



GETTING DOWN — TO FACTS II —

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Pensions and California Public Schools

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About: The Getting Down to Facts project seeks to create a common evidence base for understanding the current state of California school systems and lay the foundation for substantive conversations about what education policies should be sustained and what might be improved to ensure increased opportunity and success for all students in California in the decades ahead. *Getting Down to Facts II* follows approximately a decade after the first Getting Down to Facts effort in 2007. This research brief is one of 19 that summarize 36 research studies that cover four main areas related to state education policy: student success, governance, personnel, and funding.

This brief summarizes the *Getting Down to Facts II* technical report, **Pensions and California Public Schools**, by Cory Koedel and Gabriel E. Gassmann, September 2018.

This and all GDTFII studies can be found at www.gettingdowntofacts.com.

Introduction

In 2014, the California Legislature passed Assembly Bill 1469, a law that requires teachers and school districts, along with the state government, to substantially increase their respective contributions to the California State Teachers' Retirement System (CalSTRS). The need for higher pension contributions is not a short-term aberration. Recent CalSTRS projections indicate that the higher rates will be required through 2046, assuming that the system continues to operate as it has and actuarial assumptions are met. The large increases in pension contributions have important implications for education finance in California.

The heart of the problem lies in the state's accrual of pension liabilities—which are effectively pension debt—over an extended period of time. As of the 2017 valuation, CalSTRS had amassed a “debt” of approximately \$107 billion.

Within the current benefit structure, halting the growth of unfunded liabilities would require some combination of higher contribution rates and reduced benefits. Like many states, California has made moves on both fronts in recent years, but even bigger changes would be needed for long-term sustainability. The other option is to make modifications to the underlying benefit structure.

This study provides background information about how CalSTRS and other pension plans work before explaining in greater detail what is happening with CalSTRS and why. It also discusses options for reform, both within the current CalSTRS structure and under alternative structures. The full study includes examples of reforms from other states that California could consider in developing its own policy response.

KEY FINDINGS

- California's teacher retirement system provides a defined-benefit pension for retirees.
- Pension contributions depend on the cost of providing benefits for current workers and carry-overs from plan operations in previous years.
- The total CalSTRS contribution rate is legislated to nearly double by 2021.
- Pension costs are rising because of accumulated debt and a change in assumptions.
- All options going forward involve some trade-offs.

DATA FOR THIS REPORT

The pension system data presented in this report are based on publicly available information, much of it from CalSTRS itself, synthesized to improve transparency and highlight key issues.

Summary of Key Findings

California's teacher retirement system provides a defined-benefit pension for retirees

CalSTRS is a statewide defined-benefit (DB) pension plan that covers certificated personnel in public schools. Most U.S. teachers are covered by a similarly-structured, statewide DB plan. The level of retirement benefits for California teachers is within the norms of teacher plans in other states.

After California teachers have accrued five years of service, they are vested in CalSTRS. At that point, the benefit amount they receive at retirement is based on their years of service and "final average salary." Workers who leave before five years receive their own contributions back from the plan with interest, but lose all contributions made on their behalf by school districts and the state. In 2013, the state reduced benefits for new employees. (See the box on page 4 for more about the benefit formula.)

CalSTRS also provides an annual cost-of-living adjustment that is 2% of a teacher's initial pension benefit. California is one of several states where teachers are not enrolled in Social Security, which results in the state plan providing higher benefits and having higher costs than in states where teachers are also enrolled in Social Security.

This report primarily discusses CalSTRS. However, noncertificated school employees receive retirement benefits through the California Public Employees' Retirement System (CalPERS). Across California school districts, as of 2013-14, CalPERS contribution costs were on average about 50% of CalSTRS costs. CalPERS is also a traditional, final-average-salary DB pension plan, like CalSTRS. The structure and funding situation with CalPERS is not qualitatively different from that of CalSTRS.

CALIFORNIA PUBLIC PENSION PLANS

- **CalSTRS:** California State Teachers' Retirement System to which all certificated educators belong, including teachers and administrators.
- **CalPERS:** California Public Employees' Retirement System, which covers other public employees, including classified employees within the K-12 system.

