



Hidden Education Funding Cuts

How Growing Teacher Pension Debt Stresses
America's K-12 Education Budgets

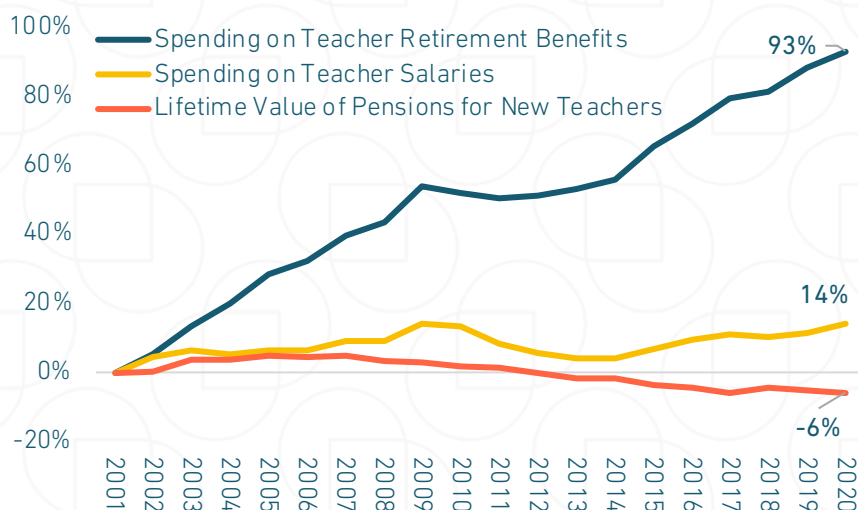
March 2023

ANTHONY RANDAZZO AND JONATHAN MOODY

KEY FINDINGS & INSIGHTS

- \$816 Billion** — The total funding shortfall for teacher and public school employee retirement systems in 2022. In 2001, the shortfall was just \$86 billion.
 - In 2001, teacher retirement systems were 93% funded on average. In 2022, they are 76% funded.
- \$7 out of every \$10** — \$43.8 billion of the \$63.7 billion – or approximately \$7 out of every \$10 – in 2021 teacher retirement costs went pension debt payments.
 - The 69% share of retirement costs going to pension debt in 2021 is up from 17% in 2001. That amounts to a 414% increase.
- 322%** — The percentage increase in the share of total state and local K–12 expenditures that went toward teacher retirement costs in 2020, based on the most recent data available for the combined total (and before the effects of the pandemic).
 - The amount spent on teacher retirement costs in 2020 (5.5%) has more than tripled since 2001 (when just 1.3% of total state and local expenditures was used) and is almost double the share from 2009 (3.2%).
 - This dramatic growth rate is, in part, due to increases in teacher retirement plan costs (driven by pension debt) which are up from \$21.7 billion in 2001, to \$34.2 billion in 2009, to \$65.9 billion in 2020.
 - The per student increase in teacher retirement costs has similarly grown over the same years from \$457 per pupil in 2001 to \$692 per pupil in 2009 to \$1,336 per pupil in 2020.
- 15.65%** — The share of state-provided K–12 resources that has wound up going toward teacher retirement costs, as of 2021. This is more than double the amount that was spent out of state-provided K–12 dollars for teacher retirement costs in 2001 and is a nearly 50% increase since 2009.
- 33% versus 220%** — The difference in the growth of state and local K–12 spending (33%), and the growth in teacher retirement spending (220%) between 2002 and 2020, even after adjusting for inflation. The growth rate in K–12 budgets is just not keeping pace with the growing cost of teacher retirement benefits.
- \$100,000** — The decline in average value of lifetime retirement benefits for new teachers. Hidden education funding cuts are increasing in part because of growing teacher retirement plan costs — but the value of retirement benefits for new teachers is declining, demonstrating the driver of increased pension debt is not generous benefits.

The Cost of Teacher Benefits Has Been Increasing While the Value of Benefits Decline and Salaries Are Stagnant



STATES WITH 10 LARGEST CHANGES IN HIDDEN CUTS SINCE 2002

STATE	ABSOLUTE CHANGE	PERCENTAGE CHANGE
Illinois	10.56%	313.4%
Pennsylvania	9.33%	1392.5%
Michigan	5.98%	235.4%
Connecticut	5.93%	229.8%
New Jersey	5.37%	1678.1%
Hawaii	5.12%	297.7%
Kentucky	4.33%	108.8%
New York	4.27%	361.9%
Alaska	4.09%	176.3%
Rhode Island	3.82%	110.7%

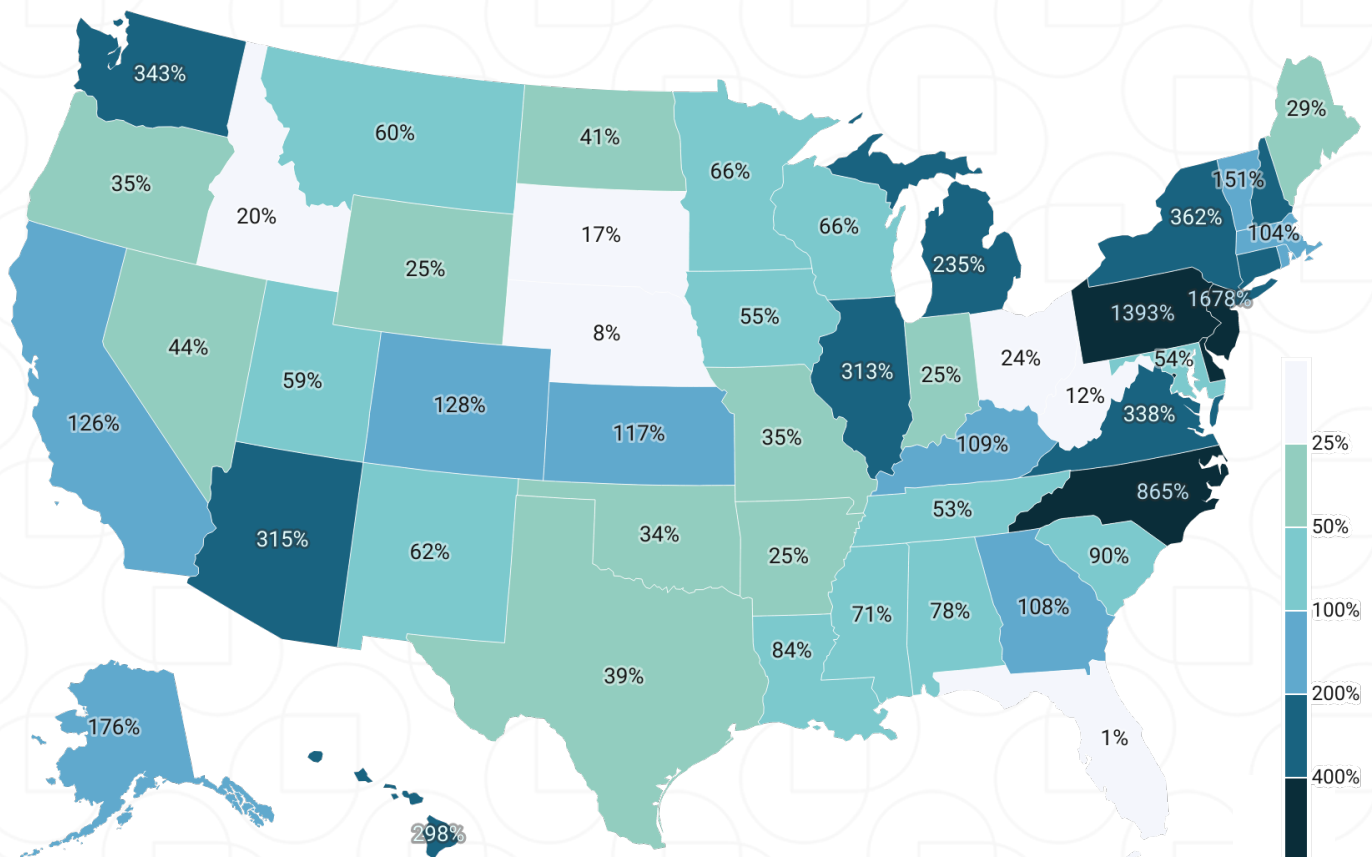
STATES WITH 10 SMALLEST CHANGES IN HIDDEN CUTS SINCE 2002

STATE	ABSOLUTE CHANGE	PERCENTAGE CHANGE
North Dakota	0.85%	40.9%
Tennessee	0.83%	52.5%
Idaho	0.75%	20.5%
Wisconsin	0.74%	66.1%
Ohio	0.65%	23.9%
Wyoming	0.57%	25.1%
South Dakota	0.29%	16.9%
Delaware	0.24%	600%
Nebraska	0.19%	7.8%
Florida	0.02%	0.9%

Source: Census Bureau and Equable Institute analysis of public plan valuation reports and ACFRs. Note: State specific Census data measured from 2001 is not always complete, therefore in this paper any references to a change in hidden cuts for a specific state are measured as of 2002.

Where in the United States are the growth rate trends in hidden education funding cuts the most and least concerning?

GROWTH RATE IN TEACHER RETIREMENT COSTS AS A SHARE OF STATE AND LOCAL K-12 FUNDING, 2002-20



For a full list of hidden education funding cuts by percentage growth, see table 3 on page 25.

TABLE OF CONTENTS

Part 1: Understanding America’s Hidden Education Funding Cuts	4
Key Terms in This Report	9
Part 2: Hidden Cuts to State Education Spending	10
Part 3: Hidden Cuts to Local Education Spending.....	15
Part 4: State Variance in Hidden Education Funding Cuts	22
Part 5: Questions, Effects, and Conclusions	30
Appendix A: Effect of Federal Covid Relief Dollars.....	37
Appendix B: Methodology	39
Appendix C: Baseline Education and Retirement Expenditures	40
Appendix D: Heatmaps Showing the Percentage Change in Hidden Funding Cuts	44
Appendix E: California Special Note.....	46
Appendix F: 50 State Statistics and Details for Hidden State & Local Funding Cuts	48

Part 1: Understanding America's Hidden Education Funding Cuts

When the Texas legislature approved an increase in contribution rates to the Teachers Retirement System (TRS) in the spring of 2013, they didn't envision that doing so would eventually make education harder in a post-pandemic climate a decade later. However, over the last several years state and local spending on K–12 education in Texas has not always kept pace with the growing cost of benefits for teachers and public school employees. The result has been fewer resources for teachers and schools where the most marginal changes to K–12 funds can have meaningful effects on programs and services for students.

"Post Covid, our greatest challenge is technology," says Sunset High School's 10th grade principal, Yuri Lewis. "All of our students have laptops; however, each is different... and we don't have the resources to support teachers with that varying technology." Josue Tamarez Torres, Dallas Independent School District's 2018 Teacher of the Year echoes this sentiment, noting that a lack of resources has meant bigger class sizes, a shortage of counselors and math coaches, "libraries without librarians," and even some students going an entire year with just a rotating cast of substitute teachers.

Even with an influx of federal Covid relief dollars between 2020 and 2022, challenges have remained in part because short-term infusions of cash don't guarantee funding for the long-term programs and investments schools need most to support students and educators.

Josue, who also serves as the Chair of the Teacher Vacancy Task Force for the Texas Education Agency, argues, "It is not necessarily a recruiting problem we're having, it is a retention problem. We're not retaining teachers, they come in and they leave the first or second year because they are overwhelmed. When I started teaching in 2011, we had aids for the classroom and coaching support when we were struggling, but many of those positions are gone because of a lack of funding... so that's why you see teachers are burnt-out."

These staffing and resource challenges are not only because of growing retirement costs. But pension debt is making things worse. After the Great Recession, the annual share of state spending on K–12 that ultimately went to TRS grew from 7.4% in 2009 to 12.9% in 2021 (the most recent year of complete data).¹

In dollar terms, K–12 retirement costs for Texas TRS have grown from \$1.85 billion in 2009 to \$3.64 billion in 2021 — and they are scheduled to increase considerably in the coming years. Legislation in 2019 created a ramp up of contribution rates that will take state payments from 6.8% up to 8.25% of payroll and district payments from 1.5% to 2% of payroll by 2025.

The reason for these contribution rate increases? Texas TRS has accumulated roughly \$60 billion in unfunded liabilities as of 2022 — known as "pension debt." Part of this shortfall has been caused by the legislature historically not paying its pension bills every year. Another part of it is due to investment performance being less than anticipated by TRS trustees.

With that much pension debt, the responsible policy has been to increase contributions into Texas TRS and ensure retired teachers have a secure retirement. However, the fundamental challenge is that the state hasn't adapted its education spending with respect to these pension cost changes. While no legislator might have thought they were trading off education funding for pension debt funding, that is what has happened in practice.

"The achievement gap that grew during the pandemic is becoming a bit wider now because we don't have enough teachers," says Josue. That could be addressed with additional K–12 resources that are otherwise being shaved away by steadily increasing retirement costs. And Yuri adds that "district leaders need to speak about the effects of growing pension costs because we're losing the people that want to be impactful educators."

Teacher retirement costs growing faster than K–12 spending has created a [hidden education funding cut](#) in Texas that's contributing to reduced student services and teacher supports. Today's learning loss for certain students may not have been as severe if the state had ensured K–12 funding levels remained at least constant in the face of growing pension debt costs.

¹ In Texas, the state pays nearly all of the costs of teacher retirement benefits directly, so the most appropriate measurement is retirement costs as a share of state own-source spending. When measuring the share of state plus local K–12 spending consumed by retirement costs, the increase is from 2.6% to 3.5% by 2020 (the most recent year of complete state and local K–12 data).

1.1 SUMMARY FINDINGS

School district spending on teacher retirement costs is typically a generic line item, and rarely can we draw a direct line between increased pension costs and a specific child's learning loss, concerning teacher retention numbers, or the lack of mental health resources in schools.² But we don't even have to have such an explicit link to know that growing teacher benefit costs are putting negative pressure on K–12 budgets.



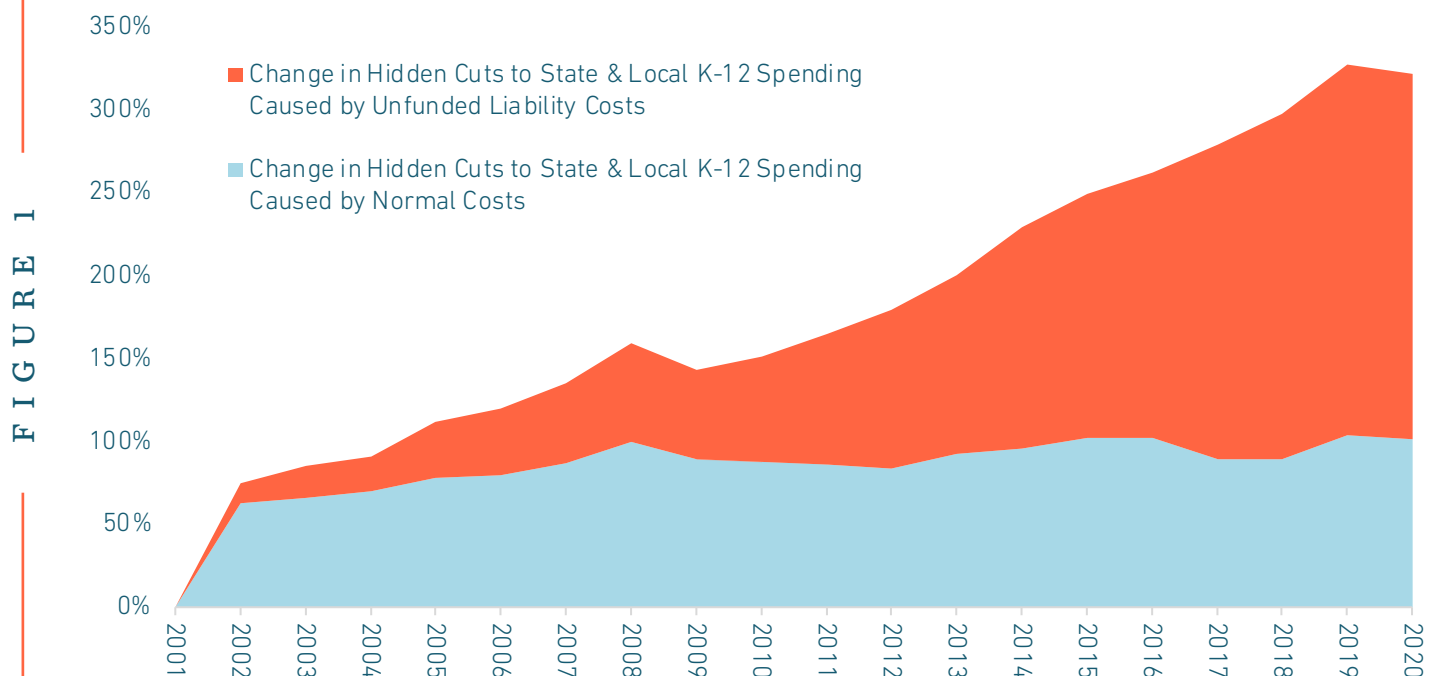
Total teacher retirement costs as a share of state and local K–12 spending has increased 322% since 2001.

Since money is fungible, we know that growing costs of benefits means less in resources for teacher salaries, educational programs, and necessary facilities and technology — unless, of course, K–12 budgets grow faster than pension costs. Nationally, and in most states, pension costs have been growing faster than K–12 education spending over the past two decades. The questions are: How bad of a problem are these hidden education funding cuts? Where are they a bigger problem than elsewhere? And are they growing?

Figure 1 provides a first look at the change in hidden education funding cuts. The chart shows a 322% growth in total teacher retirement costs as a share of state and local K–12 spending since 2001. The chart also shows how these retirement costs are split between *normal* costs (about a third) and *debt* costs (about two-thirds).

RETIREMENT COSTS AS A SHARE OF STATE & LOCAL K–12 SPENDING ARE GROWING, DRIVEN PRIMARILY BY TEACHER PENSION DEBT

The Sources of Growth in Teacher Retirement Plan Contributions as a Share of K–12 Spending, 2001–20



Source: Equable Institute analysis of public plan valuation reports and ACFRs; combined state and local funding data are drawn from Census Bureau Annual Survey of State and Local Government Finances. Expenditures figures are adjusted for inflation to 2021 dollars. "Employer contributions" includes both state and employer spending on pensions, guaranteed return plans, defined contribution plans, and hybrid plans.

² Bloomberg, "Why Teachers Are Quitting," September 2022; Chalkbeat, "School psychologist, counselor hiring lags nationwide," November 2022

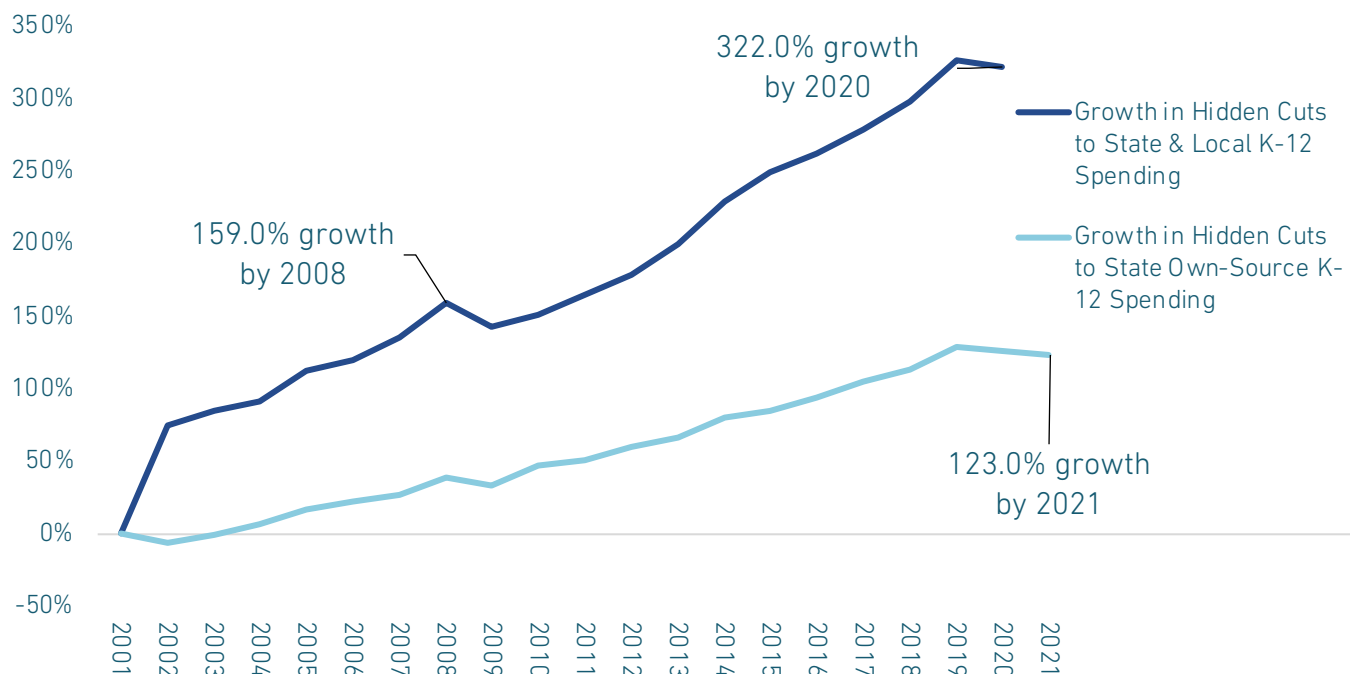
Figure 2 provides another perspective on how to think about “hidden education funding cuts.” The purple line shows the same total growth rate since 2001 in the share of state and local K–12 spending going to teacher retirement costs as is demonstrated in Figure 1.³

States vary in whether the state or school districts carry the majority of costs for teacher retirement plans. But, most teacher retirement costs are managed at the state level. So, we can also measure the same retirement costs as a share of state own-source K–12 spending. And in Figure 2 we see a 123% growth rate between 2001 and 2021 in hidden cuts to what states provide for K–12 funding, shown in the light blue line.⁴

FIGURE 2

NATIONAL PUBLIC SCHOOL RETIREMENT COSTS ARE CONSUMING A GREATER SHARE OF STATE & LOCAL K–12 EDUCATION SPENDING OVER TIME

Growth in Actual State Retirement Plan Contributions as a Share of Total K–12 Spending, 2001–21



Source: Equable Institute analysis of public plan valuation reports and ACFRs, combined state and local funding data are drawn from Census Bureau's Annual Survey of State and Local Government Finance, and state own-source funding data are from NASBO's annual state expenditure reports. These figures are based on expenditures data adjusted for inflation to 2021 dollars. "Employer contributions" includes both state and employer spending on pensions, guaranteed return plans, defined contribution plans, and hybrid plans.

These growth rates reflect considerable increases in the amount of retirement costs that both states and school districts are paying today relative to two decades ago. Back in 2001, the share of state own-source K–12 spending that went to retirement costs was 7% on average for the country as a whole. But that hidden cut has more than doubled to 15.7% in 2021. And we break down that 123% growth trend in Part 2 of this paper.

The absolute hidden cut to state and local education spending has quadrupled from 1.3% in 2001 to 5.5% in 2020 (the most recent year of available data). We detail the elements of that 322% growth trend in Part 3.

³ This is based on Census Bureau data, for which 2020 is the most recent year available.

⁴ This is based on National Association of State Budget Officers data, for which 2021 is the most recent year available.

