



RESEARCH REPORT

How COVID-19-Induced Changes to K–12 Enrollment and Poverty Might Affect School Funding

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How COVID-19 Might Affect School Funding

Most states allocate funding to school districts using prior-year measures such as average attendance, enrollment, and share of students from low-income families. Because of disruptions caused by the COVID-19 pandemic, these prior-year measures may not accurately capture school district need for the 2021–22 school year. Policymakers must navigate how to account for declines in enrollment, as well as uncertain levels of student poverty, while facing state revenue declines ranging from 5 to 20 percent.¹ Although additional federal aid could help cushion state budget shortfalls, school districts and policymakers must still answer big questions about how to allocate these scarce resources, as measures of student counts and student poverty will be less reliable as predictors of need in 2021–22.

We model the potential effects of enrollment and poverty changes on the progressivity of state and local formula funding allocations if policymakers take no action. We estimate that 2020–21 declines in enrollment and attendance are more likely to harm high-poverty districts by reducing 2021–22 funding. We hypothesize that uncertainty about student poverty levels—driven by pandemic-induced economic shocks and changes in the administration of school meal programs—could affect the efficient allocation of resources for low-income students next year.

We also look at the effects of policy changes that policymakers could make to mitigate these effects. These options include a “hold-harmless” policy of using 2019–20 data, the use of averages or weighted averages of 2019–20 and 2020–21 data, and policies that allow higher-poverty districts more weight on their 2019–20 data. Each approach has advantages and disadvantages:

- A hold-harmless approach (using 2019–20 data) would still likely underestimate student need, especially for students made newly low income by the pandemic economy.
- Averaging measures across two years accounts for shifting poverty levels while stabilizing enrollment shifts but would still somewhat reduce funding for districts serving high shares of low-income students.
- Options that favor historically high-poverty districts increase or maintain funding progressivity but may require additional funding to fully implement.

Our analysis indicates that state legislators cannot rely on status quo measures when allocating funding for the 2021–22 school year. As students have already encountered substantial disruption in

their education, it is critical that available education funding is distributed efficiently and equitably. Policymakers must carefully explore the effects of different measures of student enrollment and need in their state funding allocations, pushing for solutions that deliver the most resources to districts with the most need.

State Funding Cuts May Disproportionately Harm Students from Low-Income Backgrounds

School district funding matters for student outcomes, especially for low-income students. Shifts toward more progressive funding allocations improve both short-term and long-term student outcomes. In the short run, finance reforms are associated with better student performance on standardized tests (Lafortune, Rothstein, and Schanzenbach 2018) and higher graduation rates among high-poverty school districts (Candelaria and Shores 2017). In the long run, \$1,000 of additional per pupil spending from 4th to 7th grade leads to a 3.3 percentage-point increase in postsecondary enrollment (Hyman 2017). Increases in per pupil spending also yield higher earnings in adulthood among children from low-income families (Jackson, Johnson, and Persico 2014) and increase intergenerational income mobility for low-income students (Biasi 2019). In a period when student learning has likely degraded because of COVID-19 disruptions, it is more important than ever that school districts have the financial support they need.²

K-12 funding formulas are designed to allocate state funding to support the needs of students and to support districts with lower levels of local funding. Thus, state funding typically reduces disparities between wealthy and poor school districts. But during a recession, reductions in state funding can exacerbate these wealth disparities, disproportionately harming districts with higher shares of students from low-income backgrounds (Knight 2017).³ In recent decades, the share of K-12 funding from state resources has increased, relative to local dollars, making education funding even more vulnerable in a recession.⁴

To counter the effects of the 2008 Great Recession, federal funding from the American Recovery and Reinvestment Act included the State Fiscal Stabilization Fund, which required states to maintain K-12 educational expenditures at fiscal year 2006 levels, at minimum. The Recovery Act also included supplemental funding for students from low-income backgrounds (through the Title I program) and for those with special needs (through the Individuals with Disabilities Education Act program).⁵

Through the Coronavirus Aid, Relief, and Economic Security (CARES) Act, Congress created the Education Stabilization Fund, which includes \$3 billion for emergency funds to K–12 and higher education entities, and \$13.2 billion for K–12 education, of which at least 90 percent goes to districts for expenses related to education during the pandemic (Skinner et al. 2020). The acceptance of these funds requires a maintenance of effort for state funding in fiscal years 2020 and 2021, at a level that is, at minimum, the average of the three prior years (US Department of Education 2020). The consensus is that CARES Act funding will not replace all state revenue lost during the pandemic-induced recession, and the recently passed COVID relief package allocates an additional \$53.4 billion for a K–12 education stabilization fund, which some have characterized as a “down payment” on additional relief.⁶

The COVID-19 Pandemic Will Shift Student Enrollment and Poverty

In previous recessions, economic instability caused some changes in student poverty and enrollment numbers. Student poverty became more concentrated during the Great Recession, and the share of students in school districts with poverty rates of at least 30 percent increased from 7 percent in 2007 to 16 percent in 2011 (Baker, Sciarra, and Farrie 2014). Changes in student enrollment were small, but evidence shows that the 2008 recession was associated with increased student mobility, potentially changing enrollment numbers through the transfer of students across districts (Caple 2014; GAO 2010; Mordechay 2017).

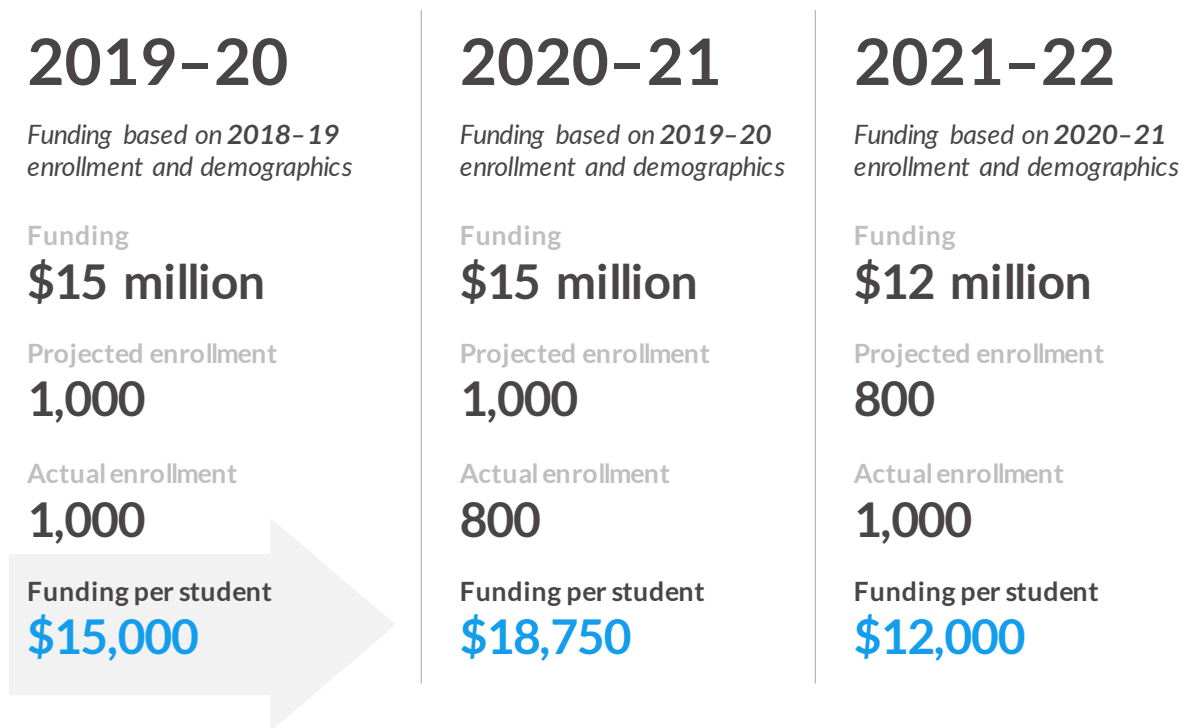
Enrollment Declines May Lead to an Underallocation of Funding for 2021–22

The COVID-19 pandemic has introduced large changes in student enrollment and mobility for the 2020–21 school year. A substantial share of the nation’s students is attending school remotely.⁷ Some parents have kept students at home by “redshirting” students who would otherwise start school in the fall or by homeschooling their children.⁸ And still others have enrolled their children in private school, hoping that nonpublic options will offer more stability or allow in-person learning. Because of these changes, districts and schools face difficulty verifying and reconciling fall 2020 student enrollment counts. Large school districts are reporting substantial declines in enrollment, with thousands of expected students missing from the rolls. This drop is especially prevalent in kindergarten, where a sample of 60 school districts indicates that kindergarten enrollment has dropped by an average of 16 percent.⁹

These enrollment declines have consequences for school district funding, as dollars or resources are typically allocated based on prior-year district enrollment numbers. A decline in 2020–21

enrollment could lead to an underestimate of district need (i.e., the number of students who will be served) in 2021–22. Conversely, 2020–21 funding levels were not affected by the pandemic because they used fall 2019 enrollment counts. Figure 1 illustrates a simple example of this phenomenon in a hypothetical district. If no adjustments are made to enrollment measures, funding per student declines substantially in 2021–22.

FIGURE 1
Sample Scenario for Pandemic-Induced Student Demographic Enrollment and Funding Level Changes, 2019–20 through 2021–22



Notes: Some states, including Alaska, Colorado, Nevada, and Ohio, “true up” funding based on actual enrollment midway through the year, in which case this timeline may be more condensed. See Morgan Helmick, “What the True-Up?” Rea & Associates blog, October 18, 2017, <https://www.reacpa.com/insight/what-the-true-up/>; and Colorado Department of Education, “School Finance Update,” presentation given at the Colorado Association of School Executives Winter Leadership Conference, February 2019.