THE CalSTRS BENEFIT FORMULA

- The basic formula for calculating pension benefits looks like this:
(about 2% x years of service) x final average salary = benefit
- Example: Brenda has decided to retire at age 60. Having worked as a teacher since she was 35, she has 25 years of service. Her highest single year of earnings was \$100,000. Using the formula above, her base annual pension benefit would be as follows:
(2% x 25 years of service) = 50%
50% x \$100,000 highest salary = Brenda's pension benefit of \$50,000

The above is a simplification given that there are many additional variables for any individual. For example:

- Depending on when a teacher was hired, the final average salary is calculated as either the highest single year of earnings or the average of the highest three years.
- Teachers employed before 2013 reach eligibility for the 2% multiplier level at age 60. Teachers hired after that will not attain the 2% multiplier level until age 62.

Pension contributions depend on the cost of providing benefits for current workers and carryovers from plan operations in previous years

Each year, CalSTRS actuaries set the **Annual Required Contribution (ARC)**, which is the total contribution needed in order to fund the pension plan according to actuarial calculations. The ARC consists of two components.

First is the estimated annual cost of providing promised retirement benefits for current workers based on the formulas discussed in the previous section, referred to as the “**normal cost.**” The normal cost is determined by actuarial calculations that are complex, uncertain, and require assumptions about many factors, including the expected rate of return on assets, life expectancies of members, salary growth profiles, and career persistence profiles.

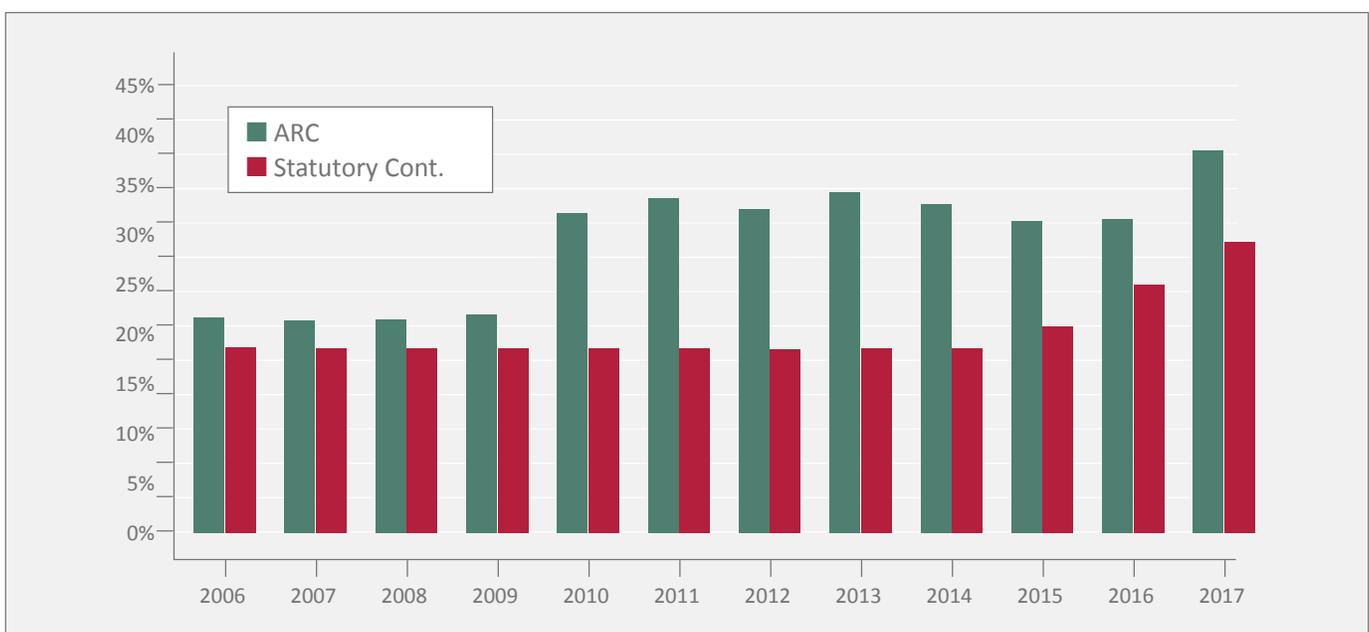
The second component is carryover balances from previous years. In principle, carryovers can be positive or negative, but in recent history they have been consistently negative in California and in state plans nationally. Negative carryovers can accumulate over time and are referred to collectively by pension actuaries as the **Unfunded Actuarial Accrued Liability (UAAL)**, effectively pension debt. A portion of the ARC—often substantial—is needed to service pension debt.