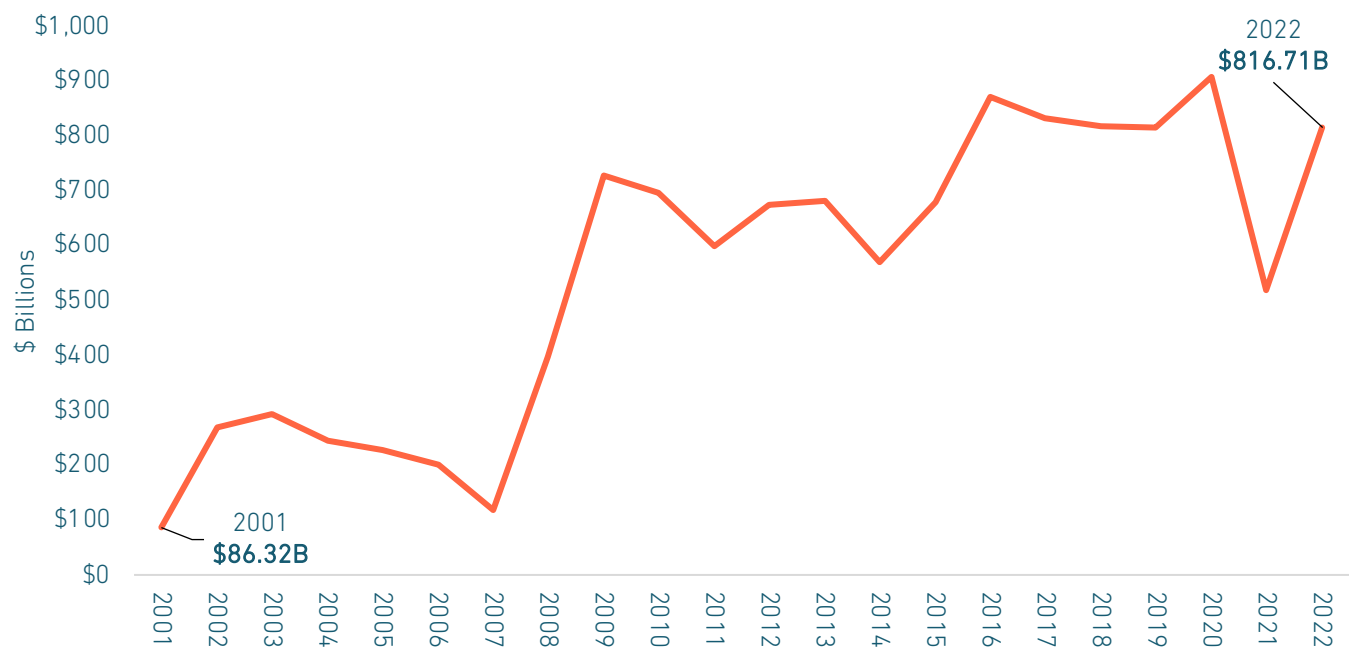
1.2 PENSION DEBT COSTS ARE WHAT'S CAUSING RETIREMENT COST GROWTH

The primary reason for the *growth in these hidden cuts* is that retirement costs are growing at a much faster rate than K–12 spending generally. Using Census Bureau data, total state and local K–12 spending has grown 33% since 2001, adjusted for inflation. By contrast, spending on retirement costs for teachers and school employees has grown 220%.

The main reason that *retirement costs* are rising is a growth in unfunded liabilities — colloquially known as pension debt. Between 2001 and 2022, teacher pension plans went from having effectively no pension debt to around \$816 billion, shown in Figure 3.⁵ This, in turn, has required an increase in contributions to pay down that pension debt. Formally these are called unfunded liability amortization payments, but it is easier to think of them as *pension debt costs*.

TEACHER PENSION UNFUNDED LIABILITY HISTORY

Unfunded Liabilities for Defined Benefit Plans Covering Teachers and Public School Employees, 2001–22



Source: Equable Institute analysis of public plan valuation reports and ACFRs.

Specifically, between 2001 and 2021 total retirement costs grew from \$21.7 billion to \$63.7 billion (193% increase). The portion of that money that was required to pay down pension debt increased from \$3.6 billion in 2001 (a roughly 16.6% share) to \$43.8 billion in 2021 (a 68.8% share).⁶ (See Appendix C for a visual.)

The simple reality is this: A primary driver of **hidden education funding cuts** is teacher pension debt, which has caused increases to overall teacher retirement spending. The growth in K–12 budgets is just not keeping pace with these growing pension debt costs.

To be clear, the problem is not pension plans themselves, it is the pension debt. The problem is the way that pension plans have been managed. To a broader extent, the problem is the way that state and local governments have managed their budgets and tax policies without appropriate regard to these pension debt costs.

⁵ Equable Institute, "State of Pensions 2022." Note that this figure is for teacher plans and public school employee plans. The portion that is just for teachers is estimated to be around \$600 billion of that \$816 billion, but states do not always breakout and report their K–12 teacher data separate from public school employees.

⁶ 2021 is the most recent year for complete teacher retirement actual contribution data.

1 . 3 FOCUS ON THE TRENDLINES

There are various ideas about how to define teacher pension “crowd out” — a general term that is often deployed when talking about the relationship between pension costs and K–12 budgets.⁷ Reasonable minds can quibble over what the appropriate amount of spending on teacher retirement benefits should be; we know that it should be more than 0% and less than 100%. However, we argue that it doesn’t really matter whether retirement costs are eating up 5%, 10%, or 20% of education budgets, so long as the amount being spent is acceptable to all stakeholders and is a stable amount of money.

That means what is important is the trendline — as in, the trend over time. What is the trend in retirement costs as a share of K–12 spending? Where was it before and where is it going? Right now, the trendline is going in the wrong direction for an overwhelming majority of states.

If retirement costs are steadily growing as a share of K–12 spending, that is a warning sign. It might be a warning that the total amount of spending on pension debt will be unsustainable in the near future. It might be a warning that there is a problem today — both for teachers (because salaries and wages are flat relative to benefit costs, while retirement benefit values aren’t increasing) and for students and their learning potential, particularly those with higher needs.

1 . 4 EFFECT OF COVID RELIEF DOLLARS

There were three special Congressional infusions of cash into state and local education budgets as a response to the Covid-19 pandemic between March 2020 and March 2021.⁸ In total, these relief/rescue bills allocated nearly \$190 billion to the Elementary and Secondary School Emergency Relief Fund, known as ESSER.⁹

Generally, these dollars have not had a meaningful influence on the hidden education funding cuts analyzed in this paper. The main reason is that most of the teacher retirement costs and school budget dollars analyzed in this paper were determined before the pandemic hit. The teacher retirement expenses for the 2020–21 school year would not have been meaningfully influenced by any investment losses related to the financial crisis due to the nature of the budget cycles that determine contribution rates. So, the retirement costs for 2020 and 2021 data are also largely unaffected by the pandemic.

Federal dollars also are frequently line-itemed and provided for specific, non-payroll expenses. While future hidden education funding cuts analysis will need to take particular care to factor in ESSER spending, they are not relevant for this report. For a longer discussion of this topic and a chart showing the distribution of how much funding for K–12 education comes from federal, state, or local sources, see Appendix A.

Tax collection policy also varies considerably from state to state. In certain states, the majority of money provided to school districts is provided by the state, while in other states the opposite is true. In 2020, in some states, like Delaware and Utah, around half of K–12 funding came from state resources, while in Illinois and New York, local governments provided 80% or more of resources. To see data on the percentage of non-federal K–12 spending that were provided by state or local governments, see Appendix C.

⁷ Numerous papers such as “[The Big Squeeze](#)” by Pivot Learning and analysis from The Hechinger Report called “[How Rising Teacher Pension Costs Hurt School Districts](#)” talk about crowd out as incremental growth in K–12 expenditures going to cover retirement costs. By contrast NPCERS’ paper “[Peaceful Coexistences](#)” frames retirement costs as “such a small part of state and local revenues that they cannot possibly crowd out a major state and local function, namely public education.” Instead, retirement costs create a “squeeze on state and local budgets” NPCERS says, “because state and local revenue systems are out of sync with the economy.” In practice, these various papers are talking about the same thing. Disagreement about the term “crowd out” in these context is a semantic matter that is wrapped up in a debate over to what degree tax policies and/or the management of retirement systems themselves should carry the blame for retirement costs growing as a share of education expenditures.

⁸ The first bill created an Elementary and Secondary School Emergency Relief Fund (now known as [ESSER 1](#)), a portion of the second stimulus/relief bill in December 2020 was known as [ESSER 2](#), and a portion of the third “rescue” bill is referred to as [ARP ESSER](#).

⁹ National Association of State Budget Officers (NASBO), “[State Expenditure Report: Fiscal Years 2020-2022](#).”

Key Terms in This Report

Retirement Costs: Expenditures by K–12 employers (school districts) that participate in a state sponsored or municipally sponsored retirement system + any contributions made by the state as a non-employer contributor on behalf of those employers.

Normal Cost: This is the annual cost for retirement benefits earned that same year. For pension plans, if this money is fully provided and if it earns all expected investment returns, then it should be roughly enough to pay for all pension benefits earned by workers in a given year. For defined contribution plans, these are the regular required employer contributions.

Pension Debt Costs: This is the informal name for unfunded liability amortization payments. This is the amount of money that needs to be paid annually to eliminate unfunded liabilities.

Retirement Plan Types Included: For retirement benefit data used in this report, we include all “employer” contributions to primary retirement plans used by public schools. This includes, pension, defined contribution, guaranteed return, and hybrid plans. We do not include supplemental retirement plans nor contributions “picked up” on behalf of employees to cover required member contributions.

Retirement Systems Covered: We included data for all public retirement plans that cover K–12 teachers.¹⁰ Throughout this paper we occasionally use shorthand like “teacher retirement costs” recognizing that, while retirement plans that offer benefits to more than just K–12 teachers are included, those plans have been adjusted to reflect only the teacher

Unfunded Liability: This is the shortfall in money that a pension fund should have on hand to pay all future promised benefits. Think of this as pension debt owed to retirement systems to pay promised pension benefits. In technical terms, this refers to the Unfunded Actuarially Accrued Liability.

K–12 Education Spending: This is all expenditures each year either provided by the state on its own, or by a combination of the state and local governments. We exclude federal dollars from this analysis. We also use the terms “spending,” “expenditures,” and “funding” interchangeably.

Own-Source K–12 Spending: This is money spent on primary education using state resources only, excluding any federal funding, local resources, or expenditures on higher education. We use National Association of Budget Officers expenditure reports for data on state own-source K–12 spending.

State & Local K–12 Spending: This is money spent on primary education using state and local community resources, excluding any federal funding or expenditures on higher education. We use data from both the Census Bureau’s Annual Surveys of State and Local Government Finances and Public Elementary and Secondary Education Finance Data for our measures of combined state and local K–12 spending.

For a complete methodology of plans covered and data used, see Appendix B

¹⁰ In many instances these plans also include non-instructional public school employees or even other types of public employees that work outside of education. In those cases, we have selected retirement contribution data that are only related to costs for K–12 teachers (see our methodology for more details). This prevents us from overstating teacher retirement costs that might happen by including costs that school districts would never be paying. This also means we are slightly understating school district costs because we do not include expenditures for non-instructional employees. The primary reason is that while these are clearly defined in certain states, in other states their costs are more completely buried in state employee retirement plans. While a future version of this report may develop a way to separate these costs, because we do not have a definitive and comprehensive method, we’ve taken a more conservative approach with our data.

Part 2: Hidden Cuts to State Education Spending

Back around 2001, most teacher pension funds were fully funded. While a few states had significant unfunded liabilities (like Illinois), many others were overfunded, and the average funded ratio for teacher pension plans was close to 100%. At the same time, the contribution rates required from public school employers were a relatively reasonable 7.56% of payroll, on average.¹¹

“Teacher retirement costs have more than doubled as a share of state funding for K–12 education between 2001 and 2021.

Since then, unfortunately, the costs of teacher retirement plans have increased dramatically to 20.3% of pay in 2021, due to a wide range of factors. Critical to this analysis, K–12 funding in general has not increased at a similar rate.

The result is that teacher retirement costs have more than doubled as a share of state funding for K–12 education between 2001 and 2021. Specifically, between 2001 and 2021 the share of state own-source K–12 funding going to retirement benefits increased from 7.03% in 2001 to 15.65%, as shown in Figure 4.

Data Note: The retirement cost data used for Figure 4 cover all employer costs for primary retirement plans — including pension plans, guaranteed return plans, and primary income defined contribution plans (but not supplemental plans, like 457 accounts or member contributions that are “picked up” by employers).¹¹ The K–12 education expenditures included are based on National Association of State Budget Officers (NASBO)’s annual state expenditure report using self-reported data from states.¹²

We only measure actual contributions made. The hidden cuts trends would look worse because some states — including large ones like California, Illinois, and Texas — do not always pay the actuarially determined required contribution rate to their teacher retirement systems.¹³ If every state were to always pay the formal actuarially determined contribution rate, then 16.71% of state K–12 expenditures would have been put toward retirement costs in 2021, more than the 15.65% share actually contributed.

¹¹ Equable Institute, “[State of Pensions 2022](#)”

¹² This incorporates all employer costs, whether paid by the state legislature directly to retirement systems or transferred from school districts. The costs also include both defined benefit and defined contribution plans.

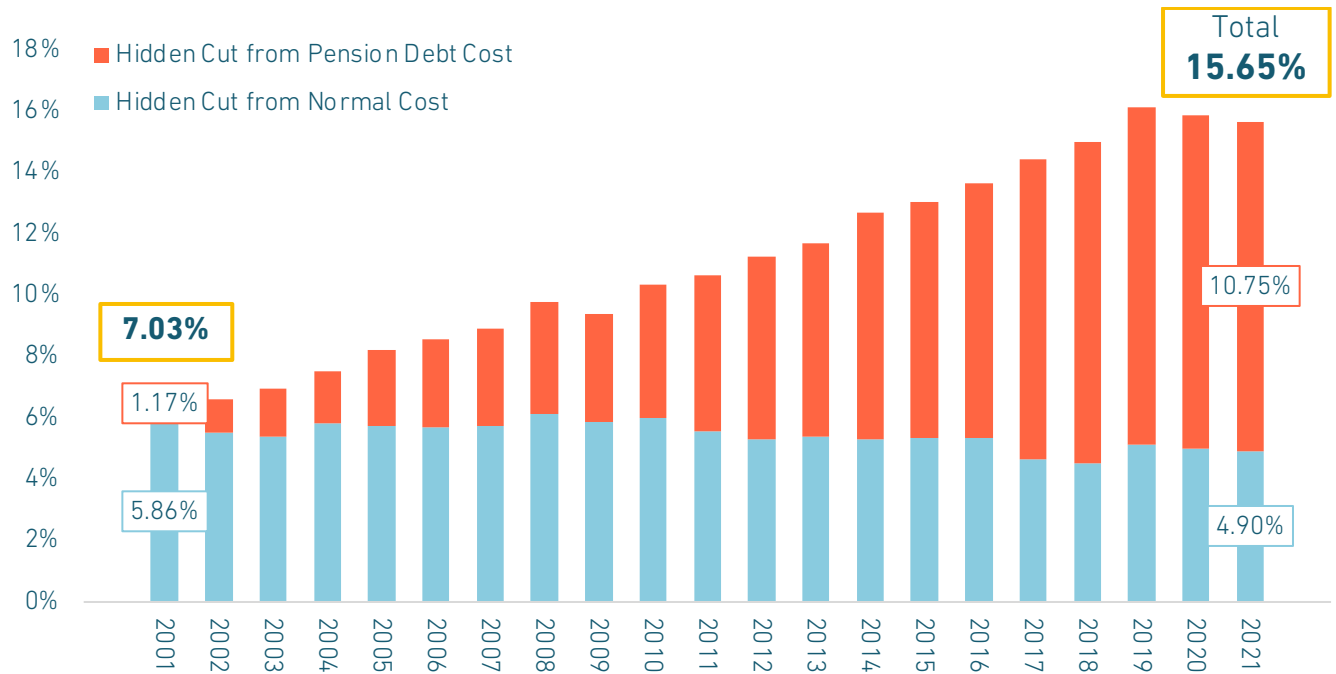
¹³ States vary on whether they incorporate pension costs in the education spending that they report. However, NASBO specifically records which states indicate that they have included these costs in the totals they present. We have filtered the NASBO data to exclude pension costs from those states that do incorporate retirement benefits in their education data.

¹⁴ Here is a complete list of states that failed to pay the actuarially determined contribution rate at least twice between 2012 and 2021: Alaska, Arkansas, California, Colorado, Florida, Hawaii, Idaho, Illinois, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Dakota, Ohio, Pennsylvania, Texas, Virginia, Washington, Wyoming.

FIGURE 4

NATIONAL PUBLIC SCHOOL RETIREMENT COSTS ARE CONSUMING A GREATER SHARE OF STATE OWN-SOURCE K-12 EDUCATION SPENDING OVER TIME

Actual State Retirement Plan Contributions as a Share of State Own-Source K-12 Spending, 2001–21



Source: Equable Institute analysis of public plan valuation reports and ACFRs; state own-source K-12 education spending data are drawn from NASBO state expenditure reports. These figures are based on expenditures data adjusted for inflation to 2021 dollars. "Employer contributions" includes both state and employer spending on pensions, guaranteed return plans, defined contribution plans, and hybrid plans.

The topline hidden cut for 2021 is 15.65% of state K-12 spending going toward retirement costs. This data point might sound high, low, or reasonable depending on any individual or group's perspective. But the topline figure itself is not the most significant concern raised by the data in Figure 4. Rather, what is disconcerting is how the trendline is going up from multiple points of measurement.

Consider the trend line from 2001, which is the most relevant benchmark from which to measure the change in hidden education funding cuts because that is the last point in time when teacher pension plans were effectively fully funded. The growth rate since then is more than 100%.

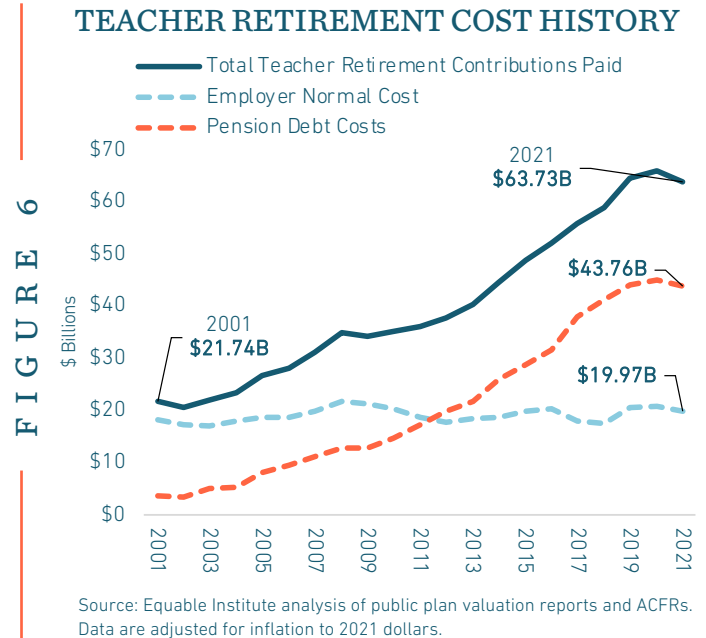
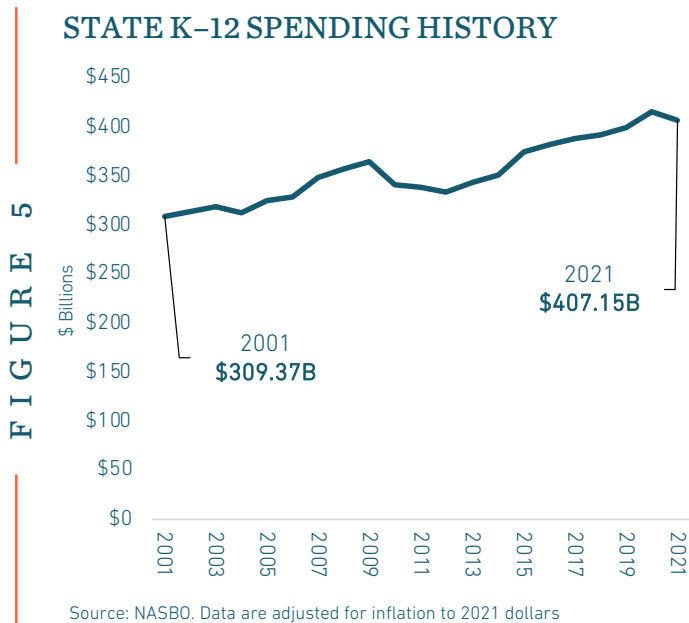
“On average in 2021, 10.75% of state own-source K-12 spending was put toward pension debt.”

While this hidden cut could have been mitigated by state's matching any growth in retirement costs with additional K-12 spending, it is clear from this chart that the primary source of hidden cuts is from pension debt costs. On average in 2021, 10.75% of state own-source K-12 spending was put toward pension debt, while 4.9% was put toward normal retirement costs.

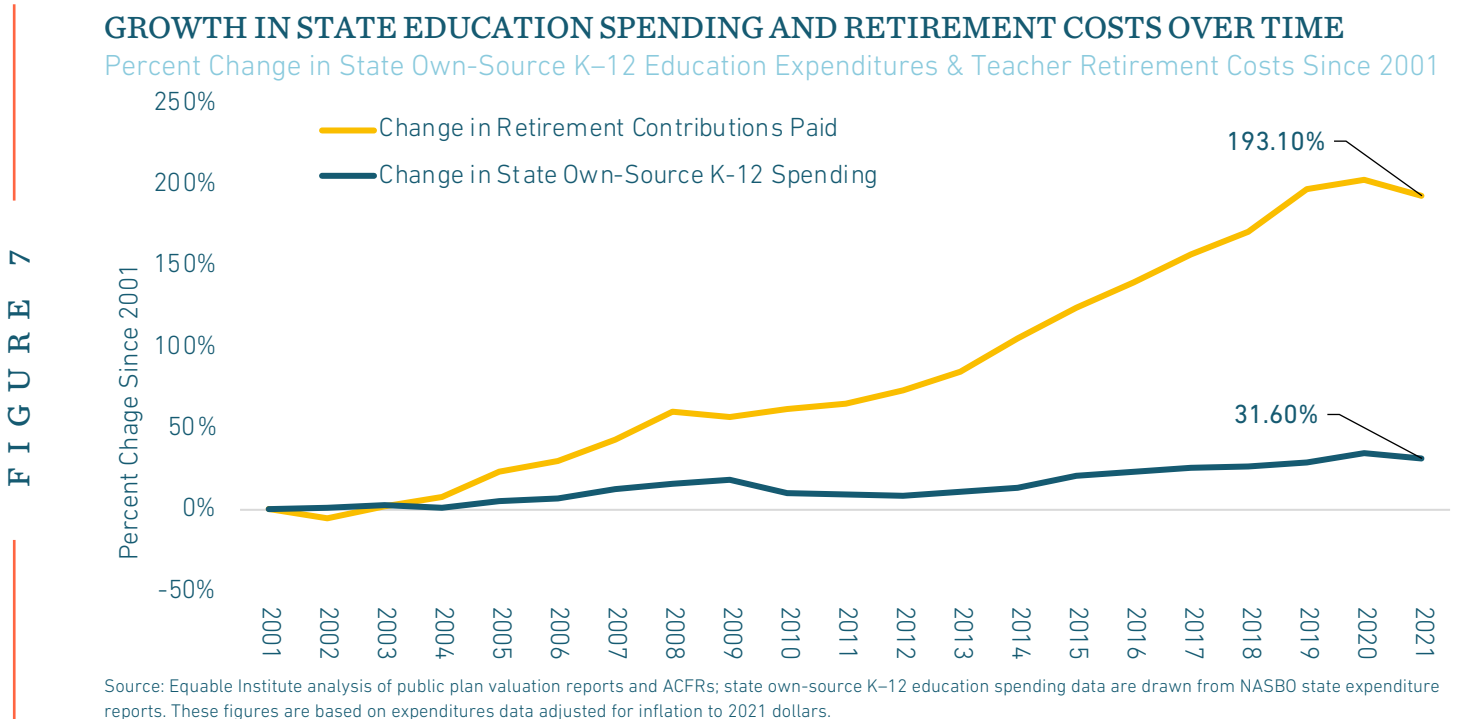
We could also look at the trendline since 2009, after the financial crisis and Great Recession. Figure 4 data also show that hidden state education spending cuts have also grown nearly 50% from 2009 through 2021.

2.1 BASELINE EDUCATION AND RETIREMENT COSTS

Between 2001 and 2021 the amount spent on K–12 education using state revenues increased from \$309 billion a year (inflation-adjusted) to \$407 billion, shown in Figure 5. At the same time, spending on retirement benefits for teachers and public school employees increased from \$21.8 billion (inflation-adjusted) to \$63.7 billion, shown in Figure 6.



What is important about these figures is the relative rate of change over time. Retirement costs have grown much faster than state-only K–12 spending in general. Figure 7 shows the change over time in state spending on K–12 separate from the change in teacher retirement costs. This is what is causing the growth in hidden education funding cuts.



The yellow line in Figure 7 shows the change in state K–12 education spending over the past two decades. The dark blue line shows the rate of change since 2001 for public school retirement costs. (See Appendix C for raw dollar amounts.)

Looking at the data this way helps to clarify some of the factors causing the hidden funding cuts. There has been a 31.6% increase from 2001 to 2021 in state spending on K–12 education. But total teacher retirement cost spending has jumped 193.1% over the same period.

