

An Urban Myth? New Evidence on Equity, Adequacy, and the Efficiency of Educational Resources in Pennsylvania

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How and in what ways money matters in education is a long-standing question among policymakers and education researchers. This issue is particularly salient to large, urban school districts, where debates on the organization of school often gravitate toward issues of financial resources and academic performance. Large urban districts, the story goes, spend more money per pupil but generate lower than expected results. In this policy brief, University of Pennsylvania researchers Matthew P. Steinberg and Rand Quinn present evidence that addresses the oft-told story that large urban districts, such as the School District of Philadelphia (SDP), are inefficient.

“Philadelphia is doing more with less, when compared to its peer high-poverty and low-achieving districts.

Steinberg & Quinn (2014)

”

Equity concepts in education finance generally refer to the fair distribution of available resources to students across school districts. **Adequacy** refers to the provision of resources sufficient to produce desired educational outcomes for all students. The difference between the resources that districts need for all students to achieve academically and the amount districts actually spend is called the **adequacy gap**.

To allow for comparisons across districts, the researchers construct **EQ**—the ratio of a district’s per pupil adequacy gap to its actual per pupil spending. This measure allows for an assessment of the extent of cross-district inequality and inadequacy in district spending throughout the state.

What constitutes a “**fair**” distribution of resources is contested. Three forms of equity are commonly understood. Horizontal equity conceptualizes all students as equivalents, leading to uniform per-pupil spending throughout a system. In contrast, vertical equity takes into account student characteristics associated with increased need, leading to (appropriately) unequal funding. A third principle of equity, fiscal neutrality (or equal opportunity), stipulates a decoupling of educational expenditures from district wealth or tax effort.¹

Legal and policy context of school funding in Pennsylvania

Early court battles to alter state finance systems focused on equity. However, more recent cases, fueled by the standards and accountability movement, focused on addressing both equity and adequacy. In 1992, the Pennsylvania General Assembly discontinued its use of a fixed formula to determine basic education funding. In 2007, a Costing Out study was presented to the Pennsylvania State Board of Education.² The following year, the Pennsylvania school code was amended to include language mandating that education funding to districts be based largely on the formula offered by the “Costing Out” study. In 2011, the funding formula requirement to account for student and district characteristics was removed from the school code and the state budget included an overall reduction in basic education funding.

1 Berne, R., & Stiefel, L. (1984). *The measurement of equity in school finance: Conceptual, methodological, and empirical dimensions*. Baltimore, MD: Johns Hopkins University Press.

2 Augenblick, Palaich, and Associates. (2007). *Costing out the resources needed to meet Pennsylvania’s public education goals*. Denver, CO: Augenblick, Palaich, and Associates, Inc.

Findings

Using school revenue, expenditure and achievement data from the 2009-2010 school year³, the researchers examined the distribution of school funding in Pennsylvania and the extent to which the equitable and adequate distribution of resources is shaped by the students that districts serve.

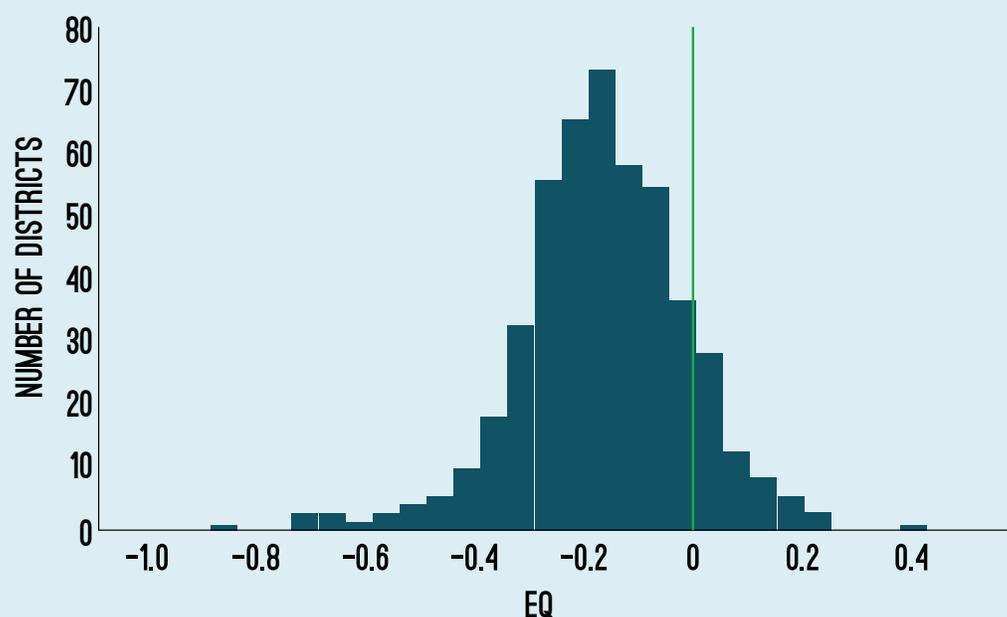
Education spending across districts in Pennsylvania is inadequate.