PENSION ACCOUNTING TERMS

- **Normal Cost:** the estimated annual cost of providing promised retirement benefits for current workers based on assumptions about return on assets, life expectancy of members, etc.
- **ARC - Annual Required Contribution:** the total of normal cost, plus carryovers—whether positive or negative—from previous years, measured as a percentage of covered employees' salaries.
- **UAAL - Unfunded Actuarial Accrued Liability:** pension debt that accumulates when promised benefits from previous years exceed the value of the amount paid into the pension fund.
- **Statutory Contribution Rate:** the state-determined amount that employees, employers (school districts), and the state must pay into the pension program, measured as a percentage of covered teachers' salaries.

In some states, the statutory contribution rate is explicitly bound to the ARC. In the case of CalSTRS, the statutory contribution need not match the ARC. Figure 1 shows changes in CalSTRS contributions and the ARC since 2006. Note that each year in which the statutory contribution falls below the ARC, the pension fund is running a deficit according to actuarial calculations.

Figure 1: CalSTRS Statutory Contribution Rates Versus the ARC, 2006–2017, as Percent of Salaries



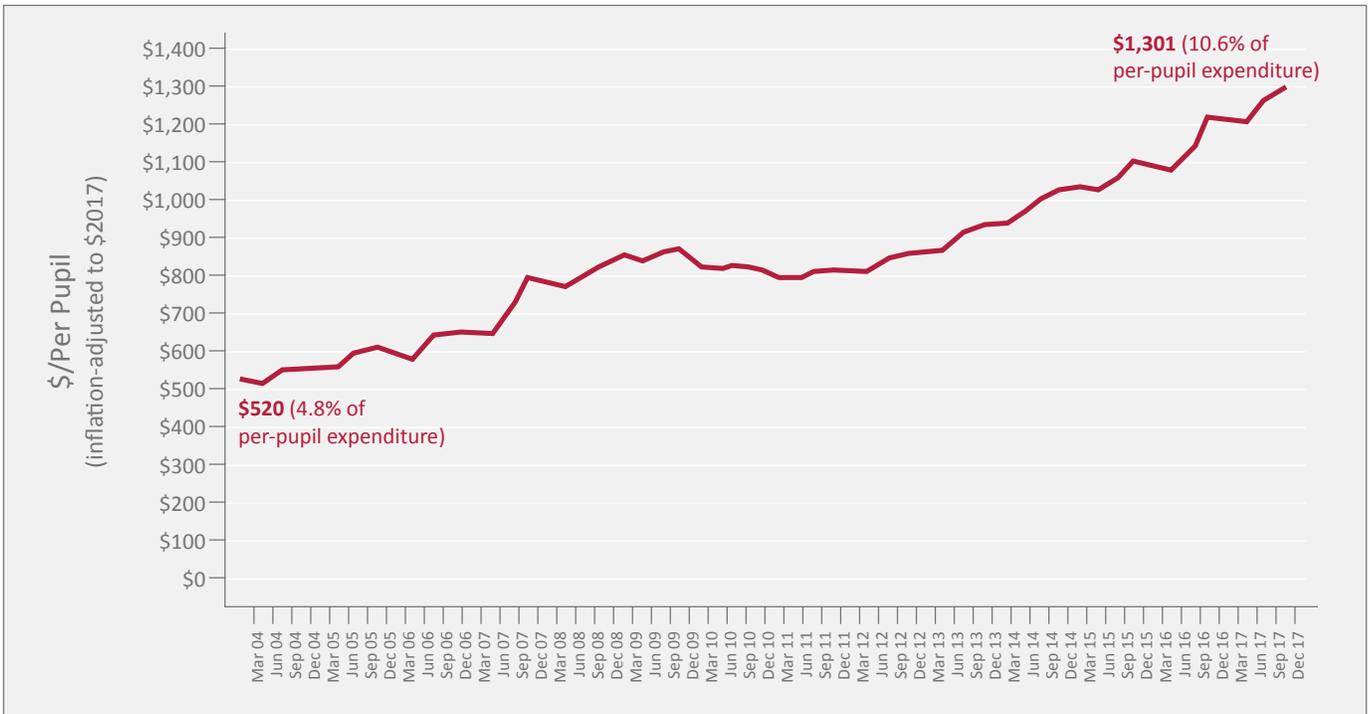
Data: CalSTRS' actuarial valuation reports and Assembly Bill 1469.

