

An Analysis of the Validity of Student Eligibility Status for NSLP as a Proxy Variable for Socioeconomic Status in Reporting NAEP Results After the Implementation of the Community Eligibility Provision

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Abstract

Note

For the 2024 NAEP release, the label for the key socioeconomic (SES) proxy—National School Lunch Program (NSLP) status—will be updated to Economic Disadvantage (ED) status. Interest in and scrutiny of the NSLP/ED variable are expected to grow, as it will serve as one of the four components of the new NAEP SES index, which will also be reported for the first time during the NAEP 2024 release. With these upcoming changes in mind, we believe that sharing the validity analyses of NSLP/ED status in this working paper—ahead of these updates—could be of interest to a broader audience, even though the report does not include the latest NAEP 2022 data. This study was completed before the NAEP 2022 data became available.

This analysis uses the 2009–2019 NAEP mathematics data to determine whether the implementation of the Community Eligibility Provision (CEP) in the National School Lunch Program (NSLP) has reduced the validity of student NSLP eligibility status as a proxy for socioeconomic status (SES) in the reporting of NAEP results. Concerns about the validity of student NSLP eligibility status as a proxy for SES in NAEP are based on the supposition that CEP implementation might substantially increase the overall percentage of NSLP-eligible students and the proportion of NSLP-eligible students across schools at lower poverty levels. That is, a substantial number of students who were previously ineligible for NSLP and attended lower poverty schools might now be counted as NSLP-eligible by NAEP.

In general, NSLP-noneligible students score higher on NAEP than NSLP-eligible students. If many higher-achieving students who would have been classified as NSLP-noneligible based on pre-CEP criteria were now grouped with NSLP-eligible students due to the implementation of CEP, the average NAEP score of the NSLP-eligible group would increase. This would cause the achievement gap by NSLP eligibility status to decrease and the variance in NAEP achievement explained by NSLP eligibility status to diminish. However, if these trends are not observed, concerns about the validity of student NSLP eligibility status, as defined and reported by NAEP, as a proxy variable for SES may not be warranted.

Based on what we would expect to observe if NSLP eligibility status is becoming less valid due to the implementation of CEP, the study uses four criteria to determine whether there is evidence against the validity of NSLP eligibility as reported by NAEP. Specifically, if the validity of the NSLP measure has been compromised by the adoption of CEP, the following trends should be observed:

- (1) There should be a substantial increase in the overall percentage of NSLP-eligible students.
- (2) There should be a substantial increase in the percentage of NSLP-eligible students from schools at lower poverty levels that participated in school-wide free lunch programs.
- (3) The achievement gap between NSLP-eligible and NSLP-noneligible students, as defined and reported by NAEP, should decrease over time.
- (4) The variance explained by the association between NSLP eligibility status and NAEP performance should also decrease over time.

The analysis was conducted at the national, state, and Trial Urban District Assessment (TUDA) levels to examine the impact of the adoption of CEP on reported NSLP eligibility in NAEP.

The major findings using these criteria are:

At the national level, our analyses do not support the concerns that student NSLP eligibility status is no longer a valid SES proxy variable due to the implementation of CEP.

- (1) There has been no substantial increase in the overall percentage of NSLP-eligible students since the national implementation of CEP. The percentage of NSLP-eligible students from CEP-all schools remained small and unchanged between 2015 and 2019 after the national implementation of CEP.
- (2) There has been no fundamental change in the percentage of reported NSLP-eligible students from schools that participated in school-wide free lunch programs by the level of poverty concentration.
- (3) NAEP achievement gaps by student NSLP eligibility status at the national level have also remained very stable over time. There has been no decrease in the NAEP mathematics achievement gap by student NSLP eligibility status.
- (4) The variance in student NAEP mathematics achievement explained by student NSLP eligibility status, as measured by R-squared, has remained largely unchanged at all three grades from 2009 to 2019.

At the state level, there is no evidence of a continuing, across-the-board increase in the percentage of students recorded as eligible for NSLP or a widespread decrease in NAEP achievement gaps by student NSLP eligibility status.

- (1) Between 2011 and 2019, no state experienced a decrease in the achievement gap at grades 4 and 8.
- (2) During the same period, only nine states at grade 4 and four states at grade 8 saw a decrease in the variance explained by student NSLP eligibility status. This suggests that, for most states, student NSLP eligibility status remains a valid proxy variable for student SES at the state level.

At the TUDA district level, there has not been a widespread, dramatic increase in the percentage of students eligible for NSLP in most participating districts following the nationwide implementation of CEP. Additionally, the reporting of NAEP achievement gaps at the TUDA district level has not been affected by the implementation of CEP.

Taken together, these results suggest that, to date, the implementation of CEP has not affected the validity of student NSLP eligibility status as a proxy variable for SES at the national, state, or TUDA levels.

The likely reason for the disconnect between the often-voiced concerns about the decreased validity of NSLP eligibility status due to CEP and these empirical results is the misconception that NAEP cannot differentiate between NSLP-eligible and NSLP-noneligible students in schools implementing CEP. In fact, in most schools where all students can receive free lunch, NAEP can still differentiate between students

who are economically disadvantaged (coded as NSLP-eligible) and those who are not (coded as NSLP-noneligible), as defined by respective state standards.

This technical memorandum provides important empirical evidence for the continuing validity of NSLP eligibility as an SES proxy variable for NAEP reporting and for its inclusion in a NAEP SES index.

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1. Background

Student eligibility for the National School Lunch Program (NSLP) has been used as a proxy variable for socioeconomic status in the reporting of assessment results by the National Assessment of Educational Progress (NAEP) program since 2003. However, its validity has come under scrutiny since the nationwide implementation of the Community Eligibility Provision (CEP) of the [Healthy, Hunger-Free Kids Act of 2010](#) in the 2014–15 school year. Before the nationwide rollout, CEP was phased in over 3 years, starting in the 2011–12 school year, in the District of Columbia and 10 states: Illinois, Kentucky, Michigan, New York, Ohio, West Virginia, Florida, Georgia, Maryland, and Massachusetts.

To implement CEP, at least 40 percent of the students in a school or school district must be directly certified to be eligible for free meals through means-tested programs, such as the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), Medicaid, or Head Start. This eligibility for CEP also requires that the school or school district provide free lunches to all its students for a period of 4 years and pay the difference between the federal reimbursement and the cost of providing all meals at no charge using non-federal funds. Importantly, CEP enables some students who previously would not have been eligible for free or reduced-price lunch to receive free meals. As a result, the percentage of students receiving free lunch would likely increase significantly. This shift raises legitimate concerns about whether student NSLP eligibility status remains a valid proxy measure of SES in NAEP reporting.

However, the fact that all students in a school under CEP can receive free lunch does not necessarily mean that all these students are reported as NSLP-eligible by NAEP. For most schools where all students receive free lunch based on their CEP participation, NAEP still receives separate information about individual students' NSLP eligibility status based on various approaches used by states. Details on these approaches are discussed in Section 2.4.

Concerns about using student NSLP eligibility as a proxy for SES in NAEP arise from the supposition that adopting CEP would substantially increase the number of students that NAEP counts as eligible for free lunch, including many who were previously not eligible. Furthermore, since students who are not eligible for free lunch typically score higher on NAEP than those who are eligible, if these higher-achieving students are now grouped with NSLP-eligible students, the average NAEP score of the NSLP-eligible group would rise. This could lead to smaller achievement gaps by NSLP status and a reduction in the variance explained by NSLP eligibility status. In other words, if the validity of the NSLP measure has been compromised by the adoption of CEP, the following trends should be observed:

- (1) There should be a substantial increase in the overall percentage of NSLP-eligible students.
- (2) There should be a substantial increase in the percentage of NSLP-eligible students from schools at lower poverty levels that participated in school-wide free lunch programs.
- (3) The achievement gap between NSLP-eligible and NSLP-noneligible students, as defined and reported by NAEP, should decrease over time.
- (4) The variance explained by the association between NSLP eligibility status and NAEP performance should also decrease over time.

This memorandum is to examine whether there is empirical evidence that supports any of the four above-described scenarios, which would support the concerns about the decreasing validity of NSLP eligibility as a proxy for SES in NAEP reporting after the implementation of CEP. Since NAEP results are reported at the national, state, and TUDA district levels, the analyses are conducted at all three levels.

