Evaluation of New York School Funding

Report Brief 5: Equity Issues in Raising Revenue

Drew Atchison, Jesse Levin, Arun Kolar, and Adam Hearn

American Institutes for Research

Bruce Baker

University of Miami

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Contents

Introduction	1
New York's School Funding Model	
Calculating the State Share of Foundation Aid: Equalizing Revenue Across Districts	
State Aid Outside of the Foundation Aid Formula	4
STAR Program	4
Additional Local Revenue	4
State Aid With Respect to Wealth and Income	5
Foundation Aid	5
Total State Revenue	6
Local Effort, Revenue, and Spending	9
Local Revenue	9
Local Effort	10
Overall Resource Levels	12
Conclusion	13
References	15
Appendix. Additional Exhibits	16

Exhibits

Exhibit 1. The Foundation Aid State Sharing Ratio as a Function of the Foundation Aid Combined Wealth Ratio	3
Exhibit 2. Foundation Aid and Minimum Local Share per TAFPU With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)	6
Exhibit 3. Foundation Aid, Total State Aid, and Total State Revenue per DCAADM With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)	7
Exhibit 4. State Aid Outside of Foundation Aid With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)	8
Exhibit 5. Local Revenue With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)	10
Exhibit 6. Local Effort With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)	11
Exhibit 7. State and Local Revenue and Current Spending Relative to the Foundation Aid Target With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)	13
Exhibit A1. Pupil Needs Index, Regional Cost Index, and the Product of the Two Indexes With Respect to the Foundation Aid Combined Wealth Ratio	16
Exhibit A2. Distribution of STAR Revenue With Respect to the Foundation Aid Combined Wealth Ratio (2014–15 and 2022–23)	17
Exhibit A3. Regressions Examining Relationships Between Key Revenue Variables and Measures of Wealth and Income	18
Exhibit A4 Descriptive Statistics of Key Variables	19

Introduction

The key goal of a state school finance system is to ensure that all local public school districts have sufficient financial resources to provide the programs and services needed for all children to have equal opportunity to achieve the desired outcomes (Duncombe & Yinger, 1998). In the first report in this series, we examined whether New York's current education funding system provides more resources to schools and districts with higher student needs, achieving equity in educational spending. The second report in the series examined whether students have equal opportunity to succeed in meeting the state's educational goals.

A well-designed state school funding system should also ensure that local communities are able to provide sufficient programs and services to meet students' needs through equitable tax effort. State aid formulas must establish some basis for an equitable local contribution to the funding levels needed by each district, with the understanding that at comparable levels of effort districts with lower capacity will be able to raise less revenue locally. State aid must be distributed in a way that accounts for local capacity to raise revenue by providing more state aid to districts with the lowest tax base on which to raise revenue locally. In other words, state aid can be used to reduce the costs (in taxes) to local communities that need the most help in raising a sufficient amount of revenue to provide the necessary educational resources and services for their students. When state aid is distributed in ways that appropriately account for local capacity, it enables communities low in wealth and income to provide adequate programs and services without those communities having to tax themselves at exorbitant rates. Alternatively, when state aid does not appropriately account for local capacity, higher wealth and income communities can more easily escalate their spending above and beyond what is needed for their students to achieve state-defined goals while also outpacing other districts with lower capacity to raise revenue (and who often have higher student needs as well).

In this brief, we first describe New York State's current approach to equalizing revenue, accounting for differences in local capacity. We then examine the extent to which New York's current system achieves equitable funding with respect to local capacity. If this is achieved, the system should result in equitable rates of taxation and district resource levels that are not dependent on local capacity. However, we find that higher wealth districts typically have lower tax rates, are able to raise more in state and local revenue per student, and have higher spending per student.

¹ Tax effort is defined as the amount of taxes collected (revenue raised) relative to tax capacity as measured by property wealth and/or gross income levels. As such, it can be thought of as an average tax rate.

New York's School Funding Model

In this section, we provide information on how New York currently funds its school districts through the state funding formula as it relates to equalizing revenue with respect to local capacity.

Calculating the State Share of Foundation Aid: Equalizing Revenue Across Districts

In our first report on student equity, we described the state's approach to generating Foundation Aid targets (the adjusted foundation amount) based on a pupil needs index (PNI) and a regional cost index (RCI). The funding required for each district to achieve the Foundation Aid targets is split between the state's responsibility and the local responsibility, where the local responsibility is defined according to an expected minimum local contribution. The expected minimum local contribution is designed to be inversely proportional to district fiscal capacity, such that districts with less local capacity (defined as having lower property wealth and income) have a lower expected local contribution and higher state contributions.

