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## THE FUNDED STATUS OF LOCAL PENSIONS INCHES CLOSER TO STATES

By Jean-Pierre Aubry, Caroline V. Crawford, and Alicia H. Munnell\*

#### INTRODUCTION

The last comprehensive review of locally adminstered plans in this series found that their funded status – as of 2011 – lagged behind that of state pension plans.<sup>1</sup> Yet much has happened in the public pension land-scape since. Plans administered at both the state and local levels have passed a spate of reforms to control rising pension costs and to limit liability growth.<sup>2</sup> This *brief* uses the most recent data available – from 2015 and 2016 – to assess the current status of local plans.

The discussion proceeds as follows. The first section briefly describes the universe of local plans and the sample of plans used in this study. The second section compares trends in the funded status for state and local plans. While local plans have historically trailed states, their funding gap is slowly closing.<sup>3</sup> To better understand this pattern, the third and fourth sections examine two key determinants of the funded status: required contributions and investment returns. The final section concludes that although local plans have paid more of their actuarially required contributions than state plans, relatively poor returns limited their ability to close the gap in the past. More recently, however, local plans have experienced higher actual returns relative to state plans, in part, due to a smaller allocation to alternative investments. As a result, the gap in funded status between the two groups is shrinking.

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#### AN OVERVIEW OF LOCAL PLANS

The Census of Governments reports a total of 6,276 state and local pension plans in 2016, with over \$3.7 trillion in assets and 31.2 million members.<sup>4</sup> Of this total, 5,977 plans – amounting to \$684 billion in assets and 3.8 million members – are locally administered. So, local plans make up the majority of plans, but the majority of assets and plan members are in state-run plans.

While state plans are few and generally large and local plans are numerous and generally small, local plans range enormously in size. For example, more than 90 percent of local plans had under \$1 billion in assets in 2015, but three plans – the New York City Employee Retirement System, the New York City Teachers Retirement System, and the Los Angeles County Employee Retirement System – each had market assets in excess of \$40 billion.

State and local plans also differ by the types of employees they cover (see Table 1). While state and local systems have a similar proportion of plans for general employees, state systems have a larger share of plans specifically for teachers, while local systems have a larger share specifically for police and firefighters.

TABLE 1. PERCENTAGE OF STATE AND LOCAL PLANS ANDAverage Asset Levels by Employee Type, 2015

|                     | Administration level |                |                     |                |  |
|---------------------|----------------------|----------------|---------------------|----------------|--|
| Croup covered       | State                |                | Local               |                |  |
| Gloup covered       | Percentage of plans  | Avg.<br>assets | Percentage of plans | Avg.<br>assets |  |
| General employees   | 58.8%                | \$26.4         | 58.3%               | \$3.8          |  |
| Teachers            | 28.1                 | 34.7           | 9.1                 | 6.9            |  |
| Police/firefighters | 13.2                 | 7.6            | 32.6                | 2.6            |  |
| Total               | 100.0%               | \$26.2         | 100.0%              | \$3.7          |  |

Source: Public Plans Database (PPD) (2015).

This *brief* relies on detailed data for a sample of 130 large local plans that are geographically distributed across the United States (see Appendix for a full list of local plan data).<sup>5</sup> For purposes of comparison, the analysis also includes 114 state plans. The data for all state plans and 55 of the local plans come from the *Public Plans Database* (PPD); the data for the other 75 local plans are collected separately. Figure 1 shows the proportion of total assets and active members in the public pension universe that the sample represents. For state plans, the sample covers 97 percent of assets and 95 percent of members. For local plans, the sample represents 71 percent of assets and 66 percent of members.





Note: Estimates are based on 2014 data, the last year of complete data.

*Sources:* Authors' calculations from U.S. Census Bureau (2014); PPD (2014); and various actuarial valuations (AVs) and comprehensive annual financial reports (CAFRs).

### Funded Status: State vs. Local Plans

Figure 2 (on the next page) presents the aggregate funded ratios for state and local plans from 2001-2015 as measured under the traditional GASB standards.<sup>6</sup> Using this measure, both state and local plans were overfunded – in aggregate – in the early 2000s, before declining in the wake of two financial crises, with local funding levels declining more sharply than that of states.

