How Did School-Level Expenditures Change in the Wake of the Pandemic?

An Assessment Using Model Estimates of Poverty in Schools

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Acknowledgments

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The COVID-19 pandemic prompted a substantial federal investment in K–12 education known as Elementary and Secondary School Emergency Relief (ESSER), aimed at supporting student learning during the pandemic and recovering from the loss of learning time in the wake of schooling disruptions. This report is the first assessment of how school-level spending changed in the two years after the start of the pandemic. Overall, typical school-level expenditures rose by about $1,000 per student nationwide from the 2018–19 school year to 2021–22. Using the Urban Institute's Model Estimates of Poverty in Schools (MEPS), we find that the typical allocation of school-level spending for students from low-income households, relative to students from higher-income households, became modestly more progressive. The average school-level spending allocated to students from low-income households, relative to those from higher-income households, increased about 2.5 percentage points from 2018–19 to 2021–22 (around $350 per student).

This positive but muted effect on school-level spending differences may be attributable to multiple factors, including the fact that federal spending, even at its highest level during the pandemic, makes up only a small share of overall spending. Further, we point to evidence that funding was more likely to be spent on district initiatives, rather than school-level resources, and that districts serving higher shares of low-income students appear to have spent ESSER dollars at a slower pace than districts serving higher-income students. Finally, data show that districts serving higher-income students are more likely to have seen enrollment declines during the pandemic, which may also downwardly bias our estimate of exposure to per pupil spending by student need.

Background on K–12 Funding to Support Pandemic Instruction

The pandemic resulted in substantial changes in K–12 educational funding and in public school enrollment. Lawmakers passed federal funding packages to support the transition to virtual and hybrid schooling, as well as programming to help combat learning loss. And some students left public schools for private or homeschooling alternatives, resulting in substantial decreases in enrollment that tended

to be larger in urban school districts and in districts serving higher shares of low-income students (Burtis and Goulas 2023; Dee 2023). But recent research from Michigan and Massachusetts shows that enrollment for low-income students returned toward baseline trends more quickly than enrollment for higher-income students (Bacher-Hicks et al. 2024; Francis and Goodman 2025).

Timeline of Funding

Packages of funding for K–12 public schools, known as ESSER funding, arrived in three waves. ESSER funding was allocated to provide more funding to school districts with higher shares of low-income students. Most funding was allocated via the Title I formula, which provides funding for students from low-income households (OIG 2022). But research suggests that districts with greater student economic need have spent ESSER funding more slowly than districts with less need (Lafortune et al. 2023; Roza and Silberstein 2023).

- **Coronavirus Aid, Relief, and Economic Security (CARES) Act:** Authorized $13.2 billion to K–12 education in March 2020. Funds could be committed for spending until September 30, 2022.

- **Coronavirus Response and Relief Supplemental Appropriations Act:** Authorized $54.3 billion to K–12 education in December 2020. Funds could be committed for spending until September 30, 2023.

- **American Rescue Plan (ARP) Act**: Authorized $122 billion (with some funding conditional on submitting a spending plan) to K–12 education in December 2020. Funds could be committed for spending until September 30, 2024.[1]

The deadline for committing ESSER funds does not necessarily mean the conclusion of ESSER spending, and some states and territories received extensions that allow them to spend some ARP funding through March 30, 2026.[2]

Funding for K–12 education may have also reached districts in the form of the federal Governor's Emergency Education Relief Fund, which allocated roughly $3 billion through the CARES Act and an additional $4 billion through the Coronavirus Response and Relief Supplemental Appropriations Act.[3]

Importantly, not all of this new federal spending may show up in differences in school-level spending within districts. A 2022 analysis of ESSER I (CARES Act allocations) by the US Department of Education's Office of Inspector General found that in a sample of 48 local education agencies, just 26 percent of funding was allocated to specific schools, relative to spending on district-wide programs (OIG 2022).

Evidence on Funding and Outcomes

There is evidence of a relationship between expanded ESSER funding at the district level and student academic experiences and outcomes. Researchers have found that moving toward spending adequacy (spending that fully meets student need) during the pandemic is associated with reduced time spent in virtual instruction (Weber and Baker 2025). Exploiting discontinuities in how federal funding was allocated to states and districts, researchers have found that an additional $1,000 in federal revenue per pupil is associated with increases in math scores of 0.007 to 0.009 standard deviations and in reading scores of 0.002 to 0.005 standard deviations (Dewey et al. 2024; Goldhaber and Falken 2024). Researchers have even been able to point to specific expenditures as supporting academic outcomes. For example, HVAC (heating, ventilation, and air conditioning) upgrades during the pandemic led to increases in test scores and a reduction in student absences (Persico and Fuller 2025).

Background on School-Level Measurement of Students from Low-Income Families

The traditional, nationally available school-level measure of economic disadvantage (i.e., the share of students eligible for free and reduced-price lunch, or FRPL) measures students from households earning up to 185 percent of the federal poverty level via applications or direct certification. But the accuracy and consistency of this measure has eroded over the past decade with the increased adoption of federally supported universal free meal programs such as the Community Eligibility Provision and reporting of direct certification—the share of students either categorically eligible for social safety net programs (e.g., students in foster care, migrant students, and students participating in Head Start) or participating in social safety net programs (e.g., the Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, or Medicaid). FRPL and direct certification *can* be reported for all schools nationally via federal collection of the Common Core of Data (CCD), but direct certification data typically only identify eligible students using a poverty threshold equal to 130 percent of the federal poverty level, apply only to students who are eligible for social safety net programs, and are not reported by all states. To address this, new metrics, including MEPS, have emerged. These measures aim to measure student need consistently over time and across state borders.

Evaluating spending at the school level, rather than at the district level, allows states to be evaluated on more equal footing. School districts vary in size. Some states, such as those in New England, have districts that are aligned with town boundaries or small regions, meaning that a district may have just a few schools. Other states, including many in the South, align school districts with

counties, meaning there are more schools within each district. Because schools are more uniformly sized than districts, in terms of enrollment, school-level spending can provide more comparative estimates of progressivity across states.[4]

Data and Methods

This analysis uses school-level data on spending, teacher staffing, and enrollment to calculate progressivity of school resources before the start of the pandemic (2018–19) and after (2020–21 and 2022–23). Because of the substantial changes that occurred at the start of the pandemic (e.g., unplanned remote education, the expansion of universal school meals, and a necessary ramp-up to distributing and spending ESSER I funding), we do not analyze data from 2019–20.

