Figure 1a. K-12 funding adequacy

Figure 1b. Student outcomes

Fixing New York's Foundation Aid Formula

Bruce D. Baker
University of Miami

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Goals of School Finance Systems

○ The goal of school finance systems is to provide all children, regardless of where they live or attend school, *equal opportunity to achieve common, adequate outcome goals*

- Providing equal educational opportunity toward common goals costs different amounts in different settings, and across children (individually and collectively) by needs and contexts
- In the U.S., State accountability systems set common goals - rate, rank and evaluate schools on whether they meet those goals
- A fair system requires funding sufficient to provide equal opportunity to meet these goals (which are often used for articulating constitutional rights)
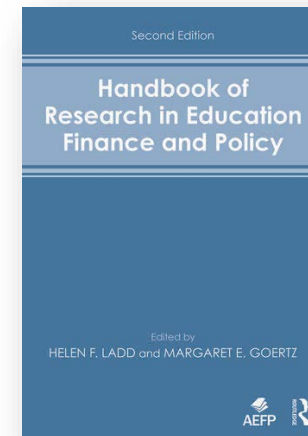
Second Edition

Handbook of Research in Education Finance and Policy

Edited by

HELEN F. LADD and MARGARET E. GOERTZ

AEFP
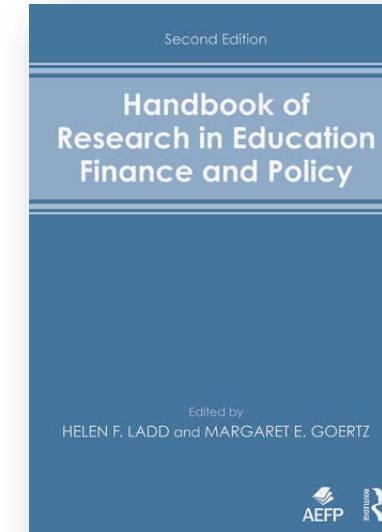
14 Conceptions of Equity and Adequacy in School Finance

16 Measurement of Cost Differentials

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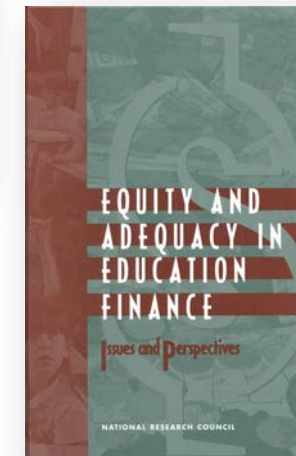
Basic Principles of "Costs" & "Equal Opportunity"

- It costs more to achieve higher than lower outcomes
  - All else equal, the per pupil spending required to achieve higher, and broader outcome goals is higher than the per pupil spending required to achieve narrower and/or lower goals

- It costs more to achieve the same outcomes with some children than others
  - Collective, social context effects (poverty)
  - Specific student needs (ELL, Disability)

- It costs more to achieve the same outcomes with some children than others in some settings than others
  - Economies of Scale – Small, sparsely populated remote school districts
  - Regional variations in the competitiveness of wages (labor market effects)

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16
Measurement of Cost Differentials

EQUITY AND ADEQUACY IN EDUCATION FINANCE

Issues and Perspectives

NATIONAL RESEARCH COUNCIL

8
Performance Standards and Educational Cost Indexes: You Can't Have One Without the Other

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Cost analysis methodologies

○ Input Oriented
- Determine the personnel and non-personnel resources and corresponding costs associated with the educational services used to generate student outcomes. [Ingredients Method (Levin et al., 2018; Baker & Morphew, 2007)]
- Resource Cost Models or Ingredients methods
- Institutional production/delivery or student consumption

○ Outcome Oriented
- Evaluate aggregate spending per-student as a function of student outcomes and several cost factors including needs, labor price levels, scale of operations and other institutional characteristics. [Education Cost Function Analysis (Duncombe & Yinger, 2011; Levin et al., 2022)]
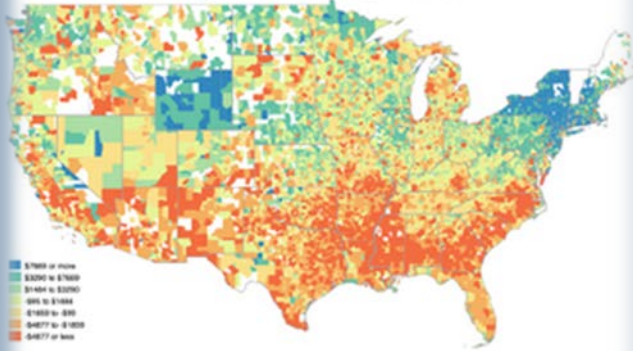
UNIVERSITY OF MIAMI
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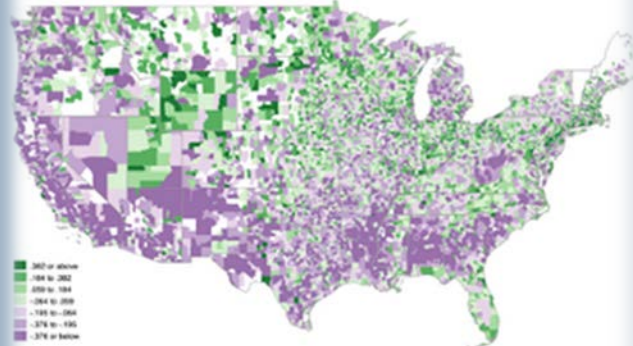& HUMAN DEVELOPMENT

What's Wrong with New York's Foundation Aid Formula?

Bruce D. Baker
University of Miami

Conclusions

- **Conclusion 1**: The calculation method and measures in the formula do not rationally determine what districts need to spend, or what they actually spend, in order to achieve adequate outcomes;

- **Conclusion 2**: The foundation formula has continued to drift further, over time, from funding even its own (inadequate) hypothetical sound basic funding level;

- **Conclusion 3**: Standards, goals and context of the education system have changed, with both broader and higher expectations and greater needs and cost pressures across the state.

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Conclusion #3

- Higher outcomes, more rigorous assessments and a wider array of outcome goals cost more to achieve;

- Even to achieve comparable outcomes over time requires maintenance of a quality teacher workforce, where competitive wages for teachers typically grow at a faster pace than consumer price inflation;

- Changes to the population of students served may also change the costs of achieving even the same outcome goals.

Recommendations

- Short term fixes:
  - Increasing base aid to better reflect general instructional expenditures of successful, efficient districts. The minimum increase justified herein would be 10.75% above next year's inflation adjusted based. Were that to have been implemented for fy2026, the base would be $9,162 (10.75% above the adopted base of $8,273).
  - Noting that adjustments for student needs were never based on any empirical analyses, and drawing on related work, I would suggest adding and increasing adjustments for student needs, including adjustments for children from homeless, foster care and migrant families, and increasing weighting for English learners, with each weight being adopted or moved toward 1.0 additional funding.

- In the longer term:
  - over the next year and a half, with intent to reform Foundation Aid for fy2028, the state should conduct a rigorous analysis of the spending required to achieve current desired outcome goals for all children.

