
Syracuse University

Maxwell School of Citizenship and Public Affairs | Center for Policy Research

Policy Brief

How Equitable is The
Education Finance System in
New York State?

John Yinger

No. 54/2019

John Yinger is Professor of Public Administration and Economics, and Director of the Education Finance and Accountability Program (EFAP).

EFAP promotes research, education, and debate about fundamental issues in public education in the United States, especially the tax and state aid programs that fund this system, and programs to promote efficiency and accountability in school districts. EFAP also sponsors research and debate on other issues related to elementary and secondary education. For more information about EFAP, go to <https://www.maxwell.syr.edu/cpr/efap/>.

The Policy Brief series is a collection of essays on current public policy issues in aging; urban and regional studies; education finance and accountability; public finance; social welfare, poverty, and income security; and related research done by or on behalf of the Center for Policy Research (CPR) at the Maxwell School of Syracuse University.

Single copies of this publication may be downloaded at no cost from the CPR website at <https://www.maxwell.syr.edu/cpr> or ordered from the Center for Policy Research, 426 Eggers Hall, Syracuse, New York 13244-1020.

© 2019, Syracuse University. This publication may be distributed freely for educational and research uses as long as this copyright notice is attached. No commercial use of this material may be made without express written permission.

Policy Brief

How Equitable is The
Education Finance System in
New York State?

John Yinger

No. 54/2019

How Equitable is The Education Finance System in New York State?

Introduction

This policy brief provides an overview and evaluation of the education finance system in New York State. The brief addresses four broad topics: student performance disparities in New York State, the nature of the New York State education finance system, the contributions of the New York foundation aid formula to educational equity, and the benefits to all taxpayers in New York State from education finance reform.

Student Performance Disparities in New York State

Every year, the New York State Education Department (NYSED) publishes a report describing student performance on the State's achievement tests. These tests cover English Language Arts (ELA) and mathematics in the third through eighth grades.

Table 1 describes the results from the most recent tests, which were taken in 2018.¹ Almost one million students participated. This table shows the average proficiency rate on these tests for students in various categories. The tests are given a score of 1 to 4 and the proficiency rate is the share of students who receive a score of 3 or 4.

This table reveals large disparities in student performance across various demographic groups. The disparity in the proficiency rates between White and Hispanic students is 17 percentage points on the ELA tests and 22 points on the math test. The comparable disparities between White and Black students are 18 and 25 percentage points, respectively. These are large gaps. The White ELA proficiency rate is

1. The data cited here are available at: <https://data.nysed.gov/>.

about 50 percent higher than the proficiency rate for Blacks or Hispanics and the gap is even larger than this on the math tests. New York State clearly is not providing an equal opportunity for all its students.

To a large degree, these disparities reflect the challenges posed by poverty and immigration. Students who are not economically disadvantaged have a proficiency rate that is about 75 percent higher than the rate for economically disadvantaged students. This gap is even larger when comparing students who are still learning English with other students.

Thanks to the racial and ethnic segregation across school districts in New York State, these disparities also appear in comparisons of school districts. To be specific, the available data make it possible to compare the proficiency rates (or average scores) in the schools attended by the average student in different demographic groups. For example, suppose there are only three types of schools, which have proficiency rates of 75 percent, 50 percent, and 25 percent, respectively. Now suppose one-third of White students go to each type of school, whereas half of Black students attend schools where the proficiency rate is 50 percent and half attend schools where it is 25 percent. Then the school quality in the school attended by the average White student is $[(1/3) \times 75 + (1/3) \times 50 + (1/3) \times 25] = 50$ percent proficient. In contrast, the school quality in the school attended by the average Black student is $[(1/2) \times 50 + (1/2) \times 25] = 37.5$ percent proficient. Because, in this example, Black students do not have access to the best schools, the average Black student attends a school of much lower quality than does the average White student.

A more general approach is to compare the share of the students in different ethnic groups who are in schools with overall proficiency rates below a certain level. Figure 1 provides this type of information for the overall proficiency rate (average share of students proficient on ELA and math tests in third through eighth grade) for Black and White students in

2014.² This figure shows that half of Black students are in districts with overall proficiency rates below 20 percent, whereas only 8 percent of White students find themselves in districts where the proficiency rate is this low. Moreover, the median White student goes to school in a district where the proficiency rate is 35 percent.

Additional evidence along these lines is provided in Figures 2 through 5.³ Figures 2 and 4 show the cumulative distributions for eighth grade ELA and math proficiency rates in 2018. Figures 3 and 5 provide the same type of information for the average scores on these two tests. Figure 2 shows, for example, that the median Black student goes to a school where the eighth grade proficiency rate is 25 percent whereas the median White student goes to a school where this rate is 47 percent—almost twice as high. The comparable figures for the math tests (Figure 4) are 11 percent and 25 percent, respectively. Figures 3 and 5 reveal that these disparities carry over to the average test scores, as well. In addition, the White-Hispanic gaps are almost as large as the White-Black gaps in all of these cases.

These results reflect the balance between the high poverty rates and other factors that both raise the cost of education and lower tax bases in districts where historically disadvantaged ethnic groups are concentrated and the extra state aid that these districts receive. They also demonstrate that the current balance leaves districts where these groups are concentrated at far lower levels of student proficiency than other districts, in large part because they do not receive enough aid from the state.

According to the Court of Appeals, New York State is responsible for ensuring that every child receives the “opportunity for a meaningful high school education, one which prepares them to function productively

2. These numbers and the surrounding text are taken from Yinger, John. 2015. “Unequal Access to Good Schools in New York State.” *It’s Elementary* column, April. Available at: https://www.maxwell.syr.edu/cpr/efap/It_s_Elementary/.

3. These figures are based on data available at: <https://data.nysed.gov/downloads.php>.

as civic participants.” The courts have explicitly ruled that poverty and other factors that raise educational costs cannot be used as an excuse for failing to meet this standard. These results provide evidence that the State of New York is not living up to its educational responsibilities. Students cannot receive a “meaningful high school education” if they live in a district where only a small share of students attain proficiency in the tests leading up to ninth grade. The outcomes in Table 1 and Figures 1 through 5 violate the standard set by the Court of Appeals and violate widely held principles of equal opportunity and fair treatment for children in different racial and ethnic groups.

The New York State Education Finance System

In 2017-18, the New York State education finance system provided the funding for 2,622,879 K-12 students in 733 school districts.⁴ This system has three main components: local property taxes, state aid to school districts, and STAR tax exemptions, which are paid either to school districts or to homeowners.⁵ Five school districts (New York City, Buffalo, Rochester, Syracuse, and Yonkers) are not independent but are instead departments of a city government. These school districts also have access to sales tax revenue, and in the case of New York City and Yonkers, income tax revenue. In 2019-20, state contributions to K-12 education will amount to almost \$30 billion.⁶

4. These figures come from <http://data.nysed.gov>. Some of these districts are small, specialized districts, so most of the data in this brief is based on about 100 fewer districts. From this point on, this brief often shortens the year reference to the final year. For example, 2017-18 becomes 2018.

5. State aid and STAR payments are funded by state general revenues, such as the income tax, and the state lottery. This funding system is not covered in this brief.

6. See: <https://www.ny.gov/fy-2020-new-york-state-budget/highlights-fy-2020-budget> .

How Fair Are the Pupil Weights in the NYS Foundation Formula?

The recent history of state school aid in New York begins with the court finding in *CFE v. New York* (2003) that the amount of state aid to New York City was not sufficient to provide a “meaningful high school education.”⁷ This ruling led to a 2006 ruling that the state should provide at least an additional \$1.93 billion in operating aid to New York City per year.⁸ Moreover, in 2007, elected officials passed a new education aid formula for the entire state that was designed to offset fiscal disparities across the state in line with the principles in the *CFE* ruling. A key feature of this new education aid formula was a new set of weights for disadvantaged or “at-risk” students.

