RESEARCH REPORT

How Have Teacher Pensions Changed since the Great Recession?

Richard W. Johnson   *Erald Kolasi*
February 2020

URBAN INSTITUTE · ELEVATE · THE · DEBATE

ABOUT THE URBAN INSTITUTE

The nonprofit Urban Institute is a leading research organization dedicated to developing evidence-based insights that improve people's lives and strengthen communities. For 50 years, Urban has been the trusted source for rigorous analysis of complex social and economic issues; strategic advice to policymakers, philanthropists, and practitioners; and new, promising ideas that expand opportunities for all. Our work inspires effective decisions that advance fairness and enhance the well-being of people and places.

Contents

Acknowledgments

How Have Teacher Pensions Changed since the Great Recession?

Most public school teachers participate in final average salary (FAS) defined-benefit (DB) pension plans, which guarantee retirees a lifetime payment stream based on their years of service and the salary they received near the end of their career. These plans have historically provided substantial retirement benefits to teachers who are covered for their entire career, although shorter-term participants receive much less. Pensions are paid from dedicated trust funds financed by regular contributions from school districts and teachers and investment returns from past contributions. However, financial pressures on teacher pension plans have intensified over the past decade as revenues have grown more slowly than expected future benefit payments. This development is forcing school districts to contribute more to teacher pensions, highlighting the financial risk of guaranteeing pension benefits when investment returns are uncertain.

The growing financial strain on teacher pensions has also led many states and municipalities to cut retirement benefits and raise the contributions teachers are required to make to their future pensions. Although these cutbacks have received less attention than the cost of funding public-sector pensions, they have important implications for teachers' financial security and states' ability to staff the public school system. Cutting pensions erodes the value of retirement benefits and can undermine teachers' future retirement security, especially for teachers in districts that do not provide Social Security coverage. Retirement benefit reductions can also significantly lower teacher compensation, limiting the ability of school districts to attract and retain the best teachers. Many teachers leave the public sector before they have earned a pension worth more than the contributions they made to the retirement plan and thus gain nothing by participating in the plan. Further, pension cuts can create significant discrepancies in benefits between teachers hired in different years because public retirement systems typically maintain the old rules for incumbent employees when they change benefit rules for new hires. These discrepancies can reduce teacher morale.

In this report, we examine how teacher retirement plans have changed over the past decade. We compare plan rules determining pension eligibility and benefit amounts in effect for teachers hired on January 1, 2008, and those in effect for teachers hired on January 1, 2018. Our analysis covers teachers in the 43 states that continue to provide FAS DB plans. We consider benefit rules only for plans administered at the state level, not at the local level. Many of the largest cities, including New York, Los Angeles, and Chicago, provide pensions to retired teachers through locally administered plans. Plan rules come from the Urban Institute's State and Local Employee Pension Plan Database, which reports

detailed formulas and other rules that states and municipalities use to compute retirement benefits for public-sector employees.[1] It includes both current and historical information. As background, we also report the financial status of state plans covering public school teachers from 2001 to 2018, including plan assets and liabilities, the funded ratio, and plan contributions. These data come from the Public Plans Database, collected by the Center for Retirement Research at Boston College, the Center for State and Local Government Excellence, and the National Association of State Retirement Administrators.[2]

Our results show that most state plans that provide FAS pensions to teachers have cut benefits or increased mandatory teacher contribution rates over the past decade. Nearly one-half of state teacher plans raised the age at which teachers can begin collecting their pension, and nearly one-third reduced the share of salary a pension replaces. Among plans that made these changes between 2008 and 2018, the average retirement age increased almost five years, and the average replacement rate fell nearly 6 percentage points. More research is needed to assess how these reforms will affect teachers' retirement security, states' ability to attract and retain high-quality teachers, state spending, and the financial stability of public-sector retirement systems.

How Teacher Pensions Work

FAS DB plans, which cover most public school teachers and other public-sector employees, provide retirees with a lifetime payment stream based on the salary they earned near the end of their career and their years of completed service. The rules determining how much retirees collect and when they can begin collecting vary by plan. About 60 percent of retired teachers also receive Social Security benefits.[3] Pensions account for most of the retirement income received by teachers not covered by Social Security.

The typical annual benefit is computed as a specified percentage of FAS (usually calculated over the last 3, 5, or 10 years of employment) multiplied by completed years of service. That percentage sometimes varies with years of service (e.g., increasing with seniority). Some plans also cap pension benefits so they do not exceed a certain share of FAS, such as 75 or 80 percent.

Teachers may begin collecting their pension once they have leave the payroll and satisfy their plan's eligibility criteria, usually based on age but sometimes on service years or a combination of age and service years. A typical requirement is that teachers may begin collecting full benefits at age 55 if they have completed 30 years of service or at age 65 if they have completed 5 years of service. Most plans offer reduced benefits to teachers who separate before the normal retirement age as long as they meet

certain age and service-year requirements. Sometimes the payment reductions are roughly actuarially fair, meaning the monthly benefit cut almost exactly offsets the additional expected number of payments received by early retirees. In that case, the expected value of lifetime payments is about the same if an employee separates at the early retirement age and immediately begins collecting benefits or if he or she waits until the normal retirement age to begin collecting benefits. Many plans, however, subsidize early retirement, meaning employees can increase their lifetime payments by collecting early.