The investigation primarily uses NAEP mathematics data from 2009 to 2019 for grades 4 and 8 to examine the relationship between NSLP status and mathematics performance over time. Although the 2009 NAEP data are presented, the 2011 NAEP mathematics assessment data are used as the base-year data before the nationwide implementation of CEP for comparisons of NSLP eligibility and NAEP achievement gap by NSLP eligibility status, as it is the last year without CEP in any state. Since the 2015 NAEP was administered in the first year of national CEP implementation, it serves as the reference point to examine trends in NSLP eligibility and NAEP achievement gaps by NSLP eligibility status after CEP's national implementation.

The next section presents the analysis results at the national level. Section 3 covers the state level, and Section 4 addresses the TUDA district level. Section 5 includes a national-level analysis on the concentration of reported NSLP-eligible students from schools participating in school-wide free lunch programs by school poverty. The summary and conclusions from the analyses are provided in Section 6, with a recommendation provided in the final section.

2. National-Level Analysis of NSLP Participation and NAEP Achievement Gap by Student NSLP Eligibility Status Over Time

Even before the introduction of CEP, there were other special provisions under which a school could provide free lunch to all students. These include Provisions 2 and 3,¹ which are still used by a small number of schools. Provision 2 has been available since 1980, while Provision 3 has been an option since 1995. These provisions reduce the burden of application and simplify meal counting and claiming procedures. Schools using Provisions 2 or 3 receive federal reimbursement based on the NSLP eligibility rate determined in the base year for a period of 4 years and must offer meals to all participating children at no charge. Schools electing these two options must pay the difference between the federal reimbursement and the cost of providing all meals at no charge using non-federal funds.

NAEP collects data on how schools operate their NSLP program: either through individual certification and household applications or by providing meals for all students at no charge through CEP or via special provisions such as Provisions 2 and 3. These data allow an analysis of trends in the percentage distribution of schools and students by NSLP operation status (i.e., individual vs. school-based participation).

NAEP also collects data on student-level NSLP eligibility status, allowing for an analysis of trends in the percentage of students eligible for NSLP. While there has been a large increase in the number of schools and students receiving free meals under special provisions with the introduction of CEP, this has not led to a substantial rise in the number of students classified as NSLP-eligible by NAEP. Consequently, the overall percentage of students reported as eligible for NSLP has not increased as much as the percentage of NSLP-eligible students participating in school-wide free lunch programs. Section 2.4 provides a detailed description of how NAEP collects data on student NSLP eligibility.

2.1. There Was a Rapid Increase in Schools Participating in NSLP Under Special Provisions Beginning in 2015

The percentage of schools providing free meals to all students under special provisions increased significantly after the nationwide implementation of CEP in the 2014–15 school year (see Table 1). At grade 4, it increased from 4 percent in 2011 to 14 percent in 2015 and 23 percent in 2019. The change was smaller at grade 8, where it increased from 4 percent in 2011 to 11 percent in 2015 and 19 percent in 2019.

¹ Under Provision 1, which requires at least 80 percent of enrolled students eligible for free or reduced-price meals, there is no requirement to offer meals at no charge to all students. For details about Provisions 1, 2, and 3, see [U.S. Department of Agriculture, Food and Nutrition Service \(2023\)](#).

Table 1. Percentage of schools providing free lunch to all students under special provisions, by grade: 2009, 2011, 2013, 2015, 2017, and 2019

Grade	2009	2011	2013	2015	2017	2019
Grade 4	3	4	6	14	17	23
Grade 8	3	4	4	11	14	19

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009–2019 Mathematics Assessments.

2.2 There Was a Sharp Increase in Reported NSLP-Eligible Students Based on School-Wide Participation Under Special Provisions Following the National Implementation of CEP in the 2014–15 School Year

The percentage of reported NSLP-eligible students based on school-wide participation under special provisions also increased significantly following the nationwide rollout of CEP in the 2014–15 school year. This increase was distinct from the percentage of NSLP-eligible students determined through household applications or direct certification from schools not under special provisions.

- At grade 4, this percentage increased from 10 percent in 2011 to 26 percent in 2015 and to 42 percent in 2019 (see Table 2 and Figure 1).
- At grade 8, it increased from 8 percent in 2011 to 21 percent in 2015 and to 35 percent in 2019 (see Table 2 and Figure 2).

Table 2. Percentage of reported NSLP-eligible students from schools that participated in school-wide free lunch programs, by grade: 2009, 2011, 2013, 2015, 2017, and 2019

Grade	2009	2011	2013	2015	2017	2019
Grade 4	10	10	12	26	33	42
Grade 8	8	8	8	21	26	35

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009–2019 Mathematics Assessments.

Note that the rapid increase in reported NSLP-eligible students based on school-wide participation under special provisions is directly due to more schools adopting these provisions (primarily CEP). However, this does not mean that the increase is entirely attributable to counting all students from CEP schools who receive free meals as NSLP-eligible. As shown in Sections 2.3 and 2.4, the percentage of students counted as NSLP-eligible because they receive free meals (CEP-all) is quite small, as is their proportion among all NSLP-eligible students. In fact, there is already differentiation between NSLP-eligible and NSLP-noneligible students in CEP schools, as shown in Section 2.4.

2.3. Percentage of NSLP-Eligible Students From “CEP-All Schools” Is Small and Has Remained Stable since 2015

The percentage of NSLP-eligible students from CEP-all schools—those that implement CEP but do not provide any differentiating information about students’ socioeconomic background (e.g., economic disadvantage status)—has been quite small (about 3 percent at grade 4 and 2 percent at grade 8). This percentage remained stable between 2015 and 2019, following the national implementation of CEP (see Table 3).

Table 3. Overall percentage of NSLP-eligible students from CEP-all schools in 2015 and 2019

Grade	2015	2019
Grade 4	3	3
Grade 8	2	2

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2015 and 2019 Mathematics Assessments.

2.4. Percentage of NSLP-Eligible Students Based on a “CEP-All” Approach Is Too Small to Have Caused a Dramatic Inflation of NSLP-Eligible Students

In NAEP data collections, a student’s NSLP eligibility is determined using several methods. For students from non-CEP schools, eligibility is based on direct certification² and/or family income. For students from schools with school-wide participation in NSLP, the determination methods include:

- Provision 2 or 3;³
- the universal food program (UFP);⁴
- CEP-direct only (counting only students directly certified for free lunch from a CEP school as NSLP-eligible);
- CEP-direct plus (determining NSLP eligibility based on both direct certification and family income for students from a CEP school); and
- CEP-all (counting all students from a CEP school as NSLP-eligible).

NAEP reports all students from schools implementing Provisions 2 or 3 and schools implementing UFP as NSLP-eligible. However, students from schools implementing CEP are not uniformly reported as NSLP-eligible, despite receiving free meals. The methods for determining NSLP eligibility in CEP schools vary by state and TUDA district. Among these methods, the CEP-direct plus approach is similar to the traditional

² Prior to CEP, direct certification data were used in conjunction with household applications to determine the amount of federal reimbursement a school received. Under CEP, schools rely solely on direct certification data for identified students to determine eligibility and federal reimbursement rates. Direct certification data are typically available to all local education agencies (LEAs) that participate in NSLP at least annually. LEAs with schools not operating under a special provision (e.g., CEP, Provision 2, or Provision 3) are required to run direct certification with SNAP at least three times a year. See U.S. Department of Agriculture, Food and Nutrition Service ([2011a](#), [2011b](#)).

³ Schools with Provision 2 or 3 also generally have very high percentages of NSLP-eligible students. For example, data for the Common Core of Data “[Public Elementary/Secondary School Universe Survey](#)” for school year 2014–15 (NCES CCD) indicate that about 75 percent of schools with Provision 2 or 3 had over 75 percent of their students eligible for NSLP. However, NSLP-eligible students in schools with Provision 2 or 3 represented a small percentage of the total NSLP-eligible population. In NAEP mathematics data, there is information on NSLP-eligible students enrolled in schools operating under Provision 2 or 3 in 2015, but there is no such data in 2019. NAEP science data has information on Provisions 2 or 3 in both 2015 and 2019. This helps to show the declining trend of Provision 2 or 3 among NSLP-eligible students. NAEP science data show that these students made up about 6 percent of the NSLP-eligible population at both grades 4 and 8 in 2015, consistent with the mathematics assessment data for the same year. By 2019, their representation had decreased to about 3 percent at both grades.

⁴ The number of NSLP-eligible students via UFP is extremely small and negligible.

NSLP eligibility determination method. In contrast, the CEP-direct only approach may lead to an undercounting of NSLP-eligible students, while the CEP-all approach may result in overcounting unless all students would have been individually determined as eligible. Thus, the major concern regarding CEP's impact should be on whether the use of the CEP-all approach has increased and whether it has become the predominant method for determining student NSLP eligibility in NAEP.

