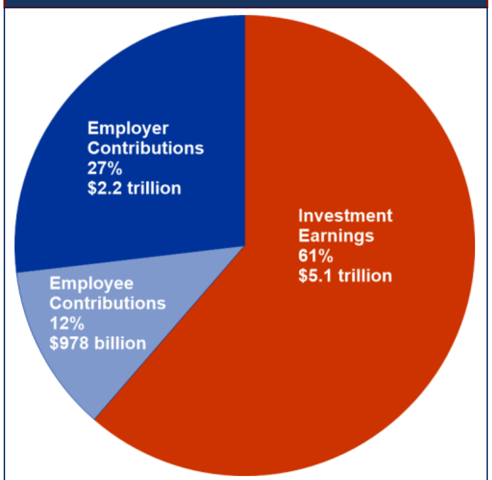
# NASRA Issue Brief:
## State and Local Government Contributions to Statewide Pension Plans: FY 20

**December 2021**

**Pension benefits for employees of state and local governments are paid from trust funds to which public employers and employees contribute during employees' working years. Timely contributions are vital to both adequate funding and the sustainability of these plans: failing to pay required contributions results in higher future costs due to foregone principal and investment earnings that the contributions would have generated.**

Figure A: Sources of public pension fund revenue, 1991-2020




Source: US Census Bureau, compiled by NASRA

**According to the US Census Bureau, on a national basis, contributions made by employers—states and local governments—in 2020 accounted for nearly three-fourths of all contributions received by public pension plans. The remaining contributions were paid by public employees.[1] A 2020 NASRA issue brief finds that contributions made by state and local governments to pension trust funds in recent years account for just over five percent of all non-federal spending.[2]**

**Funding a pension plan takes place over many years and, as described in the box below, typically involves a combination of contributions from employees and employers, which are invested to generate investment earnings. As shown in Figure A, contributions are a vital source of public pension funding: of the $8.5+ trillion in public pension revenue since 1991, 39 percent, or more than $3 trillion, came from contributions paid by employers and employees.[3] Of course, contributions provide the basis for investment earnings. The amount of contributions needed to fund a pension plan is calculated as part of an actuarial valuation, a mathematical process that determines a pension plan's condition and cost needed to pay promised benefits.**

## A Brief History of Public Pension Contributions[4]

Although employee and employer contributions today are a core feature of funding for most public pension plans, this has not always been the case. For many years, including, for some plans, as recently as the 1980s, pension benefits for employees of state and local government either were not prefunded, or these benefits were funded without the use of actuarial calculations to determine the annual amount needed to fund promised benefits. For example, some states and cities funded pension plans either on a pay-as-you-go basis, in which current benefits were paid with current employer revenues; or public employer payments into the pension plan were not based on an amount determined by actuarial calculation. The practice of not

**The Retirement Benefit Plan Equation**

**A basic formula describes the financing of any type of retirement benefit:**

**C + I = B + E**

**Contributions plus investment earnings equals benefits plus expenses. The money that is drawn from a retirement plan, for benefits and administrative costs, ultimately must equal the money that is contributed to the plan and the investment earnings those contributions generate. This fundamental formula illustrates the vital role contributions play in funding a pension plan.**

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1 US Census Bureau, 2020 Annual Survey of Public Pensions

2 NASRA, "State and Local Government Spending on Public Employee Retirement Systems," December 2020; calculation does not include spending from federal sources

3 Contributions@NASRA.org, http://www.nasra.org/contributions

4 The authors wish to thank Paul Angelo with the Segal Company and David Kausch with GRS Consulting for their input on this section.

funding benefits using actuarial cost resulted in inadequate contributions; this proved to have negative consequences, as plans funded in that manner often accrued large unfunded liabilities, some of which persist today.

The amount needed to adequately fund a pension benefit also has not always been a clear or settled matter. Efforts by the accounting and actuarial professions to establish a consensus methodology for determining a contribution for funding new benefit accruals and systematically eliminating any unfunded liabilities resulted in the creation in 1994 of the Annual Required Contribution, or ARC, by the Governmental Accounting Standards Board (GASB). In Statement 25, GASB defined the ARC (paraphrased) as the sum of the plan's normal cost (i.e., the cost of benefits accrued each year) and the annual cost to amortize the plan's unfunded liability over a period of years, known as the funding period.

