$$(\ln)\textbf{SCHOOL} = b_0 + b_1 State_i + b_2 LaborMarket_{ij} + b_3 CWI_{ij} + b_4 \textbf{FINANCE}_{ij} + b_5 PopulationDensity_{ij} + b_6 Enrollment_{ij} + b_7 \textbf{INDICATORS}_{ij} + b_8 Scale_{ij} + b_9 Poverty_{ij} + b_{10} SchlType_{ij} + b_{11} \textbf{DATABASE}_{ij} + e$$

ALBERT SHANKER INSTITUTE
RUTGERS Graduate School of Education

STATE SCHOOL FINANCE PROFILE
2016-17 SCHOOL YEAR

MASSACHUSETTS

Description: This profile of Massachusetts's public K-12 school finance system focuses on three core indicators from the School Finance Indicators Database: fiscal effort, adequacy, and progressivity. These three measures provide a succinct but informative overview of how much Massachusetts devotes to its public schools, the fairness of its system, and whether its funding levels are sufficient to meet common outcome goals.

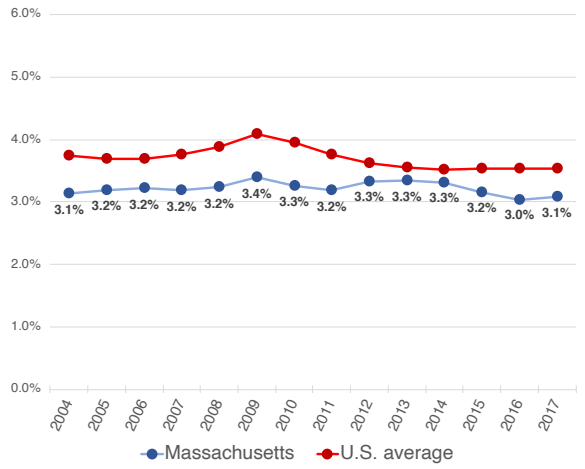
CONTEXTUAL STATS	MA	U.S.
Child (5-17yo) poverty rate (%)	12.7	17.3
Public school coverage (%)	88.9	87.8
Pct. revenue from state sources	38.7	47.1
Total enrollment (U.S. rank)	964,514 (17)	

FISCAL EFFORT

Fiscal Effort is the amount a state spends directly on K-12 education as a percentage of its total "economic capacity," which we measure here in terms of Gross State Product (GSP).

Massachusetts effort	3.08 %
U.S. average	3.53 %

- In FY 2017, Massachusetts spent 3.08% of its economic capacity directly on K-12 education.
- This was 0.46 percentage points lower than the unweighted national average of 3.53%.
- Massachusetts's effort level ranks #37 in the nation (out of 50).



Effort trends, 2004-17

- Effort in MA increased in the years before the "Great Recession's" main impact on K-12 funding, going from 3.13% in 2004 to 3.39% in 2009.

Net change by period (% pts.)

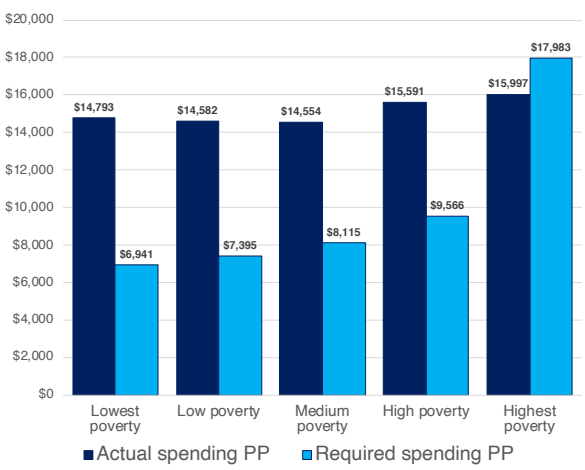
Period	MA	U.S.
2004-2009	0.26	0.35
2009-2017	-0.31	-0.56
2004-2017	-0.05	-0.21

- This was followed by a decrease of 0.31 percentage points between 2009 and 2017.
- MA's effort was 0.05 percentage points lower in 2017 than in 2004.

ADEQUACY

Adequacy compares actual state and local per-pupil (PP) spending in each state to the estimated amount required to achieve national average test scores. These comparisons are presented, by district poverty quintile, in the center graph (in $), and in the right panel table (as percentage differences).

- Spending in Massachusetts's highest poverty districts is $1,985 PP lower than the estimated adequate level ($17,983), a difference of -11.0%.
- Districts in Massachusetts's second highest poverty quintile receive 63.0% more than the estimated adequate level.



