





# FUNDING GAPS 2018

## TOO MANY STUDENTS DO NOT GET THEIR FAIR SHARE OF EDUCATION FUNDING <sup>1</sup>

BY IVY MORGAN AND ARY AMERIKANER

Throughout history, public education has been called the great equalizer — the single most influential factor that allows all students, regardless of zip code, to one day excel in the workforce and contribute to the nation’s economic well-being as well as their own and that of the communities in which they live.

While that may be true, the educational opportunities provided to the nearly 51 million children who attend public schools are anything but equal. Students of different races, ethnicities, and socioeconomic backgrounds tend to end up at very different schools, ones with disparate resources, including those most crucial to student success — for example, high quality teachers, effective early education programs, and meaningful forms of college and career counseling.

Access to these and other resources are intrinsically linked to historical inequities in school funding that have been pervasive in American public schools. Coupled with state and local policies, funding allocations determine how much teachers are paid, the extent and frequency of professional development, the length of the school day, the number of students in a classroom, the availability of student supports and extracurricular activities, and myriad other factors that can have an impact on student learning.

In 2015, the last time The Education Trust examined this issue, we set out to determine how state and local funding for different districts compared by percentage of students in poverty and by percentage of students of color. What we found was that many states were not sending additional resources to their highest poverty districts or to districts serving the most students of color, and across the country, these districts were in fact receiving less money than the districts serving the fewest students living in poverty and students of color. In this report, we take another look at how state and local school funding decisions can either advance or hinder equity. In doing so, we ask the following questions:

- How do the revenues of districts serving the most students in poverty (the highest poverty districts) compare with those serving the fewest students in poverty (the lowest poverty districts) in each state and across the country?
- How much funding does the state provide to districts, and how does it distribute those dollars?
- How do the revenues of districts serving the most students of color compare with those of districts serving the fewest students of color?

We focus specifically on state and local revenues and exclude federal sources because federal dollars are intended — and targeted — to provide supplemental services to such specific groups of students as those in poverty, English learners, and students with disabilities.<sup>2</sup> In this analysis, we are interested in learning how states allocate the resources they oversee.

*Funding Gaps 2018* is part of a rich body of work on funding inequities conducted by many terrific researchers and advocates at both the local and national level.<sup>3</sup> This brief provides an up-to-date, straightforward analysis of funding equity — between districts — that is comparable across states and allows advocates and policymakers to understand how their state fares in a national context against a few key criteria. This report gives an overview of funding equity by race and poverty concentration across states, while our interactive, online data tool offers more detailed information for each state. We hope this work will help advocates keep the focus on equity.

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# Inequities Persist for Students Living in Poverty and Students of Color

Nationally, funding inequities continue to be large. The highest poverty districts in our country receive about \$1,000 less per student than the lowest poverty districts. The differences are almost twice as large — roughly \$1,800 per student — between districts serving the most students of color and those serving the fewest.

Importantly, these numbers reflect differences between the quartiles of districts with the most and fewest children in poverty (or students of color).<sup>4</sup> At the extremes (e.g., the 5 percent of districts with the most and fewest students in poverty or students of color), of course, the differences can be much larger.

When we look at funding gaps within each state, we find a great deal of variation. While some states provide substantially more funding to their highest poverty districts, others provide substantially less. The funding gaps between high and low poverty districts look even worse when we consider that students in poverty are likely to need additional supports in order to succeed academically. In other words, simply offering equal funding isn't enough. Moreover, some states that fund their highest poverty districts equally, or even progressively (meaning, they allocate more funding to the highest poverty districts), are still providing substantially fewer dollars to districts that serve the most students of color than to those that serve the fewest.

## CHANGES SINCE 2015

This report builds upon the foundation laid by *Funding Gaps 2015*. In this 2018 update, we provide a snapshot of many of the same data points that we included in our 2015 report.

Overall, the funding inequities we documented in the 2015 report appear slightly smaller, but persist. Compared to 2015, the national funding gap between high and low poverty districts decreased slightly — by 3 percentage points — from 10 percent to 7 percent. The national funding gap between districts with the highest and lowest percentages of students of color went from 15 percent to 13 percent, representing a 2 percentage point drop.

As we saw in the 2015 report, there is a lot of variation in the funding gaps within states, but overall, we see a small uptick in the number of states providing more funding to their districts with higher percentages of students from low-income backgrounds and students of color. Similarly, we see a slightly smaller number of states providing less funding to districts with higher percentages of students from low-income backgrounds and students of color.

In some states, there were significant shifts between the gaps reported in our 2015 analyses and these updated analyses. These shifts may be the result of changes in funding practices, changes in student enrollment patterns (for example, changes in the numbers of low-income students or students of color may have an impact on which districts are included in the highest or lowest quartiles), or data anomalies or reporting errors. Determining the causes of these shifts is beyond the scope of this report.

## ABOUT THIS ANALYSIS

In this analysis, we examine the relationship between funding and the demographics of the students that districts served as of 2015, which is the latest school year for which data are available. Specifically, we examine how the revenues of districts that serve higher percentages of students living in poverty or students of color compare with those of their counterparts. Our analysis compares the average revenues of groups of districts (the quartiles with the highest poverty and lowest poverty districts, for example). Within each group, some districts may be receiving substantially more or less funding than these averages. Furthermore, just because a high-poverty district gets more money per student, it does not mean that every school in that district is more generously funded. Previous research shows that even when funding for districts is progressive at the state level, dollars may be distributed regressively for schools within districts.<sup>5</sup> Our analysis does not seek to explain why we see the results that we see. Rather, we hope that this analysis will support the work of state advocates who know their local context far better than we do.