NERD$ Data

National Education Resource Database on Schools (NERD$) data, published by the Edunomics Lab at Georgetown University, are a compilation of school-level, per pupil spending data. The Every Student Succeeds Act requires that these data be published. The NERD$ data for 2018–19 and 2020–21 contain a normed, per pupil spending variable that the analysis team built to support cross-state comparisons (Georgetown University, n.d.).

For our analysis, we use the normed NERD$ variable when possible. To extend our comparison to 2021–22, we also conduct an analysis using the raw per pupil spending variable, which is available in all three years of our data. To ensure that our sample accurately reflects typical spending in a state, we exclude observations that have been flagged by the NERD$ team as a concerning value (e.g., a value inconsistent with other available data). We also exclude any schools with raw values that are substantially lower (up to 20 percent of the mean value) or substantially higher (at least five times the mean value). Finally, we exclude schools with less than 50 students or that have missing enrollment data.

Because the costs of providing an education vary across different geographic areas, we adjust the school-level variables using a district-level adjustment factor, the Comparable Wage Index for Teachers (CWIFT). CWIFT was not published for 2020–21 because of pandemic-related uncertainties in the data. For this analysis, we use 2021–22 CWIFT data to adjust 2020–21 spending information.

MEPS 2.0 Data

MEPS was created in 2022 to provide a consistent measure of student poverty in the wake of universal free meal programs' growing popularity and the associated decline in accuracy and reliability of the FRPL measure. MEPS 2.0 is an update to the original MEPS 1.0 school-level measure of the share of students from households earning up to 100 percent of the federal poverty level that is comparable across states and time and reflects, as closely as possible, the students who attend each school.

MEPS 2.0 uses a multilevel (mixed-effects) linear regression model to produce comparable estimates and to handle correlated and nonindependent hierarchical data from schools within districts within states. The measure uses aggregated geographic district-level free lunch and direct certification shares to predict adjusted Small Area Income and Poverty Estimates in each available year. It then applies the estimated parameters from this district-level model to school-level data to predict school-level poverty.

Because MEPS uses a poverty threshold of 100 percent of the federal poverty level, we can use MEPS to identify schools serving higher-need students (i.e., students from households in deeper poverty) compared with students receiving free and reduced-price meals (185 percent of the federal poverty level) or directly certified (130 percent of the federal poverty level).

The modified MEPS data are school-level measures from our model that are adjusted to more closely reflect SAIPE measures of district-level poverty. This procedure better accounts for potential bias in our model (particularly for schools with high shares of Black students) but reduces reliability in geographic districts with modest or small populations. We include the modified MEPS 2.0 data as a robustness check when comparing MEPS 2.0 outcomes on progressivity with results for direct certification and FRPL but use the main MEPS 2.0 dataset for all other analyses.

Common Core of Data

As part of our analysis, we use data on the school-level share of students directly certified for free and reduced-price meals and the share of students eligible for free and reduced-price meals through direct certification or application. Because some states report one measure, the other measure, or both, these results are not available for all schools and may be reported differently across years. Table 1 outlines the availability of each measure in each year, where at least 80 percent of sample schools in the state have an available value.

TABLE 1
Number of States with Available Data on Low-Income Students

At least 80 percent of schools in our sample have available data within the state and year

	States in sample	DC	FRPL	MEPS 2.0	Modified MEPS 2.0
2018	49	22	38	49	49
2020	50	27	38	50	50
2021	49	26	38	49	48

Source: Urban Institute analysis.

Notes: DC = direct certification; FRPL = free and reduced-price lunch; MEPS = Model Estimates of Poverty in Schools. "States in sample" refers to states that have available school-level funding data in the given year.

In addition to school-level measures of the share of students from low-income families, we use data on the number of full-time equivalent teachers at each school. Using these data, we develop a teacher-student ratio for each school. Because most K–12 educational spending is on personnel costs, we use these data as a check on our school-level expenditure results (Learning Policy Institute 2025). This analysis is similar in spirit to analysis done using Civil Rights Data Collection data looking at expenditures on personnel and on novice teacher concentration within schools (Shores and Ejdemyr 2017). But this is likely an incomplete proxy for increases in spending. First, it is possible that many districts were more likely to spend temporary ESSER funding on nonpersonnel costs (e.g., health and safety products and technology for remote schooling) or on supports outside the school day (e.g., contractors for after-school tutoring or summer learning programs). Second, analysis of district-level staffing data suggests that only 17 percent of the 200,000 new K–12 positions added from 2019–20 to 2023–24 were teachers. Most new positions were in roles such as administration, counseling, coaching, or support staff (Roza et al. 2025).

Methodology

For this analysis, we employ an exposure-based approach for measuring progressivity for students from low-income families. We look at average per pupil spending among students from low-income households, relative to average per pupil spending among students from higher-income households. We construct a ratio of these values, where 1 indicates that per pupil spending is equal across lower-income and higher-income students, and a value higher than 1 indicates that spending is higher for students from low-income households (box 1). This measure has been used in multiple contexts to look at district- and state-level revenue and spending for different student populations (e.g., Sosina and Weathers 2019; Shores et al. 2022; Chingos and Blagg 2017; Blagg et al. 2023).[5]

An Example of Exposure-Based Spending Analysis

The following provides a simplified example of exposure-based spending for school-level data. For this example, there are only two schools, Washington School and Adams School, both with 100 students.