Once teachers begin collecting their pensions, they are usually entitled to cost-of-living adjustments (COLAs) designed to help maintain their benefits' purchasing power in the face of inflation. Sometimes COLAs do not kick in until retirees have collected their pension for a few years or have reached a certain age (such as 65).

To help finance these benefits, most teachers must contribute to their system. Teacher contributions are almost always specified as a percentage of salary.

Teachers who separate before they can begin receiving their retirement benefits may usually begin collecting their pensions once they are old enough, as long as they have worked enough years to vest in their benefits. Vesting requirements usually involve completing between three and five years of service. Teachers who separate before vesting typically have their retirement plan contributions refunded to them, generally (but not always) with interest. Most plans also give separating teachers—even those who have vested—the option of collecting a refund of their required contributions and forgoing a future pension instead of waiting to collect their benefits.

This benefit structure creates inequities across teachers and other government workers. The plan backloads payments late in a worker's career because the benefit formula directly ties payments to years of service. FAS also generally increases with tenure, so the earnings base partially replaced by the plan grows as employees work longer. Future retirement benefits erode over time when employees separate from the plan before they can begin receiving payments, because the benefit is not adjusted for inflation or interest forgone while waiting to collect. As a result, employees who retire after a long career receive a much larger pension than those who spend less time in the plan. For New Jersey state employees hired at age 25 before 2007, for example, the expected lifetime value of retirement benefits is about 32 times higher for those who complete 30 years of service than for those who complete 10 years of service (Johnson, Steuerle, and Quakenbush 2012). In many FAS plans, workers' expected lifetime benefits soar if they complete just one additional year of service. In Pennsylvania, for example, workers with 34 years of experience who were hired at age 25 typically earn an additional $200,000 in lifetime pensions, net of their own mandatory contributions, by working one more year (Johnson et al. 2014).

Although most state and local FAS plans provide substantial benefits to employees who spend most of their careers in the public sector, benefits are often quite meager for retirees who spend less time in the public sector. Many state and local government employees leave the public sector before they have earned a pension worth more than the contributions they made to their plan. An analysis of state teacher pension plans found that one-half of teachers must serve more than 25 years to receive a pension worth more than their own mandatory plan contributions (Aldeman and Johnson 2015). Teachers with shorter careers get no school-financed retirement benefit despite their many years of service. They may be better off taking back their contributions when they quit rather than waiting to collect a pension. According to the analysis, more than three-quarters of newly hired teachers will end up with no more in pension benefits than they contributed to their retirement plan. These shorter-term teachers subsidize the benefits received by longer-term teachers.

Teachers' retirement benefits are paid from dedicated trust funds financed by contributions from teachers, school districts, and sometimes the state, plus investment returns from past contributions. Each year, a plan's actuaries estimate how much needs to be contributed to the plan to cover future payouts, given assumptions about investment returns and the workforce, including how long teachers will remain employed, how fast their salaries will grow, and how long they will live. Plans can be fully funded when these assumptions are realized and required contributions are fully paid. In that case, the funded ratio, which divides plan assets by the plan's actuarial liabilities, equals 1. If investments do not perform as well as expected or employers fail to make their required contributions, however, plan assets can fall short of liabilities, leading to a funding gap and a funded ratio less than 1.

States and municipalities frequently adjust the rules governing the retirement benefits they provide to their workforce, often in response to funding shortfalls, and the pace of change has quickened over the past decade as many public retirement systems have confronted significant financial pressures. In 2018, for example, 15 states made significant changes to the FAS pension plans they offer their employees.[4] Typically, these reforms apply only to new hires, whereas benefits for incumbent employees and retirees continue to be set by the rules in effect when they were hired. Consequently, some plans have several sets of benefit rules, called tiers, for teachers hired in different years. The New York State Teachers' Retirement System, for example, uses six tiers. This practice places most of the burden of pension system reform on new hires, largely sparing current retirees and incumbent workers (although COLA cuts usually affect both current and future retirees, and employee contribution hikes usually apply to both incumbent workers and new hires). Illinois, for example, changed the rules determining pension benefits for public school teachers hired on or after January 1, 2011. For Illinois teachers who complete at least 10 years of service, median expected lifetime pension benefits are $426,800 for those hired before 2011, whose pensions are determined by the original

benefits rules; the median value is only $167,800—less than half as much—for those hired later (Johnson and Southgate 2014).

Other Types of Retirement Plans

Although FAS DB pension plans continue to dominate in the public sector, most private-sector employers offer their employees defined-contribution (DC) retirement plans. In 2019, 64 percent of private-sector employees received access to a DC retirement plan from their employer, whereas only 16 percent had access to a DB pension plan (US Bureau of Labor Statistics 2019). Between 1975 and 2017, the number of private-sector employees participating in a DC retirement plan at work increased 790 percent, while the number of employees participating in a DB pension plan increased only 6 percent.[5] DC plans are also growing in the public sector. Instead of replacing FAS plans with a DC plan, however, some state and local governments added a DC component to the retirement plan they offer their employees and shrank the FAS component.

In a typical 401(k) plan, the most common DC retirement plan, an employee and his or her employer make regular tax-deferred contributions to a retirement account established for the employee. Those contributions earn investment returns, and employees receive the proceeds from their account when they separate from their employer.