Although measuring enrollment is challenging across the country, states that use attendance measures to allocate funding may face further difficulties, as schools tended to see lower attendance after switching to virtual learning in spring 2020.¹⁰ Seven states—including California, New York, and Texas—use average daily attendance (ADA), rather than enrollment, to estimate state funding formula

allocations. Because lower attendance rates are correlated with poverty, ADA-based funding formulas effectively negatively weight poverty in funding allocations (Baker and Corcoran 2012). This relationship is likely to be exacerbated if students, particularly those that are low income, continue to have less access to computers or Wi-Fi and thus are more likely to be absent during remote learning sessions (Blagg et al. 2020; KewalRamani et al. 2018).

Pandemic-Induced Changes in Student Poverty Rates May Change District Need

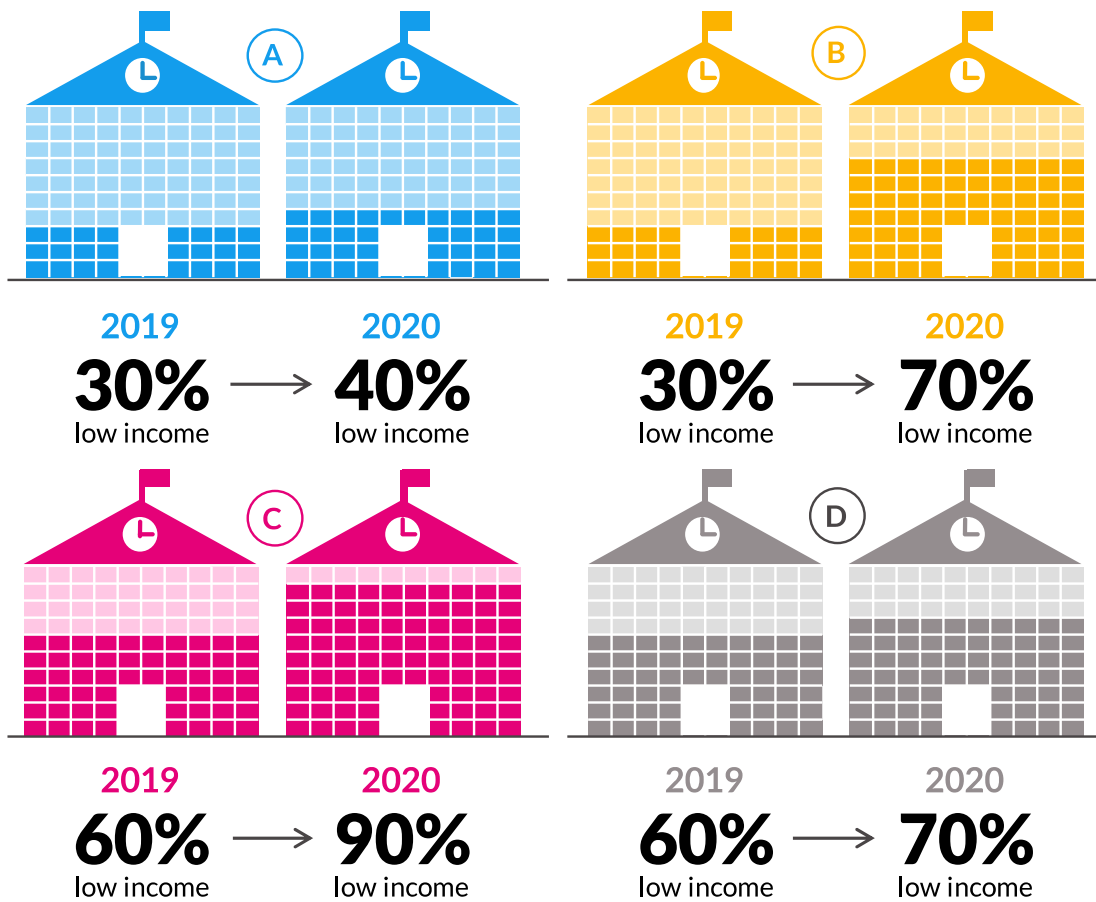
Not only does the COVID-19 pandemic make measuring enrollment challenging, it also makes assessing need based on student poverty more difficult. The pandemic has produced the highest unemployment and poverty rates since the Great Depression and has increased hardship among households with children.¹¹ This recession is different than previous downturns, hitting certain sectors and regions of the country harder than others. Policymakers must strategically assess how to account for the increase in students from low-income households and how to prioritize school funding aid to both historically low-income and newly low-income districts.

Participation in safety net programs has increased during the pandemic, and this need will be reflected in the share of students directly certified for free meals in the 2020–21 school year (Rosenbaum 2020). Some states rely on the share of directly certified students (e.g., students whose households receive Supplemental Nutrition Assistance Program, or SNAP) to allocate additional funding for economically disadvantaged students, while others rely on the share of students who apply via applications for free and reduced-price meals, which will likely be less reliable during the 2020–21 school year. In fact, the share of students eligible for free and reduced-price meals will likely be an underestimate of actual need. Thanks to a series of US Department of Agriculture (USDA) waivers, districts can provide free meals to any student who asks for them, reducing the incentive for families to return completed meal application forms to school districts.¹²

If all families with students are equally affected by the pandemic's economic downturn, the ways in which student poverty measures are typically used to distribute state funds may not drastically change. But if increases in unemployment, or underemployment, disproportionately affect some districts more than others, states may need to assess how to address differential short- and long-term changes in student poverty rates and investigate whether using prior-year numbers is appropriate. Figure 2 illustrates this scenario, showing how differences in the change of student poverty rates in different districts could change the way district need aligns with or deviates from historic trends.

FIGURE 2

Sample Scenarios of Pandemic-Induced Increases in District Poverty Rates



Understanding the Effects of COVID-19 Changes on K-12 Funding

Average Daily Attendance and Enrollment

Measures of attendance or enrollment are used in most state funding formulas to allocate resources to districts based on the number of students the district serves. State formulas that rely on attendance typically use average daily attendance. A student's individual ADA is the number of days the student is in attendance divided by the total number of days in the school year (or number of days in the student's enrollment period). A district's overall ADA is the sum of the ADAs for all students.

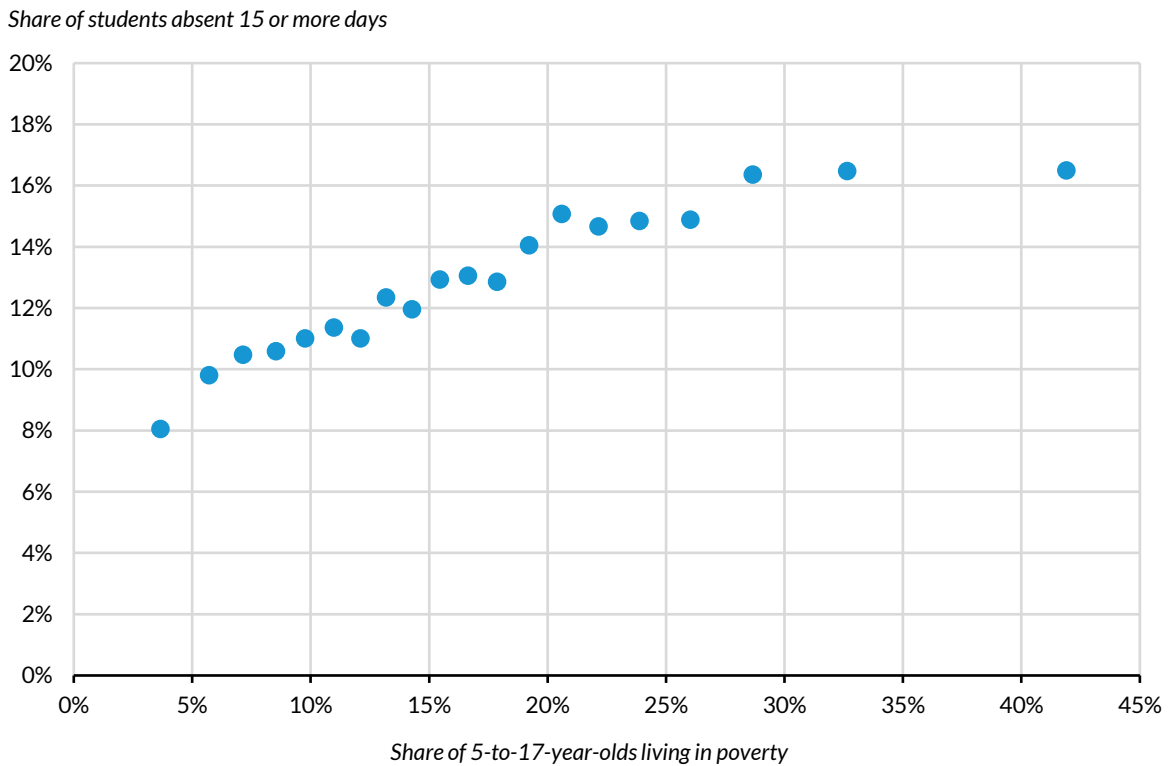
Using ADA in funding formulas has some advantages. ADA creates a financial incentive for districts to support students in making it to school consistently. Additionally, ADA accounts for how many students are actually in the building (or reporting to teachers, in a remote environment). But districts do not have full control over their students' attendance, and each enrolled student uses district resources, regardless of their attendance rate.

ADA is typically lower than enrollment because students move, drop out, or miss school because of illness.¹³ In schools with high concentrations of poverty, attendance tends to be lower because of the barriers that low-income students face in having consistent attendance, even absent illness.¹⁴ In this way, funding formulas that rely on ADA tend to disadvantage districts serving high concentrations of students experiencing poverty.

We demonstrate the relationship between attendance and poverty by comparing chronic absenteeism, as measured in the US Department of Education's 2015–16 Civil Rights Data Collection, and district poverty rates as measured by the US Census Bureau. For a student to be chronically absent, they must miss 15 or more days of school within the year. Although this is a high threshold, this measure allows us to look at the relationship between student socioeconomic status and attendance nationally.

