

“Equal” K–12 State Funding Cuts Could Disproportionately Harm Low-Income Students

Technical Appendix

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Our socioeconomic measure looks at school funding progressivity in each state by estimating average spending on all poor children compared with average spending on nonpoor children. We classify poor children as children from families living below the federal poverty level.

We adapt this measure to look at two additional measures of equity: funding for students of color relative to white students and funding for students in urban schools relative to students in rural schools. Before calculating the weighted averages, we adjust each district’s funding to reflect differences in the costs they face. To make this adjustment, we use a measure of the salaries of college graduates who are not teachers in the district’s labor market. All dollar amounts are reported in cost-adjusted dollars.

Because we use district-level data, we do not capture any differences in funding or spending across schools within districts (and students within schools). For example, poor students may benefit from programs or targeted revenue streams not available to nonpoor students. Conversely, nonpoor students may attend schools with more highly paid teachers or enroll in courses that are more expensive to provide than the schools poor students are enrolled in within the same district. But our analyses provide insights into states’ broad funding trends.

To calculate the first equity measure for poor and nonpoor students, we use district-level poverty data from the US Census Bureau’s Small Area Income and Poverty Estimates to calculate the share of children ages 5 to 17 who are from low-income families in each district. A drawback of this approach is that we only calculate progressivity for geographic school districts (this measure most commonly

excludes charter school districts). We merge these data with district-level finance data from the National Center for Education Statistics' Common Core of Data. We calculate each district's per student funding using the number of poor children in each district as the weight. Then, we calculate the same weighted average using the number of nonpoor children.

BOX 1

Calculating Equity Measures

This simplified example best explains our equity measure calculation. In this example, the state has only two districts, A and B, each with 100 students.

<p>District A \$10,000 per student 10 poor, 90 nonpoor students</p>	<p>District B \$13,000 per student 30 poor, 70 nonpoor students</p>
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District B is located in an area where there are higher wages because of increased living costs, so they will likely need to spend more on teacher and staff salaries (a key driver of cost in education). We use the Comparable Wage Index to adjust the per student amount down to account for this difference.

<p>District A \$10,000 per student \$10,000 per student, cost-adjusted 10 poor, 90 nonpoor students</p>	<p>District B \$13,000 per student \$12,000 per student, cost-adjusted 30 poor, 70 nonpoor students</p>
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Next, we compute a weighted average funding level for poor and nonpoor students.

Poor:
$$\frac{(10 \text{ students from A} \times \$10,000) + (30 \text{ students from B} \times \$12,000)}{10 \text{ students from A} + 30 \text{ students from B}} = \mathbf{\$11,500 \text{ per student}}$$

Nonpoor:
$$\frac{(90 \text{ students from A} \times \$10,000) + (70 \text{ students from B} \times \$12,000)}{90 \text{ students from A} + 70 \text{ students from B}} = \mathbf{\$10,875 \text{ per student}}$$