Another type of retirement savings vehicle offered by employers is the cash-balance plan. These plans combine features of FAS DB pension plans and DC plans (Johnson and Uccello 2004). Cash-balance plans establish notional retirement accounts for each plan member and specify how much employers and employees must contribute each period. The accounts are pooled and professionally managed and earn investment returns. The plans also typically establish interest credit rates, indicating how much participants earn each year on their investments, but those credit rates often fluctuate somewhat with actual investment returns. The plan benefit is expressed as an account balance, but participants may elect to receive their benefit as a lifetime annuity.

Cash-balance plans initially gained popularity in the private sector in the early 1990s, when many private-sector firms converted from FAS plans to this new format. Litigation over whether these conversions violate federal law by freezing benefits for older workers halted most cash-balance plan conversions by the end of the decade. The Pension Protection Act of 2006 breathed new life into cash balance plans by explicitly establishing their legality and authorizing most plan conversions. Cash-balance plans also exist in the public sector and now cover certain government employees in several states, such as Kansas, Kentucky, Nebraska, and Texas.

DC and cash-balance plans offer employers several advantages. They both limit employers' (and taxpayers') exposure to investment and longevity risk. By promising retirees a lifetime pension based on salary and years of service, FAS plans create significant financial risk for employers and taxpayers. If pension funds do not earn as much as expected or retirees live longer than expected (and thus collect benefits longer), employers could be forced to contribute more to the plan to finance the guaranteed benefits. DC plans do not guarantee a retirement benefit, so they do not pose a financial risk for employers; instead, benefits depend on how much money has accumulated in participants' retirement accounts when they separate from their employer. Cash-balance plans set interest credit rates, but those credit rates often respond to market conditions, increasing when investments outperform expectations and falling when investments underperform; this limits employers' investment risk but increases the financial risk for plan members. Neither type of plan becomes costlier when retirees live longer, because neither guarantees a lifetime pension. DC and cash-balance plans typically allow participants to collect their benefits as an annuity, but an annuity's monthly payment will fall as life expectancy increases, keeping the lifetime cost of the annuity constant.

Another advantage of DC and cash-balance plans is that they reduce the risk of underfunding. Because DC plan accounts are owned by employees, employers must fund them every year, just as they must pay salaries every pay period. Unlike contributions to FAS pensions, contributions to DC retirement plans cannot be deferred. Employees do not own cash-balance retirement accounts, so those plans are easier to underfund. Nonetheless, the public-sector cash balance plans that have operated for more than a decade are well funded, perhaps because they explicitly define required employer contributions (Pew Charitable Trusts and Laura and John Arnold Foundation 2014). In Nebraska, the 2019 funded ratio was 101 percent for the two cash-balance plans available to state and county employees (Cavanaugh and Macdonald Consulting 2019a, 2019b). In 2018, the funded ratio for the two cash-balance plans for local Texas government employees was 88.5 for the Texas County and District Retirement System (2019) and 87.1 percent for the Texas Municipal Retirement System (2019).

The protections that DC and cash-balance plans provide to employers increase the risk exposure for employees. Poor investment returns shrink account balances for participants in DC and cash-balance plans, threatening participants' financial security in retirement. And as retirees live longer, their DC and cash-balance accounts must last longer. On the other hand, an advantage of DC and cash-balance plans for teachers is that these plans accumulate future retirement benefits more smoothly than FAS plans. Unlike with FAS plans, the value of future retirement benefits in DC and cash-balance plans does not spike once an employee has completed a certain number of service years. As a result, participants in these plans do not lose most of their future retirement benefits if they separate from their employer before completing a full career. Moreover, the value of future retirement benefits in DC

and cash-balance plans continues increasing as long as participants remain employed. Unlike in FAS plans, future retirement benefits in DC and cash-balance plans do not lose value if participants continue working after they reach retirement age.

Teacher Pension Finances

Teacher pension finances have deteriorated substantially over the past two decades. In 2001, state-administered plans covering teachers were almost fully funded, with a funded ratio of 98.5 percent (figure 1). The average funded ratio fell to 85.3 percent in 2008 and bottomed out at 71.6 percent in 2012 following large investment losses from the 2008 stock market crash.[6] The average funded ratio has improved only modestly since then, reaching 72.2 percent in 2018.[7] These estimates may understate teacher pensions' financial problems because they are based on assumptions adopted by the plan trustees that often minimize the present value of future liabilities (Novy-Marx and Rauh 2009).