Since 2012, however, the gap between state and local funding has been shrinking. The funded status of local plans has increased modestly from 67.0 to 69.9 percent, while the funded status of state plans has remained essentially level between 73.3 to 73.9 percent. To isolate the driving factors behind this recent development, the analysis looks at the key determinants of funded status: contributions and investment returns.





Note: 2014 and 2015 values for local plans are based on complete data for 91 percent and 81 percent of the sample, respectively. The omitted plans are small (< 1,000 active members), so would have a limited impact on the total. *Sources*: Authors' calculations from PPD (2001-2015); and various AVs and CAFRs.

#### **Required Contributions**

Two aspects of the employer's required contribution are important for funding: 1) how much of the contribution is paid; and 2) how the contribution is calculated.

In 2014, the new GASB standards replaced the Annual Required Contribution (ARC) with the Actuarially Determined Employer Contribution (ADEC). While the two measures have minor conceptual differences, they are generally not material. By using the new ADEC numbers to extend historical ARC data, the analysis is able to evaluate the long-term trends in the percentage of required contributions received.<sup>7</sup>

As shown in Figure 3, since the early 2000s, both state and local plans have received about 90 percent of their reported actuarially required contributions. In fact, localities have paid a slightly higher percentage than states.

Depending on the plan's actuarial methods, paying the required contribution may or may not be enough to make meaningful reductions in the plan's unfunded liability. Many plans use a "level-percentage-of-payroll" method to amortize their unfunded liabilities to keep contributions at a set percentage of government payroll – which is consistent with public sector budgeting objectives. However, this method results in smaller amortization payments in earlier years and larger payments later, based on an assumption that payrolls will increase each year. Coupled with 20- to 30-year amortization periods used by many plans, level-percent-of-pay allows the unfunded liability to grow in the early years of the amortization. An alternative approach used by some plans is a "level-dollar" amortization method that schedules equal annual dollar payments and – for any given amortization period – reduces the unfunded liability more quickly than level percent.<sup>8</sup>





Note: The figure shows the aggregate percentage received. The 2005 spike in the local data reflects pension obligation bonds for the Dallas and Detroit general employee plans. *Sources:* Authors' calculations from PPD (2002-2015); and various AVs and CAFRs.

Unfortunately, under either funding method, plans can undermine their own efforts to pay off the unfunded liability by regularly extending their amortization period.<sup>9</sup> This tendency is particularly problematic when using a level-percentage-of-pay method because contributions remain at the initial low levels indefinitely.<sup>10</sup>

Figure 4 (on the next page) shows the percentage of required contributions received by state and local plans when the contribution is recalculated using a level-dollar amortization method – which, holding all other factors constant, pays down the unfunded liability more quickly.<sup>11</sup>

The takeaways are twofold. First, under the more stringent level-dollar method, both state and local plans are receiving much less than is required. This shortfall helps explain the lack of improvement in their funded status. Second, under the level-dollar method, local plans receive more of their required contributions than state plans. For example, in 2015 local plans received 83 percent of the recalculated required contributions compared to only 76 percent for states. This pattern reflects the fact that about a third of local plans already use a level-dollar method, compared to just under a quarter of state plans.<sup>12</sup>

FIGURE 4. PERCENTAGE OF CRR-CALCULATED ANNUAL Required Contribution Received by Plans, 2002-2015



Note: The figure shows the aggregate percentage received. The 2005 spike in the local data reflects pension obligation bonds for the Dallas and Detroit general employee plans. *Sources:* Authors' calculations from PPD (2002-2015); and various AVs and CAFRs.

#### INVESTMENT RETURNS

While localities pay more of their required contribution than states, local plans have been consistently less well funded throughout the period. The key to this conundrum rests with investment returns.

The effect of investment returns on the funded ratio depends on the difference between the expected and actual returns. Each year, pension liabilities grow by the interest rate on existing liabilities. In the public sector, the interest rate is the expected rate of return, which is used to discount future benefits. On the other hand, assets grow by the actual return achieved. If *actual* returns are lower than expected, assets grow at a slower rate than liabilities, leading to a worse funded position. Conversely, if actual returns are higher than expected, assets grow faster than liabilities, causing the funded ratio to increase. As shown in Table 2, between 2000 and 2012 both state and local plans achieved lower returns relative to their assumptions, contributing to their decline in funding. Since 2013, actual returns for both state and local plans have exceeded assumptions, but local returns have exceeded their assumption by 2.2 percentage points more than state returns. The greater differential for locals since 2013 is due to both higher actual returns and the fact that locals assume a slightly lower return. Between 2013 and 2015, the assumed return for local plans averaged 7.4 percent compared to 7.7 percent for state plans.