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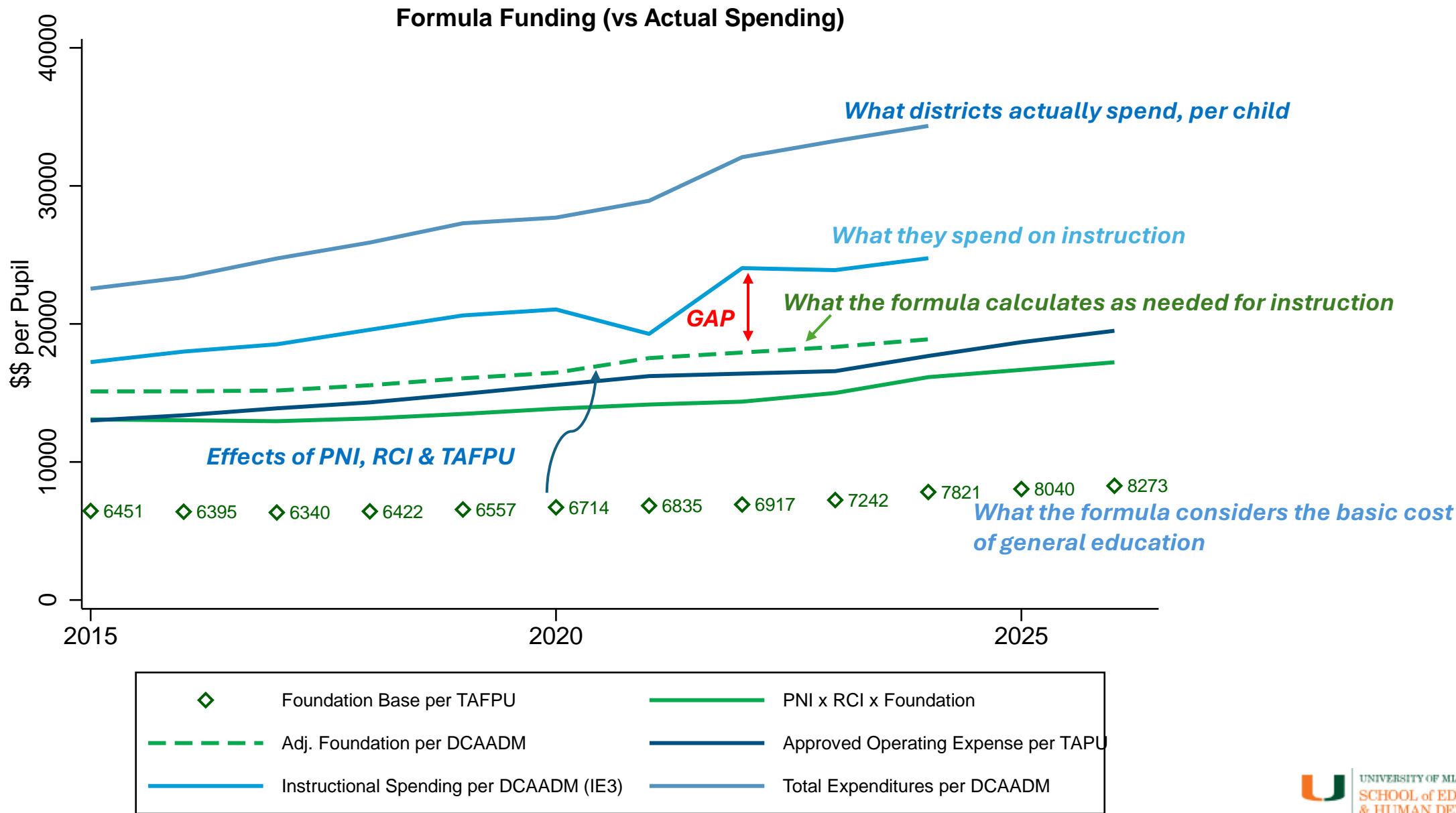SCHOOL of EDUCATION
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Core Assumptions

- **Adj. Foundation Amount ≈ Sound Basic Funding**

- **Base x PNI x RCI x TAFPU ≈ Sound Basic Funding**

- **Base**
  - **GEIE = IE - SEIE**
  - **Deflated GEIE = GEIE/PNI/RCI**
  - **Base = Avg. Deflated GEIE of Successful, Efficient Districts**

- **Note: PNI & TAFPU components not based on any "cost" analysis**
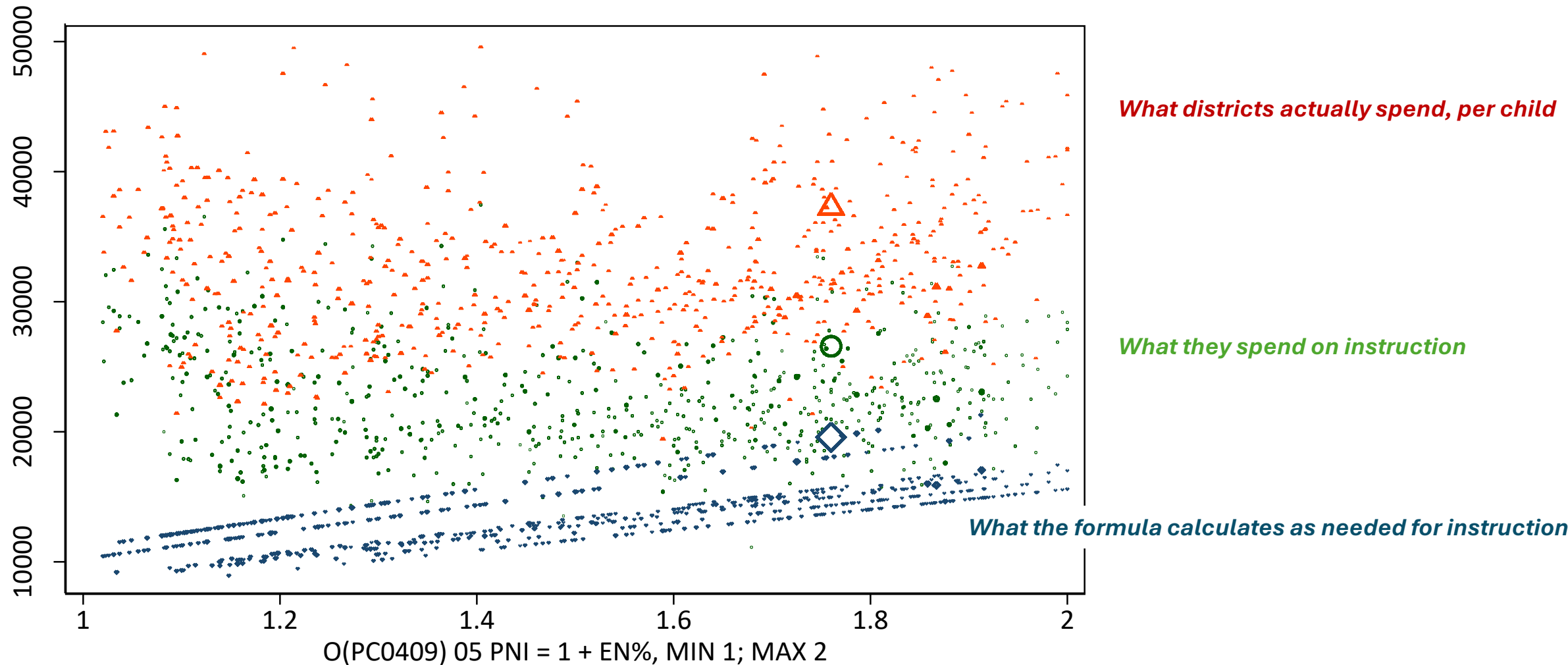
Conditions needed to support core assumptions

- Instructional spending is all a district needs to operate its programs and services;

- If the PNI and RCI are based on thorough analyses of costs and cost differences to achieve the desired outcomes (since they've been peeled off to be added back in);

- If the special education spending subtracted to get GEIE is subsequently made whole when we go back and multiply by TAFPU.