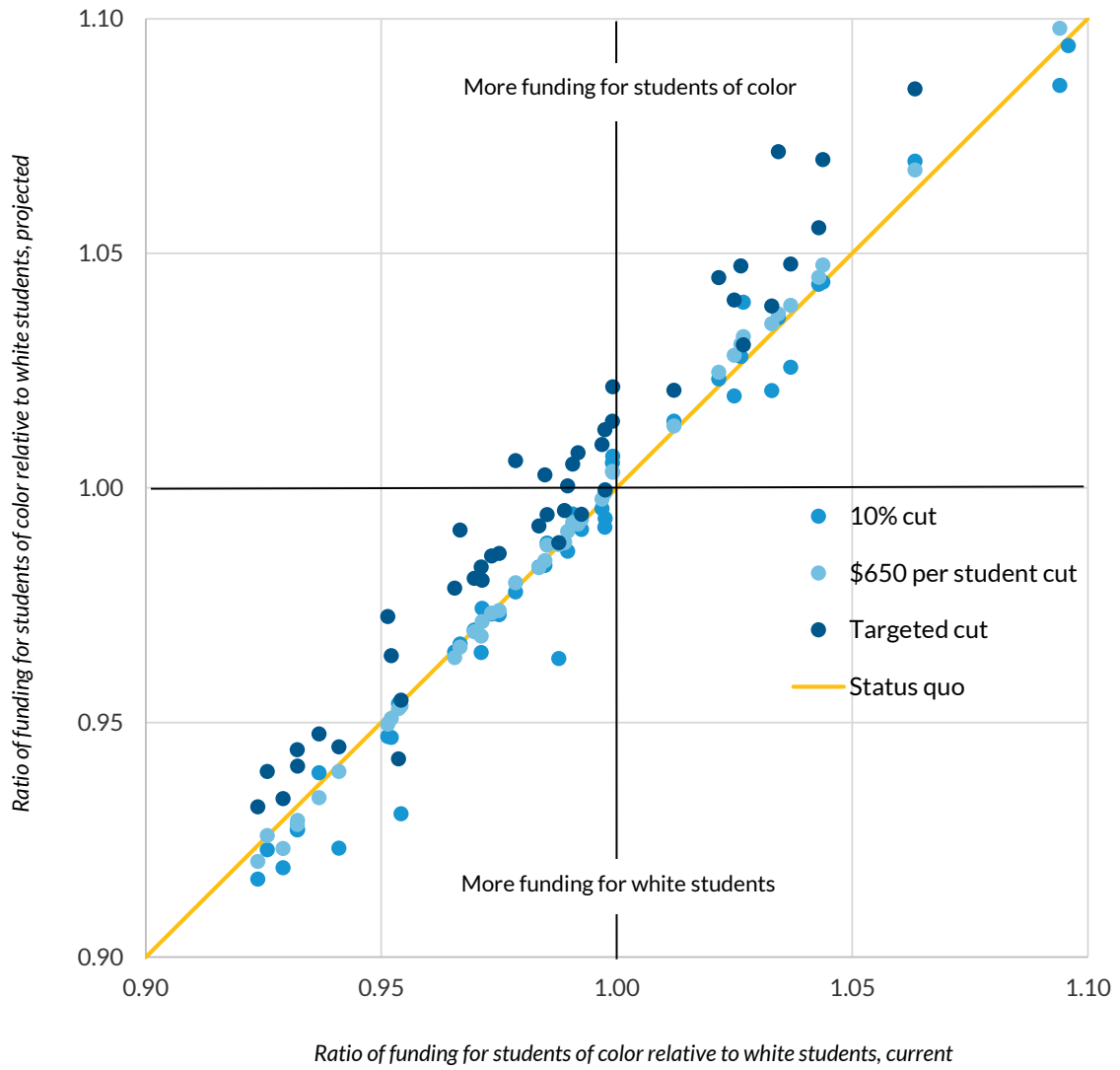
The difference between these two average per student amounts constitutes our measure of equity.

$$\$11,500 \text{ per poor student} - \$10,875 \text{ per nonpoor student} = \mathbf{\$625}$$

Thus, in our simplified example, we estimate that the average poor student lives in a district that receives \$625 more per student than the average nonpoor student.

FIGURE 1

Changes in State and Local Funding for Students of Color Relative to White Students