The total CalSTRS contribution rate is legislated to nearly double by 2021

Pension costs are rising in public plans across the United States. Figure 2 shows the increase in employer pension contributions on behalf of school employees since 2004 nationally, measured in per-pupil terms. The figure is constructed and made available by Robert Costrell at the University of Arkansas.

Figure 2: Employer Contributions Per Pupil Retirement Benefits

U.S. Public Elementary and Secondary Schools, Teachers and Other Employees, 2004–2017



Data: BLS, National Compensation Survey, Employer Costs for Employee Compensation; NCES Digest of Education Statistics; BLS, CPI; author's calculations explained in Robert M. Costrell:

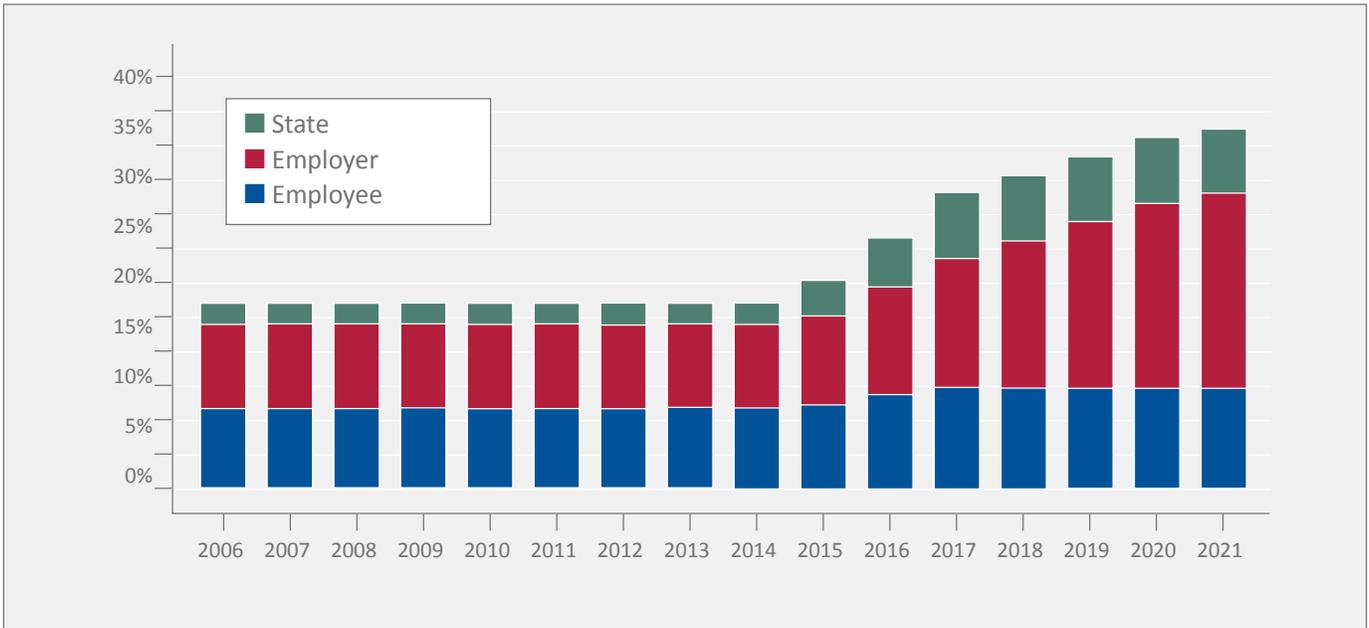
<http://www.teacherpensions.org/blog/school-pension-costs-have-doubled-over-last-decade-now-top-1000-pupil-nationally>

Note: Does not include retiree health benefits or Social Security.

Consistent with the national trend documented in Figure 2, pension costs are rising in California. As a matter of state statute, CalSTRS contributions are paid by three groups: employees (teachers), employers (school districts), and the state of California.

Assembly Bill 1469, approved by the governor in 2014, set into motion the current rise in CalSTRS contributions, beginning with the 2014-15 school year. Figure 3 shows past and projected (per direct legislation) CalSTRS statutory contribution rates starting with 2006 and continuing through 2021, the last year of increases scheduled by AB 1469. The vertical axis is measured in percentage points of covered teacher salaries. The total height of each bar represents the total contribution. Each bar is also subdivided to show shares for the three contributing groups. Through 2017, the bars in Figure 3 (on the following page) match the red bars in Figure 1 (on the previous page).

Figure 3: Realized and Projected CalSTRS Statutory Contributions, 2006–2021, as Percent of Salaries



Data: CalSTRS’ actuarial valuation reports and Assembly Bill 1469.