None of those conditions are met

- Instructional spending typically constitutes about 65% by national accounting standards and metrics, and 75% by New York standards and metrics, of current operating expense for local public school districts;

- No empirical analyses were ever provided to validate the weights on the components of the PNI, per the most rigorous methods of the day;

- No empirical analyses were ever provided to validate the weights on children with disabilities included withing TAFPU.

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Formula Funding (vs Actual Spending)

$$ per Pupil

What districts actually spend, per child

What they spend on instruction

What the formula calculates as needed for instruction

GAP

Effects of PNI, RCI & TAFPU

What the formula considers the basic cost of general education

6451   6395   6340   6422   6557   6714   6835   6917   7242   7821   8040   8273

2015   2020   2025

◇ Foundation Base per TAFPU	——	PNI x RCI x Foundation
--- Adj. Foundation per DCAADM	——	Approved Operating Expense per TAPU
—— Instructional Spending per DCAADM (IE3)	——	Total Expenditures per DCAADM

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Foundation Formula "Sound Basic" Funding vs. Actual Spending

What districts actually spend, per child

What they spend on instruction

What the formula calculates as needed for instruction

O(PC0409) 05 PNI = 1 + EN%, MIN 1; MAX 2

Legend:
- FARU: Instructional Spending per Pupil
- FARU: Total Expenditures per Pupil
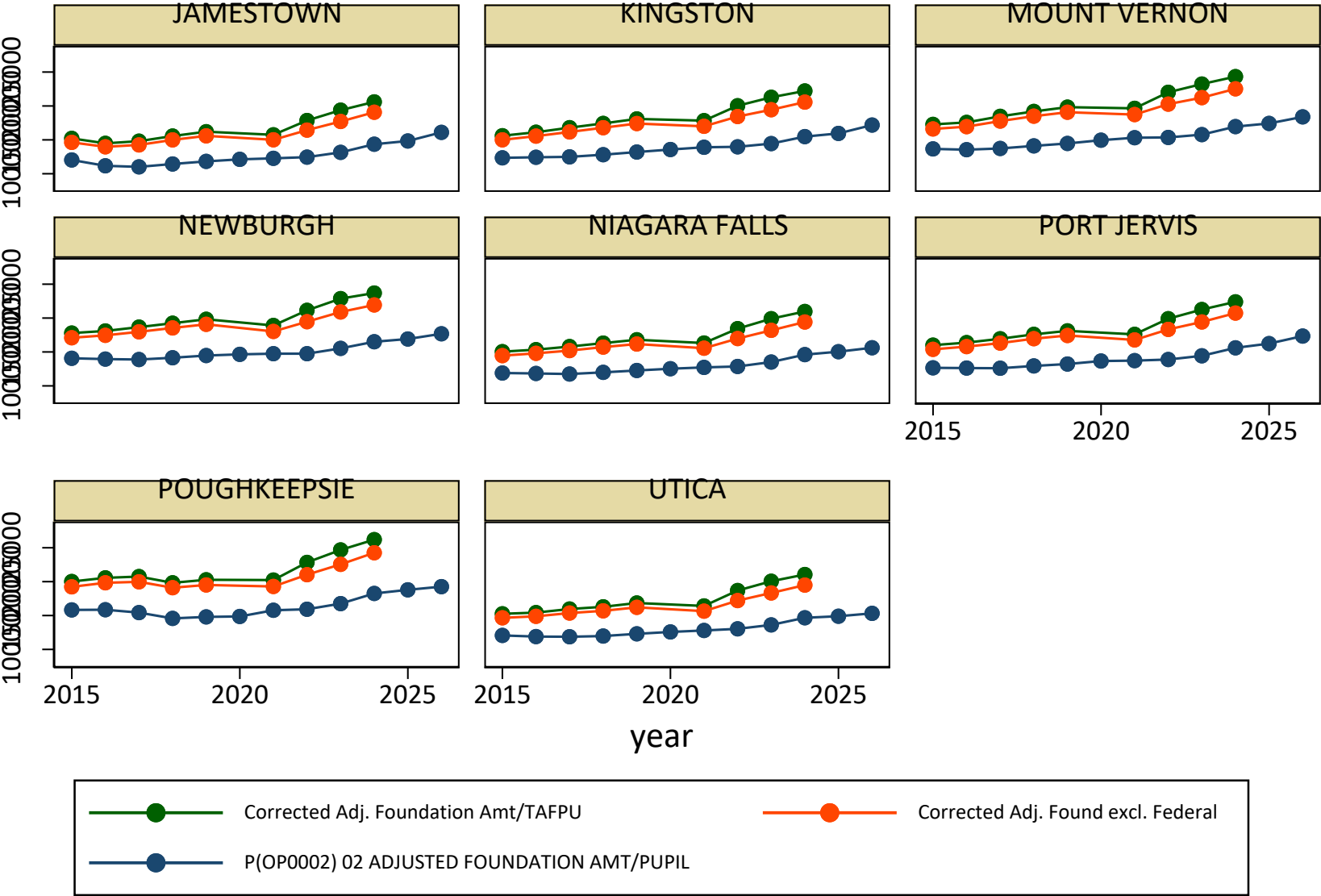- AID: Adj. Foundation per Pupil

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Table 1. All Districts

year	Total Expenditure per Pupil [1]	Instructional Expenditure per Pupil (IE3)[1]	Instruction % of Total	Adj. Foundation per DCAADM[3]	Adj. Foundation per TAFPU[2]	Base[4]
2015	$22,553	$17,235	76%	$15,108	$13,081	$6,451
2016	$23,371	$17,997	77%	$15,120	$13,020	$6,395
2017	$24,741	$18,524	75%	$15,176	$12,955	$6,340
2018	$25,897	$19,578	76%	$15,560	$13,155	$6,422
2019	$27,293	$20,617	76%	$16,064	$13,482	$6,557
2020	$27,703	$21,050	76%	$16,471	$13,861	$6,714
2021	$28,919	$19,278	67%	$17,526	$14,160	$6,835
2022	$32,081	$24,043	75%	$17,930	$14,371	$6,917
2023	$33,255	$23,898	72%	$18,334	$14,998	$7,242
2024					$16,145	$7,821
2025					$16,674	$8,040
2026					$17,221	$8,273

[1] Data source: Fiscal Profiles https://www.nysed.gov/sites/default/files/programs/fiscal-analysis-research/masterfiles-93-94-to-22-23.xlsx, Variable: EXPENDITURE/PUPIL [AQ], and IE3:INSTRUCTIONAL EXPENDITURES INCLUDING FRINGE BENEFITS (LESS TUITION 1) / DUPLICATED COMBINED ADJUSTED AVERAGE DAILY MEMBERSHIP (DCAADM) [AO]. Fiscal profiles definitions: https://www.nysed.gov/fiscal-analysis-research/guide-headings-fiscal-profile