As Table 4 shows, the CEP-all approach did not expand from 2015 to 2019 and did not dominate the determination of student NSLP eligibility status in NAEP. Among all NSLP-eligible students, there was a sharp decline in the traditional method of NSLP eligibility determination—an 18-percentage-point decline at grade 4 and a 14-percentage-point decline at grades 8 and 12—between 2015 and 2019. In contrast, the CEP-direct plus method, which is similar to the traditional method of individually based NSLP-eligibility determination, saw a comparable increase at all three grades. Additionally, the CEP-direct only method saw a 4-percentage-point increase at grade 4, a 2-percentage-point increase at grade 12, and no change at grade 8. The percentage of NSLP-eligible students determined through the CEP-all approach remained unchanged at both grades 4 and 8 between the two years, at 6 and 5 percent, respectively, but declined at grade 12 by 3 percentage points, from 6 to 3 percent. Overall, the number of CEP-all NSLP-eligible students is too small to have significantly inflated the overall count of NSLP-eligible students so far (see Table 4).

Table 4. Percentage of NSLP-eligible students, by grade and Type of NSLP eligibility determination: 2015 and 2019

Type of NSLP eligibility determination	Grade 4			Grade 8			Grade 12		
	2015	2019	Change	2015	2019	Change	2015	2019	Change
Non-CEP	77	59	-18*	79	66	-14*	82	68	-14*
CEP-Direct cert only	4	8	4*	5	7	1	3	5	2*
CEP-Direct cert plus	10	24	14*	9	21	12*	8	21	13*
CEP-All students	6	6	#	5	5	#	6	3	-3*
Info unavailable	2	2	#	1	1	#	#	2	2*

Rounds to zero.

* Statistically significant at .05 level.

NOTE: Changes between 2015 and 2019 are computed based on unrounded numbers and are then rounded.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2015 and 2019 Mathematics Assessments.

2.5 From 2011 to 2019, the Overall Percentage of NSLP-Eligible Students Increased at a Much Slower Pace Compared With the Increase in School-Wide NSLP Participation.

While the proportion of reported NSLP-eligible students from school-wide participation at both grades 4 and 8 sharply increased between 2011 and 2015 and was more than three times higher in 2019 than in 2011 (see Table 2, and Figures 1 and 2), the overall percentage of NSLP-eligible students, as defined and reported by NAEP, only had a small increase from 2011 to 2015 at both grades 4 and 8. Furthermore, it then decreased after 2015 at both grades (see Table 5, and Figures 1 and 2).

- At grade 4, the percentage of NSLP-eligible students increased by 2 percentage points between 2011 and 2019, rising from 49 percent to 50 percent.⁵ It grew by 3 percentage points between 2011 and 2015 (from 49 to 52 percent) but then decreased by 1 percentage point between 2015 and 2019.
- At grade 8, the percentage of NSLP-eligible students increased by 3 percentage points between 2011 and 2019, rising from 44 percent to 47 percent. It initially increased by 4 percentage points between 2011 and 2015, before decreasing by 2 percentage points between 2015 and 2019.

Table 5. Overall Percentage of NAEP students reported as NSLP-eligible, by grade: 2009, 2011, 2013, 2015, 2017, and 2019

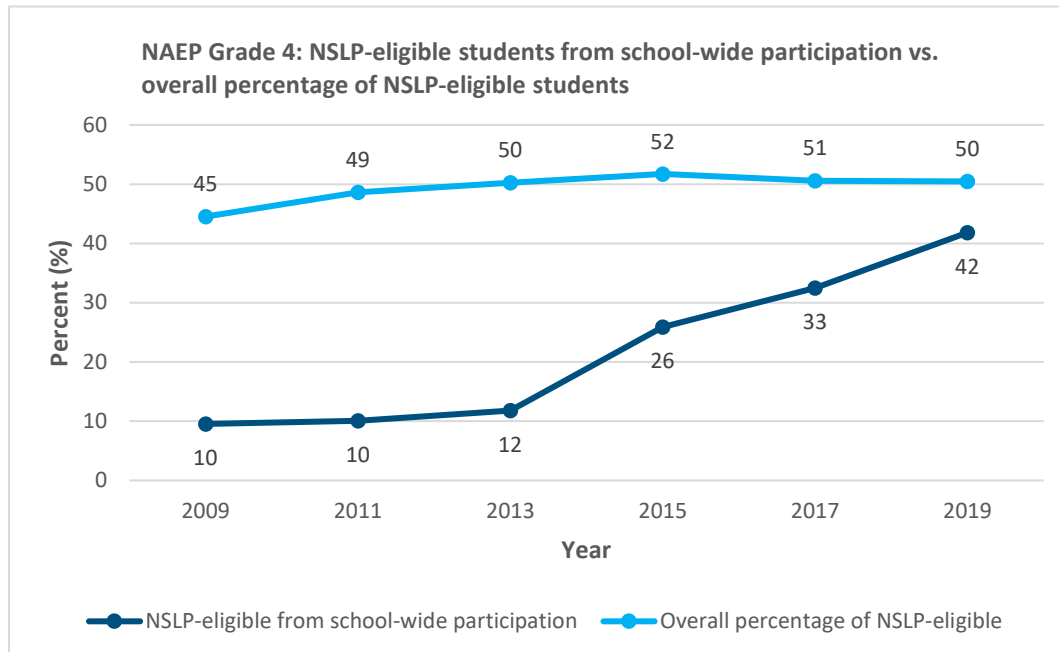
Grade	2009	2011	2013	2015	2017	2019	Change from 2011 to 2019	Change from 2011 to 2015	Change from 2015 to 2019
Grade 4	45	49	50	52	51	50	2*	3*	-1*
Grade 8	39	44	46	49	46	47	3*	4*	-2*

*Statistically significant at .05 level.

NOTE: Differences between 2 years are computed based on unrounded estimates and are then rounded.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009–2019 Mathematics Assessments.

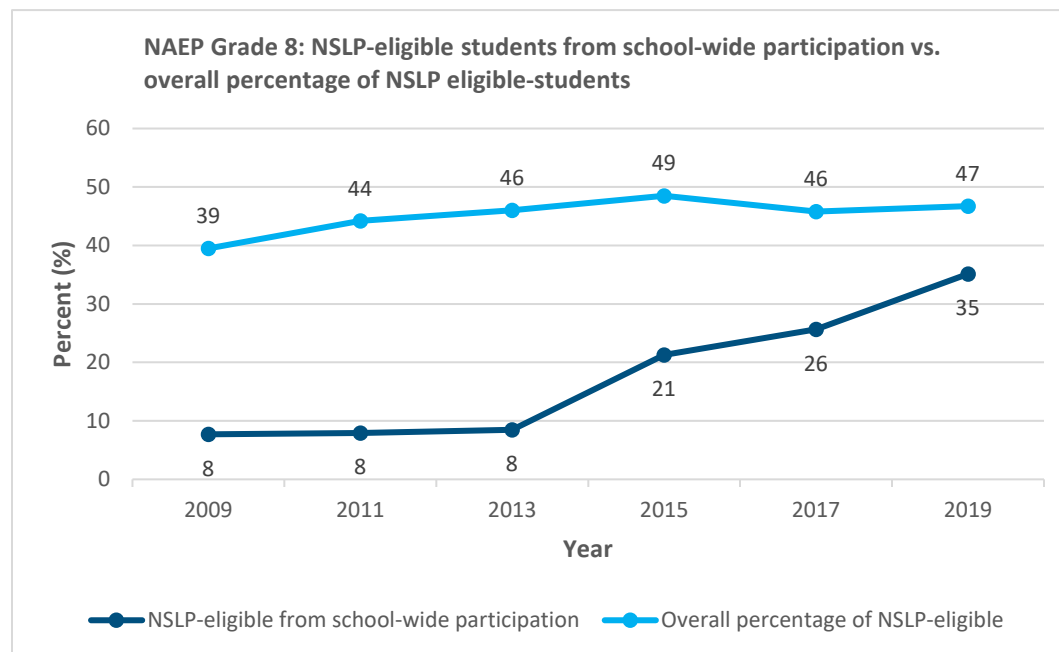
Figure 1. Grade 4 NSLP Eligibility—School-Wide Participation vs. Overall Percentage: 2009, 2011, 2013, 2015, 2017, and 2019



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009–2019 Mathematics Assessments.

⁵ Throughout this report, differences between 2 years are measured using unrounded numbers and are then rounded.

