



*Resource disparities have figured prominently in discussions about closing achievement gaps. If a state such as Pennsylvania, whose disparities in per-pupil spending have been the subject of recent news reports, gets serious about funding schools equitably and adequately, will it see the hoped-for results? Its history of changing education budget formulas provides a case in point.*

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**by Rand Quinn and Matthew P. Steinberg**

## Can State Policy Deliver Equitable and Adequate Funding?

Sooner or later, talk of closing achievement gaps turns to education finance—specifically, fixing widespread disparities in school funding within individual states. After all, if districts don't have enough money, and if states don't distribute it fairly across districts, it hardly seems likely that this deep laceration in the flesh of the nation—one that tends to

follow racial and socioeconomic lines—will ever be stitched together.

In policyspeak, committing sufficient resources to educate all students to desired academic levels is referred to as *adequacy*. The fair distribution of those resources is called *equity*. More specifically, *vertical equity* occurs when resources are distributed in a way that accounts for the

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differential costs of educating all children—regardless of race, ethnicity, English-language learner status, disability, socioeconomic status, and geography. The difference between the resources that a district needs to educate all students and the amount the district actually spends is called an *adequacy gap*.

We often take for granted that the solution to educational inequity and inadequacy is the right combination of resources and political will. In other words, the assumption is that when policy elites shake loose funding for reform, the reform will actually play out as intended: that there will not only be enough money to adequately educate all students, but it will be distributed equitably across districts serving different student populations in different locations.

There is actually little evidence to support or debunk this assumption. The link between state-level reform and results is unclear, and much of this murkiness is due to the paucity of data. And yet current reports underscore the need for clarity: Pennsylvania is one state where continuing disparities in per-pupil spending have been highlighted.<sup>1</sup>

One way to get a clearer picture is to compare different policy climates over time. This is not a situation analysts can create in a laboratory. Fortunately, the span from 1991 to 2011 in Pennsylvania was a real-world petri dish for just such an analysis.

During those two decades, the state saw dramatically different policy climates. From 1991 to 2001, Pennsylvania was decidedly retrograde in its approach to education spending, eradicating its funding formula and essentially flatlining education funding despite rising enrollments. In the subsequent decade, the stars aligned in favor of reform: Districts received an infusion of resources, bolstered by policy and legislative climates supportive of improving adequacy and equity across districts. These two decades provide rich data for comparison. From these data, we generated estimates of adequate per-pupil spending for Pennsylvania's school districts in 2001 and 2011—years that capped very distinct decades in the state's education policy climate.

In making the comparison, we sought to uncover the extent to which differences across the two decades resulted in changes in

adequate per-pupil spending and improvements in how districts that serve different student populations spent their educational resources. But before delving into what we found, let's travel back in time to the dawning of the first decade of our comparison.

## Decade 1: Pennsylvania Education Funding in Retrograde

In 1992 the Pennsylvania General Assembly discontinued its use of a fixed formula that accounted for district wealth and enrollment to determine basic education funding.<sup>2</sup> Although various supplements and subsidies were gradually added over the remainder of the decade, the annual education budget process was conducted without strict guidelines, was based largely on the prior year's appropriation, and lacked any predictably consistent consideration for student needs.

This led to two important consequences: First, any inequity existing at the start of the decade was largely maintained until its end. And second, any changes in a district's characteristics (such as an increase in English-language learners) would not be accounted for when allocating state funding. As a result, state funding for schools in the decade following the dissolution of the funding formula was essentially flat: Inflation-adjusted state funding increased by 4.3 percent. During this same period, Pennsylvania's total student enrollment increased by 8.8 percent, while inflation-adjusted per-pupil spending increased by 4.5 percent.