### IN BRIEF: WHAT WE DID

This section briefly describes our data sources and key analytic decisions.

For more detailed documentation, please see the technical appendix to this report.

We used the following data to analyze the state of funding equity across the U.S. and within each state:

- **State and local revenues per student:** These data were obtained from the 2013, 2014, and 2015 U.S. Census Bureau's Public Elementary-Secondary Education Finance Data files, the most recent data available.<sup>6</sup> To limit the impact of year-to-year fluctuations in revenues, which can arise from such one-time investments as renovations or capital projects, we used three-year averages of state and local funds. We also adjusted these dollar figures for both inflation and for regional variation in labor market costs.<sup>7</sup> To calculate revenues per student for each district, we divided each district's three-year average state and local revenues by the total number of students enrolled in the district in 2015.
- **Percentage of children in poverty:** Poverty data are based on the 2015 U.S. Census Bureau's Small Area Income and Poverty Estimates.<sup>8</sup> For each district, the percentage of children in poverty is the estimated number of school-aged children in poverty divided by the estimated number of school-aged children in the district.
- **Percentage of students of color:** Enrollment data by student ethnicity were obtained from the 2014–15 National Center for Education Statistics' Common Core of Data.<sup>9</sup> In this analysis, the percentage of students of color is the number of students who are Black, Latino, or American Indian in each district divided by the total number of students enrolled in the district.<sup>10</sup>

#### To calculate gaps between the highest and lowest poverty districts, we:

- Sorted all districts by the percentage of students below the poverty line (or the percentage of students of color);
- Divided districts into four groups (quartiles) so that each group had approximately the same number of students;
- Calculated the average state and local revenue per student across all the districts in each quartile; and
- Compared the state and local revenues per student in the highest and lowest poverty quartiles.

### A NOTE ABOUT POVERTY DATA

Our analysis of gaps between the highest and lowest poverty districts uses the percentage of students living below the poverty line as an indicator of income. We rely on the poverty rate, rather than the percentage of students qualifying for free or reduced-price lunch to remain consistent with prior analyses and because the free or reduced-price lunch eligibility is becoming a less-precise measure of poverty status, in part, as districts take advantage of the community eligibility provision.<sup>11</sup> It is important to note, however, that the percentage of students in poverty and the percentage qualifying for free or reduced-price lunch are highly correlated. In other words, districts with high poverty rates also tend to have high percentages of students eligible for free or reduced-price lunch, and vice versa.

## How do the Revenues of High-Poverty Districts Compare With Those of Low-Poverty Districts?

Across the country, the highest poverty districts receive about \$1,000, or 7 percent, less per pupil in state and local funding than the lowest poverty districts.

These gaps add up, and there is evidence that closing them can have a lasting impact on student achievement.<sup>12</sup> For example, in a district with 5,000 students, that gap means nearly \$5 million in missing resources. These funds could be used to pay for supports and services that we know improve academic outcomes for students, such as substantially smaller class sizes in the elementary grades, additional school counselors in the upper grades, or high-quality and integrated professional development for teachers.<sup>13</sup>

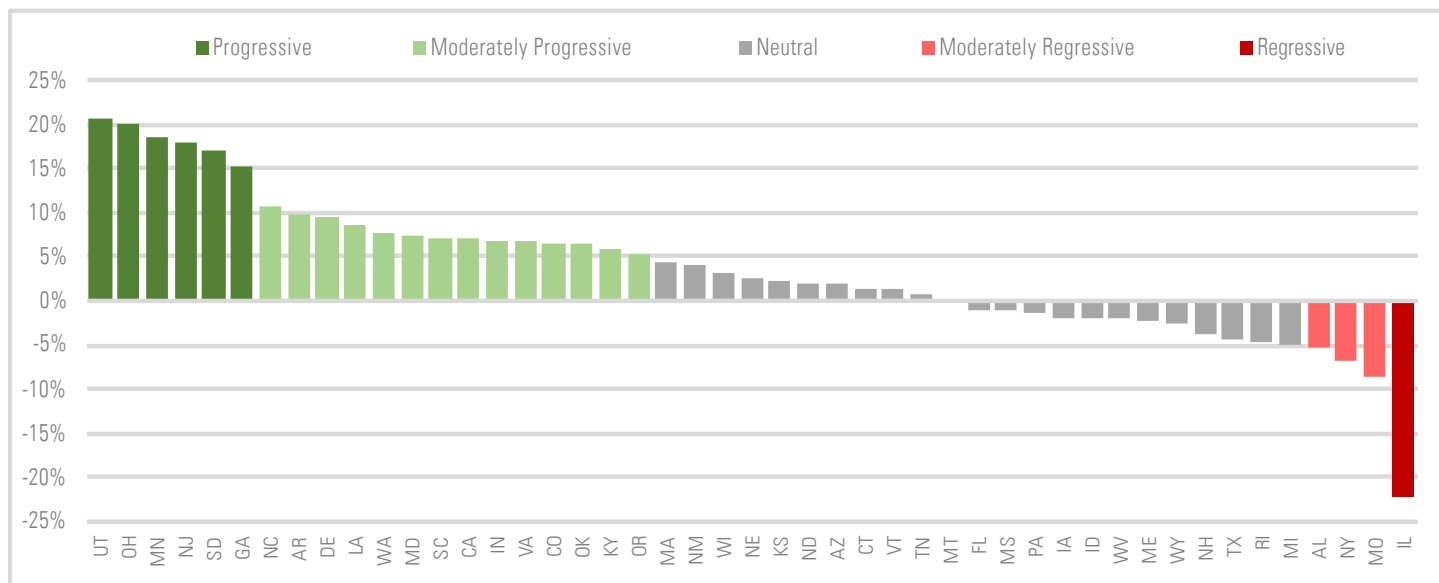
The within-state funding gap analysis shows a great deal of variation among states in the progressiveness — or regressiveness — of funding (*Figure 1*). In 20 states, the highest poverty districts received at least 5 percent more in state and local funds than the