New York uses two options to define the expected minimum local contribution. Option A is based on the amount of revenue districts are expected to be able to raise per pupil, which is calculated by multiplying local property valuation per pupil by a uniform tax rate (which the state calls the *local tax factor*) and an adjustment based on a measure of income per pupil relative to the state average income per pupil (which the state calls the *income wealth index*).

Expected Minimum Local Contribution per Pupil Option A: = Property Valuation per Pupil * Uniform Tax Rate * *Income Adjustment*

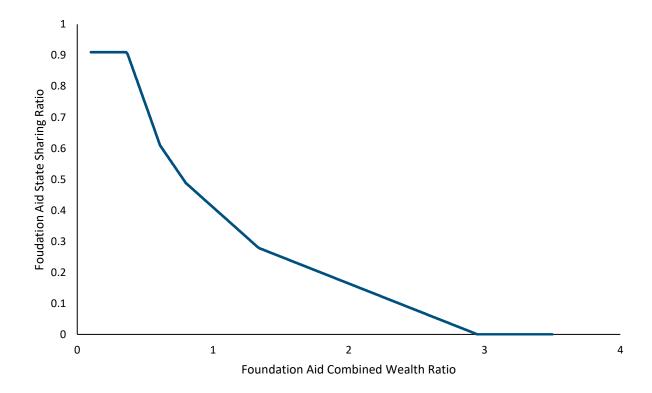
Option B is based on defining a Foundation Aid State Sharing Ratio (FASSR), which represents the percentage of the Foundation Aid target that will be covered by the state. The FASSR declines as a measure called the Foundation Aid Combined Wealth Ratio (FACWR) increases. The FACWR is a measure of a district's relative property wealth per pupil and relative gross income, where the two are weighted equally. Both relative property wealth per pupil and relative gross income per pupil are calculated by dividing the district's value on those measures by the statewide average. Values greater than 1 on those measures indicate that a district has higher wealth or income than the statewide average and values below 1 indicate that a district has lower wealth or income than the statewide average.

Foundation Aid State Sharing Ratio = f(Foundation Aid Combined Wealth Ratio)

Foundation Aid Combined Wealth Ratio **Option B:** = 0.5 * Relative Property Valuation per Pupil + .5* Relative Gross Income per Pupil

The maximum FASSR is 0.91, even if the calculation suggests a higher value. The FASSR decreases as the FACWR increases, to the point where the FASSR reaches 0 for a FACWR of just under 3 (Exhibit 1).

Exhibit 1. The Foundation Aid State Sharing Ratio as a Function of the Foundation Aid **Combined Wealth Ratio**



Between the two options for determining state versus local contributions, the state applies the one that results in a higher amount of state aid for each district. In 2023–24, only six out of 673 districts used Option A for calculating the state share of Foundation Aid; 631 used Option B; and for the remaining 36 districts the two options were equivalent (in all of these cases, both options resulted in a state share of 0).

Although the calculation of the state versus local share generally defines how much districts receive in state aid, the minimum amount any district receives is \$500 per pupil even if the calculated state share suggests they should receive less than that amount. Each district also does not receive less in total state aid than received the year before plus a yearly percentage increase. Because this minimum is based on total state aid rather than a per pupil amount, districts with declining enrollment benefit.

State Aid Outside of the Foundation Aid Formula

In addition to Foundation Aid, the state provides funding to districts through a variety of additional categorical funding programs. These programs include funding for school construction projects (building aid), student transportation, expansion of pre-kindergarten programs, services for students with high-cost disabilities, Boards of Cooperative Educational Services (BOCES), and maintaining up-to-date educational materials and equipment (textbooks, library materials, technology, etc.), and a number of smaller programs. Statewide, these categorical programs account for almost 30% of total state aid, with Foundation Aid making up just over 70% of state aid.

STAR Program

The School Tax Relief Program (STAR) is a homestead tax exemption that provides tax relief to eligible homeowners. The amount of the exemption is based on the amount of a "basic exemption" which is adjusted based on the tax rate in a given district and other factors, including an upward adjustment in counties where median sales prices exceed the statewide average. The state provides local districts with funding to cover the decrease in local revenue resulting from the exemption.² Revenue to districts from the STAR program is not considered state aid but is included in the state's reporting of state revenue provided to districts.