During this period, equity lawsuits were filed by the Pennsylvania Association of Rural and Small Schools and on behalf of the city and School District of Philadelphia to ensure a transparent and predictable education appropriation process (*PARSS v. Casey* and *Marrero v. Commonwealth of Pennsylvania*, respectively). Both lawsuits were ultimately unsuccessful at ending the status quo state education funding process, as the court refused to adjudicate the issue. In dismissing *Marrero* in 1999, the State Supreme Court affirmed the lower court's argument that maintaining a "thorough and efficient system of public schools" was subject to legislative control, and that "it would be impossible to resolve the [petitioners'] claims without making an initial policy determination of a kind which is clearly legislative, and not judicial, discretion."<sup>3</sup>

The same year the court issued its ruling, Pennsylvania put in place an accountability system that called for annual standardized tests and provided specific objectives for student learning—a move that preceded a similar federal effort under No Child Left Behind and facilitated adequacy- and equity-based school finance reform in the state.

## Decade 2: The Stars Align

When Governor Edward Rendell began his first of two terms in office in 2003, he made school finance reform one of his central legislative priorities.<sup>4</sup> The governor's enacted budgets contributed to gradual increases in the state's basic education fund. The enacted budgets also included an accountability block grant program that channeled funds to poor districts. "Given the demands of the federal No Child Left Behind Law, to not make this investment would be unwise," Rendell proclaimed in his first state of the state address. "The accountability block grant represents an important down payment toward the funds necessary to help us meet these ambitious federal targets."<sup>5</sup>

Despite these efforts early in Rendell's tenure, the underlying process for school funding remained unchanged from 1992. By the 2006–07 school year, "over three-fourths of the total subsidy was based on the system from the early 1990s" that had led to the equity lawsuits.<sup>6</sup> Then, in 2007, the Pennsylvania State Board of Education was presented with a legislatively commissioned study calculating the "basic cost per pupil to provide an education that will permit a student to meet the State's academic standards and assessments."<sup>7</sup> The study used four recognized methods to generate measures of adequate and equitable funding: successful school districts, professional judgment, evidence-based measures, and cost-function analysis.<sup>8</sup> It determined that, for the 2005–06 school year, an additional \$4.38 billion in spending was necessary to meet student achievement targets (total expenditure for 2005–06 was approximately \$18.4 billion). In line with similar efforts across the nation, the study proposed a base cost (\$8,003 per student) plus cost weights and additional cost factors such as poverty, resulting in a per-student estimate of \$11,926 compared with actual per-student spending of \$9,512.

In 2008 the Pennsylvania school code was amended to include language mandating that education funding to districts be based largely on the formula the study offered.<sup>9</sup> In his annual budget address, Governor Rendell pledged to close half of the identified adequacy gap through a state allocation that would be phased in over six years.<sup>10</sup> Starting with the 2008–09 school year, an adequacy target was calculated for each school district that began with a base cost per student and took into account district characteristics, including the number of students in poverty, enrollment over time, number of English-language learners, and location. For districts with an adequacy gap, a state funding target—which amounted to a percentage of the adequacy target—was determined. The poorest districts and highest taxing districts had state funding targets closest to their calculated adequacy shortfalls. Each school district with an adequacy gap received a state share phase-in allocation equal to a percentage of its state funding target based on its tax effort.

The effort did not last. In 2011 the funding formula requirement to account for student and district characteristics was removed from the school code.<sup>11</sup>

Distinct from the preceding decade, state funding to districts from the 2001–02 school year to the 2010–11 school year steadily increased, with inflation-adjusted state funding increasing by 11 percent. During this period, Pennsylvania's total student enrollment decreased by 1.6 percent, while inflation-adjusted per-pupil spending increased by 22.7 percent. Clearly, education dollars flowed more freely in the second decade. But how did adequacy and equity fare?

## The Fate of Adequacy and Equity

To compare adequacy and equity across districts and time, we developed a measure, EQ, which is a ratio of a district's adequacy gap, as defined by Pennsylvania's costing-out study, to its actual spending (see box 1). Using this measure, we estimated that during the second decade, districts, on average, improved their level of adequate spending. On average, districts' adequacy gap per actual spending ratio (EQ), was cut by nearly 14 percentage points (a 45 percent improvement) when accounting for district characteristics likely correlated with differences in adequacy across the two periods.