TABLE 2. GAP BETWEEN ACTUAL AND ASSUMEDINVESTMENT RETURNS, 2000-2012 AND 2013-2015

| Period    | State | Local |
|-----------|-------|-------|
| 2000-2012 | -1.5% | -1.7% |
| 2013-2015 | 9.1   | 11.3  |

*Source*: U.S. Census Bureau (2000-2015) and PPD (2001-2015).

The higher returns for local plans may be due, in part, to their lower allocation to alternative investments such as private equity, hedge funds, real estate, and commodities (see Figure 5).<sup>13</sup> The data show a growing difference between the alternative allocations in state and local plans, which today stands at 6 percentage points.



2007

2009

2011

2013

2015

2003

Source: PPD (2001-2015)

2001

2005

FIGURE 5. PERCENTAGE OF ASSETS IN ALTERNATIVES, 2001-2015

Alternative investments had robust returns between 2000 and 2007, and they lost substantially less than traditional equities during the financial crisis. However, previous research in this series estimated that - from 2010 to 2015 - a 10-percentagepoint increase in the allocation to alternatives was related to a 44-basis-point decrease in the annual return.<sup>14</sup> Based on this relationship, a 6-percentagepoint difference in the allocation to alternatives would result in roughly a 26-basis-point difference in return. It is clear that further research on the specific investment allocation and performance of state and local plans is needed to fully explain the difference in returns. That said, the advantage in returns combined with a more aggressive funding schedule has helped local plans close the funding gap in recent vears.

#### CONCLUSION

Since 2001, local plans have trailed states in funded level. While local plans receive more of their actuarially required contributions and tend to set more stringent required contributions, poor investment returns have historically limited their ability to close the gap with states. But, in recent years, local plans have experienced stronger returns than state plans, shrinking the funding gap between the two. More research is needed to fully understand this recent reversal.

While the findings of this *brief* highlight the impact of investment performance on funding, the amount of the actuarially required contribution paid – and the way the required contribution is calculated – is also important. If the required contribution is based on less aggressive funding methods, a plan receiving 100 percent of its required amount may not realize meaningful improvement in its funded status in the short term. For this reason, it is important that state and local plans evaluate their funding policies and consider incorporating more aggressive funding methods that pay down unfunded liabilities faster. This shift would expedite funding progress when returns are strong and could serve as a safeguard in the event of poor returns.

#### Endnotes

1 Munnell et al. (2011).

2 Between 2009 and 2014, 74 percent of state plans and 57 percent of local plans made some degree of changes to benefit provisions (see Aubry and Crawford 2017).

3 For continuity with historical numbers, the trend in funded status is based on the assets and liabilities reported under Standards 25 and 27 of the Governmental Accounting Standards Board (GASB).

4 See U.S. Census Bureau (2016).

5 The intent was to include the largest local plans from each state, but some states have no localities that administer plans. In addition, the Portland Fire and Police Disability Retirement Fund – formerly part of the PPD – and the Atlanta Board of Education Fund – formerly part of the local sample – have been excluded. As a result, the sample used in this analysis consists of 130 local plans from 42 states.

6 This analysis focuses on the funded status as measured under the old GASB standards (GASB 25) for continuity with historical trends and because the new standards under GASB 67 are for reporting purposes only and are not meant to determine funding. As such, funding measures under the GASB 25 and GASB 67 rules are not entirely comparable. See Aubry, Crawford, and Munnell (2017) for a more thorough comparison of the two accounting standards.

7 Generally, actuarially required contributions at the local level are larger as a percentage of payroll than that at the state level because police and fire plans, which provide relatively higher benefits at younger ages, are more expensive than plans for general employees and teachers. For both state and local plans, the actuarially required contributions as a percentage of payroll have increased dramatically since 2001. Between 2001 and 2015, local costs grew from 9.3 percent of payroll to 29.3 percent, while states increased from 6.2 percent to 17.0 percent.

8 As the amortization period shortens, the difference in funding progress between the level-percent-of-pay and level-dollar methods becomes less pronounced.