[2] Data Source: State Aid Reports (DBSAD), variable: P(OP0002) 02 ADJUSTED FOUNDATION AMT/PUPIL

[3] Data Sources: Fiscal Profiles & State Aid Reports (DBSAD), variables: [P(OP0002) 02 ADJUSTED FOUNDATION AMT/PUPIL x M(OP0088) 00 SELECTED TAFPU] / DUPLICATED COMBINED ADJUSTED AVERAGE DAILY MEMBERSHIP (DCAADM)

[4] Data Source: State Aid Reports (DBSAD), variables: P(OP0002) 02 ADJUSTED FOUNDATION AMT/PUPIL / O(PC0409) 05 PNI = 1 + EN%, MIN 1; MAX 2 / N(MI0125) 03 REGIONAL COST INDEX (RCI)

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JAMESTOWN · KINGSTON · MOUNT VERNON · NEWBURGH · NIAGARA FALLS · PORT JERVIS · POUGHKEEPSIE · UTICA

year

Legend:
- Corrected Adj. Foundation Amt/TAFPU
- Corrected Adj. Found excl. Federal
- P(OP0002) 02 ADJUSTED FOUNDATION AMT/PUPIL

Graphs by 05/06/25

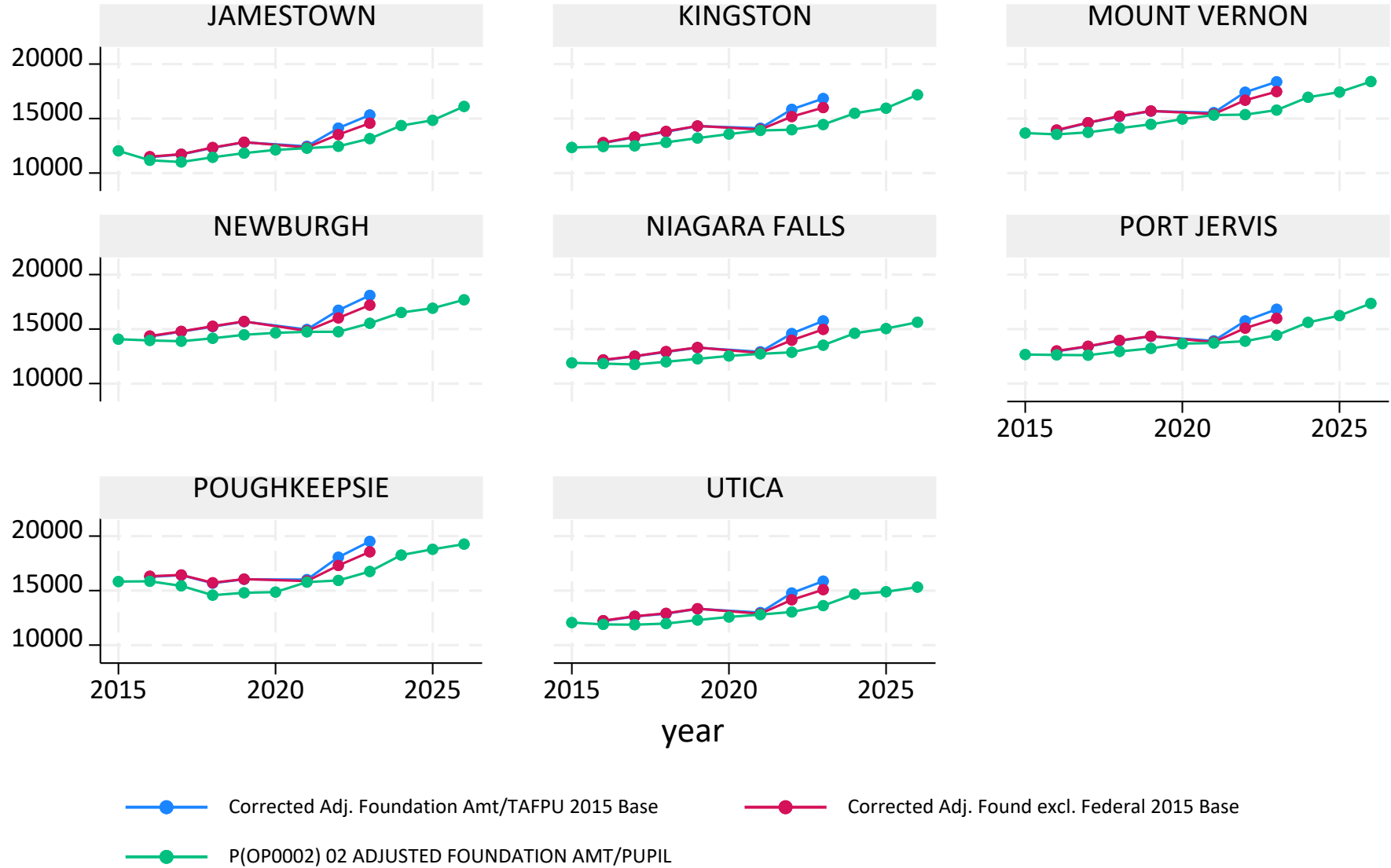UNIVERSITY OF MIAMI
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Table 4: Selected Small City Districts would have significantly higher adj. funding per pupil if based on more complete instructional spending 2022-23

District	Adj. Foundation per TAFPU (Current Law)[1]	Adj. Foundation per TAFPU using IE3 (deflated) S&E Base[2]	Adj. Foundation per TAFPU using IE3 (deflated) S&E Base (Excl. Federal) [2]	Adj. Foundation per TAFPU using IE3 S&E Growth Only[2]	Adj. Foundation per TAFPU using IE3 S&E Growth Only (Excl. Federal[2]
JAMESTOWN	$13,163	$19,385	$17,715	$15,332	$14,578
POUGHKEEPSIE	$16,758	$24,679	$22,552	$19,519	$18,559
NIAGARA FALLS	$13,519	$19,909	$18,193	$15,747	$14,972
UTICA	$13,622	$20,061	$18,333	$15,867	$15,086
NEWBURGH	$15,530	$22,871	$20,900	$18,089	$17,199
PORT JERVIS	$14,436	$21,259	$19,428	$16,815	$15,987
KINGSTON	$14,455	$21,287	$19,453	$16,837	$16,008
MOUNT VERNON	$15,777	$23,235	$21,233	$18,378	$17,473

[1] Data source: State Aid Reports (DBSAD), variable: P(OP0002) O2 ADJUSTED FOUNDATION AMT/PUPIL

[2] Calculation based on applying base figures from previous table (3) times RCI and PNI for 2023 for each selected small city district in the table

Table 5: Selected Small City Districts would have significantly higher state aid per pupil if based on more complete instructional spending 2022-23