To be more specific, New York, like most other states, uses a “foundation” formula for its main state education aid program. With this type of formula, state aid equals a foundation amount minus an expected local contribution. The foundation amount is the spending level state policy makers believe is required for a district to meet the state’s student performance standard. In New York, the foundation amount, called the Adjusted Foundation Amount or AFA, has several multiplicative components, including a phase-in percentage, a regional cost index, and a pupil need index, PNI.

7. For more on this case and its legacy, see the *It’s Elementary* column, November 2013. Available at https://www.maxwell.syr.edu/cpr/efap/It_s_Elementary/ , and the material posted at <http://schoolfunding.info/>.

8. The history of the *CFE* case can be found at <http://schoolfunding.info/> .

Emily Gutierrez and I recently conducted an analysis of the PNI.⁹ This index indicates the percentage increase in educational costs in a given district associated with that district's at-risk students. Many studies show that a district with a high concentration of at-risk students must spend more than other districts to achieve a given student-performance target.¹⁰ New York, like most other states, uses pupil weights to account for the extra costs of educating at-risk students. In the standard terminology for this type of aid formula, a weight of 1.0 for students from poor families leads to twice as much aid for these students as for non-poor students, all else equal. Our analysis describes the pupil weights in New York State's education aid formula, presents new weights estimated with recent data, and shows the extent to which the current pupil weights understate the cost differences implied by up-to-date estimates.

As indicated above, these pupil weights appear in the PNI. Because it is a multiplicative component of the AFA, the PNI serves to increase aid per pupil in the neediest districts relative to the baseline established by the other components. A district's value for this index depends on the share of the district's students who are in poverty, the share of the district's students who are English language learners (ELL), and the weights placed on these two district characteristics.¹¹

The poverty component combines two measures of poverty:

9. Gutierrez, Emily and John Yinger. "Updated Pupil Weights for New York's Foundation Aid Formula." *It's Elementary* Column, November 2017. Available at: https://www.maxwell.syr.edu/cpr/efap/lt_s_Elementary/ . The material in the rest of this section draws heavily on this column. Ms. Gutierrez is a Ph.D. student in economics at Syracuse University.

10. This principle is discussed in many of my *It's Elementary* columns. See, for example, the column from October 2016 at: https://www.maxwell.syr.edu/cpr/efap/lt_s_Elementary/ .

11. In a few small districts, the PNI also reflects the district's sparsity. This is a relatively small adjustment and I do not consider it here.

the three-year average share of students who are eligible for a free or reduced-price lunch, FRPL, and the three-year average share of students from poor families as counted by the Census, SAIPE (for Small Area Income and Poverty Estimates).¹² Each measure has a weight of 0.65. The weight for ELL students is 0.5. These weights are combined in the extraordinary needs component of the formula, EN

$$EN = (0.65) \times FRPL + (0.65) \times SAIPE + (0.5) \times ELL$$

The final PNI is $(1 + EN)$ with a cap of 2.0. Suppose FRPL and SAIPE both equal 100% and ELL equals 10% in a given district. Then $EN = (0.65) \times (100\%) + (0.65) \times (100\%) + (0.5) \times (10\%) = 1.35$. Because of the cap, the final PNI is $(1 + 1) = 2$ instead of $(1 + 1.35) = 2.35$. As of 2015, no district had an EN value above 1, but several, including Rochester and Buffalo, had values above 0.95. Further increases in FRPL or SAIPE in these districts will push them above the cap, which means they will not receive full compensation for their added costs—even using the pupil weights in the current formula.

The pupil weights in the current formula were informed by scholarly estimates of these weights available when the formula was designed. However, these weights have not been updated since then. We gathered the relevant data for approximately 612 K-12 school districts in New York State during the school years 2011-12 to 2014-15.¹³ We estimated education cost functions using methods that are widely

12. This information comes from the Census' Small Area Income and Poverty Estimates (SAIPE) program which provides annual estimates of poor children, aged 5-17, by school district.

13. Data sources include the Bureau of Labor Statistics, the American Community Survey, the New York Comptroller, the New York Department of Taxation and Finance, the New York State Education Department.

recognized in the scholarly literature.¹⁴ These cost functions determine the extra spending associated with at-risk students holding student performance and other factors constant, which is the definition of a pupil weight. Our preferred estimates define student performance as an index that equally weights the share of students reaching the state's proficiency standard on math and English exams in the third through eighth grades, as well as Regents Diploma rates.

We find that the share of students eligible for a free lunch, FL, is the poverty measure with the strongest link to spending.¹⁵ The average district pupil weight for this measure is 1.25; that is, it costs 125 percent more to bring a poor student (by this measure) up to the same level of student performance as a non-poor student.¹⁶ Our estimated weights are 0.61 for ELL students and 0.39 for students with a severe disability. This ELL weight is higher than the 0.5 weight in the current aid formula.

By combining these weights with the share of students in each of these at-risk categories, we can also calculate the extra spending that is required to bring at-risk students up to any student performance

14. For a review of this literature, see Duncombe, William D., Phuong Nguyen-Hoang, and John Yinger. 2015. "Measurement of Cost Differentials." In *Handbook of Research in Education Finance and Policy*, 2nd Edition, M.E. Goertz and H.F. Ladd (eds.), New York: Routledge, 260-278. For an earlier application to New York, see Eom, Tae Ho, William D. Duncombe, Phuong Nguyen-Hoang, and John Yinger. 2014. "The Unintended Consequences of Property Tax Relief: New York State's STAR Program." *Education Finance and Policy* 9 (4) (Fall): 446-480.

15. Scholarly estimates of pupil weights make use of pupil characteristics that best explain observed spending, controlling for other factors. We find that FL does a better job explaining the added costs of poor students than FRPL, SAIPE, or the combined measure in the current state aid formula.

16. The estimated pupil weights for each district are weighted by enrollment.

standard selected by New York State.¹⁷ We find that to attain any given student performance standard, state-wide school spending outside New York City has to increase by 37.1 percent to account for the state's economically disadvantaged students, by 2.5 percent to account for LEP students, and by 6.7 percent to account for students with severe disabilities. The required extra spending obviously varies across districts. Tables 2 and 3 indicate the percentage increase in spending required to cover, respectively, the added costs of free-lunch students and ELL students in the state's 10 largest districts outside New York City. These added costs vary over time because the share of students in each of these categories varies. From 2014 to 2015, for example, many districts experienced an increase in the share of their students eligible for a free lunch and hence experienced an increase in their required added costs for this student category. See Table 2.¹⁸

An alternative way to express these results appears in Figure 6, which describes funding gaps in high-poverty districts. More specifically, this figure indicates, for economically disadvantaged and ELL students combined, the gap in funding between an aid formula based on our estimates and the current aid formula. This gap is expressed as a percentage of baseline spending. Figure 6 indicates, for example, that the state aid formula would have to give the Syracuse schools an additional 16 percent of the state-wide baseline spending in 2015 to cover the added costs of economically disadvantaged and ELL students in the district. Tables 2 and 3 indicate that the overall added costs of free-lunch and ELL students in Syracuse in 2015 are (90% + 9%) = 99% of

17. Because of the multiplicative nature of New York State's aid formula, we can express these results as a required percentage increase in spending. This percentage increase applies to any spending amount.

18. For more information on recent poverty increases, see "Growing Student Poverty: Challenges for Achievement and State Aid," by the New York Association of School Business Officials. Available at: https://www.nyasbo.org/uploads/reports/1510154391_Growing%20Student%20Poverty%202017.pdf.

the baseline, so this result indicates that the PNI in the current state aid formula covers $(99\% - 16\%) = 83\%$ of Syracuse's spending need.