Additional Local Revenue

School districts are able to exceed the minimum local effort as calculated as part of the Foundation Aid formula. In 2011, a state law was passed capping the growth in property taxes levied to the lesser of 2% or the consumer price index (CPI). The tax limit can be overridden by a local vote with 60% approval.

² This program has been criticized in several academic articles and reports as a model of a tax relief program that served to escalate spending (along with inequity and inefficiency) in the state's most affluent suburban school districts. See, for example, Eom and Rubenstein (2006), Eom and Killeen (2007), Baker and Corcoran (2012), and Eom et al. (2014).

State Aid With Respect to Wealth and Income

In this section, we examine the distribution of state aid with respect to local wealth and income. The expectation is that more state aid would be provided to districts with lower capacity to raise revenue locally (as measured by the FACWR), with the intent of providing all districts with the ability to raise necessary revenue at comparable levels of effort (similar rates of local taxation). As such, we first focus on the extent to which state aid allocations are driven by local capacity.

Foundation Aid

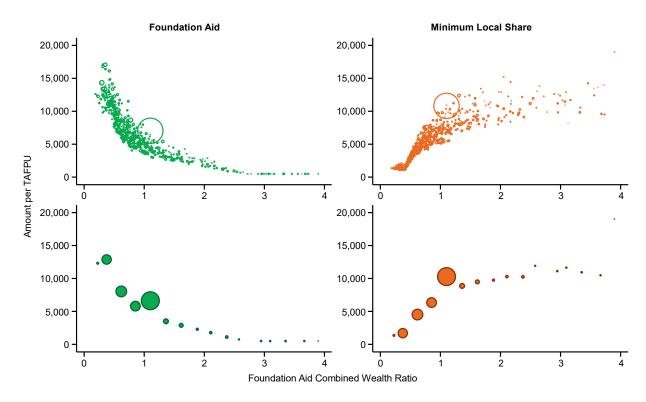
In the left panel of Exhibit 2, we show how Foundation Aid per total aidable foundation pupil units (TAFPU) varies across districts according to the FACWR.³ Although this section is focused on state aid, in the right panel we show the minimum local share per TAFPU, as this is the complement to Foundation Aid in reaching the Foundation Aid target per pupil amounts. We see that the state share of the targets largely mirrors the pattern of the state sharing ratio shown in Exhibit 1, where Foundation Aid falls steeply as the FACWR increases from 0 to 1 and then continues to decline at a lesser rate between 1 and just under 3. At a FACWR just under 3, the Foundation Aid hits the minimum amount of \$500 per TAFPU. At any given FACWR, there is some variation in the amount of Foundation Aid that districts receive due to differences in the Foundation Aid targets. Higher need districts and those in higher cost regions (as defined by the PNI and RCI, respectively) have higher foundation targets, and therefore receive more Foundation Aid despite a comparable FACWR.

The required local share of the Foundation Aid target shows the opposite pattern (the right panel of Exhibit 2). As the FACWR increases, the amount required from the local share increases. Note that there is also variation in the local share at any given FACWR and this variation is also due to differences in the Foundation Aid targets resulting from the PNI and RCI. Take New York City (the large circle) as an example. It has a FACWR of just over 1. New York City receives somewhat more state Foundation Aid than other districts with a similar FACWR, but also has a higher minimum local contribution than other districts with a similar FACWR. That is the result of New York City having a higher Foundation Aid target than other districts with similar levels of local capacity. Because the state and local shares are defined based on a share or percentage, districts with higher needs and higher Foundation Aid targets will have higher

³ TAFPU is the sum of each district's average daily membership (ADM), summer school ADM multiplied by 0.12, and a weighted count of students with disabilities (SWDs). For the weighted count of SWDs, each qualifying full-time equivalent SWD is multiplied by 1.41, in which qualification is determined by receiving a minimum threshold of special education services. Because TAFPU includes additional weights for summer school and SWDs, TAFPU is larger than a district's average daily membership. TAFPU is the enrollment measure on which Foundation Aid is distributed to districts.

local shares in addition to more state Foundation Aid. Exhibit A1 in the Appendix shows districts' PNI and RCI with respect to the FACWR.