There is a strong correlation between district poverty and chronic absenteeism as reported to the Department of Education (figure 3). Districts with high poverty rates (at least 30 percent of students live in poverty) tend to have higher shares of students who are chronically absent, roughly double the share of students chronically absent in districts with the lowest poverty rates.

FIGURE 3
Chronic Absenteeism by Ventile (20 Groups) of District Poverty



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Source: Urban Institute analysis of data from the US Department of Education’s 2015–16 Civil Rights Data Collection and the US Census Bureau’s 2015–16 Small Area Income and Poverty Estimates.

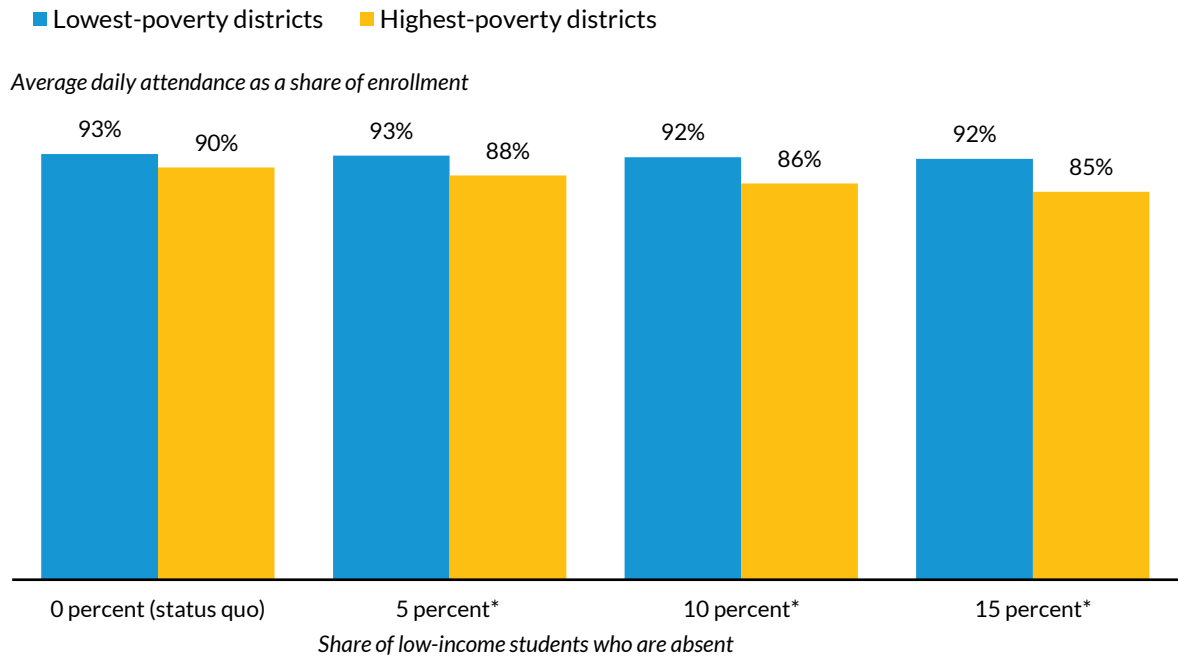
MODELING THE EFFECTS OF PANDEMIC-INDUCED CHANGES IN ATTENDANCE ON ADA

We use district average daily attendance data from California, Florida, and Texas to model how ADA might change if students from low-income backgrounds are more likely to miss school days during the pandemic (e.g., because of difficulty accessing virtual lessons).¹⁵ We model this relationship using the ratio between ADA and enrollment. A school district with perfect attendance (where all students are present for all school days) will have an ADA-enrollment ratio of 1 (or 100 percent). As student ADA declines, this ratio falls.

In Texas, under the status quo (no changes in attendance rates) 2018–19 measurement of ADA, the 10 percent of districts with the highest poverty rates (as measured by US Census Bureau) had an average of 90 percent of enrolled students in attendance on any given day (figure 4). In the 10 percent of districts with the lowest poverty rates, 93 percent of students were in attendance on any given day.

If attendance by students from low-income families drops by 15 percent during 2020–21, the gap in the ADA-enrollment ratio between the highest-poverty and lowest-poverty districts would more than double, increasing from 3 percentage points to 7 percentage points.

FIGURE 4
Texas Average Daily Attendance Rates, by Student Poverty Decile



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Source: Urban Institute analysis of Texas Education Agency average daily attendance data for 2018–19 and US Department of Education Common Core of Data 2018–19.

* No changes in absenteeism among students not from low-income families.

Correlation between ADA and district poverty levels varies by state. For example, states with large geographic school districts (and thus less variation in poverty rates between districts) will likely see smaller differences in ADA between districts during the pandemic. Nonetheless, in all three states we modeled, we observe a gap in ADA rates between high-income and low-income districts, which is projected to grow if students from low-income families are less likely to attend school in 2020–21 (see the appendix for analyses of California and Florida).¹⁶

MODELING THE EFFECTS OF CHANGES IN ENROLLMENT ON FUNDING

Although changes in attendance may more acutely affect high-poverty districts, many districts have also seen substantial declines in student enrollment. The consequences of enrollment declines for district funding will likely depend on which students withdraw. We model four scenarios: withdrawal of

students from low-income backgrounds, withdrawal of students from high-income backgrounds, withdrawal of very young students, and withdrawal of economically disadvantaged high school students.

To assess changing enrollment, we use a dataset of district-level enrollment and student poverty shares. These data are based on information from a state with town-based school districts, so our assumptions about the distribution of student need and enrollment across districts within our model state reflect actual distributions. But from this base dataset, we build a fictional, simplified funding formula to test our scenarios.

To build our fictional model, we assume that the share of economically disadvantaged students in the district is uniformly distributed across grades. We build a progressive model formula, allocating more aid to economically disadvantaged students, and we assume the formula is fully funded by state and local dollars.

BOX 1

Calculating the Model District Allocation Based on Real Enrollment Data for a State

The district allocation is the sum of the following:

- $(\$9,000 * \text{non-ED elementary school enrollment})$
- $(\$9,000 * 1.5 * \text{ED elementary school enrollment})$
- $(\$7,500 * \text{non-ED middle school enrollment})$
- $(\$7,500 * 1.5 * \text{ED middle school enrollment})$
- $(\$12,000 * \text{non-ED high school enrollment})$
- $(\$12,000 * 1.5 * \text{ED high school enrollment})$

where elementary enrollment = enrollment in prekindergarten, kindergarten, and grades 1–5; middle school enrollment = enrollment in grades 6–8; high school enrollment = enrollment in grades 9–12; and ED = economically disadvantaged.

Our fictional state funding formula (box 1) allocates money to districts based on the number of students from economically disadvantaged backgrounds and the number of students at each level (elementary, middle, and high school). In our state, economically disadvantaged status is based on a

student's participation in state-administered means-tested programs (e.g., SNAP, Medicaid, or other programs). Our fictional formula assigns economically disadvantaged students 150 percent of the funding that a non-economically disadvantaged student receives. Although our weight for low-income students is larger than what most state formulas use, our formula does not account for other factors that may drive funding to districts and may also be associated with economic disadvantage within a district (e.g., additional funding for students who are English language learners or grants for districts with lower academic performance). Our simple formula-generated funding levels are directionally similar (correlation = 0.61) to actual levels in our sample state (appendix figure A.3).

BOX 2

Measuring Change in Progressivity

- Calculate the baseline difference in funding per student in high-poverty districts relative to low-poverty districts
 - » Calculate funding per student for low-poverty districts (the bottom decile of districts based on Census Bureau poverty estimates)
 - » Calculate funding per student for high-poverty districts (the top decile of districts based on Census Bureau poverty estimates)
 - » Take the difference
- Calculate the difference in funding per student in high-poverty districts relative to low-poverty districts after modeling declines in enrollment and attendance or increases in poverty
- Calculate the difference in funding for high-poverty and low-poverty districts with modeled change in enrollment or poverty as a percentage of the baseline difference
 - » A percentage above 100 percent indicates that changes in enrollment increased funding progressivity
 - » A percentage below 100 percent indicates that changes in enrollment decreased funding progressivity

To demonstrate how changes in enrollment could affect funding, we compare mean funding per pupil in districts with the highest shares (top decile) of economically disadvantaged students in the state with districts with the lowest shares (bottom decile) of economically disadvantaged students. Based on prepandemic 2019–20 enrollment, our model estimates that districts in the top decile of economically

disadvantaged students would receive an average of \$12,086 per student, while districts serving the lowest decile of economically disadvantaged students would receive an average of \$9,752 per student.

The difference in per student funding between high-poverty and low-poverty districts (\$2,334 per student) is the metric we will use as a baseline to compare different enrollment scenarios and will indicate how the progressivity of our formula is affected by enrollment changes. To make this difference in funding easier to understand, we convey our output as a percentage. In a scenario when changes in enrollment increases progressivity, we show a percentage above 100 percent. In scenarios when progressivity decreases, we show a percentage below 100 percent.