lowest poverty districts. In six states, the highest poverty districts received at least 15 percent more funding per student than the lowest poverty districts. Those states are (in alphabetical order) Georgia, Minnesota, New Jersey, Ohio, South Dakota, and Utah.

At the other end of the spectrum, there are four states where the highest poverty districts received substantially less in state and local funding than their lowest poverty counterparts. The largest gap, by far, continues to be in Illinois, where the highest poverty districts received 22 percent less in state and local funding than the lowest poverty districts.<sup>14</sup> Other states with regressive gaps include (in alphabetical order) Alabama, Missouri, and New York. The highest poverty districts in these states received 5 percent to 9 percent less than the lowest poverty districts.

In the remaining 23 states, high- and low-poverty districts received similar amounts of state and local funding.

**FIGURE 1: Gaps in State and Local Revenues per Student Between Districts Serving the Most and the Fewest Students in Poverty**



**READING THIS FIGURE:** In Utah, the highest poverty districts receive 21 percent more in state and local funds per student than the lowest poverty districts. In states shaded in dark green, the highest poverty districts receive at least 15 percent more state and local funds than the lowest poverty districts; light green shading indicates that the highest poverty districts receive between 5 and 15 percent more. In states shaded in dark red, the highest poverty districts receive at least 15 percent less state and local funds than the lowest poverty districts; light red shading indicates that the highest poverty districts receive between 5 and 15 percent less. Gray shading indicates similar levels of funding for the highest and lowest poverty districts. States are ordered and classified as providing more or less funding to their highest poverty districts based on unrounded percentages.<sup>15</sup>

## WHAT HAPPENS WHEN THE NEEDS OF STUDENTS FROM LOW-INCOME BACKGROUNDS ARE TAKEN INTO ACCOUNT?

So far, we've been looking at whether the funding that high and low-poverty districts receive is equal. But to close achievement gaps, we need funding that is *equitable* — funding that accounts for the fact that it simply costs more to educate students from low-income backgrounds, many of whom start school academically behind their more affluent peers.

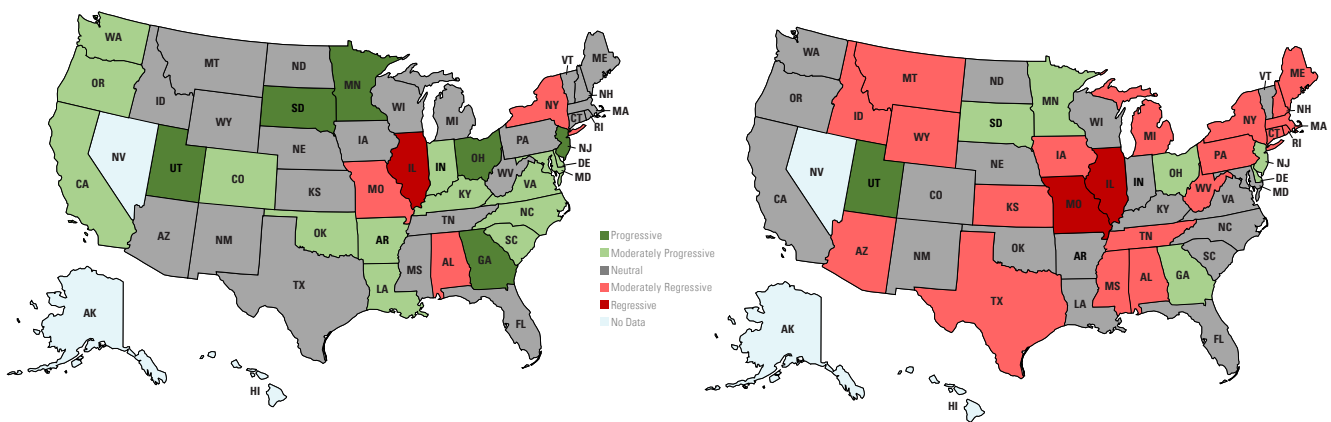
To account for these additional needs, we repeated our analysis with the assumption: that it costs a district 40 percent more to educate a student in poverty than not in poverty. This figure is based on the federal Title I formula, and, in all likelihood, is an underestimate. Research shows that it could cost twice as much, or more, to educate a student from a low-income background to the same standards as a student from a more affluent background.<sup>16</sup>

Nationally, when we account for the additional needs of students from low-income backgrounds,<sup>17</sup> we see that the highest poverty districts receive about \$2,000, or 16 percent, less per student than low-poverty districts (compared to roughly \$1,000 before making this adjustment). And while 20 states appeared to provide substantially more funding to the highest poverty districts before accounting for the additional needs of students from low-income backgrounds, after the adjustment, only seven still do (*Figure 2*). Moreover, the number of states with regressive funding gaps (i.e., states that provide at least 5 percent less funding to the highest poverty districts) increases from four to 20.