The change in spending from 2009 to 2021 has a similar disparity. K–12 education spending by state governments has grown 11.5%, but teacher retirement spending has grown 86.5% over the same period. Put another way, the average annual change in state K–12 spending has been 1.58 percentage points, whereas the annual average change in retirement costs for public schools has been 9.66 percentage points.

2.2 STATE HIDDEN CUTS ON A PER-STUDENT BASIS

Another important way to look at the relationship between retirement costs and education funding is on a per-pupil basis, normalizing costs to be in line with student enrollment. Using this approach, the per-pupil cost of teacher retirement benefits has increased at a faster rate than just state K–12 spending alone.

T A B L E 1

THE GROWTH RATE IN PER-PUPIL STATE K–12 SPENDING HAS BEEN ALMOST CUT IN HALF

Total State Own-Source K–12 Funding and Retirement Costs per Student, 2001–21

YEAR	NATIONAL ENROLLMENT	RETIREMENT COSTS PER STUDENT	STATE K–12 FUNDING PER STUDENT	ADJUSTED ACTUAL PER-STUDENT STATE K–12 FUNDING
2001	47,554,958	\$457	\$6,506	\$6,048
2002	47,903,246	\$430	\$6,542	\$6,112
2003	48,253,088	\$458	\$6,599	\$6,141
2004	48,601,782	\$483	\$6,430	\$5,946
2005	48,950,310	\$546	\$6,650	\$6,104
2006	49,298,290	\$571	\$6,682	\$6,111
2007	49,264,782	\$631	\$7,083	\$6,452
2008	49,246,313	\$707	\$7,252	\$6,545
2009	49,336,739	\$693	\$7,401	\$6,708
2010	49,457,615	\$713	\$6,897	\$6,184
2011	49,493,389	\$727	\$6,836	\$6,109
2012	49,740,169	\$757	\$6,724	\$5,966
2013	50,011,926	\$805	\$6,884	\$6,079
2014	50,278,016	\$886	\$6,997	\$6,111
2015	50,401,567	\$966	\$7,430	\$6,463
2016	50,577,778	\$1,029	\$7,547	\$6,518
2017	50,657,355	\$1,103	\$7,662	\$6,558
2018	50,694,061	\$1,160	\$7,734	\$6,574
2019	50,755,623	\$1,271	\$7,883	\$6,612
2020	49,335,905	\$1,336	\$8,428	\$7,092
2021	49,414,846	\$1,290	\$8,239	\$6,950

Source: Enrollment data are drawn from NCES data; state own-source K–12 education spending data are drawn from NASBO state expenditure reports. Retirement cost data are drawn from public plan valuation reports and ACFRs. Spending figures are adjusted for inflation to 2021 dollars.

Using national student enrollment data, Table 1 (above) shows the per-pupil share of state own-source K–12 education funding, teacher retirement costs on a per-pupil basis, and the remaining per-pupil dollars for K–12 budgets — all adjusted for inflation.

Most states use funding formulas that distribute money on a per-student basis, and over the past two decades the hidden cut to state own-source education spending has increased from \$457 per student (in 2001) to \$1,290 per student (in 2021) — a 182% increase.

The value of per-student state K–12 funding increased 26% from 2001 to 2021, or by around \$1,735 per pupil on an inflation-adjusted basis. However, once retirement costs are accounted for, the increase has only been 15%, or about \$900 per pupil.

2 . 3 STRENGTHS AND WEAKNESSES OF NASBO DATA

The education spending data in this section are based on NASBO collection of self-reported own-source spending. This means the data are predicated on the accuracy of state budget officer reports to NASBO, as well as the precision in how the state budget officer of any given state classifies the spending in their state as based on state-collected taxes (e.g., “own-source”) versus federally provided resources.

For any given state, these data may not always align with how a state legislature allocates spending, or in how a state education office records and classifies data. However, when looking at the NASBO data for K–12 spending as a whole, the figures are very similar to Census Bureau data reports on overall state spending, suggesting that they are generally accurate and correct. For the purposes of an analysis like this, which is looking at trendlines, this gives the NASBO data a particular strength, as they allow state officials to self-report what they are spending.

A separate peculiarity of the NASBO state spending data is that some states report their K–12 spending inclusive of retirement costs, and other states do not. Part of the reason for this is that states don’t all pay their retirement bills the same way.¹⁵ To ensure we are not double counting the retirement costs, we’ve isolated the states that report retirement costs as part of their K–12 spending, and subtracted from that figure the amount of retirement spending reported by the state’s teacher retirement system.

Ultimately, the limits to NASBO data are that they may not reflect how every agency in a given state may think about education spending and they are focused on state dollars. This means that any state-specific analysis only based on NASBO data should be contextualized with Census Bureau data and/or a state education agency’s data. However, when the state spending reported in NASBO is compared to state-only spending in Census Bureau data, the general cumulative trend is nearly perfectly correlated – which means NASBO data are particularly well suited for the purposes of a national analysis.

For a complete discussion on the strengths and weaknesses of NASBO data, see our methodology notes linked in Appendix B.

¹⁵ States like Connecticut and Massachusetts transfer money from the state legislature to their state teacher retirement systems directly “on-behalf” of school districts, and Illinois and Texas largely do the same. Other states such as Florida and South Carolina have school districts pay 100% of required contributions themselves, and theoretically make up for this in student funding formulas. And there are dozens of permutations and quirky approaches that still other states take that are between these poles.

Part 3: Hidden Cuts to Local Education Spending

There are generally three sources of revenue for school districts: federal dollars (largely prescribed for specific programs), state tax revenues, and local government revenues.¹⁶ The largest contributor of these categories is local government. Between the years 2002 and 2020, the average national share of K–12 resources provided by local governments was 67.6% (see Appendix C for details).

How these revenues are collected and distributed varies considerably from state to state. Student funding formulas might result in money getting extracted from one community and used to pay for schools in another community as a means of balancing out K–12 resources. Still, local areas with large income and/or property tax revenue bases are typically better off in general because of the resource availability.

As previously noted, state government funding for K–12 education has the most flexibility, given the legislature’s budgetary authority. And retirement systems are primarily managed at a state level. This makes state-only K–12 spending the best source of measurement against retirement costs. But some states push retirement costs to school districts, so assessing the effect of retirement costs on combined state and local K–12 spending can provide a complementary picture to state-only data.

When measuring education spending as both state and local K–12 expenditures, we see lower headline hidden cut figures (because the denominator is changing), but a faster growing trendline.

Figure 8 (next page) shows that teacher retirement costs as a share of state and local funding for K–12 education more than tripled between 2001 and 2020. Specifically, in 2001, state and local K–12 funding going to retirement benefits was 1.31%, but by 2020, that had increased to 5.53%.

In the context of \$1.1 trillion in state and local K–12 spending, that 5.53% cut represents tens of billions in resources that could have otherwise been allocated to improving education equity, compensating educators appropriately, hiring support staff, or financing IEPs for disabled students. But even in that context, the problem is greater than a headline figure in 2020, the problem is the trendline.

Even if we measure the trendline change since 2002 (which may be a better starting point due to questions about the completeness of Census Bureau data for 2001), there is a 2.5x increase in the hidden funding cut of state and local education expenditures. This means that in the coming decades, the share of state and local K–12 spending on retirement benefits will push well past 5.53% if the problem is ignored.

Teacher retirement costs have tripled as a share of state & local funding for K–12 education between 2001.

Data Note: The retirement cost data used for Figure 8 cover all employer costs for primary retirement plans — including pension plans, guaranteed return plans, and primary income defined contribution plans (same as in the previous section). The K–12 education expenditures included are based on Census Bureau data for state and local spending taken from their Annual Survey of State and Local Government Finances. Complete education data from the Census Bureau are more limited in scope for certain states in 2001 and not yet finalized or published. We measure national changes to Census data from 2001 and state specific changes from 2002.

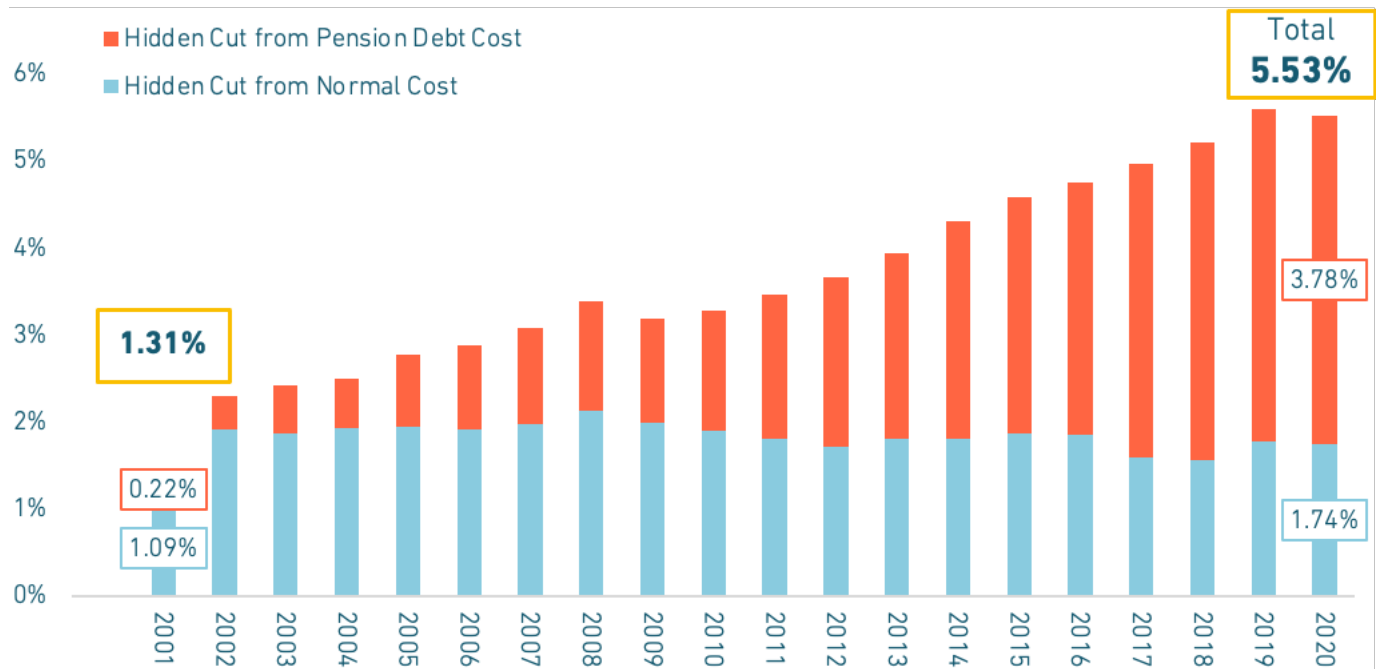
Same as before, we only measure actual retirement plan contributions made. If every state always paid the formal actuarially determined contribution rate, then 5.9% of state and local K–12 expenditures would have been put toward retirement costs in 2020, more than the 5.5% share actually contributed.

¹⁶ Private foundations and individuals can donate to public schools, but nationally, this is a tiny fraction of overall resources.

NATIONAL PUBLIC SCHOOL RETIREMENT COSTS ARE CONSUMING A GREATER SHARE OF STATE AND LOCAL K–12 EDUCATION SPENDING OVER TIME

Actual Retirement Plan Contributions as a Share of Total State and Local K–12 Spending, 2001–20

FIGURE 8



Source: Equable Institute analysis of public plan valuation reports and ACFRs; combined state and local funding data are drawn from Census Bureau Annual Survey of State and Local Government Finances. These figures are based on expenditures data adjusted for inflation to 2021 dollars. "Employer contributions" includes both state and employer spending on pensions, guaranteed return plans, defined contribution plans, and hybrid plans.

Important Note: Figure 8 measures the national cumulative totals for state and local education spending, as reported by the Census Bureau. While the national macro data going forward from 2001 is clear, there are some methodological questions for specific states with 2001 data. To avoid any state specific problem, we measure all hidden cuts data for state and local education spending for 2002 when analyzing individual states. So, to create consistency in the analysis going forward in this section, the rest of our charts measuring hidden cuts to state and local education spending will also simply start from 2002.

The topline hidden cut for 2020 is 5.53% of state plus local K–12 spending going toward retirement costs. This data point might sound high, low, or reasonable depending on any individual or group's perspective. But, just like our analysis of state own-source education spending, the topline figure itself is not the most significant concern raised by the data in Figure 8. Rather, what is disconcerting is how the trendline is going up from multiple points of measurement.

The share of state and local K–12 spending going toward teacher retirement costs has increased 141% between 2002 and 2020 (and 322% since 2001). Either way of starting the data, those are problematic growth rates.

And we see the same kind of problem in looking at the hidden education funding cut change between 2009 and 2020 (e.g., after the financial crisis) — teacher retirement costs increased 87% while the growth rate in state and local K–12 spending only went up 11%, adjusted for inflation (see charts in Section 3.1 on the next page). This has translated into a 74% increase in the hidden education funding cut since 2009.

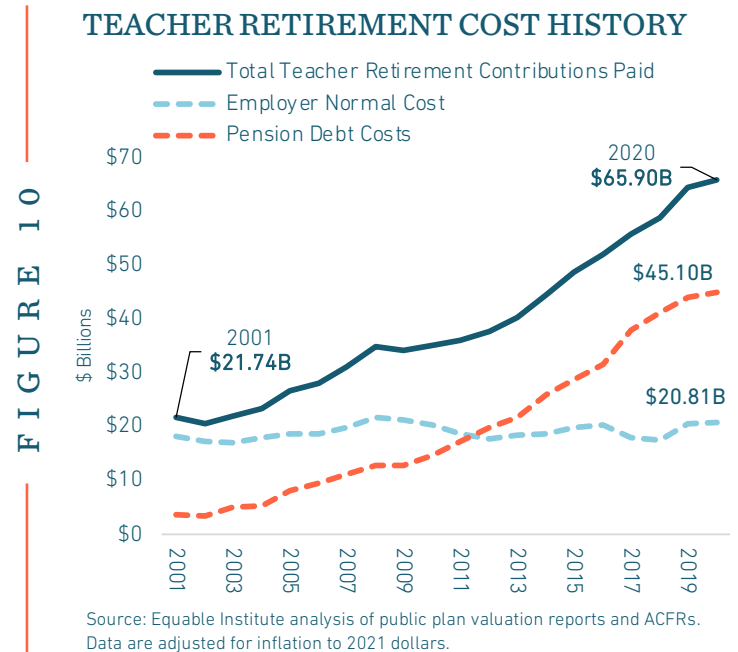
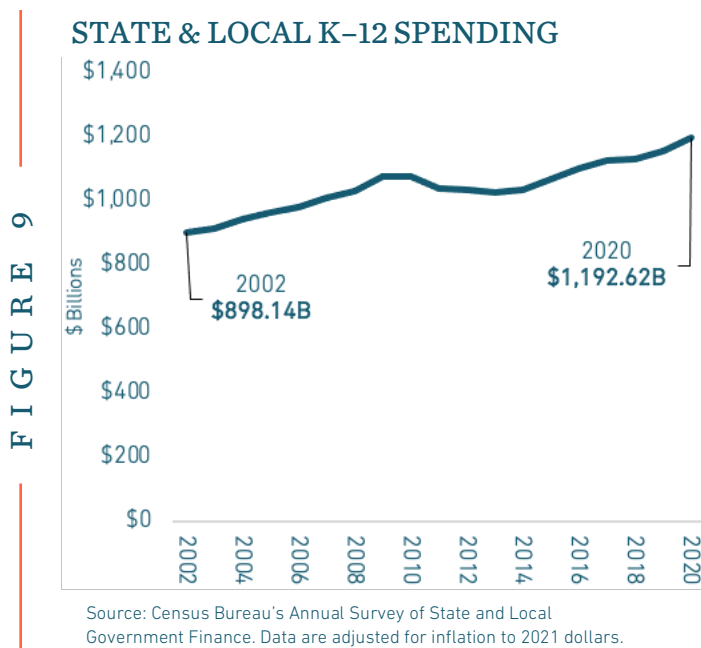
Again, teacher retirement plan costs for states and school districts increased from \$21.7 billion in 2001 to \$34.2 billion in 2009 to \$65.9 billion in 2020. Policymakers could have ensured K–12 budgets kept up with these costs, which would have meant no changes to the level of "hidden cuts" — but they didn't.

3.1 BASELINE EDUCATION COST COMPARISON

The retirement costs used in this alternative analysis of education spending is the same as used in Part 2's analysis of state-only K–12 expenditures. However, the dollar amount of education spending used is notably larger when accounting for local revenues and when using Census Bureau data.

There is a limitation with Census Bureau data (discussed in more detail in Section 3.4 below) that is partially visible in the 2001 data shown in Figure 8 above. Changes in data collection and reporting methodology mean that some measurements of relative change from 2001 may overstate the degree of growth in hidden funding cuts. To be conservative, from here forward, we will measure changes over the last two decades as going back to 2002.

Between 2002 and 2020, the amount spent on K–12 education using state and local combined revenues increased from about \$900 billion a year (inflation-adjusted) to \$1.19 trillion, shown in Figure 9. At the same time, spending on retirement benefits for teachers and public school employees increased from \$21.8 billion (inflation-adjusted) to \$65.9 billion in 2020, shown in Figure 10.



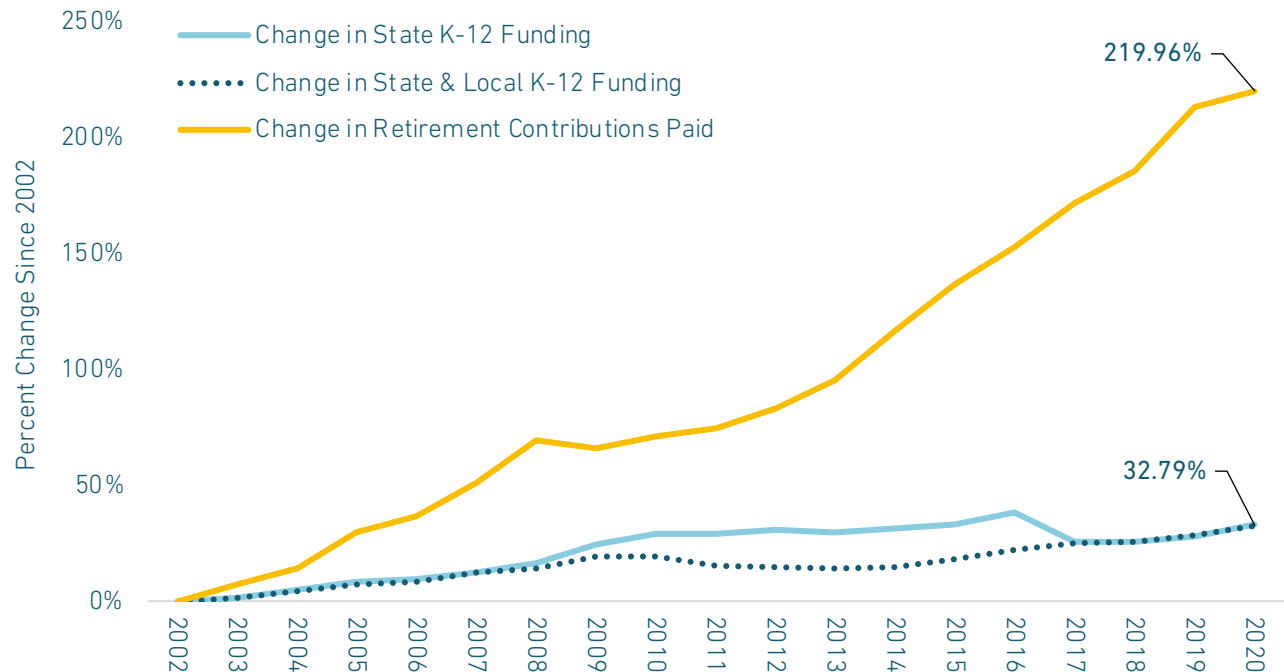
Again, what is important about these figures is the relative rate of change over time. Retirement costs have grown much faster than state and local K–12 spending in general. Figure 11 (next page) shows the change over time in state spending on K–12 separate from the change in teacher retirement costs. This is what is causing the growth in hidden education funding cuts.

The dark blue dotted line shows the change in state and local K–12 education spending over the past two decades. For comparative purposes the light blue line shows the change in state only K–12 education spending (using Census Bureau for state expenditures). The yellow line shows the rate of change since 2002 for public school retirement costs. (See Appendix C for raw dollar amounts.)

FIGURE 11

GROWTH IN STATE & LOCAL K-12 SPENDING VERSUS RETIREMENT COSTS OVER TIME

Percentage Change in State & Local K-12 Education Expenditures & Teacher Retirement Costs Since 2002



Source: Equable Institute analysis of public plan valuation reports and ACFRs and Census Bureau Annual Survey of State and Local Government Finances. These figures are based on expenditures data adjusted for inflation.

This again clarifies some of the factors causing the hidden funding cuts. There has been a 32.8% increase from 2002 to 2020 in state and local spending on K-12 education, and a similar 33.3% increase in state-only education funding. But total teacher retirement cost spending has jumped 220.0% over the same period.

The change in spending from 2009 to 2021 has a similar disparity. K-12 education spending by state governments grew 7.1% and by state plus local sources by 11.2%, but teacher retirement spending grew 92.9% over the same period.

3.2 STATE & LOCAL HIDDEN CUTS ON A PER-STUDENT BASIS

The per-pupil cost of teacher retirement benefits has increased at a faster rate than just state and local K–12 spending alone. This is another important way to look at the general effects of retirement costs growing at a faster rate than education funding. Most states use funding formulas that distribute money on a per-student basis, and over the past two decades, the hidden cut to state and local education spending has increased from \$430 per student (in 2001) to \$1,336 per student (in 2021) — a 211% increase.

Using national student enrollment data, Table 1 shows the per-pupil share of state-only K–12 education funding, teacher retirement costs on a per-pupil basis, and the remaining per-pupil dollars for K–12 budgets — all adjusted for inflation.

T A B L E 2

THERE IS A \$900+ PER-STUDENT HIDDEN CUT TO STATE & LOCAL K–12 SPENDING

Total State & Local K–12 Funding and Retirement Costs per Student, 2002–20

YEAR	NATIONAL ENROLLMENT	RETIREMENT COSTS PER STUDENT	STATE K–12 FUNDING PER STUDENT	LOCAL K–12 FUNDING PER STUDENT	ADJUSTED ACTUAL PER STUDENT K–12 FUNDING
2002	47,903,246	\$430	\$5,785	\$12,965	\$18,319
2003	48,253,088	\$458	\$5,826	\$13,020	\$18,388
2004	48,601,782	\$483	\$5,989	\$13,318	\$18,824
2005	48,950,310	\$546	\$6,120	\$13,522	\$19,096
2006	49,298,290	\$571	\$6,150	\$13,649	\$19,228
2007	49,264,782	\$631	\$6,318	\$14,161	\$19,848
2008	49,246,313	\$707	\$6,567	\$14,261	\$20,121
2009	49,336,739	\$693	\$6,991	\$14,754	\$21,052
2010	49,457,615	\$713	\$7,220	\$14,458	\$20,965
2011	49,493,389	\$727	\$7,223	\$13,748	\$20,243
2012	49,740,169	\$757	\$7,289	\$13,427	\$19,959
2013	50,011,926	\$805	\$7,190	\$13,259	\$19,645
2014	50,278,016	\$886	\$7,229	\$13,313	\$19,656
2015	50,401,567	\$966	\$7,329	\$13,778	\$20,140
2016	50,577,778	\$1,029	\$7,566	\$14,121	\$20,658
2017	50,657,355	\$1,103	\$6,868	\$15,321	\$21,085
2018	50,694,061	\$1,160	\$6,852	\$15,401	\$21,094
2019	50,755,623	\$1,271	\$6,972	\$15,771	\$21,472
2020	49,335,905	\$1,336	\$7,487	\$16,686	\$22,838

Source: Enrollment data are drawn from the federal Department of Education's National Center for Education Statistics. Total state and local K–12 education spending data are drawn from the Census Bureau Annual Survey of State and Local Government Finances. Retirement cost data are drawn from public plan valuation reports and ACFRs. All spending figures are adjusted for inflation to 2021 dollars.

The value of per-student state and local K–12 funding increased by 29% from 2002 to 2020, or around \$5,400 per pupil on an inflation-adjusted basis. However, once retirement costs are accounted for, the increase has only been 24.7%, or about \$4,500 per pupil.