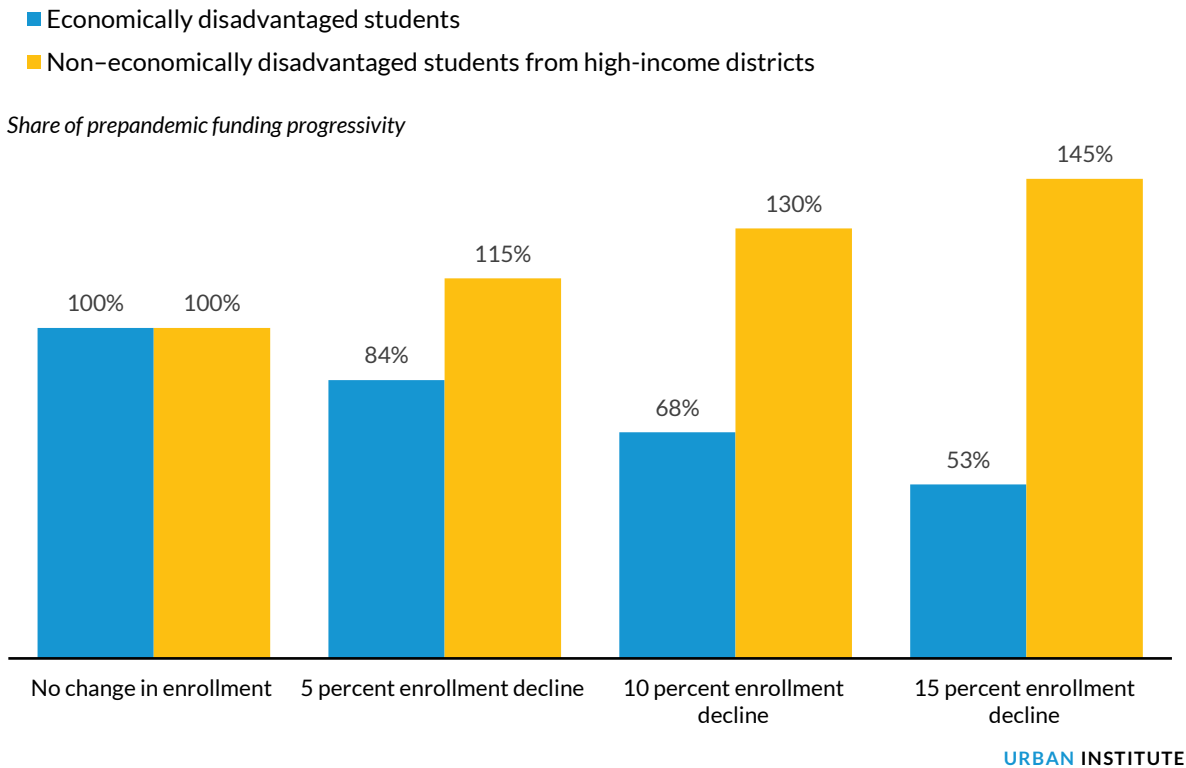
Withdrawal of low-income students in 2020–21 tends to substantially decrease progressivity in 2021–22 allocations, and withdrawal of high-income students tends to moderately increase progressivity. If there is a decline in enrollment of low-income students in 2020–21, this trend will probably decrease the progressive allocation of funding in 2021–22 (figure 5), assuming enrollment levels return to their prepandemic levels in 2021–22. This happens because our model formula is designed to have progressive features (where each low-income student brings relatively more money to the district than their non-low-income peers). As a result, when we simulate withdrawal of low-income students, districts that previously served high shares of these students look more like districts with fewer low-income students and therefore receive less money. Our model suggests that if 10 percent of economically disadvantaged students withdrew in 2020–21 (and returned in 2021–22), additional funding for the highest-need districts, relative to the lowest-need ones, would decrease by 32 percent (from \$2,334 per student to \$1,587 per student).

We also look at scenarios when very high-income students withdraw during 2020–21 (e.g., for homeschool or private school options). To identify districts serving very high-income students, we use the median household income in the district based on Census Bureau data from the National Historical Geographic Information System school district files. We then identify the decile of districts with the highest median household incomes and model the withdrawal of non-economically disadvantaged students in these districts.

In our model, the withdrawal of high-income students during 2020–21 increases the progressivity of funding in 2021–22 (figure 5). This happens because non-economically disadvantaged students bring in fewer dollars to the district in our formula. When these students withdraw for the year, the share of economically disadvantaged students increases, increasing overall funding per student in the district. The results are small because we model a small effect, reducing enrollment only in the top decile of districts based on median income. If we think more students will withdraw (i.e., if we lower the

threshold for being considered high income), we would see the same pattern (decrease in progressivity) but by a larger magnitude.

FIGURE 5
How Student Withdrawal, Based on Family Economic Advantage, Affects Funding Progressivity in 2021–22 Allocations, Relative to Prepandemic Values



Source: Urban Institute analysis of model state funding formula and enrollment changes.

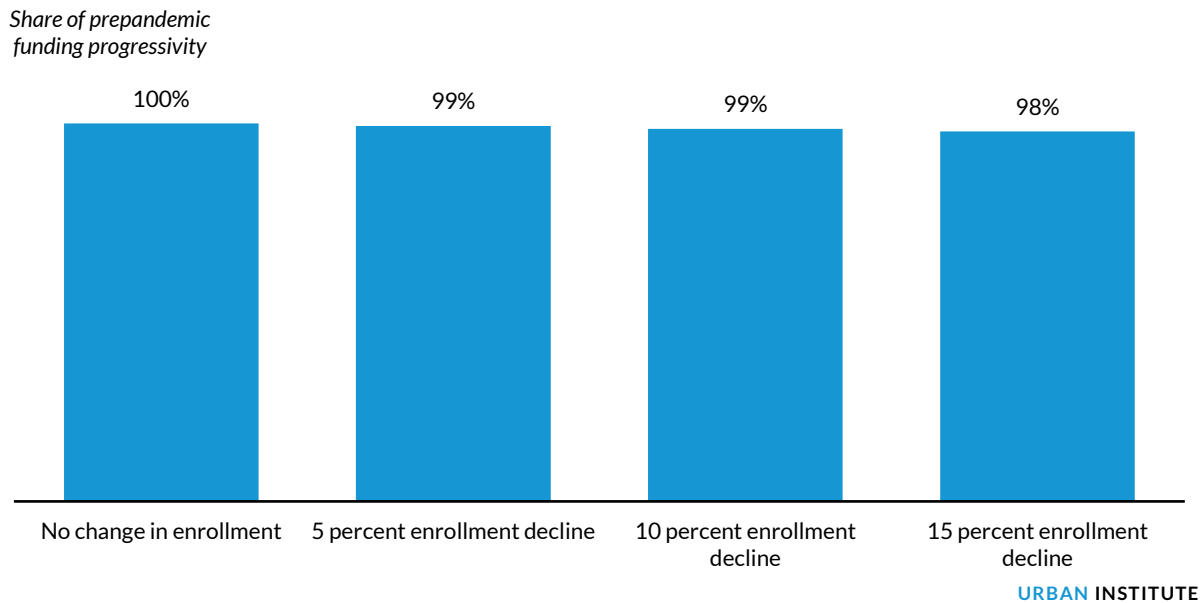
Note: Funding progressivity is the difference between per student funding in high-poverty districts relative to funding in low-poverty districts.

Declines in prekindergarten and kindergarten enrollment tend to slightly decrease funding progressivity.

Given the continued prevalence of remote school in some districts, it is possible that some families may keep their very young students at home for an additional year, rather than start school. We model declines in prekindergarten and kindergarten enrollment, assuming that prekindergarten enrollment is used in the elementary school calculation of our model state’s funding formula (nine states and the District of Columbia fund prekindergarten this way) (Parker, Diffey, and Atchison 2018). Declines in early-grade enrollment tend to slightly reduce funding progressivity (figure 6). Prekindergarten and kindergarten enrollment declines have a regressive effect because, in our model state, these students were more likely to have been previously enrolled in districts with higher shares of low-income

students. This effect may more broadly be partially explained by the fact that younger children are more likely to be from low-income households than older children (Koball and Jiang 2018).

FIGURE 6
How Prekindergarten and Kindergarten Student Withdrawal Affects Funding Progressivity in 2021–22 Allocations, Relative to Prepandemic Values



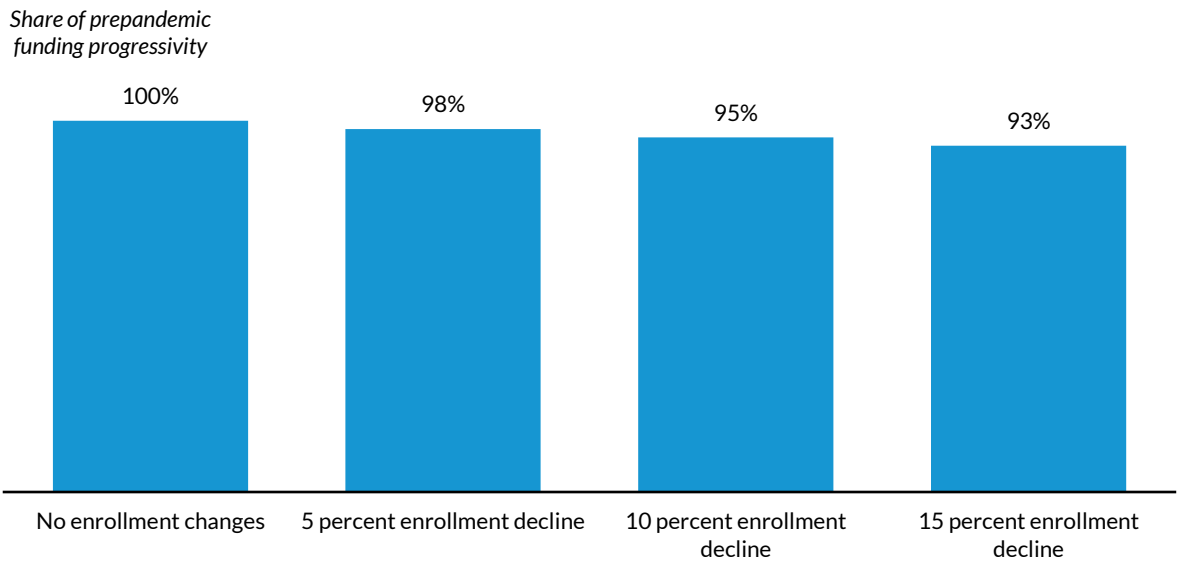
Source: Urban Institute model state funding formula and enrollment changes.