- » An additional \$3.55 billion would have been required to close the **adequacy gap** between current per-pupil spending and an educationally adequate level of spending for the 2009-10 school year for the 412 school districts with an estimated adequacy gap⁴.
 - ◇ The average district-level adequacy gap was **\$1,559 per pupil**.
 - ◇ For the 25% of districts serving the largest percentage of poor students, the average adequacy gap was **\$2,416 per pupil**.
 - ◇ In contrast, the 25% of districts with the lowest percentage of students in poverty had an average adequacy gap of **\$442 per pupil**.

Assessing and addressing equity and adequacy

- » An adequate and equitable system would be one in which the **EQ ratio** would be zero for each district in the state—in other words, a system in which no district had an adequacy gap and district spending in every district was equal to the amount necessary to educate all students, given the characteristics of the students served.
- » The majority of school districts in Pennsylvania have a **negative EQ ratio** (e.g. EQ=-.10 implies that a district would have needed to spend 10 percent more per pupil to provide an adequate level of education for all of its students).

DISTRIBUTION OF EQ RATIO IN PENNSYLVANIA, 2009-10



Note: EQ is the ratio of a district's per pupil adequacy gap (surplus) to its actual per pupil spending during the 2009-10 school year. Districts spending more than would be necessary (e.g. adequacy surplus) to meet performance expectations and assure academic success for all of its students will have positive values of EQ; districts with adequacy gaps will have negative values of EQ. The mean (standard deviation) value of EQ for 491 (of 500) PA districts is $-.153$ (.154), suggesting that, on average, districts would have needed to spend 15 percent more per pupil to educate all students to meet performance expectations.

³ District-level revenue and expenditure data from the U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD); district-level achievement data from the Pennsylvania Department of Education (www.portal.state.pa.us/portal/server.pt/community/school_assessments/7442).

⁴ Current per-pupil spending includes district revenues from all sources (federal, state, local, and other).

Empirical evidence in support of efficiency of large urban districts

» The lowest-achieving and highest-poverty districts have the largest adequacy gap.

◇ For the 24 highest-poverty Pennsylvania districts excluding School District of Philadelphia (SDP), the **adequacy gap was \$2,608 on average**.

» These districts, on average, would have needed to spend approximately **20% more per pupil** to educate all students to meet performance expectations.

◇ For SDP, the **adequacy gap was \$5,478**, more than twice as large as the average district serving the same share of economically disadvantaged students.

» SDP would have needed to spend approximately **48% more per pupil** to educate all students to meet performance expectations.

◇ Districts like SDP, with large percentages of low-income students and English language learners, were disproportionately burdened.

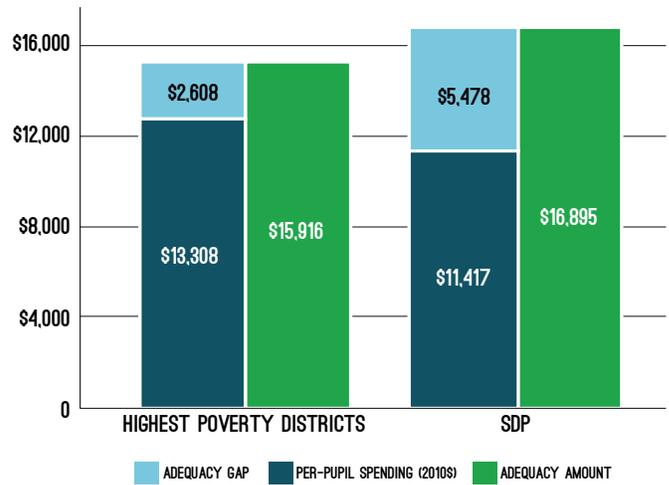
» However, SDP did more per pupil with the resources at its disposal than the average peer district with regard to student poverty and achievement. In terms of the actual achievement outcomes among peer districts, SDP students performed slightly better in math and ELA.

◇ For the 24 highest-poverty districts in Pennsylvania, actual education spending amounted to approximately \$1,000 per 3.8 proficiency points on the 2010 PSSA ELA and 4.3 proficiency points on the 2010 PSSA math exams.