FIGURE 1
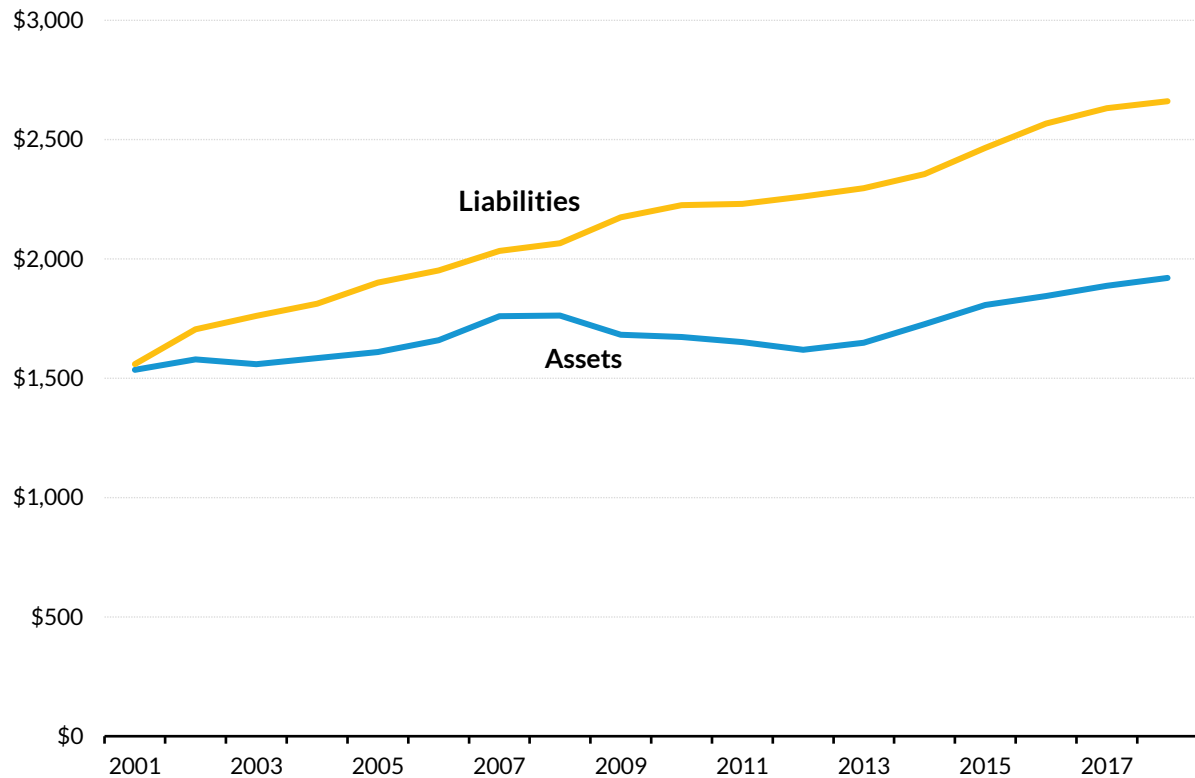
Funded Ratio for Teacher Retirement Plans, 2001–2018
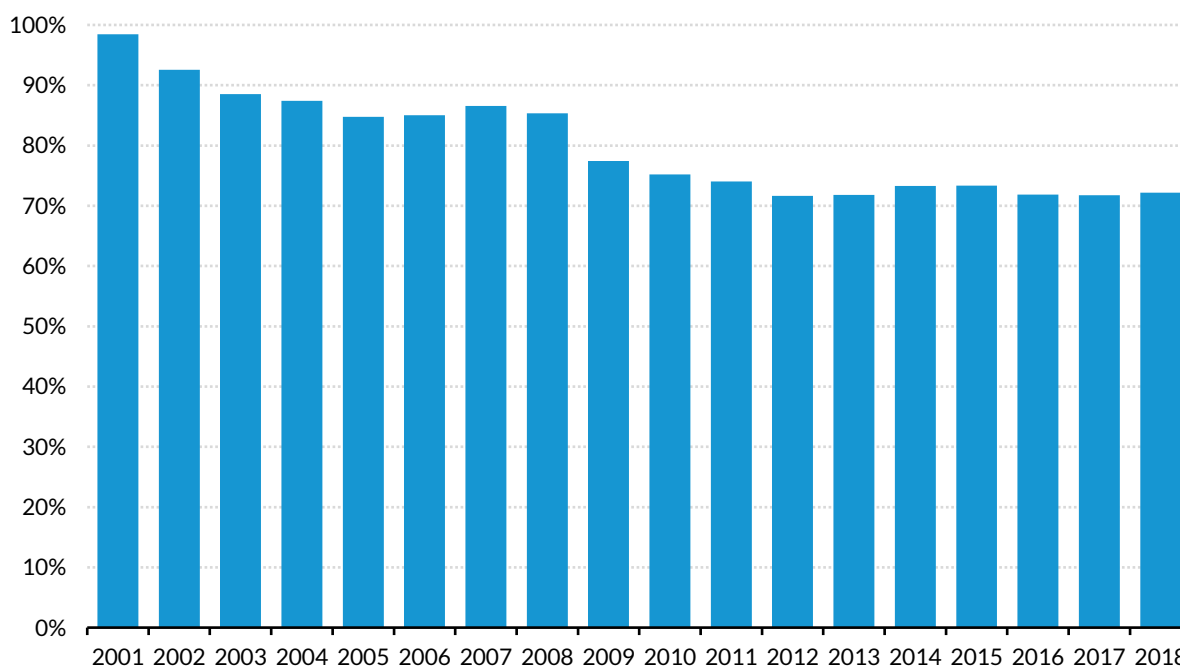
Source: Authors' estimates from the Public Plans Database.

Notes: Figure shows the funded ratio, defined as actuarial assets divided by actuarial liabilities, for state-administered retirement plans covering public school teachers in all 50 states. Because of data limitations, estimates exclude Colorado from 2001 to 2004 and Connecticut and Montana in 2001.