Note: Funding progressivity is the difference between per student funding in high-poverty districts relative to funding in low-poverty districts.

Withdrawal of economically disadvantaged high schoolers substantially decreases funding progressivity. The transition to online learning may have disparate effects on already disengaged students, potentially causing dropout rates to increase. The US Department of Education released guidance on how to identify and engage students who are at heightened risk for dropping out during the pandemic.¹⁷ Some have estimated that an additional 2 to 9 percent of students may drop out of high school because of the pandemic and the associated school closures.¹⁸ To reflect these concerns, we have modeled how changes in enrollment of economically disadvantaged high school students will affect funding progressivity. Declines in enrollment among these students substantially decreases funding progressivity in our model state funding formula. A 10 percent decline in economically disadvantaged high schoolers reduces the size of our progressive funding bonus for low-income districts by 5 percent (from \$2,334 per student to \$2,217 per student) (figure 7).

FIGURE 7

How Economically Disadvantaged High School Student Withdrawal Affects Funding Progressivity in 2021–22 Allocations, Relative to Prepandemic Values



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Source: Urban Institute model state funding formula and enrollment changes.

Note: Funding progressivity is the difference between per student funding in high-poverty districts relative to funding in low-poverty districts.

MODELING POLICY SOLUTIONS FOR ENROLLMENT CHANGES

Our models of enrollment declines among economically disadvantaged students, prekindergarten and kindergarten students, and high school students had regressive effects on the distribution of funding for our model state. Declines in high-income student enrollments had progressive effects on the distribution of funding for our model state. But our scenarios assume that no funding formula policy changes will be made to account for fluctuating enrollment.

In the following analyses, we model how different policies aimed at ameliorating the effects of 2020–21 enrollment changes may affect funding progressivity. Specifically, we model five policies:

- **pandemic values (current policy).** A scenario based on 2020–21 enrollment only.
- **hold harmless.** A policy in which enrollment numbers used in the funding formula are the 2019–20 enrollment values, ignoring 2020–21 enrollment altogether.
- **straight average.** A policy in which enrollment numbers used in the funding formula are an average of 2019–20 and 2020–21 enrollments.

- **weighted average.** A policy in which enrollment numbers used in the funding formula are a weighted average of 2019–20 and 2020–21 enrollments, with a heavier (2/3) weight on 2019–20 (prepandemic) numbers and a lighter (1/3) weight on 2020–21 numbers.
- **progressive average.** A policy in which enrollment numbers used in the funding formula are a weighted average of prepandemic and pandemic enrollment counts, and the weights depend on the district’s decile of student poverty before the pandemic (2019–20). Specifically, for the 10 percent of districts with the lowest shares of economically disadvantaged students, we apply a 10 percent weight to 2019–20 (prepandemic) enrollment numbers and a 90 percent weight to 2020–21 (pandemic) enrollment. For the next decile, we apply a 20 percent weight to prepandemic enrollment and an 80 percent weight to pandemic enrollment. We continue this pattern. In the decile with the highest concentration of economically disadvantaged students, we apply a 90 percent weight to 2019–20 enrollment and a 10 percent weight to 2020–21 enrollment.

For these models, we assume enrollment returns to prepandemic levels in the 2021–22 school year. This assumption may not be fully accurate. For example, enrollments could still be below 2019–20 levels if the pandemic continues into 2021–22 or if students who withdraw for private school or homeschool may opt not to return to their public school. Enrollment levels could also increase above 2019–20 levels if a district anticipates a student population increase from 2019 to 2021. Thus, the effects of proposed changes on funding progressivity indicate the potential magnitude of a policy change, given the demographics of students who withdraw during the pandemic. Table 1 indicates how each of the policies aimed at mitigating the effects of changes in enrollment affect baseline (prepandemic) progressivity (i.e., the difference in funding per student in high-poverty districts relative to low-poverty districts) of the formula under various enrollment change scenarios. Values below 100 percent indicate declines in progressivity relative to baseline. Values above 100 percent indicate the policy change increases progressivity of funding relative to baseline.

TABLE 1

Modeling Enrollment Policy Solutions

	10 Percent of These Students Withdraw			
	Economically disadvantaged students	High-income students	Prekindergartners and kindergartners	High school students
Pandemic values (current policy)	68%	130%	99%	95%
Hold harmless	100%	100%	100%	100%
Straight average of 2019–20 and 2020–21 enrollment	84%	115%	99%	95%
Weighted average of 2019–20 enrollment (2/3) and 2020–21 enrollment (1/3)	95%	110%	100%	97%
Progressive enrollment weights	101%	127%	103%	101%
Pandemic values (current policy)	68%	130%	99%	95%

Source: Urban Institute model state funding formula and enrollment changes

If economically disadvantaged students withdraw at similar rates across all grade levels, policymakers should incorporate 2019–20 enrollment counts to maintain or even increase progressivity of funding. Assigning a larger weight to 2019–20 enrollment (in our example, 2/3 weight) preserves the progressivity of the formula compared with no policy change or taking a simple average of 2019–20 and 2020–21 enrollments. As would be expected, building in new progressive weights based on 2019–20 district poverty rates yields the best outcome for high-poverty districts, but only by 2 percentage points above prepandemic values (allocating an additional \$47 per student in the highest-poverty districts versus the lowest-poverty districts).

Conversely, if high-income students withdraw (e.g., leaving for other options such as homeschool or private school during the 2020–21 school year only), the most progressive option is to make no changes to the way enrollment is factored into the formula. The next best option (in terms of increasing progressivity of the formula relative to pandemic-induced enrollment changes) is adding a small weight to prepandemic enrollment numbers for the highest-income districts. Applying large weights on the prepandemic enrollment numbers has a less progressive effect than the alternatives in this scenario.

In the final two scenarios, where prekindergarten and kindergarten enrollment decline or where low-income high school students drop out, districts serving high shares of low-income students are best served by formulas that apply a larger weight to 2019–20 enrollment counts. In particular, a progressive policy that allows for large weights on the districts with the highest shares of low-income students and smaller weights for other districts produces the most progressive results in our model.

Share of Students in Poverty

Most state funding formulas provide additional funds to school districts based on the share of low-income students they serve. Although we do not yet know 2020–21 student poverty rates by school district, unemployment rates have increased rapidly, and SNAP caseloads have risen across the nation, suggesting the number of students in poverty is also likely to increase. As the share of students in poverty rises, states may also face revenue shortfalls, leading to a scarcity of resources during a time of increased demand. But because this recession is unlike previous economic downturns in that economic shutdowns were imposed for public health reasons, it is possible that the any spike in 2020–21 student poverty rates will not remain at such elevated rates in the years to come.

Unemployment rates have skyrocketed since the pandemic hit the US in March. According to the Bureau of Labor Statistics, the US unemployment rate jumped from 3.5 percent in February to a high of 14.7 percent in April. Although unemployment rates have slowly declined in the months since, they remain double the prepandemic rate. Because of pandemic-related circumstances and some people's inability to apply for unemployment (e.g., lack of child care options, workers' undocumented status), unemployment rates may underrepresent true economic circumstances.¹⁹ But unemployment rates can shed light on how COVID-related economic circumstances may affect household and student poverty rates.

The effects of the pandemic-induced recession will likely ripple throughout school communities in the 2020–21 school year, but there are differences in academic effects of short-term versus long-term exposure to poverty. Students with longer histories of poverty perform worse than students who only occasionally experience poverty and likely need additional support relative to their peers with only occasional experience (Micheltmore and Dynarski 2017). This pattern of short-term versus long-term poverty could be extended to school districts. Districts with long histories of serving economically disadvantaged students may need to be prioritized, relative to better-off districts whose students are experiencing more temporary shocks in family income. Current economic conditions will likely worsen economic circumstances for students across school districts, but districts that previously served high shares of low-income students will likely continue to do so after the pandemic's economic effects have dissipated.

MODELING THE EFFECTS OF PANDEMIC-INDUCED CHANGES IN STUDENT POVERTY

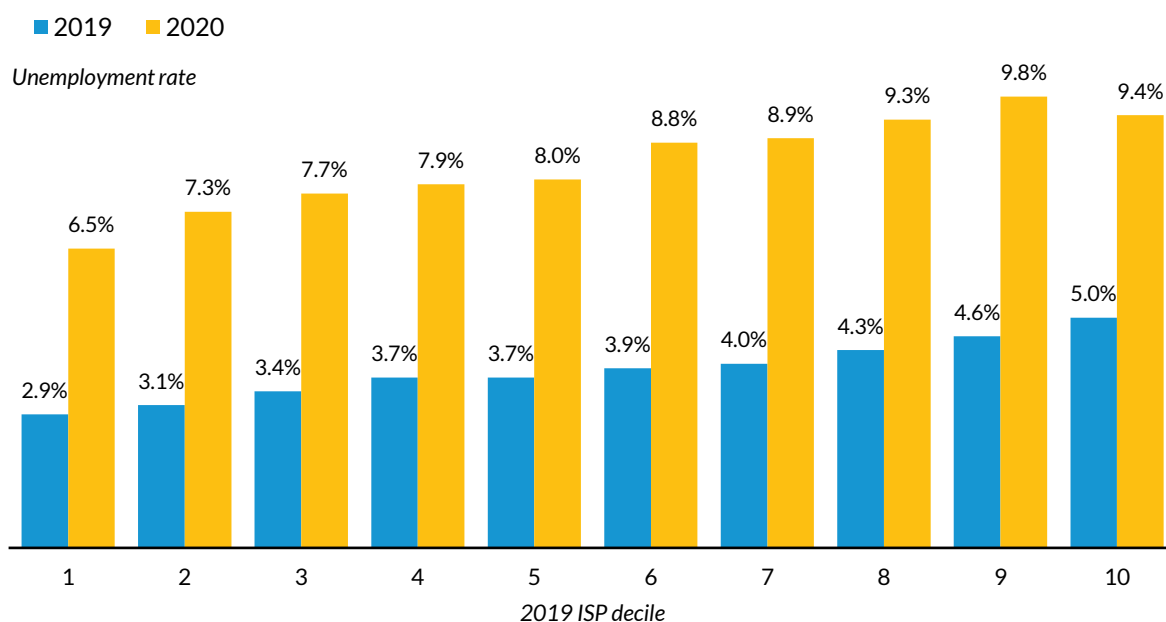
To better understand how current economic conditions may affect student poverty rates, we examine the relationship between 2019–20 student poverty rates and 2019 and 2020 average unemployment rates. We estimate prepandemic student poverty rates using schools' 2019–20 identified student

percentage (ISP)—the share of students that are categorically eligible for free meals—as collected by the Food Research and Action Center.²⁰ We build county-level 2019 ISP rates from these district data and match them to county-level average monthly unemployment rates from the Bureau of Labor Statistics, which is possible for 35 states and the District of Columbia.²¹ We use the average monthly unemployment rate for May through August 2020 as well as May through August 2019 for comparison.