Exhibit 2. Foundation Aid and Minimum Local Share per TAFPU With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)



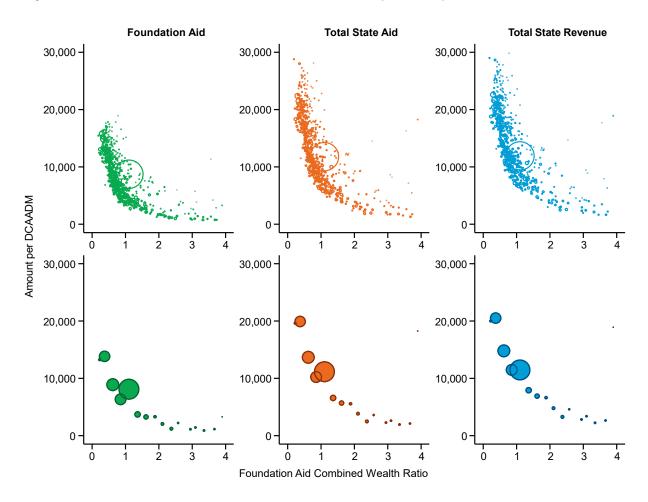
Note. The top panels show district-level scatter plots with each circle representing a single district. The bottom panel shows binned scatter plots where each circle represents the average of districts within a given bin (range) of the Foundation Aid Combined Wealth Ratio. Each bin has a width of 0.25. The size of the dots is proportional to enrollment (each district's enrollment in the top panel and the sum of enrollment by bin in the bottom panel. The scatter plots exclude 19 districts with a Foundation Aid Combined Wealth Ratio greater than 4.

Total State Revenue

As described in the discussion of New York's school funding model, Foundation Aid is only one source of state aid, albeit the largest by far. Districts also receive aid for a variety of categorical programs. Outside of state aid, districts also receive state revenue through the STAR program, which uses state revenue to offset declines in local revenue resulting from the state's school property tax relief policy. Exhibit 3 shows Foundation Aid (left panel), total state aid inclusive of all other state aid programs (middle panel), and total state revenue inclusive of STAR (right

panel) per student.⁴ Across the three panels, the general pattern of declining state funding per pupil as the FACWR increases persists. Inclusive of all state revenue, the districts with the lowest FACWR receive just over \$20,000 per student, on average, and districts with a FACWR higher than 2 receive \$2,000–\$4,000 per student, typically.

Exhibit 3. Foundation Aid, Total State Aid, and Total State Revenue per DCAADM With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)

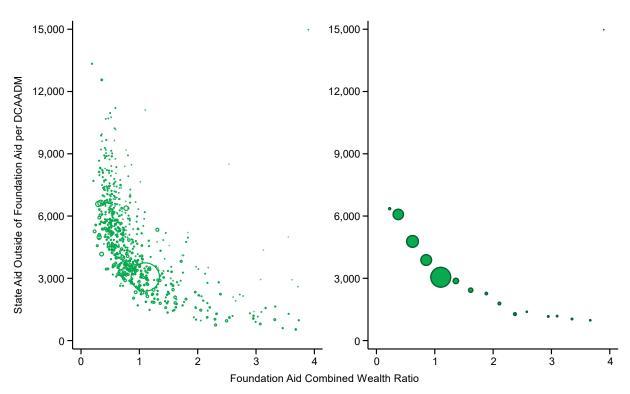


Note. The top panels show district-level scatter plots with each circle representing a single district. The bottom panel shows binned scatter plots where each circle represents the average of districts within a given bin (range) of the Foundation Aid Combined Wealth Ratio. Each bin has a width of 0.25. The size of the dots is proportional to enrollment (each district's enrollment in the top panel and the sum of enrollment by bin in the bottom panel. The scatter plots exclude 19 districts with a Foundation Aid Combined Wealth Ratio greater than 4.

⁴ The enrollment used as the denominator in these figures is the duplicated combined average daily membership (DCAADM). The DCAADM is a measure of the number of pupils educated at district expense. It includes the average daily membership of students enrolled in district programs, charter school students resident in the district, incarcerated youth, plus students attending other types of schools or programs at district expense, with half-day pre-K and half-day kindergarten students weighted at 0.5.