9 As of 2016, approximately one-third of plans in the PPD used an open amortization period.

10 The Conference of Consulting Actuaries (CCA) categorizes rolling/open amortization periods over longer than 25 years as an "unacceptable practice."

11 Level-dollar amortization payments are based on each plan's reported unfunded liability and remaining amortization period, using the plan's assumed return as the interest rate. Then, to calculate the employer's annual required contribution, the level-dollar amortization payment is added to the employer normal cost for the plan.

12 In addition, on average, local plans use a shorter amortization period than states. In 2015, the amortization period of state and local plans averaged 27 and 21 years, respectively.

13 While the asset allocation for state and local plans differed slightly for most asset classes, the most significant difference between the two groups was in the percentage of assets allocated to alternatives.

14 See Aubry, Chen, and Munnell (2017).

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# APPENDIX

| State | Plan name   |                 | Percentage of ARC paid |                    |
|-------|---|-----------------|------------------------|--------------------|
|       |   | Funded status - | Reported               | CRR-calculated     |
| AK    | Anchorage Police and Firemen Retirement Plan                    | <b>86.0%</b> ª  | 100.0%                 | 91.7% <sup>b</sup> |
| AL    | Birmingham Retirement & Relief System                           | 75.5            | 46.3                   | 37.8               |
| AR    | Little Rock City Firemen's Relief and Pension Fund              | 49.0ª           | 33.1 <sup>b</sup>      | 32.3 <sup>b</sup>  |
|       | Phoenix ERS   | 57.3            | 100.0                  | 68.9               |
| AZ    | Tucson, AZ Supplemental Retirement System                       | 71.1            | 100.6                  | 83.2               |
|       | Alameda County Employee's Retirement Association                | 78.1            | 100.0 <sup>b</sup>     | 81.7 <sup>b</sup>  |
|       | Contra Costa County   | 86.5            | $100.0^{\mathrm{b}}$   | 88.7 <sup>b</sup>  |
|       | Kern County Employees Retirement Association                    | 63.4            | 100.0                  | 80.3               |
|       | LA County ERS   | 79.4            | 100.0                  | 85.3               |
|       | Los Angeles City Employees' Retirement System                   | 71.4            | 100.0                  | 73.1               |
| CA    | Los Angeles Fire and Police                                     | 93.9            | 100.0                  | 92.7               |
|       | Los Angeles Water and Power                                     | 84.2            | 98.3                   | 98.3               |
|       | Marin County Employees' Pension Plan                            | 81.5            | 100.0                  | 90.1               |
|       | Orange County ERS   | 73.1            | 108.8                  | 88.4               |
|       | Sacramento County ERS   | 87.3            | 100.0                  | 87.4               |
|       | San Diego City ERS  | 71.6            | 100.0                  | 85.9               |
|       | San Diego County  | 76.9            | 100.0                  | 84.2               |
|       | San Francisco City & County                                     | 85.0            | 100.0                  | 83.7               |
|       | San Jose, CA Police and Fire Plan                               | 75.7            | 100.0                  | 86.1               |
|       | Denver Employees  | 71.0            | 112.4 <sup>b</sup>     | 85.4 <sup>b</sup>  |
| CO    | Denver Schools  | 75.9            | 24.1                   | 18.7               |
|       | Bridgeport Police Retirement Plan B                             | 69.6            | 0.0                    | 0.0                |
|       | Bridgeport Public Safety Plan A                                 | 23.4            | 100.0                  | 65.5               |
| _     | Greenwich Town Retirement System                                | 74.6            | 100.0                  | 89.6               |
| СТ    | Hartford Municipal Employee Retirement Fund                     | 74.8            | 100.0                  | 100.0              |
|       | New Haven City Employee Retirement Fund                         | 40.1ª           | 100.2                  | 73.8 <sup>b</sup>  |
|       | New Haven Police and Fireman's Retirement Fund                  | 53.2ª           | 100.0                  | 77.4 <sup>b</sup>  |
|       | DC Police & Fire  | 110.8           | 100.0                  | 100.0              |
| DC    | DC Teachers   | 90.9            | 100.0                  | 87.8               |
|       | Dover General Employee Pension Plan                             | 62.5            | 102.1                  | 102.1              |
| DE    | New Castle County Pension Program                               | 75.0            | 100.0                  | 100.0              |
|       | Wilmington Police Pension Fund                                  | 53.9ª           | 100.3                  | 75.4 <sup>b</sup>  |
|       | City of Miami Firefighters and Police Officers Retirement Trust | 69.6            | 100.0                  | 79.0               |
|       | Jacksonville General Employee Pension Plan                      | 64.6            | 95.3                   | 87.1               |
| FL    | Pensacola General Pension and Retirement Fund                   | 76.7            | 100.0                  | 100.0              |
|       | Tallahassee Retirement System                                   | 88.5            | 100.0                  | 97.0               |
|       | Tampa City Firemen and Policemen Pension Fund                   | 95.4            | 100.0                  | 100.0              |