Washington School	Adams School
Spending: $11,000 per student	**Spending**: $12,000 per student
20 students from low-income families,	50 students from low-income families,
80 students from higher-income families	50 students from higher-income families

In this case, the exposure-based spending ratio would be calculated as follows:

$$\frac{\dfrac{(\$11{,}000 * 20) + (\$12{,}000 * 50)}{70}}{\dfrac{(\$11{,}000 * 80) + (\$12{,}000 * 50)}{130}}$$

The values would produce the following ratio:

$11,714 / $11,384 = **1.03**

A value above 1 indicates relatively more funding for students from low-income families. In this case, students from low-income families receive, on average, 3 percent more than students from higher-income families.

For this analysis, we test four measures of students from low-income families: students directly certified, students eligible for free and reduced-price meals, the implied number of students who are below the poverty threshold as determined through MEPS 2.0, and the modified MEPS 2.0 measure.

Results

In the following section, we outline the results of our progressivity analysis using available data on direct certification, FRPL eligibility, and the MEPS measure. We also highlight state-level trends in progressivity of resources for low-income students.

A Comparison of Direct Certification, FRPL, and MEPS 2.0 Measures in 2018–19 and 2020–21

Our analysis shows that school-level spending per student and the number of teachers per student both increased between 2018–19 and 2020–21 (table 2).

Average Per Student Spending and Teachers Per Student over Time
Resources per student increased at the school level after the start of the pandemic

Year	NERD$-adjusted spending (2021 dollars)	Raw spending (2021 dollars)	Teacher-student ratio (per 100 students)
2018–19	$14,956	$14,155	6.26
2019–20			
2020–21	$15,504	$14,793	6.50
2021–22		$15,188	6.50

Source: Urban Institute analysis of data from NERD$, Model Estimates of Poverty in Schools, and the Common Core of Data.
Notes: NERD$ = National Education Resource Database. Schools are included if they meet sample criteria, even if they do not report in all three years of data. Analysis is weighted by school-level enrollment. Dollars are adjusted for local labor costs.

Even after accounting for inflation, typical school-level spending increased by about $500 to $600 per student from 2018–19 to 2020–21 and by around $400 from 2020–21 to 2021–22. The number of teachers per student also increased from 2018–19 to 2020–21 but did not change substantially in the next year.

Prepandemic Results

Consistent with previous analyses of student poverty measures, MEPS appears to measure state-level school spending progressivity more conservatively than direct certification or FRPL (Blagg and Gutierrez 2024). Estimates using FRPL in particular tend to display relatively higher (or lower) exposure-based progressivity (figure 1). This could be attributable to multiple factors. First, in some states, district (or school) funding formulas may use the share of directly certified or FRPL-eligible students as part of the funding allocation formula. It follows that our analysis would pick up that more direct, mechanical relationship. But because direct certification and FRPL may be reported differently by different states, these results are less comparable across the US. Second, the typical eligibility thresholds for direct certification (130 percent of the federal poverty level) and FRPL (185 percent of the federal poverty level) are higher than the federal poverty level. Measurement against these higher thresholds might yield higher exposure-based progressivity factors, especially if students below that threshold are more likely to be grouped in fewer schools compared with students below 100 percent of the federal poverty level. The modified MEPS measure of progressivity is typically slightly

higher than the standard MEPS measure. This is likely because the modified MEPS measure works to "true up" school-level estimates according to SAIPE school district measures of poverty. SAIPE is used for Title I distributions, so it is possible that aligning more closely with these values also aligns with funding progressivity.

Prepandemic Exposure-Based Spending Progressivity, NERD$ Normed Spending (2018–19)

Progressivity estimated using four measures of students from low-income households
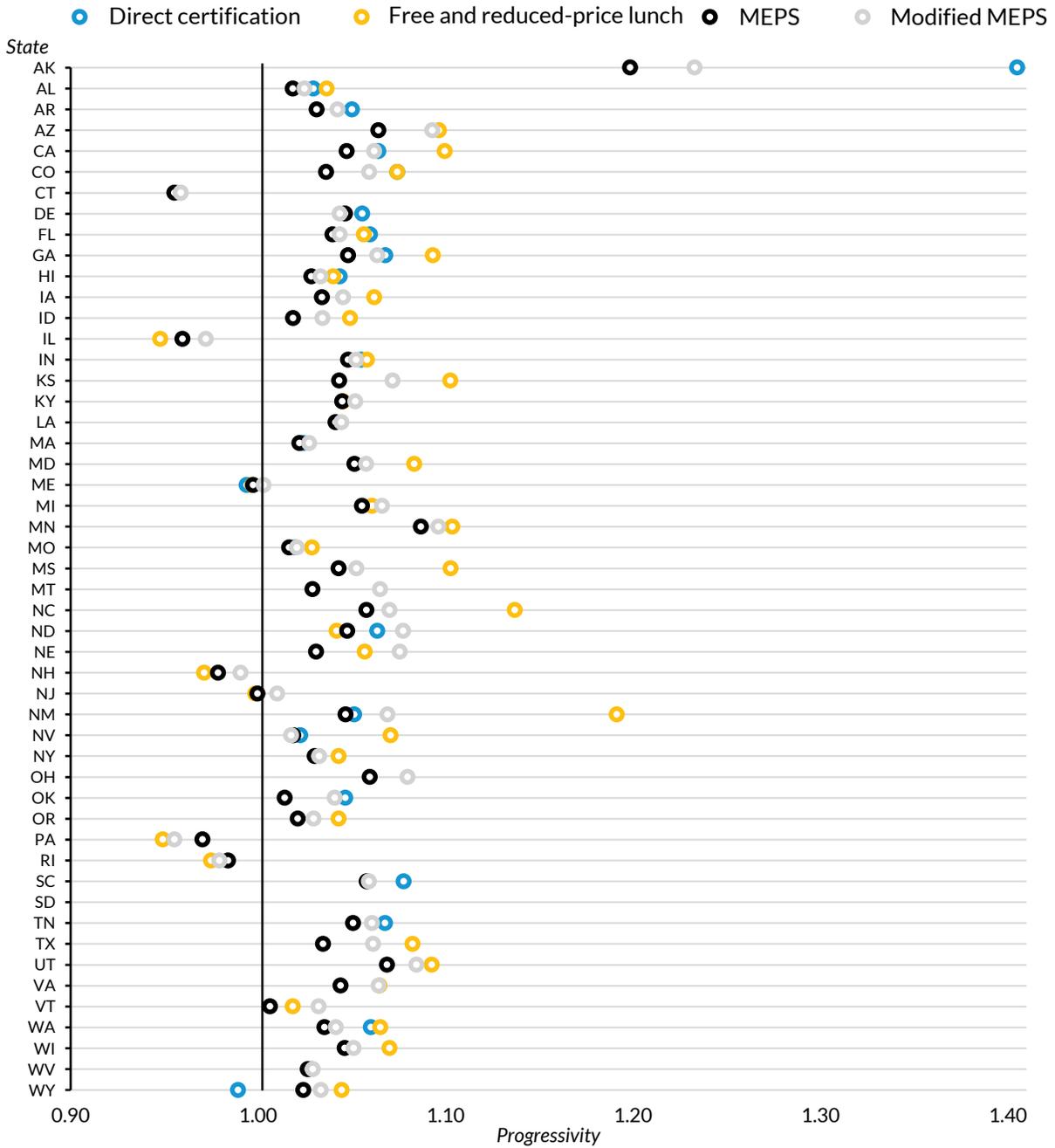
Source: Urban Institute analysis of data from NERD$, MEPS, and the Common Core of Data.