In Exhibit 4, we isolate the state aid that is distributed outside of Foundation Aid. As with Foundation Aid, other state aid also generally declines as the FACWR increases. However, there is substantial variation across districts at any given level of the FACWR. For example, at a FACWR of just under 0.5, districts receive about \$6,000 per pupil in other state aid, on average. However, some districts receive more than \$9,000 per pupil in other state aid, whereas others receive \$3,000 per pupil.5

Exhibit 4. State Aid Outside of Foundation Aid With Respect to the Foundation Aid Combined **Wealth Ratio (2022–23)**



Note. State aid outside of Foundation Aid includes various categorical funding programs distributed separately from Foundation Aid, such as transportation aid, building aid, etc. It does not include STAR revenue. The left panel shows a district-level scatter plot with each circle representing a single district. The right panel shows a binned scatter plot where each circle represents the average of districts within a given bin (range) of the Foundation Aid Combined Wealth Ratio. Each bin has a width of 0.25. The size of the dots is proportional to enrollment (each district's enrollment in the left panel and the sum of enrollment in the right panel. The scatter plots exclude 19 districts with a Foundation Aid Combined Wealth Ratio greater than 4.

In short, the allocation of state aid occurs as the system was designed—providing less in state funding to districts with higher capacity as measured by the FACWR. In 2022–23, districts with

⁵ While STAR revenue also contributes some variation to the overall distribution, it appears that STAR revenue has less impact than in past years (as described by Eom & Killeen, 2007 and Eom et al., 2014). Exhibit A2 in the Appendix shows the distribution of STAR revenue with respect to the FACWR.

the lowest FACWR received approximately \$14,000 per student in Foundation Aid and just over \$20,000 per student in total state revenue. By contrast, districts with the highest FACWR typically received about \$1,000 per student in Foundation Aid and about \$3,000 per student in total revenue.

Local Effort, Revenue, and Spending

Despite a cursory examination of the local share of the Foundation Aid target, our investigation thus far has focused on state funding. However, in New York State, the state portion of funding accounts for well under half of public education funding statewide. In 2022–23, districts raised about \$5,000 more per pupil from their local funding than they received in state funding, on average. As such, the distribution of local revenue plays a large role in the distribution of total revenue and has important equity implications. In this section, we examine the distribution of local revenue, tax effort, and total resources (spending and revenue) in relation to local capacity as defined by the FACWR.

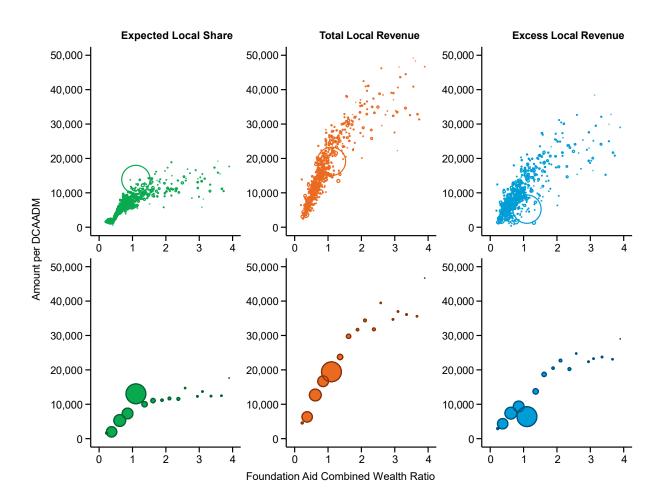
The expectation for a well-designed formula is that higher capacity districts should generate more local revenue per pupil, leading to equalized local effort. In addition, the amount of revenue raised from local sources in higher wealth areas should not be so much that they are able to outpace lower wealth areas in total revenue or spending after accounting for state aid. In other words, wealthier local communities would be expected to raise more locally and receive less from the state, such that effort across wealthier and poorer communities would be relatively similar and such that both sets of communities would have comparable resource levels, commensurate with their needs. In states like New York, where there is extreme income and wealth inequality across communities as well as high degrees of local school district fragmentation, this is a difficult goal to achieve.