### TABLE A1. LOCAL PLANS: FUNDED STATUS AND PERCENTAGE OF ARC PAID (REPORTED AND CRR-CALCULATED), 2016

#### Issue in Brief

| State | Plan name  | Funded ratio -    | Percentage of ARC paid |                    |
|-------|--|-------------------|------------------------|--------------------|
|       |  |                   | Reported               | CRR-calculated     |
| GA    | Atlanta Fire Fund  | 71.9              | 100.0                  | 75.3               |
|       | Atlanta General Employees Pension Fund                           | 60.4              | 100.0                  | 71.2               |
|       | Atlanta Police Fund  | 73.1              | 100.0                  | 76.3               |
|       | Cobb County Government Employees' Pension Plan                   | 53.7              | 102.2                  | 83.4               |
| IA    | Des Moines Water Works Retirement System                         | 87.0              | 100.0                  | 100.0              |
| ID    | Pocatello Police Retirement Pension Plan                         | 92.7              | 100.0                  | 100.0              |
|       | Chicago Fireman's Annuity Benefit Fund                           | 21.3              | 46.1                   | 46.1               |
|       | Chicago Laborers Retirement Board Employees Annuity Benefit Fund | 50.4              | 10.8                   | 10.8               |
|       | Chicago Municipal Employees                                      | 30.5              | 16.2                   | 16.2               |
| IL    | Chicago Police   | 23.7              | 34.9                   | 27.1               |
|       | Chicago Teachers   | 52.4              | 84.7                   | 62.2               |
|       | Cook County Employees  | 56.7              | 73.7                   | 67.6               |
| WC.   | Wichita Employees Retirement System                              | 92.9              | 100.0                  | 88.6               |
| KS    | Wichita Police and Fire Retirement System                        | 94.0              | 100.0                  | 91.1               |
|       | Lexington Police & Firemen Retirement Fund                       | 77.8              | 100.0 <sup>b</sup>     | 100.0 <sup>b</sup> |
| 1737  | Louisville-Jefferson County Firefighters' Pension Fund           | 48.4 <sup>b</sup> | 100.0                  | 92.2               |
| KY    | Owensboro City Employees' Pension Funds                          | 139.3ª            | 100.0                  | 100.0              |
|       | Owensboro Police and Firefighters' Retirement Fund               | 36.0ª             | 100.0                  | 100.0              |
| T 4   | Baton Rouge City Parish Retirement System                        | 67.9              | 105.7 <sup>b</sup>     | 85.6 <sup>b</sup>  |
| LA    | New Orleans Employee's Retirement System                         | 62.0              | 102.8                  | 102.8              |
| MA    | Boston Retirement Board  | 57.6 <sup>b</sup> | 100.0 <sup>b</sup>     | 66.5 <sup>b</sup>  |
|       | Anne Arundel County Employees Retirement Plan                    | 77.1              | 99.9 <sup>b</sup>      | 84.8 <sup>b</sup>  |
|       | Baltimore County Employees Retirement System                     | 65.1              | 95.6                   | 76.4               |
| MD    | Baltimore Fire and Police Employees Retirement System            | 71.5              | 100.0                  | 100.0              |
|       | Employees Retirement System of Baltimore City                    | 71.2              | 101.6                  | 101.6              |
|       | Montgomery County Employees Retirement System                    | 91.7              | 100.0                  | 93.1               |
|       | Detroit Employees General Retirement System                      | 63.3              | 100.0                  | 100.0              |
| MI    | Detroit Police and Fire Retirement System                        | 73.5              | 100.0                  | 100.0              |
|       | Wayne County Employees' Pension Plan                             | 54.0              | 143.2                  | 114.7              |
| MN    | St. Paul Teachers  | 63.3              | 95.3                   | 64.7               |
|       | Kansas City, MO Employees' Retirement System                     | 83.3              | 100.1                  | 83.9               |
| МО    | St. Louis Employees Retirement System                            | 81.9              | 112.6                  | 112.6              |
| MO    | St. Louis Police Retirement System                               | 78.0              | 100.0                  | 87.5               |
|       | St. Louis School Employees                                       | $78.5^{\circ}$    | 102.6 <sup>b</sup>     | 102.6 <sup>b</sup> |
| NC    | Charlotte Firefighters Retirement System                         | 86.9              | 85.2                   | 77.0               |
| ND    | Bismarck City Employees' Pension Plan                            | 89.9 <sup>c</sup> | 125.3                  | 222.3ª             |
|       | Fargo Employees Retirement System                                | 73.1ª             | 84.1                   | 84.6 <sup>b</sup>  |
|       | Fargo Police Pension System                                      | 68.8 <sup>b</sup> | 81.1                   | 68.2               |
|       | Omaha Employees Retirement System                                | 55.7              | 108.4                  | 57.9               |
| NE    | Omaha Police and Fire Pension Fund                               | 51.8              | 101.8                  | 70.0               |
|       | Omaha School Employee Retirement System                          | 65.3              | 107.7                  | 80.5               |