3 . 3 STATE CONTEXT MATTERS: Interpreting the Correlation Between State-Only and Local-Only Hidden Cuts

There are multiple ways to look at America's hidden education funding cut data:

- **Change in the cut over time**, whether from 2001 or 2002 to the present, or from 2009 following the financial crisis, and its influence on teacher pension funded status;
- **Absolute size of the cut**, both to state own source K–12 education funding or combined state and local education funding; and/or
- **Relationship between hidden education funding cuts and the distribution of K–12 revenue sources** within each state (e.g., the share of revenues that come from either the state budget or local taxes).

Most of this paper's analysis is focused on the first two from the list above. But we also looked at the correlation between: (a) the absolute hidden education funding cut in 2020 to combined state and local K–12 education spending; and (b) the portion of each state's K–12 revenue that came from either state sources or local sources.¹⁷

Specifically, first we looked at a list of all 50 states plus D.C. and the share of their K–12 expenditures that came from "state" sources (shown in Appendix C) and correlated that with absolute total hidden funding cuts for the year 2020, and then we did the same thing for a list of 50 states and the share of K–12 spending that came from "local" sources. In both cases, the correlation was effectively zero.¹⁸

This means that we can't really know in looking at a state's hidden funding cut for a given year whether that state has a large, small, or equal share of revenue coming from a given source. The absolute hidden funding cut in any specific state may or may not reflect how that state divides its education revenue sources. That, in turn, means any state's topline numbers should be contextualized by specifics on the distribution of resources in that state.

This reinforces the need to focus on trendlines as the most important barometer for national hidden education funding cuts. And it emphasizes the need to look at both absolute numbers and trendlines within any given state.

3 . 4 STRENGTHS AND WEAKNESSES OF CENSUS BUREAU DATA

Researchers at the Census Bureau are tasked with a daunting challenge – to provide accurate, consistent data over time across all 50 states and Washington, D.C. To complicate that challenge, each state has a very different way of doing business that could affect the availability and comparability of their respective data. For this report, we draw on the compiled state, local, and combined education expenditure data as presented in The Census Bureau Annual Survey of State and Local Government Finances.

A key shortcoming in Census Bureau data is changes in how data are compiled as the Census Bureau's methodologies evolve over time. These methodological adjustments have led to certain data abnormalities, such as the large variance in education expenditures between 2001 and 2002, with Census Bureau data showing a drop from \$1.1 trillion in total education expenditures in 2001 to \$594.7 billion in 2002. While the recession of 2001–03 may have resulted in a drop in education spending, state own-source self-reported data to NASBO does not present this same picture. There are reasons to suspect the data swing is a methodological anomaly.

¹⁷ Formally the measurement here is a simple Pearson's r correlation coefficient.

¹⁸ State share of K–12 spending correlates 0.067 with absolute cuts, and local shares correlate -0.067. On a scale of 1 to -1, these figures are effectively zero and indicate no meaningful correlation.

The availability of Census Bureau data also is slow, and only available through fiscal year 2020 as of this writing in early 2023. There are also issues of data classification that are difficult to untangle. For instance, data offering a breakout of state, local, and federal revenues, available through the Census Bureau Public Elementary-Secondary Education Finance Data, are significantly different from those reported in the Annual Survey of State and Local Government Finances.

While these data have their issues, in knowing the shortcomings, we can adjust for them and ensure we are not unintentionally misinterpreting analytical outputs from using Census Bureau data. In general, Census Bureau data are among the widest and most readily available. And because their data from 2002 to 2020 are robust and directly comparable to self-reported state own-source education spending data compiled by NASBO, we have confidence in using them alongside other sources. The fact that data from both the Census Bureau and NASBO, each with their own limitations and biases, produce similar resulting trendlines bolsters the robustness of our findings.

Part 4: State Variance in Hidden Education Funding Cuts

The national trendlines for hidden education cuts are clearly a problem for the country as a whole. However, the policies related to overall education funding and management of retirement systems are all decided at the state level, and the ways hidden education funding cuts manifest from state to state also varies considerably. Students in certain places are suffering more than others from the ways these hidden cuts are affecting K–12 resources. Moreover, there are even specific ways that hidden cuts are putting downward pressure on teacher salaries.

In this section, we discuss two different ways of thinking about the change in hidden education funding cuts over time: (a) a percentage growth, typically measured over the last two decades or since 2009; or (b) an absolute change in the size of hidden cuts.

Either approach paints the same trendline picture — either positive or negative depending on the state. But the scale of change can be different, and each approach can make certain states look better or worse compared to one another. To illustrate, Table 3 shows the 10 largest *absolute increases* in the size of the hidden funding cut, both for state own-source K–12 spending and state and local combined K–12 spending. We include the *percentage change* over the last two decades as well.

TABLE 3

TOP 10 LARGEST ABSOLUTE HIDDEN FUNDING CUT INCREASES OVER TWO DECADES

State Own-Source K–12 Hidden Cut, 2001–21

HIDDEN CUT TO STATE OWN-SOURCE K–12 SPENDING		
STATE	ABSOLUTE CHANGE SINCE 2001	PERCENTAGE CHANGE SINCE 2001
Pennsylvania	32.5%	1347%
Illinois	27.8%	205%
Connecticut	16.8%	194%
New Jersey	14.2%	1766%
Kentucky	13.4%	168%
Hawaii	13.3%	557%
New Hampshire	13.1%	375%
Michigan	12.5%	239%
Virginia	12.5%	201%
California	12.4%	109%

Source: NASBO and Equable Institute analysis of public plan valuation reports and ACFRs.

State & Local K–12 Hidden Cut 2002–20

HIDDEN CUT TO STATE AND LOCAL K–12 SPENDING		
STATE	ABSOLUTE CHANGE SINCE 2002	PERCENTAGE CHANGE SINCE 2002
Illinois	10.6%	313%
Pennsylvania	9.3%	1393%
Michigan	6.0%	235%
Connecticut	5.9%	230%
New Jersey	5.4%	1678%
Hawaii	5.1%	298%
Kentucky	4.3%	109%
New York	4.3%	362%
Alaska	4.1%	176%
Rhode Island	3.8%	111%

Source: Census Bureau and Equable Institute analysis of public plan valuation reports and ACFRs.

Pennsylvania experienced the largest cut to state own-source K–12 spending, with a 32.5 percentage point increase in the share of state-only education expenditures that was put toward retirement costs. Not only was this the largest absolute increase, but Pennsylvania also had one of the largest percentage increases since 2001, too, as their hidden state education funding cut grew 1,346% between 2001 and 2021, and there was a 619% increase between 2009 and 2021 (see Figure 10).

By contrast, Illinois had a similarly large absolute increase in the size of their hidden state funding cut over the past two decades (shown in Table 3), but their 205% increase from 2001 to 2021 was notably less than that of Pennsylvania. This is because Pennsylvania was reporting a roughly fully funded teacher pension plan with low retirement costs back in 2001, whereas Illinois was already facing substantial unfunded liabilities and high retirement costs. Pennsylvania's hidden cut grew

from retirement costs taking up around 2% of state spending in 2001 to over 35% in 2021. Meanwhile, Illinois already had a hidden state K–12 funding cut of over 13% in 2001 which jumped to over 40% by 2021.

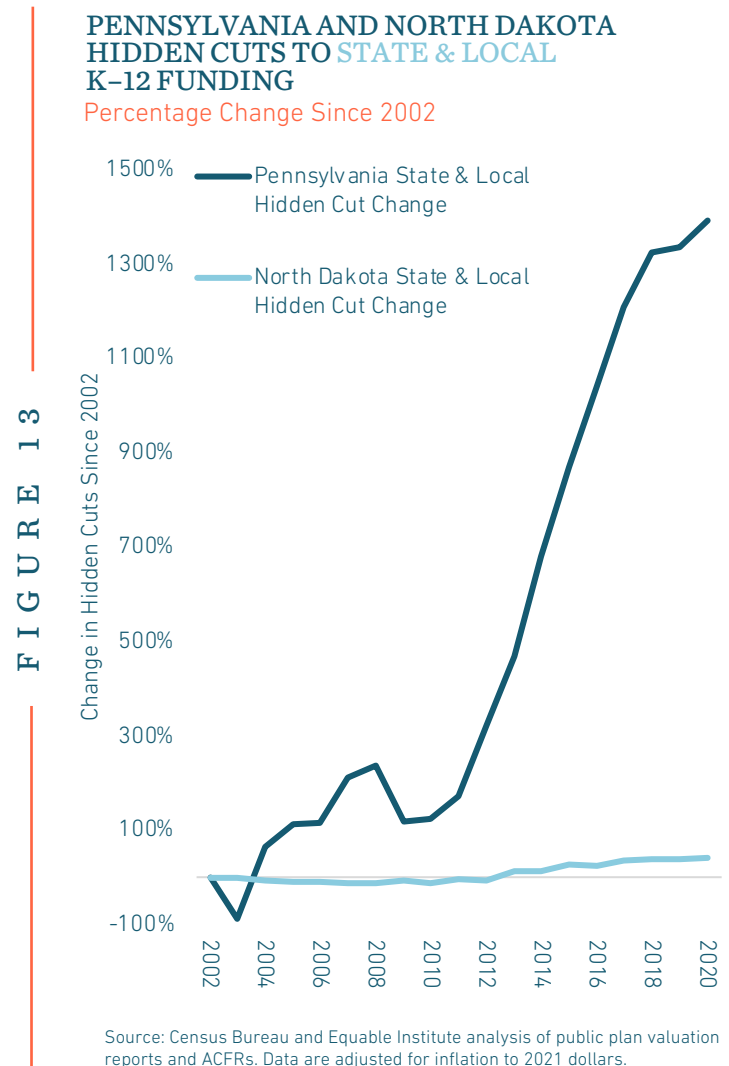
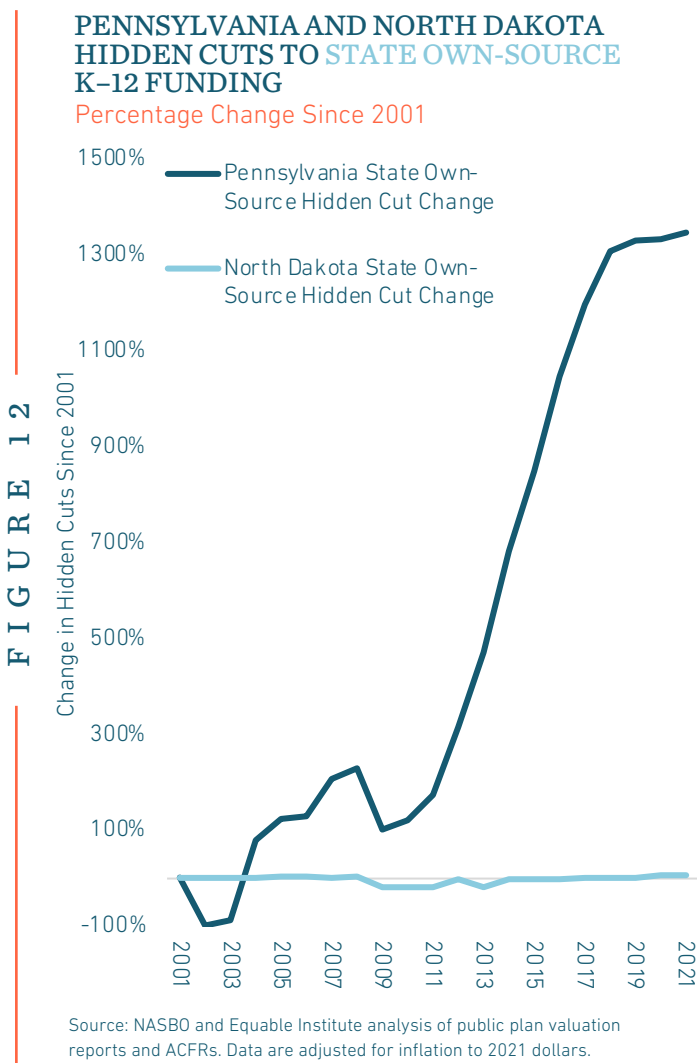
We can see a similar dynamic playing out with the change in hidden funding cuts to state and local K–12 spending combined. Both Pennsylvania and Illinois have the largest absolute increases in hidden cuts between 2002 and 2020, but with different percentage change growth (see Table 3).

To read the story of why this happened to Pennsylvania, see [“Taking Money from the Future: Pennsylvania’s Hidden Education Funding Cuts.”](#)

By contrast North Dakota’s share of K–12 spending on teacher retirement benefits has held relatively stable since 2001, despite increases in teacher pension costs. In 2001, the state was spending 8.39% of its appropriation for education funding on teacher retirement costs, and this only moved to 8.78% in 2009, and 8.85% in 2021. The absolute change of 0.46% percentage points was just a 5.48% increase (also shown in Figure 12). The trendline was relatively similar when looking at teacher retirement costs relative to state and local spending, too (see Figure 13).

To read the story of how this played out in North Dakota, see [“Keeping Pace with Pension Debt: North Dakota’s Management of Hidden Education Funding Cuts.”](#)

PENNSYLVANIA AND NORTH DAKOTA HAVE VERY DIFFERENT HIDDEN CUT TRENDLINES



4.1 PERCENTAGE CHANGE IN HIDDEN FUNDING CUTS BY STATE

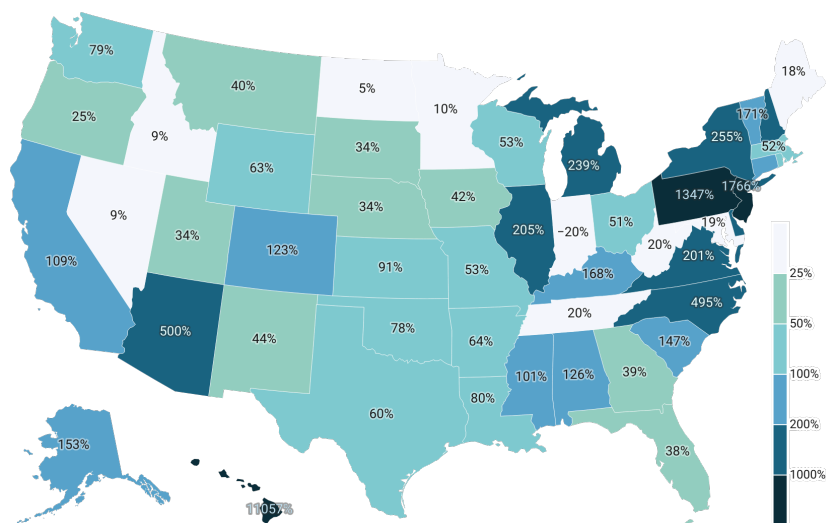
The following two heatmaps show the percentage change in hidden education funding cuts over the past two decades as a way of providing another perspective on trendline growth rates:

- **Figure 14** provides a map of the percentage change in retirement costs cutting into state own-source K–12 spending between 2001 and 2021.
- **Figure 15** shows a similar map, but with the percentage change in hidden cuts to state and local K–12 spending between 2002 and 2020.

See Appendix D for similar heatmaps that show percentage change since 2009, and for the percentage change over the last five years.

GROWTH RATE IN TEACHER RETIREMENT COSTS AS A SHARE OF STATE OWN-SOURCE K–12 EDUCATION FUNDING, 2001–21

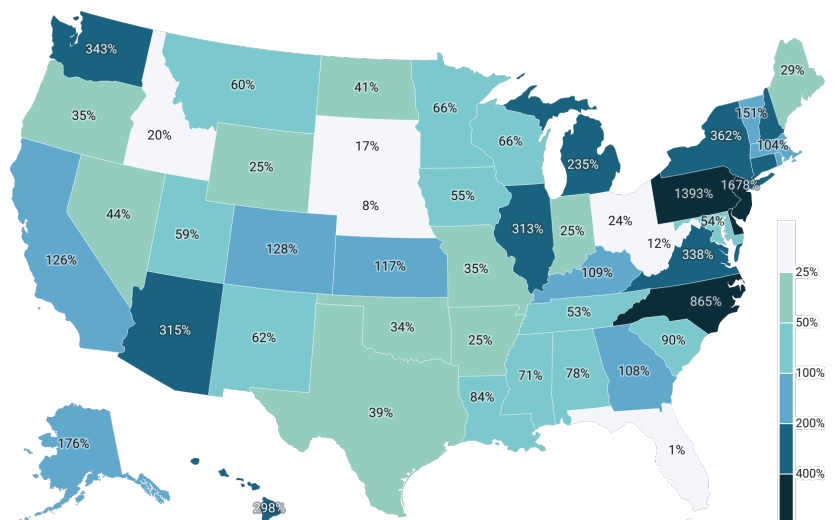
Percentage Change Since 2001



Source: Equable Institute analysis of public plan valuation reports and ACFRs and NASBO state own-source K–12 education spending data. These figures are based on expenditures data adjusted for inflation to 2021 dollars.

GROWTH RATE IN TEACHER RETIREMENT COSTS AS A SHARE OF STATE AND LOCAL K–12 EDUCATION FUNDING, 2002–20

Percentage Change Since 2002



Source: Equable Institute analysis of public plan valuation reports and ACFRs and Census Bureau state and local K–12 education spending data. These figures are based on expenditures data adjusted for inflation to 2021 dollars.

Table 4 lists states based on their percentage increase (or decrease) in hidden education funding cuts since 2001 for state-only K–12 funding and since 2002, for state and local K–12 funding.

T A B L E 4

PERCENTAGE CHANGE IN HIDDEN EDUCATION FUNDING CUTS OVER TWO DECADES

State Only Percentage Change, 2001–21

STATE OWN-SOURCE FUNDING	HIDDEN CUT PERCENTAGE CHANGE, 2001–21
New Jersey	1765.66%
Pennsylvania	1347.13%
District of Columbia	780.25%
Hawaii	556.83%
Delaware	525.00%
Arizona	500.00%
North Carolina	494.63%
New Hampshire	375.20%
New York	255.02%
Michigan	238.82%
Illinois	205.08%
Virginia	201.28%
Connecticut	193.74%
Vermont	171.09%
Kentucky	168.24%
Alaska	153.01%
South Carolina	147.46%
Alabama	125.91%
Colorado	122.53%
California	109.46%
Mississippi	101.22%
Kansas	91.33%
Louisiana	80.26%
Washington	78.52%
Oklahoma	77.91%
Arkansas	64.26%
Rhode Island	63.92%
Wyoming	63.04%
Texas	59.51%
Missouri	52.76%
Wisconsin	52.55%
Massachusetts	51.76%
Ohio	51.14%
New Mexico	43.79%
Iowa	41.85%
Montana	40.35%
Georgia	39.39%
Florida	38.37%
Nebraska	34.24%
South Dakota	34.17%
Utah	33.73%
Oregon	25.40%
West Virginia	20.39%
Tennessee	19.68%
Maryland	19.34%
Maine	18.19%
Minnesota	10.11%
Idaho	9.49%
Nevada	9.12%
North Dakota	5.48%
Indiana	-19.97%

State and Local Percentage Change 2002–20

STATE & LOCAL FUNDING	HIDDEN CUT PERCENTAGE CHANGE, 2002–20
District of Columbia	1866.67%
New Jersey	1678.13%
Pennsylvania	1392.54%
North Carolina	865.00%
Delaware	600.00%
New York	361.86%
Washington	342.68%
Virginia	338.32%
Arizona	315.28%
Illinois	313.35%
Hawaii	297.67%
Michigan	235.43%
Connecticut	229.84%
New Hampshire	202.63%
Alaska	176.29%
Vermont	150.71%
Colorado	128.40%
California	126.46%
Kansas	116.82%
Rhode Island	110.72%
Kentucky	108.79%
Georgia	108.07%
Massachusetts	104.26%
South Carolina	90.11%
Louisiana	84.43%
Alabama	77.78%
Mississippi	71.15%
Wisconsin	66.07%
Minnesota	65.54%
New Mexico	62.11%
Montana	60.14%
Utah	58.63%
Iowa	55.34%
Maryland	54.11%
Tennessee	52.53%
Nevada	43.73%
North Dakota	40.87%
Texas	39.37%
Oregon	35.21%
Missouri	34.75%
Oklahoma	34.15%
Maine	28.74%
Arkansas	25.32%
Wyoming	25.11%
Indiana	24.95%
Ohio	23.90%
Idaho	20.49%
South Dakota	16.86%
West Virginia	11.98%
Nebraska	7.76%
Florida	0.87%

Changes since the financial crisis may or may not be a more relevant point of measurement, depending on each state's finances. Table 5 lists states based on their change in hidden cuts since 2009.

TABLE 5

PERCENTAGE CHANGE IN HIDDEN EDUCATION FUNDING CUTS SINCE THE GREAT RECESSION

State Own-Source Percentage Change, 2009–21

STATE OWN-SOURCE FUNDING	HIDDEN CUT PERCENTAGE CHANGE, 2009–21
New Jersey	1907.61%
District of Columbia	675.00%
Pennsylvania	619.14%
North Carolina	264.97%
Colorado	193.28%
Hawaii	170.24%
Vermont	153.28%
Michigan	128.47%
Kentucky	117.21%
Delaware	108.33%
Illinois	105.23%
Massachusetts	95.97%
Oregon	92.28%
Virginia	89.52%
Connecticut	78.86%
Texas	75.78%
Wyoming	69.48%
Washington	64.76%
Louisiana	60.69%
Mississippi	57.55%
California	54.64%
Nebraska	47.50%
South Carolina	43.65%
New Hampshire	43.13%
Montana	40.35%
Minnesota	39.13%
Georgia	33.48%
Arizona	32.22%
Nevada	31.27%
Utah	24.91%
Alaska	24.58%
Kansas	21.98%
Maryland	21.59%
Oklahoma	20.35%
Iowa	18.56%
Wisconsin	18.41%
Idaho	17.69%
Ohio	17.33%
Arkansas	15.62%
Tennessee	14.95%
Alabama	12.24%
Missouri	11.64%
New York	10.75%
New Mexico	6.19%
Maine	5.64%
South Dakota	4.71%
North Dakota	0.80%
Florida	-3.25%
West Virginia	-5.79%
Rhode Island	-7.83%
Indiana	-13.68%

State and Local Percentage Change 2009–20

STATE AND LOCAL FUNDING	HIDDEN CUT PERCENTAGE CHANGE 2009–20
New Jersey	1796.67%
District of Columbia	608.00%
Pennsylvania	584.93%
North Carolina	227.12%
Illinois	167.88%
Michigan	139.33%
Georgia	116.17%
Massachusetts	114.83%
Vermont	112.73%
Kentucky	111.45%
Oregon	107.47%
Washington	106.25%
California	97.31%
Connecticut	85.00%
Hawaii	81.43%
Delaware	75.00%
Louisiana	67.70%
Virginia	67.50%
South Carolina	62.87%
Kansas	57.95%
Wyoming	56.04%
Alaska	52.98%
North Dakota	48.73%
Iowa	48.15%
Minnesota	47.59%
Montana	45.63%
Colorado	44.91%
Mississippi	39.43%
New Mexico	38.74%
New Hampshire	36.50%
Texas	34.09%
Tennessee	33.15%
Maryland	31.27%
Wisconsin	30.99%
Utah	30.29%
Nevada	29.90%
Idaho	18.55%
Arizona	15.00%
South Dakota	13.56%
New York	13.31%
Rhode Island	12.71%
Nebraska	10.92%
Missouri	10.67%
Oklahoma	10.44%
Indiana	10.25%
West Virginia	6.94%
Maine	5.13%
Alabama	4.14%
Arkansas	3.13%
Ohio	-1.75%
Florida	-6.83%

4 . 2 ABSOLUTE CHANGE IN HIDDEN FUNDING CUTS BY STATE

The percentage change in hidden education funding cuts does not tell us the entire story for each individual state. Some states have large percentage increases in hidden cuts over time, but the underlying numbers are relatively small — after all, going from 1% to 2% is a 2x growth rate. Other states have small growth rates, but started at relatively high levels of hidden cuts. The national story is relatively clear, but for any given state there are important details to consider.

New Jersey and D.C.

For example, New Jersey and the District of Columbia are each among the three largest percentage increases in hidden cuts shown in Tables 4 and 5, whether looking at changes over the last two decades or since 2009, and whether measuring based on state-only K–12 spending or combined state and local K–12 spending. However, the absolute change in hidden cuts for both jurisdictions is very different.

Retirement costs in New Jersey have been among the largest in the country. Between 2001 and 2021, retirement costs as a share of state-only K–12 funding had an absolute increase of 17.5 percentage points from a hidden cut of less than 1% to over 18%. By contrast, the absolute increase in hidden cuts for the District of Columbia was just 6.3 percentage points, going from 0.8% in 2001 to 7.1% in 2021.