Funding levels vary widely across state plans. Data from the Pension Plan Database indicate that in 2018, the best-funded plans for teachers included South Dakota (with a 100 percent funded ratio), Wisconsin (100 percent), New York (99 percent), Tennessee (93 percent), Washington (90 percent), and Idaho (90 percent). The worst-funded plans in 2018 included Illinois (with a 40 percent funded ratio), New Jersey (43 percent), Indiana (46 percent), Massachusetts (52 percent), and Rhode Island (54 percent).

Since 2001, liabilities have grown much faster than assets in teacher retirement plans (figure 2). Between 2001 and 2018, liabilities increased 71 percent in inflation-adjusted terms; assets grew only 25 percent. Plan liability growth outpaced asset growth through 2008, but the gap surged between 2008 and 2012 as asset values fell 8 percent. The funding gap reached $740 billion in 2018, more than twice as large as the 2008 gap in inflation-adjusted dollars.

FIGURE 2

Actuarial Assets and Liabilities for Teacher Retirement Plans, 2001–2018

Billions of inflation-adjusted 2018 dollars

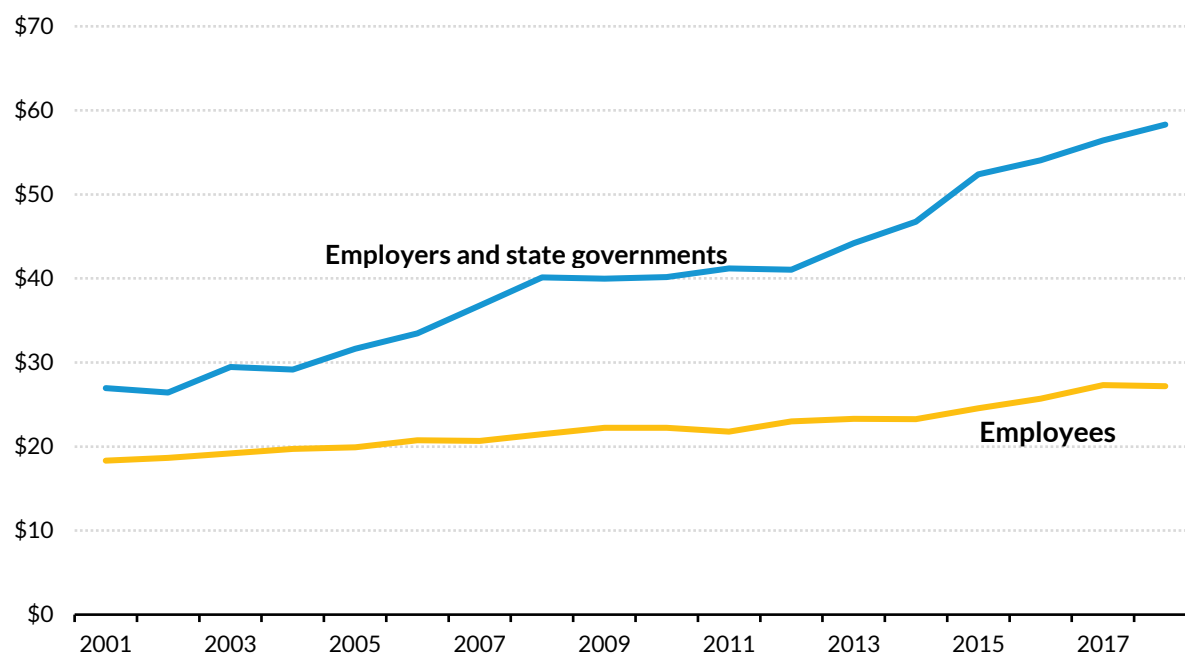**Source:** Authors' estimates from the Public Plans Database.
Notes: Figure shows actuarial assets and liabilities for state-administered retirement plans covering public school teachers in all 50 states. Because of data limitations, estimates exclude Colorado from 2001 to 2004 and Connecticut and Montana in 2001.

As the funding gap grew, contributions to teacher retirement plans surged, driven mostly by funding from employers and state governments (figure 3).[8] In 2018, total contributions to teacher retirement plans reached $85.5 billion, 89 percent more in inflation-adjusted dollars than in 2001. Between 2001 and 2018, inflation-adjusted contributions from employers and state governments increased 116 percent; those from teachers increased 48 percent. School district and state government contributions stalled between 2008 and 2012, increasing only 0.6 percent a year over that period, but they have soared since then, growing 6 percent a year from 2012 to 2018.

FIGURE 3

Annual Contributions to Teacher Retirement Plans by Source, 2001–2018

Billions of inflation-adjusted 2018 dollars

Source: Authors' estimates from the Public Plans Database.
Notes: Figure shows contributions to state-administered retirement plans covering public school teachers in all 50 states. Because of data limitations, estimates exclude Colorado from 2001 to 2004 and Maine in 2013.

Nationally, employees now account for nearly one-third of total contributions to teacher retirements, while employers and state governments account for the remaining two-thirds. However, the relative importance of employee contributions varies widely across state plans. In 2017 and 2018, employees accounted for the largest share of total plan contributions in New Jersey (83 percent), Arizona (68 percent), Nevada (67 percent), South Dakota (67 percent), Wyoming (67 percent), and Texas (65 percent). Employees accounted for the smallest share of total plan contributions in Oregon (1 percent), Utah (2 percent), New York (5 percent), Michigan (10 percent), and Washington (13 percent).