**FIGURE 2: Gaps in State and Local Revenues per Student Between Districts Serving the Most and the Fewest Students in Poverty**

*PANEL 1: Not adjusted for the additional needs of low-income students*

*PANEL 2: Adjusted for the additional needs of low-income students*



**READING THIS FIGURE:** Panel 1 shows the gap in state and local revenues per student without adjusting for the additional needs of students in poverty; panel 2 shows the gaps when we do adjust for additional student need. In states shaded in dark green, the highest poverty districts receive at least 15 percent more in state and local funds than the lowest poverty districts, light green shading indicates that the highest poverty districts receive between 5 and 15 percent more. In states shaded in dark red, the highest poverty districts receive at least 15 percent less state and local funds than the lowest poverty districts; light red shading indicates that the highest poverty districts receive between 5 and 15 percent less. Gray shading indicates similar levels of funding for the highest and lowest poverty districts. Light blue shading indicates that the state was excluded from the within-state analysis. In 20 states, the highest poverty districts receive more state and local funds per student than the lowest poverty districts (panel 1). When adjusting for the additional needs of students in poverty (panel 2), the highest poverty districts receive more in state and local funds per student in seven states.

Unlike local dollars, which are derived mainly from property taxes and can vary widely from district to district, state dollars are the funds that state legislatures can and should use to counteract these disparities.

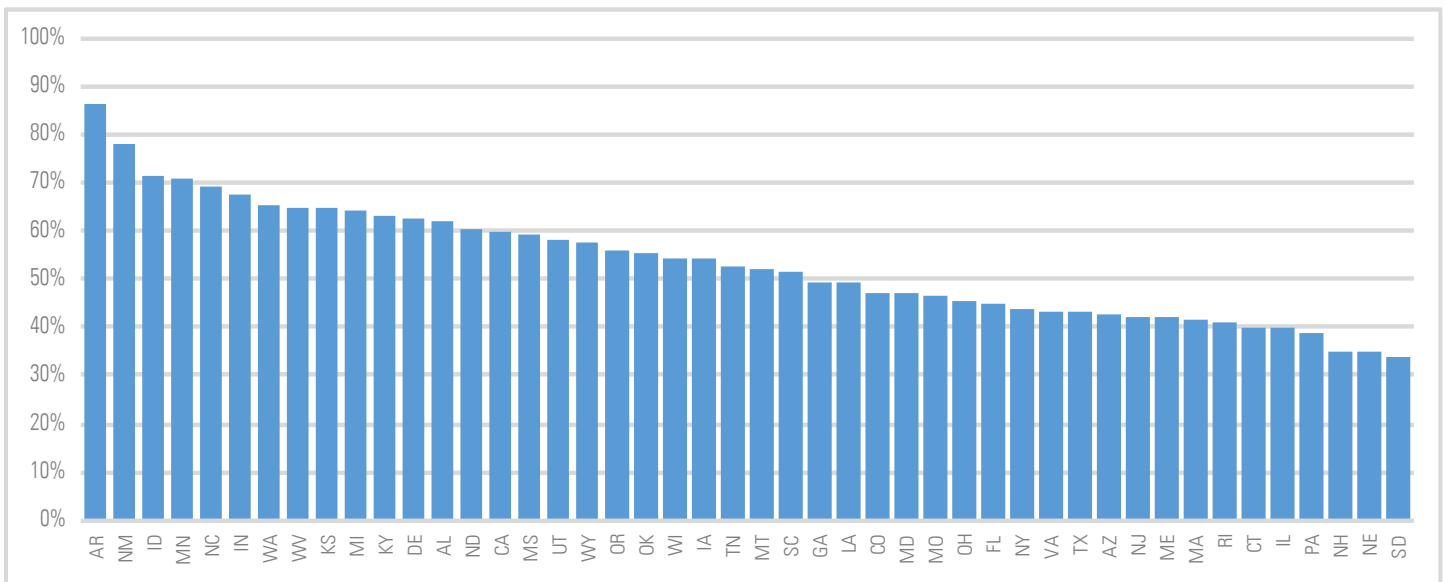
## The Role of State Dollars

So far, we've been looking at the distribution of state and local funds combined. Now, let's look exclusively at state dollars. Unlike local dollars, which are derived mainly from property taxes and can vary widely from district to district, state dollars are the funds that state legislatures can and should use to counteract these disparities. In this section, we will examine the share of funding that comes from the state and how progressively states distribute these dollars.

## How Much Funding Comes from the State?

Figure 3 shows the percentage of P-12 revenues that districts derive from the state (as opposed to local) sources. Although states vary quite a bit in the share of school funding they provide, all contribute at least a third of funds. About half of the states provide a bigger share of school funds than localities do, with Arkansas providing the largest.

**FIGURE 3: Percentage of District Revenues Derived from State (as Opposed to Local) Sources**



**READING THIS FIGURE:** In Arkansas, 86 percent of districts' non-federal revenues come from state (as opposed to local) sources. Alaska, Hawaii, and Nevada were excluded from this analysis because they do not appear in any of the other state-by-state analyses. In addition, Vermont was excluded because the state tabulates revenue sources differently from other states.<sup>18</sup> States are ordered based on unrounded percentages.



States could allocate dollars based on district need, taking into account each district's fiscal capacity and the characteristics of the students it serves. These decisions can have a profound effect on the resources districts receive and the educational opportunities they provide.