This analysis leads to three key conclusions. First, the current aid formula in New York State makes a significant contribution to educational equity by accounting for the added costs of educating students in poverty and students who are English language learners. Second, despite this valuable contribution, the current formula does not provide many high-need districts with the funding necessary to fully offset their cost disadvantages. Third, thanks to growing poverty in many New York State school districts, the cap in the formula may soon begin to magnify the gap between actual and needed state aid in some high-need districts.

These findings imply that the pupil weights in the current formula should be updated and the cap should be removed. The issues that need further examination include adding data for more recent school years, considering alternative definitions of school district performance, exploring additional measures of poverty, and exploring alternative ways to account for the added costs of students with special needs. An office in NYSED with responsibility for estimating these pupil weights, which does not currently exist, could provide additional insight into the range of issues raised by cost-function estimation and by changes in pupil characteristics over time.

How Fair Is New York State's Foundation Aid Formula Overall?

Aid to New York City

The 2006 CFE decision required New York State to pay at least \$1.93 billion more in annual operating aid to New York City. Aid to New York City did increase in the years following the CFE decision, but this increase did not last very long. As shown in Figure 6, aid per pupil did increase for New York City in 2008 and 2009, and it was higher than aid

per pupil in the rest of the state in those years.¹⁹ By 2010, however, it had dropped back down to the same level as the rest of the state and has been below that level ever since. Moreover, New York City's share of total state aid has fallen far below its share of the state's students, despite the temporary reversal of this situation right after the CFE decision. See Figure 7.

At the time of the CFE ruling, 1,018,982 students attended the City's schools, so one could also say that CFE decision required the state to increase its aid to New York City by \$1.93 billion divided by 1,018,982 students, which equals \$1,894.08 per pupil. To make this figure comparable across years, it must be adjusted for inflation.²⁰

The most recent accessible data on aid to New York City applies to the 2017 school year. The budget for this year is set in 2006—in 2006 prices. Translated into 2006 prices, the \$1,894.08 figure becomes \$2,382.70.²¹ In other words, the CFE decision called for an increase in aid to NYC in 2016-17 equal to \$2,382.70 per pupil.²² With 1,018,982 pupils, this requirement calls for \$2.428 billion in state aid above the 2007 baseline. In fact, however, state aid in 2017 was only \$0.095 billion

19. The data for Figures 6 and 7 can be found at: <http://www.oms.nysed.gov/faru/Analysis/cover.html>.

20. Comparing figures in 2006 dollars with figures in 2016 dollars is like comparing apples and oranges. An inflation adjustment is critical. Moreover, the 2006 CFE decision explicitly recognizes that the \$1.93 figure “must be adjusted for inflation.”

21. This calculation makes use of the consumer price index (available at: <https://www.bls.gov/cpi/tables/supplemental-files/home.htm>). The implicit price deflator for state and local government purchases (available at: <https://fred.stlouisfed.org/series/A829RD3Q086SBEA>) is an alternative; it results in somewhat higher measures of aid shortfalls for NYC.

22. The \$1.93 billion comes from a calculation in which the level of school performance is fixed. One could also argue that the \$1.93 billion should grow (in real terms) as the State's school performance target grows. This approach is not pursued in this policy brief.

about this baseline, leaving a gap of \$2.428 billion - \$0.095 billion = \$2.333 billion. See Table 4. These calculations hold the number of pupils constant at the 2007 level. In fact, the number of pupils in New York City increased significantly over this period. As shown in Table 4, accounting for this increase raises the 2017 state aid gap to \$2.574 billion.²³

Two further adjustments are needed to calculate the state aid shortfall in earlier years. First, the \$1.93 billion was expected to phase in over four years. This adjustment leads to a required minimum aid increase per pupil of $(1/4) \times \$2,382.70 = \595.67 in 2008, with a gradual increase up to the full \$2,382.70 in 2011. Second, it seems reasonable to allow a lower aid increase in a recession year. The *CFE* decision did not mention this possibility, of course, but if the court had retained jurisdiction, it might well have allowed such an adjustment. State aid to districts outside New York City actually increased above the 2008 baseline in the first recession year, 2009, by 2.4 percent, but it decreased almost 4 percent relative to this baseline in 2010. Moreover, constant-dollar spending did not exceed this baseline until 2016. To place a lower bound on the remaining gaps in state aid, my calculations assume a considerably larger reduction in the required minimum aid to New York City. To be specific, I reduce this minimum by 10 percent in 2009 and 25 percent in 2010, and then gradually return to the 2008 baseline with a 5 percent increase each year.

The results of these calculations are presented in Table 4. After the phase-in of the increased aid to New York City and the recession, state aid to the City falls more than \$2.4 billion short of the *CFE* minimum in every year. The cumulative gap in actual aid compared to the required *CFE* minimum amounts to an astonishing \$20.579 billion. Most of this gap reflects the failure of New York State to take the \$1.93 billion

23. I am by no means the first person to point out New York State's failure to meet its *CFE* obligations. See, for example: Ashley, Stephanie D. 2017. "New York's Persistent Denial of New York City Educational Rights: Ten Years After *Campaign For Fiscal Equity V. New York*." *Seton Hall Law Review* 47: 1045-1075.

requirement seriously, but \$1.274 billion of it comes from the failure of New York State to account for the increased enrollment in New York City schools. In any case, these results demonstrate that the \$1.93 billion aid increase in the *CFE* decision is nowhere in sight. Despite the *CFE* rulings, in other words, elected officials in New York State have returned to shortchanging school children in New York City.

In several more years, New York City's school aid may have increased enough in real terms so that the annual shortfalls disappear. Even in this case, however, the huge cumulative shortfall will remain unpaid.

Aid Outside New York City

The 2019-20 budget for New York State provides an increase in school aid of about \$1 billion, bringing the total school aid up to \$27.9 billion.²⁴ Despite this increase, state school aid still falls short of the increase necessary to fully fund the foundation formula that was supposed to be phased in starting in 2008.²⁵ Indeed, the Alliance for Quality Education estimates that full funding requires an additional \$4.1 billion in state aid.²⁶

In another recent analysis, Emily Gutierrez and I asked whether New York's existing state aid system, including foundation aid and other

24. See: <https://www.ny.gov/fy-2020-new-york-state-budget/highlights-fy-2020-budget> .

25. Moreover, the state has been chipping away at local control over their foundation aid by increasing the "set-aside" for community schools, and, in some districts, for magnet schools and teacher support. A foundation formula is intended to provide school districts with unrestricted funds. This set-aside transforms some of the foundation aid into a categorical grant that must be spent on a specific purpose—in this case on turning schools into community "hubs."

26. See <https://www.aqeny.org/equity/>. This estimate is dated November 2018, so the \$618 million increase in foundation aid funding for 2020 brings this gap down to \$3.5 billion.

aid programs, adequately recognizes the extra spending and revenue requirements of high-need districts.²⁷ This analysis is an extension of our examination of spending weights for at-risk students, which is discussed above.

The analysis in this extension takes a broader view. To be specific, we compare a district's actual state education aid with a comprehensive measure of its fiscal health. In this context, fiscal health is defined as a district's ability to deliver a given level of educational quality at a given tax rate on its residents, based on factors outside the district's control. Our measure of fiscal health follows the logic of a foundation aid formula.²⁸ It equals the amount a district must spend to meet the state's student performance target (expenditure need) minus the amount of money the district can raise at a given level of sacrifice by its residents (revenue-raising capacity).