Changes to Teacher Retirement Benefit Rules

As the funding gap facing teacher pension plans has worsened, many plans have revised the benefits they provide to retirees. Since 2008, six states have taken the significant step of moving newly hired teachers out of FAS DB plans. (Alaska moved its teachers into a DC plan in 2006, eliminating its FAS plan.) Kansas recently moved its teachers into a cash-balance plan, while Michigan, Rhode Island, Tennessee, Utah, and Virginia moved their teachers into hybrid plans that shrink the FAS DB pension and add a DC component to the retirement plan. Assessing how these changes will affect teachers' future retirement incomes is difficult because the retirement account balances they ultimately accumulate will depend on uncertain investment returns. Moreover, some teachers with relatively short careers will likely fare better in a cash-balance plan or hybrid plan than they would have with only an FAS pension, because FAS pensions backload benefits late into a career. Members who remain in the retirement plan for a full career, however, would likely fare better with an FAS pension. We restrict the rest of our analysis of retirement benefit changes to the 43 states that continue to provide FAS pensions to their teachers.

TABLE 1

States that Moved Teachers into Cash-Balance or Hybrid Plans, 2008 to 2018

State	Plan type	Year converted
Kansas	Cash-balance	2015
Michigan	Hybrid	2010
Rhode Island	Hybrid	2012
Tennessee	Hybrid	2014
Utah	Hybrid	2012
Virginia	Hybrid	2014

Source: Authors' estimates from the Urban Institute's State and Local Employee Pension Plan Database.
Notes: Alaska moved its newly hired teachers into a defined-contribution plan in 2006.

Benefit Changes in FAS Plans

Thirty-seven states that offer FAS pensions to teachers changed the terms of those retirement plans so that benefits rules for teachers hired on January 1, 2018, differ from those for teachers hired 10 years earlier (table 2). These plans represent 86 percent of the 43 state plans that provide FAS DB pensions to teachers hired in 2018. Twenty-five states (58 percent) increased mandatory teacher contribution rates, 20 states (47 percent) increased the age at which a teacher could collect full pension benefits, 13 states (30 percent) reduced the share of salary that the pension replaces, 15 states (35 percent) increased the number of years included in FAS computations, and 12 states (28 percent) increased vesting requirements.

TABLE 2
Number and Percentage of Teacher FAS Pension Plans that Changed Benefit Rules, 2008 to 2018

Benefit rule	Number	Percentage
Any	37	86
Normal retirement age	20	47
Replacement rate	13	30
FAS calculations	15	35
Vesting requirements	12	28
Contribution rate	25	58

Source: Authors' estimates from the Urban Institute's State and Local Employee Pension Plan Database.
Notes: FAS = final average salary. Estimates are restricted to the 43 state-administered retirement plans that provided FAS pensions to teachers hired in 2018. Table indicates plans that had different benefit rules in place for teachers hired on January 1, 2018, than for teachers hired on January 1, 2008.

Overall, the average age at which a teacher hired at age 25 could first begin collecting full pension benefits increased 2.1 years, from 56.7 for those hired in 2008 to 58.8 for those hired in 2018 (table 3). Among plans that increased retirement ages, the average age increased 4.6 years, from 56.0 to 60.6. The increase was much more dramatic in a handful of states. The full retirement age for a 25-year-old hire increased 12 years in Alabama (from age 50 to 62), 8 years in New York (from age 55 to 63), and 7 years in Maryland and West Virginia (from age 55 to 62). For teachers hired at age 25 in 2008, the youngest age at which they can collect a full pension is 50, permitted in Alabama, Mississippi, Montana, and New Mexico; the oldest age, in Minnesota, is 66. For teachers hired at age 25 in 2018, the earliest age at which they can collect a full pension is 52, permitted only in Kentucky, and the oldest age, in Massachusetts, is 67.

TABLE 3
Change in Pension Benefit Rules for Newly Hired Teachers, 2008 to 2018

	All FAS Teacher Plans		FAS Teacher Plans that Changed Benefit Rules	
	2008	2018	2008	2018
Age at which an age-25 hire can first collect full benefits	**56.7**	**58.8**	**56.0**	**60.6**
Replacement rate				
10 years of service	19.9%	19.0%	20.6%	17.8%
30 years of service	60.1%	58.0%	61.6%	55.0%
Years included in FAS calculations	**3.5**	**4.3**	**3.1**	**5.3**
Years of service required to vest	**5.8**	**7.0**	**4.6**	**9.0**
Contribution rate	**6.8%**	**7.7%**	**7.0%**	**8.5%**

Source: Authors' estimates from the Urban Institute's State and Local Employee Pension Plan Database.
Notes: FAS = final average salary. Estimates are restricted to the 43 state-administered retirement plans that provide FAS pensions to teachers hired in 2018 and compare benefit rules for teachers hired on January 1, 2008, with those for teachers hired on January 1, 2018. Replacement rates are computed for teachers hired at age 25 who first collect a pension at age 65. FAS calculations are for teachers with 25 years of service. The table compares 2012 contribution rates for teachers hired in 2008 and 2018 contribution rates for teachers hired that year.