The same dynamic is at play when looking at the absolute change in hidden cuts based on state and local K–12 funding. In 2002, there were virtually no retirement costs paid by the District of Columbia and their hidden cut was 0.1%. But this only increased in absolute terms to a hidden cut of 1.8%, a 1.7 percentage point increase. New Jersey, meanwhile, had an absolute increase of 5.37 percentage points between 2002 and 2020, even though the percentage increase of over 1,600% was less than the growth rate for D.C.

Nevada and Nebraska

States that have a small absolute change in hidden cuts over the past two decades are not necessarily in a sound fiscal position — retirement costs as a share of K–12 spending might still be considerable. For example, Nevada's hidden cut to state-only education spending only increased by 1.3 percentage points in absolute terms between 2001 and 2021. But the increase was from a hidden cut of 26.2% to 27.5% of state K–12 funding. This means that over the past two decades a quarter of state education dollars have consistently gone to retirement costs, but the state has also managed to keep up with the growth rate in retirement costs by periodically adjusting K–12 budgets.

Nebraska also has had a small incremental change in hidden cuts, but has kept its retirement costs as a share of K–12 spending consistently low. Between 2002 and 2020, Nebraska's hidden cut to state and local K–12 expenditures only increased from 2.4% to 2.6% — an absolute increase of just 0.2 percentage points.

The following Table 6 lists states with the 10 largest and smallest absolute changes in hidden education funding cuts since 2001 for state own-source K–12 funding and since 2002 for state and local K–12 funding.

Changes since the financial crisis may or may not be a more relevant point of measurement, depending on each state's finances. Table 7 lists states with the 10 largest and smallest absolute change in hidden cuts since 2009.

T A B L E 6

LARGEST AND SMALLEST ABSOLUTE CHANGES IN HIDDEN EDUCATION FUNDING CUTS OVER THE PAST TWO DECADES

State Own-Source Percentage Change, 2001–21

State and Local Percentage Change 2002–20

10 LARGEST CHANGES TO STATE-ONLY K–12	ABSOLUTE CHANGE SINCE 2001	2021 HIDDEN FUNDING CUT
1. Pennsylvania	32.87%	35.31%
2. Illinois	27.44%	40.82%
3. New Jersey	17.48%	18.47%
4. Connecticut	16.41%	24.88%
5. Hawaii	15.48%	15.62%
6. Kentucky	14.25%	22.72%
7. New Hampshire	14.07%	17.82%
8. Michigan	13.35%	18.94%
9. Virginia	12.56%	18.80%
10. South Carolina	11.59%	19.45%

10 LARGEST CHANGES TO STATE & LOCAL K–12	ABSOLUTE CHANGE SINCE 2002	2020 HIDDEN FUNDING CUT
1. Illinois	10.56%	13.93%
2. Pennsylvania	9.33%	10.00%
3. Michigan	5.98%	8.52%
4. Connecticut	5.93%	8.51%
5. New Jersey	5.37%	5.69%
6. Hawaii	5.12%	6.84%
7. Kentucky	4.33%	8.31%
8. New York	4.27%	5.45%
9. Alaska	4.09%	6.41%
10. Rhode Island	3.82%	7.27%

10 SMALLEST CHANGES TO STATE-ONLY K–12	ABSOLUTE CHANGE SINCE 2001	2021 HIDDEN FUNDING CUT
42. Maryland	2.30%	14.19%
43. Maine	2.25%	14.62%
44. Oregon	2.22%	10.96%
45. Wisconsin	1.44%	4.18%
46. Tennessee	1.10%	6.69%
47. Idaho	0.83%	9.58%
48. Minnesota	0.47%	5.12%
49. North Dakota	0.46%	8.85%
50. Delaware	0.42%	0.50%
51. Indiana	-2.85%	11.42%

10 SMALLEST CHANGES TO STATE & LOCAL K–12	ABSOLUTE CHANGE SINCE 2002	2020 HIDDEN FUNDING CUT
42. North Dakota	0.85%	2.93%
43. Tennessee	0.83%	2.41%
44. Idaho	0.75%	4.41%
45. Wisconsin	0.74%	1.86%
46. Ohio	0.65%	3.37%
47. Wyoming	0.57%	2.84%
48. South Dakota	0.29%	2.01%
49. Delaware	0.24%	0.28%
50. Nebraska	0.19%	2.64%
51. Florida	0.02%	2.32%

Source: NASBO and Equable Institute analysis of public plan valuation reports and ACFRs.

Source: Census Bureau and Equable Institute analysis of public plan valuation reports and ACFRs.

TABLE 7

LARGEST AND SMALLEST ABSOLUTE CHANGES IN HIDDEN EDUCATION FUNDING CUTS SINCE THE FINANCIAL CRISIS

State Own-Source Percentage Change, 2009–21

State and Local Percentage Change 2009–20

10 LARGEST CHANGES TO STATE-ONLY K-12	ABSOLUTE CHANGE SINCE 2009	2021 HIDDEN FUNDING CUT
1. Pennsylvania	30.40%	35.31%
2. Illinois	20.93%	40.82%
3. New Jersey	17.55%	18.47%
4. Colorado	13.80%	20.94%
5. Kentucky	12.26%	22.72%
6. Connecticut	10.97%	24.88%
7. Michigan	10.65%	18.94%
8. Hawaii	9.84%	15.62%
9. Massachusetts	9.06%	18.50%
10. Virginia	8.88%	18.80%

10 LARGEST CHANGES TO STATE & LOCAL K-12	ABSOLUTE CHANGE SINCE 2009	2020 HIDDEN FUNDING CUT
1. Illinois	8.73%	13.93%
2. Pennsylvania	8.54%	10.00%
3. New Jersey	5.39%	5.69%
4. Michigan	4.96%	8.52%
5. Kentucky	4.38%	8.31%
6. Connecticut	3.91%	8.51%
7. Georgia	3.88%	7.22%
8. Massachusetts	3.33%	6.23%
9. California	3.25%	6.59%
10. Hawaii	3.07%	6.84%

10 SMALLEST CHANGES TO STATE-ONLY K-12	ABSOLUTE CHANGE SINCE 2009	2021 HIDDEN FUNDING CUT
42. Maine	0.78%	14.62%
43. Wisconsin	0.65%	4.18%
44. New Mexico	0.54%	9.26%
45. South Dakota	0.41%	9.11%
46. Delaware	0.26%	0.50%
47. North Dakota	0.07%	8.85%
48. Florida	-0.32%	9.52%
49. West Virginia	-1.20%	19.54%
50. Rhode Island	-1.74%	20.49%
51. Indiana	-1.81%	11.42%

10 SMALLEST CHANGES TO STATE & LOCAL K-12	ABSOLUTE CHANGE SINCE 2009	2020 HIDDEN FUNDING CUT
42. Wisconsin	0.44%	1.86%
43. Arizona	0.39%	2.99%
44. Nebraska	0.26%	2.64%
45. Maine	0.26%	5.33%
46. South Dakota	0.24%	2.01%
47. Arkansas	0.15%	4.95%
48. Alabama	0.14%	3.52%
49. Delaware	0.12%	0.28%
50. Ohio	-0.06%	3.37%
51. Florida	-0.17%	2.32%

Source: NASBO and Equable Institute analysis of public plan valuation reports and ACFRs.

Source: Census Bureau and Equable Institute analysis of public plan valuation reports and ACFRs.

Part 5: Questions, Effects, and Conclusions

The troubling conclusion from this analysis is that teacher retirement costs increased by nearly \$50 billion a year (inflation-adjusted) between 2001 and 2021 — and K–12 budgets did not keep up.

There were lots of reasons why retirement costs changed over the past two decades. In general, the costs of providing guarantees like pensions is just more expensive in the 21st century than it was projected to be in the 20th century. Even states with well-funded pension plans have had a slight increase in their required employer contribution rates since 2001. But more damningly, roughly \$816 billion in teacher pension debt has been accumulated through the end of 2022 and that has triggered the need for significant unfunded liability amortization payments.

Fundamentally, any given state could have prevented a hidden education funding cut by ensuring that its overall K–12 funding grew at a similar rate to the growth in teacher retirement costs. Or the state could have used general funds to cover growing pension debt costs. Those retirement costs might have been considerable, but in such a case, at least the K–12 funding, and the students and teachers that money is intended to support, would not have been undercut.

At a national level, hidden cuts to K–12 spending are growing at a notably fast rate. No matter how you slice the data, over the past two decades, retirement costs have been consuming between two to three times the K–12 education resources that they used to.

This should be alarming for anyone who cares about education resources. This should be viewed as problematic by anyone working toward education equity, expanding education choice, and/or improving education outcomes.

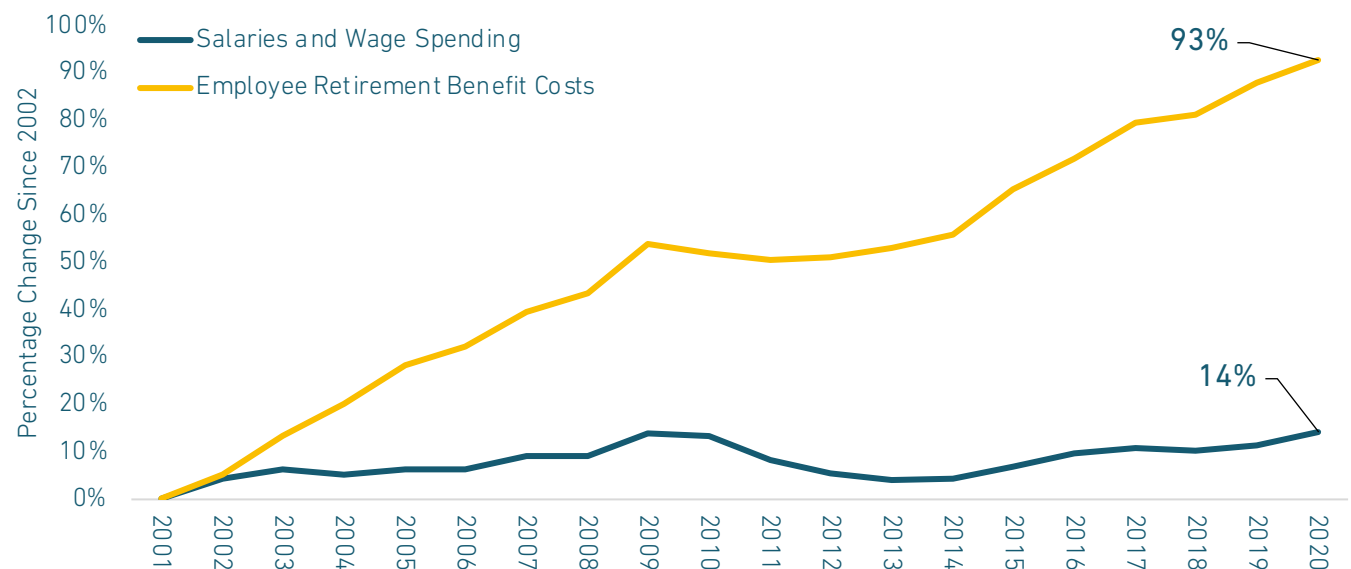
This leaves us with several questions and considerations about the effects of hidden funding cuts on K–12 education itself.

5 . 1 WHAT HAVE BEEN THE EFFECTS OF HIDDEN CUTS ON TEACHER COMPENSATION?

There has been a marked increase in the amount of money spent on teacher retirement benefits over the past two decades, whether in nominal terms or inflation adjusted. In fact, spending on retirement benefits has been notably larger than on teacher salaries. Figure 16 shows the percentage change in spending on teacher salaries and wages since 2001 compared to employee benefit spending, using Census Bureau data.

SPENDING ON TEACHER RETIREMENT IS GROWING MUCH FASTER THAN ON SALARIES

Percent Change in Total National K–12 Spending on Salaries versus Employee Benefits



Source: Census Bureau Public Elementary-Secondary Education Finance Data. Figures are inflation adjusted.

The data in Figure 16 show that relative to 2001, spending on teacher salaries increased 14% by 2020, while K–12 employer spending on benefits jumped 93%.¹⁹ And looking at the change since 2009, inflation adjusted salary spending has only increased 2% while benefit spending increased 72%.

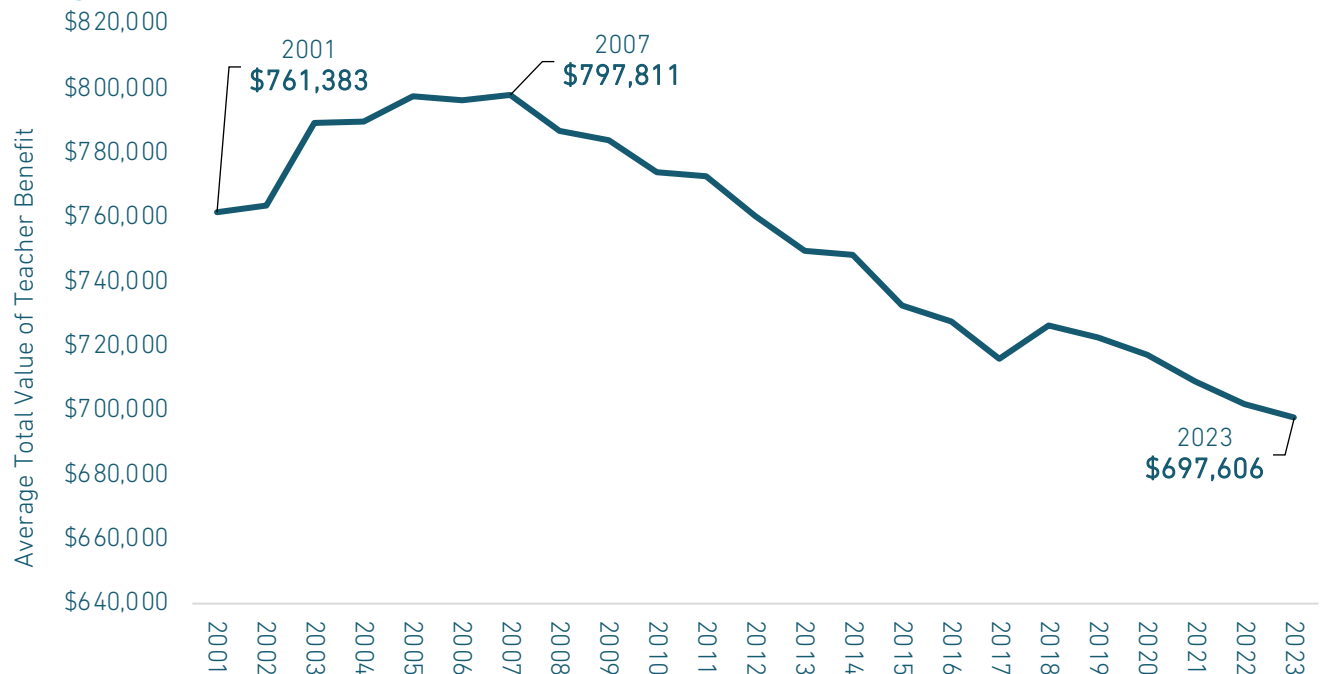
However, this rapid increase in spending on benefits has not meant more valuable retirement benefits overall. Some states have more valuable retirement plans today than two decades ago, and several have expanded access to adequate retirement benefits. But the value of those plans for new workers has been decreasing.

Figure 17 shows how over time there has been a change in the value of what a new teacher entering the profession should estimate to be the lifetime value of retirement income that they would earn if they stayed in the profession in the same state for their whole career.²⁰ In each year on this chart, we look at all public pension plans open to accepting new certificated teachers, consider the normal retirement eligibility rules for each plan (that is, how many years someone would need to work to qualify to start drawing pension checks), and estimate the lifetime value of those benefits for an average teacher salary.

Every year there are new pension plans being opened and closed, moving the average expected benefits around. And since 2005, almost all new pension plans created for new teachers have had lower and lower benefit values. Specifically, there has been a 13% decline in the lifetime value of benefits that a full-career teacher could expect to earn between 2005 and the current 2022–23 school year. Again, this is even though the employer cost of retirement benefits has surged so considerably during that time span.

CHANGE IN THE EXPECTED LIFETIME VALUE OF PENSION BENEFITS FOR A NEW TEACHER ONCE THEY HAVE REACHED NORMAL RETIREMENT ELIGIBILITY, 2001–2023

Average Net Present Value of Defined Benefits at Normal Retirement for a New, 25-Year-Old Hire



Source: Equable Institute analysis of retirement provisions for defined benefit plans open to new hires.

¹⁹ Important note: In Census Bureau data the spending on retirement benefits is bundled with health care benefits. However, we know from retirement spending data that it has increased considerably on its own terms. Whether or not retirement costs are outpacing salaries by 93% or another figure like 75% or 50%, it is still meaningfully growing at a faster rate, and this has put downward pressure on salaries by limiting available resources.

²⁰ For complete details and methodology for the chart, see Jonathan Moody and Anthony Randazzo, "The Fading Value of Teacher Retirement Benefits in America," Equable Institute.

This means that the value of retirement benefits for new teachers is *declining*, while salary growth rates are *stagnant*, and the cost of retirement plans is *increasing* — all contributing to growing hidden education funding cuts. Teachers' lives are being made harder, with lower compensation (see the benefit values and flat salary growth rate in Figures 17 and 18) all while being offered fewer resources in the classroom (see the hidden funding cuts shown in Figures 1, 4, and 9).

5 . 2 ARE CERTAIN STATE FUNDING POLICIES MORE LIKELY TO CAUSE A GROWTH RATE IN HIDDEN EDUCATION FUNDING CUTS?

There is an important relationship between both a state's growth rate in K–12 funding generally and its growth rate in retirement costs. Hidden funding cuts could go up because of additional retirement costs. But a state could mitigate these costs by back-filling district budgets or paying them directly out of general funds. As such, it is hard to tease out any specific policies across states that might consistently make one more prone than another to develop hidden education funding cuts.

For example, there are a range of factors that could cause unfunded liabilities to increase — thus meaning higher pension debt costs and higher retirement costs. But these causes are not uniformly distributed across the states.

Figure 18 shows the various factors that have caused an increase in pension debt through 2020. The leading cause in growth in unfunded teacher pension liabilities is investment performance being less than anticipated (the first column). Other leading causes nationally are when pension plans have had to change assumptions about future investment returns, mortality, or other demographic factors (the second column), and states that have had interest accumulating on their pension debt faster than they are paying it down (the third column).²¹

Only a tiny fraction of national teacher pension debt is due to states that didn't pay their pension bills (the fifth column). But for certain states, like Illinois and Texas, this has been a significant source of teacher pension debt. Nationally, demographic changes like people living longer than expected haven't been a main source of pension debt growth (the sixth column), but in certain states, like Florida, they have been major contributors to unfunded liabilities.

Last, while some states, such as California, have added to their unfunded liabilities with increases in retirement benefits, there have been more states, like Ohio, that have reduced teacher pension benefit values such that changes to benefits have on net decreased teacher pension debt (the seventh column).

We can't know from this national analysis what is the most likely cause for any given state's hidden funding cut growth without looking at the particulars of each state's pension fund history.

Similarly, we found there is no clear link between the assumed rate of return on pension assets that a state uses and their size of hidden funding cut. Neither is there any effective correlation between states that have a requirement to pay their annual actuarially determined contribution rates and states with a large growth rate in hidden education funding cuts over the past two decades.²²

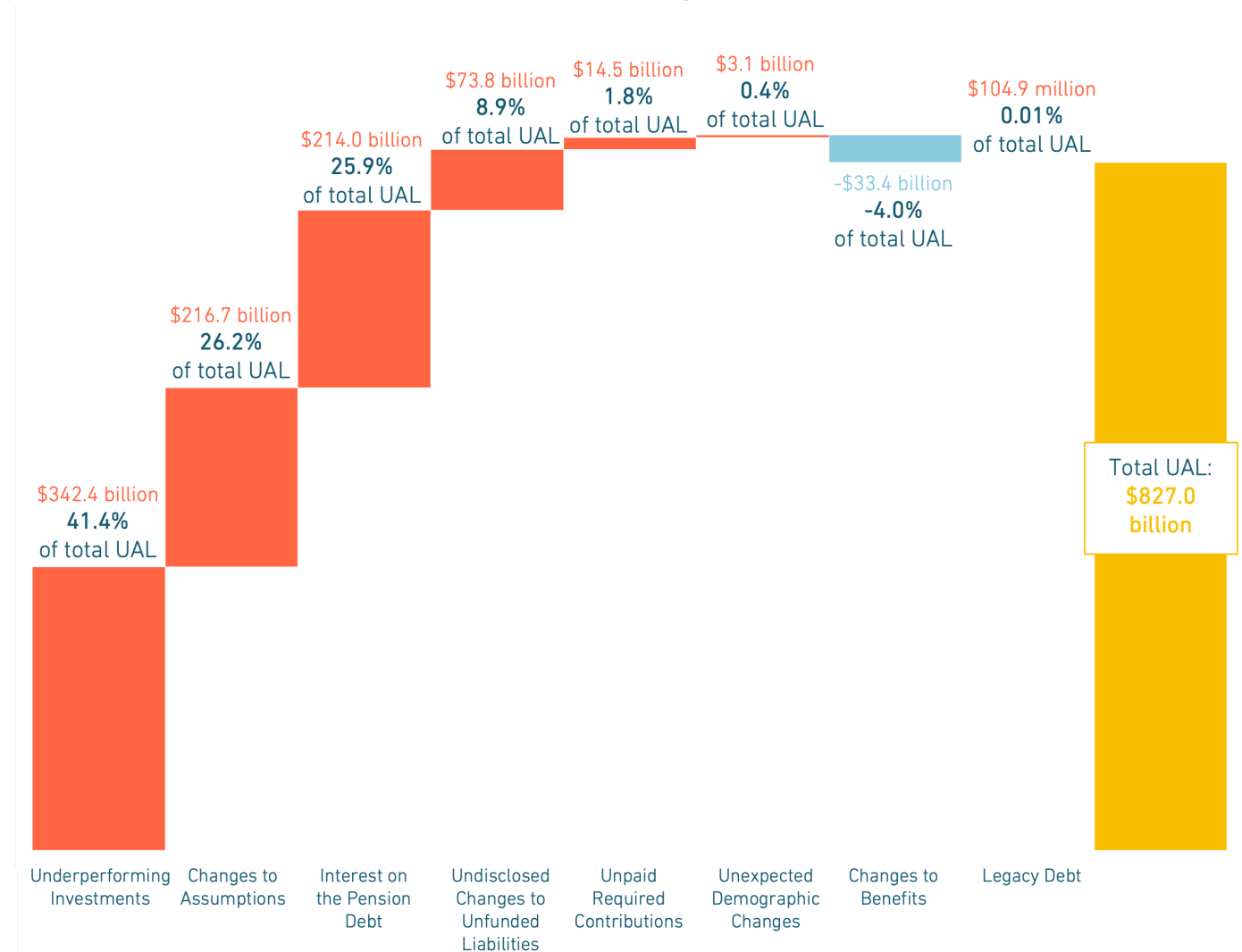
²¹ These category descriptions are simplified from the technical definitions. For a formal discussion of this gain/loss analysis, see Equable's working paper, "[Sources of America's Public Pension Debt](#)." Ironically, states that were (or still are) using relatively high assumed rates of return over the past two decades would have effectively kept their employer contribution rates lower than would have otherwise been appropriate (and thus would have avoided some protential increases in hidden cuts). In the short term, it would have meant lower normal costs, but in the long term, it would have meant increased unfunded liability amortization payments related to underperforming investments. States that were early adopters of lower assumed rates of return may or may not have increased K–12 funding to cover the additional (appropriate) pension costs.

²² To assess the relationship between these requirements and hidden education funding cuts, we reviewed the language presented in each respective retirement system's actuarial valuations and annual comprehensive financial reports to discern whether there were statutory guidelines that required the full actuarially determined contribution to be paid. In many cases, we did locate language referring to statutory contribution rates that were tied to the ADEC and in many other instances the simple existence of a statutory contribution rate results in the plan consistently paying their full ADEC. However, we note that there are also cases where statutory contribution rates result in underpayment relative to the ADEC, as the statutes either do not update quickly enough or otherwise prevent contributions high enough to meet the actuarial bill. The presence of requirements was treated as a binary variable which was then correlated against the size of the hidden education funding cuts for a given plan. The resulting correlation was -0.05. We also examined the correlation between the change in the hidden education funding cut since 2001/02 and the presence of statutory requirements and found an equally inconclusive 0.07.

FIGURE 18

SOURCES OF UNFUNDED LIABILITIES FOR TEACHER PENSION PLANS

Cumulative Actuarial Gain/Loss Data as of Fiscal Year Ending 2020



Source: Equable Institute analysis of retirement system actuarial valuation reports.