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**Larger school districts did not realize adequacy improvements relative to smaller school districts, nor did urban districts make gains relative to suburban districts.**



### Box 1. Using the EQ Ratio to Calculate Adequacy and Equity for Your State

EQ is a ratio of a district’s per-pupil adequacy gap to its actual per-pupil spending.<sup>a</sup> We developed the measure to assess adequacy and equity in Pennsylvania over a two-decade span, but it could easily be used to gauge the adequacy and equity of funding formulas in other states.<sup>b</sup> Its value lies both in its simplicity and its ability to compare districts within a state (or schools within a district) over time. The EQ measure is represented as follows:

$$EQ_{it} = \frac{\text{Adequacy}_{it}}{\text{Expenditures}_{it}}$$

where  $Adequacy_{it}$  is the estimated per-pupil adequacy gap (surplus) for district  $i$  in school year  $t$ , and  $Expenditures_{it}$  is the actual per-pupil spending for district  $i$  in year  $t$ .

An adequate and equitable system is one in which the EQ ratio is zero for each district in the state—in other words, a system in which no district has an adequacy gap and district spending in every district is equal to the amount necessary to educate all students, given the characteristics of

the students a district serves. An adequate but inequitable system would be one in which the EQ ratio is greater than zero for all districts, but the EQ ratio would be different for at least one pair of districts. In such a system, each district has an adequacy surplus, but at least one district has a greater surplus-to-spending ratio than at least one other district. In an equitable but inadequate system, the EQ ratio would be less than zero for all districts (indicating an adequacy gap for each district), but the ratio between a district’s adequacy gap and its per-pupil spending would be equal across all districts. Put another way, while the total amount of education spending would be inadequate to meet the system’s performance goals, the distribution of those funds would be done equitably. We suspect that in no state at no point in time would one find a system that was fully equitable or adequate or both.<sup>c</sup> Rather, in every system, districts will likely have EQ ratios that vary and are greater than zero for some districts (reflecting an adequacy surplus) and less than zero for other districts (reflecting an adequacy gap).

<sup>a</sup>For details on EQ, see Matthew P. Steinberg and Rand Quinn, “A Tale of Two Decades: New Evidence on Adequacy and Equity in Pennsylvania,” *Journal of Education Finance* 40, no. 3 (2015): 273–98.

<sup>b</sup>We determined the adequacy gap for Pennsylvania using the formula from Augenblick, Palaich, and Associates. *Costing Out the Resources Needed to Meet Pennsylvania’s Public Education Goals* (Denver, 2007). Similar formulas are increasingly mandated by courts and commissioned by legislatures and thus are the basis for determining measures of adequate and equitable resources in many states.

<sup>c</sup>See, for example, US Department of Education, *For Each and Every Child—A Strategy for Education Equity and Excellence* (Washington, DC, 2013).

This works out to an average per-pupil adequacy improvement of \$1,491. Moreover, the average improvement in the second decade masks differences in the way districts with certain characteristics improved their relative standing. Districts with more low-achieving students, poor students, minority students, and special education students realized improvements compared with their more advantaged counterparts. For example, in 2001, relative to a district's actual per-pupil expenditures, the highest poverty districts would have needed to spend, on average, 46 percent more to adequately educate all of their students; the lowest poverty districts would have needed to spend 24 percent more, on average, to adequately educate all of their students. By 2011, those numbers shifted to 19 percent for the highest poverty districts and 8 percent for the lowest poverty districts. Rural districts also gained ground on suburban districts.

The situation wasn't all rosy, however. Inadequacies persisted into the second decade among certain types of districts. For instance, larger school districts did not realize adequacy improvements relative to smaller school districts, nor did urban districts make gains relative to suburban districts.

In short, the system overall improved, but improvements varied based on district type.

## Clear Skies Ahead?

The availability and use of educational resources have been shown to be factors that matter in improving outcomes and closing achievement gaps. We sought to determine whether a state environment conducive to producing adequate and equitable funding can actually do so.