Actual aid in these calculations includes current foundation aid, other school aid programs, and STAR reimbursements. We make no attempt to estimate the impact of specific provisions in the foundation aid program or in any other component of total state aid. These specific provisions include hold harmless rules, arbitrary limits in the foundation aid formula on the expected local contribution, negotiated school aid that supplements foundation aid, and the features of STAR (which are discussed below). Our calculations indicate whether the net impact of all these provisions is to pull certain types of districts away from the aid they

27. This column, on which this section is based, is Gutierrez, Emily and John Yinger. 2018. "How Fair Is New York State's Foundation Aid Formula?" *It's Elementary* column, February. Available at: https://www.maxwell.syr.edu/cpr/efap/It_s_Elementary/.

28. Our fiscal health calculations and associated foundation aid formula follow the same philosophy as the New York foundation aid formula, but, as discussed below, the details are not the same.

would receive under a foundation aid formula based on fiscal health.

Our first step in calculating fiscal health is to determine each district's relative costs. These costs include the higher costs of educating students from poor families, with limited English proficiency, or with special needs, which were the focus of our earlier analysis. They also reflect the higher wages that some districts must pay to attract teachers, holding teacher quality constant, and the economies or diseconomies of enrollment scale in each district.²⁹ These cost factors are all determined from the estimation of an education cost function, as discussed in a previous section of this policy brief. The net effect of all these cost factors is summarized by a cost index, which equals 1.0 in the average district and, for example, 1.5 in a district where costs are 50% higher than average. As discussed below, this cost index must be multiplied by a spending target in the average district to determine expenditure need.

Our second step is to calculate the amount of money a district could raise using the principal local funding source for public education in New York, namely, the property tax. Because the property tax rate in the average district in New York is about 1.5 percent, we set the expected local contribution at this level. In other words, the revenue-raising capacity component of fiscal health is set at 1.5 percent of property wealth per pupil in each district.

Our third step is to determine New York State's implicit spending target in the average district, which is a component of expenditure need. Because our fiscal health measure is equivalent to a foundation aid formula, we can measure the required state budget for a fiscal-health-based foundation formula at any given spending target. The State's implicit spending target for the average-cost district is the one that leads to the same state education aid budget with our foundation formula as

29. Costs per pupil are relatively high in very small districts. Some districts could lower these costs through consolidation. See Duncombe, William D. and John Yinger. 2010. "School District Consolidation: The Benefits and Costs." *The School Administrator* 67 (5) (May): 10-17. We do not consider consolidation in our calculations.

the actual state aid budget in 2015.

These steps lead to a measure of fiscal health equal to a district's expected local contribution minus its expenditure need. This need, also called the foundation amount, is defined as the state's implicit spending target multiplied by the district's cost index. The associated aid formula brings all districts into spending-revenue balance by setting aid equal to expenditure need minus the expected local contribution. To avoid "recapture," defined as negative aid, the minimum aid amount is set at \$1,000 per pupil.

Figure 9 summarizes our results. This figure plots actual state aid (the vertical axis) and district fiscal health (the horizontal axis) for all districts in New York State except New York City.³⁰ It shows that actual state aid in New York is correlated with district fiscal health. In other words, districts in poor fiscal health tend to receive more state aid per pupil than other districts.

Nevertheless, three troubling lessons emerge from this figure. First, state aid does not fully compensate low-health districts for their disadvantages. To be specific, a \$1 increase in the need-capacity gap leads to only a \$0.62 increase in state aid. Moreover, the expected gap between fiscal-health-based aid and actual aid per capita is \$5,488 higher in a school district with a 100 percent of its students eligible for a free lunch than in a school district with no student poverty.

Second, many large and/or high-need districts receive far less aid than warranted by their fiscal health. Actual aid falls short of fiscal-health based aid by \$3,495 per pupil in Rochester, \$4,930 per pupil in Syracuse, \$6,612 per pupil in Binghamton, \$7,924 per pupil in Schenectady, and an astonishing \$13,214 per pupil in Yonkers. Buffalo is the only high-need district that receives more actual aid, almost \$2,000 per pupil, than aid based on fiscal health.

Third, the districts that receive more aid than warranted by their fiscal health alone are, on average, remarkably similar to the average

30. In these calculations, "actual state aid" includes all the state aid a district receives, including STAR payments, not just its foundation aid.

district overall. Their average enrollment is slightly smaller (2,160 pupils compared to 2,403 pupils), their free lunch share is slightly lower (33.3 percent compared to 38.3 percent), and their per-pupil wealth is virtually identical. The advantageous aid received by these districts, in other words, cannot be explained by factors related to their fiscal health. Overall, educational aid in New York State has an equalizing impact, but this impact falls far short of giving the neediest districts the aid they need to meet the state's implicit student performance standards.

Fiscal health is an appealing base for a state educational aid program because it summarizes a district's fiscal situation based on factors outside its control. By offsetting each district's fiscal disadvantages, an aid program based on fiscal health could play a major role in helping New York meet its constitutional requirement to ensure that all districts provide an adequate education.

A focus on fiscal health provides further evidence that the New York State education aid system shortchanges districts with relatively high concentrations of Black and Hispanic students. To be specific, Figure 10, shows that the median Black or Hispanic student goes to school in a district in which actual aid falls 19 percent below aid from a formula based on fiscal health. In contrast, the median White student goes to school in a district where actual aid exceeds fiscal-health-based aid by 7 percent. The comparable figure for Asian students is 22 percent. The formulas that determine state aid in New York obviously do not include race or ethnicity directly, but this evidence shows that their net impact is to place Black and Hispanic students at a severe disadvantage.

State policy makers may, of course, want to incorporate factors other than fiscal health into the foundation aid formula. Because fiscal health is such a fundamental measure of a district's ability to deliver a quality education at a given sacrifice by its residents, I believe that any additional factors in the aid formula should have widespread support and a clear justification—considerations that appear to be missing for the

current aid formulas.

The Role of STAR, the Property Tax Levy Limit, and the Local Taxing Requirement

The education finance system in New York State also includes a tax-exemption program, a property tax limit, and tax contributions by the school districts themselves. The School Tax Relief Program, or STAR, gives homeowners with incomes below a certain amount an exemption on their school property tax payment. This exemption is adjusted to account for assessment procedures, so it is equivalent to an exemption on the value of their house. The state compensates a school district for the revenue it loses because of this exemption. The STAR exemptions are gradually being turned into credits, in which taxpayers receive a check from the state instead of a break on their property tax payment.³¹

All these STAR payments to school districts are appropriately counted as part of the state's education finance system. In 2017, STAR cost the state \$369 million in New York City and \$2.415 billion in the rest of the state. Outside of New York City, the STAR reimbursements account for about 14 percent of aid from the state.³²

Property tax exemption generally make the property tax system more progressive among the set of people who receive them. In fact, exemptions eliminate the property tax altogether for homeowners whose houses have a lower value than the exemption. Nevertheless, the STAR exemptions have two features that make them inequitable.

First, the STAR exemptions only apply to homeowners. As a result, the STAR payment from the state is much larger for school districts with a high homeownership rate (often wealthy suburbs) than for school districts in which most households are renters (often cities). A high renter population is correlated with high poverty and high student need, so the

31. See: <https://www.tax.ny.gov/star/> . Eligibility for STAR exemptions has a \$500,000 income limit.

32. Data on STAR payments can be found at: http://www.oms.nysed.gov/faru/Profiles/profiles_cover.html .

design of STAR does not send state money to the places that need help the most. Using \$2.8 billion for STAR payments instead of for foundation aid undermines the equity of the state education finance system.

