states handle the loss of free and reduced-price meal data, using the difference-in-differences specification in Equation (6). Event time -1 is the omitted reference period. All estimates are weighted by district enrollment. Bars represent 95% confidence intervals.

Figure A.3: Robustness Checks



Notes: This figure plots the event-study estimates in Table 6. The estimates are from Equations (6) and (7), where the outcome is annual state revenue per pupil. Event time −1 is the omitted reference period. All estimates are weighted by district enrollment. Bars represent 95% confidence intervals.

Table A.1: Methods That States Use to Handle Changes to Free and Reduced-Price Meal Data

Categories	Number of States	States
Alternative income form	20	California, Colorado, Connecticut, Iowa, Kansas, Kentucky, Maine, Michigan, Minnesota, New Hampshire, New Jersey, New York, Ohio, Rhode Island, Tennessee, Texas, Vermont, Virginia, Washington, Wisconsin
Direct certification through other means-tested programs	7	Delaware, District of Columbia, Illinois, Indiana, Massachusetts, South Carolina, Utah
Most recent school meals data	5	Arkansas, Hawaii, Louisiana, Maryland, Missouri
Direct certification x Multiplier	6	Mississippi, Nebraska, Nevada, North Dakota, Oklahoma, Wyoming
Title I/Census data	5	Montana, New Mexico, North Carolina, Oregon, Pennsylvania
No funding for poverty	8	Alabama, Alaska, Arizona, Florida, Georgia, Idaho, South Dakota, West Virginia

Notes: Author collected data based on Food Research & Action Center (2017), EdBuild (2020), and Blagg et al. (2025).

B Sample Alternative Income Forms in CEP Schools

Date Withdrew_____ F _____ R _____ D_____

2024-2025 Application for Free and Reduced Price School Meals/Milk

To apply for free and reduced price meals for your children, read the instructions on the back, complete **only one** form for your household, sign your name and **return it to the address listed below.** Call ***(607-274-2302),*** if you need help. Additional names may be listed on a separate paper.

Return Completed Applications to: **ICSD Child Nutrition Program**
1601 N. Cayuga Street
Ithaca, NY 14850

1. List all children in your household who attend school:

Student Name	School	Grade/Teacher	Foster Child	Homeless Migrant, Runaway
			☐	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐

2. SNAP/TANF/FDPIR Benefits:
If anyone in your household receives either SNAP, TANF or FDPIR benefits, list their name and CASE # here. **Skip to Part 4 and sign the application.**

Name: _____ CASE #: _____

3. Report all income for ALL Household Members (Skip this step if you completed step 2)

All Household Members (including yourself and all children that have income).
List all Household members not listed in Step 1 (including yourself) **even if they do not receive income**. For each Household Member listed, if they do receive income, report total income for each source in whole dollars only. If they do not receive income from any other source, write '0'. If you enter '0' or leave any fields blank, you are certifying (promising) that there is no income to report.

Name of household member	Earnings from work before deductions ***Amount / How Often***	Child Support, Alimony ***Amount / How Often***	Pensions, Retirement Payments ***Amount / How Often***	Other Income, Social Security ***Amount / How Often***	No Income
	$ _____ / _____	$ _____ / _____	$ _____ / _____	$ _____ / _____	☐
	$ _____ / _____	$ _____ / _____	$ _____ / _____	$ _____ / _____	☐
	$ _____ / _____	$ _____ / _____	$ _____ / _____	$ _____ / _____	☐
	$ _____ / _____	$ _____ / _____	$ _____ / _____	$ _____ / _____	☐
	$ _____ / _____	$ _____ / _____	$ _____ / _____	$ _____ / _____	☐

Total Household Members (Children and Adults) ☐☐

***Last Four Digits of Social Security Number:** XXX-XX- __ __ __ __ I do not have a SS# ☐

*When completing section 3, an adult household member must provide the last four digits of their Social Security Number (SS#) or mark the "I do not have a SS# box" before the application can be approved.

4. Signature: An adult household member must sign this application before it can be approved.
I certify (promise) that all the information on this application is true and that all income is reported. I understand that the information is being given so the school will get federal funds; the school officials may verify the information and if I purposely give false information, I may be prosecuted under applicable State and federal laws, and my children may lose meal benefits.
Signature: _____ **Date:** _____
Email Address: _____
Home Phone: _____ Work Phone: _____ Home Address: _____

5. Ethnicity and Race are optional; responding to this section does not affect your children's eligibility for free or reduced price meals.

Ethnicity: ☐Hispanic or Latino ☐Not Hispanic or Latino

Race (Check one or more): ☐American Indian or Alaskan Native ☐Asian ☐Black or African American ☐Native Hawaiian or Other Pacific Island ☐White

DO NOT WRITE BELOW THIS LINE – FOR SCHOOL USE ONLY

Annual Income Conversion (Only convert when multiple income frequencies are reported on application)
Weekly X 52; Every Two Weeks (bi-weekly) X 26; Twice Per Month X 24; Monthly X 12

☐ SNAP/TANF/Foster
☐ Income Household: Total Household Income/How Often: _____/_____ Household Size: _____
☐ Free Meals ☐ Reduced Price Meals ☐ Denied/Paid
Signature of Reviewing Official_____ **Date Notice Sent:** _____