Although established only as an accounting requirement, the ARC became widely recognized as a de facto measure of employers' effort to fund the pension benefits they were sponsoring. However, compliance with the GASB ARC also permitted the use of certain actuarial methods that resulted in contributions that were insufficient to actually amortize unfunded liabilities over the funding period. One example of such a method was the use of a so-called rolling amortization period, in which the funding period did not decline because it was effectively refinanced each year. Using this method, when the amortization period is lengthy, such as 30 years, which was the maximum length permitted under GASB standards, the result was amortization of an unfunded liability over a period actually longer than 30 years.

Following the onset of GASB 25, the actuarial and accounting professions continued to make efforts to strengthen required contributions to public pension plans: in 2014, the Conference of Consulting Actuaries published non-binding guidelines for developing a principles-based actuarial funding policy.[5] These guidelines articulate key elements of an actuarial-based funding policy and specify practices for implementing such a policy.

In 2015, GASB supplanted Statement 25 with Statement 67, and replaced the ARC with a new term, the Actuarially Determined Contribution, or ADC. Through Statement 67, GASB sought to clarify and emphasize that its pension accounting standards are, indeed, accounting standards, not guidelines for how a public pension plan should be funded. This distinction is evident in the GASB 67 definition of an ADC, which, rather than specifically defining what an appropriate pension contribution should be, instead defers to the Actuarial Standards Board (ASB) (the entity charged with promulgating guidelines for professional actuaries known as Actuarial Standards of Practice, or ASOPs), responsibility for defining how a public pension plan should be funded. The GASB 67 definition of an ADC is as follows:

> A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

ASOP No. 4 defines an actuarially determined contribution as:

> A potential payment to the plan as determined by the actuary using a contribution allocation procedure. It may or may not be the amount actually paid by the plan sponsor or other contributing entity.

For practical purposes, in most cases the ADC is substantially similar to the ARC in that both measures reflect a contribution dollar amount and a percentage rate that are based on an actuarial calculation reflecting the sum of the normal cost and a cost to eliminate any unfunded liability within a permissible timeframe. GASB's switch to the ADC was intended to shift the focus of funding a pension plan from accounting standards to actuarial standards.

Another change made by Statement 67 was that single employer and (multiple-employer) cost-sharing plans that calculate an Actuarially Determined Contribution are required to report:

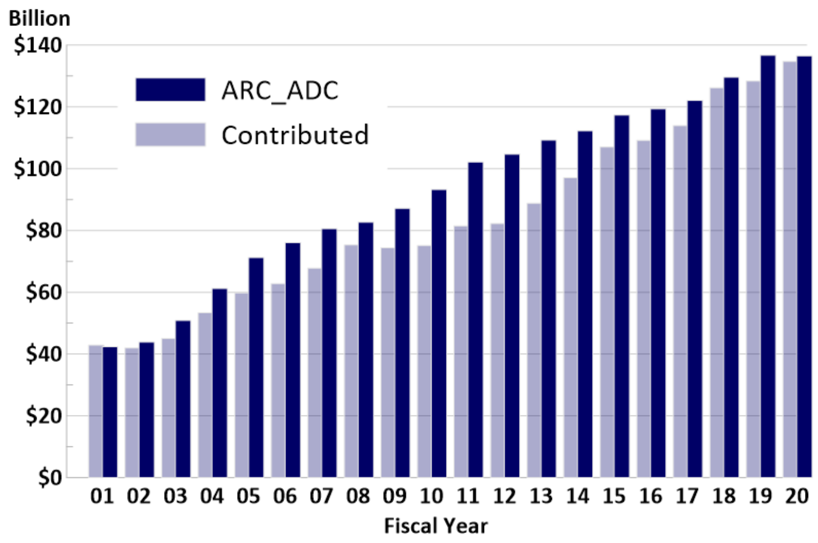
a) the ADC;
b) if different from the ADC, the contractually required contribution rate, such as would exist under a statutory fixed contribution requirement (for cost-sharing plans);
c) actual contributions made to the plan; and
d) the dollar difference between the ADC and the actual contributions.[6]