Local Revenue

In Exhibit 5, we examine the distribution of local revenue per pupil across districts with respect to the FACWR. The left panel shows the expected local contributions per pupil resulting from the calculations of the minimum local share of Foundation Aid targets; the middle panel shows the amount of local revenue actually raised by school districts; and the right panel shows the difference between the minimum local contribution and what is actually raised, which we term excess local revenue per pupil. In the left panel we show that the expected amount of local revenue per pupil increases with the FACWR. This increase in local revenue is by design, as it is what policy dictates. In the middle panel, we observe that the amount of local revenue actually raised by districts increases at a faster rate as the FACWR increases than the expected amount. Finally, the right panel demonstrates conclusively what we might have gleaned from the first

two panels: that districts with higher wealth are able to exceed their expected local shares to a much greater extent, on average. In particular, districts with a FACWR greater than 2, typically raise upwards of \$20,000 per pupil more in local revenue than what is required by their expected local share.

Exhibit 5. Local Revenue With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)



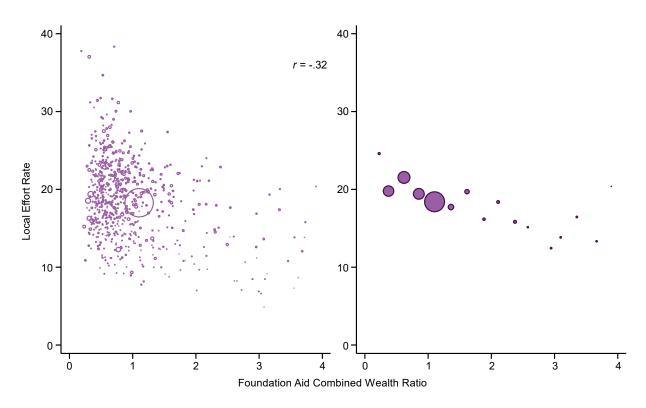
Note. The top panels show district-level scatter plots with each circle representing a single district. The bottom panel shows binned scatter plots where each circle represents the average of districts within a given bin (range) of the Foundation Aid Combined Wealth Ratio. Each bin has a width of 0.25. The size of the dots are proportional to enrollment (each district's enrollment in the top panel and the sum of enrollment by bin in the bottom panel. The scatter plots exclude 19 districts with a Foundation Aid Combined Wealth Ratio greater than 4.

Local Effort

In Exhibit 6, we examine whether local effort varies according to the FACWR. Local effort is calculated as the local revenue divided by each district's property valuation in the prior year, multiplied by 1,000. In effect, it represents the average property tax rate for each district

(defined as the school property taxes paid per \$1,000 of assessed valuation). As shown in the figure, some of the lowest wealth districts as measured by the FACWR have the highest local effort rate. In particular, there are quite a few districts with a FACWR of less than 1 that have a local effort rate that exceeds 25 and, on average, these districts have a local effort rate near 20. For districts that have a FACWR above 1, very few have a similarly high local effort rate and as the FACWR increases the average local effort rate declines to under 15. The trend of declining local effort as the FACWR increases is verified by the negative correlation between the two measures (r = -.32).

Exhibit 6. Local Effort With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)



Note. Local effort is calculated as the local revenue divided by each district's property valuation in the prior year, multiplied by 1,000. The left panel shows a district-level scatter plot with each circle representing a single district. The right panel shows a binned scatter plot where each circle represents the average of districts within a given bin (range) of the Foundation Aid Combined Wealth Ratio. Each bin has a width of 0.25. The size of the dots is proportional to enrollment (each district's enrollment in the left panel and the sum of enrollment in the right panel. The scatter plots exclude 19 districts with a Foundation Aid Combined Wealth Ratio greater than 4.

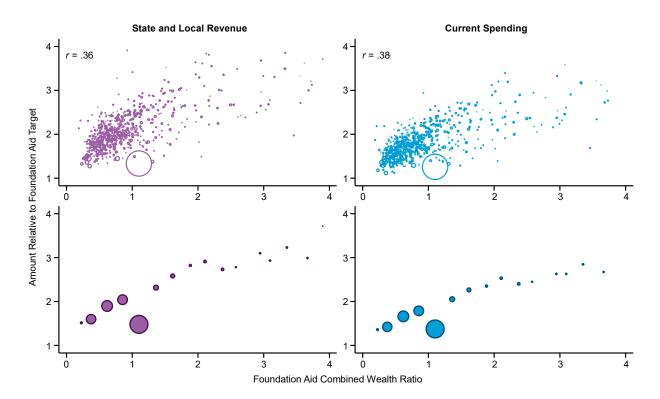
In conjunction with Exhibit 5, we conclude that districts with greater wealth are able to raise far more revenue locally (exceeding their expected minimum local contribution to a greater extent) than lower wealth districts, despite having lower property tax rates.