### How Progressively Is State Money Distributed?

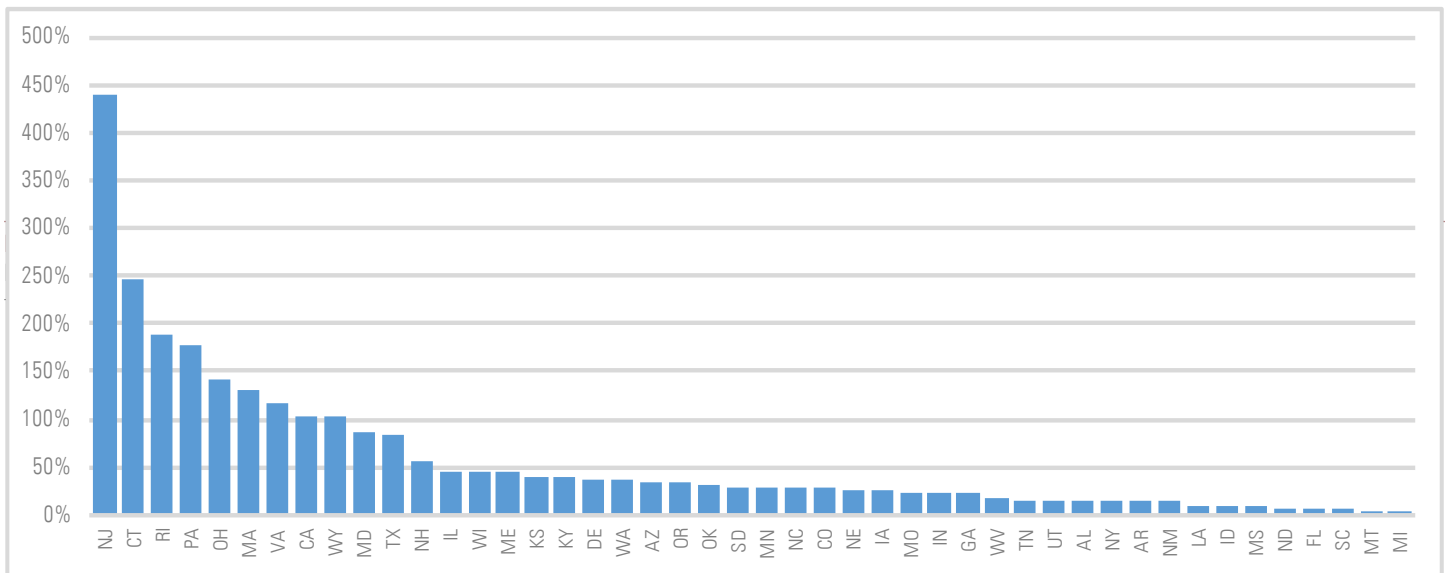
States make decisions about how to allocate the funds they contribute. They could, for example, choose to distribute dollars based on student enrollment — that is, provide all districts with an equal amount for every student they serve. Or, they could allocate dollars based on district need, taking into account each district's fiscal capacity and the characteristics of the students it serves. These decisions can have a profound effect on the resources districts receive and the educational opportunities they provide.

So are states allocating more state dollars to their highest poverty districts? And if so, how much more? *Figure 4* shows

the differences in the amount of state funds that states provide to their highest and lowest poverty districts.

While the overwhelming majority of states do provide more state dollars to their highest poverty districts than their lowest poverty districts, the relative size of those additional allocations varies greatly. Nine states, for example, provide more than twice as much (i.e., more than a 100 percent difference) in state funds to their highest poverty districts compared with their lowest poverty districts. At the other end of the spectrum, two states provide roughly the same amount to districts, regardless of poverty.

**FIGURE 4: Difference in State Revenues per Student Between Districts Serving the Most and the Fewest Students in Poverty**



**READING THIS FIGURE:** In New Jersey, the highest poverty districts receive 439 percent more in state dollars per student than the lowest poverty districts. As in Figure 3, Vermont was excluded because the state tabulates revenue sources differently from other states, and Alaska, Hawaii, and Nevada were excluded because they do not appear in any of the other state-by-state analyses. States are ordered based on unrounded percentages.<sup>19</sup>

## IN ILLINOIS, FUNDING INEQUITIES PERSIST, BUT A NEW FUNDING FORMULA COULD CHANGE THAT

In this analysis, Illinois ranks at or near the bottom of the list in terms of gaps in funding between districts with the highest and lowest percentages of students from low-income families and students of color. While the state contributes slightly more to high poverty districts than low poverty districts and provides the highest poverty districts with about half of their total funding, state efforts are not enough to make up for the tremendous disparities in local funding between the highest and lowest poverty districts. These are patterns we also observed in our 2015 report.

To improve the equity in Illinois' education funding policy, Advance Illinois, a statewide education advocacy organization, led a coalition to change the state's funding formula. Those efforts were strongly informed by the *Funding Gaps 2015* report.

**"Funding Gaps 2015 showed how inequitable Illinois' funding system had become. The data helped galvanize support for a more equitable approach to providing state dollars," said Ben Boer, deputy director, Advance Illinois.**

Due to the work of Advance Illinois and others, the state adopted a new school funding formula in August 2017 that prescribes a more equitable distribution of state dollars to the neediest districts. The formula takes into account the cost of providing a high-quality education to all students as well as local property wealth. Other goals underlying the new funding formula include closing existing funding gaps, improving stability of state funding allocations, ensuring that no district loses state funding, and encouraging districts to reduce reliance on local property taxes for school funding.<sup>20</sup>

**"What is groundbreaking is that the new formula calculates the cost of a quality education for each school district and focuses dollars on those districts farthest from that amount," said Boer.**

These changes went into effect in the 2017–18 school year — well after the education funding data that are reflected in this year's analysis were collected. It will be a number of years before these reforms are evident in the school district financial data used in these analyses.