Notes: NERD$ = National Education Resource Database on Schools; MEPS = Model Estimates of Poverty in Schools. State is included if at least 80 percent of schools in the sample have the measure of economic disadvantage.

Despite magnitude differences, direct certification, FRPL, and MEPS measures appear to be fairly consistent in the story they tell for each state. Only New Jersey and Wyoming are deemed progressive by at least one measure and regressive by another. Most states appear to allocate relatively more school-level spending to low-income students by this exposure-based measure.

Postpandemic Results

When we look at the same data for 2020–21, states appear slightly more progressive than in the year before the pandemic (figure 2). Eighty-three percent of states with a direct certification value in both years demonstrate greater progressivity for low-income students after the pandemic. Sixty-nine percent of states with FRPL values, and 70 percent of states with MEPS values, also demonstrate higher levels of progressivity in 2020–21 relative to 2018–19.

Illinois, Maine, New Hampshire, and Rhode Island all appear to move from a regressive distribution of school-level expenditures in 2018–19 to a more neutral or progressive allocation in 2020–21. Connecticut and Pennsylvania appear to have regressive spending allocations in both years.

Although it is tempting to attribute this change to increases in federal funding as a result of ESSER, this is not the only possible route through which we could see these increases. The pandemic substantially changed school enrollment and attendance. If enrollment and attendance declines in 2020–21 were smaller in low-income schools relative to higher-income schools, this could artificially boost per pupil spending in higher-income schools. In addition, the school-level spending data are still fairly new. If states improved their reporting of school-level expenditures (e.g., more precisely allocating dollars to schools, rather than a central office) in 2020–21 compared with 2019–20, this could lead to changes in the progressivity measure, even if there were no underlying changes in actual spending. Finally, changes in household economic circumstances during the pandemic, and changes to eligibility for free school meals, could have shifted states' reporting of low-income students (or forced states to rely on measures of need from before the pandemic). If the growth in student economic need is more concentrated in high-spending schools, the measure of exposure-based progressivity could increase even if spending levels stay the same.

At the same time, there are reasons to believe that ESSER and other funding changes to account for the pandemic are one of the drivers behind these spending changes. First, there are some nuances in the Title I formula that lead to some states getting more per formula student than other states. The four states that flipped to a positive allocation after the pandemic are among the top 15 states in terms of per formula student funding in Title I.[6] This means that when ESSER funding flowed through the same formula, these states got an extra boost of funding meant for low-income students. This discontinuity in

Title I (and thus ESSER) funding allocation is large enough that it has been used to look at the effects of pandemic spending on student outcomes (Dewey et al. 2024; Goldhaber and Falken 2025). Second, although states receiving ESSER funding are not required to follow the rule of "supplement, not supplant" with the funds, they are required to demonstrate a maintenance of effort. Broadly, states must demonstrate that they are maintaining a level or share of funding equivalent to their historic support of K–12 schools (US Department of Education 2021). This means that states are more likely to layer ESSER funds on top of existing supports, rather than adjust allocations of other funding.

FIGURE 2

Postpandemic Exposure-Based Spending Progressivity, NERD$ Normed Spending (2020–21)