Figure 2. Grade 8 NSLP Eligibility—School-Wide Participation vs. Overall Percentage: 2009, 2011, 2013, 2015, 2017, and 2019



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009–2019 Mathematics Assessments.

2.6. Stable National Achievement Gap Between NSLP-Eligible and NSLP-Noneligible Students and Unchanged Association Between Student NSLP Eligibility and NAEP Achievement Since the Implementation of CEP

At the national level, the achievement gap between NSLP-eligible and NSLP-noneligible students remained quite stable over time at all three grades despite the implementation of CEP. Similarly, the association between student NSLP eligibility status and NAEP achievement—measured by the variance of NAEP performance explained by NSLP eligibility status (R-squared)—remained largely unchanged (see Table 6).

There was no evidence of decreasing achievement gaps by NSLP eligibility status at any of the three grade levels. For example, the achievement gap by NSLP eligibility was 23 points in 2011 and 24 points in 2019 at grade 4; 27 points in 2011 and 30 points in 2019 at grade 8; and 23 points in 2013 and 25 points in 2019 at grade 12. Notably, the gap increased at grades 4 and 8 in 2019 compared to 2011—the last year before CEP was implemented. Compared to 2015, the gap in 2019 increased at grade 8, while there was no change at grades 4 and 12.

Table 6. Relationship between NSLP eligibility status and student performance in mathematics at the national level: 2009, 2011, 2013, 2015, 2017, and 2019

Grade	2009		2011		2013		2015		2017		2019	
	Estimated regression coefficient (eligible)	R-SQ	Estimated regression coefficient (eligible)	R-SQ	Estimated regression coefficient (eligible)	R-SQ	Estimated regression coefficient (eligible)	R-SQ	Estimated regression coefficient (eligible)	R-SQ	Estimated regression coefficient (eligible)	R-SQ
Grade 4	-22.6	0.15	-22.9	0.15	-23.7	0.15	-23.7	0.15	-24.4	0.14	-24.2	0.14
Grade 8	-27.1	0.13	-26.6	0.13	-27.2	0.14	-27.8	0.14	-29.4	0.14	-29.8	0.14
Grade 12	-22.7	0.09	NA		-22.8	0.11	-22.8	0.12	NA		-24.6	0.12

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009–2019 Mathematics Assessments.

2.7 Summary of National-Level Results

The percentage of schools providing free meals to all students with special provisions increased significantly after the nationwide implementation of the Community Eligibility Provision (CEP) in the 2014–15 school year. By 2019, the percentage had risen to 23 percent at grade 4, about five times higher than the 4 percent in 2011, and 19 percent at grade 8, over four times higher than the 4 percent in 2011. Similarly, the percentage of NSLP-eligible students from schools with school-wide free lunch programs increased from 10 percent in 2011 to 42 percent in 2019 at grade 4 and from 8 percent in 2011 to 35 percent in 2019 at grade 8. In 2019, it was more than three times higher than in 2011 at both grades 4 and 8 at the national level.

Not all students from CEP schools are reported as NSLP-eligible by NAEP. The percentage of NSLP-eligible students from “CEP-all schools,” where all students are reported to NAEP as NSLP-eligible, remained unchanged at grades 4 and 8 between 2015 and 2019 after the national implementation of CEP; it declined at grade 12 by 3 percentage points, from 6 to 3 percent. In 2019, NSLP-eligible students determined by the CEP-all approach accounted for only 6 percent of all NSLP-eligible students at grade 4, 5 percent at grade 8, and 3 percent at grade 12. Consequently, the small number of CEP-all NSLP-eligible students was insufficient to cause a dramatic inflation in the overall count of NSLP-eligible students over time. This helps explain why there has not been a significant increase in the overall percentage of NSLP-eligible students, despite the rapid growth in the percentage of NSLP-eligible students from schools participating in school-wide meal provision programs since the national implementation of CEP.

The overall percentage of students reported as NSLP-eligible by NAEP increased from 2011 to 2019 but at a much slower pace compared to the rapid increase in the percentage of reported NSLP-eligible students participating in school-wide free meal programs. Specifically, the increase was about 2 percentage points at grade 4 and 3 percentage points at grade 8 when comparing 2019 to 2011—the last year before the introduction of CEP in any state. It is worth noting that after an initial increase between 2011 and 2015, there was a decline between 2015 and 2019—1 percentage point at grade 4 and 2 percentage points at grade 8.

At the national level, the achievement gap between students reported by NAEP as NSLP-eligible (“economically disadvantaged”) and NSLP-noneligible (not “economically disadvantaged”) was quite stable over time at all grades despite the implementation of CEP. Additionally, the association between student NSLP eligibility status and NAEP achievement, measured by variance in NAEP mathematics scores explained (R-squared), was largely unchanged. This is because receiving free lunch is not necessarily the same as being classified by NAEP as NSLP-eligible.

3. State-Level Analysis of NSLP Participation and NAEP Achievement Gaps by Student NSLP Eligibility Status Over Time

Tables 7 and 8 summarize the state-level analysis of NSLP participation and associated NAEP achievement gaps. Key findings include:

- Among all NSLP-eligible students at grades 4 and 8, nearly all states (all but 2 or 3) saw a significant increase in the percentages of reported NSLP-eligible students from schools that participated in school-wide free lunch programs between 2011 and 2019. About two-thirds of the states saw continued increases in these percentages after 2015.
- Over one-third of the states at grade 4 and approximately two-fifths of the states at grade 8 saw a significant increase in the overall percentage of students eligible for NSLP between 2011 and 2019.
- The NAEP achievement gap by NSLP eligibility status remained unchanged between 2011 and 2019 for most states at both grades 4 and 8 (i.e., 42 out of 51 states at grade 4, and 32 out of 51 states at grade 8). The gap increased for 9 states at grade 4 and for 19 states at grade 8 during this period. *No state experienced a decrease in the NSLP eligibility status gap.*
- The variance in NAEP achievement explained by student NSLP eligibility status remained unchanged for most states at both grades 4 and 8 between 2011 and 2019 (i.e., 35 out of 51 states at grade 4, and 39 out of 51 states at grade 8).

Table 7. Summary results of state-level analysis of NSLP eligibility status and score gap by NSLP eligibility at grade 4: 2009, 2011, 2015, and 2019

Measures of change	# of states (2019 vs. 2011)	# of states (2015 vs. 2009)	# of states (2015 vs. 2011)	# of states (2019 vs. 2015)
Significant increase in reported NSLP-eligible from school-wide free lunch programs, percent	49	39	34	32
Significant decrease in reported NSLP-eligible from school-wide free lunch programs, percent	0	1	2	0
No change in reported NSLP-eligible from school-wide free lunch programs, percent	2	11	15	19
Significant increase in eligible percent	17	40	11	6
Significant decrease in eligible percent	9	0	2	13
No significant change in eligible percent	25	11	38	32
Significant increase in score gap	9	10	7	7
Significant decrease in score gap	0	1	2	2
No significant change in score gap	42	40	42	42
Meaningful increase in association (R-SQ)	7	9	8	5

Meaningful decrease in association (R-SQ)	9	4	6	10
No meaningful change in association (R-SQ)	35	38	37	36

NOTE: Meaningful increase or decrease refers to a change in R-SQ greater than .03.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009–2019 Mathematics Assessments.

Table 8. Summary results of state-level analysis of NSLP eligibility status and score gap by NSLP eligibility at grade 8: 2009, 2011, 2015, and 2019

Measures of change	# of states (2019 vs. 2011)	# of states (2015 vs. 2009)	# of states (2015 vs. 2011)	# of states (2019 vs. 2015)
Significant increase in reported NSLP-eligible from school-wide free lunch programs, percent	48	33	33	32
Significant decrease in reported NSLP-eligible from school-wide free lunch programs, percent	0	3	2	0
No change in reported NSLP-eligible from school-wide free lunch programs, percent	3	15	16	19
Significant increase in eligible percent	20	45	23	2
Significant decrease in eligible percent	9	0	1	14
No significant change in eligible percent	22	6	27	35
Significant increase in score gap	19	5	2	5
Significant decrease in score gap	0	0	0	0
No significant change in score gap	32	46	49	46
Meaningful increase in association (R-SQ)	8	13	5	5
Meaningful decrease in association (R-SQ)	4	2	1	4
No meaningful change in association (R-SQ)	39	36	45	42

NOTE: Meaningful increase or decrease refers to a change in R-SQ greater than .03.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009–2019 Mathematics Assessments.