District	Selected Foundation Aid per TAFPU [1] (Current Law)	Foundation Aid per TAFPU using IE3 S&E Base[2]	Foundation Aid per TAFPU using IE3 S&E Base (Excl. Federal) [2]	Foundation Aid per TAFPU using IE3 S&E Growth Only[2]	Foundation Aid per TAFPU using IE3 S&E Growth Only (Excl. Federal[2]
JAMESTOWN	$11,847	$17,583	$15,943	$13,799	$13,120
POUGHKEEPSIE	$14,847	$21,865	$19,981	$17,294	$16,443
NIAGARA FALLS	$12,167	$17,918	$16,374	$14,172	$13,474
UTICA	$12,260	$18,330	$16,602	$14,280	$13,578
NEWBURGH	$12,284	$18,533	$16,563	$14,309	$13,605
PORT JERVIS	$12,992	$19,133	$17,485	$15,133	$14,389
KINGSTON	$8,167	$13,564	$11,730	$9,513	$9,045
MOUNT VERNON	$7,999	$14,350	$12,348	$9,492	$8,859

[1] Data source: State Aid Reports (DBSAD), variable: V(OP0069) 02 SELECTED FOUNDATION AID/PUPIL

[2] Calculation based on selected state aid share (state sharing ratio) from current law, using each of the adj. foundation per TAFPU calculations from the previous table (4)

Table 6: Selected Small City Districts would have significantly higher state aid if based on more complete instructional spending

District	Total Foundation Aid (incl. Supplements)[1]	Calculated Foundation Aid (Current Law)[2]	Foundation Aid per TAFPU using IE3 SSLS Base[3]	Foundation Aid per TAFPU using IE3 SSLS Base (Excl. Federal)[3]	Foundation Aid per TAFPU using IE3 SSLS Growth Only[3]	Foundation Aid per TAFPU using IE3 SSLS Growth Only (Excl. Federal)[3]
JAMESTOWN	$57,340,681	$61,650,643	$91,501,516	$82,969,350	$71,810,881	$68,276,688
POUGHKEEPSIE	$69,178,471	$77,413,614	$114,005,049	$104,183,176	$90,171,646	$85,733,854
NIAGARA FALLS	$96,367,301	$104,682,889	$154,163,805	$140,882,068	$121,935,028	$115,933,910
UTICA	$134,500,000	$152,747,091	$228,376,709	$206,843,570	$177,920,127	$169,163,692
NEWBURGH	$146,800,000	$162,299,907	$244,863,545	$218,830,752	$189,047,601	$179,743,579
PORT JERVIS	$39,022,115	$43,354,838	$63,847,555	$58,346,911	$50,499,889	$48,014,491
KINGSTON	$57,411,742	$63,669,464	$105,743,853	$91,446,378	$74,162,451	$70,512,512
MOUNT VERNON	$81,529,562	$73,608,454	$132,047,320	$113,626,940	$87,349,304	$81,519,754

[1] Data source: State Aid Reports (DBSAD), Total Foundation Aid, which is inclusive of additional aid above calculated Foundation Aid (x TAFPU). Additional Aids include: Y(CL0011) 00 3% AID DUE MINIMUM GUARANTEE, AA(MI0023) 00 2006-07 OPER AID FOR REORG INCENTIVE AID, AC(MI0174) 00 2006-07 PUB EXCESS COST AID W/O HC AID(SA0708), AD(SE0003) 00 2022-23 PUBLIC EXCESS COST SETASIDE, AE(SE0004) 00 2021-22 PUBLIC EXCESS COST SETASIDE. In 2023 most districts still received reductions in aid compared to calculated aid, but these reductions were smaller than previous years and converged on $0 by 2024. That is, districts received full funding of their Calculated Foundation Aid in 2024 (and perhaps great, when supplements were added).

[2] Calculations based on multiplying state aid per TAFPU times TAFPU for each respective scenario in previous table (5).

Exhibit 7. Regression Results Examining Relationships Between School Characteristics and the Student Outcome Factor Score
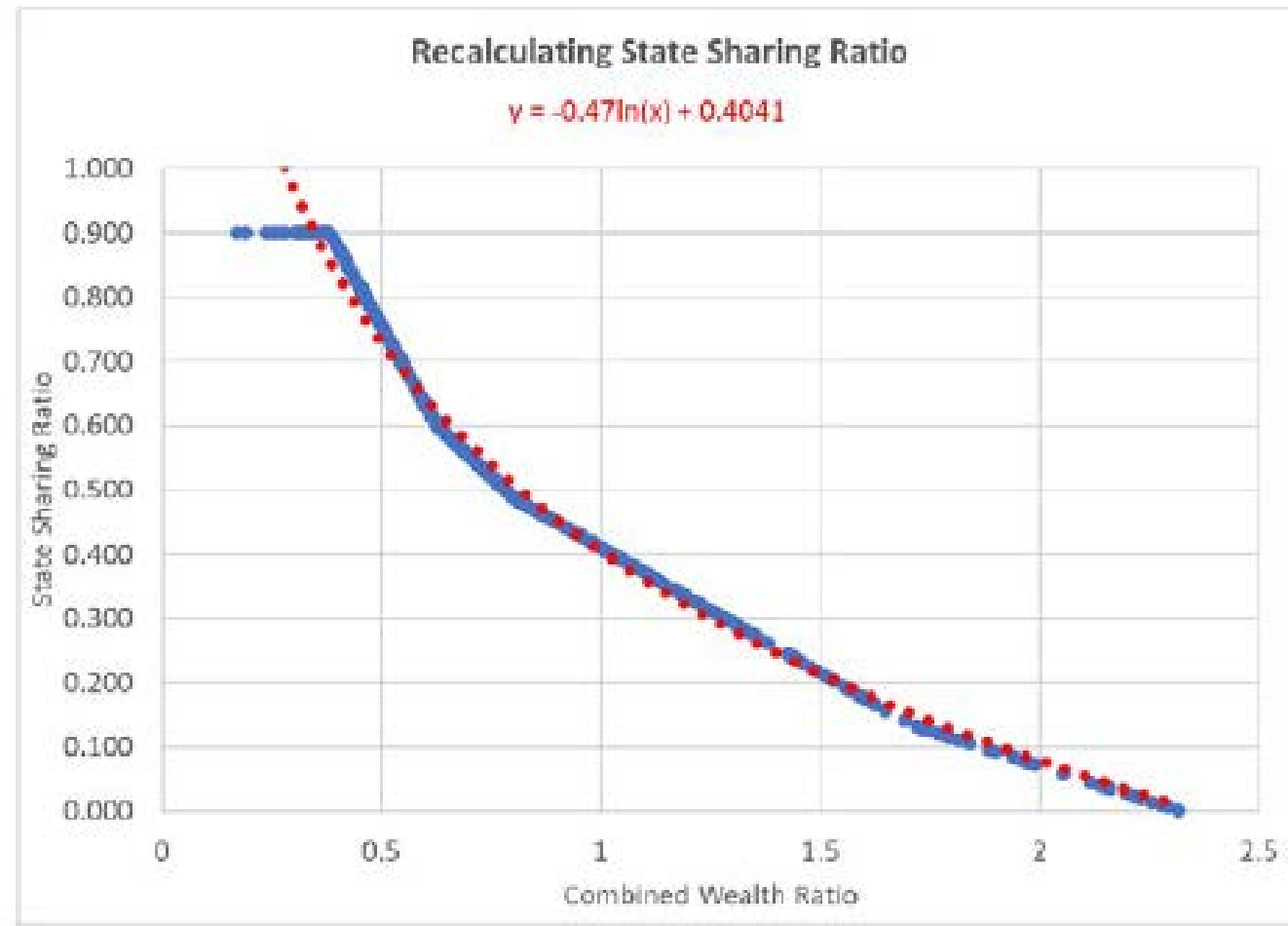
	Model 1		Model 2	
	Coef.	SE	Coef.	SE
Student needs				
Economically disadvantaged proportion	-2.335*	(0.052)	-2.191*	(0.054)
English language learner proportion	-0.519*	(0.128)	-0.446*	(0.134)
Students with disabilities proportion	-3.253*	(0.226)	-2.911*	(0.222)
Homeless student proportion			-1.131*	(0.237)
Migrant student proportion			-5.348*	(1.243)
Foster student proportion			-13.22*	(1.915)
Proportions of enrollment, by grade				
Grades 6–8	0.019	(0.024)	0.0146	(0.023)
Grades 9–12	-0.087*	(0.023)	-0.082*	(0.023)
CWIFT geographic cost index	2.197*	(0.109)	2.309*	(0.111)
School and district size (scale)				
School < 200	-0.395*	(0.045)	-0.300*	(0.042)
School 200 to < 400	-0.228*	(0.020)	-0.184*	(0.020)
School 400 to < 600	-0.159*	(0.019)	-0.135*	(0.019)
District < 300	0.325*	(0.088)	0.278*	(0.084)
District 300 to < 600	0.270*	(0.040)	0.251*	(0.040)
District 600 to < 2000	0.089*	(0.021)	0.081*	(0.021)
Locale				
Suburb	-0.217*	(0.028)	-0.235*	(0.029)
Town	-0.175*	(0.037)	-0.147*	(0.038)
Rural	-0.076*	(0.035)	-0.074*	(0.036)
Charter indicator	0.272*	(0.045)	0.267*	(0.044)
Constant	1.508*	(0.059)	1.414*	(0.058)
Number of school X year observations	22,961		22,961	
Number of unique schools	4,722		4,722	
R^2	.607		.616	