### What About Students of Color?

Inequities in funding don't only occur based on poverty. Previous studies have shown that districts serving the most students of color also tend to receive less state and local funding than districts serving the fewest.<sup>21</sup> Our latest findings confirm this pattern.

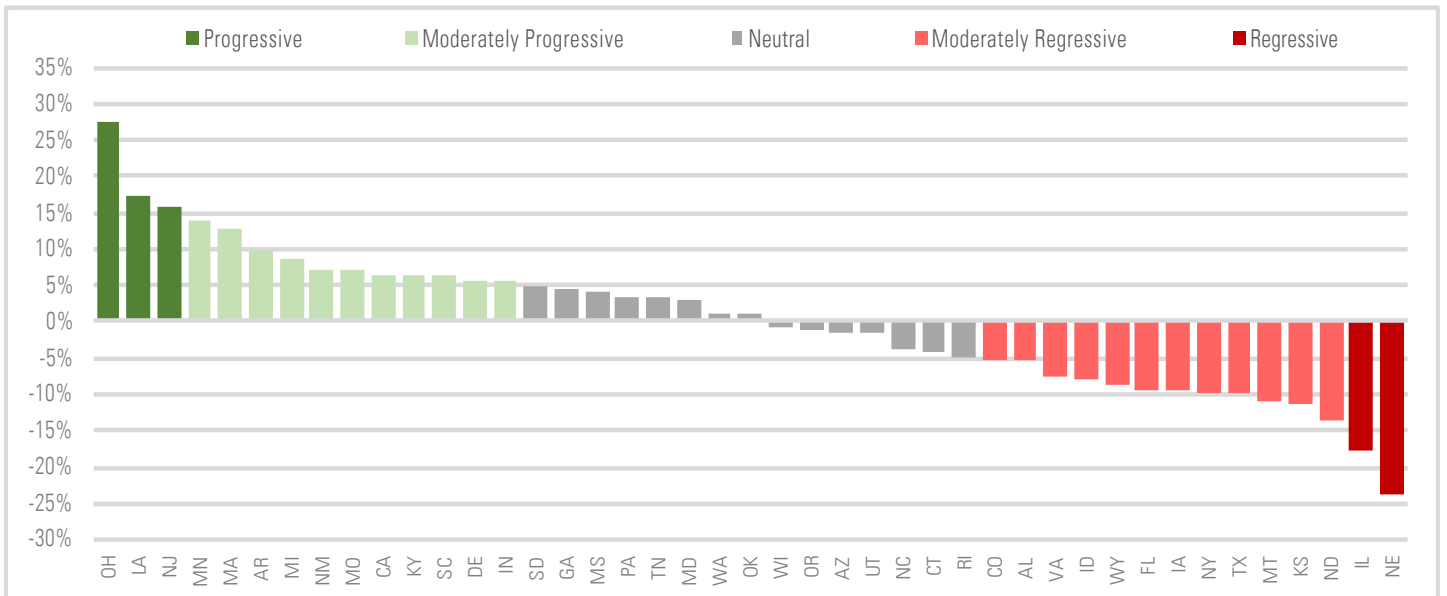
In fact, when we looked at state and local funding for districts serving the largest concentrations of Black, Latino, and American Indian students, we found inequities to be more prevalent and more substantial than those based on poverty.

Nationally, districts serving the most students of color receive about \$1,800, or 13 percent, less per student than districts serving the fewest students of color.<sup>22</sup> Funding differences within states show a great deal of variation (*Figure 5*). In 14 states, districts that serve the most students of color receive at least 5 percent more

funding than districts that serve the fewest students of color. In 14 other states, the reverse is true; those serving the most students of color receive at least 5 percent less funding than districts serving the fewest students of color.

These patterns are troubling for many reasons, but particularly because research shows that many students of color start school academically behind their peers.<sup>23</sup> If the goal of our education system is to ensure that all students leave high school ready for what's next — be it college or a meaningful career — we need to provide students who need the most (and the schools that educate them) with more support — not less.

**FIGURE 5: Gaps in State and Local Revenues per Student Between Districts Serving the Most and the Fewest Students of Color**



**READING THIS FIGURE:** In Ohio, districts serving the most students of color receive 28 percent more in state and local funds per student than districts serving the fewest students of color. In states shaded in dark green, the districts serving the most students of color receive at least 15 percent more state and local funds than the lowest poverty districts; light green shading indicates that districts serving the most students of color receive between 5 and 15 percent more. In states shaded in dark red, districts serving the most students of color receive at least 15 percent less state and local funds than districts serving the fewest students of color; light red shading indicates that the districts serving the most students of color receive between 5 and 15 percent less. Gray shading indicates similar levels of funding for the districts serving the most and fewest students of color. States are ordered and classified as providing more or less funding to their districts with the most students of color based on unrounded percentages.<sup>24</sup>

## Conclusion

Whether you look at the national numbers or the state-by-state numbers, the pattern is disturbing: in more than half of states, districts with the highest poverty rates do not receive more funding to account for that increased need. And in 14 states, the districts with the most students of color get at least 5 percent less funding than districts with the lowest percentage of students of color. These funding inequities are not new — they have been documented and debated for decades. But there has been real progress in some states, and we hope this work serves as a tool to help advocates and state leaders continue to identify, assess,

and remedy the funding inequities described in this report. We also hope that the work doesn't stop there. The ways in which dollars are spent matter too, and making sure that students have equitable access to other resources — such as high-quality rigorous curricula, effective teaching, and safe and supportive learning environments — is just as important for fulfilling our commitment to achieve educational equity for students from low-income families and students of color.