Notes: Projections are as legislated by Assembly Bill 1469. The projected average employee contributions depend on the proportion of CalSTRS members in each tier of the plan (who are scheduled to pay different rates under AB 1469). Estimates here are based on rough projections of member demographics from CalSTRS’ actuarial valuation reports. Although employee contribution rates remain the same for each tier from 2017 onward (unless normal costs rise substantially, which we do not allow for in the graph), the estimated average member contribution rate decreases slightly over time as more second-tier members enter.

Figure 3 shows that between 2014 and 2021, AB 1469 calls for the total contribution rate to nearly double from 18.3% to 35.3%. Although all three contributing parties—teachers, school districts, and the state of California—are experiencing rate increases, school districts are affected the most. In 2013-14, school districts contributed 8.25% of teacher salaries to CalSTRS. By 2020-21, this rate more than doubles to 19.1%.

Provisions of AB 1469 also allow the contribution rates of employees, school districts, and the state to fluctuate, depending on CalSTRS’ financial condition. Of the three contributing parties, the state is most at risk of rate fluctuations. Currently the state rate is projected to rise beyond the initially legislated level by an extra 0.5 percentage points of teacher salaries annually—the maximum allowable annual increase under Assembly Bill 1469—for seven consecutive years (beginning with fiscal year 2017-18). Assuming this full projection comes to fruition, by 2024 the total state rate will plateau at 9.8% of teacher salaries.

Pension costs are rising because of accumulated debt and a change in assumptions

Like other state teacher plans nationally, contributions to CalSTRS are rising primarily because of the accumulation of substantial debt. As of the 2017 Actuarial Valuation Report, the CalSTRS UAAL was just over \$107 billion and the cost of servicing the UAAL was roughly 18% of covered salaries.

Notably, the contribution rate increases do not correspond to improved benefits. In fact, as discussed above, benefits were recently reduced for new members. (Legal precedent blocks benefit reductions for existing employees.)

The growth in debt is driven by two factors:

- CalSTRS assumes too high a rate of return on assets.
- The Annual Required Contribution, as reported by CalSTRS actuaries, has been consistently underpaid.

The consistent underpayment of the ARC, as documented in Figure 1, is like a monthly credit card bill that is not paid in full. As a consequence, the balance has gotten larger and larger, requiring bigger and bigger payments.

In addition, the ARC, as reported by actuaries, is too low because of the high assumed rate of return on assets. CalSTRS collects contributions today to pay for promised benefits in the future. With a high assumed rate of return, actuarial calculations can underestimate what is needed in current contributions to fund future promised benefits.

Since 2010, CalSTRS has made a steady effort to lower the assumed rate of return. As of 2009, CalSTRS assumed an 8% annual return on assets, which is fairly typical of state and municipal plans nationally. By 2011, the rate had been lowered to 7.5%, and in 2016 it was lowered to 7% (effective beginning in 2017). Although these rate changes are fiscally responsible, every time the assumed rate of return is lowered the calculation of the pension debt rises because projected investment returns are less. Even seemingly small moves in the assumed rate of return—for example, by 0.25 or 0.5 percentage points—can have dramatic impacts on the financial condition of the plan given the large sums involved and compounded returns. In addition to the debt issue, the reductions to the CalSTRS' assumed rate of return on assets have contributed to the recent rise in the contribution rate.

Although the trend in the CalSTRS assumed rate of return is moving in the right direction, there is more bad news. The new assumption of a 7% return is still too high, according to financial economists. If true, the unfunded liabilities will continue to accumulate as CalSTRS takes in too little in contributions to fund future promised obligations.

All options going forward involve some trade-offs

The authors identify two basic paths that will allow California to combat the persistent accrual of unfunded liabilities, which is at the heart of the pension problem.

One path is to further lower the assumed rate of return to a realistic “long-term guaranteed rate.” Doing so will raise contribution costs further unless benefits are reduced. As noted above, California has already reduced benefits to some degree, but much larger changes would be needed. The state could dramatically reduce retirement benefits for new entrants into teaching, and perhaps also reduce cost-of-living adjustments (COLAs). These benefit reductions would put downward pressure on required contributions by reducing long-term liabilities.