[5] Conference of Consulting Actuaries, Actuarial Funding Policies and Practices for Public Pension Plans, 2014

[6] Statement 67 also eliminates the requirement that agent plans report their ADC experience, because, as the statement says, "aggregated information about contributions to agent pension plans has limited decision utility because the pattern of contributions to each individual agent employer's pension plan would be obscured if the aggregated amounts were reported about the agent pension plan as a whole." Individual employers participating in agent pension plans each have their own actuarial experience, with their own liability and contribution rate. Many agent plans permit employer members to contribute more than the ADC.

Because GASB 67 permits agent plans to forgo reporting an ADC and its actual contributions received toward the ADC, since the onset of this statement in 2015, several plans that were included in the dataset that accompanies this brief ceased including this information in their financial reports. That experience is reflected in Appendix A.

Figure B: Inflation-adjusted change in Annual Required Contribution/Actuarially Determined Contribution and employer contributions, FY 01 to FY 20




Source: State retirement system financial reports, compiled by NASRA

## Recent Contribution Experience

As shown in Figure B, aggregate contributions in FY 20 to the plans included in this analysis increased over the prior year by 6.2 percent, growing from $120.9 billion in FY 19 to $128.4 billion.

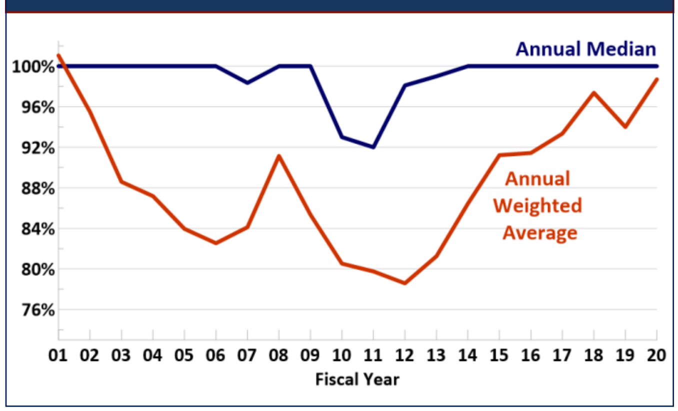
This experience reflects a continuation of an effort among state and local governments to make a larger portion, including all, of their actuarially determined pension contributions. As Figure C illustrates, the median percentage of ADC received in FY 20 was 100 percent, and the dollar-weighted average was 98.6 percent. This marks the highest percentage of ADC received since FY 01, and the sixth consecutive year in which the aggregate ADC experience was higher than 90 percent. Nearly 80 percent of the increase in contributions received by public pensions in FY 20 is attributable to two states: the State of California, which contributed an additional $6.0 billion to its public pension plans, and the Commonwealth of Pennsylvania, whose State Employees' Retirement System received an advance payment of $1.06 billion from Pennsylvania State University.

Following the recession of 2007-09 and the market decline of 2008-09, many public pension plans have made changes to their funding policies and practices that have produced increases in required contributions in subsequent years, including implementation of more conservative (aggressive) funding policies; lower investment return assumptions; updated mortality assumptions; and reduced amortization periods.

### *Dedicated Funding Sources*

In recent years, a growing number of public employers established dedicated public pension funding sources to supplement or replace other sources of funding for employer contributions to public pensions. Traditionally, contributions to public pension funds come from employers' general fund and other sources that are used to pay employees. Such dedicated funding sources include dedicated sales taxes, insurance policy surcharges, budget surplus monies, mineral and severance tax revenues, and others. Perhaps the most notable source of dedicated funding is in the State of New Jersey, which in 2017 transferred rights to all revenue generated by the state lottery to the state pension plans.[7]