The question has taken on added urgency, particularly for Pennsylvania. Recent evidence indicates that within-state spending disparities between districts serving the most and fewest students in poverty is most severe in Pennsylvania.<sup>12</sup> Our study of Pennsylvania's past efforts to grapple with this disparity can inform the current debate in this state and in others. In Pennsylvania, when the stars aligned to produce a favorable policy environment, the state did achieve a more adequate and equitable distribution of resources across districts. It wasn't a perfect system, and certain inequities persisted. But it was a step in the right direction. ■

<sup>1</sup>Natasha Ushomirsky and David Williams, *Funding Gaps 2015: Too Many States Still Spend Less on Educating Students Who Need the Most* (Washington, DC: Education Trust, 2015), [http://edtrust.org/wp-content/uploads/2014/09/FundingGaps2015\\_TheEducationTrust1.pdf](http://edtrust.org/wp-content/uploads/2014/09/FundingGaps2015_TheEducationTrust1.pdf); National Center for Education Statistics, Education Finance Statistics Center, "School District Current Expenditures per Pupil with and without Adjustments for Federal Revenues by Poverty and Race/Ethnicity Characteristics," table A-1, 2015, [http://nces.ed.gov/edfin/Fy11\\_12\\_tables.asp](http://nces.ed.gov/edfin/Fy11_12_tables.asp).

<sup>2</sup>Pennsylvania Public School Code, Act of July 9, 1992, P.L. 392, No. 85.

<sup>3</sup>Marrero v. Commonwealth of Pennsylvania, 739 A.2d 110 (1999).

<sup>4</sup>Authors' communication with Donna Cooper, former secretary of planning and policy under Pennsylvania Governor Rendell (September 15, 2014).

<sup>5</sup>E. G. Rendell, Fiscal Year 2004–2005 Budget Address of Governor Edward G. Rendell. Commonwealth of Pennsylvania, Legislative Journal, Session of 2004, 188th of the General Assembly, no. 6, p. 67 (2004, February 3).

<sup>6</sup>Janice Bissett and Arnold Hillman, *The History of School Funding in Pennsylvania: 1682–2013* (Harrisburg, PA: The Pennsylvania Association of Rural and Small Schools, Bissett and Hillman, 2013), 44.

<sup>7</sup>Pennsylvania Public School Code, Act of July 11, 2006, P.L. 1092, No. 114, §2259.3.

<sup>8</sup>The successful school district approach entails assessing the expenditures of the highest achieving and/or greatest gaining school districts and then making adjustments to account for variation in district and student characteristics across a state. The professional judgment approach involves seeking input on the resources necessary to produce desired levels of achievement from an expert panel of superintendents, teachers, school board members, and other educators. The evidence-based approach synthesizes extant research identifying strategies found to produce desired levels of student achievement and then estimating their associated costs. The cost function approach identifies the relationship between spending and achievement in a state to determine adequate spending by district and student characteristics. As might be expected, these various "costing-out" approaches are politically contested and branded by some as scientifically flawed. For a detailed review, see Eric A. Hanushek and Alfred A. Lindseth, *Schoolhouses, Courthouses, and Statehouses: Solving the Funding-Achievement Puzzle in America's Public Schools* (Princeton, NJ: Princeton University Press, 2009). However, these approaches are increasingly mandated by courts and commissioned by legislatures and thus are the basis for determining measures of adequate and equitable resources in many states.

<sup>9</sup>Pennsylvania Public School Code, Act of July 9, 2008, P.L. 846, No. 61, § 2502.48.

<sup>10</sup>E. G. Rendell, Fiscal Year 2008–2009 Budget Address of Governor Edward G. Rendell, Commonwealth of Pennsylvania, Legislative Journal, Session of 2008, 192nd of the General Assembly, No. 10, p. 334 (2008, February 5). Local school districts were expected to close the remaining half. Authors' communication with Ron Cowell, President, The Education Policy and Leadership Center (October 31, 2013).

<sup>11</sup>Pennsylvania Public School Code, Act of June 30, 2011, P.L. 112, No. 24.

<sup>12</sup>Ushomirsky and Williams, *Funding Gaps 2015*; NCES, "School District Current Expenditures per Pupil."

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