The average replacement rate for teachers who were hired at age 25 and first collect a pension at age 65 fell 0.9 percentage points, from 19.9 to 19.0 percent, for those who separate after 10 years of service. The average replacement rate fell 2.1 percentage points, from 60.1 to 58.0 percent, for those who separate after 30 years of service. Among plans that changed the benefit formula multiplier, the average replacement rate fell 2.8 points, from 20.6 to 17.8 percent, for teachers who separate after 10 years of service; the average rate fell 6.6 points, from 61.6 to 55.0 percent, for teachers who separate after 30 years of service. The largest cuts in replacement rates for teachers completing 30 years of service occurred in Nevada (where the rate fell 12.6 points), Alabama (10.9 points), and Hawaii (7.5 points). For teachers hired in 2008, replacement rates for teachers separating after completing 30 years of service range from 80.1 percent in Nevada to 30 percent in Washington. For teachers hired 10 years later who complete 30 years of service, replacement rates range from 75.0 percent in Colorado, Kentucky, and Louisiana to 30 percent in Washington.

Changes to teacher FAS plans between 2008 and 2018 modestly boosted the average number of years included in FAS computations. This increase reduces pension benefits by including lower-earning years in the average salary used to compute payments. Pensions for teachers hired in 2008 are based on salaries earned over the final 3.5 years of service, on average, whereas pensions for teachers hired in 2018 use the final 4.3 years of salary when computing pension benefits. Among the 15 plans that changed their FAS calculations between 2008 and 2018, the average number of years used increased from 3.1 to 5.3. For teachers hired in 2018, the number of years included in FAS calculations range from eight in Florida and Illinois to one in South Dakota.

Vesting requirements for teachers have also increased since the Great Recession. On average, teachers hired in 2018 must complete 7.0 years of service to qualify for a future pension, compared with 5.8 years for teachers hired in 2008. Among the 12 states that raised vesting requirements, the minimum years of service increased 4.4 years, from 4.6 to 9.0. Sixteen states impose 10-year vesting requirements on teachers hired in 2018, whereas only eight states require teachers hired in 2008 to serve that long to qualify for a pension.

More than half of states providing teachers with FAS pension plans recently increased the percentage of salary they require teachers to contribute to the pension plan. Overall, the average 2018 contribution rate for newly hired teachers was 7.7 percent. By contrast, the average 2012 contribution rate for 2008 hires was 6.8 percent. Among plans that boosted contribution rates between 2012 and 2018, average rates increased 1.5 percentage points, from 7.0 to 8.5 percent. In 2018, teachers faced the highest mandatory contribution rates in Missouri and Nevada, where they contributed 14.5 percent of their salary, Ohio (14 percent), and Kentucky (12.9 percent). Oregon and Washington are the only states that did not require teachers to contribute to an FAS pension plan in 2018.

Conclusions

Most states provide less-generous pensions to teachers hired in 2018 than to teachers hired in 2008. Since the Great Recession, 43 states raised the contributions that teachers must make to their retirement plan or cut benefits by raising the retirement age, reducing the share of salary that pensions replace in retirement, adding more years to the final salary calculation that determines payouts, or raising vesting requirements. Nearly one-half of state teacher plans raised the age at which teachers can begin collecting their pension, and nearly one-third reduced the share of salary a pension replaces. Among plans that made these changes between 2008 and 2018, the average retirement age increased almost five years, and the average replacement rate fell nearly 6 percentage points. These cutbacks could be especially harmful to teachers who are not covered by Social Security (Kolasi, Boyens, and Smalligan 2019).

Another six states moved newly hired teachers out of FAS DB pension plans over the past decade. Five states moved new teachers into a hybrid plan, which shrinks the FAS DB pension component of the retirement plan and adds a DC component. Kansas moved new teachers into a cash-balance plan. These alternative plan designs do not necessarily reduce retirement benefits, but they generally make future retirement benefits less certain by exposing plan members to investment risk. Shorter-term teachers generally accumulate more retirement benefits under these plans than FAS pension plans, but longer-term teachers generally accumulate less.

Despite recent cutbacks, teacher pension plans are less financially secure today than in 2008. In 2018, state teacher retirement plans held enough assets to cover 72 percent of future liabilities, compared with 85 percent in 2008 and 99 percent in 2001. The situation today is even worse in certain states, such as Illinois, New Jersey, Indiana, Massachusetts, and Rhode Island. Controlling for inflation, the overall funding gap is twice as large today as in 2008. These financial challenges have forced school districts and states to contribute more to teacher pension plans, potentially crowding out spending on other priorities or necessitating tax hikes.

More research is needed to understand how recent teacher pension reforms will affect teachers' retirement security, states' ability to meet teacher staffing needs, state spending, and the financial stability of public-sector retirement systems. The implications for retirement security depend on many factors, including the level of existing benefits and the availability of Social Security. Because benefit changes generally affect only new hires, not incumbent teachers, the financial impact of recent cuts may not be felt for years. Cutting retirement benefits for new hires may not be the best way to improve plan finances. Plans often experience funding problems because state governments and other employers

failed to make required contributions in the past, not because benefits are too high. Also, investment losses often create funding shortfalls. Forcing new hires to bear much of the cost of past mistakes and investment losses can lead to inequities within the teacher workforce and may make it difficult for states to attract and retain high-quality teachers. Introducing automatic adjustments into the plan design, such as tying COLAs for retirees and contributions from employers and members to a plan's funding status, may be a better way of stabilizing plan finances.