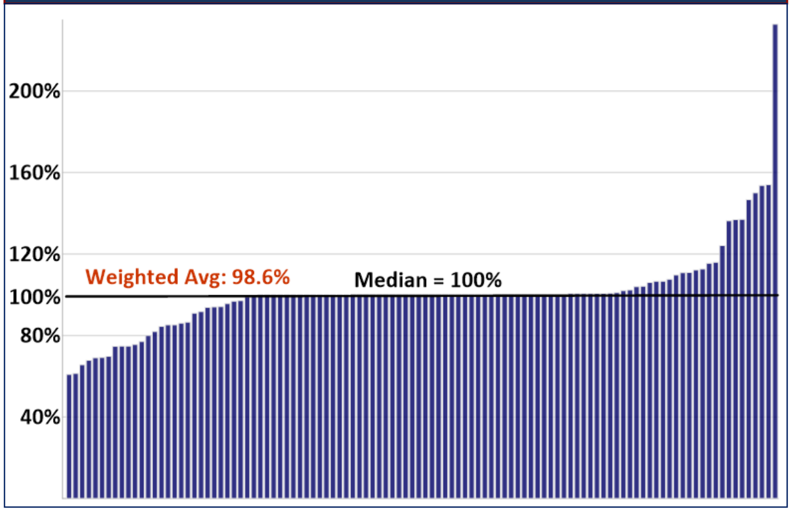
Figure C: Median and weighted average employer contributions as a percentage of ARC/ADC, FY 01 to FY 20




Source: State retirement system financial reports, compiled by NASRA

[7] Funding Policies@NASRA.org, http://www.nasra.org/funding

Figure D: Distribution of employer contributions received in FY 20 as a percentage of actuarially determined contribution




Source: State retirement system financial reports, compiled by NASRA

### *Contributions above the ADC*

As shown in Figure D, some plans received significantly more than their ADC in FY 20, and some of these same plans have consistently received contributions well above the actuarially determined amount. As discussed previously, some of these are agent plans, in which each employer has its own actuarial experience and required contribution rate, and some employers elect to contribute more than the actuarially determined amount.

Contributions above the ADC can be made for any of a variety of reasons, including the use of surplus revenue, such as from a budget surplus; changes to the timing of contributions, such as from one fiscal year to another; and to pre-fund certain benefits, such as a cost-of-living adjustment.

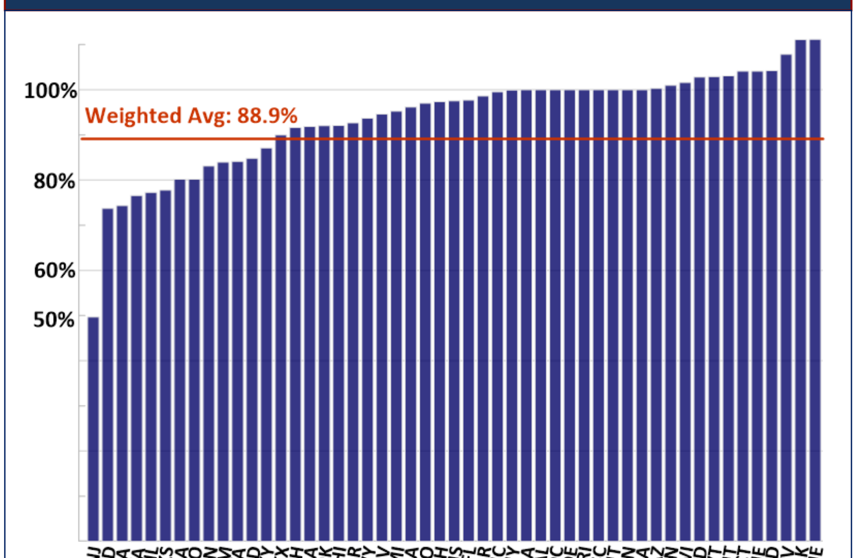
The West Virginia Teachers' Retirement System operated for many years on a pay-as-you-go basis following decades of underfunding, but that has changed more recently: for most of the past 20 years, the plan has received its full required contribution, including an average of more than 120 percent of its ADC since FY 15. In recent years, the plan's contribution sources include state budget surplus funds and a portion of the state's tobacco settlement monies, used to reduce the state's unfunded actuarial liability. In 2010, legislation approved in West Virginia directs 10 percent of revenues from the state tax on fire insurance premiums and casualty insurance policies to the Teachers' Retirement System.