Second, STAR exemptions are adjusted by an unfair “Sales Price Differential Factor” or SPDF. This provision, which costs state taxpayers \$1 billion, increases the exemption in counties with above-average home sales prices.³³ The 2019 STAR exemption in Westchester County, for example, was \$79,875, compared to \$30,000 in most of upstate New York. Proponents of STAR have tried to argue that this is just a correction for the cost of living, but the truth is that tax systems do not—and should not—account for variation in the cost of living across locations. Markets already pay higher wages in locations with higher costs of living, and it makes no sense for governments to subsidize people for living in high-cost locations. In short, the SPDF is profoundly unfair and should be removed from STAR.

The property tax levy limit implemented in 2012 is another source of inequity in the New York education finance system. School districts with a relatively high amount of state aid per pupil and/or a low property tax base per pupil tend to be poor districts and to have relatively low property tax revenue per pupil. As a result, the levy limit, which is roughly 2 percent per year, constrains these districts far more than it constrains other districts.

33. Data on STAR payments can be found at: http://www.oms.nysed.gov/faru/Profiles/profiles_cover.html . The latest SPDFs are available at: <https://www.tax.ny.gov/pit/property/star/diff.htm> .

In 2017, the last year with complete financial information, 10 districts had a tax levy below \$2,800 per pupil and 10 other districts had a tax levy above \$37,750 per pupil.³⁴ If a district starts with a per pupil levy of \$2,800, then the highest this levy can be after 20 years is $\$2,800 \times (1.02)^{20} = \$4,161$. In contrast, a district that starts with a per pupil levy of \$37,750, this levy could increase to \$56,095 in 20 years.

One of these poor districts has to wait at least 12 years to realize the same revenue increase per pupil as these rich districts obtain in a single year! Moreover, over a 20-year period, the gap in property tax revenue per pupil between these districts could grow from \$34,950 ($\$37,750 - \$2,800$) to as much as \$51,934 ($= \$56,095 - \$4,161$) per pupil—and increase of \$16,984 per pupil. In principle, of course, state aid could offset this dramatic disadvantage, but there is no sign that elected officials in New York State are even aware of this problem, let alone willing to fix it.

As discussed above, foundation aid equals the spending required to meet a student performance target, called the foundation amount, minus an expected local contribution. To ensure fairness across districts with different wealth per pupil, this expected contribution is based on the same tax rate in every district. Of course, districts who receive this aid also make an actual contribution, that is, they collect money for schools through local taxes. In New York and about half of the other states that use a foundation aid formula, school district are not required to set their actual contribution equal to their expected contribution, and many districts, especially poor ones, set their actual tax rate below the tax rate in the foundation aid formula. As a result, total funding for education in many districts falls short of the foundation amount, that is, of the amount that is thought to be needed to reach the State's student-performance target.

34. These data can be found at: http://www.oms.nysed.gov/faru/Profiles/profiles_cover.html.

The only way to ensure that actual funding reaches the foundation amount, which is the cost-adjusted spending target, is to require school districts to levy a tax rate that equals or exceeds the implicit tax rate in the foundation aid formula. This inescapable logic leads to a dilemma for state officials. The lower the expected tax rate, the higher the required state aid budget to reach a given foundation amount. However, raising the tax rate to minimize the state aid budget increases the burden on poor school districts. For example, the fiscal health calculations that lead to Figures 9 and 10 assume that the expected local property tax rate is 1.5 percent, which is roughly the average rate in the state. This rate is higher than the rate in many poor districts, however, so requiring a 1.5 percent rate would ensure that all districts had enough revenue to reach the foundation amount but would also place an additional burden on these poor districts. The only way to lower this burden is to raise the state foundation aid budget, which would make it possible to lower the expected tax rate and lower the number of poor districts that would be required to raise their actual rates.

All New Yorkers Would Benefit from a Fairer School Aid Formula

Elected officials in New York State should understand that all New Yorkers lose by the state's failure to improve educational outcomes in low-income and minority school districts.³⁵ To show why this is true, consider first the recent study, authored by C. Kirabo Jackson, Rucker C. Johnson, and Claudia Persico, which assembles a national data set following individuals from childhood to adulthood, complete with

35. This section draws heavily on Yinger, John. 2016. "All New Yorkers Would Benefit from a Fairer School Aid Formula." *It's Elementary* column, September. Available at: https://www.maxwell.syr.edu/cpr/efap/It_s_Elementary/.

information about their families and the schools they attended.³⁶ This study estimates how adult outcomes change when a child attends a school in which school-finance reform, a type of external shock, led to increased spending. The study is thorough and thoughtful and it is published in a high-quality scholarly journal.

The results are striking. The study's (statistically significant) "estimate for children from low-income families indicates that increasing per pupil spending by 10% in all school-age years reduces the annual incidence of poverty in adulthood by 6.1 percentage points" (p. 203). Imagine that. A 10 percent permanent increase in spending (in real terms) would reduce the adult poverty rate for children from poor families by about 6 percentage points. The study also finds that the adult income gains for students who experience from this type of education finance reform are roughly three times as large (in present value terms) as the added expenditures on education. This looks like a pretty good investment.

Two other recent studies in top journals provide similar results. Julien Lafortune, Jesse Rothstein, and Diane Whitmore Schanzenbach find that school finance reforms tend to increase spending in low-income school districts and that these "reforms cause increases in the achievement of students in these districts, phasing in gradually over the years following the reform. The implied effect of school resources on

36. Jackson, C. Kirabo, Rucker C. Johnson, and Claudia Persico. "The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reforms." *Quarterly Journal of Economics* 131 (1) (February 2016): 157-218. The working-paper version of this study was discussed in my August 2014 column.

educational achievement is large.”³⁷ Joshua Hyman finds that “students exposed to \$1,000 (10 percent) more spending were 3 percentage points (7 percent) more likely to enroll in college and 2.3 percentage points (11 percent) more likely to earn a postsecondary degree.”³⁸

So why should taxpayers around the state care about this? The answer is that increased income for the grown-up children from poor families saves state taxpayers a lot of money.

The most obvious savings for taxpayers is a reduction in spending on social safety-net programs. According to a recent report, New York spends about \$6.7 billion per year on federally mandated programs for health insurance for low-income families (Medicaid/CHIP) and income support for low-income parents (TANF or Temporary Assistance for Needy Families).³⁹ Eligibility for these programs depend on household income,⁴⁰ and this report shows that higher wages and employer provided health care [which may accompany better jobs at higher wages] would lower both state and federal public assistance costs, and allow all levels of government to better target how their tax dollars are used.

The connection between household income and safety-net spending is well documented. The loss of income and jobs during the Great Recession pushed millions of families into Medicaid and added

37. Lafortune, Julien, Jesse Rothstein, and Diane Whitmore Schanzenbach. 2018. “School Finance Reform and the Distribution of Student Achievement.” *American Economic Journal: Applied Economics* 10 (2): 1-26.

38. Hyman, Joshua. 2017. “Does Money Matter in the Long Run? Effects of School Spending on Educational Attainment.” *American Economic Journal: Economic Policy* 9 (4): 256-80.

39. This report is Jacobs, Ken, Ian Perry, and Jenifer MacGillvary, “The High Public Cost of Low Wages.” U.C. Berkeley Labor Center. April 13, 2015. Available at: <http://laborcenter.berkeley.edu/the-high-public-cost-of-low-wages/>.

40. The role of income in eligibility for Medicaid is described at: <https://www.medicaid.gov/medicaid-chip-program-information/by-topics/eligibility/eligibility.html>. Comparable information for TANF can be found at: <http://www.cbpp.org/research/policy-basics-an-introduction-to-tanf>.