Progressivity estimated using four measures of students from low-income families
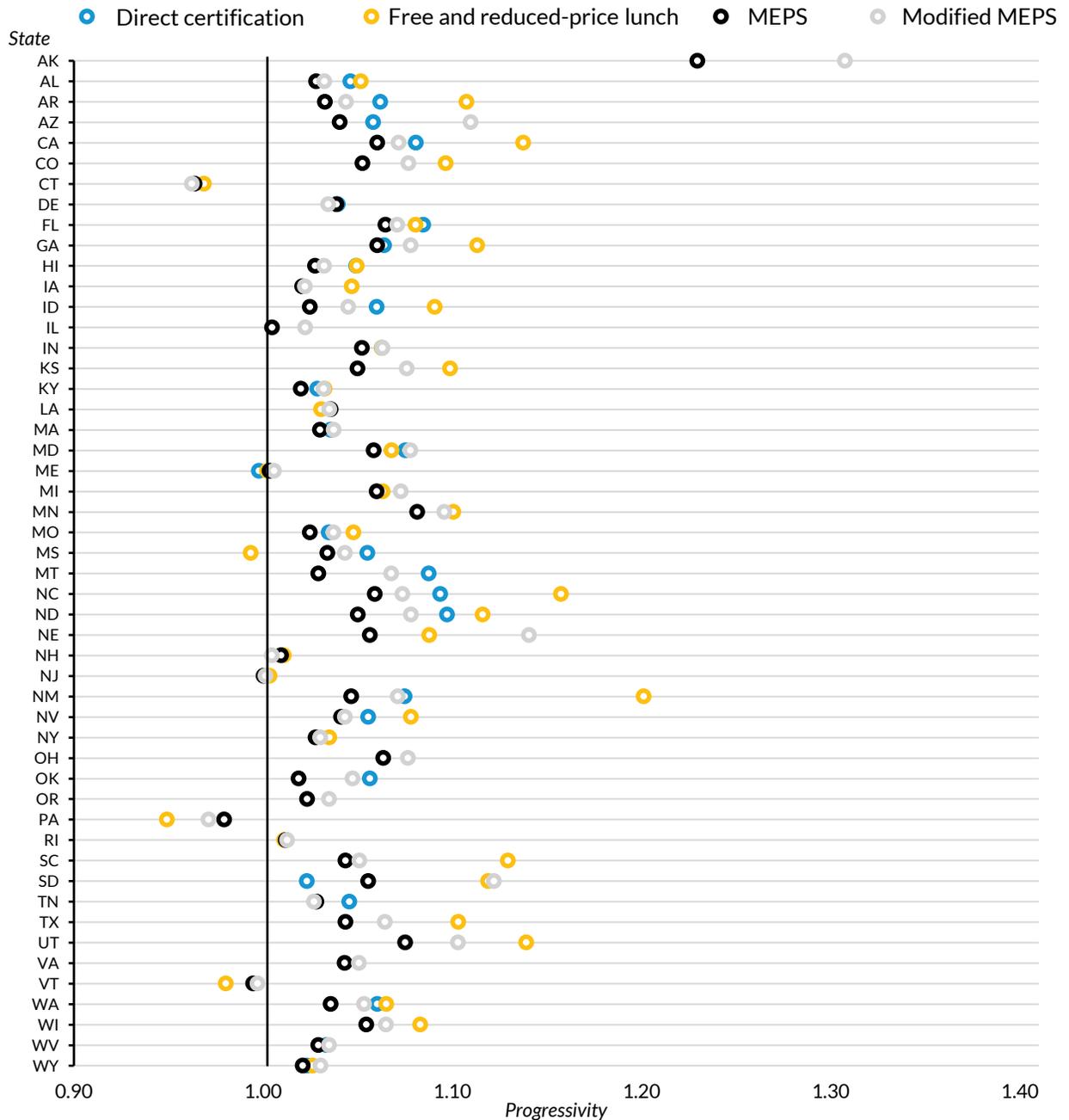
Source: Urban Institute analysis of data from NERD$, MEPS, and the Common Core of Data.

Notes: NERD$ = National Education Resource Database on Schools; MEPS = Model Estimates of Poverty in Schools. State is included if at least 80 percent of schools in the sample have the measure of economic disadvantage.

Trends in Progressivity of School-Level Resources over Time

To move from these state-level estimates to a broader national assessment of progressivity for low-income students, we use the MEPS measure, combined with three measures of school resources: NERD$-adjusted funding, raw funding levels for schools, and the teacher-student ratio. We use the MEPS measure for this analysis. First, it is the only measure that is available at the school level across all states. Second, although we would not expect perfect year-over-year correlation in terms of the state-level measure of progressivity, the MEPS measure does generally have a stronger state-level, year-over-year correlation on estimated progressivity measures compared with direct certification or FRPL measures (appendix table A.1).

Our results show that all three measures of school-level expenditures grew after 2019–20. Nationally, school-level spending for low-income students, relative to higher-income students, increased about 1.6 percentage points (about $232 per student) from 2018–19 to 2020–21, using the NERD$-adjusted variable (1.3 percentage points, or $188, if the sample is restricted to only schools that reported spending data in all three years). Findings using the raw data are similar (a 1.6 percentage-point increase; 1.3 percentage points if using the limited sample). Spending in the next year (2021–22) rose an additional 0.8 percentage points, or 1.5 percentage points in the limited sample.

Teacher-student ratios can serve as a modest check on the direction of our results. These results indicate a 0.7 percentage-point increase in teacher-student ratio, equivalent to students from below the federal poverty level having about 0.5 additional full-time equivalent teachers per 1,000 students relative to the prepandemic year. But this ratio shifts slightly downward in the following year (0.2 percentage points).

FIGURE 3
National Estimate of School-Level Expenditure Progressivity
For 2018–19, 2020–21, and 2021–22

Allocation toward students from low-income households
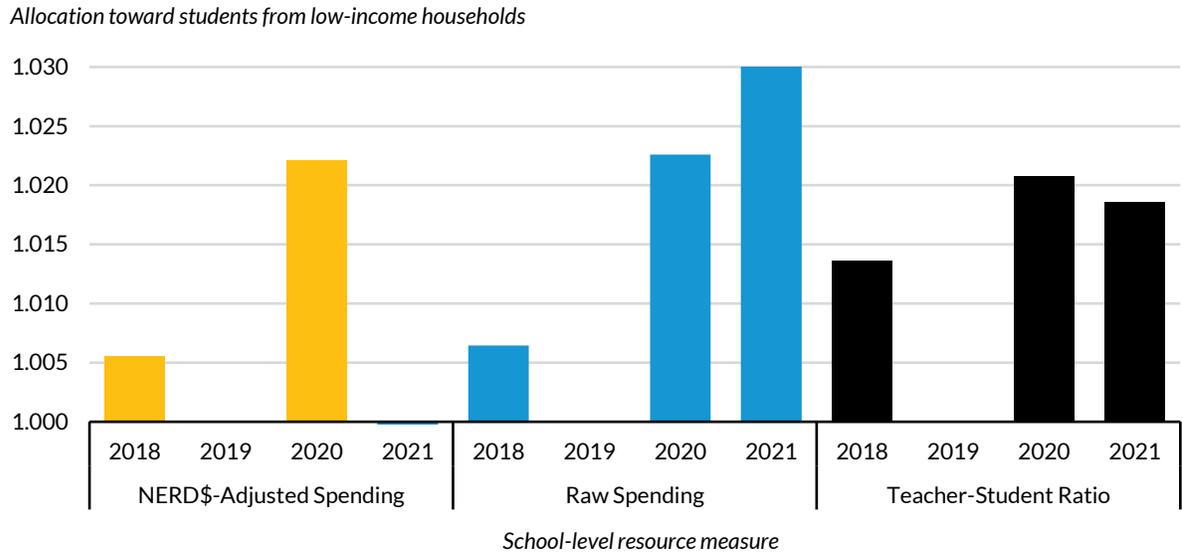
School-level resource measure