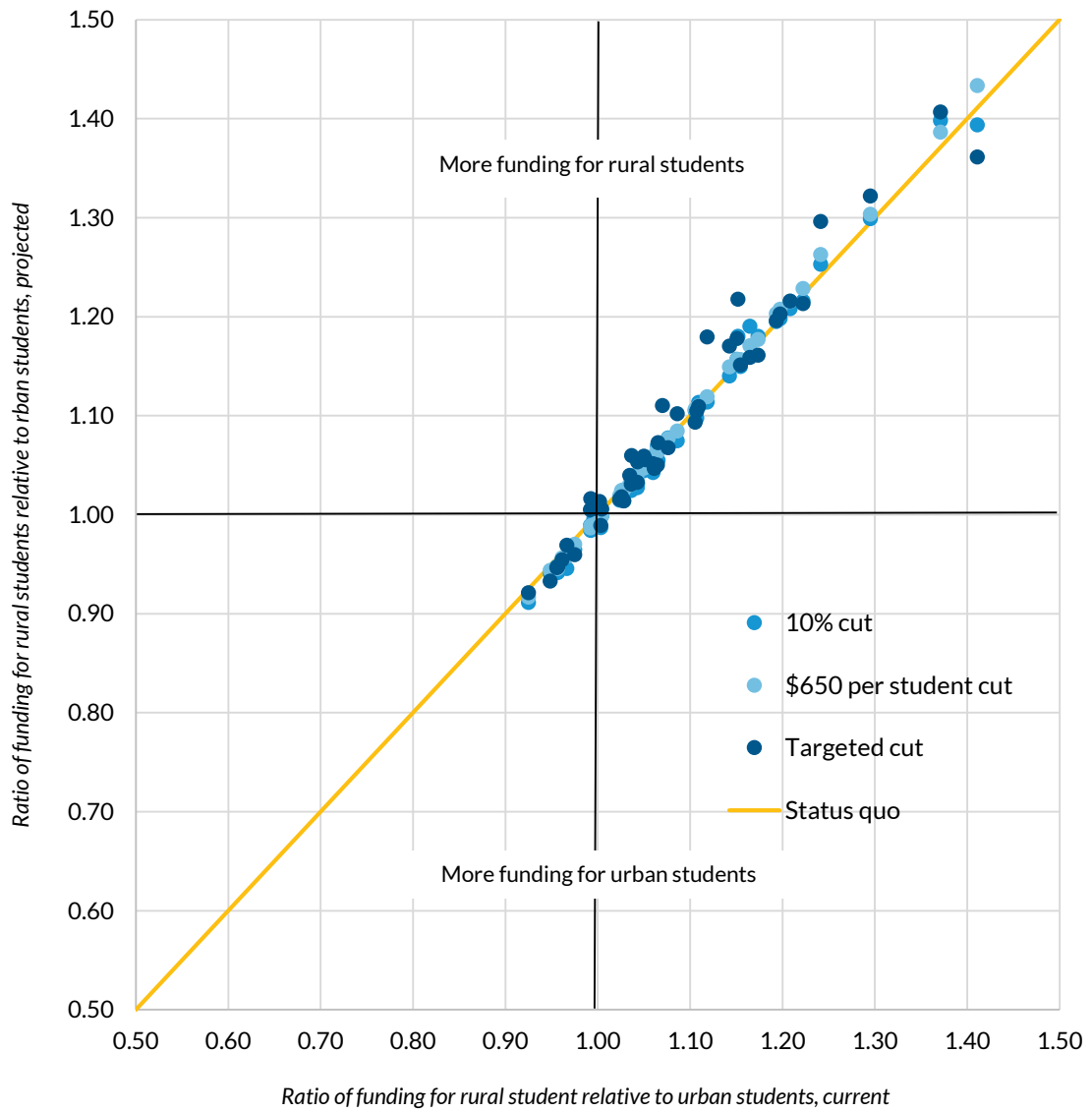


Sources: Urban Institute analysis of US Department of Education’s Common Core of Data Local Education Agency Finance Survey and Small Area Income and Poverty Estimates data.

Note: Alaska is removed from this chart to improve legibility.

FIGURE 2

Changes in State and Local Funding for Rural Students Relative to Urban Students



Sources: Urban Institute analysis of US Department of Education’s Common Core of Data Local Education Agency Finance Survey and Small Area Income and Poverty Estimates data.

Note: Alaska is removed from this chart to improve legibility.

TABLE 1
State and Local Funding Equity Ratios

	Ratio of Poverty to Nonpoverty				Ratio of Students of Color to White Students				Ratio of Rural to Urban			
	Status quo	10% cut	\$650 per student cut	Targeted cut	Status quo	10% cut	\$650 per student cut	Targeted cut	Status quo	10% cut	\$650 per student cut	Targeted cut
Alabama	0.98	0.98	0.98	0.99	0.97	0.97	0.97	0.99	1.02	1.01	1.02	1.02
Alaska	1.14	1.13	1.14	1.17	1.16	1.16	1.17	1.19	1.59	1.58	1.61	1.63
Arizona	0.98	0.98	0.98	1.00	0.97	0.96	0.97	0.98	1.03	1.03	1.03	1.04
Arkansas	1.02	1.02	1.02	1.04	1.03	1.03	1.03	1.05	1.05	1.05	1.05	1.06
California	1.03	1.02	1.03	1.04	1.03	1.02	1.04	1.04	1.05	1.04	1.05	1.06
Colorado	1.03	1.02	1.03	1.04	1.00	1.00	1.00	1.01	1.30	1.30	1.30	1.32
Connecticut	0.96	0.95	0.96	0.96	0.94	0.92	0.94	0.94	1.17	1.18	1.18	1.16
Delaware	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.02	0.95	0.94	0.94	0.93
Florida	1.00	0.99	1.00	1.00	0.97	0.97	0.97	0.98	1.04	1.03	1.04	1.05
Georgia	1.02	1.02	1.02	1.03	0.99	0.99	0.99	1.01	1.04	1.02	1.03	1.03
Idaho	1.00	1.00	1.00	1.02	0.99	0.99	0.99	1.00	1.14	1.14	1.15	1.17
Illinois	0.92	0.92	0.92	0.94	0.93	0.92	0.93	0.94	0.96	0.95	0.95	0.95
Indiana	1.00	1.00	1.01	1.03	0.98	0.98	0.98	1.01	1.06	1.06	1.06	1.05
Iowa	1.00	1.00	1.00	1.01	0.95	0.95	0.95	0.96	1.11	1.11	1.11	1.11
Kansas	1.01	1.00	1.01	1.03	0.95	0.95	0.95	0.97	1.15	1.15	1.16	1.15
Kentucky	1.01	1.00	1.01	1.02	1.03	1.04	1.03	1.03	0.97	0.95	0.96	0.97
Louisiana	1.01	1.01	1.01	1.02	1.06	1.07	1.07	1.09	0.93	0.91	0.92	0.92
Maine	0.99	0.98	0.99	0.99	0.98	0.98	0.98	0.99	1.03	1.02	1.02	1.02
Maryland	1.00	0.99	1.00	1.01	1.00	0.99	1.00	1.00	0.99	0.99	0.99	1.01
Massachusetts	1.03	1.02	1.03	1.04	1.04	1.03	1.04	1.05	1.06	1.07	1.07	1.05
Michigan	0.99	0.99	0.99	1.01	1.02	1.02	1.02	1.04	1.00	1.00	0.99	1.01
Minnesota	1.04	1.04	1.04	1.07	1.04	1.04	1.05	1.07	1.00	1.00	1.00	1.01
Mississippi	1.01	1.01	1.01	1.02	1.03	1.04	1.04	1.07	0.96	0.95	0.96	0.95
Missouri	0.97	0.97	0.97	0.98	1.00	1.01	1.00	1.01	0.96	0.94	0.95	0.95
Montana	0.99	0.99	0.99	1.01	0.93	0.93	0.93	0.94	1.20	1.20	1.21	1.20
Nebraska	1.03	1.03	1.03	1.04	0.89	0.88	0.89	0.90	1.37	1.40	1.39	1.41
Nevada	0.99	0.99	0.99	0.99	0.94	0.94	0.93	0.95	1.41	1.39	1.43	1.36
New Hampshire	1.00	0.99	1.00	1.00	0.88	0.88	0.88	0.88	1.21	1.21	1.22	1.22
New Jersey	1.03	1.00	1.03	1.03	0.99	0.96	0.99	0.99	1.11	1.11	1.11	1.09
New Mexico	1.01	1.01	1.01	1.03	0.97	0.97	0.96	0.98	1.12	1.11	1.12	1.18
New York	1.01	1.00	1.01	1.02	0.99	0.99	0.99	1.00	1.06	1.04	1.06	1.05
North Carolina	1.01	1.01	1.01	1.02	0.97	0.97	0.97	0.98	1.09	1.07	1.08	1.10