Unsurprisingly, as the funded ratio of teacher pension benefits nationally has declined or improved there has been some marginal associated change with hidden funding cut levels. However, the relationship is weak because employer contribution rates to retirement benefits are typically determined one to two years in advance (meaning a funded ratio decline in a given year might not influence the contribution rates for the following year at all) and the effects of large increases in unfunded liabilities might get spread out over three to five years (meaning because contribution rates are typically determined using a pension fund's "actuarial value" of assets, any single year event won't have a complete effect on the proceeding single year's contribution rate).

5.3 HAVE “PENSION REFORMS” INCREASED OR DECREASED HIDDEN FUNDING CUTS?

There is little relationship between states that have cut benefits recently and a decline in hidden funding cuts. Consider that Illinois slashed the value of pension benefits for new teachers starting in 2011 by roughly 2/3, but that state remains near the top of the list in terms of growth rate in hidden cuts over the past two decades. The reason is that Illinois continues to face large costs of paying down unfunded liabilities.

Michigan, by contrast, has taken a number of steps since 2018 to improve its Public School Employees' Retirement System by creating a new hybrid plan, offering the option of a primary defined contribution plan, and lowering its assumed rate of return on pension assets from 8% to 6%. All of these changes will have positive long-term effects on the distribution of retirement benefits to teachers and the resilience of pension benefits, but they will take one or two decades to start showing effects. And so, Michigan also remains among those with large growth rates in hidden funding cuts.

Both Michigan and Illinois could have taken steps to avoid hidden education funding cuts by using general fund dollars to pay for all or a portion of unfunded liabilities. In particular, Michigan pays for a portion of teacher retirement costs off the top of its School Aid Fund, which reduces resources that get distributed by the state to districts. As teacher retirement costs in Michigan increased while it improved responsibly paying for pension debts, these costs were directly paid out of resources intended for K–12 generally. Even as school budgets were increased each year, the dollars getting to the classroom were not as large as policymakers intended (and might have actually declined).

Rhode Island has had one of the larger declines in hidden state own-source education funding cuts since 2009, an absolute decrease of 1.74 percentage points — and they experienced only a slight 0.8 percentage point increase in state and local education funding cuts during the same time period. That state had a significant overhaul of retirement benefits around 2011 that influenced its contribution rates. However, changes in K–12 spending also contributed to keep hidden funding cuts down. Similarly, Utah overhauled its retirement system aiming to stabilize costs starting with the fiscal year ending 2012. The total 20.1% hidden cut to state own-source K–12 funding in 2012 has been more or less stable since then, ending up at 20.5% in 2021, and the hidden cut to state and local spending combined has hardly changed during the same time period either, sliding from 6.1% in 2012 to 6.7% in 2020. However, Utah also had to ensure that its K–12 spending was growing with retirement costs to maintain those stable levels.

Our collective assessment is that the following short list of practices are indicative of being less likely to have growing hidden funding cuts, but are not necessarily widely shared traits with every state that has been better at keeping its hidden cuts on a stable trend line:

1. Ensure that, as retirement costs grow, K–12 funding is similarly increased.
2. Adopt adjustments to retirement systems that stabilize retirement costs.
3. Provide supplemental dollars from the general fund to bring down employer costs for school districts.

States that have undertaken sweeping overhauls to their retirement systems might be more likely in the future to struggle less with hidden education funding cuts. But in the near term, it is just as likely that a “pension reform” will increase hidden funding cuts as decrease them because of the important relationship between the growth rate in K–12 funding and the growth rate in retirement costs.

5.4 SOLUTIONS

There are limits to how much generalized policy solutions can address each state's individual hidden education funding cuts. Every state presents a unique set of education funding policies and retirement policy challenges. In addition to varying funding formula rules, tax codes, and budget structures, there are also varying demographic, workforce, and underlying economic trends that could change what reasonable retirement policy looks like.

However, there are a few key principles that can guide policy change across the country, and policymakers and stakeholders in each state can use these to guide improvements to their status quo.

1. Transparency

Across the board, there is a transparency problem when it comes to the effect of retirement costs on education funding. States can implement reporting standards that reflect these effects so creeping hidden funding cuts can be addressed before they become untenable or damaging to teachers and students. One possible approach:

- A general annual report tracking each dollar of K–12 spending, including shares going to retirement costs. Legislatures could determine the most appropriate measurement of education spending in their state, and require an annual report that compares this with the change in teacher retirement costs, whether paid by the state and/or school districts. This is particularly important for states with funding formulas integrating local control of education resources, as any pension debt costs that get pushed down to districts can inhibit their ability to allocate those funds to improving educational outcomes and appropriate pay for educators.

2. Use the General Fund for Pension Debt Instead of Education Dollars

Traditionally, pension payments are just considered part of the cost of providing retirement benefits, which is a form of compensation. However, there is very little that school districts can do to manage pension plans or avoid the development of unfunded liabilities. It would be more appropriate for the state to pay for any costs of unfunded liabilities directly — and ideally use general fund dollars and not money otherwise earmarked for K–12. A few specific approaches could be:

- Provide one-time, supplemental contributions to a teacher pension plan to pay down unfunded liabilities using budget surplus dollars and/or money from rainy day funds.
- Adopt a rule that school districts only need to pay for normal costs of retirement benefits.

3. Ensure Education Funding Grows at Least at the Rate of Retirement Costs

State governments can work to ensure that hidden funding cuts do not get worse by reviewing annual retirement costs each year and ensuring that they are not growing any faster than the combined state and local K–12 budgets. States should also review:

- Whether growing retirement costs for school districts are exacerbating education inequities.
- Whether state retirement payments (non-employer contributions) on behalf of school districts, which are effectively a kind of pension subsidy, are inequitably distributed.

4. Improve Pension Funding Policies

All states should continuously work toward achieving a resilient funded status for their defined benefit plans. The specific challenges to solve and solutions for them vary considerably from state to state. Each state has to look holistically at the current and potential future effects of pension debt costs and design targeted policy accordingly. While there are no one-size-fits-all solutions, policymakers could draw inspiration from a set of policy ideas for four specific states in a series of papers called "[The Pension Debt Challenge for Equity in Education.](#)"

Appendices

Appendix A: Effect of Federal Covid Relief Dollars

There were three special Congressional infusions of cash into state and local education budgets as a response to the Covid-19 pandemic between March 2020 and March 2021.²³ In total, these relief/rescue bills allocated nearly \$190 billion to the Elementary and Secondary School Emergency Relief Fund known as ESSER. Generally, these dollars have not had a meaningful influence on the hidden education funding cuts analyzed in this paper. The main reason is that most of the teacher retirement costs and school budget dollars analyzed in this paper were determined before the pandemic hit.

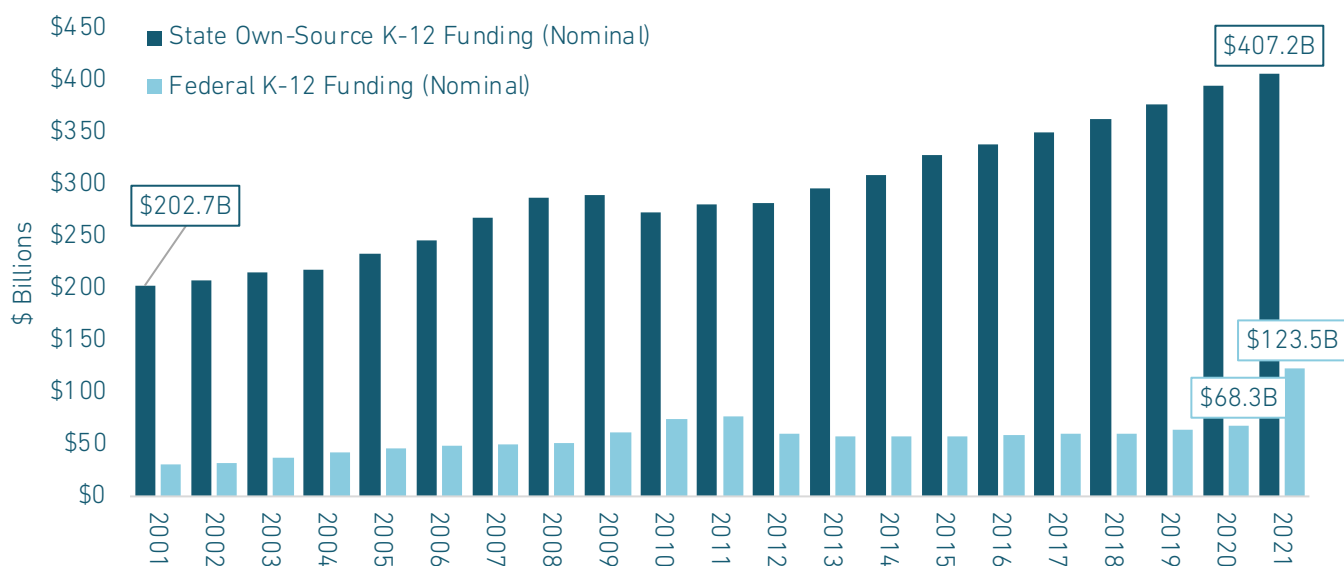
The pandemic struck in the spring of 2020, when schools were mostly toward the end of the 2019–20 school year. All retirement costs measured through 2020 would have been determined well in advance of this, and since there were no widespread teacher layoffs between March and June of 2020, any contribution rates as a percentage of salary would have been paid as usual.

To the degree that any expenditures during the school year ending 2020 were pandemic-related, these were largely provided for with special state and federal funding. Federal expenditures are tracked separately from K–12 spending using state and local dollars, and we’ve been able to exclude all of these federal dollars from this analysis.

For the 2020–21 school year, there were ESSER dollars that would have been used by schools for prescribed expenses, such as personal protective equipment and air filtration devices that would allow the reopening of schools (Figure A1 shows a jump in federal dollars for FY2021 relative to previous years.). But again, our methodological approach (see Appendix B) allowed us to separate out these federal dollars.

FIGURE A1: STATE VERSUS FEDERAL K–12 EXPENDITURE HISTORY

K–12 State and Federal Expenditures, Nominal, 2001–2021



Source: NASBO State Expenditure Reports.

The teacher retirement expenses for the 2020–21 school year would not have been meaningfully influenced by any investment losses related to the financial crisis due to the nature of the budget cycles that determine contribution rates.²⁴ So, the retirement costs for 2021 data are also largely unaffected by the pandemic.

²³ The first bill created an Elementary and Secondary School Emergency Relief Fund (now known as ESSER 1), a portion of the second stimulus/relief bill in December 2020 was known as ESSER 2, and a portion of the third “rescue” bill is referred to as ARP ESSER. See the following link for more details: <https://oese.ed.gov/offices/education-stabilization-fund/elementary-secondary-school-emergency-relief-fund/>.

²⁴ A typical state teacher pension plan ends its fiscal year on June 30 and provides information to the state legislature on necessary changes to contribution rates, which get adopted during the following spring legislative session and adopted starting the following July. Several states determine contribution rates two years in advance, and other states have fiscal years ending in the fall or December that create an 18-month period between when new contribution rates can be determined and when school employers must pay them. Contribution rates to be paid starting in July 2020 through June 2021 simply couldn’t have been influenced by Covid-19 factors in any normal context. Additionally, most pension

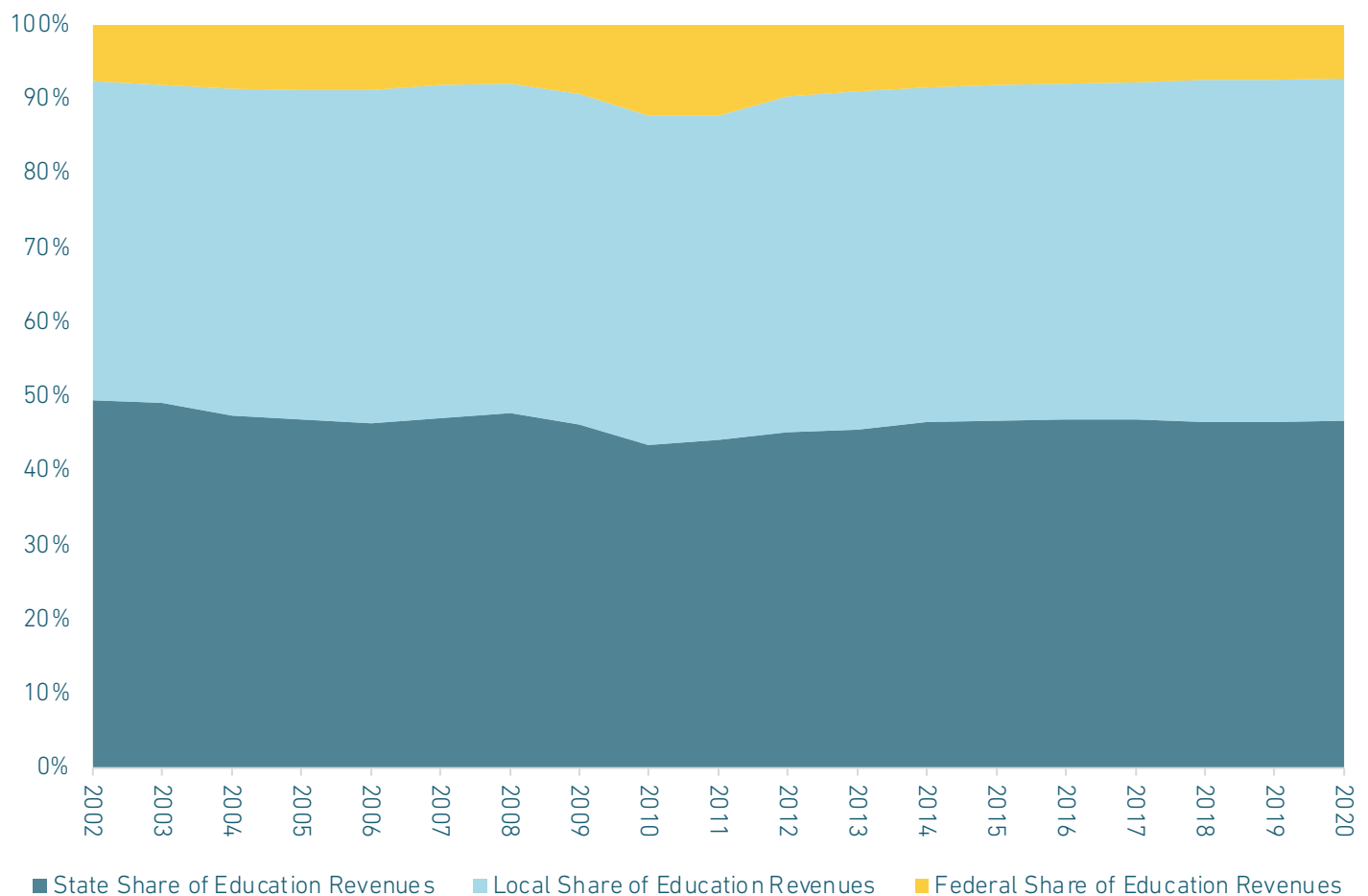
ESSER money provided through the American Rescue Plan (March 2021) could have some long-term effects on school expenditure and teacher retirement cost data, depending on how it is tracked and measured. For example, even though the ARP legislation says it is not to be used for pension costs, some states have used their budget surpluses to provide supplemental contributions to teacher retirement plans — and those surpluses were in part made possible by ESSER dollars. Similarly, school districts have used ESSER funds for hiring purposes, which may mean retirement costs that would not have otherwise been paid.

Whatever the case on either front, the first time they will meaningfully show up in data will be for the 2022 fiscal year and beyond. As such, they do not influence the findings in this report measuring state-reported K–12 expenditures through the 2021 school year, and Census Bureau–reported K–12 expenditures through the 2020 school year.

Generally, there are three sources of money for K–12 education: federal, state, and local dollars. Figure 2 shows a distribution of all K–12 spending over the past two decades based on the funding source.

FIGURE A2: SOURCES OF NATIONAL K–12 EDUCATION FUNDING

K–12 Education Expenditures by Source, 2002–2020



Source: Census Bureau Public Elementary-Secondary Education Finance Data.

funds spread out investment gains and losses over a five-year period. So, to the degree that there were any unique cases where 2021 contribution rates were reflecting some investment losses (such as for a state that changes contribution rates separate from a normal fall to spring school cycle), there would just have been a small portion of these losses layered in.

Appendix B: Methodology

Data collected for this report came from a wide range of sources, including the Census Bureau, state and local retirement systems, and the National Association of State Budget Officers (NASBO). For a complete methodology of this report, visit: <https://equable.org/methodology-hidden-education-funding-cuts-2023>.

“Retirement costs” throughout this paper refer to any employer contributions to a retirement plan that is intended for providing a primary source of income to teachers and/or public school employees (including for retirement plans offered to teachers by municipalities). This includes defined benefit pension plans, defined benefit cash balance plans (or guaranteed return plans), defined contribution plans, and hybrid forms of these structures. We notably did not include any employer contributions to supplemental retirement plans, nor did we count employer “pick-ups” of member contributions as these are managed at the district level and are not always consistent across a given state. We also did not count supplemental payments made to a pension fund if they were from a state’s general fund or a rainy-day fund.

“Employer contributions” in this context refers to school district employers and, where applicable, state contributions as a non-employer contributor. Most states have separate retirement systems, retirement plans, or tiers of benefits for teachers and public school employees, and this allows us to collect contribution rate data specific to these classifications of employee. States that offer the same retirement plan for all civilian public employees typically publish reports based on Government Accounting Standards Bureau guidelines that document what share of the collective pension plan’s contributions were associated with K–12 employers.

In the small number of cases where these data were not provided for a given year, we used an estimating methodology to determine what share of employer contributions to count in this study. Further, in a small number of cases, complete employer contribution data for primary income defined contribution plans were not available — this effectively makes all of our estimates slightly conservative. The dollars involved in these exclusions are exceedingly small and would not influence the overall analysis if they were included (though they would change the headline figures for a specific state).

There are two ways we’ve documented K–12 spending. Both approaches exclude federal dollars as these generally are prescribed for specific programs and not typically the basis of sources of payroll financing. Since retirement costs are almost always managed at the state level, we’ve focused on state own-source K–12 expenditures as documented in self-reports to the National Association of State Budget Officers. However, there are certain states where local revenues provide a considerable share of K–12 revenues and it is appropriate to also document retirement costs as a share of combined state and local K–12 spending, too, using data from the Census Bureau.

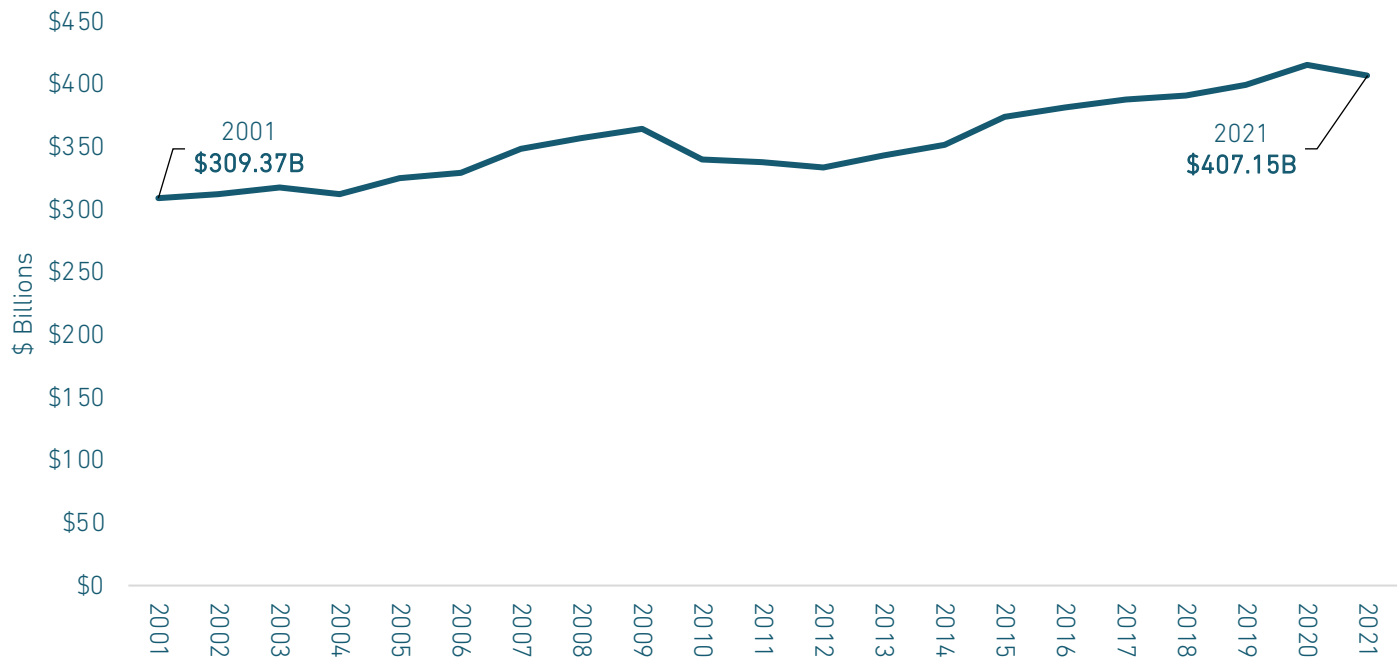
Both the NASBO and Census data have strengths and weaknesses which are summarized in this report and detailed in the complete methodology. One of the limits of the Census Bureau data is the number of years covered and completeness of data provided. This has meant most of our Census Bureau data-based analysis focuses on the period 2002 to 2020. By contrast, we can use NASBO data for the period 2001 to 2021. And 2001 is an appropriate starting point for analysis because it marks the point in time when teacher pension plans were best funded.

It is worth emphasizing that state expenditure data in NASBO and Census Bureau reports largely track (except for 2001), and show similar trendlines for hidden education funding cuts. This information is more completely provided in the linked methodology document.