Notes

[1] The Urban Institute State and Local Employee Pension Plan Database, Urban Institute, accessed January 14, 2020, https://www.urban.org/policy-centers/cross-center-initiatives/program-retirement-policy/projects/urban-institute-state-and-local-employee-pension-plan-database.

[2] Public Plans Database, Center for Retirement Research at Boston College, the Center for State and Local Government Excellence, and the National Association of State Retirement Administrators, accessed January 14, 2020, https://publicplansdata.org/public-plans-database/download-full-data-set/.

[3] "Social Security Coverage," National Association of State Retirement Administrators, accessed January 28, 2020, https://www.nasra.org/socialsecurity.

[4] "Pension and Retirement Legislation Information by State," National Conference of State Legislatures, March 11, 2019, http://www.ncsl.org/research/fiscal-policy/pension-legislation-database.aspx#database.

[5] Authors' calculations from Employee Benefits Security Administration (2019).

[6] The average funded ratio does not immediately reflect all investment losses from the 2008 stock market crash, because most plans average plan assets over several years when evaluating their financial condition.

[7] In 21 states, the retirement plans that cover teachers also cover other government employees. In the remaining 29 states with stand-alone teacher pension plans, the funded ratio fell from 97.2 percent in 2001 to 69.2 percent in 2018.

[8] In teacher-only plans, employers are generally school districts.

References

Aldeman, Chad, and Richard W. Johnson. 2015. *Negative Returns: How State Pensions Shortchange Teachers* Washington, DC: Bellwether Education Partners and Urban Institute.

Cavanaugh Macdonald Consulting. 2019a. *Nebraska Public Employees Retirement Systems: 2019 County Employees' Retirement System Cash Balance Benefit Fund*. Bellevue, NE: Cavanaugh Macdonald Consulting.

———. 2019b. *Nebraska Public Employees Retirement Systems: 2019 State Employees' Retirement System Cash Balance Benefit Fund*. Bellevue, NE: Cavanaugh Macdonald Consulting.

Employee Benefits Security Administration. 2019. *Private Pension Plan Bulletin Historical Tables and Graphs 1975–2017*. Washington, DC: US Department of Labor.

Johnson, Richard W., and Benjamin G. Southgate. 2014. *Evaluating Retirement Income Security for Illinois Public School Teachers*. Washington, DC: Urban Institute.

Johnson, Richard W., and Cori E. Uccello. 2004. "Cash Balance Plans: What Do They Mean for Retirement Security?" *National Tax Journal* 57 (2): 315–28.

Johnson, Richard W., C. Eugene Steuerle, and Caleb Quakenbush. 2012. *Are Pension Reforms Helping States Attract and Retain the Best Workers*? Washington, DC: Urban Institute.

Johnson, Richard W., Barbara A. Butrica, Owen Haaga, and Benjamin G. Southgate. 2014. *Assessing Pension Benefits Paid under Pennsylvania's State Employees' Retirement System*. Washington, DC: Urban Institute.

Kolasi, Erald, Chantel Boyens, and Jack Smalligan. 2019. "Recent Changes in Pension Benefits for State and Local Workers Not Covered by Social Security." Washington, DC: Urban Institute.

Novy-Marx, Robert, and Joshua D. Rauh. 2009. "The Liabilities and Risks of State-Sponsored Pension Plans." *Journal of Economic Perspectives* 23 (4): 191–210.

Pew Charitable Trusts and Laura and John Arnold Foundation. 2014. "Public Penson Cash Balance Plans: A Primer." Washington, DC, and Houston: Pew Charitable Trusts and Laura and John Arnold Foundation.

Texas County and District Retirement System. 2019. *Comprehensive Annual Financial Report for the Years Ended December 31, 2018 & 2017.* Austin: Texas County and District Retirement System.

Texas Municipal Retirement System. 2019. *Comprehensive Annual Financial Report for the Year Ended December 31, 2018.* Austin: Texas Municipal Retirement System.

US Bureau of Labor Statistics. 2019. *National Compensation Survey: Employee Benefits in the United States, March 2019*. Washington, DC: US Department of Labor.

About the Authors

Richard W. Johnson is a senior fellow in the Income and Benefits Policy Center at the Urban Institute, where he directs the Program on Retirement Policy. His current research focuses on older Americans' employment and retirement decisions, long-term services and supports for older adults with disabilities, and state and local pensions. Recent studies have examined job loss at older ages, occupational change after age 50, and the impact of recent teacher pension reforms on costs and benefits. He earned his AB from Princeton University and his PhD from the University of Pennsylvania, both in economics.

Erald Kolasi is a research associate in the Income and Benefits Policy Center. He develops computer models and simulations designed to study the effects of proposed retirement and economic policies. His research interests include state and local pensions, Social Security, and the federal budget. Kolasi received his BA in physics and history from the University of Virginia and earned his MS and PhD from George Mason University, both in physics.

URBAN INSTITUTE · ELEVATE · THE · DEBATE

500 L'Enfant Plaza SW
Washington, DC 20024

www.urban.org