North Dakota	1.00	1.00	1.00	1.01	0.93	0.93	0.93	0.94	1.15	1.16	1.16	1.18
Ohio	1.05	1.05	1.06	1.06	1.10	1.09	1.10	1.11	0.97	0.96	0.97	0.96
Oklahoma	1.01	1.00	1.01	1.02	0.98	0.97	0.97	0.99	1.11	1.10	1.11	1.10
Oregon	1.01	1.01	1.01	1.02	0.99	0.99	0.99	0.99	1.07	1.05	1.06	1.07
Pennsylvania	1.01	1.00	1.01	1.01	1.02	1.02	1.03	1.04	1.03	1.01	1.03	1.01
Rhode Island	0.98	0.97	0.98	0.98	0.95	0.93	0.95	0.95	1.16	1.19	1.17	1.16
South Carolina	1.01	1.01	1.01	1.02	1.04	1.04	1.04	1.06	0.99	0.98	0.99	1.02
South Dakota	1.00	0.99	1.00	1.01	0.93	0.92	0.92	0.93	1.19	1.20	1.20	1.20
Tennessee	1.00	1.00	1.00	1.01	1.00	1.01	1.00	1.02	1.00	0.99	1.00	0.99
Texas	0.99	0.98	0.99	0.99	0.92	0.92	0.92	0.93	1.22	1.22	1.23	1.21
Utah	1.03	1.03	1.03	1.05	0.99	0.99	0.99	1.01	1.24	1.25	1.26	1.30
Vermont	1.00	1.00	1.00	1.04	0.98	0.98	0.98	1.00	1.07	1.07	1.07	1.11
Virginia	1.01	1.01	1.01	1.02	0.99	0.99	0.99	0.99	1.04	1.03	1.03	1.03
Washington	1.00	1.00	1.00	1.01	0.97	0.97	0.97	0.99	1.04	1.03	1.03	1.06
West Virginia	1.00	1.00	1.00	1.01	0.95	0.95	0.95	0.94	1.00	1.00	1.00	1.01
Wisconsin	1.01	1.01	1.02	1.03	1.00	0.99	1.00	1.01	1.08	1.08	1.08	1.07

Source: Urban Institute analysis of US Department of Education's Common Core of Data Local Education Agency Finance Survey and Small Area Income and Poverty Estimates data.

Note: Ratios greater than 1 indicate more funding for poor students relative to non-poor students, more funding for students of color relative to white students, and more funding for rural students relative to urban students.

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For more information on this project, see <https://www.urban.org/urban-wire/equal-k-12-state-funding-cuts-could-disproportionately-harm-low-income-students>.



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