Note. Coef. = coefficient; SE = standard error; CWIFT = Comparable Wage Index for Teachers. The coefficients shown are exponentiated Poisson coefficients and are interpreted relative to 1, such that values less than 1 represent lower spending and values greater than 1 represent higher spending. The models also include year fixed effects, which are not shown in the regression results. The constant term reflects the outcome factor score in the 2022–23 school year when all other covariates have a value of 0.

*$p < .05$.

We found that each of these student characteristics have significant negative effects on our comprehensive index of student outcomes

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https://cee.tc.columbia.edu/media/centers-amp-labs/cee/publication-pdfs/AIR-Report-2--Student-Outcomes-and-Student-Need---Final-10-29-24-1-1.pdf

Figure B5. State Sharing Ratio Re-estimation & Cap Removal

New Jersey's analogous Base Cost per Pupil

Then add weights for:
 x Grade Level

 FRL (.47-.57)
 ELL (.5)
 Combo ELL/FRL
 Spec Ed*

 x Geographic Cost Adj.

 = Adequacy Budget –
 Local Share = State Aid

Changes in the Base Amount Per Pupil

The NJDOE regularly revisits educational costs in deciding the numbers that go into the adequacy budget. The table below illustrates how the base amount has increased since the SFRA was instituted. The 2009 figure was set by the SFRA; subsequent figures are from the NJDOE's Educational Adequacy Report.

Fiscal Year	Base Amount (Elementary school students)
2009	$9,649
2014	$11,009
2017	$11,009
2020	$11,775
2023	$12,451
2024	$13,181
2025	$13,946

The Adequacy Budget That adequacy budget starts with a baseline of what it would cost to educate one elementary school student with no external factors considered. Various weights are added for each individual student for whom a weight applies.
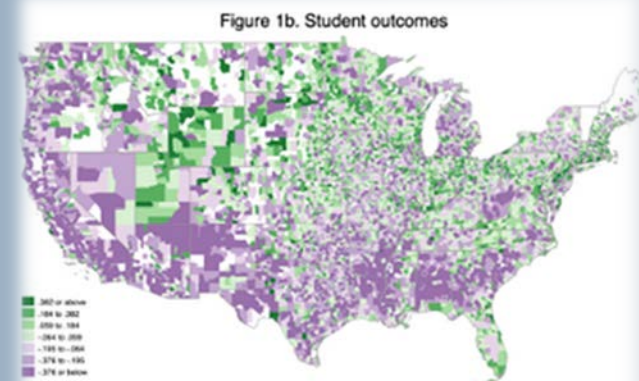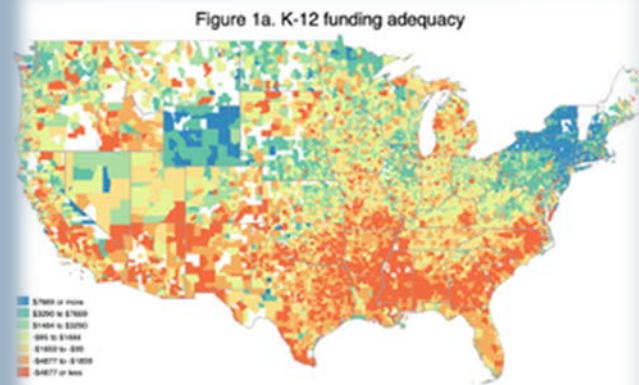
Fixing New York's Foundation Aid Formula
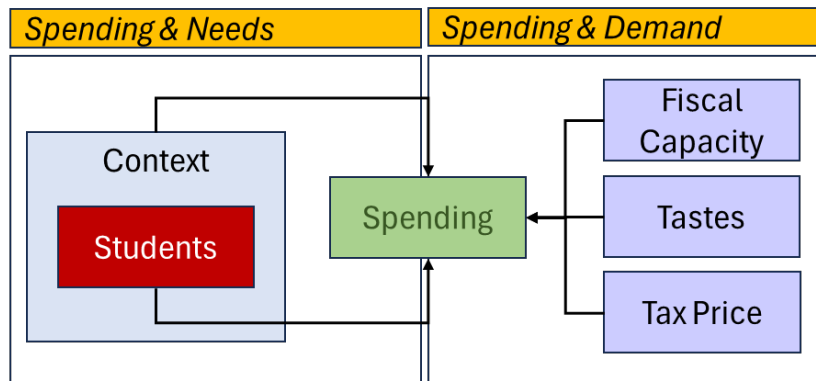
Bruce D. Baker
University of Miami

Jesse Levin
American Institutes for Research

Elements of a Comprehensive Study

STEP 1: EDUCATION COST MODEL (ECM)

Estimate ECM to determine:

Base per-pupil cost of providing adequate education

Additional cost-based funding adjustments to account for cost factors, including student needs, resource price levels, scale of operations, and other contextual characteristics

Variation in adequate cost with respect to different target level goals for outcomes included in the model

STEP 3: RESOURCE COST MODEL

Convene panels of expert educational practitioners (Professional Judgment Panels) to:

Propose resource configurations for schools to meet desired outcome goals, including civic engagement, arts/enrichment/cultural growth, mental health, etc., which may not be reflected in cost modeling goals

Propose how those resource needs (schooling inputs) need to vary by: student needs, resource price levels, scale of operations, and other contextual characteristics

STEP 2: IDENTIFY EFFICIENT SCHOOLS AND DISTRICTS

Use estimated ECM to identify sample of schools/districts serving different student populations in different contexts and operating above, below, and at statewide average efficiency to:

Determine adequate cost projections for sampled schools/districts

Develop resource profiles for sampled schools/districts, including staffing ratios for different types of key staff and per-pupil spending for categories of non-personnel resources

Explore differences in how schools/districts that are more versus less efficient allocate resources

STEP 4: RECONCILIATION & FORMULA DEVELOPMENT

Compare/evaluate and reconcile findings from Steps 1, 2 and 3.