Overall Resource Levels

Lastly, we examine overall resource levels of school districts with respect to the FACWR, measured as the amount of state and local revenue or current spending in districts relative to their Foundation Aid targets (Exhibit 7). The Foundation Aid target, under New York's current funding system, is intended to represent the amount of fiscal resources needed by districts accounting for differences in student needs and geographic cost differences. All districts in the state raise more in state and local revenue than the Foundation Aid target as a result of additional state aid outside of the Foundation Aid formula as well as districts raising more revenue locally than is required by the expected minimum local contribution. However, in an equitable system that achieves wealth neutrality, the level by which districts exceed their Foundation Aid targets would not be related to districts' local wealth and capacity to raise revenue locally. Exhibit 7 shows that higher wealth districts typically are able to exceed their Foundation Aid targets in both state and local revenue and current spending to a greater extent than lower wealth districts. The correlation coefficients between overall resource levels and the FACWR are positive and of moderate strength (r = .36 for state and local revenue and r = .38 for current spending).6

⁶ Exhibit A3 in the Appendix also shows a series of regressions that confirm that districts with higher property wealth and higher income typically have lower effort, raise more revenue locally, and exceed the Foundation Aid targets to a greater extent in both state and local revenue and current spending.

Exhibit 7. State and Local Revenue and Current Spending Relative to the Foundation Aid Target With Respect to the Foundation Aid Combined Wealth Ratio (2022–23)



Note. The amounts relative to the Foundation Aid target are calculated as state and local revenue or current spending divided by the Foundation Aid target. A value of 2, for example, means that actual state and local revenue or current spending is two times the Foundation Aid target. The top panels show district-level scatter plots with each circle representing a single district. The bottom panel shows binned scatter plots where each circle represents the average of districts within a given bin (range) of the Foundation Aid Combined Wealth Ratio. Each bin has a width of 0.25. The size of the dots is proportional to enrollment (each district's enrollment in the top panel and the sum of enrollment by bin in the bottom panel. The scatter plots exclude 19 districts with a Foundation Aid Combined Wealth Ratio greater than 4.

Conclusion

The evidence presented in this brief suggests that New York's current system is neither equitable to taxpayers nor wealth neutral. Residents in the lowest wealth districts typically tax themselves at higher rates to achieve lower levels of overall resources compared with higher wealth districts. Although state aid is distributed in a way that provides more in state aid to the lowest wealth districts, this distribution is not strong enough to make up for the vast differences in local revenue across districts with different levels of wealth. One of the contributing factors to these inequities is that Foundation Aid targets are likely too low. In

2022–23, all districts exceeded their Foundation Aid targets in both state and local revenue and current spending. In addition, all districts raised more in local revenue than their minimum local share of the Foundation Aid target suggested (by an average of almost \$8,000 per student). Setting Foundation Aid targets that are too low means that the efforts at equalization across districts based on local capacity apply to only a portion of the overall revenue that districts raise and likely need. In other words, setting higher Foundation Aid targets (and higher expected minimum local contributions) would bring a larger portion of the overall revenue that districts currently raise under the umbrella of Foundation Aid, allowing the state to apply efforts at equalization to a larger portion of the revenue raised for public education in the state.

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Appendix. Additional Exhibits

Exhibit A1. Pupil Needs Index, Regional Cost Index, and the Product of the Two Indexes With Respect to the Foundation Aid Combined Wealth Ratio

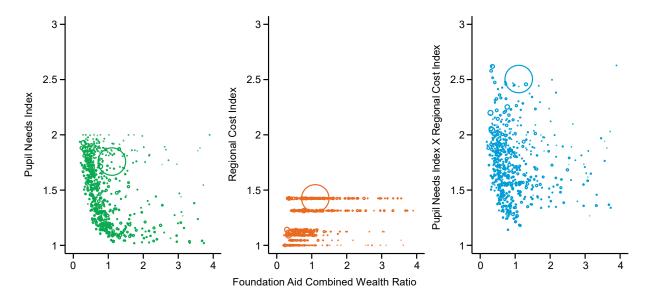


Exhibit A2. Distribution of STAR Revenue With Respect to the Foundation Aid Combined Wealth Ratio (2014–15 and 2022–23)