Adequacy: MA vs. US average

Percent above / below adequate

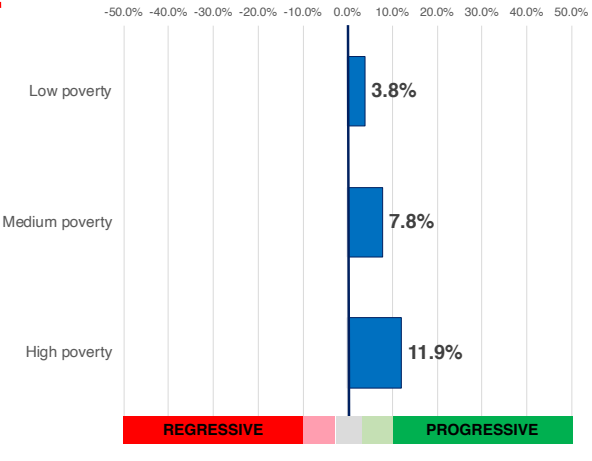
Poverty quintile	MA	U.S.
Lowest poverty	113.1	23.2
Low poverty	97.2	6.2
Medium poverty	79.3	-6.3
High poverty	63.0	-22.1
Highest poverty	-11.0	-28.2

- In its highest poverty districts, Massachusetts's spending is 11.0% below the adequate level, compared with a -28.2% U.S. average.
- Adequacy in Massachusetts's highest poverty districts ranks #12 in the nation (out of 50).

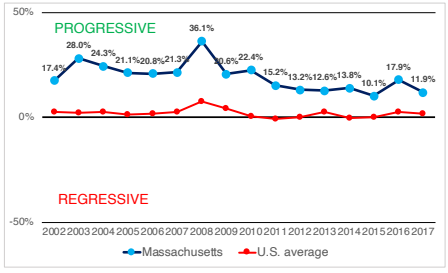
PROGRESSIVITY

Progressivity is the degree to which states provide greater resources to districts serving higher need students. The center graph is the percentage difference in adjusted state and local revenue between: 1) low (10%), medium (20%), and high poverty (30%) districts and; 2) zero poverty districts.

- School funding in Massachusetts is progressive.
- High poverty districts receive 11.9% more revenue than zero poverty districts (this level of progressivity ranks #9 in the nation [out of 51]).



Progressivity trend (30/0), 2002-17



- MA's funding was more regressive in 2017 (11.9%) vs. 2002 (17.4%).
- Since 2002, funding in the typical state (red line) is generally neither progressive nor regressive.

$$(\ln)\text{SCHOOL} = b_0 + b_1\text{State}_i + b_2\text{LaborMarket}_{ij} + b_3\text{CWI}_{ij} + b_4\text{FINANCE}_{ij} + b_5\text{PopulationDensity}_{ij} + b_6\text{Enrollment}_{ij} + b_7\text{INDICATORS}_{ij} + b_8\text{Scale}_{ij} + b_9\text{Poverty}_{ij} + b_{10}\text{SchlType}_{ij} + b_{11}\text{DATABASE}_{ij} + e$$

NOTES ON DATA AND MEASURES

State School Finance Profiles 2016-17

General

The data in this state profile are from the **School Finance Indicators Database** (SFID), a collection of public K-12 school finance and resource allocation indicators published annually by researchers from the Albert Shanker Institute and the Rutgers University Graduate School of Education. The purpose of the SFID, which draws on data from a dozen sources, is to provide sophisticated yet accessible school finance data and analysis to policymakers, journalists, parents, and the public. The primary product of the SFID is the State Indicators Database (SID), a state-level dataset containing roughly 130 variables. This profile focuses on three types of measures included in the SID: **fiscal effort**, **adequacy**, and **progressivity**. The full SID dataset, along with full documentation and other SFID tools and reports, are freely available to download at: schoolfinancedata.org. Some general notes about the profiles, followed by descriptions and notes pertaining to the three types of measures presented in this profile:

- The years in the profile refer either to the fiscal year or to the spring semester of the school year (e.g., 2017 is 2016-17). *Note that the latest data in this profile (2016-17) predate the coronavirus pandemic by 3-4 years.*
- Due to rounding, changes and differences published in this profile may vary slightly from users' manual calculations.
- All poverty data used in the SFID and presented in these profiles is from the U.S. Census Bureau.
- The total number of states assigned rankings varies slightly by measure (as indicated), as not all measures are available in D.C. and Hawaii.
- In order to facilitate replication or further analysis, the notes below include the names of SID variables used in each section of this profile.
- **Non-SFID data sources** ("Contextual Stats" table): 1) Child (5-17 years) poverty (2017) from the U.S. Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program; 2) see SFID documentation for sources used for coverage estimates; 3) percent of total (FY 2017) revenue from state sources from the U.S. Census Bureau Annual Survey of School System Finances; 4) total state public elementary and secondary school enrollment (Fall 2016) from the *2018 Digest of Education Statistics*, published by the National Center for Education Statistics.