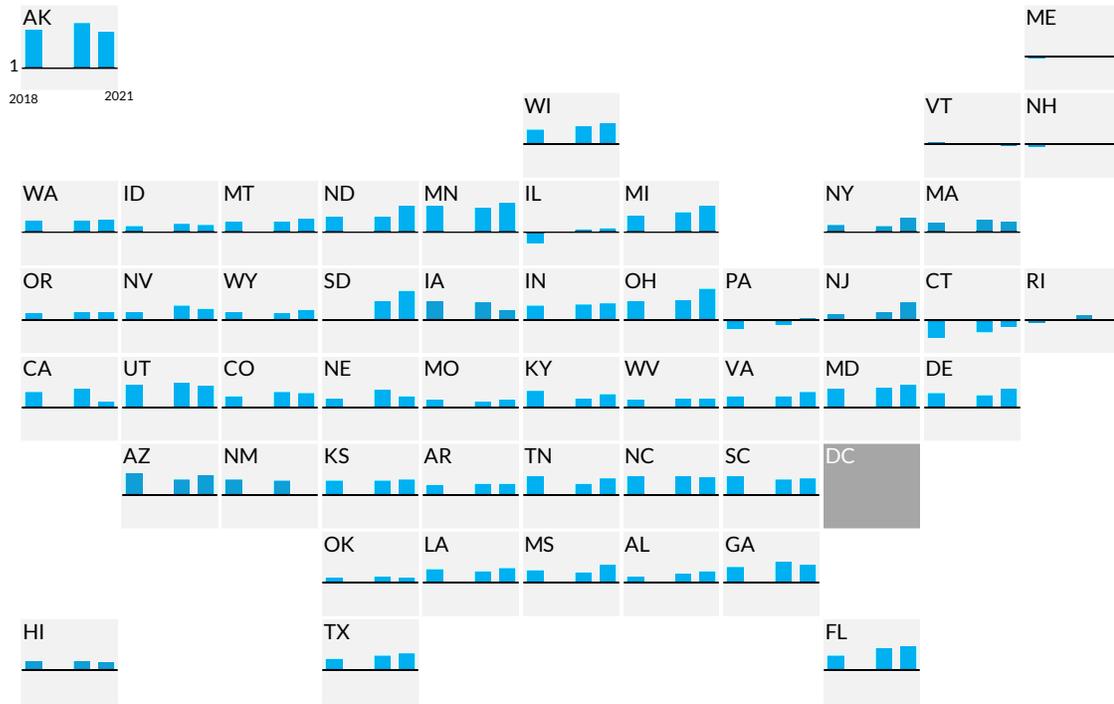**Source:** Urban Institute analysis of data from NERD$, Model Estimates of Poverty in Schools, and the Common Core of Data.
Notes: NERD$ = National Education Resource Database on Schools. Allocation can be interpreted as a percentage difference, such that a value of 1.01 means that students from low-income households receive 1 percent more spending, or full-time equivalent teachers per student population, than students from higher-income households.

Because the NERD$-adjusted and raw spending results were quantifiably similar, we use the raw school-level spending data to produce estimates of the change in progressivity, by state, across the three years of our analysis (figure 4). Our results show that several states echo the national estimate in having expenditure progressivity that generally increases from the prepandemic year and increases again from 2020–21 to 2021–22.

FIGURE 4
School-Level Expenditure Progressivity, by State
Using raw school-level expenditure data and MEPS data on students below the federal poverty level
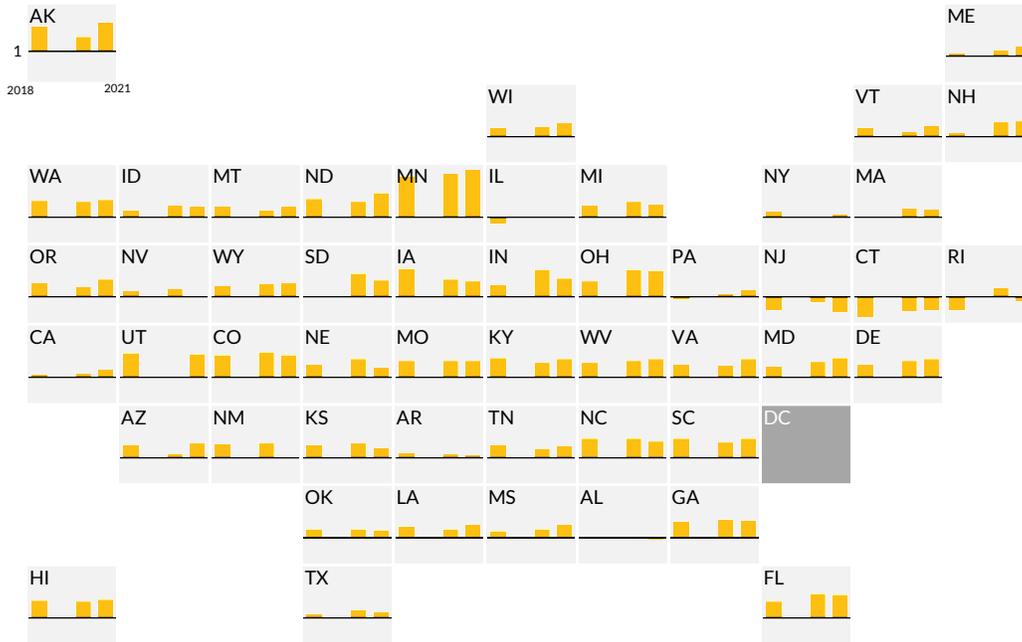
Source: Urban Institute analysis of National Education Resource Database on Schools and MEPS data.
Notes: MEPS = Model Estimates of Poverty in Schools. All states except Alaska have a progressivity scale from 0.90 to 1.15, where values above 1 indicate that school-level funding is weighted toward students from households below the federal poverty level. Alaska is on a scale from 0.90 to 1.30. Data are not available for South Dakota in the 2018–19 school year or for New Mexico in the 2021–22 school year.

