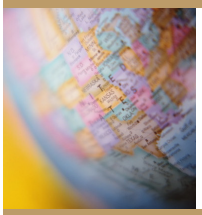

CENTER for RETIREMENT RESEARCH at BOSTON COLLEGE

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THE FUNDING OF STATE AND LOCAL PENSIONS IN 2010

*By Alicia H. Munnell, Jean-Pierre Aubry, Josh Hurwitz, Madeline Medenica, and Laura Quinby**

Introduction

The financial crisis of 2008-09 was a major setback for state and local pension plans, as plummeting asset values caused their funded ratios to drop significantly. The initial impact of the crisis on plan health was covered in a *brief* published last year.[1] Since that time, several new developments have had a mixed effect on the current and future health of public plans. On the positive side, the stock market has risen significantly from the 2009 trough. And many states have introduced reforms to increase pension contributions and reduce future costs. On the negative side, recent growth in liabilities has outpaced growth in actuarial assets (because these values smooth market gains and losses over a five-year period). Moreover, the recession that accompanied the financial crisis has made it more difficult for states and localities to contribute the full amount of their required pension contribution. This *brief* explores how all of these developments affected the funded status of state and local plans in 2010.

This discussion is organized as follows. The first section reports that the ratio of assets to liabilities for our sample of 126 plans declined from 79 percent in 2009 to 77 percent in 2010, as predicted in our earlier update. These valuations, however, discount liabilities by the expected long-term yield on plan assets, roughly 8 percent. Most economists contend that, instead, plans should use a riskless rate of roughly 5 percent for valuing liabilities. So the second section revalues liabilities using the riskless rate, and the results show that the funded ratio dropped from 53 percent to 51 percent. Regardless of the discount rate

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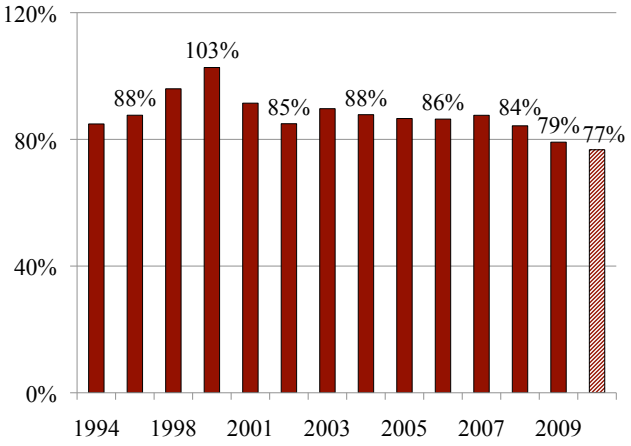
employed, judging the adequacy of funding requires more than a snapshot of the ratio of assets to liabilities. The key issue is whether the sponsor has a funding plan and is sticking to it. So the third section looks at the extent to which plans are making their annual required contribution (ARC). Not surprisingly, with the drop in state and local revenues and increased spending pressure on safety net programs, employers are contributing a smaller portion of the required payment. Taken alone, this pattern suggests worse funding problems in the future. On the other hand, states and localities have made numerous changes, most of which will slow the rate at which unfunded liabilities grow. These changes are discussed in the fourth section. The final section concludes that the outlook is mixed; plans are still struggling to shake off the effects of the economic crisis, but they have taken some actions to improve funding.

Funded Status in 2010

This section reports the ratio of actuarial assets to liabilities for our sample of 109 state-administered plans and 17 locally-administered plans from 1994 through 2010, based on the accounting methods issued by the Government Accounting Standards Board (GASB).[2] Figure 1 shows the *aggregate* funded ratio for our sample of plans. (The ratios for each individual plan appear in the Appendix). From the mid-1990s to 2000, funding improved markedly in response to GASB funding standards and a rising stock market. In 2000, assets amounted to 103 percent of liabilities. With the bursting of the tech bubble at the turn of the century, funded levels dropped as years of low market asset values replaced the higher values from the 1990s. Funding then stabilized with the run-up of stock prices, which peaked in 2007. But the collapse of market asset values in 2008 has once again led to declining funded ratios.

Of the 126 plans in our sample, 70 had reported their 2010 funded levels by mid-May 2011. For those plans without valuations, we projected assets on a plan-by-plan basis using the detailed process described in the valuations.[3] Applying our methodology retrospectively produced numbers for previous years that perfectly match published asset values in half the cases and that came within 1 percent in the other half. We projected liabilities based on their rate of growth in the most recent year of published data. We then sent our proposed projections to the plan administrators and made any suggested alterations. This process resulted in a complete set of plan funded ratios for fiscal year 2010. The aggregate funded ratio was 77 percent – $2.7 trillion in actuarial assets compared to $3.5 trillion in liabilities.