Fiscal effort

Fiscal effort indicates how much of a state's total resources or capacity are spent directly on K-12 schools. It is calculated in the SFID by dividing total state and local expenditures (direct to education) by either Gross State Product (GSP) or aggregate state income. Both of these denominators are measures of a state's economic capacity; in the simplest terms, how much "money" does a state have? In this sense, effort measures how much each state spends as a percentage of how much it *might* spend. The former denominator (GSP) is used in these profiles, but the two are highly correlated, and the income-based effort indicator is available in the SID. Bear in mind that high capacity states with larger economies, such as New York and California, can put forth lower effort than lower capacity states, such as Mississippi and Alabama, but still produce the same revenue.

- U.S. average effort is unweighted and can be interpreted as effort in the typical state in a given year.
- The table in the right panel summarizes the graph in the center panel, with a focus on effort trends before and after the "Great Recession" of the late 2000s (comparing this state with concurrent changes in the U.S. average). 2009 is the "cutpoint" in the table because effort in the typical state was increasing until that year, and subsequently declined. Trends, however, vary by state, as is evident in some states' profiles.
- Note that even seemingly small changes in effort levels can translate into large changes in spending, particularly in high capacity states.
- **SID variables used**: *effort*; *year*

Adequacy

Adequacy is typically defined as the extent to which the amount of funding for schools is sufficient for students to reach a given level of educational outcomes. The SFID's primary measure of adequacy compares, by poverty quintile, a state's actual current state and local spending levels to estimates from models of how much that state would have to spend in order to achieve national average test scores in the prior year. The 2016-17 estimates in this profile are from the National Education Cost Model (NECM), which is part of the SFID. The NECM calculates required spending based on factors such as districts' labor costs, structural characteristics (e.g., size), and the students they serve. For more information about the NECM, see the SFID documentation and annual report.

- The district poverty categories (e.g., lowest, low, medium, high, highest) are defined in terms of quintiles (i.e., 20 percentile increments).
- The U.S. average adequacy percentages (the difference between actual and required spending) in the right panel table are calculated using averages of actual and required spending across all states, by poverty quintile, weighted by enrollment. Note, however, that the NECM defines poverty quintiles state-by-state, which means that the U.S. averages should be interpreted as an approximate snapshot of the national situation.
- **SID variables used** (each of these three sets of variables include five separate variables [*q1-q5*], one for each poverty quintile): *necm_predcost_q1—necm_predcost_q5*; *necm_ppcstot_q1—necm_ppcstot_q5*; *necm_enroll_q1—necm_enroll_q5*

Progressivity

A progressive school finance system is one in which districts serving larger shares of disadvantaged students (all else equal) are allocated more resources than their counterparts serving lower proportions of these students. In this profile, progressivity is calculated by comparing adjusted state and local revenue between districts with (U.S. Census) child poverty rates of zero to those with higher poverty rates (i.e., 10, 20, and 30 percent). In addition to child poverty, revenue is also adjusted for labor market costs, population density, and district size, all of which affect the value of the education dollar. For more details on the calculation of adjusted revenue, as well as alternative approaches to measuring progressivity, see the SFID documentation and annual report.

- In the left panel (first bullet), the progressivity of each state's system is classified based on the percentage difference in adjusted state and local revenue between high (30%) and zero percent poverty districts (this is also the figure presented in the bottom bar of the center panel graph). The designations are as follows: progressive (revenue in high poverty districts is at least 10% greater than that in zero poverty districts); moderately progressive (between +3% and +10%); neither progressive nor regressive (within three percentage points of zero); moderately regressive (between -3% and -10%); regressive (lower than -10%).
- In the graph in the center panel, "low poverty" districts are those with 10 percent poverty, "medium poverty" districts have 20 percent poverty, and "high poverty" districts have 30 percent poverty. Once again, the figures in the graph are percentage differences in adjusted state and local revenue between low/medium/high poverty districts and zero poverty districts.
- The graph in the right panel presents the trend in percentage difference between high (30%) and zero poverty districts, both for this state and on average across the U.S. The U.S. averages are unweighted and can be interpreted as 30/0 progressivity in the typical state in a given year.
- **SID variables used**: *predicted_slocrev0_*; *predicted_slocrev10_*; *predicted_slocrev20_*; *predicted_slocrev30_*; *year*