Appendix A presents the analysis of NAEP achievement gap by NSLP eligibility status in the 11 states with early adoption of CEP (see Figures A-1 and A-2 and Tables A-1 and A-2 in Appendix A). Key findings include:

- No state among the 11 with early adoption of CEP experienced a decrease in the NAEP achievement gap by student NSLP eligibility status between 2011 and 2019; however, several states saw an increase in the achievement gap.
- Among the 11 states that adopted CEP before the 2014–15 school year, 7 at grade 4 and 9 at grade 8 experienced no change in the score gap by NSLP eligibility status between the two adjacent administrations of NAEP since CEP adoption. Several state-level jurisdictions saw an increase or decrease in the gap after CEP adoption.
- At grade 4, three jurisdictions saw a score gap increase after CEP adoption: the District of Columbia (2011–13), Georgia (2015–17), and Ohio (2011–13). Two jurisdictions experienced a

score gap decrease: the District of Columbia (2017–19) and Illinois (2017–19). At grade 8, two jurisdictions saw a score gap increase after CEP: the District of Columbia (2011–13, 2015–17) and Illinois (2011–13). One jurisdiction had a score gap decrease: the District of Columbia (2017–19).

- When comparing the score gap by NSLP eligibility status between 2011 and 2019, there was no change for 8 of the 11 early-CEP-adoption states at both grades 4 and 8, respectively. However, three state-level jurisdictions at grade 4 (Georgia, Massachusetts, and New York) and three at grade 8 (the District of Columbia, Georgia, and Ohio) witnessed an increase in the gap (see Tables A-1 and A-2 in Appendix A).

4. TUDA District-Level Analysis of NSLP Participation and NAEP Achievement Gaps by Student NSLP Eligibility Status Over Time

There has been no widespread, dramatic increase in the percentage of reported NSLP-eligible students and no substantial impact from CEP adoption on the reporting of NAEP results in TUDA districts by NSLP eligibility status over time.

As shown in tables 9 and 10, the nationwide implementation of CEP did not lead to a significant increase in the percentage of students eligible for NSLP in most participating TUDA districts.⁶ Among 19 TUDA districts in 2011, only 2 at grade 4 and 5 at grade 8 saw an increase in the percentage of students reported by NAEP as eligible for NSLP between 2011 and 2015; all other districts experienced no change or a decrease. Comparing 2019 with 2011, only 2 districts at grade 4 and 6 at grade 8 experienced an increase in NSLP eligibility; all other TUDA districts saw a decrease or no change.

After CEP was introduced nationwide, a similar pattern persisted between 2015 and 2019 for the 19 TUDA districts with comparable data in both years. Only 3 TUDA districts at grades 4 and 5 at grade 8 saw an increase in the percentage of NSLP-eligible students, while all other districts experienced a decrease or no change. In summary, the nationwide implementation of CEP did not result in a significant increase in the percentage of students eligible for NSLP in most participating TUDA districts.

Similarly, the implementation of CEP had limited impact on NAEP reporting by NSLP eligibility status for TUDA districts (See Tables B-1 and B-2 in Appendix B). However, if the percentage of NSLP-eligible students increased to the extent that there was an insufficient number of non-NSLP students in a TUDA district sample, no NAEP achievement gap by NSLP eligibility status could be analyzed or reported.⁷ Except for Cleveland in all 6 years, Boston in 2015, and Dallas (at grade 4) in 2017, the achievement gap by NSLP eligibility status is reportable at both grades 4 and 8 for TUDA districts. This indicates that the implementation of CEP did not lead to a dramatic change in the distribution of students by NSLP eligibility status in these districts. Moreover, there is no evidence of a consistent and widespread decrease in the achievement gap by NSLP eligibility status between 2011 and 2019, 2011 and 2015, or 2015 and 2019 across TUDA districts. See Appendix B for the TUDA achievement gaps at grades 4 and 8 from 2009 to 2019.

⁶ The Cleveland and Boston TUDA districts reported 100 percent of their students eligible for NSLP in 2015 and are omitted from the following comparisons over time.

⁷ Reporting NAEP performance results for a student group requires a minimum sample size of 62 students from at least 5 primary sampling units. For more details, see https://nces.ed.gov/nationsreportcard/tdw/analysis/summary_rules_minimum.aspx.

Table 9. Percentage of students eligible for NSLP at grade 4, by TUDA district: 2009, 2011, 2013, 2015, 2017, and 2019

States	2009	2011	2013	2015	2017	2019	Change in 2011–19	Change in 2011–15	Change in 2015–19
Albuquerque	—	66	71	64	72	72	Increase	No change	Increase
Atlanta	74	75	73	74	73	73	Decrease	No change	No change
Austin	65	64	62	62	59	56	Decrease	No change	Decrease
Baltimore City	84	88	87	81	69	58	Decrease	Decrease	Decrease
Boston	78	81	85	100	74	76	Decrease	†	†
Charlotte	47	52	56	66	42	42	Decrease	Increase	Decrease
Chicago	87	88	84	85	82	78	Decrease	Decrease	Decrease
Clark County (NV)	—	—	—	—	76	77	†	†	†
Cleveland	100	100	100	100	98	99	†	†	†
Dallas	—	92	94	88	93	89	No change	No change	No change
Denver	—	—	—	—	66	65	†	†	†
Detroit	81	87	88	74	77	88	No change	Decrease	Increase
District of Columbia (DCPS)	72	72	76	73	75	72	No change	No change	No change
Duval County (FL)	—	—	—	52	50	58	†	†	No change
Fort Worth (TX)	—	—	—	—	82	88	†	†	†
Fresno	89	93	91	92	90	86	Decrease	No change	No change
Guilford County (NC)	—	—	—	—	47	61	†	†	†
Hillsborough County (FL)	—	58	58	60	58	67	Increase	No change	No change
Houston	83	81	83	80	77	83	No change	No change	No change
Jefferson County (KY)	60	62	65	71	66	63	No change	Increase	Decrease
Los Angeles	84	83	84	84	65	70	Decrease	No change	Decrease
Miami-Dade	68	74	74	72	71	72	No change	No change	No change
Milwaukee	78	83	83	—	83	83	No change	†	†
New York City	87	90	79	85	72	71	Decrease	No change	Decrease
Philadelphia	87	90	94	68	72	75	Decrease	Decrease	Increase
San Diego	61	65	66	69	66	61	No change	No change	Decrease
Shelby County (TN)	—	—	—	—	62	59	†	†	†

— Did not participate.

† Not applicable.

NOTE: “Increase” or “decrease” indicates a change that is statistically significant at the .05 level.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, NAEP Data Explorer (<https://www.nationsreportcard.gov/ndecore/landing>).

Table 10. Percentage of students eligible for NSLP at grade 8, by TUDA district: 2009, 2011, 2013, 2015, 2017, and 2019

States	2009	2011	2013	2015	2017	2019	Change in 2011–19	Change in 2011–15	Change in 2015–19
Albuquerque	—	60	66	68	69	69	Increase	Increase	No change
Atlanta	78	82	81	81	78	71	Decrease	No change	Decrease
Austin	55	59	61	56	50	50	Decrease	Decrease	Decrease
Baltimore City	82	85	84	77	68	53	Decrease	Decrease	Decrease
Boston	73	76	80	100	69	70	Decrease	†	†
Charlotte	46	52	55	61	42	39	Decrease	Increase	Decrease
Chicago	86	84	83	86	82	80	No change	No change	Decrease
Clark County (NV)	—	—	—	—	66	65	†	†	†
Cleveland	100	100	100	100	99	97	†	†	†
Dallas	—	85	89	90	91	88	Increase	Increase	No change
Denver	—	—	—	—	70	64	†	†	†
Detroit	70	79	84	72	73	86	Increase	Decrease	Increase
District of Columbia (DCPS)	75	70	77	79	72	70	No change	Increase	Decrease
Duval County (FL)	—	—	—	44	47	52	†	†	Increase
Fort Worth (TX)	—	—	—	—	77	88	†	†	†
Fresno	86	88	89	81	83	86	No change	Decrease	Increase
Guilford County (NC)	—	—	—	—	45	52	†	†	†
Hillsborough County (FL)	—	54	56	62	51	60	Increase	Increase	No change
Houston	78	76	79	76	74	80	Increase	No change	Increase
Jefferson County (KY)	55	60	63	58	60	61	No change	No change	No change
Los Angeles	82	82	80	84	59	69	Decrease	No change	Decrease
Miami-Dade	63	72	74	73	74	72	No change	No change	No change
Milwaukee	78	81	82	—	82	84	Increase	†	†
New York City	79	87	77	79	68	74	Decrease	Decrease	No change
Philadelphia	85	88	88	60	67	67	Decrease	Decrease	Increase
San Diego	55	60	60	64	58	58	No change	No change	Decrease
Shelby County (TN)	—	—	—	—	54	52	†	†	†

— Did not participate.