The average county unemployment rate from May through August 2020 was 8.4 percent for the 35 states and the District of Columbia, a doubling of the average rate for the same period in 2019 (3.9 percent). The average county ISP during the 2019–20 school year was 39 percent. Assuming a logarithmic relationship between average unemployment and student poverty, we estimate that a 10 percent increase in a county’s average unemployment rate is associated with a 3 percentage-point increase in the county’s ISP.²²

Average 2019 unemployment rates trend upward from the lowest ISP decile to the highest (figure 8). Counties with lower shares of low-income students had lower prepandemic unemployment rates than counties with higher shares of low-income students. Average 2020 unemployment rates are 4 to 5 percentage points higher than in 2019, but the trend holds, as areas with higher student poverty rates in 2019 still experience higher unemployment rates in 2020.

FIGURE 8
Average Unemployment Rates, by 2019 ISP Decile



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Sources: Unemployment data from the Bureau of Labor Statistics. ISP data from the Food Research and Action Center.

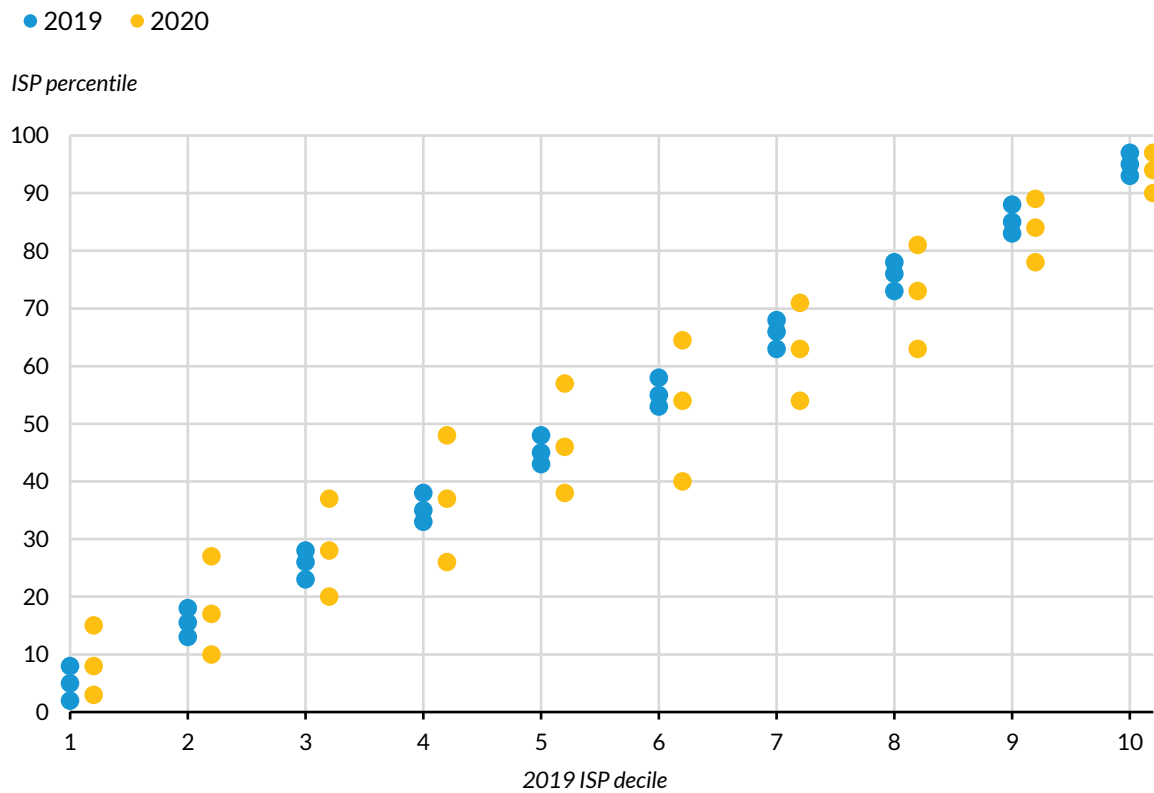
Notes: ISP = identified student percentage. ISP deciles are weighted by enrollment for all counties in the available 35 states and the District of Columbia.

But the distribution of county-level unemployment rates in 2020 are far more varied than what was observed for 2019 (appendix figure A.4). For almost all ISP deciles, the 10th percentile of unemployment in 2020 is roughly equal to the 90th percentile of unemployment in 2019. This indicates that even though the overall trend of unemployment relative to student poverty is fairly consistent from 2019 to 2020, individual areas may see larger swings in unemployment and thus, potentially, in student poverty.

We predict counties' 2020 ISPs using the relationship between 2019 unemployment rates and ISPs, as well as available state-level information on the change in monthly SNAP caseloads. Our model predicts that the average county ISP in the 2020–21 school year would be 61.2 percent, up 22 percentage points from the 2019 average (39.2 percent). But monthly SNAP caseload data, which are available for 20 states, show that average May through August caseloads increased by 9.1 percent between 2019 and 2020 for the same period.²³ This is roughly half the change in our model. Therefore, to better reflect what 2020 ISPs might look like, we deflate our predicted change in 2020–21 ISPs by half of what our unemployment data predicts them to be.

To identify how relative student need within a state might change in the 2020–21 school year, we compare counties’ 2019 ISP rankings with their predicted 2020 ISP rankings. Figure 9 demonstrates how each county ranks in student poverty, in percentile terms, relative to other counties in the same state based on counties’ 2019 ISP deciles. We show the 25th, 50th, and 75th percentile values for both the 2019 and 2020 ISP percentiles. For example, in the first 2019 decile, counties at the 25th, 50th, and 75th percentiles exist at the 2nd, 5th, and 8th percentiles of their state (as is expected, given that all values are between 0 and 10). But in 2020, these same counties become more dispersed in ISP values and are ranked at the 3rd, 8th, and 15th percentiles of their state. This pattern continues throughout each decile, signaling that individual counties experienced varying changes in unemployment, which we attribute to differential effects of the pandemic’s economic downturn by industry.²⁴ In our model, these varying unemployment changes indicate substantial variation in 2020 ISP rates, relative to 2019.

FIGURE 9
Dispersion in Predicted 2020 ISP Ranks Compared with 2019 Ranks



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Source: ISP data from the Food Research and Action Center and authors’ calculations.

Notes: ISP = identified student percentage. ISP deciles are unweighted and created within state for states with 50 or more counties (among the 35 states, plus DC, available in this brief). Each dot corresponds to the 25th, 50th, and 75th percentiles within each ISP decile.

MODELING POLICY SOLUTIONS FOR STUDENT POVERTY CHANGES

Policymakers are likely to encounter substantial changes in district-level student poverty rates. Because states are experiencing revenue declines, increasing funding to meet increased student need in 2020–21 may not be viable without substantial federal support.

Student poverty rates may likely increase because of the pandemic-induced recession, and, broadly, counties with the highest prepandemic student need have higher average unemployment rates. But ranked changes in student need within each state suggest that district need, based on student poverty rates, could fluctuate more than in previous years. A district that typically ranks in the 50th percentile within a state for student poverty could move down to the 40th percentile or up to the 60th percentile, potentially changing its formula funding allocation. These ranking swings could be even larger than what we estimate here, as districts that rely on the submission of free and reduced-price lunch (FRPL) forms have seen declines in form submission (as families have no incentive to do so). Facing larger swings in student poverty rates and the prospect of reduced state funding, policymakers might change how their formulas account for student poverty.

Although education funding should meet measured student need as much as possible, we anticipate that if state policymakers face revenue shortfalls, they may have to consider several options, including options that might discount 2020–21 increases in poverty rates.

Specifically, we model changes in predicted poverty rates under five policies:

- **pandemic values (current policy).** A scenario based only on our predicted 2020–21 poverty rates.
- **hold harmless.** A policy in which 2019–20 poverty rates are used, ignoring changes in 2020–21 poverty rates.
- **straight average.** A policy in which poverty rates are computed as an average of 2019–20 and 2020–21 values.
- **weighted average.** A policy in which poverty levels are computed as a weighted average of 2019–20 and 2020–21 values, with a 2/3 weight on 2019–20 (prepandemic) poverty rates and a 1/3 weight on 2020–21 poverty rates.
- **progressive increase on 2019–20 levels.** SNAP caseloads from May through August 2019 increased, on average, 9 percent for the same period in 2020. Policymakers could consider implementing an adjustment on 2019–20 levels by applying a similar 9 percent increase. This

would be a progressive policy, as it would provide larger increases to counties with already high poverty rates and smaller increases for those with lower poverty rates.