In FY 2015, the State of Alaska appropriated approximately $3 billion in state surplus monies to reduce the unfunded liabilities of the pension plans for teachers and state and local government workers, which resulted in contributions received equal to 231.7 and 527.7 percent of the ADC, respectively.

In FY 2009, the State of Connecticut issued some $2 billion in pension obligation bonds to reduce the unfunded actuarial liability of the Connecticut Teachers Retirement System. As in the case of Alaska, this infusion of funding produced an employer contribution substantially greater than the actuarially determined contribution for that year. These actions taken by Alaska and Connecticut are responsible for those states' strong contribution performance for the measurement period as evidenced by Figure E.

These cases, in West Virginia, Alaska, and Connecticut, are examples of states using one-time, surplus state funds to reduce their pension plans' unfunded actuarial liability.

Figure E: Distribution of weighted average employer contributions made to plans in this analysis for each state, for period FY 01 to FY 20

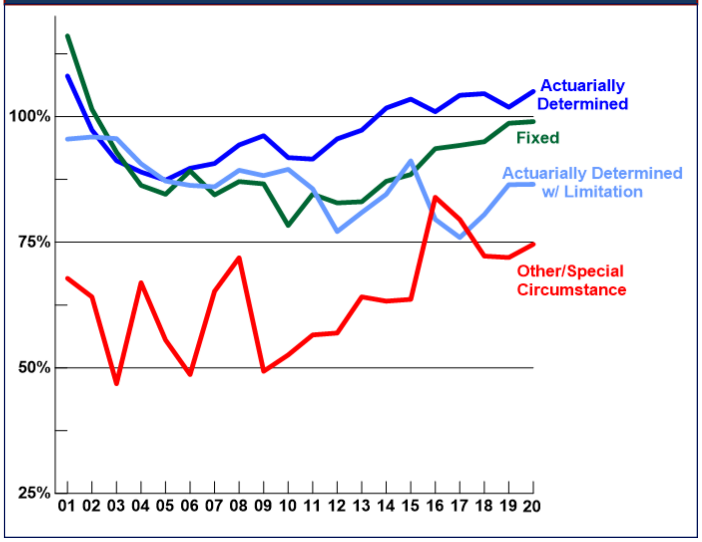



Source: State retirement system financial reports, compiled by NASRA

## Governance Structure May Impact Funding Experience

A key factor of the pension funding experience is the myriad governance and funding policy structures that are in place to determine whether and how much pension contributions are made. Beginning with the paper published in 2015, "The Annual Required Contribution Experience of State Retirement Plans," NASRA grouped retirement systems on the basis of how employer contributions to public pension plans are determined. This analysis employs the use of four broad classifications (see Appendix A): Actuarially Determined; Statutorily Fixed; Actuarially Determined with Limitation; and Other, which, for purposes of this analysis includes plans governed by funding arrangements that differ from the three preceding categories, such as a state law or policy which supersedes an ADC requirement. Table 1 compares the average weighted ARC/ADC experience for plans in this study for the period 2001 to 2020.

Figure F: Average ARC/ADC received for each employer classification: Actuarially Determined, Fixed, Actuarially Determined w/Limitation, and Other, FY 01 to FY 20




Source: State retirement system financial reports, compiled by NASRA

Figure F illustrates the variation in the ARC/ADC received among plans in each of the four classes. Following the sharp market decline that began in March 2000, the average percentage of contributions received by the plans in the Actuarially Determined category fell below 100 percent in FY 02, remaining below 100 percent, but above 89 percent, for twelve years before rising above 100 percent beginning in FY 14. The average ARC/ADC received by plans whose actuarially determined contribution is constrained by a limiting factor is 86.6 percent for the measurement period, and the average experience for plans whose employer contribution basis was fixed received an average of 90.7 percent of their ARC/ADC during this period. By contrast, the average ARC/ADC received by plans in the Other group is 63.8 percent for the measurement period.