† Not applicable.

NOTE: “Increase” or “decrease” indicates a change that is statistically significant at the .05 level.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, NAEP Data Explorer (<https://www.nationsreportcard.gov/ndecore/landing>).

5. Reported NSLP-Eligible Students From Schools That Participated in School-Wide Free Lunch Programs Remain Concentrated in High-Poverty Schools After the Implementation of CEP

Table 11 shows the distribution of reported NSLP-eligible students from schools that participated in school-wide free lunch programs by grade and the percentage of students eligible for NSLP at the school level.⁸ Note that for the 2019 NAEP, data on the percentage of students eligible for NSLP at the school level were not collected for schools that offered free lunch to all students under special provisions. Therefore, the following analysis only covers the period between 2009 and 2017.

Nearly four-fifths of grade 8 students and over four-fifths of grade 4 students were still concentrated in schools where more than 75 percent of their students were eligible for NSLP in 2017. Between 2011 and 2017, in this category, the percentage of reported NSLP-eligible students from schools that participated in school-wide free lunch programs declined from 95 percent to 85 percent at grade 4 and from 88 percent to 78 percent at grade 8. However, as Table 11 shows, at both grades there was an increase in the percentage of reported NSLP-eligible students from schools that participated in school-wide free lunch programs in schools where 51–75 percent of their students were eligible for NSLP.

About 95 percent of reported NSLP-eligible students from schools participating in school-wide free lunch programs were in high-poverty schools (defined here as schools with over 50 percent of their students eligible for NSLP) at both grades 4 and 8 in 2017. Between 2011 and 2017, there was a 3-percentage-point decline in the percentage of reported NSLP-eligible students in these schools at grade 4, but no change at grade 8. Between 2015 and 2017, there was no statistically significant change in the percentage of reported NSLP-eligible students from high-poverty schools with school-wide free lunch programs at either grade level.

As shown in Table 11, there was no statistically significant change in the distribution of reported NSLP-eligible students from schools that participated in school-wide free lunch programs at any level of school poverty between 2015 and 2017. This finding suggests that there has been no fundamental shift in the percentage of reported NSLP-eligible students from schools with school-wide free lunch programs across levels of school poverty since the nationwide implementation of CEP in the 2014–15 school year.

In summary, the implementation of CEP has not fundamentally changed the percentage of reported NSLP-eligible students from schools that participated in school-wide free lunch programs by the level of poverty concentration. Reported NSLP-eligible students from schools that participated in school-wide free lunch programs remained concentrated in high-poverty schools (i.e., schools with over 50 percent of their students eligible for NSLP) after the introduction of CEP. About 95 percent of reported NSLP-eligible

⁸ Data on the percentage of students eligible for NSLP at the school level are based on the responses to a categorical variable in the school questionnaire.

students from schools that participated in school-wide free lunch programs were in high-poverty schools.

Table 11. Distribution of reported NSLP-eligible students from schools that participated in school-wide free lunch programs, by grade and school-level NSLP eligibility rate: 2009, 2011, 2013, 2015, and 2017

Grade	Percent of students eligible for NSLP at school	2009	2011	2013	2015	2017	Change from 2011 to 2015	Change from 2011 to 2017	Change from 2015 to 2017
Grade 4	0–25	0.2	1.0	0.2	0.5	1.1	-0.5	0.1	0.6
	26–50	1.6	0.2	0.3	3.3	3.6	3.1*	3.4*	0.3
	51–75	3.4	2.5	5.4	13.2	9.6	10.7*	7.1*	-3.6
	76–100	93.7	95.1	93.1	82.3	85.2	-12.8*	-10.0*	2.8
	Unknown	1.0	1.1	1.0	0.7	0.5	-0.4	-0.6	-0.2
	<=50%	1.8	1.2	0.5	3.8	4.7	2.6*	3.5*	0.9
	>50%	97.2	97.6	98.5	95.5	94.7	-2.1	-2.9*	-0.8
	Unknown	1.0	1.1	1.0	0.7	0.5	-0.4	-0.6	-0.2
Grade 8	0–25	0.0	2.0	0.4	0.3	1.4	-1.7	-0.6	1.1
	26–50	1.1	2.3	0.1	2.6	2.8	0.3	0.5	0.2
	51–75	5.8	5.8	11.1	18.3	17.4	12.5*	11.6*	-0.9
	76–100	89.2	88.2	85.9	78.2	77.9	-10.1*	-10.3*	-0.3
	Unknown	3.9	1.7	2.5	0.6	0.5	-1.0	-1.2	-0.2
	<=50%	1.2	4.3	0.5	2.9	4.3	-1.4	-0.1	1.3
	>50%	95.0	94.0	97.0	96.4	95.3	2.4	1.3	-1.2
	Unknown	3.9	1.7	2.5	0.6	0.5	-1.0	-1.2	-0.2

*Statistically significant change at the .05 level.

NOTE: In the 2019 NAEP, data on the percentage of students eligible for NSLP were not collected for schools that offered free meals to all students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009–2017 Mathematics Assessments.

6. Conclusion

The national implementation of the Community Eligibility Provision (CEP) has substantially increased the number of schools and reported NSLP-eligible students participating in school-wide free meal provision. However, NAEP does not report all students who receive free meals under CEP as NSLP-eligible. Most students from CEP schools in the NAEP sample are still differentiated as NSLP-eligible or NSLP-noneligible through direct certification or direct certification plus family income using household applications. While NAEP reports students from schools using the CEP-all approach, Provision 2 or 3, or the universal food program as NSLP-eligible, they represent only a small and consistent share of all NSLP-eligible students. Furthermore, the approaches for determining student NSLP eligibility in CEP schools vary across states and across TUDA districts.

This memorandum has examined whether the implementation of CEP has decreased the validity of student NSLP eligibility status, as reported by NAEP, as a proxy for student socioeconomic status (SES). Concerns were based on the expectation that, after CEP implementation, a substantial number of students who were previously ineligible for NSLP and attended lower poverty schools would be counted as NSLP-eligible by NAEP.

In general, NSLP-noneligible students achieve higher scores on NAEP than NSLP-eligible students. If more previously NSLP-noneligible students with higher NAEP achievement were included in the NSLP-eligible group after CEP implementation, the NAEP score of the NSLP-eligible group would increase. This would narrow the achievement gap between NSLP-eligible and NSLP-noneligible students and decrease the variance in NAEP achievement explained by NSLP eligibility status. In short, if the validity of the NSLP measure has been compromised by the adoption of CEP, the following trends should be observed:

- (1) There should be a substantial increase in the overall percentage of NSLP-eligible students.
- (2) There should be a substantial increase in the percentage of NSLP-eligible students from schools at lower poverty levels that participated in school-wide free lunch programs.
- (3) The achievement gap between NSLP-eligible and NSLP-noneligible students, as defined and reported by NAEP, should decrease over time.
- (4) The variance explained by the association between NSLP eligibility status and NAEP performance should also decrease over time.

At the national level, our analyses do not support the concerns that student NSLP eligibility status is no longer a valid SES proxy variable due to the implementation of CEP.

- (1) There has been no substantial increase in the overall percentage of NSLP-eligible students since the national implementation of CEP. The percentage of NSLP-eligible students from CEP-all schools remained small and unchanged between 2015 and 2019 after the national implementation of CEP.

(2) There has been no fundamental change in the percentage of reported NSLP-eligible students from schools that participated in school-wide free lunch programs by the level of poverty concentration.

(3) NAEP achievement gaps by student NSLP eligibility status at the national level have also remained very stable over time. There has been no decrease in the NAEP mathematics achievement gap by student NSLP eligibility status.

(4) The variance in student NAEP mathematics achievement explained by student NSLP eligibility status, as measured by R-squared, has remained largely unchanged at all three grades from 2009 to 2019.

At the state level, there is no evidence of a continuing, across-the-board increase in the percentage of students recorded as eligible for NSLP or a widespread decrease in NAEP achievement gaps by student NSLP eligibility status.

(1) Between 2011 and 2019, no state experienced a decrease in the achievement gap at grades 4 and 8.

(2) During the same period, only nine states at grade 4 and four states at grade 8 saw a decrease in the variance explained by student NSLP eligibility status. This suggests that, for most states, student NSLP eligibility status remains a valid proxy variable for student SES at the state level.