State results for teacher-student ratio are similarly aligned with national trends in that most states allocate more teachers to schools serving higher shares of low-income students. But there is more variation across states in terms of trends over time. Some states (e.g., Louisiana, Oklahoma, Oregon, Nevada, and Washington) did not appear to have postpandemic changes in teacher-student ratios that benefited students from low-income families versus those from higher-income families. And some states, such as Iowa, actually saw changes that meant there were relatively more teachers per student for higher-income students.

FIGURE 4
Teacher-Student Ratio Progressivity, by State
Using school-level teacher-student enrollment ratios and MEPS data on students below the federal poverty level

Source: Urban Institute analysis of Common Core of Data and MEPS data.
Notes: MEPS = Model Estimates of Poverty in Schools. All states except Alaska have a progressivity scale from 0.95 to 1.10, where values above 1 indicate that school-level teacher-student ratio is weighted toward students from households below the federal poverty level. Alaska is on a scale from 0.90 to 1.15.

Conclusion

Our results indicate that the school-level allocation of educational expenditures increased slightly postpandemic for schools serving higher shares of students from low-income households, relative to schools serving students from higher-income backgrounds. This result generally holds across multiple measures of low-income status: the share eligible for FRPL, share of directly certified students, and the share of students identified as being from a household below the federal poverty level (MEPS). And although overall spending increased for all students in the years following the start of the pandemic, this increase in progressivity spending was muted—on the order of about 2.5 percentage points (about $350) more in spending per low-income student over two years. This muted effect may be attributable to multiple factors, including the following:

Federal dollars make up a relatively small percentage of K–12 funding. Even with ESSER funding, federal dollars made up only 13.7 percent of total revenue for school districts in 2021–22 (Cornman et al. 2024). Even when this revenue is substantially directed to schools serving more students from low-income families, it still contributes a small share to overall expenditures.

The structure of school-level spending data makes it difficult to fully account for dollars going to schools. Because nearly all schools benefit from a central local education agency office or staff, it is difficult to assign every dollar of spending to a school site. In the 2018–19 NERD$ data, the share of spending allocated to school sites ranges from less than 60 percent to more than 90 percent (Blagg et al. 2022). When more expenditures are allocated centrally, rather than to a school, it dilutes the measurement of progressivity for school-level expenditures.

The allocation of ESSER funding was primarily to states and school districts. Department of Education analysis of school districts indicates that just 26 percent of funding was allocated to specific schools, relative to spending on district-wide programs (OIG 2022). Further research indicates that less than 20 percent of new K–12 positions added from 2019–20 to 2023–24 were teachers (Roza et al. 2025). Support staff may be less likely than teachers to be counted as part of expenditures at the school level. These trends in ESSER spending make it less likely that the funds appear in school-level expenditures versus district-level spending on broader initiatives. Again, this dilutes the measure of progressivity at the school level.

Districts spent funding at different rates. Districts with greater student economic need have spent ESSER funding more slowly than districts with less need (Lafortune et al. 2023; Roza and Silberstein 2023). Because of this trend in delaying expenditures, it is possible that our assessment of school-level expenditures might underestimate the progressivity of funding, relative to using estimates of school- or district-level revenues.

Changes in enrollment during the pandemic may have generated a mismatch between student need and allocated funding. The pandemic caused substantial shifts in public school enrollment, as some students moved to home school or private school enrollment (Dee 2023). In particular, research indicates that permanent declines in enrollment were largely in districts that tend to have higher shares of students from higher-income households (Bacher-Hicks et al. 2024; Francis and Goodman 2025). If allocations of ESSER funding to schools were based on prepandemic enrollment data, per pupil expenditures could be artificially higher for schools with steeper drops in enrollment, which may disproportionately be at schools serving students from higher-income families.

Appendix

State-Level Correlation of Spending Ratios Across Poverty Measures and Time

2018 NERD$ spending variable, calculated low-income ratios

	Direct certification	FRPL	MEPS	Modified MEPS
Direct certification	1.00			
FRPL	0.47	1.00		
MEPS	0.83	0.64	1.00	
Modified MEPS	0.80	0.63	0.94	1.00

2018 and 2020 NERD$ spending variable, calculated low-income ratios

	Correlation with 2020 result (all)	Correlation with 2020 result (limited)
Direct certification	0.79	0.88
FRPL	0.84	0.85
MEPS	0.93	0.95
Modified MEPS	0.92	0.96

2018, 2020, and 2021 raw spending variable, calculated low-income ratios

	Correlation with 2020 result (all)	Correlation with 2021 result (all)	Correlation with 2020 result (limited)	Correlation with 2021 result (limited)
Direct certification	0.82	0.85	0.88	0.96
FRPL	0.86	0.72	0.86	0.78
MEPS	0.93	0.90	0.95	0.91
Modified MEPS	0.93	0.91	0.96	0.95

2018, 2020, and 2021 teacher-student ratio, calculated low-income ratios

	Correlation with 2020 result (all)	Correlation with 2021 result (all)	Correlation with 2020 result (limited)	Correlation with 2021 result (limited)
Direct certification	0.85	0.91	0.83	0.93
FRPL	0.65	0.82	0.82	0.81
MEPS	0.81	0.92	0.86	0.91
Modified MEPS	0.78	0.90	0.85	0.88

Source: Urban Institute analysis of data from National Education Resource Database, MEPS, and the Common Core of Data.

Notes: FRPL = free and reduced-price lunch; MEPS = Model Estimates of Poverty in Schools. "Limited" refers to a limited sample in which only schools with funding data in all three years (2018–19, 2020–21, 2021–22) are included.

Notes

1   "States Received $189.5 Billion in Relief for Schools. Here's the Breakdown," Pandemic Oversight, February 24, 2022, https://pandemicoversight.gov/data-interactive-tools/data-stories/states-received-1895-billion-relief-schools-heres-breakdown.

2   Kara Arundel, "With ESSER Expiration, COVID-19 Spending Prepares for Finale," K–12 Dive, September 30, 2024, https://www.k12dive.com/news/school-funding-esser-American-Rescue-Plan-covid-19-coronavirus/728352/.