Outcome Oriented (Cost Function Modeling)

Input Oriented (Professional Judgment)

Recent Applications of Cost Modeling

Professional Reports

o Colorado – Atchison, D., Levin, S., Levin, J., Kolar, A., Blair, D., Srikanth, A., & Salvato, B. (2024). Equity and Adequacy of Colorado School Funding: A Cost-Modeling Approach. https://www.cde.state.co.us/cdedepcom/schoolfinancecostmodelingadequacystudyreport

o Delaware – D. Atchison, B.D. Baker, J. Levin, S. Fatima, A. Trauth, A. Srikanth, C. Herberle, N. Gannon-Slater, L. Junk, K., Wallace, L., & Baker, B. (2023) Assessment of Delaware Public School Funding. https://education.delaware.gov/wp-content/uploads/2023/12/23-22933_1_Delaware_Full_Report-FMT-ed103023-Version-2.pdf

o New Hampshire – Atchison, D., Baker, B.D., Levin, J., Kearns, C. (2020) New Hampshire Commission to Study School Funding, Final Report. https://carsey.unh.edu/sites/default/files/media/2020/09/20-12685_nh_final_report_v10.pdf

o Ohio – Levin, J., Brooks, Baker, B., C., Fatima, S., Blair, D., Salvato, B., Srikanth, A., London, B., Atchison, D., Jacobson, A., Hadley, L., Dotson, B., Harrington, H., Yeshitla, B. (2025). Study of the Educational Costs of Serving Students Who Are Economically Disadvantaged. https://education.ohio.gov/getattachment/About/Annual-Reports/Economic-Disadvantage-Finance-Study-American-Institutes-for-Research.pdf.aspx?lang=en-US

o Oregon – Brooks, C., Levin, J., Baker, B., & Salvato, B. (2025). Understanding the Cost of Providing Adequate Educational Opportunity in Oregon. https://olis.oregonlegislature.gov/liz/2025R1/Downloads/CommitteeMeetingDocument/291280

o Vermont – Kolbe, T., Baker, B.D., Atchison, D., Levin, J. (2019) Pupil Weighting Factors Report. https://legislature.vermont.gov/assets/Legislative-Reports/edu-legislative-report-pupil-weighting-factors-2019.pdf

Peer Reviewed Articles & Working Papers

o Baker, B. D. (2024). *How and Why Racial Isolation Affects Education Costs & the Provision of Equal Educational Opportunity*. EdWorkingPaper No. 24-1047. Annenberg Institute for School Reform at Brown University.

o Baker, B. D., Weber, M., & Srikanth, A. (2021). Informing Federal School Finance Policy with Empirical Evidence. *Journal of Education Finance*, 47(1), 1-25.

o Gronberg, T. J., Jansen, D. W., & Taylor, L. L. (2017). Are charters the best alternative? A cost frontier analysis of alternative education campuses in Texas. *Southern Economic Journal*, 83(3), 721-743.

o Levin, J., Baker, B., Lee, J., Atchison, D., & Kelchen, R. (2022). *An Examination of the Costs of Texas Community Colleges*. REL 2023-142. Regional Educational Laboratory Southwest.

o Kolbe, T., Baker, B. D., Atchison, D., Levin, J., & Harris, P. (2021). The additional cost of operating rural schools: Evidence from Vermont. *AERA Open*, 7, 2332858420988868.

o Zhao, B. (2022). Estimating the cost function of Connecticut public K–12 education: implications for inequity and inadequacy in school spending. *Education Economics*, 31(4), 439-470.
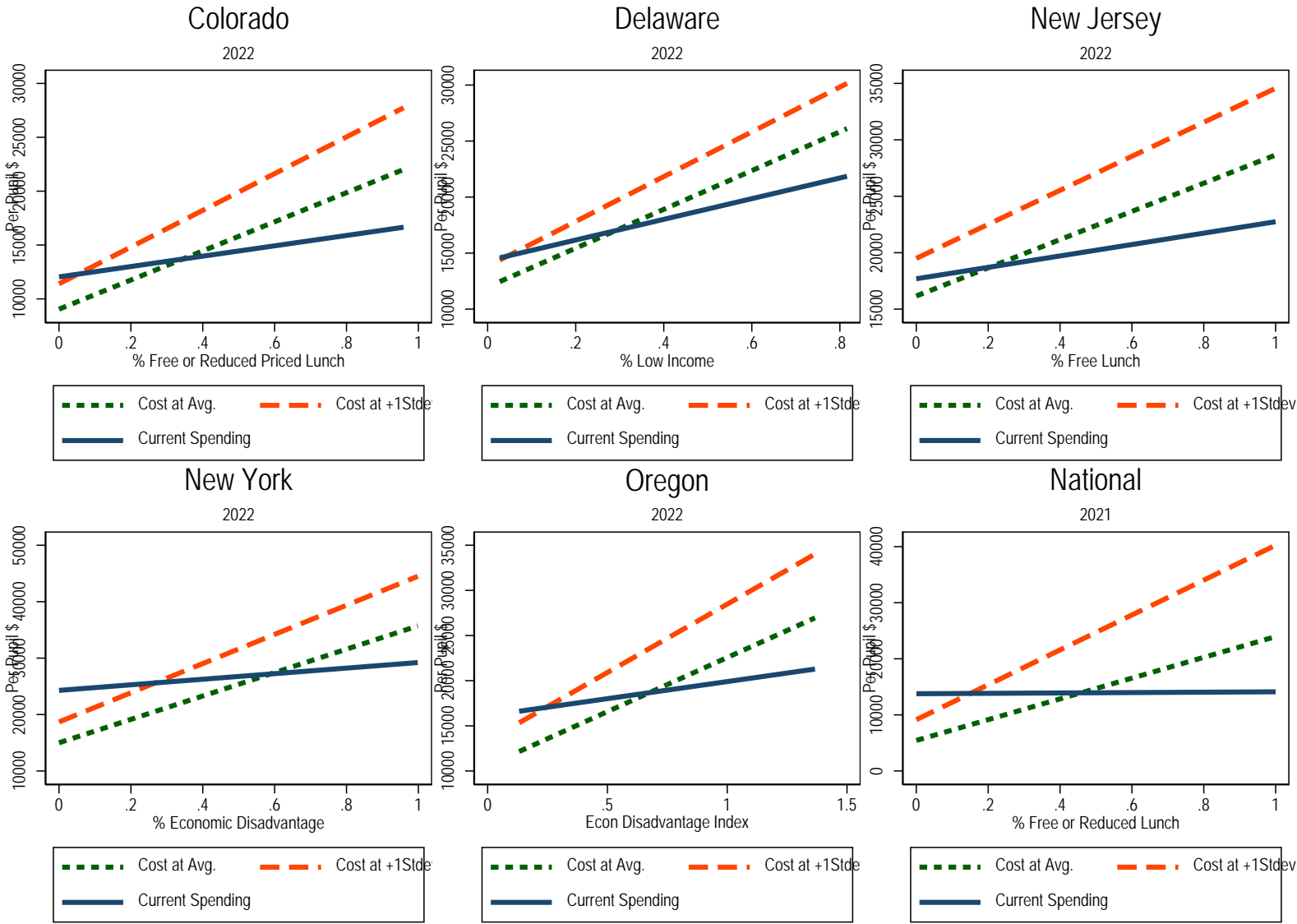
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Policy Influence of Cost Modeling Studies