The second path involves changing the CalSTRS plan structure in a way that eliminates or de-emphasizes the defined-benefit approach currently in place in favor of a “defined-contribution (DC)” approach. The latter is the typical structure used among private employers. This type of reform has been done for teachers in other

states using a variety of approaches that incorporate at least some aspects of a DC plan. Some states have completely done away with traditional DB plans—for example, by moving entirely to a DC plan—but most have not gone that far. Middle-of-the-road reforms that have retained a traditional DB presence include approaches that let teachers choose between defined-benefit and defined-contribution plans or offer hybrid plans that include DB and DC components. The full report lists which states have undertaken which kind of reform and describes some models of each.

PENSION PLAN TYPES

- **DC - Defined Contribution:** a plan in which the value of a worker’s retirement account is entirely a function of the contributions made by the worker, contributions on her behalf by the employer, and investment returns.
- **DB - Defined Benefit:** a plan in which the retirement benefits are defined by a specific formula rather than being directly linked to contributions at the individual level.
- **CB - Cash Balance:** a hybrid plan that combines features of both DB and DC plans. CB plans have individual retirement accounts into which employees and employers contribute. They are managed centrally and offer a guaranteed rate of return. At retirement, the balance is annuitized to provide a “stream of payment” benefit similar to a traditional DB plan.

An objective of pension plan reform is to better control both costs and risk. De-emphasizing defined benefits can achieve this objective. Given that cost control is a goal, an initial reaction might be that reform must make teachers worse off. However, this need not be the case. Indeed, there are opportunities for changes that improve cost management while minimizing harm to teachers, and teachers can even benefit.

The following analysis of the dimensions of risk for teachers highlights how and why this can be true.

Type of Risk for Teachers	Defined-Benefit Plan	Defined-Contribution Plan
Investment risk	Guaranteed rate of return, not subject to market fluctuations, provides clear advantage.	Risks are present, though modern plans are reducing exposure somewhat by streamlining investment choices.
Career uncertainty risk	Given differences in teacher tenure, benefits are distributed unevenly depending on how long a teacher works.	Teachers who work less than a full career or who choose to work beyond their CalSTRS “peak benefit” date could be better off.
Intergenerational risk due to growth of pension debt	Structure facilitates resource transfers across cohorts so younger teachers may receive less in benefits than older teachers (as happened with AB 1469), can expect to pay more into the pension plan, and may bear other costs if districts have to cut expenditures to pay for increasing pension costs.	Individual accounts are fully funded in real time so the system does not count on younger teachers’ contributions to pay for older cohorts’ benefits.

A structural reform of CalSTRS could also be part of a broader negotiation with the state of California to alleviate some of the very large debt the system currently carries. In exchange for shifting to a new plan structure in which debt accrual is prevented, the state may be willing to take on some or all of the debt that the school system carries through CalSTRS. If so, this would free up substantial resources that, in the absence of reform, would be committed to pay down pension debt for the foreseeable future.

The state could also add Social Security coverage for California teachers, which would diversify their retirement income portfolios and lessen the financial burden on the state going forward. Social Security benefits are mobile across states and a broad range of employers, unlike CalSTRS benefits, which only cover work in California schools. States where teachers are dually enrolled in Social Security tend to have less costly and less generous retirement plans. This is intuitive: in these states, the total retirement benefit for a teacher comes from a combination of the state plan and Social Security. Teachers and their employers also contribute to both systems while working.

Conclusion

California is not alone in the challenges and choices it faces related to its state pension systems for K-12 employees. Pension promises have been underfunded for many years as a result of faulty assumptions about investment returns and underpayment of the Annual Required Contribution.

If the state chooses to maintain its current defined-benefit structure, some combination of even higher contribution rates and reduced benefits will be necessary going forward. The state could also make modifications to the underlying benefit structure, which could help to change the trajectory.

The problem of rising pension costs is not a temporary aberration and will not be easily fixed. California has dug itself into a hole with CalSTRS, a hole that cannot magically be refilled. The only way out of the current crisis is to do exactly what California is doing—require larger contributions to cover current worker benefits and pay down previously accrued pension liabilities. The policy options discussed here briefly, and expanded on in the full report, are for changes moving forward. They cannot undo what has already been done, but they can prevent further damage.

Lead Author Biography

Cory Koedel is an associate professor of Economics and Public Policy at the University of Missouri, Columbia. He received his Ph.D. in Economics from the University of California, San Diego, in 2007. He has published numerous articles on teacher pensions in academic journals, including Education Finance and Policy, Educational Researcher, Industrial and Labor Relations Review, and Journal of Policy Analysis and Management.