At the TUDA district level, there has not been a widespread, dramatic increase in the percentage of students eligible for NSLP in most participating districts following the nationwide implementation of CEP. Additionally, the reporting of NAEP achievement gaps at the TUDA district level has not been affected by the implementation of CEP.

Taken together, these results suggest that, to date, the implementation of CEP has not affected the validity of student NSLP eligibility status as a proxy variable for SES at the national, state, or TUDA levels.

This is likely because, in practice, students from CEP schools in most jurisdictions are still differentiated as NSLP-eligible or NSLP-noneligible based on direct certification only or direct certification plus family income through household applications. Therefore, even though students receive free meals through CEP, they are not necessarily reported as NSLP-eligible by NAEP.

7. A Recommendation

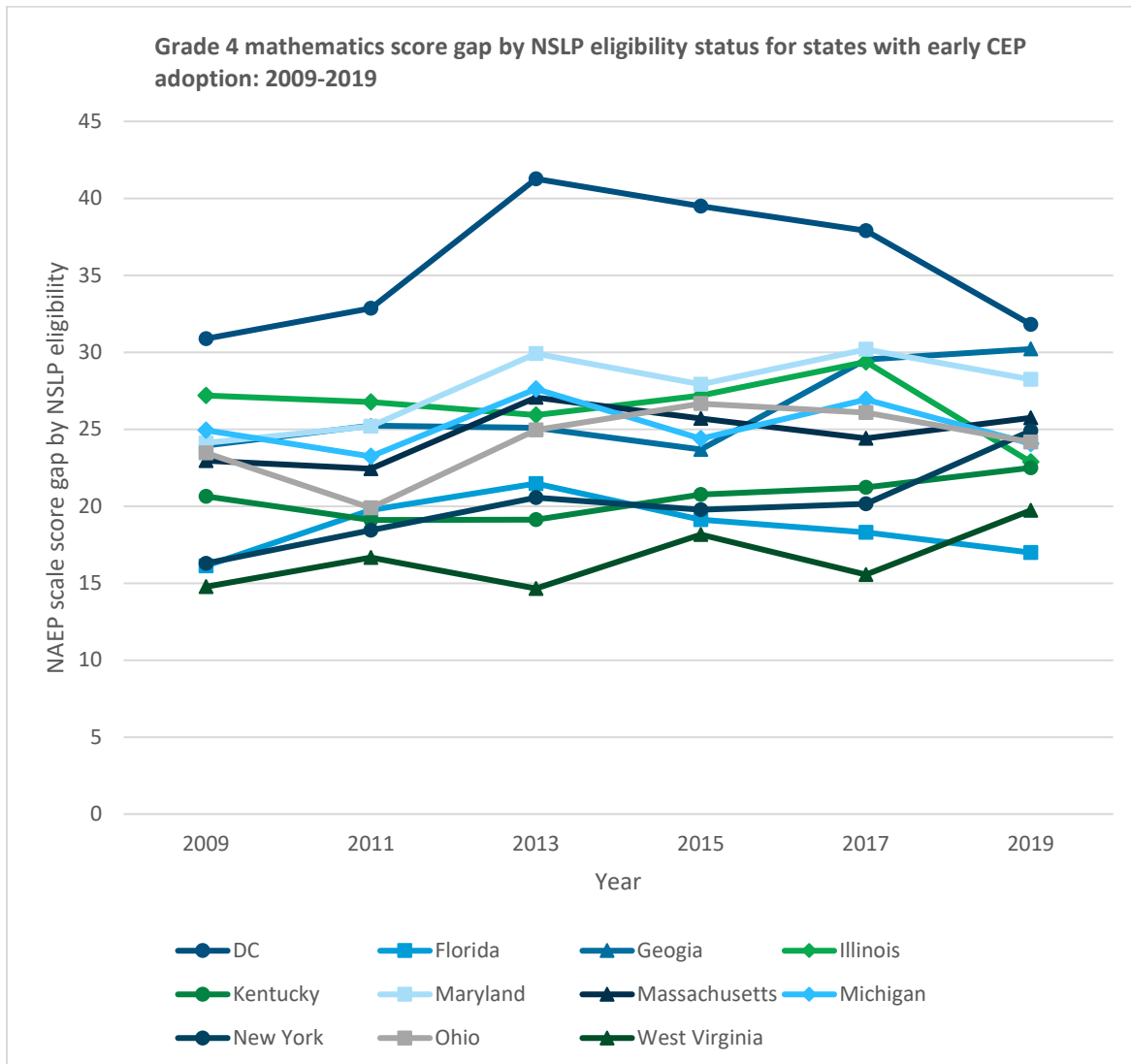
Despite the encouraging results reported in this memorandum, there is one important issue to address moving forward. Varying approaches are used across states to report NSLP eligibility status for CEP school students (and, in some cases, for non-CEP students as well). This issue deserves more attention to ensure accurate monitoring of CEP's impact on the validity of student NSLP eligibility as a proxy for SES.

The variation in approaches used by NAEP to report NSLP eligibility for CEP school students may have led to difficulties in making consistent comparisons of achievement gaps across states. Additionally, reporting national and state-level trends in the achievement gap by student NSLP eligibility status may have been affected by shifts in reporting methods over time. For example, in the 2016–17 and 2018–19 school years, several states, such as Delaware, Massachusetts, and Tennessee, reported only students directly certified for free lunch as NSLP-eligible across all schools, while other states used different approaches for CEP and non-CEP schools.

To enhance the clarity of student NSLP eligibility data, we recommend including a jurisdiction-level flag (or a school-level flag for states with multiple options) in the NAEP data. This flag would indicate the type of approaches used to report NSLP eligibility status for students from both CEP and non-CEP schools.

Appendix A. NAEP Score Gap Change at Grades 4 and 8 for the States of Early CEP Adoption

Figure A-1. Grade 4 mathematics score gap by NSLP eligibility status for states with early CEP adoption: 2009–2019



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, NAEP Data Explorer (<https://www.nationsreportcard.gov/ndecore/landing>).

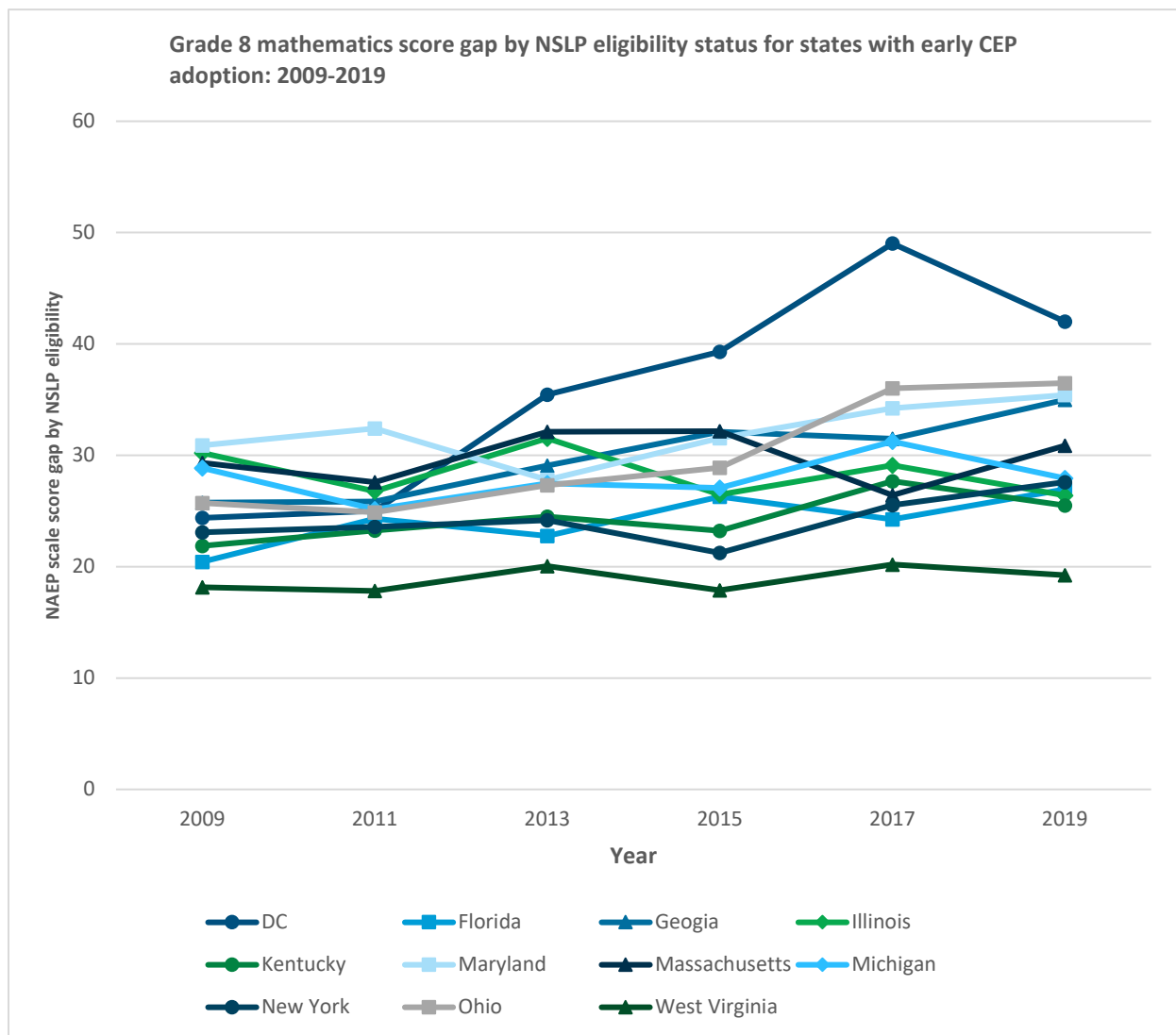
Table A-1. Change in grade 4 mathematics score gap by NSLP eligibility status between two adjacent assessments for states with early CEP adoption: 2009–2019