Appendix C: Baseline Education and Retirement Expenditures

FIGURE C1: STATE OWN-SOURCE K-12 EDUCATION SPENDING HISTORY

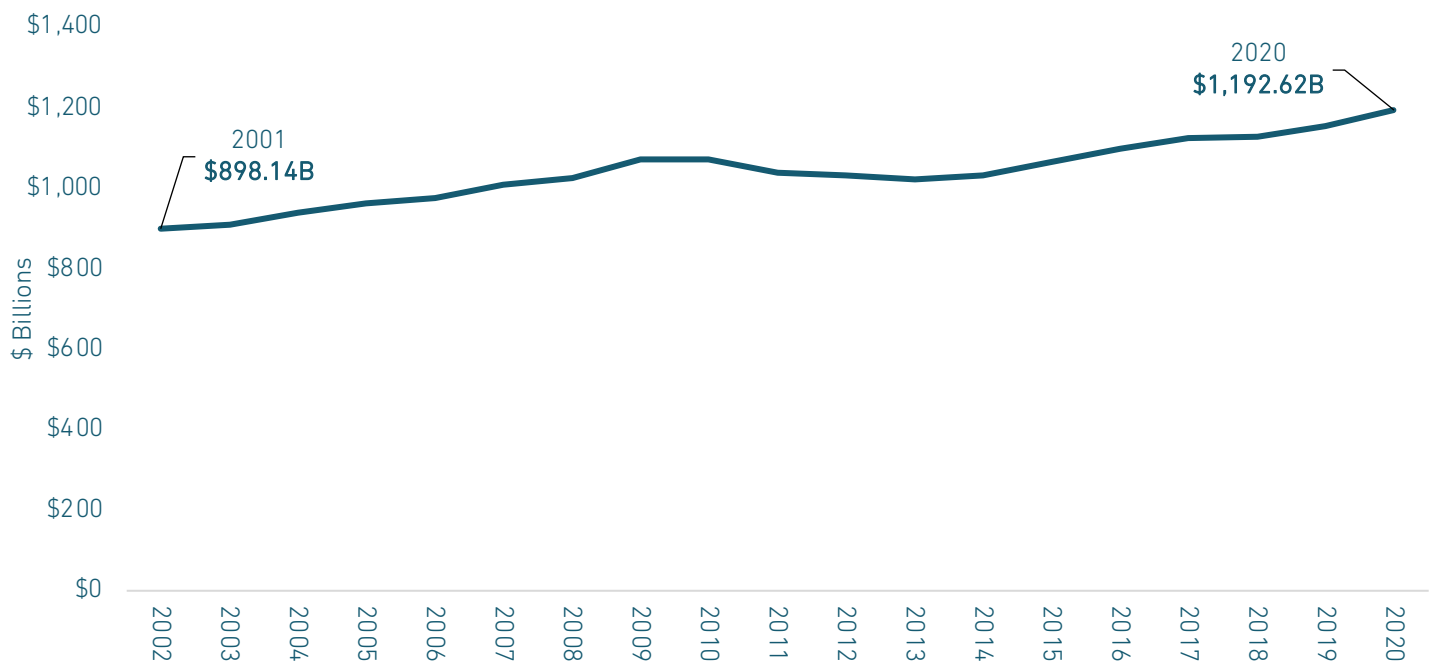
Own-Source K-12 State Education Expenditures, Inflation-Adjusted, 2001-21



Source: National Association of State Budget Officers

FIGURE C2: STATE AND LOCAL K-12 EDUCATION SPENDING HISTORY

K-12 State and Local Expenditures, Inflation-Adjusted, 2001-20

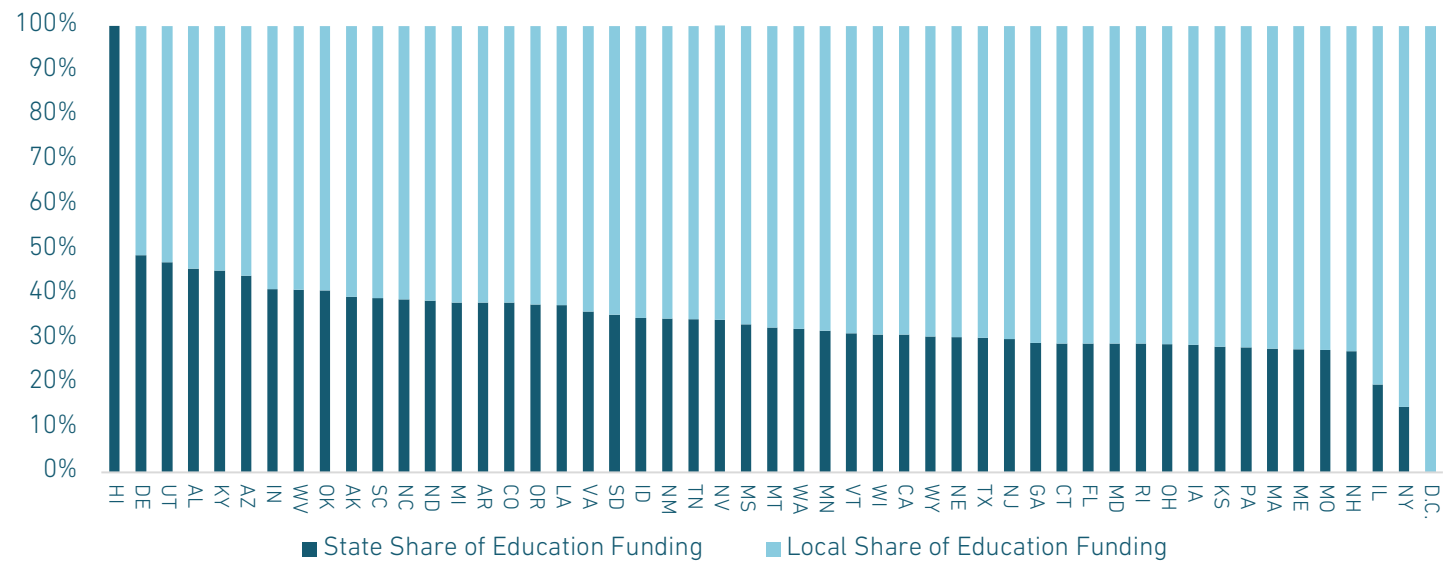


Source: Census Bureau. Note: Excludes federal expenditures on K-12 education.

Tax collection policy also varies considerably from state to state. In certain states, the majority of money provided to school districts is by the state, while in other states, the opposite is true. Figure C3 shows the percentage of non-federal K–12 spending that was provided by state or local governments.

FIGURE C3: SHARE OF K–12 EDUCATION FUNDING COMING FROM STATE OR LOCAL REVENUES

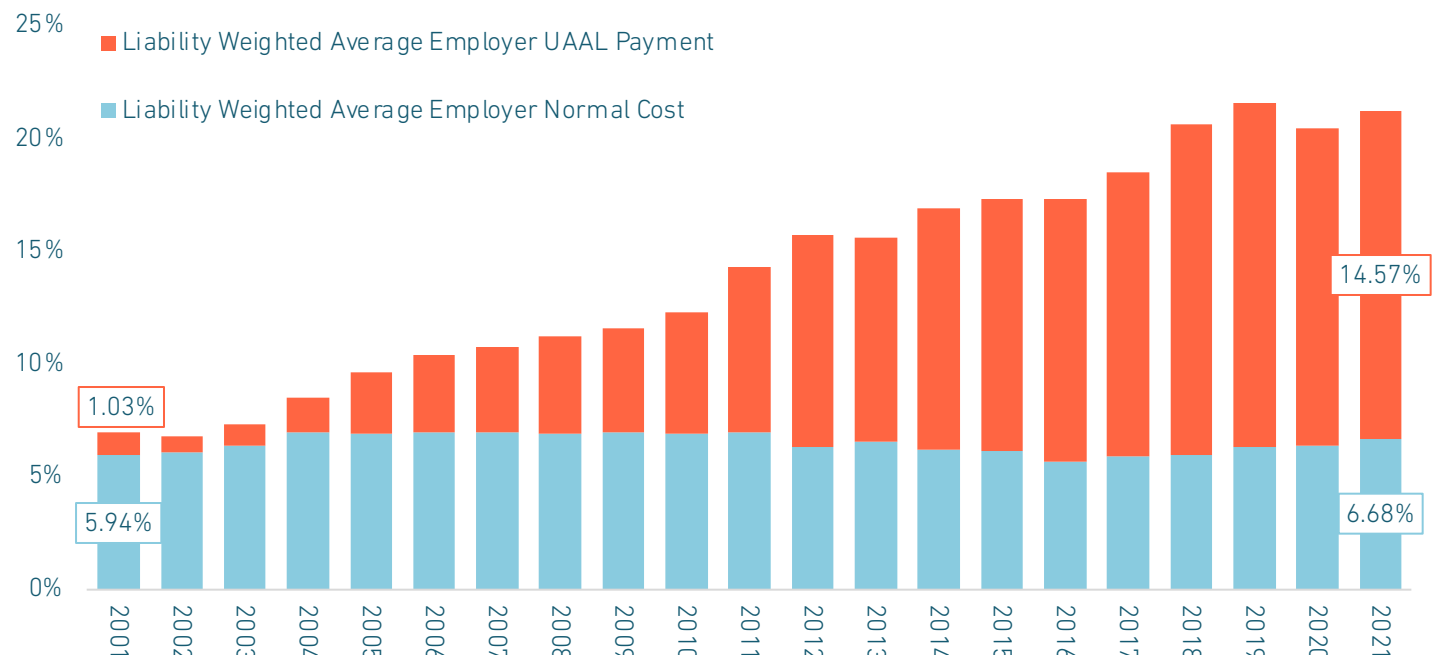
K–12 Education Expenditures by Funding Source, 2020



Source: Census Bureau Annual Surveys of State and Local Government Finance.

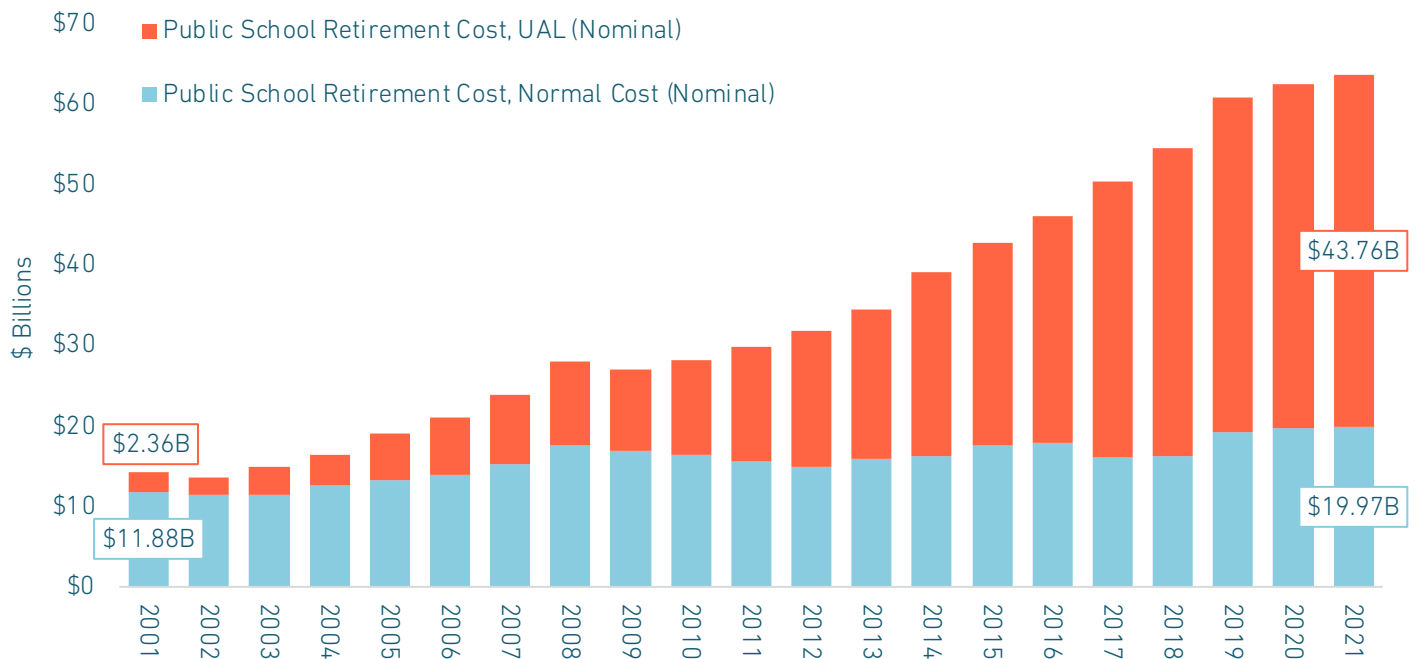
FIGURE C4: PUBLIC SCHOOL RETIREMENT COST SPENDING HISTORY, PERCENTAGE OF PAYROLL

Actual Employer Contributions, as a Percentage of Payroll, 2001–22



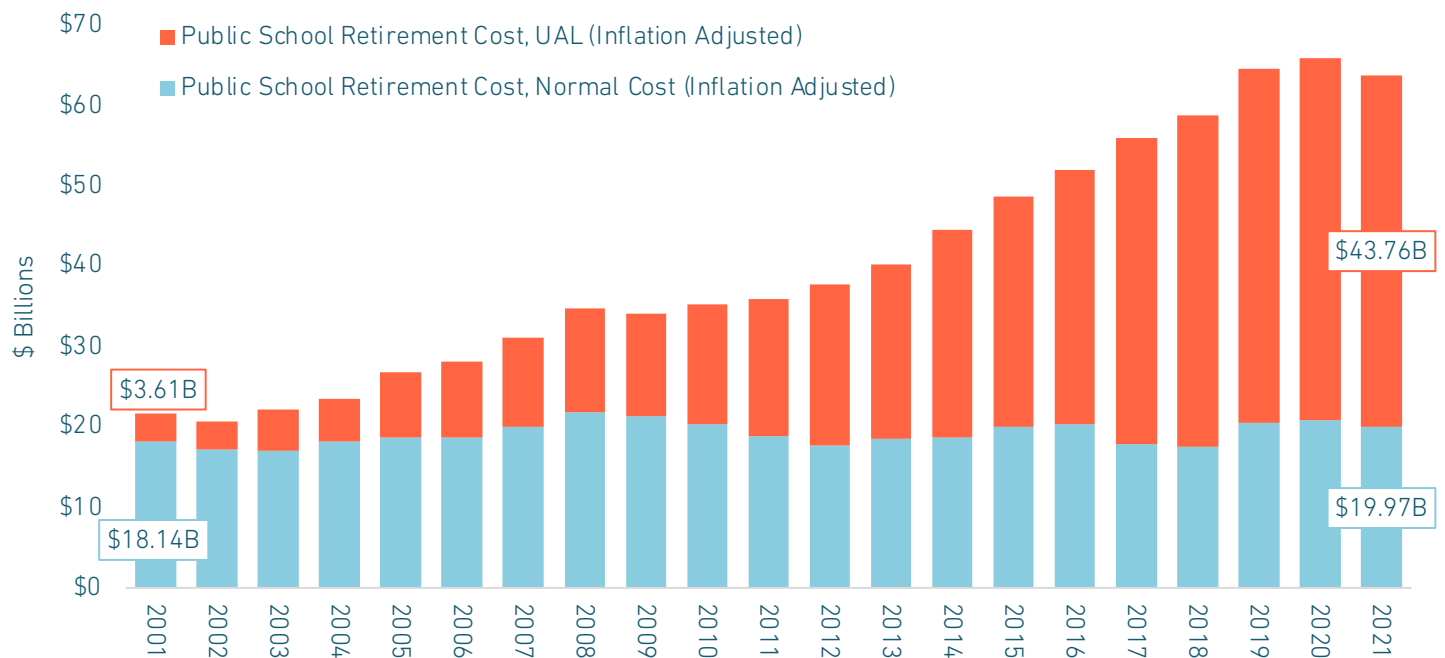
Source: Equable Institute analysis of public retirement system actuarial valuations and ACFRs.

FIGURE C5: PUBLIC SCHOOL RETIREMENT COST SPENDING HISTORY, NOMINAL
Actual Employer Contributions, in Nominal Dollars, 2001–22



Source: Equable Institute analysis of public retirement system actuarial valuations and ACFRs.

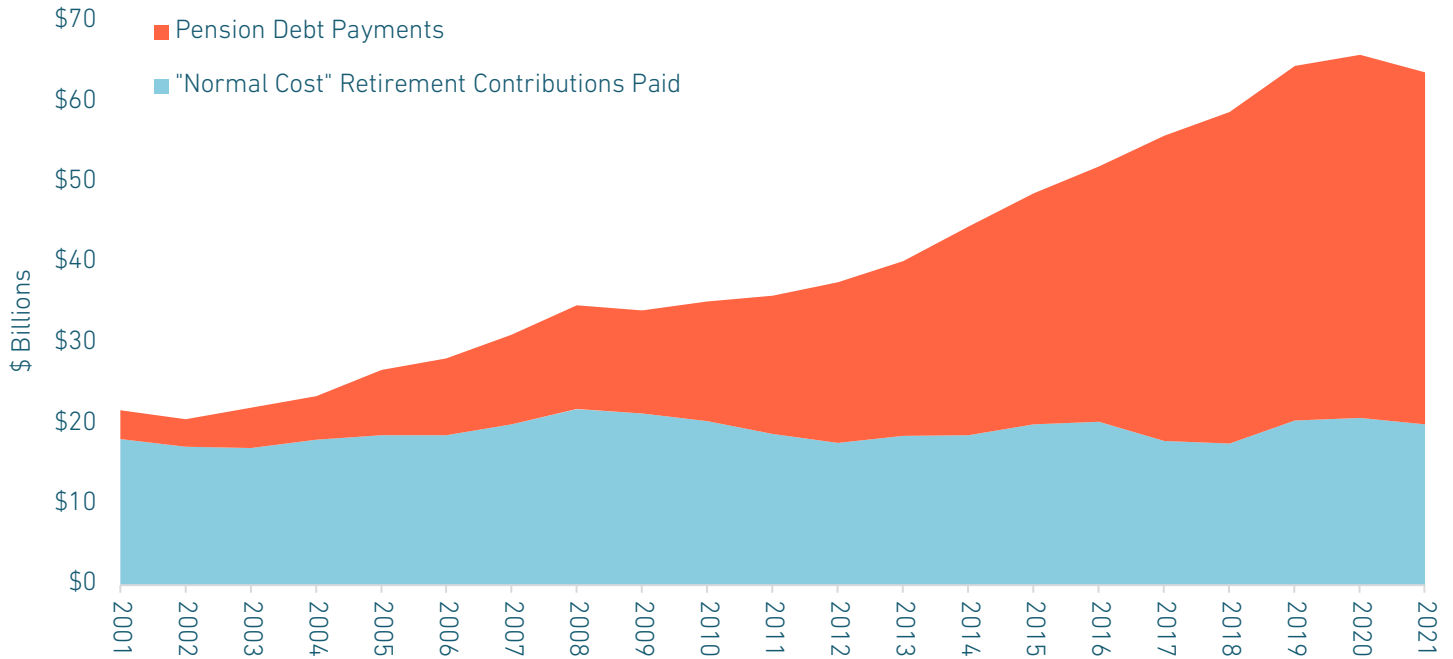
FIGURE C6: PUBLIC SCHOOL RETIREMENT COST SPENDING HISTORY, INFLATION-ADJUSTED
Actual Employer Contributions, Inflation-Adjusted, 2001–2022



Source: Equable Institute analysis of public retirement system actuarial valuations and ACFRs.

FIGURE C7: INCREASED RETIREMENT COSTS HAVE BEEN PRIMARILY DRIVEN BY THE NEED FOR ADDITIONAL PENSION DEBT PAYMENTS

Normal Cost and Unfunded Liability Amortization Payment Shares of Teacher Retirement Costs, 2001–21



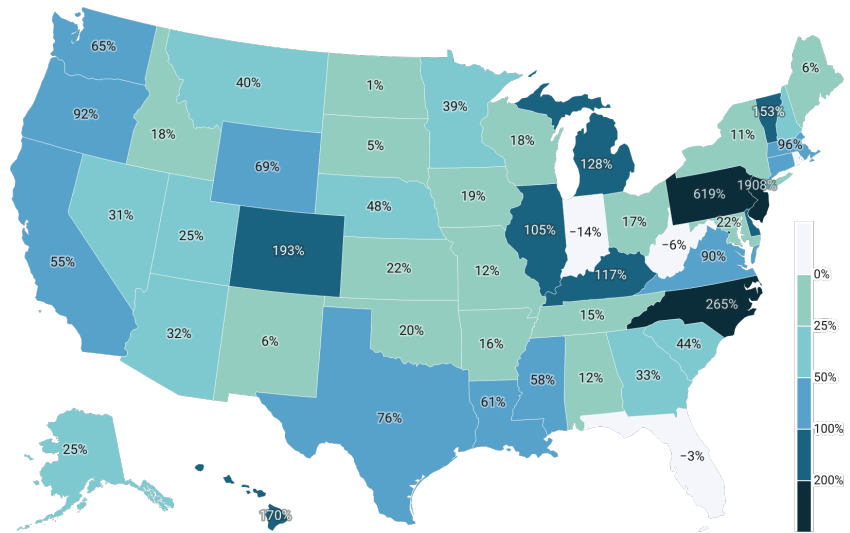
Source: Equable Institute analysis of public plan valuation reports and ACFRs. Normal cost figures include employer contributions to defined contribution plans intended to contribute to primary retirement income.

Appendix D: Heatmaps Showing the Percentage Change in Hidden Funding Cuts

The national trendlines for hidden education cuts are clearly a problem for the country as a whole. However, the policies related to overall education funding and management of retirement systems are all decided at the state level. And how hidden education funding cuts have manifested from state to state varies considerably. In Part 4 of this paper, we showed heatmaps with the percentage change in hidden education funding cuts over the past two decades as a way of providing another perspective on trendline growth rates. In this appendix, we provide similar heatmaps that show percentage change since 2009, and for the percentage change over the last five years.

**FIGURE D1: GROWTH RATE
IN TEACHER RETIREMENT
COSTS AS A SHARE OF
STATE OWN-SOURCE K-12
EDUCATION FUNDING,
2009–21**

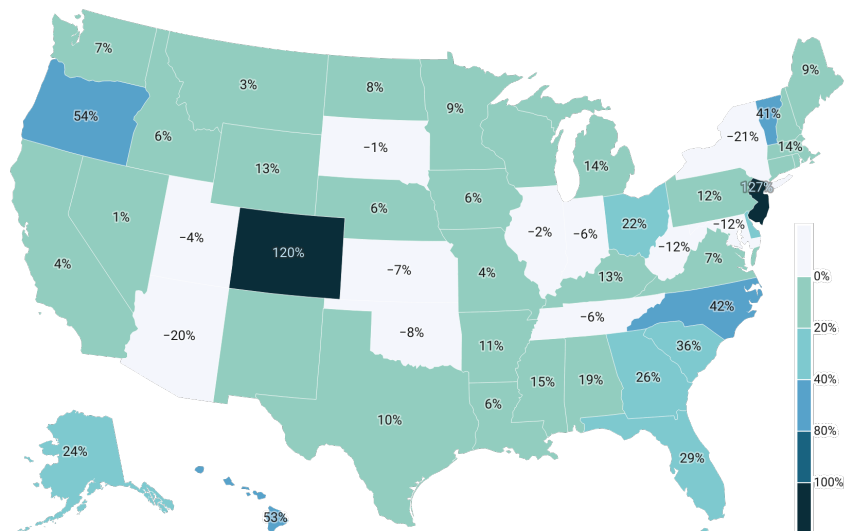
Percentage Change Since 2009



Source: Equable Institute analysis of public plan valuation reports and ACFRs and NASBO state own-source K-12 education spending data. These figures are based on expenditures data adjusted for inflation to 2021 dollars.

**FIGURE D2: GROWTH RATE
IN TEACHER RETIREMENT
COSTS AS A SHARE OF
STATE OWN-SOURCE K-12
EDUCATION FUNDING,
2017–21**

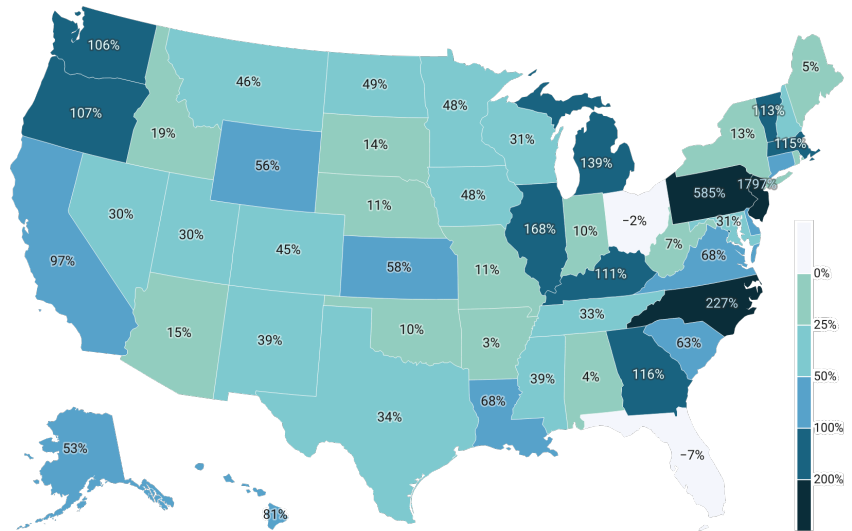
Percentage Change Since 2017



Source: Equable Institute analysis of public plan valuation reports and ACFRs and NASBO state own-source K-12 education spending data. These figures are based on expenditures data adjusted for inflation to 2021 dollars.

**FIGURE D3: GROWTH RATE
IN TEACHER RETIREMENT
COSTS AS A SHARE OF
STATE AND LOCAL K-12
EDUCATION FUNDING,
2009-20**

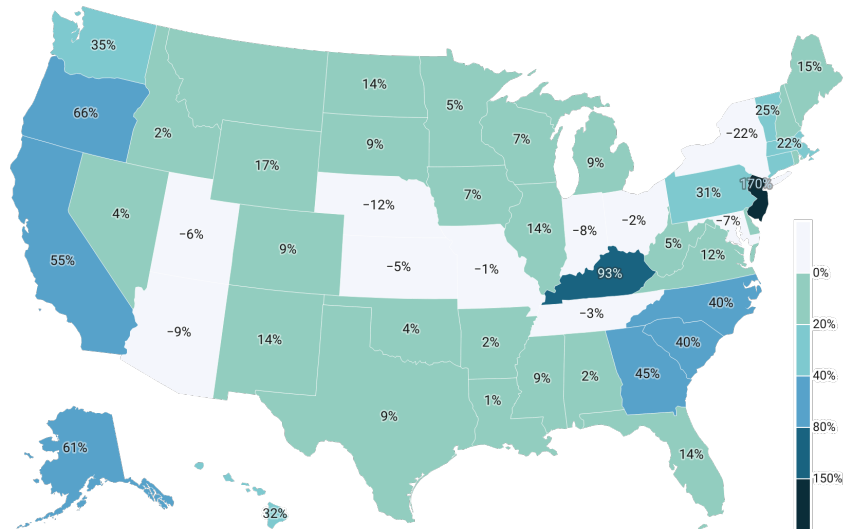
Percentage Change Since 2009



Source: Equable Institute analysis of public plan valuation reports and ACFRs and Census Bureau state and local K-12 education spending data. These figures are based on expenditures data adjusted for inflation to 2021 dollars.