| State  | Plan name  | T 1. 1                   | Percentag          | Percentage of ARC paid |  |  |
|--------|--|--------------------------|--------------------|------------------------|--|--|
|        |  | Funded ratio             | Reported           | CRR-calculated         |  |  |
| NH     | Manchester Employees' Contributory Retirement System         | 63.7                     | 100.0              | 29.5                   |  |  |
| NJ     | Jersey City Municipal Employees Pension Fund                 | 49.1 <sup>c</sup>        | 100.0              | N/A                    |  |  |
|        | New York City Board of Education Retirement System           | 55.5ª                    | 100.0ª             | 100.0ª                 |  |  |
|        | New York City ERS  | 70.4ª                    | 100.0 <sup>a</sup> | 100.0ª                 |  |  |
| NY     | New York City Fire   | 55.3ª                    | 100.0 <sup>a</sup> | 100.0ª                 |  |  |
|        | New York City Police   | 72.3ª                    | 100.0ª             | 100.0ª                 |  |  |
|        | New York City Teachers                                       | 60.5ª                    | 100.0 <sup>a</sup> | 100.0ª                 |  |  |
| ОН     | Cincinnati Employees Retirement System                       | 76.9                     | 38.0               | 38.0                   |  |  |
| OV     | Employees Retirement Fund City of Oklahoma City              | 104.9 <sup>b</sup>       | 100.0              | 100.0                  |  |  |
| OK     | Tulsa City Employees Retirement Fund                         | 70.4                     | 100.0              | 64.2                   |  |  |
|        | Philadelphia Municipal Retirement System                     | 44.8                     | 35.5ª              | 35.5ª                  |  |  |
| DA     | Pittsburgh Firemen's Relief and Pension Plan                 | 55.5ª                    | 169.8              | 148.8 <sup>b</sup>     |  |  |
| PA     | Pittsburgh Municipal Pension Fund                            | 60.8 <sup>a</sup>        | 169.8              | 148.8 <sup>b</sup>     |  |  |
|        | Pittsburgh Policemen's Relief and Pension Plan               | 55.5ª                    | 169.8              | 148.8 <sup>b</sup>     |  |  |
| RI     | Providence Employees Retirement System                       | 27.1 <sup>b</sup>        | 100.0              | 80.3                   |  |  |
|        | City of Spartanburg General Employees Retirement Plan        | 28.6 <sup>c</sup>        | 77.3               | 62.5ª                  |  |  |
| SC     | Greenville City Fire Department's Pension Plan               | 81.0 <sup>c</sup>        | 114.5              | N/A                    |  |  |
| SD     | Sioux Falls Employees Retirement System                      | 87.2                     | 100.0              | 84.4                   |  |  |
|        | Knox County DB Plan  | 56.6 <sup>c</sup>        | 101.6              | 95.8ª                  |  |  |
| PT'N T | Knox County Teachers' DB Plan                                | <b>82.1</b> <sup>c</sup> | 100.0              | 100.0 <sup>a</sup>     |  |  |
| ΤN     | Nashville-Davidson Metropolitan Employees Benefit Trust Fund | 96.0                     | 142.2              | 142.2                  |  |  |
|        | Retirement System of The City of Memphis                     | 84.1                     | 70.2               | 70.2                   |  |  |
|        | City of Austin ERS   | 67.5                     | 98.2ª              | 79.0ª                  |  |  |
|        | City of Austin Fire Fighters' Relief and Retirement Fund     | 88.3                     | 100.0              | 80.9                   |  |  |
|        | City of Austin Police Officers' Retirement and Pension Fund  | 66.2                     | 100.0              | 67.2                   |  |  |
|        | Dallas Employees Retirement Fund                             | 80.4                     | 66.6               | 52.4                   |  |  |
|        | Dallas Police and Fire                                       | 49.4                     | 108.4 <sup>b</sup> | 38.0 <sup>b</sup>      |  |  |
| TX     | El Paso City Employees Pension Fund (CEPF)                   | 79.2                     | 100.0              | 82.1 <sup>b</sup>      |  |  |
|        | Fort Worth Employees Retirement Fund                         | 58.5                     | 83.6               | 62.5                   |  |  |
|        | Houston Firefighters   | 80.6                     | 77.1ª              | 66.3ª                  |  |  |
|        | Houston Municipal Employees Pension System                   | 54.2 <sup>b</sup>        | 98.6               | 73.9                   |  |  |
|        | Houston Police Officers Pension System                       | 77.5                     | 85.3               | 70.8                   |  |  |
|        | San Antonio Firemen's and Policemen's Pension Fund           | 87.9                     | 100.0              | 90.5                   |  |  |
| VA     | Arlington County Employees Retirement System                 | 99.6                     | 100.0              | 99.2                   |  |  |
|        | City of Richmond Retirement System                           | 63.5                     | 100.0              | 86.6                   |  |  |
|        | Fairfax County Employees' Retirement System                  | 70.2                     | 100.0              | 86.6                   |  |  |
|        | Fairfax County Police Officers Retirement System             | 85.4                     | 100.0              | 90.7                   |  |  |
|        | Fairfax County Schools                                       | 76.0                     | 100.7              | 84.4                   |  |  |
|        | Newport News Employees Retirement Fund                       | 67.6                     | 99.6               | 99.6                   |  |  |
|        | Norfolk Employees Retirement System                          | 83.6                     | 100.0              | 81.5                   |  |  |
| VT     | Burlington Employees Retirement System                       | 71.4                     | 100.0 <sup>b</sup> | 81.7 <sup>b</sup>      |  |  |