## NOTES

1. This report draws heavily on a previous report: Natasha Ushomirsky and David Williams, "Funding Gaps 2015" (Washington, D.C.: The Education Trust, 2015), <https://edtrust.org/resource/funding-gaps-2015/>.
2. In addition, federal funds make up a relatively small share of public education funding. In 2013–2014, federal funds represented 8.7 percent of revenues for public elementary and secondary schools across the nation. See, National Center for Education Statistics, Digest of Education Statistics (2016), "Table 235.10: Revenues for public elementary and secondary schools, by source of funds: Selected years, 1919–20 through 2013–14," [https://nces.ed.gov/programs/digest/d16/tables/dt16\\_235.10.asp](https://nces.ed.gov/programs/digest/d16/tables/dt16_235.10.asp)
3. This body of work includes, but is not limited to: Bruce D. Baker, Danielle Farrie, Monete Johnson, Theresa Luhm, and David G. Sciarra, "Is School Funding Fair? A National Report Card," (Newark, N.J.: Rutgers Graduate School of Education and Education Law Center, seventh edition, 2018), <http://www.schoolfundingfairness.org/>; Matthew M. Chingos and Kristin Blagg, "Do Poor Kids get their Fair Share of School Funding?" (Washington, D.C.: Urban Institute, 2017) [https://www.urban.org/sites/default/files/publication/90586/school\\_funding\\_brief.pdf](https://www.urban.org/sites/default/files/publication/90586/school_funding_brief.pdf); and Raegen Miller and Diana Epstein, "There Still Be Dragons: Racial Disparity in School Funding Is No Myth," (Washington, D.C.: Center for American Progress, July 2011), <https://www.americanprogress.org/issues/education/report/2011/07/05/9943/there-still-be-dragons/>. Examples of organizations working to increase funding equity in their states include Advance Illinois, Education Law Center, and Mexican American Legal Defense and Education Fund.
4. Each quartile is comprised of districts that serve roughly a quarter of all students nationwide (for the national analyses) or statewide (for the within-state analyses).
5. Marguerite Roza and Larry Miller, "Title I to Help High-Poverty Schools: How Title I Funds Fit Into District Allocation Patterns" (Seattle: Center on Reinventing Public Education, August 2005), <https://www.crpe.org/publications/strengthening-title-i-help-high-poverty-schools-how-title-i-funds-fit-district-0>; and Daria Hall and Natasha Ushomirsky, "Close the Hidden Funding Gaps in Our Schools" (Washington, D.C.: The Education Trust, April 2010), <https://edtrust.org/resource/close-the-hidden-funding-gaps-in-our-schools/>.
6. U.S. Census Bureau, "Public Elementary and Secondary Education Finance Data, 2013–2015," <https://www.census.gov/programs-surveys/school-finances.html> (Downloaded August 2017). Because the Census Bureau data on which this analysis relies do not include independently operated charter schools or districts that only operate charter schools, our analyses exclude these districts.
7. We adjusted for inflation using the Bureau of Labor Statistics' Consumer Price Index and for regional variation in labor market costs using the American Community Survey-based 2013–2015 Comparable Wage Index obtained from Dr. Lori Taylor at Texas A&M University. Bureau of Labor Statistics, "Consumer Price Index-All Urban Consumers, U.S. City Average," <http://data.bls.gov/pdq/querytool.jsp?survey=cu>, (Downloaded August 2017) and Lori Taylor, School of Government and Public Service at Texas A&M University, "ACS-based CWI 2013–2015," <http://bush.tamu.edu/research/faculty/TaylorCWI/> (Received November 2017).
8. U.S. Census Bureau, "Small Area Income and Poverty Estimates by School District, 2014–2015," <http://www.census.gov/did/www/saipe/data/schools/data/index.html> (Downloaded August 2017).
9. National Center for Education Statistics, "Common Core of Data, Local Education Agency (School District) Universe Survey Data, 2014–15," <http://nces.ed.gov/ccd/pubagency.asp> (Downloaded August 2017).
10. This represents the group of students who have been historically underserved in our educational system. The count of students of color for Hawaii includes Asian American and Pacific Islander students, in addition to Black, Latino, and American Indian. Hawaii is not included in the within-state funding gap analysis since it has only one district, but it is included in the national analysis.
11. The Community Eligibility Provision allows high-poverty schools and school districts to offer free meals to all enrolled students without collecting household applications to determine eligibility for free meals. While expansion of this important provision increases low-income students' access to meals and reduces administrative burden for school districts, it may also mean that some children who are not from low-income families may be included in the counts of students eligible for free or reduced-price lunch. See, Tom Snyder and Lauren Musu-Gillette, "Free or Reduced Price Lunch: A Proxy for Poverty?," *National Center for Education Statistics (NCES) Blog*, April 16, 2015, <https://nces.ed.gov/blogs/nces/post/free-or-reduced-price-lunch-a-proxy-for-poverty>.
12. C. Kirabo Jackson, Rucker C. Johnson, and Claudia Persico, "The effects of school spending on educational and economic outcomes: Evidence from school finance reforms," *The Quarterly Journal of Economics*, 131, no. 1 (2016): 157–218, <https://doi.org/10.1093/qje/qjv036>
13. See, for example, Grover J. Whitehurst and Matthew M. Chingos, "Class Size: What Research Says and What it means for State Policy," (Washington, D.C.: Brown Center on Education Policy at Brookings, 2011). Retrieved from [https://www.brookings.edu/wp-content/uploads/2016/06/0511\\_class\\_size\\_whitehurst\\_chingos.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/0511_class_size_whitehurst_chingos.pdf); Michael Hurwitz and Jessica Howell, "Measuring the Impact of High School Counselors on College Enrollment" (Washington, D.C.: The College Board, 2013). Retrieved from <http://media.collegeboard.com/digitalServices/pdf/advocacy/policycenter/research-brief-measuring-impact-high-school-counselors-college-enrollment.pdf>; and Joseph A. Taylor, et al., "The Effect of an Analysis-of-Practice, Videocase-Base, Teacher Professional Development Program on Elementary Students' Science Achievement," *Journal of Research on Educational Effectiveness* 10, no. 2 (2017): 241–271. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/19345747.2016.1147628>.