**FIGURE D4: GROWTH RATE
IN TEACHER RETIREMENT
COSTS AS A SHARE OF
STATE AND LOCAL K-12
EDUCATION FUNDING,
2016-20**

Percentage Change Since 2016



Source: Equable Institute analysis of public plan valuation reports and ACFRs and Census Bureau state and local K-12 education spending data. These figures are based on expenditures data adjusted for inflation to 2021 dollars.

Appendix E: California Special Note

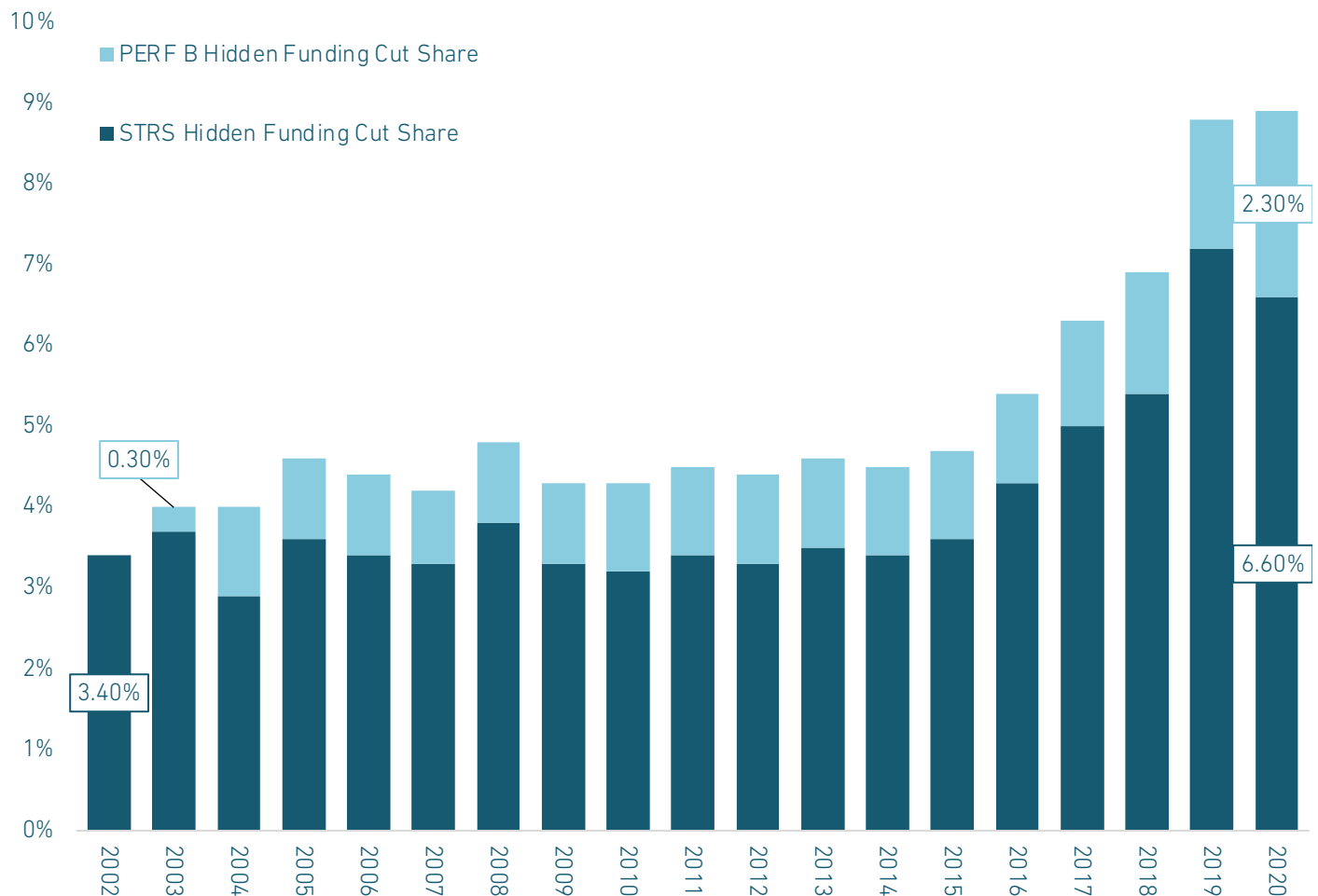
Our normal methodology excludes non-instructional public school employees where possible because in many states those employees get separate benefits that aren't easily distinguished from other general state and local employees. This is the case for California up through the end of 2013, where non-certificated public school employees are provided benefits through the CalPERS Public Employee Retirement Fund B (PERF B) but without easily separated out employer contributions in public reporting from other CalPERS funds.

Starting from 2014, CalPERS does provide detailed employer contribution rate data for PERF B though. This allows us to take a special look at California, where the public school employees benefits are a meaningful component to school district costs. In fact, CalPERS PERF B unfunded liabilities are roughly 1/3 of CalSTRS.

Using the post-2014 data, we are able to specifically identify total school district retirement costs (CalSTRS + PERF B) and estimate total retirement costs back to 2001. The result is a more accurate look at the growth rate in hidden education funding cuts for California school districts, since school budgets spend money on compensation for more than just teacher salaries.

FIGURE E1: CALIFORNIA HIDDEN EDUCATION FUNDING CUTS FOR TEACHER AND PUBLIC SCHOOL EMPLOYEE RETIREMENT COSTS COMBINED, BASED ON STATE AND LOCAL K-12 SPENDING

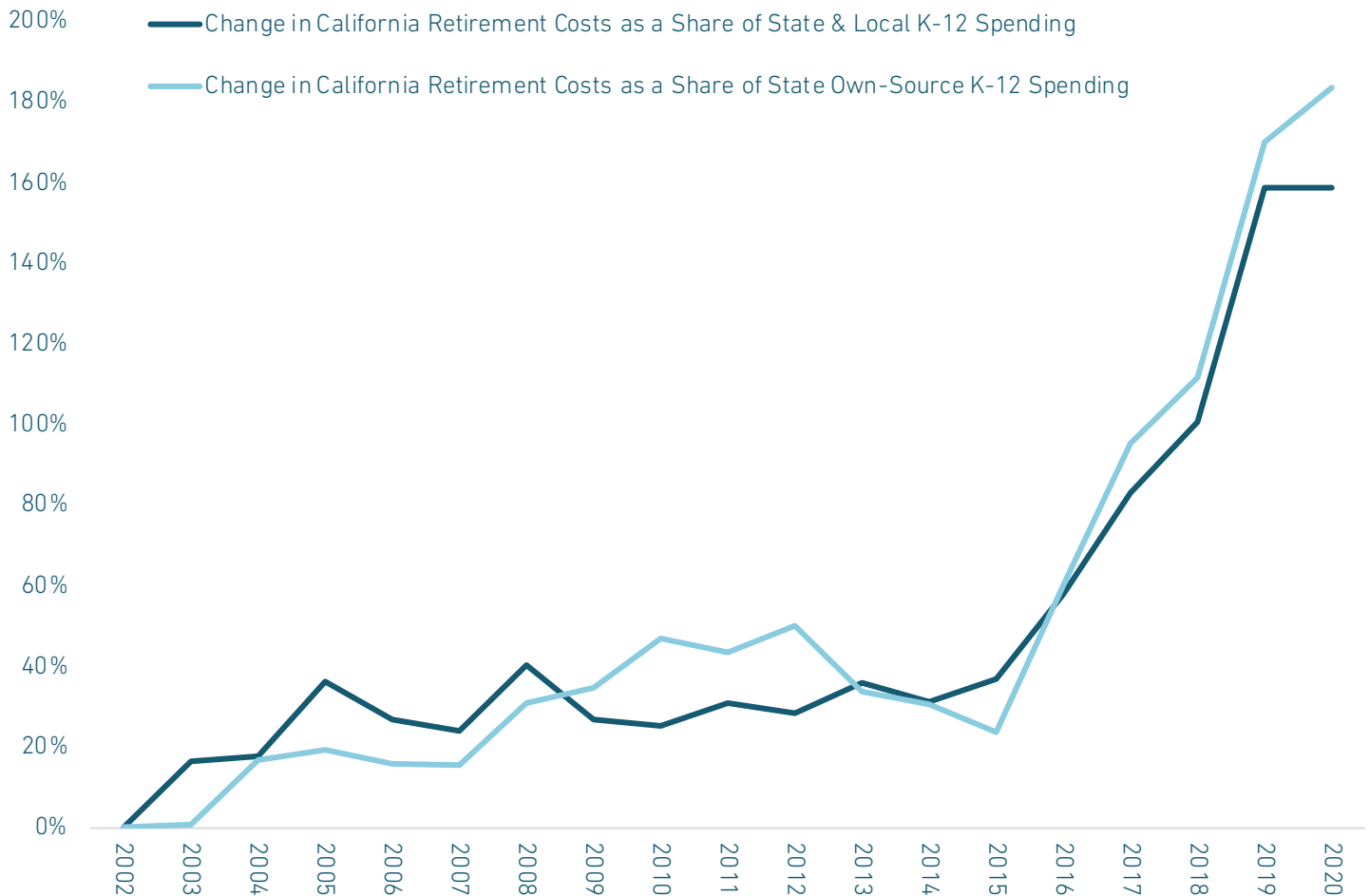
Combined CalSTRS and PERF B Retirement Costs as a Share of Census State and Local K-12, 2002–20



Source: Equable Institute analysis of public plan valuation reports and ACFRs. Normal cost figures include employer contributions to defined contribution plans intended to contribute to primary retirement income.

FIGURE E2: PERCENTAGE CHANGE IN CALIFORNIA HIDDEN FUNDING CUTS, BASED ON TOTAL CALSTRS AND PERFB RETIREMENT COSTS

Growth in Actual California Retirement Plan Contributions as a Share of Total K-12 Spending, 2001 –21



Source: Equable Institute analysis of public plan valuation reports and ACFRs, combined state and local funding data are drawn from Census Bureau's Annual Survey of State and Local Government Finance, and state own-source funding data are from NASBO's annual state expenditure reports. These figures are based on expenditures data adjusted for inflation to 2021 dollars.

Appendix F: 50 State Statistics and Details for Hidden State & Local Funding Cuts

State	Funded Ratio	UAL	State & Local Hidden Education Funding Cut				2002				2020			
			2002	2020	Percentage Change	Absolute Change	Retirement Costs Per Student	State K-12 Funding Per Student	LOCAL K-12 Funding Per Student	Adjusted Actual Per Student K-12 Funding	Retirement Costs Per Student	State K-12 Funding Per Student	LOCAL K-12 Funding Per Student	Adjusted Actual Per Student K-12 Funding
Alabama	67.70%	\$12,369,651,712	1.98%	3.52%	78%	1.54%	\$337.23	\$6,583.86	\$10,374.98	\$16,662.10	\$770.89	\$9,965.16	\$11,884.68	\$21,147.02
Alaska	72.80%	\$2,033,118,208	2.32%	6.41%	176%	4.09%	\$553.92	\$6,896.71	\$16,978.82	\$23,336.63	\$1,602.96	\$9,855.86	\$15,168.78	\$23,421.68
Arizona	69.30%	\$17,326,518,272	0.72%	2.99%	315%	2.27%	\$101.31	\$4,855.43	\$9,254.01	\$14,029.38	\$556.98	\$8,205.13	\$10,436.35	\$18,066.50
Arkansas	74.90%	\$5,660,880,896	3.95%	4.95%	25%	1.00%	\$621.05	\$6,037.80	\$9,721.52	\$15,116.48	\$953.46	\$7,320.51	\$11,926.67	\$18,293.72
California	71.80%	\$96,908,984,320	2.91%	6.59%	126%	3.68%	\$542.09	\$5,730.83	\$12,906.42	\$18,079.10	\$1,826.82	\$8,558.00	\$19,127.70	\$25,875.36
Colorado	69.10%	\$15,550,167,808	2.43%	5.55%	128%	3.12%	\$441.81	\$6,326.23	\$11,863.35	\$17,747.76	\$1,318.87	\$9,057.98	\$14,719.22	\$22,458.33
Connecticut	49.20%	\$18,846,089,216	2.58%	8.51%	230%	5.93%	\$542.80	\$5,048.67	\$15,887.42	\$20,463.90	\$2,490.53	\$8,407.69	\$20,822.77	\$26,779.22
D.C.	91.30%	\$229,413,120	0.09%	1.77%	1867%	1.68%	\$11.17	\$9,470.83	\$15,528.75	\$24,903.08	\$94.01	\$16,510.73	\$17,452.13	\$33,941.27
Delaware	87.30%	\$1,405,746,176	0.04%	0.28%	600%	0.24%	\$22.94	\$1,823.13	\$25,067.99	\$26,868.17	\$1,216.04	\$-	\$68,577.70	\$67,361.66
Florida	78.80%	\$43,341,479,936	2.30%	2.32%	1%	0.02%	\$356.73	\$4,296.42	\$11,178.66	\$15,158.13	\$434.27	\$5,408.88	\$13,325.18	\$18,299.79
Georgia	77.00%	\$24,223,916,032	3.47%	7.22%	108%	3.75%	\$604.29	\$5,058.61	\$12,347.78	\$16,788.82	\$1,402.70	\$5,641.57	\$13,814.91	\$18,019.10
Hawaii	53.20%	\$15,306,274,816	1.72%	6.84%	298%	5.12%	\$319.85	\$6,715.81	\$11,902.81	\$18,298.76	\$1,519.99	\$22,217.06	\$-	\$20,697.07
Idaho	88.20%	\$2,322,132,992	3.66%	4.41%	20%	0.75%	\$530.26	\$4,751.76	\$9,741.11	\$13,962.61	\$636.67	\$5,006.81	\$9,460.92	\$13,798.56
Illinois	38.40%	\$101,656,056,832	3.37%	13.93%	313%	10.56%	\$636.84	\$5,839.90	\$13,079.44	\$18,282.50	\$3,190.36	\$4,522.47	\$18,397.39	\$19,713.60
Indiana	49.00%	\$10,385,493,760	4.65%	5.81%	25%	1.16%	\$848.33	\$6,298.62	\$12,002.09	\$17,402.78	\$1,184.70	\$8,394.88	\$12,089.40	\$19,222.20
Iowa	82.90%	\$7,024,734,208	2.06%	3.20%	55%	1.14%	\$409.71	\$8,185.81	\$11,688.19	\$19,484.65	\$777.65	\$6,908.04	\$17,289.84	\$23,499.18
Kansas	70.20%	\$4,916,259,840	2.20%	4.77%	117%	2.57%	\$389.13	\$6,571.08	\$11,100.67	\$17,282.62	\$1,098.49	\$6,455.63	\$16,502.34	\$21,942.51
Kentucky	58.30%	\$14,835,042,304	3.98%	8.31%	109%	4.33%	\$610.18	\$6,610.90	\$8,754.98	\$14,725.92	\$1,728.84	\$9,395.74	\$11,384.18	\$19,066.26
Louisiana	65.60%	\$11,123,570,688	4.11%	7.58%	84%	3.47%	\$689.32	\$5,813.98	\$10,948.04	\$16,100.44	\$1,487.32	\$7,357.71	\$12,306.14	\$18,133.25
Maine	81.00%	\$2,829,894,656	4.14%	5.33%	29%	1.19%	\$768.04	\$5,131.06	\$13,419.71	\$17,782.73	\$1,280.09	\$6,610.42	\$17,395.84	\$22,726.17
Maryland	73.80%	\$11,766,142,976	3.16%	4.87%	54%	1.71%	\$689.91	\$7,354.89	\$14,428.25	\$21,128.42	\$1,346.44	\$7,954.43	\$19,716.11	\$26,301.44
Massachusetts	50.70%	\$28,544,843,776	3.05%	6.23%	104%	3.18%	\$636.62	\$4,943.54	\$15,930.33	\$20,226.97	\$1,776.24	\$7,930.89	\$20,613.81	\$26,757.61
Michigan	59.90%	\$35,038,938,204	2.54%	8.52%	235%	5.98%	\$529.90	\$6,797.18	\$14,001.02	\$20,326.39	\$2,109.87	\$9,413.33	\$15,340.24	\$22,643.69
Minnesota	74.70%	\$8,041,756,352	1.48%	2.45%	66%	0.97%	\$295.81	\$6,213.60	\$13,768.77	\$19,710.10	\$617.08	\$8,003.83	\$17,200.20	\$24,609.88
Mississippi	59.00%	\$19,358,836,736	3.12%	5.34%	71%	2.22%	\$337.23	\$6,583.86	\$10,374.98	\$16,662.10	\$770.89	\$9,965.16	\$11,884.68	\$21,147.02

State	Funded Ratio	UAL	State & Local Hidden Education Funding Cut				2002				2020			
			2002	2020	Percentage Change	Absolute Change	Retirement Costs Per Student	State K-12 Funding Per Student	LOCAL K-12 Funding Per Student	Adjusted Actual Per Student K-12 Funding	Retirement Costs Per Student	State K-12 Funding Per Student	LOCAL K-12 Funding Per Student	Adjusted Actual Per Student K-12 Funding
Missouri	81.40%	\$9,673,449,856	3.54%	4.77%	35%	1.23%	\$614.99	\$5,222.44	\$12,236.68	\$16,756.73	\$946.57	\$5,450.57	\$14,391.31	\$18,883.98
Montana	64.90%	\$2,249,458,944	2.81%	4.50%	60%	1.69%	\$503.06	\$6,579.03	\$11,295.33	\$17,397.72	\$1,046.52	\$7,521.26	\$15,726.28	\$22,201.03
Nebraska	88.70%	\$1,563,457,536	2.45%	2.64%	8%	0.19%	\$489.69	\$6,942.02	\$13,046.82	\$19,499.14	\$658.98	\$7,576.29	\$17,400.84	\$24,318.15
Nevada	76.60%	\$10,992,857,088	5.26%	7.56%	44%	2.30%	\$793.62	\$3,688.38	\$11,363.45	\$14,285.32	\$1,293.16	\$5,825.67	\$11,278.16	\$15,810.67
New Hampshire	58.70%	\$6,396,150,784	1.52%	4.60%	203%	3.08%	\$269.96	\$4,602.77	\$13,199.12	\$17,522.25	\$1,248.35	\$7,336.11	\$19,819.32	\$25,907.08
New Jersey	24.60%	\$65,993,500,672	0.32%	5.69%	1678%	5.37%	\$-	\$5,117.46	\$18,079.21	\$23,159.32	\$1,709.40	\$9,025.01	\$21,106.87	\$28,349.70
New Mexico	39.10%	\$20,265,890,816	2.85%	4.62%	62%	1.77%	\$556.73	\$7,803.21	\$11,735.78	\$18,982.26	\$1,028.47	\$7,669.49	\$14,613.05	\$21,222.51
New York	90.60%	\$18,560,311,296	1.18%	5.45%	362%	4.27%	\$296.87	\$5,003.48	\$20,223.87	\$24,930.48	\$2,059.78	\$5,485.76	\$32,300.78	\$35,726.77
North Carolina	86.00%	\$12,081,995,776	0.40%	3.86%	865%	3.46%	\$68.52	\$6,361.99	\$10,789.34	\$17,045.61	\$800.90	\$8,059.84	\$12,684.34	\$19,943.28
North Dakota	63.40%	\$1,530,503,424	2.08%	2.93%	41%	0.85%	\$391.77	\$8,093.39	\$10,759.45	\$18,461.07	\$852.93	\$11,221.78	\$17,920.06	\$28,288.91
Ohio	75.50%	\$24,196,440,064	2.72%	3.37%	24%	0.65%	\$529.65	\$5,883.61	\$13,565.00	\$18,918.95	\$857.10	\$7,293.01	\$18,110.97	\$24,607.64
Oklahoma	63.50%	\$9,490,196,480	4.10%	5.50%	34%	1.40%	\$678.06	\$6,045.79	\$10,532.40	\$15,868.30	\$959.14	\$7,145.81	\$10,358.54	\$16,473.19
Oregon	75.80%	\$21,823,406,080	2.67%	3.61%	35%	0.94%	\$551.99	\$7,486.24	\$13,159.83	\$20,112.20	\$1,122.08	\$11,732.73	\$19,525.75	\$29,980.89
Pennsylvania	54.30%	\$49,239,015,424	0.67%	10.00%	1393%	9.33%	\$0.44	\$6,436.73	\$13,528.05	\$20,018.89	\$2,892.96	\$8,096.71	\$20,828.49	\$26,032.24
Rhode Island	54.30%	\$3,195,005,952	3.45%	7.27%	111%	3.82%	\$730.22	\$5,880.23	\$15,311.77	\$20,436.05	\$2,020.58	\$7,975.05	\$19,758.02	\$25,784.34
South Carolina	50.70%	\$25,551,767,552	2.63%	5.00%	90%	2.37%	\$486.28	\$5,759.04	\$12,637.89	\$17,983.36	\$1,154.67	\$9,011.25	\$14,084.16	\$21,927.70
South Dakota	100.00%	-\$4,342,784	1.72%	2.01%	17%	0.29%	\$279.50	\$5,018.95	\$11,258.94	\$15,974.61	\$396.44	\$6,942.95	\$12,753.82	\$19,307.50
Tennessee	103.10%	-\$777,090,272	1.58%	2.41%	53%	0.83%	\$-	\$5,374.21	\$9,965.35	\$15,339.56	\$405.83	\$5,795.74	\$11,063.66	\$16,443.42
Texas	75.50%	\$53,557,968,896	2.54%	3.54%	39%	1.00%	\$412.68	\$4,858.97	\$11,416.22	\$15,862.50	\$691.38	\$5,900.08	\$13,624.17	\$18,851.48
Utah	96.30%	\$1,237,282,944	4.23%	6.71%	59%	2.48%	\$669.67	\$7,165.17	\$8,678.94	\$15,174.45	\$1,222.52	\$8,565.23	\$9,652.41	\$16,995.12
Vermont	50.00%	\$1,951,128,448	1.40%	3.51%	151%	2.11%	\$309.31	\$7,923.23	\$14,123.59	\$21,827.66	\$1,623.59	\$14,441.57	\$31,917.09	\$44,613.71
Virginia	71.50%	\$14,552,625,152	1.07%	4.69%	338%	3.62%	\$209.53	\$6,127.73	\$13,417.77	\$19,361.61	\$1,157.46	\$8,868.37	\$15,819.26	\$23,530.17
Washington	85.20%	\$3,944,767,488	0.82%	3.63%	343%	2.81%	\$157.46	\$6,975.56	\$12,251.69	\$19,010.51	\$1,060.77	\$9,380.57	\$19,864.74	\$28,184.54
West Virginia	70.90%	\$3,220,941,312	7.43%	8.32%	12%	0.89%	\$1,384.68	\$6,563.91	\$12,074.79	\$17,254.03	\$1,919.80	\$9,451.42	\$13,665.18	\$21,157.42
Wisconsin	105.30%	-\$6,243,106,816	1.12%	1.86%	66%	0.74%	\$241.65	\$7,045.69	\$14,569.44	\$21,384.87	\$474.02	\$7,878.89	\$17,709.44	\$25,066.12
Wyoming	79.20%	\$2,173,359,616	2.27%	2.84%	25%	0.57%	\$495.26	\$7,186.67	\$14,599.70	\$21,347.69	\$952.24	\$10,186.26	\$23,282.89	\$32,570.81

About Equable Institute

Equable Institute is a bipartisan non-profit that works with public retirement system stakeholders to solve complex pension funding challenges with data-driven solutions.

About the Authors

Anthony Randazzo (Executive Director) is a national expert on public sector pension policy and has provided technical assistance to more than a dozen states and cities on ways to improve retirement plan sustainability.

Jonathan Moody, PhD (Research VP) has developed a wide range of academic and policy research on municipal finance subjects, including state budgeting and reserve funds, state credit ratings, state fiscal management, and public retirement benefits.

Acknowledgements

This paper is the continuation of a project with initial results published in 2019 and has built upon the work of many researchers who have been looking what the effects of teacher retirement costs have been on education. We are indebted to the numerous scholars who have been exploring this issue over the past decade for informal feedback on this paper's research and our initial findings released in 2019.

This project is also profoundly better due to the thoughtful engagement and ideas of all members of Equable's team, and in particular the conceptual guidance provided by Sam Shaw and data support provided by David Hengerer.