Figure F and Table 1 illustrate the practical effect employer contribution policies had on public pension funding beginning in FY 01. Funding policies for the employers in the Other category lacked legal authority to require an adequate contribution; contributions from these employers remained well below 100 percent for the duration of the measurement period. Employers relying on fixed contribution rate policies, or whose policies are actuarially based but with limitations, received a greater percentage of required contributions than those in the Other category, as these policies provided a legal requirement to make contributions. Figure F also shows that as the level of required contributions rose, the contributions received by plans in the fixed and actuarially determined with limitation categories in most cases serve as a basis of support, even if they were insufficient to fully fund the benefit. By contrast, employers with a funding policy that includes requiring the actuarially-determined contribution predictably had the highest contribution rate experience: their contributions increased as required contributions rose. The 10-year period during which the average contribution received by plans in the ADC class illustrates that even a legal requirement to pay the actuarially-determined contribution does not, by itself, ensure that the full required contribution will always be made.

## Conclusion

Although employer contributions are a vital component of funding public pension benefits, only recently—over the past 30 years—has a broad consensus developed that pension benefits should be funded on an actuarial basis, and on how the amount should be calculated.

The experience of state and local government employers making contributions has been mixed, with some plans consistently receiving all or more of their full actuarially calculated contributions, while other plans have consistently received less than the actuarially determined amount. In some cases, amounts contributed by employers have been substantially less. This varied contribution experience is explained in part by the wide diversity in the governance arrangement states and local governments use to make their employer pension contributions.

Actuarially calculated employer contributions increased significantly following the market declines of 2000-2002 and 2008-2009, even while in the case of some plans, actual employer contributions have struggled to keep up with actuarially calculated levels. In FY 2020, aggregate employer contributions for the plans in this analysis reached their highest level ever, in dollar terms, and their highest level since FY 2001 as a percentage of actuarially determined contributions. This aggregate experience, however, is highly influenced by one-time supplemental contributions and obscures the wide range of actual plan experience, as some plans received 60 percent of their required contribution, while others received contributions that exceeded their actuarial recommendation.

## See also

National Association of State Retirement Administrators, "The Annual Required Contribution Experience of State Retirement Plans," 2015, http://www.nasra.org/files/JointPublications/NASRA_ARC_Spotlight.pdf

National Association of State Retirement Administrators, "Recession and Market Decline Impacts on Public Pension Plans," 2020, https://www.nasra.org/content.asp?admin=Y&contentid=246

National Association of State Retirement Administrators, Issue Brief: State and Local Government Spending on Public Employee Retirement Systems, December 2020, http://www.nasra.org/costsbrief

National Association of State Retirement Administrators, Issue Brief: Employee Contributions to Public Pension Funds, September 2021, http://www.nasra.org/contributionsbrief

National Association of State Retirement Administrators, "Significant Reforms to State Retirement Systems," 2018 and "Selected Approved Changes to State and Selected Local Public Pensions," 2019-present

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## Appendix A
## Basis of employer contribution and contribution history