14.7 percent to Medicaid spending between 2007 and 2009.⁴¹ Moreover, despite the time limits and work requirements associated with TANF, the number of TANF recipients increased significantly during the Great Recession. One study focuses on the years in which each state's unemployment rate was rising and finds a 30 percent increase in the TANF caseloads, on average.⁴² Given New York State's large safety-net budget, increases in income associated with education finance reform are likely to save the state's taxpayers a great deal of money.

Increases in income are also associated with reductions in crime and hence with lower costs for the criminal justice system. One study found, for example, that "a 50 percent increase in income reduces male arrests by 20 percent."⁴³ Reductions in crime associated with income increases also benefit taxpayers directly because they lower criminal victimization.

Moreover, lower poverty and higher income in one generation lead to fewer children growing up in poverty in the next generation, which results, in turn, in higher school performance and lower future costs on state taxpayers. These cost savings to school districts are, of course, the flip side of the added costs from a concentration of students from poor families. As discussed above, the cost of providing a given level of student performance is higher in a district with a high concentration

41. See "Medicaid Spending Growth and the Great Recession, 2007-2009." Kaiser Commission on Medicaid Facts. February 2011. Available at: <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8157.pdf>.

42. Haskins, Ron, Vicky Albert, and Kimberly Howard. "The Responsiveness of the Temporary Assistance for Needy Families Program during the Great Recession." The Brookings Institution. August 2014. Available at: https://www.brookings.edu/wp-content/uploads/2016/06/responsiveness_tanf_great_recession_haskins.pdf.

43. Heller, Sara B., Brian A. Jacob, and Jens Ludwig. 2011. "Family Income, Neighborhood Poverty, and Crime." In *Controlling Crime: Strategies and Tradeoffs*, P. J. Cook, J. Ludwig, and J. McCrary (eds). Chicago: University of Chicago Press, 419-459.

of students from poor families than in district with low poverty. An equivalent statement is that lowering the concentration of students from poor families in a school district will allow the district to provide the same level of student performance at lower cost.

The design of a school aid formula in New York is often seen as a zero-sum game, with each district fighting for its share. This is a short-sighted way to characterize the issue. All New Yorkers would gain from more school spending in the state's neediest districts, especially its big cities.

Conclusions

The New York State education finance system takes some steps to minimize the disadvantages faced by students in school districts with high concentrations of poverty and of students who are still learning to speak English. Nevertheless, this system still exhibits inequality on many dimensions.

The schools attended by Black and Hispanic students have significantly lower proficiency rates on ELL and math tests than the schools attended by White students. The State is responsible for this inequitable access to high-quality schools and should take steps to minimize this inequity.

New York State's foundation aid formula gives extra weight—and hence extra funding—to districts with high concentrations of “at-risk” students, defined as students from poor families or students who are English language learners. These weights are an improvement over the weights used in the aid formula before 2007, but they still understate the high costs of educating at-risk students and need to be updated. The inaccuracy of these weights leads to an aid program that leaves many high-need school districts short of the funds they need to meet the State's student performance targets. The State should create an office that is responsible for regularly updating these weights.

Elected officials in New York State have failed to provide the increased funding for New York City that is required by the 2006 CFE decision.

Moreover, New York State's education aid programs overall deviate from the aid that districts other than New York City would receive based on their fiscal health, which is a measure of their ability to deliver a high-quality education at a reasonable tax rate based on factors outside their control. These deviations are particularly hard on high-poverty school districts. In addition, these deviations result in a system in which districts with high concentrations of Black or Hispanic students tend to have less aid relative to their needs than do districts in which the students are predominantly White. Deviations from a fiscal-health-based foundation formula should be eliminated unless they promote a clear, fair policy objective.

In sum, the New York State education finance system takes some steps to lower inequality in educational opportunity. However, additional steps are needed to meet the principles in the *CFE* decision, to eliminate funding inequities linked to race and ethnicity, and to realize the full benefits of a fair education system for all New Yorkers.

Table 1: Proficiency Rates, New York State, 2018

	3-8 ELA		3-8 Math	
	Number of Students	Percent Proficient	Number of Students	Percent Proficient
Total	966,661	45%	931,449	45%
Female	471,450	51%	450,977	45%
Male	495,211	39%	480,472	44%
Multiracial	23,156	48%	22,194	48%
Native American	7,314	39%	7,031	36%
Asian	107,652	67%	103,008	71%
White	369,336	52%	350,520	54%
Black	182,307	34%	175,579	29%
Hispanic	276,896	35%	273,117	32%
English Speaker	881,296	49%	836,316	48%
English Language Learner	85,365	9%	95,133	16%
Not Economically Disadvantaged	373,036	61%	352,468	62%
Economically Disadvantaged	593,625	35%	578,981	34%

Source: <https://data.nysed.gov/>

**Table 2. Required Extra Funding for Free-Lunch Students in
NYS's 10 Largest Districts (Excluding NYC)**

School District	2012	2013	2014	2015	Avg. Share Free Lunch	Avg. Enrollment
Brentwood	64%	81%	81%	88%	63%	17,266
Buffalo	90%	95%	91%	96%	75%	30,986
Greece	16%	39%	74%	80%	42%	11,092
New Rochelle	50%	45%	45%	51%	38%	10,512
Newburgh	70%	73%	30%	39%	42%	10,955
Rochester	104%	100%	101%	105%	82%	28,958
Sachem	13%	14%	20%	21%	14%	14,030
Syracuse	91%	89%	90%	90%	72%	19,676
Wappingers	36%	15%	15%	23%	18%	11,550
Yonkers	85%	88%	85%	90%	70%	24,357

**Table 3. Required Extra Funding for ELL Students in
NYS's 10 Largest Districts (Excluding NYC)**

School District	2012	2013	2014	2015	Avg. Share LEP	Avg. Enrollment
Brentwood	17%	18%	19%	19%	29%	17,266
Buffalo	7%	7%	8%	9%	13%	30,986
Greece	1%	1%	8%	9%	8%	11,092
New Rochelle	6%	6%	6%	6%	10%	10,512
Newburgh	9%	9%	2%	2%	9%	10,955
Rochester	7%	7%	7%	8%	12%	28,958
Sachem	1%	1%	1%	1%	1%	14,030
Syracuse	8%	9%	9%	9%	14%	19,676
Wappingers	1%	1%	1%	1%	1%	11,550
Yonkers	7%	7%	7%	7%	12%	24,357

Table 4. Shortfalls in Reaching CFE Spending Minima for NYC (in billions of 2016 dollars)

Year	Shortfall Based on 2006-07 Pupil Count	Shortfall Due to Increase in Pupils, 2007-2017	Total Shortfall
2017	\$2.333	\$0.241	\$2.574
2016	\$2.195	\$0.217	\$2.412
2015	\$2.816	\$0.247	\$3.063
2014	\$2.701	\$0.170	\$2.871
2013	\$3.075	\$0.153	\$3.228
2012	\$2.898	\$0.128	\$3.027
2011	\$2.323	\$0.087	\$2.410
2010	\$1.284	\$0.034	\$1.318
2009	-\$0.146	-\$0.001	-\$0.148
2008	-\$0.175	-\$0.001	-\$0.175
Cumulative	\$19.305	\$1.274	\$20.579

Shortfall = CFE required minimum aid increase minus actual aid above 2006-07 level. The CFE minimum is phased in from 2008 to 2011. In addition, the CFE minimum is reduced in recession years (by 10% in 2009 and 25% in 2010 and then phased back it at 5 percentage points per year). Corrections for inflation use the CPI.