14. Illinois recently enacted a new school funding formula that intends to provide a more equitable distribution of state dollars to the neediest districts, by taking into account student need and local government wealth. See the call-out box on page 10. <http://www.advanceillinois.org/2017/08/press-release-advance-illinois-applauds-new-equitable-school-funding-formula-culmination-years-long-collaborative-effort>.
15. Hawaii is excluded from the within-state gap analysis because it is one district. Nevada is excluded because its student population is heavily concentrated in one district and could not be sorted into quartiles. Alaska is excluded because there are substantial regional differences in the cost of education that are not accounted for in the ACS-CWI. Because so many New York students are concentrated in New York City, we sorted that state into two halves, as opposed to four quartiles.
16. William D. Dumcombe and John Yinger, "How Much More Does a Disadvantaged Student Cost?" (Syracuse, N.Y.: Center for Policy Research at Syracuse University, July 2004), <http://surface.syr.edu/cgi/viewcontent.cgi?article=1102&context=cpr>.
17. To account for these additional needs, we repeated our analysis by assuming that it costs a district 40 percent more to educate a student in poverty than not in poverty (therefore counting each student in poverty as 1.4 students). This figure is based on the federal Title I formula.
18. Lawrence O. Picus, Allan Odden, William Glenn, Michael Griffith, and Michael Wolkoff, "An Evaluation of Vermont's Education Finance System," working draft, January 2012, <http://www.leg.state.vt.us/jfo/Education%20RFP%20Page/Picus%20and%20Assoc%20VT%20Finance%20Study%20with%20Case%20Studies%201-2-12a.pdf>.
19. Hawaii is excluded from the within-state gap analysis because it is one district. Nevada is excluded because its student population is heavily concentrated in one district and could not be sorted into quartiles. Alaska is excluded because there are substantial regional differences in the cost of education that are not accounted for in the ACS-CWI. Because so many New York students are concentrated in New York City, we sorted that state into two halves, as opposed to four quartiles.
20. To learn more about the new funding formula, see this fact sheet ([http://fundingilfuture.org/wp-content/uploads/2017/09/SB1947\\_Factsheet\\_090818.pdf](http://fundingilfuture.org/wp-content/uploads/2017/09/SB1947_Factsheet_090818.pdf)) and summary of frequently asked questions ([http://fundingilfuture.org/wp-content/uploads/2017/09/SB1947\\_FAQ\\_092617.pdf](http://fundingilfuture.org/wp-content/uploads/2017/09/SB1947_FAQ_092617.pdf)).
21. Miller and Epstein, "There Still Be Dragons: Racial Disparity in School Funding Is No Myth"; and Ross Wiener and Eli Pristoop, "How States Shortchange the Districts That Need the Most Help" in *Funding Gaps 2006* (Washington, D.C.: The Education Trust, 2006), <http://edtrust.org/resource/the-funding-gap-2>.
22. The count of students of color for Hawaii includes Asian American and Pacific Islander students, in addition to Black, Latino, and American Indian. Hawaii is not included in the within-state funding gap analysis since it has only one district, but it is included in the national analysis.
23. Roland G. Fryer and Steven D. Levitt, "The Black-White Test Score Gap Through Third Grade," NBER Working Paper 11049, (Cambridge, Mass.: National Bureau of Economic Research, January 2005), <http://www.nber.org/papers/w11049>; and Sean F. Reardon and Claudia Galindo, "Patterns of Hispanic Students' Math and English Literacy Test Scores in the Early Elementary Grades: A Report to the National Task Force on Early Childhood Education for Hispanics," October 2006, <https://lesacreduprintemps19.files.wordpress.com/2012/05/patterns-of-hispanic-students-math-and-english-literacy-test-scores-in-the-early-elementary-grades.pdf>.
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## **ABOUT THE EDUCATION TRUST**

The Education Trust is a nonprofit organization that promotes closing opportunity gaps by expanding excellence and equity in education for students of color and those from low-income families from pre-kindergarten through college. Through research and advocacy, the organization builds and engages diverse communities that care about education equity, increases political and public will to act on equity issues, and increases college access and completion for historically underserved students.



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**The Education Trust**

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