Table 2 demonstrates how the suggested policies might affect a county with relatively low ISPs (County A) and a county in the same state with relatively high ISPs (County B). Our analysis indicates that pandemic-induced changes in student poverty may change the relative rankings of school districts within a state. To account for this, we look at two states: State X, which has more uniform predicted increases in student poverty, and State Y, which has more varied predicted increases. Although both states have similar numbers of counties (our unit of analysis), State X has school districts that are aligned with county geographies, while State Y typically has multiple districts within a single county. As a result, State Y could experience even larger changes in ranking (percentile position) than we present here, as smaller geographic school districts may be more likely to have more dispersion in 2020–21 poverty rates.

TABLE 2
Modeling Poverty Rate Policy Solutions

	Average County ISP	STATE X				STATE Y			
		County A		County B		County A		County B	
		ISP	Rank	ISP	Rank	ISP	Rank	ISP	Rank
Pandemic values (predicted 2020–21 rates)	50.2%	58.1%	10	71.7%	81	46.2%	10	53.6%	67
Hold harmless (2019–20 rates)	39.2%	38.1%	11	72.5%	88	30.5%	17	42.6%	83
Straight average of 2019–20 and 2020–21 poverty rates	44.7%	48.1%	11	72.1%	88	38.3%	13	48.1%	78
Weighted average of 2019–20 poverty rates (2/3) and 2020–21 poverty rates (1/3)	42.9%	44.8%	11	72.2%	88	35.7%	18	46.3%	81
Progressive 9 percent increase in 2019 rates	49.0%	41.5%	11	79.0%	88	33.2%	17	46.4%	83

Source: Authors’ calculations using ISP data from the Food Research and Action Center.

Notes: ISP = identified student percentage. County A’s have ISPs in the 2nd ISP decile (within-state, unweighted), and County B’s have ISPs in the 9th ISP decile (within-state, unweighted).

In a time of uncertain or unavailable free and reduced-price meal application data, recent guidance from the USDA’s Food and Nutrition Service suggests that states can use 2019–20 school poverty data to identify students eligible for Pandemic Electronic Benefit Transfer (P-EBT) benefits, with additional opportunities for students to establish eligibility in the 2020–21 school year (FNS 2020). Although taking a hold-harmless approach (solely using 2019–20 poverty rates) would retain the rankings of

districts within a state in terms of poverty rates, the approach would likely underestimate poverty as measured in 2020–21. In contrast, using 2020–21 rates may change the relative ranking of need among districts. For example, in State Y, counties and districts increase their ranking position, relative to other districts (from the 10th and 67th percentiles to the 17th and 83rd percentiles, respectively).

2019–20 rates are likely more representative of students from families who are persistently in poverty, while predicted 2020–21 rates are more inclusive of students whose families may be experiencing relatively short-term poverty because of sudden business closures and restrictions. Of course, if restrictions continue for a long period, newly poor students may not experience short-term poverty and may, instead, remain there for years to come (similar to trends in poverty rates after the Great Recession). One way to account for this could be to create a new weighted poverty measure, either a straight average of 2019–20 and 2020–21 rates or an average that puts more weight (2/3) on 2019–20 rates. Using averaged poverty rates increases student poverty estimates relative to 2019–20, but the size of these increases and the change in districts' relative rankings depends on the weight. Leaning more heavily on 2019–20 rates tends to stabilize the rankings of poverty rates for a state like State Y but may underestimate poverty rates, especially if poverty persists into the 2021–22 school year.

SNAP caseloads from May through August 2019 increased, on average, by 9 percent, relative to the same period in 2020. Applying a 9 percent increase across the board (or a consistent percentage increase of any amount) to 2019–20 poverty rates would provide larger increases to counties with already-high poverty rates and smaller increases for those with lower poverty rates. This option would preserve the prepandemic rankings of school districts by need, increasing funding for every school district based on student poverty. But if growth in 2020–21 student poverty occurred primarily in districts with historically low poverty rates, this approach could put these districts at a disadvantage, as their poverty rates would likely be underestimated.

When allocating school district funding, policymakers must think about how to differentiate between short-term and long-term poverty, especially as revenue constraints may restrict a state's ability to fully fund education at 2020–21 poverty rates. Policymakers may wish to continue prioritizing prepandemic need (as this may indicate rates of long-term poverty), while pushing for expanded funding to account for increased short-term need.

Options for Allocating Formula Funding in 2021–22

Declines in enrollment and attendance, increases in student poverty, and potential reductions in state revenue appear to be building a perfect storm for policymakers as they begin their legislative sessions and portion out K–12 educational funding. Legislators will likely have to alter the measures used in their funding formulas to account for these changes.

We have modeled several policy options and the potential consequences of these options for different 2020–21 enrollment and poverty scenarios. Broadly, our results show the following:

Using 2020–21 enrollment and poverty rates alone may harm low-income students. If declines in 2020–21 enrollment are more prevalent among economically disadvantaged students, or among children in early grades, using these enrollment figures will likely reduce overall funding for students from low-income backgrounds. This could be particularly damaging in states that rely on average daily attendance to allocate funding. The only circumstance where 2020–21 enrollment numbers would produce similar or more progressive allocations of funding is when higher-income students withdraw in the 2020–21 school year and return in 2021–22.

Although using 2020–21 student poverty rates would capture the overall rise in student need, it is possible that pandemic-induced poverty could substantially change the ranking of school district need. This is particularly true for districts that rely on submitted FRPL applications, as the submission of these forms has declined with USDA waivers providing free meals to all students. Given the deeper academic consequences of long-term poverty, relying on 2020–21 poverty rates, particularly when distributing potentially limited state funds, might not efficiently distribute funds to schools that need it the most.

Falling back on 2019–20 enrollment and poverty data (the hold-harmless approach) may underestimate some student need. Using prepandemic data to allocate school district funding may seem appealing on the surface and may, overall, be a better than using 2020–21 enrollment and poverty data. But this approach presents some issues. Most importantly, 2019–20 poverty rates are substantially lower than current levels and will likely still be lower than 2021–22 levels. As researchers anticipate learning loss, especially among low-income students (Chetty et al. 2020; Kuhfeld et al. 2020), legislators will likely want to allocate funding that reflects new levels of student need.

In addition, this approach does not account for potential growth or shifts in enrollment that might occur in some districts (e.g., because of families moving out of cities to rural areas or secular growth in student populations in some cities). And should higher-income students remain withdrawn in the 2021–22 school year, this approach could cause an overallocation of funds to relatively wealthier districts.

Building a straight or weighted average of enrollment and poverty from 2019–20 and 2020–21 could be an alternative approach. Using an average of measures from 2019–20 and 2020–21 ameliorates some of the problems of a single-year measure and may be an easily calculable number. An averaged measure softens funding losses caused by decreased enrollment in 2020–21 but may still somewhat reduce funding for low-income students if enrollment declines emerge primarily among low-income students. And an averaged measure accounts for the rise in student poverty in 2020–21 while reducing fluctuations between districts.

This option has some drawbacks. Using an average of measures likely still rewards school districts that have managed to retain students in 2020–21 or to collect school lunch forms. If these districts are more likely to serve relatively well-off students, an averaged measure would likely still have some regressive effects. Thus, this approach is more likely to be unworkable in states that use ADA measures for funding (where losses in attendance may be more severe and harder to manage than losses in enrollment) or in states that rely on FRPL form submission rather than direct certification.

Developing progressive enrollment weights or multipliers preserves or increases funding for low-income students but could increase costs. Another option for allocating funding to districts is to build a new measure of enrollment altogether. Both solutions we investigate aim to preserve or increase the allocation of funding to school districts serving large shares of low-income students.

By allowing districts serving larger shares of low-income students to rely more on 2019–20 enrollment and to receive a larger boost in estimated poverty rates, these new approaches increase the progressive allocation of funding. These approaches could also introduce additional costs. If states are strapped for funding, these approaches may need to be modified.

Allowing some district discretion in setting funding formula data could help. Although not part of our modeling, we encourage states to work proactively with districts to understand their needs. In particular, underestimating enrollment (and reducing the funding allocation that matches this estimate) could harm a district that sees an unexpected surge in 2021–22 enrollment. Such a district might need to hire or reallocate staff to accommodate more students.

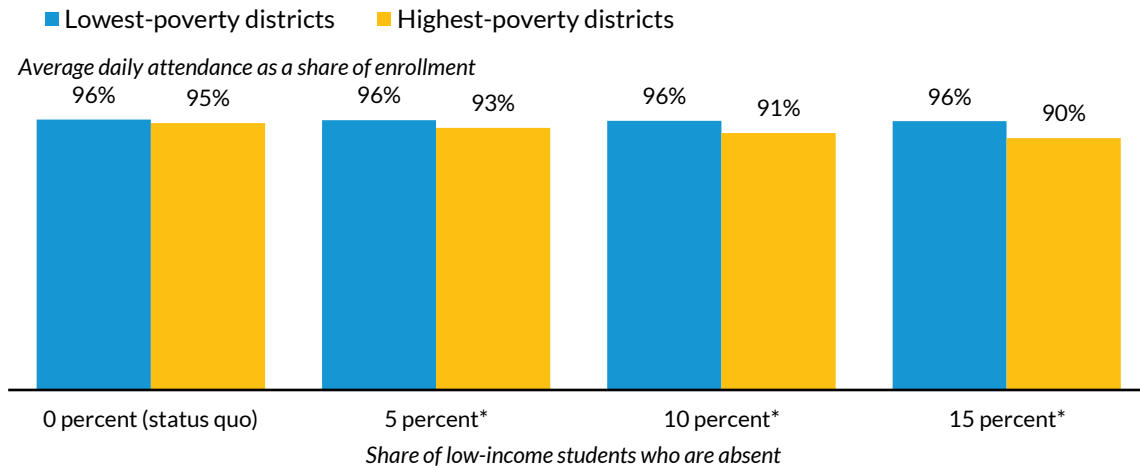
One way to provide a release valve on any funding allocation is to allow for flexibility. For example, school districts could be allowed to project their additional enrollment and poverty needs if they feel their estimate is insufficient. If these projected targets are not met, the state could “claw back” the extra funds.²⁵

Our results indicate that the best approach for implementing 2021–22 funding formula allocations is highly dependent on which students withdraw and how poverty rates change and are measured within the state. Legislators must clearly understand which students have withdrawn this year and how poverty rates have changed within and across school districts to choose the best option. We suggest that policymakers focus on options that preserve or increase funding for districts that have historically served high shares of low-income students and then prioritize districts with large shares of students from families made newly poor by the pandemic-induced recession.