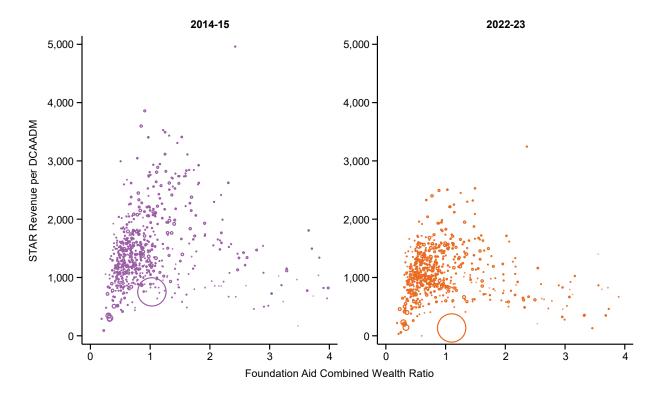


Exhibit A3. Regressions Examining Relationships Between Key Revenue Variables and **Measures of Wealth and Income**

Predictor Variable	Local Effort	Local Revenue per DCAADM	Local Excess Revenue per DCAADM	State and Local Revenue Relative to Foundation Aid Target	Current Spending Relative to Foundation Aid Target
Assessed valuation per pupil	-1.151	1,698.5	1,429.4	0.136	0.0934
(\$1,000,000s)	(0.258)	(300.5)	(175.0)	(0.0296)	(0.0203)
Gross income per pupil	-0.725	1,895.4	809.3	0.0677	0.0672
(\$100,000s)	(0.168)	(226.8)	(114.6)	(0.0110)	(0.0101)
Pupil needs index	-3.710	-5,503.7	-9,166.5	-1.236	-1.035
	(0.662)	(497.4)	(722.3)	(0.0655)	(0.0581)
Regional cost index	5.426	1,7928.8	4,228.2	-0.699	-0.481
	(1.504)	(1228.1)	(1045.8)	(0.0974)	(0.0859)
Constant	19.89	10,066.5	8,412.9	2.426	2.068
	(0.478)	(703.8)	(280.6)	(0.0474)	(0.0359)
R^2	0.156	0.825	0.734	0.749	0.780
Number of school x year observations	6,061	6,061	6,061	6,061	6,061
Number of unique schools	675	675	675	675	675

Note. All regression coefficients are statistically significant (p<.001). Assessed valuation per pupil and gross income per pupil are centered on the enrollment weighted average across all districts by year. The pupil needs index and regional cost index were centered on 0 (i.e., one was subtracted from each index) so that the minimum values are 0 rather than 1.

Exhibit A4. Descriptive Statistics of Key Variables

	All Years		2022–23 Only	
Variable	Mean	SD	Mean	SD
Foundation Aid Combined Wealth Ratio	1.00	0.74	0.99	0.68
Foundation Aid per TAFPU	\$6,541	\$2,769	\$7,151	\$3,018
Local Share of Foundation Aid per TAFPU	\$7,043	\$3,106	\$7,610	\$3,471
Foundation Aid per DCAADM	\$6,586	\$2,819	\$8,229	\$3,293
State Aid per DCAADM	\$9,802	\$3,897	\$12,002	\$4,465
Total State Revenue per DCAADM	\$10,713	\$3,714	\$12,687	\$4,378
Other State Aid (Outside of Foundation Aid) per DCAADM	\$3,216	\$1,368	\$3,773	\$1,526
STAR per DCAADM	\$911	\$721	\$686	\$580
Local Share of Foundation Aid per DCAADM	\$8,432	\$3,879	\$9,335	\$4,544
Local Revenue per DCAADM	\$15,405	\$6,700	\$17,251	\$7,040
Local Revenue in Excess of Local Share per DCAADM	\$6,973	\$4,608	\$7,915	\$5,228
Local Effort Rate	19.58	4.24	19.13	4.09
State and Local Revenue Relative to Foundation Aid Target	1.69	0.49	1.76	0.52
Current Spending Relative to Foundation Aid Target	1.48	0.40	1.58	0.41
Number of districts	6,061		673	

Note. Averages are weighted by student enrollment. *SD*s of binary variables are not shown. The statistics in the "all years" column are based on data from 2014–15 through 2022–23.

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