| Plan Name | History of Contributions Received | | |
|---|---|---|---|
| | FY 11 % | FY 20 % | 10-Year Weighted Avg % ARC/ADC Received, FY 11 to FY 20 |
| Alaska PERS | 86.0 | 100.0 | 105.7 |
| Alaska Teachers | 84.6 | 116.0 | 152.0 |
| Alabama Teachers | 100.0 | 100.0 | 100.0 |
| Alabama ERS | 100.0 | 100.0 | 100.0 |
| Arkansas Teachers | 95.9 | 99.0 | 93.0 |
| Arkansas PERS | 100.0 | 100.0 | 100.0 |
| Arizona SRS | 100.0 | 100.0 | 100.0 |
| California PERF | 100.0 | 136.9 | 111.4 |
| California Teachers | 47.0 | 96.9 | 71.2 |
| Colorado School | 89.0 | 85.2 | 84.0 |
| Colorado State | 85.0 | 86.0 | 85.4 |
| Colorado Municipal | 139.0 | 94.1 | 104.7 |
| Denver Public Schools | 20.0 | 65.6 | 40.8 |
| Connecticut Teachers | 100.0 | 100.1 | 100.0 |
| Connecticut SERS | 87.5 | 100.2 | 98.8 |
| DC Police & Fire | 100.0 | 100.0 | 100.0 |
| DC Teachers | 100.0 | 100.0 | 100.0 |
| Delaware State Employees | 100.0 | 100.0 | 100.0 |
| Florida RS | 83.0 | 100.0 | 92.4 |
| Georgia Teachers | 100.0 | 100.0 | 100.0 |
| Georgia ERS | 100.0 | 100.0 | 100.0 |
| Hawaii ERS | 91.8 | 91.7 | 88.5 |
| Iowa PERS | 82.3 | 100.6 | 99.8 |
| Idaho PERS | 87.4 | 109.8 | 98.9 |
| Illinois Teachers | 84.7 | 61.4 | 71.3 |
| Illinois Municipal | 95.0 | 100.0 | 99.2 |
| Illinois Universities | 68.0 | 80.0 | 83.4 |
| Illinois SERS | 87.5 | 81.9 | 83.1 |
| Indiana Teachers | 87.3 | 102.4 | 101.7 |
| Indiana PERF | 70.8 | 124.2 | 101.8 |
| Kansas PERS | 74.0 | 97.1 | 82.1 |
| Kentucky Teachers | 153.0 | 100.0 | 87.5 |
| Kentucky County | 112.0 | 84.5 | 96.0 |
| Kentucky ERS | 52.9 | 91.0 | 86.6 |
| Louisiana Teachers | 90.2 | 107.6 | 102.1 |
| Louisiana SERS | 82.3 | 106.6 | 96.7 |
| Massachusetts Teachers | 108.2 | 74.8 | 76.8 |
| Massachusetts SERS | 106.8 | 74.8 | 77.6 |
| Maryland Teachers | 75.0 | 100.0 | 85.0 |

**Appendix A**
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|---|---|---|---|
| | FY 11 % | FY 20 % | 10-Year Weighted Avg % ARC/ADC Received, FY 11 to FY 20 |
| Maryland PERS | 68.0 | 100.0 | 82.6 |
| Maine State and Teacher | 101.8 | 100.0 | 100.2 |
| Maine Local | 100.0 | 100.0 | 100.1 |
| Michigan Public Schools | 81.5 | 99.7 | 93.2 |
| Michigan SERS | 94.8 | 102.0 | 100.0 |
| Minnesota Teachers | 63.5 | 86.6 | 74.3 |
| Minnesota PERF | 111.1 | 115.4 | 92.3 |
| Minnesota State Employees | 81.1 | 110.8 | 77.4 |
| Missouri Teachers | 86.9 | 106.7 | 106.0 |
| Missouri State Employees | 100.0 | 100.0 | 100.4 |
| Missouri PEERS | 100.0 | 104.3 | 104.3 |
| Missouri DOT and Highway Patrol | 100.0 | 100.0 | 100.0 |
| Mississippi PERS | 100.0 | 95.6 | 97.0 |
| Montana PERS | 100.0 | 94.1 | 97.8 |
| Montana Teachers | 98.3 | 100.0 | 96.0 |
| North Carolina Teachers and State Employees | 73.0 | 100.0 | 99.3 |
| North Carolina Local Government | 100.0 | 103.9 | 102.4 |
| North Dakota Teachers | 68.4 | 93.8 | 94.4 |
| North Dakota PERS | 39.0 | 60.8 | 58.5 |
| Nebraska County Cash Balance | 100.0 | 150.0 | 139.7 |
| Nebraska State Cash Balance | 100.0 | 154.0 | 136.1 |
| Nebraska Schools | 89.0 | 137.0 | 114.3 |
| New Hampshire Retirement System | 100.0 | 100.0 | 100.0 |
| New Jersey Teachers | 1.4 | 69.1 | 36.9 |
| New Jersey PERS - state | 3.6 | 69.1 | 36.3 |
| New Jersey PERS - local | 84.1 | 100.0 | 96.3 |
| New Jersey Police & Fire - state | 2.0 | 69.8 | 38.0 |
| New Jersey Police & Fire - local | 91.9 | 100.0 | 97.7 |
| New Mexico PERF | 100.0 | 67.9 | 83.7 |
| New Mexico Teachers | 81.6 | 77.0 | 75.4 |
| Nevada Regular Employees | 89.0 | 111.0 | 95.7 |
| Nevada Police Officer and Firefighter | 88.0 | 106.0 | 92.1 |
| NY State & Local ERS | 100.0 | 100.0 | 100.0 |
| New York State Teachers | 100.0 | 100.0 | 99.8 |
| NY State & Local Police & Fire | 100.0 | 100.0 | 100.0 |
| Ohio Teachers | 51.0 | 153.7 | 86.1 |
| Ohio PERS | 100.0 | 100.0 | 100.0 |
| Ohio School Employees | 100.0 | 100.0 | 100.0 |