Appendix

FIGURE A.1

California Average Daily Attendance Rates, by Student Poverty Decile



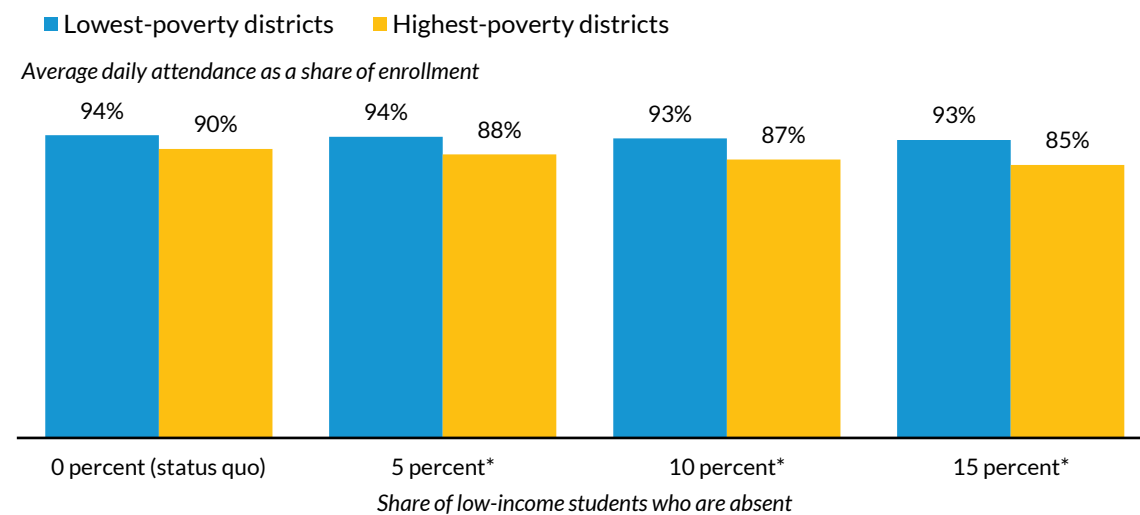
URBAN INSTITUTE

Source: Urban Institute analysis of California Department of Education 2018–19 average daily attendance data and US Department of Education 2018–19 Common Core of Data.

* No changes in absenteeism among students not from low-income families.

FIGURE A.2

Florida Average Daily Attendance Rates, by Student Poverty Decile



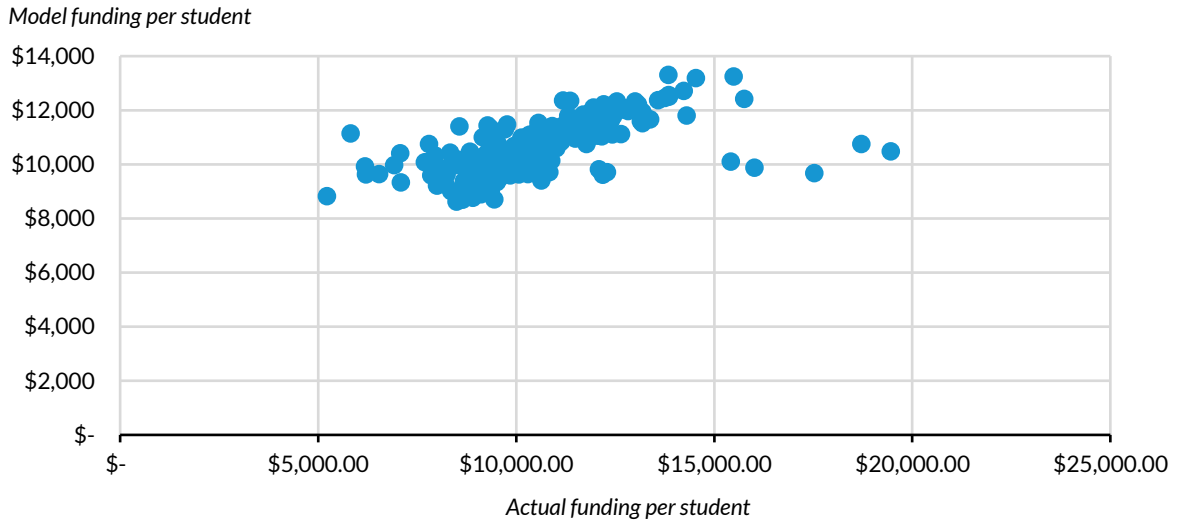
URBAN INSTITUTE

Source: Urban Institute analysis of Florida Department of Education 2018–19 average daily attendance and US Department of Education 2018–19 Common Core of Data.

* No changes in absenteeism among students not from low-income families.

FIGURE A.3

Relationship between Actual and Modeled Funding per Student

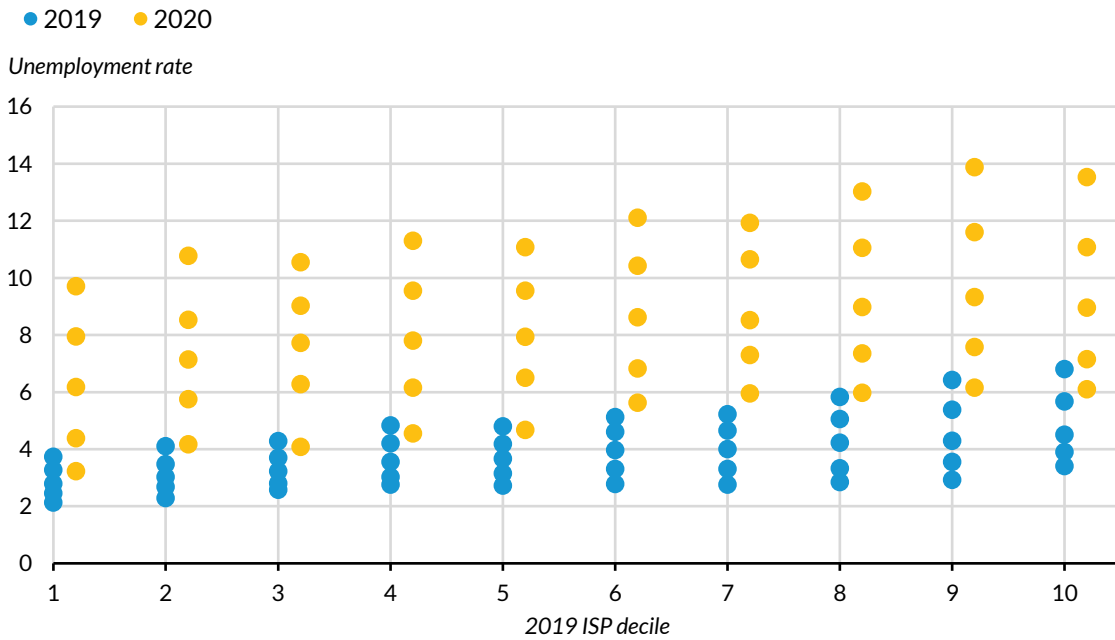


URBAN INSTITUTE

Source: Urban Institute analysis of model state funding per student.

FIGURE A.4

2020 Unemployment Rates Compared with 2019 Unemployment Rates



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Sources: Unemployment data from the Bureau of Labor Statistics. ISP data from the Food Research and Action Center.

Notes: ISP = identified student percentage. ISP deciles are weighted by enrollment for all counties in the available 35 states. Each dot corresponds to the unemployment rate at the 10th, 25th, 50th, 75th, and 90th percentiles within each ISP decile.

Notes

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- ¹⁵ From the September 16–28 (round 15) Census Pulse Survey, 8.3 percent of SNAP-eligible public school students report rarely or never having internet availability for educational purposes compared with 2.6 percent of non-SNAP-eligible public school students.
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- ²⁰ The ISP was created under the Community Eligibility Provision in which schools, groups of schools, or school districts offer breakfast and lunch free for all students if more than 40 percent of their students are “identified students.” Although rules vary by state, students are deemed categorically eligible either via direct certification (i.e., household enrollment in SNAP, Temporary Assistance for Needy Families, or Medicaid) or if the student is classified as being in foster care, participating in Head Start, being homeless, being a migrant, or being part of a household using Food Distribution Program on Indian Reservations benefits. This measure does not include students whose families cannot or do not use benefits such as SNAP, though some families may be included based on the other categorical characteristics.
- ²¹ Schools with missing 2019 enrollment data were backfilled using 2018 Common Core school enrollment. The 35 states used in the Food Research and Action Council data are Alabama, Alaska, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Mexico, New York (excluding NYC), North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Virginia, and Wisconsin (the data also include the District of Columbia).
- ²² Using log of average unemployment from May through July 2019 and 2019 ISP in bivariate regression with state fixed effects.

²³ Monthly SNAP data are available for Alabama, Arizona, Florida, Idaho, Indiana, Iowa, Kansas, Louisiana, Massachusetts, Michigan, Missouri, New Mexico, Oregon, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, and Wisconsin.

²⁴ We find similar dispersion patterns in 2020 rankings when predicting 2020 ISPs and changes in ranking using monthly SNAP cases (instead of unemployment rates) in Virginia.

²⁵ This approach is used in Montana.

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