| State |  | E de danstie      | Percentage of ARC paid |                   |
|-------|--|-------------------|------------------------|-------------------|
|       | Plan name  | Funded ratio -    | Reported               | CRR-calculated    |
| WA    | Seattle Employees Retirement System              | 66.5              | 100.7 <sup>b</sup>     | 76.6 <sup>b</sup> |
| WI    | Milwaukee City ERS                               | 96.1              | 100.0 <sup>b</sup>     | 95.9 <sup>b</sup> |
|       | Milwaukee County Employees Retirement System     | 77.1              | 83.7 <sup>b</sup>      | 68.5 <sup>b</sup> |
| WV    | Charleston, WV Firemen's Pension and Relief      | N/A               | 51.1                   | N/A               |
|       | Morgantown Employees Retirement and Benefit Fund | 78.6 <sup>c</sup> | 105.3                  | 60.6ª             |
|       | Wheeling City (WV) Employees' Retirement Funds   | N/A               | 100.0 <sup>b</sup>     | $100.0^{b}$       |

Note: Funded ratio represents assets and liabilities as measured under traditional GASB 25 standards unless otherwise noted. N/A reflects data not available. Five plans from the local sample – Duluth Teachers, Little Rock City Police Pension and Relief Fund, Marion County Law Enforcement Retirement and Disability Fund, Minneapolis Employees Retirement Fund, and Minneapolis Police Relief Association – are excluded due to either plan closure between 2011 and 2014 or lack of data since 2012 or 2013.

<sup>a</sup> Data are from fiscal year 2014.

 $^{\rm b}$  Data are from fiscal year 2015.

<sup>c</sup> Reflects assets and liabilities as valued under GASB 67 standards due to missing GASB 25 actuarial data. The plan's blended discount rate is equal to its actuarial assumed rate of return.

Sources: Authors' calculations from various financial and actuarial reports.

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