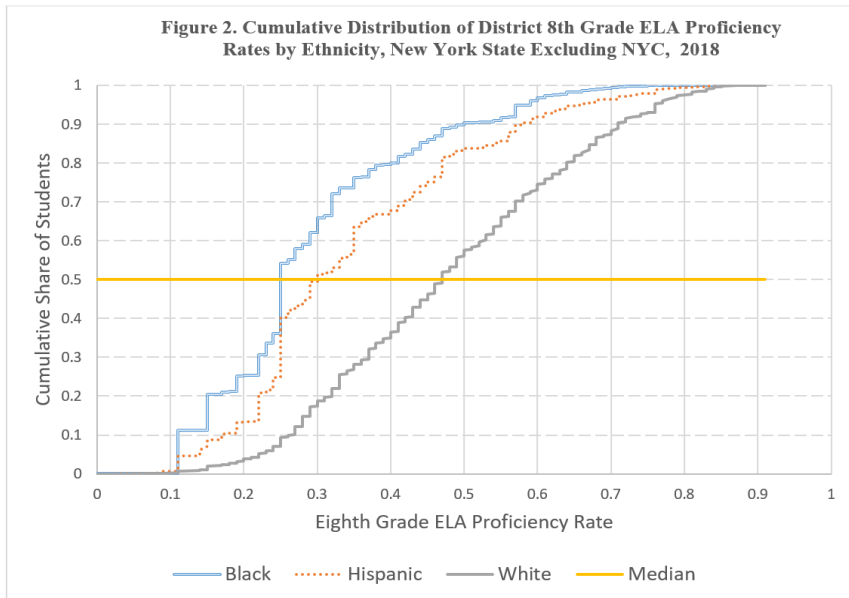
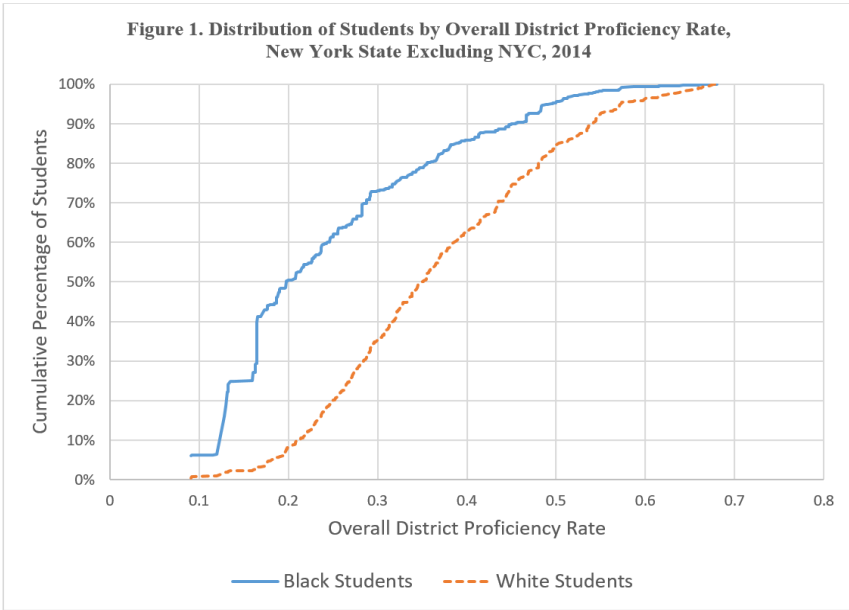


Figure 3. Cumulative Distribution of District 8th Grade ELA Mean Scores by Ethnicity, New York State Excluding NYC, 2018

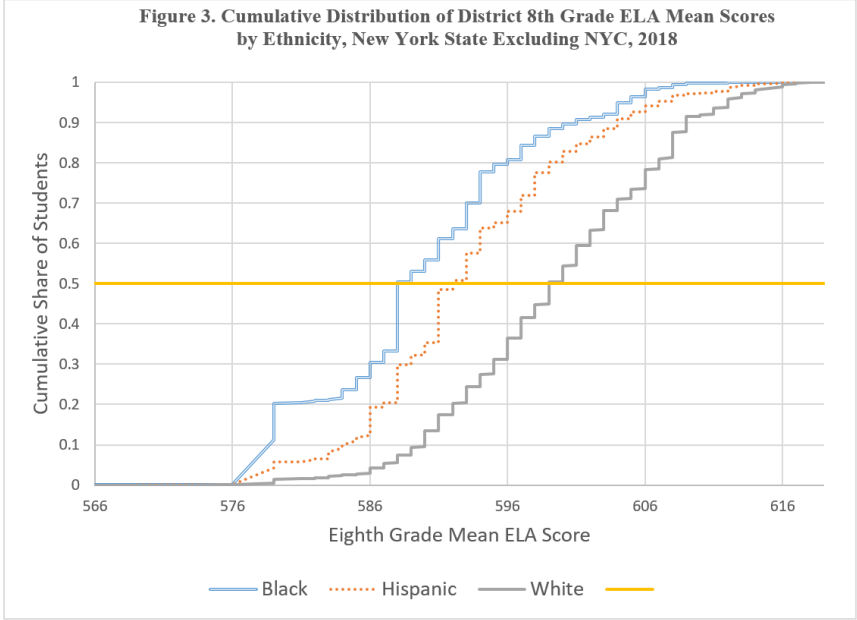
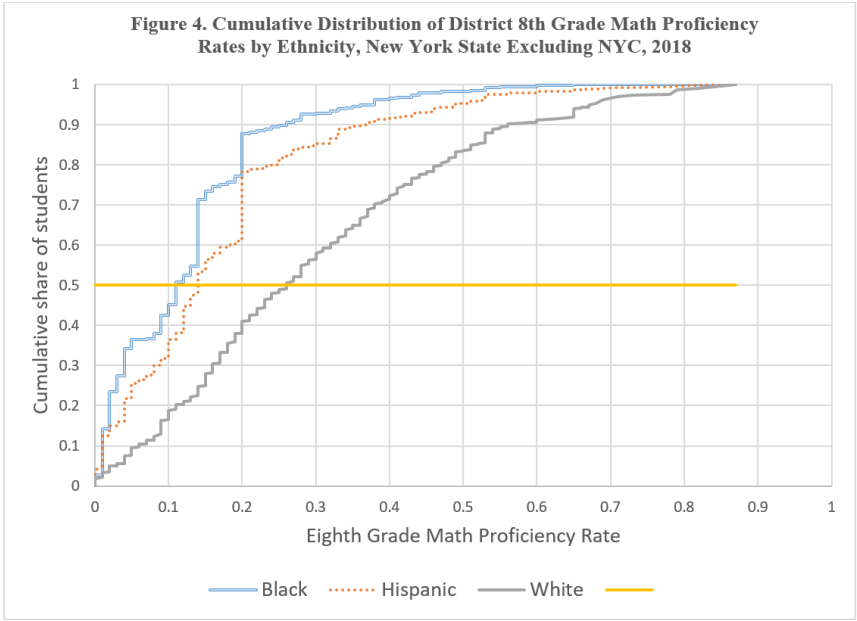
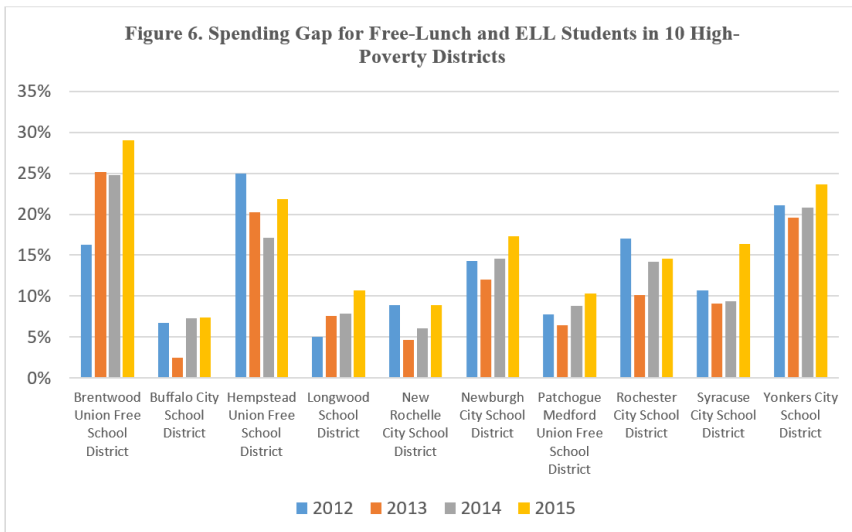
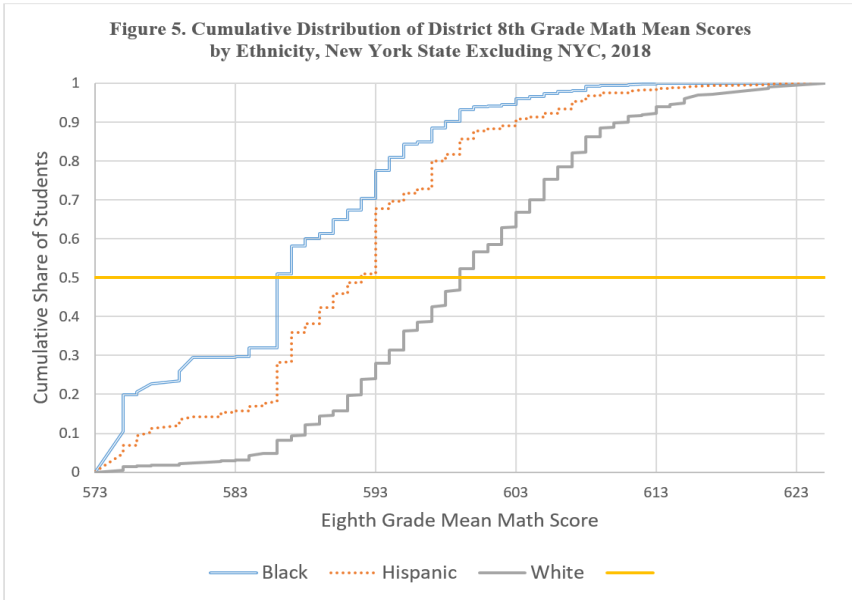
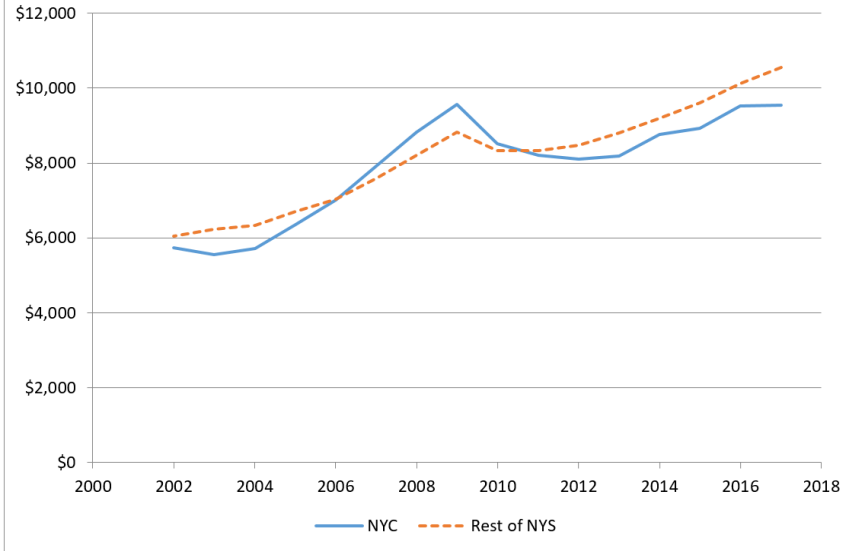