States	School year of CEP adoption	Change in gap by NSLP status*	Time of change	Comparison of gap between 2011 and 2019*
District of Columbia	2012–13	Increase (2011–13) Decrease (2017–19)	After CEP	No change
Florida	2013–14	None		No change
Georgia	2013–14	Increase (2015–17)	After CEP	Increase
Illinois	2011–12	Decrease (2017–19)	After CEP	No change
Kentucky	2011–12	None		No change
Maryland	2013–14	Increase (2011–13)	Before CEP	No change
Massachusetts	2013–14	Increase (2011–13)	Before CEP	Increase
Michigan	2011–12	None		No change
New York	2012–13	None		Increase
Ohio	2012–13	Increase (2011–13)	After CEP	No change
West Virginia	2012–13	None		No change

* “Increase” or “decrease” indicates a change that is statistically significant at the .05 level.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, NAEP Data Explorer (<https://www.nationsreportcard.gov/ndecore/landing>).

Figure A-2. Grade 8 mathematics score gap by NSLP eligibility status for states with early CEP adoption: 2009–2019



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, NAEP Data Explorer (<https://www.nationsreportcard.gov/ndecore/landing>).

Table A-2. Change in grade 8 mathematics score gap by NSLP eligibility status between two adjacent assessments for states with early CEP adoption: 2009–2019

State	School year of CEP adoption	Change in gap by NSLP status*	Time of change	Comparison of gap between 2011 and 2019*
District of Columbia	2012–13	Increase (2011–13, 2015–17) Decrease (2017–19)	After CEP	Increase
Florida	2013–14	None		No change
Georgia	2013–14	None		Increase
Illinois	2011–12	Increase (2011–13)	After CEP	No change
Kentucky	2011–12	None		No change
Maryland	2013–14	None		No change
Massachusetts	2013–14	Increase (2011–13)	Before CEP	No change
Michigan	2011–12	None		No change
New York	2012–13	None		No change
Ohio	2012–13	None		Increase
West Virginia	2012–13	None		No change

* “Increase” or “decrease” indicates a change that is statistically significant at the .05 level.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, NAEP Data Explorer (<https://www.nationsreportcard.gov/ndecore/landing>).

Appendix B. TUDA District Grades 4 and 8 Mathematics NAEP Scale Score Gap by Student NSLP Eligibility Status

Table B-1. Grade 4 mathematics NAEP scale score gap by student NSLP eligibility status, by TUDA district: 2009–2019

State	2009	2011	2013	2015	2017	2019	Change in 2011–19	Change in 2011–15	Change in 2015–19
Albuquerque	—	26	26	26	30	34	Increase	No change	Increase
Atlanta	38	42	40	44	48	39	No change	No change	No change
Austin	28	29	32	34	33	32	No change	No change	No change
Baltimore City	13	17	23	16	13	17	No change	No change	No change
Boston	16	17	25	—	19	25	Increase	†	†
Charlotte	25	25	26	28	21	22	No change	No change	Decrease
Chicago	25	26	33	34	28	26	No change	Increase	No change
Clark County (NV)	—	—	—	—	24	22	†	†	†
Cleveland	†	†	†	†	†	†	†	†	†
Dallas	—	19	21	17	—	22	No change	No change	No change
Denver	—	—	—	—	38	42	†	†	†
Detroit	10	6	14	6	6	10	No change	No change	No change
District of Columbia (DCPS)	35	40	49	47	46	41	No change	Increase	Decrease
Duval County (FL)	—	—	—	18	20	17	†	†	No change
Fort Worth (TX)	—	—	—	—	19	25	†	†	†
Fresno	28	37	29	37	23	11	Decrease	No change	Decrease
Guilford County (NC)	—	—	—	—	21	26	†	†	†
Hillsborough County (FL)	—	22	25	23	21	22	No change	No change	No change
Houston	18	20	26	29	22	31	Increase	Increase	No change
Jefferson County (KY)	29	24	27	22	28	28	No change	No change	No change
Los Angeles	27	25	27	31	17	13	Decrease	No change	Decrease
Miami-Dade	19	21	20	16	14	17	No change	No change	No change
Milwaukee	18	23	26	—	29	32	Increase	†	†
New York City	18	21	20	14	15	23	No change	No change	Increase
Philadelphia	23	20	23	13	23	24	No change	No change	No change
San Diego	31	29	30	35	30	30	No change	No change	No change
Shelby County (TN)	—	—	—	—	16	11	†	†	†

† Not applicable.

— Did not participate.

NOTE: “Increase” or “decrease” indicates a change that is statistically significant at 0.05 level.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, NAEP Data Explorer (<https://www.nationsreportcard.gov/ndecore/landing>).

Table B-2. Grade 8 mathematics NAEP scale score gap by student NSLP eligibility status, by TUDA district: 2009–2019

State	2009	2011	2013	2015	2017	2019	Change in 2011–19	Change in 2011–15	Change in 2015–19
Albuquerque	—	28	31	27	37	39	Increase	No change	Increase
Atlanta	30	33	38	55	50	45	Increase	Increase	Decrease
Austin	37	41	38	42	45	47	No change	No change	No change
Baltimore City	17	27	20	18	16	19	Decrease	Decrease	No change
Boston	26	26	37	—	27	29	No change	†	†
Charlotte	28	39	36	42	33	27	Decrease	No change	Decrease
Chicago	21	22	27	43	39	27	No change	Increase	No change
Clark County (NV)	—	—	—	—	30	23	†	†	†
Cleveland	†	†	†	†	†	†	†	†	†
Dallas	—	14	24	18	28	27	Increase	No change	No change
Denver	—	—	—	—	32	42	†	†	†
Detroit	9	7	20	12	4	2	No change	No change	Decrease
District of Columbia (DCPS)	33	33	42	53	53	53	Increase	Increase	No change
Duval County (FL)	—	—	—	18	22	21	†	†	No change
Fort Worth (TX)	—	—	—	—	14	25	†	†	†
Fresno	41	38	23	31	21	20	Decrease	No change	Decrease
Guilford County (NC)	—	—	—	—	32	34	†	†	†
Hillsborough County (FL)	—	28	28	35	30	37	Increase	No change	No change
Houston	25	15	25	28	19	31	Increase	Increase	No change
Jefferson County (KY)	30	33	34	32	32	27	No change	No change	No change
Los Angeles	27	26	25	31	16	17	No change	No change	Decrease
Miami-Dade	18	20	25	21	25	22	No change	No change	No change
Milwaukee	14	19	26	—	33	33	Increase	†	†
New York City	15	18	17	16	20	28	No change	No change	No change
Philadelphia	23	28	34	14	16	26	No change	No change	Increase
San Diego	26	34	36	31	34	38	No change	No change	No change
Shelby County (TN)	—	—	—	—	19	15	†	†	†

† Not applicable.

— Did not participate.

NOTE: “Increase” or “decrease” indicates a change that is statistically significant at 0.05 level.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, NAEP Data Explorer (<https://www.nationsreportcard.gov/ndecore/landing>).

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