3   "Governor's Emergency Education Relief Fund (GEER)," US Department of Education, last updated September 26, 2025, https://www.ed.gov/grants-and-programs/formula-grants/response-formula-grants/covid-19-emergency-relief-grants/governors-emergency-education-relief-fund-geer.

4   Kristin Blagg, "District Size Affects Estimates of Equity in K–12 Funding, but Better Measures Might Be on the Way," *Urban Wire*, Urban Institute, March 11, 2019, https://www.urban.org/urban-wire/district-size-affects-estimates-equity-k-12-funding-better-measures-might-be-way.

5   See also Kristin Blagg, Emily Gutierrez, Fanny Terrones, and Wesley Jenkins, "Which Students Receive a Greater Share of School Funding?" Urban Institute, last updated April 25, 2022, https://apps.urban.org/features/school-funding-trends/.

6   "Chapter 1: Fiscal Year 2015 Final Allocations for Title I," US Department of Education, Institute of Education Sciences, National Center for Education Statistics, accessed February 5, 2026, https://nces.ed.gov/pubs2019/titlei/ch_01.asp.

References

Bacher-Hicks, Andrew, Tareena Musaddiq, Joshua Goodman, and Kevin Stange. 2024. "The Stickiness of Pandemic-Driven Disenrollment from Public Schools." *Economics of Education Review* 100 (June): 102527. https://doi.org/10.1016/j.econedurev.2024.102527.

Blagg, Kristin, and Emily Gutierrez. 2024. "Chapter 3: Understanding School-Level Funding and Student Poverty: An Assessment Using Traditional and New Measures of Student Need." In *What Comes After Lunch? Alternative Measures of Economic and Social Disadvantage and Their Implications for Education Research*, edited by Thomas Downes, and Kieran M. Killeen. Emerald Publishing.

Blagg, Kristin, Julien Lafortune, and Tomás Monarrez. 2022. *Measuring Differences in School-Level Spending for Various Student Groups*. Urban Institute.

Blagg, Kristin, Fanny Terrones, and Victoria Nelson. 2023. *Assessing the National Landscape of Capital Expenditures for Public School Districts*. Urban Institute.

Burtis, Eloise, and Sofoklis Goulas. 2023. "Declining School Enrollment since the Pandemic." Brookings Institution.

Chingos, Matthew M., and Kristin Blagg. 2017. "Do Poor Kids Get Their Fair Share of School Funding?" Urban Institute.

Cornman, Stephen Q, Shannon Doyle, Clara Moore, Jeremy Phillips, and Malia R. Nelson. 2024. *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2021–22 (Fiscal Year 2022)*. US Department of Education, Institute of Education Sciences, National Center for Education Statistics.

Dee, Thomas S. 2023. "Where the Kids Went: Nonpublic Schooling and Demographic Change during the Pandemic Exodus from Public Schools." Urban Institute.

Dewey, Dan, Erin Fahle, Thomas J. Kane, sean f. reardon, and Douglas O. Staiger. 2024. *Federal Pandemic Relief and Academic Recovery*. Harvard University Center for Education Policy Research; The Educational Opportunity Project at Stanford University.

Francis, Abigail, and Joshua Goodman. 2025. *School Enrollment Shifts Five Years After the Pandemic*. Working Paper 25-1253. Annenberg Institute for School Reform at Brown University.

Georgetown University. n.d. "NERD$ Documentation." Georgetown University.

Goldhaber, Dan, and Grace Falken. 2024. *ESSER and Student Achievement: Assessing the Impacts of the Largest One-Time Federal Investment in K12 Schools*. Working Paper 301-0624. American Institutes for Research and CALDER.

Gutierrez, Emily, Kristin Blagg, and Matthew Chingos. 2022. *Model Estimates of Poverty in Schools: A New School-Level Measure of Economic Need*. Urban Institute.

Lafortune, Julien, Laura Hill, Niu Gao, et al. 2023. "District Spending of One-Time Funds for Educational Recovery." Public Policy Institute of California.

Learning Policy Institute. 2025. "How Money Matters: Education Funding and Student Outcomes." Learning Policy Institute.

OIG (Office of Inspector General). 2022. "Allocation of ESSER I Funds at Selected Local Educational Agencies." US Department of Education, OIG.

Persico, Claudia, and Sarah Crittenden Fuller. 2025. *The Cleaner the Air, the Better They Fare: The Effects of Air Filtration on Student Achievement*. IZA Institute of Labor Economics.

Roza, Marguerite, Katharine Meyer, and Isabel McMullen. 2025. "What Comes Next Now That Pandemic Aid for Education Has Ended?" Brookings Institution.

Roza, Marguerite, and Katherine Silberstein. 2023. "The ESSER Fiscal Cliff Will Have Serious Implications for Student Equity." Brookings Institution.

Sosina, Victoria E., and Ericka S. Weathers. 2019. "Pathways to Inequality: Between-District Segregation and Racial Disparities in School District Expenditures." *AERA Open* 5 (3). https://doi.org/10.1177/2332858419872445.

Shores, Kenneth, and Simon Ejdemyr. 2017. "Pulling Back the Curtain: Intra-District School Spending Inequality and Its Correlates." SSRN.

Shores, Kenneth A., Hojung Lee, and Elinor Williams. 2022. *The Distribution of School Resources in the United States: A Comparative Analysis Across Levels of Governance, Student Sub-Groups, and Educational Resources*. Working Paper 21-443. Annenberg Institute for School Reform at Brown University.

US Department of Education. 2021. "Guidance on Maintenance of Effort Requirements and Waiver Requests under the Elementary and Secondary School Emergency Relief (ESSER) Fund and the Governor's Emergency Education Relief (GEER) Fund." US Department of Education.

Weber, Mark, and Bruce D. Baker. 2025. "Does School Funding Matter in a Pandemic? COVID-19 Instructional Models and School Funding Adequacy." *AERA Open* 11 (December): 23328584251327581. https://doi.org/10.1177/23328584251327581.

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