Formula Changes

o Texas Community College Formula

– Levin, J., Baker, B., Lee, J., Atchison, D., & Kelchen, R. (2022). An Examination of the Costs of Texas Community Colleges. REL 2023-142. Regional Educational Laboratory Southwest. https://ies.ed.gov/sites/default/files/rel-southwest/document/2025/07/REL_2023142.pdf

o Vermont K12 Formula Weights

– Kolbe, T., Baker, B.D., Atchison, D., Levin, J. (2019) Pupil Weighting Factors Report. State of Vermont, House and Senate Committees on Education. https://legislature.vermont.gov/assets/Legislative-Reports/edu-legislative-report-pupil-weighting-factors-2019.pdf

o Kansas School Funding

Other State Uses of NECM/SFID

o Virginia Joint Legislative Audit & Review Commission Report

– https://jlarc.virginia.gov/landing-2023-virginias-k-12-funding-formula.asp

o Missouri Department of Elementary and Secondary Education Report

– https://dese.mo.gov/media/pdf/missouri-school-funding-march-2023

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Oregon

Exhibit 21. Regression Model Estimates of Raw Pupil Cost Weights and Base Funding

DV = District cost per pupil—pre-COVID- federal funding per pupil	State average	Statewide average + 1 standard deviation
Student needs		
EDI	1.422	1.452
% Students with low-cost disabilities	5.289	5.269
% Students with middle- and high-cost disabilities	6.173	6.145
% EL	1.709	1.682
School and district factors		
Grade range distribution		
% in grades K–8	(Reference)	
% grades 9 to 12	1.061	1.057
District enrollment		
Under 100	1.833	1.837
101 to 300	1.434	1.430
301 to 600	1.217	1.216
601 to 1,200	1.111	1.110
>1,200	(Reference)	
Time (Base year = 2025)	1.068	1.066
Constant (Base cost in 2025)	11,648.98	14,643.47
Number of observations	1,599	1,599

Note. Figures are exponentiated coefficients from Poisson regression. The reference group is a district serving students in grades K-8 with enrollment greater than 1,200. All percentage variables range from 0–1. All measures are calculated or reported at the district level. All variables are statistically significant at the .01 level.
Source. The ODE; Baker et al., 2024; NCES n.d. -a.

Exhibit 23. Application of Weights for +1 Standard Deviation Outcomes to a Hypothetical District

Model factor	Estimated raw weight	Characteristic value (enrollment percentage/ enrollment group indicator/ year)	Effective weight
Student needs			
EDI	1.452	65.8%	1.278
% students with low-cost disabilities	5.269	7.72%	1.137
% students with middle- and high-cost disabilities	6.145	7.71%	1.150
% EL	1.682	10.6%	1.057
Grade range distribution			
% Grades 9–12	1.057	32.9%	1.018
Enrollment group			
Under 100	1.837	0	1.000
101 to 300	1.430	0	1.000
301 to 600	1.216	0	1.000
601 to 1,200	1.110	0	1.000
Time (Base year = 2025)	1.066	-3.00	0.826
Base per-pupil amount	14,643.47		
Overall needs index (multiplied effective weights)			1.485
District per-pupil funding =	*$14,643*	x 1.485 =	*$21,746*

Note. Estimated weights are taken from the model calibrated to the high target outcome standard (Statewide Average + 1 Standard Deviation) reported in Exhibit 21. Effective weights are calculated by raising the estimated weight to the power of the model factor value. The combined needs index is the product of all effective weights. The district formula per-pupil funding estimate is calculated by multiplying base funding by the combined needs index. The final calculation indicates that a district with average located in a district with enrollment greater than 1,200 would require $21,745.55per pupil in funding to address the cost adequately of educating all students to achieve one standard deviation above statewide average outcomes.
Source. Calculations based on data from the ODE; Baker et al., 2024; NCES, n.d.-a.

https://olis.oregonlegislature.gov/liz/2025R1/Downloads/CommitteeMeetingDocument/291280

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Colorado

Exhibit 34. Weight Estimation Regression Models

Weight categories	A. Average outcomes	B. High outcomes
Student needs		
At-risk (FRL) proportion	1.05	1.07
SWD proportion	1.19	1.20
ELL proportion	1.28	1.28
Grade range		
Middle school enrollment proportion	0.12	0.12
High school enrollment proportion	0.36	0.36
School enrollment		
<300	0.45	0.46
300 to <450	0.19	0.19
450 to <600	0.12	0.12
600 to <800	0.08	0.07
Geographic cost (CWIFT)	1.05	1.05
Base funding	6,648	8,443
Number of school-by-year observations	9,654	9,654
Number of unique schools	1701	1701
Pseudo R^2 / R^2	0.959	0.960

Exhibit Reads. An increase in the low-income student proportion from 0 to 1 (i.e., from no low-income students to 100% low-income students) is associated with an additional target funding level of 105% of the base funding level, on average, to base funding when using an average-outcome target. The weights presented are additive.

Note. FRL = free or reduced-price lunch eligible, SWD = students with disabilities, ELL = English language learner. Additive weights shown are from an Ordinary Least Squares regression, where regression coefficients were expressed in dollar terms. Weights were calculated by dividing the coefficient by the base funding amount. Models also include year-specific indicator variables (where Fiscal Year 2023 serves as the reference group for all models). The base funding represents target funding per pupil in Fiscal Year 2023, when there are no students represented in the other weight categories and the geographic cost (CWIFT) is set to zero. Regression models are weighted by enrollment. The reference enrollment category is schools with more than 800 students. The grade range weights are interpreted relative to enrollment in elementary grades. Data are from the CDE and the U.S. Department of Education.

Exhibit 35. Example Application of a Weighted Student Formula for a Colorado High School Using the High Outcomes Weights Model

Weight categories	Weight	Student proportion	Effective weight	Additional cost per pupil
Student needs				(base × effective weight)
At-risk (FRL) proportion	1.07	0.32	0.342	+$2,891
SWD proportion	1.20	0.08	0.096	+$811
ELL proportion	1.28	0.05	0.064	+$540
Programming/grade range				
Middle school enrollment proportion	0.12	0	0	$0
High school enrollment proportion	0.36	1	0.36	+$3,039
School enrollment				
<300	0.46	0	0	$0
300 to <450	0.19	0	0	$0
450 to <600	0.12	0	0	$0
600 to <800	0.07	0	0	$0
Geographic cost (CWIFT)	1.05	0.13	0.137	+$1,152
Base x Needs index (sum of all effective weights)		$8,443 x 0.999	=	+ $8,434
Per-pupil funding = (base × needs index) + base		$8,434 + $8,443	=	$16,877

Note. FRL = free or reduced-price lunch eligible, SWD = students with disabilities, ELL = English language learner

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https://www.cde.state.co.us/cdedepcom/schoolfinancecostmodelingadequacystudyreport

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