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| Plan Name | History of Contributions Received | | |
|---|---|---|---|
| | FY 11 % | FY 20 % | 10-Year Weighted Avg % ARC/ADC Received, FY 11 to FY 20 |
| Oklahoma Teachers | 77.6 | 100.8 | 105.5 |
| Oklahoma PERS | 62.9 | 232.8 | 128.6 |
| Oregon PERS | 83.0 | 100.0 | 94.5 |
| Pennsylvania School Employees | 41.0 | 100.0 | 79.7 |
| Pennsylvania State ERS | 42.8 | 146.7 | 94.0 |
| Rhode Island ERS | 100.0 | 100.0 | 100.0 |
| Rhode Island Municipal | 100.0 | 100.0 | 100.0 |
| South Carolina RS | 100.0 | 100.0 | 100.0 |
| South Carolina Police | 100.0 | 100.0 | 100.0 |
| South Dakota RS | 100.0 | 100.0 | 105.2 |
| TN Public Employee Retirement Plan/1 | | 100.0 | 100.0 |
| TN Teacher Legacy Plan/1 | | 100.0 | 100.0 |
| TN Teacher Retirement Plan/1 | | 100.0 | 100.0 |
| Texas Teachers | 86.0 | 85.3 | 86.9 |
| Texas ERS | 58.5 | 74.7 | 71.8 |
| Texas County & District | 109.0 | 100.0 | 100.0 |
| Texas Municipal | 92.1 | 100.0 | 100.0 |
| Utah Noncontributory | 100.0 | 100.0 | 100.0 |
| Virginia Retirement System | 46.7 | 100.1 | 84.5 |
| Vermont Teachers | 104.0 | 100.6 | 107.4 |
| Vermont State Employees | 84.5 | 112.7 | 117.9 |
| Washington PERS 2/3 | 80.0 | 100.6 | 92.7 |
| Washington PERS 1 | 33.0 | 100.6 | 84.3 |
| Washington Teachers Plan 1 | 47.0 | 100.6 | 83.7 |
| Washington Teachers Plan 2/3 | 72.0 | 100.1 | 92.3 |
| Washington LEOFF Plan 2 | 157.0 | 101.0 | 112.4 |
| Washington School Employees Plan 2/3 | 70.3 | 100.6 | 90.8 |
| Wisconsin Retirement System | 108.0 | 100.0 | 101.0 |
| West Virginia Teachers | 106.4 | 112.1 | 108.1 |
| West Virginia PERS | 83.3 | 136.3 | 108.4 |
| Wyoming Public Employees | 93.0 | 75.5 | 81.4 |

Note: GASB Statement 67, which became effective in fiscal year 2015, eliminated the requirement that plans present aggregated employer contribution data for multiple-employer agent pension plans. As a result, this data is no longer reported for some plans that were previously included in this appendix.

/1 The structure of plans administered by the Tennessee Consolidated Retirement System was adjusted in FY 2014, from two plans—the State & Teachers plan and the Political Subdivision plan—to the three plans shown here. Employers participating in the TCRS have contributed the full annual required contribution and actuarially determined contribution for all years covered by this analysis.