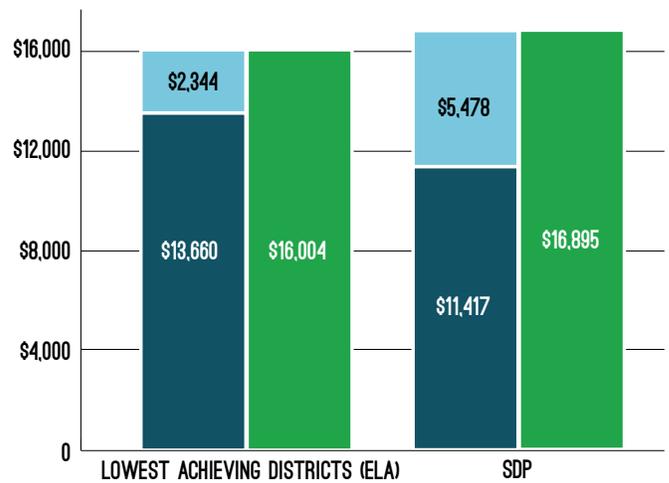
◇ For the SDP, actual education spending amounted to approximately \$1,000 per 4.4 and 4.9 proficiency points on the 2010 ELA and math PSSA exams, respectively

◇ The SDP generated approximately 15% greater achievement, per dollar, than similar high-poverty school districts.

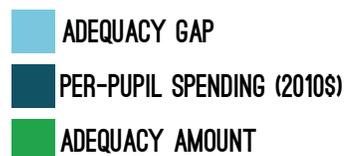
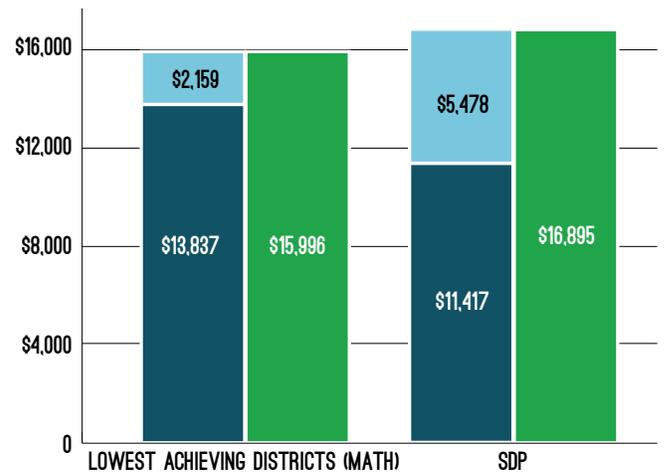
EXPENDITURES IN SDP AND PEER DISTRICTS, BY DISTRICT POVERTY



EXPENDITURES IN SDP AND PEER DISTRICTS, BY ELA ACHIEVEMENT



EXPENDITURES IN SDP AND PEER DISTRICTS, BY MATH ACHIEVEMENT



Comparison of School District of Philadelphia to peer districts in achievement and adequacy gap

	Math		English/Language Arts	
	SDP	Peer districts	SDP	Peer districts
PSSA proficient or advanced (2010)	56%	54%	50%	47%
Adequacy gap (per-pupil)	\$5,478	\$2,159	\$5,478	\$2,344

Notes. For Math, peer districts include the 23 lowest-performing districts on the 2010 PSSA math exam; for ELA, peer districts include the 23 lowest-performing districts on the 2010 PSSA ELA exam. Data are for the 2009-10 school year.

Implications

1. For the 412 school districts with estimated adequacy gaps in 2009-10, an additional \$3.55 billion would be required to account for differences in actual and adequate levels of spending.
2. The School District of Philadelphia (SDP) is doing more with less when compared to its peer high-poverty and low-achieving districts.
3. Evidence suggests that neither SDP nor its peer districts in terms of poverty and achievement are spending adequately to educate all of their students.
4. The EQ ratio provides a policy-relevant measure that enables the assessment of the extent of adequacy and equity in district spending. Because the EQ measure explicitly accounts for differences in a district's idiosyncratic costs of educating its students as well as real expenditures, the measure allows for both cross-sectional as well as longitudinal comparisons of adequacy and equity across districts within a state.

Ongoing Work

While this analysis provides an empirical response to the familiar claim that large urban districts are inefficient, more work is necessary to understand the impact of Pennsylvania's 2008 school finance reform effort. To do so, the authors are currently investigating how policy-induced changes in state revenue impact the distribution of educational revenues, educational spending, and academic achievement across Pennsylvania's school districts.

Questions? Find More Info

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