Figure 4. Cumulative Distribution of District 8th Grade Math Proficiency Rates by Ethnicity, New York State Excluding NYC, 2018





**Figure 7. State Education Aid Per Pupil,
New York City and the Rest of New York State**



**Figure 8. New York City's Share of Pupils
and of State Education Aid**

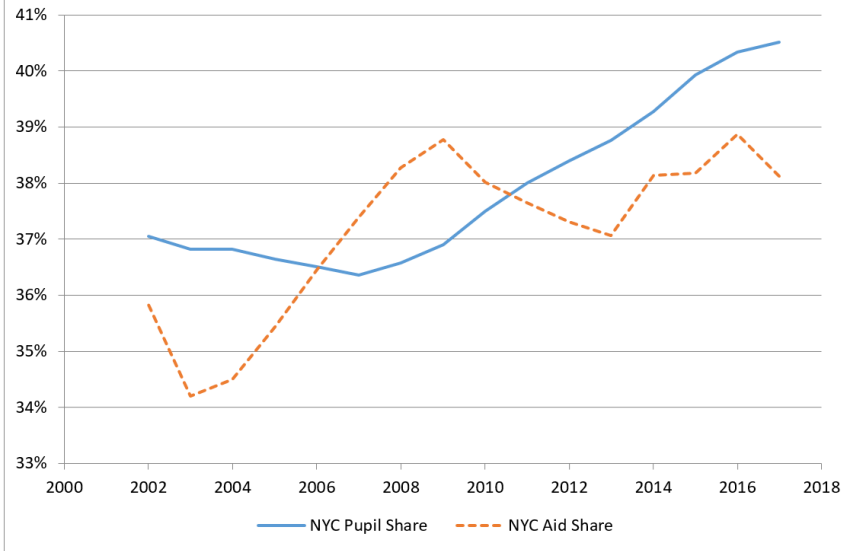


Figure 9.

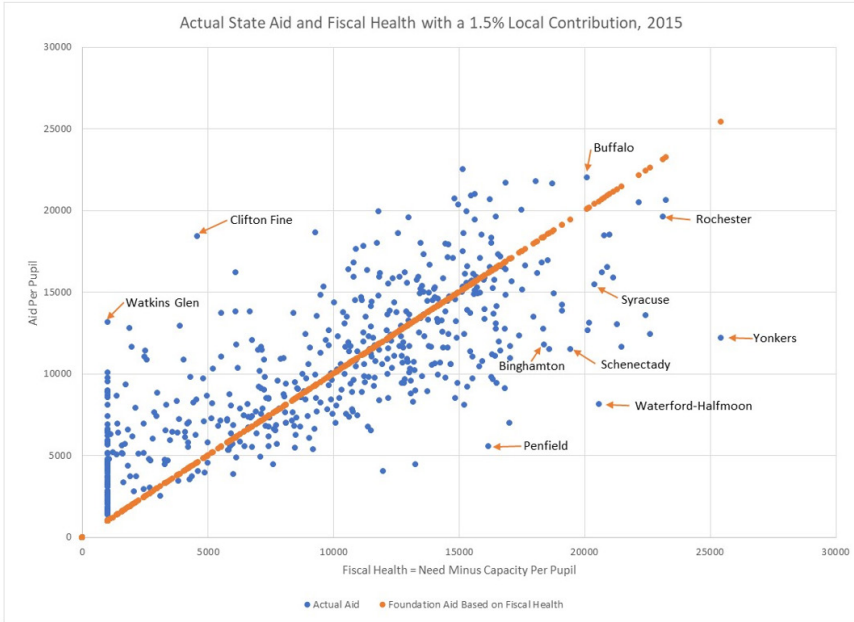


Figure 10. Actual Aid Compared to Aid Based on Fiscal Health, NY School Districts (Excluding NYC), 2015, by Ethnicity