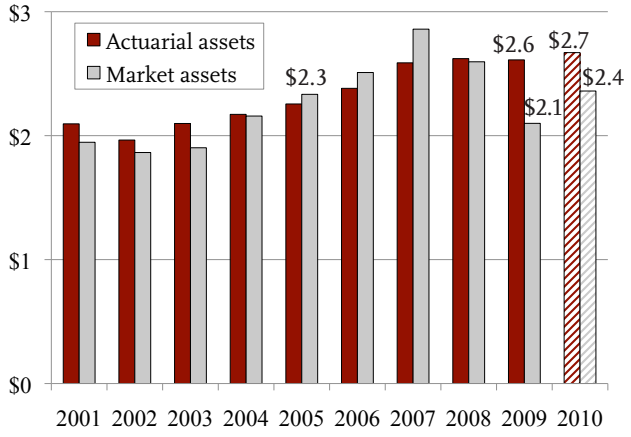
Figure 1. State and Local Funded Ratios, 1994-2010



Note: 2010 is authors' estimate.
Sources: Various 2010 actuarial valuations; *Public Plans Database* (2001-2009); and Zorn (1994-2000).

The reason for the slight decline in funded levels from 2009 to 2010 is that liabilities grew at about their historical rate while actuarial assets increased more slowly. This outcome may seem strange given that the stock market rose 50 percent between the trough in 2009 and December 2010. The explanation is that actuaries tend to smooth the fluctuations in market values by averaging gains and losses, generally over a five-year period. So while market asset values in 2010 were significantly higher than in 2009, they were virtually identical to 2005, the year replaced in the five-year moving average (see Figure 2).

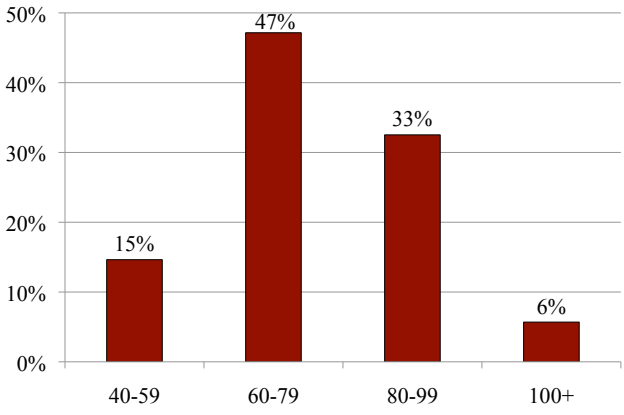
Figure 2. Actuarial vs. Market Value of State and Local Assets, 2001-2010, Trillions



Note: 2010 is authors' estimate.
Sources: Various 2010 actuarial valuations; and *Public Plans Database* (2001-2009).

In 2010, as in earlier years, funded levels among plans varied substantially (see Figure 3). Although many of the poorly-funded plans are relatively small, several large plans, such as those in Illinois (SERS, Teachers, and Universities) and Connecticut (SERS), had funded levels below 60 percent.

Figure 3. Distribution of Funded Ratios for State and Local Plans, 2010



Sources: Various 2010 actuarial valuations; and authors' calculations from the *Public Plans Database* (2009).

Funded Status with Riskless Rate

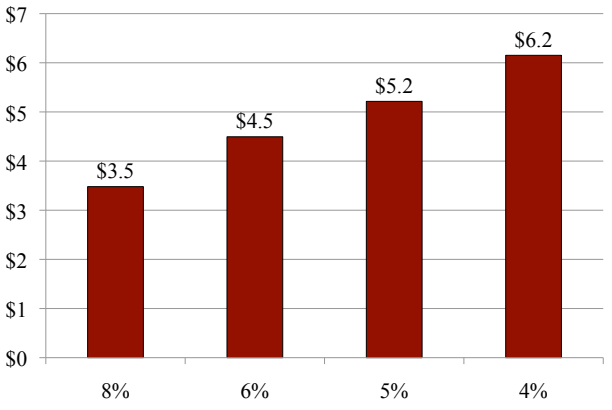
The funded ratios presented above follow GASB's actuarial model under which the liabilities are discounted by the expected long-term yield on the assets held in the pension fund, roughly 8 percent. Most economists contend that using the return on the plan's assets, as GASB recommends, produces misleading results. The returns on the bonds and stocks in the pension fund include premiums to cover the risk of holding these assets. Discounting pension benefits using the expected yield on these securities implies that the entire yield is available to help pay future benefits, making no allowance for the cost of expected losses, which is represented by the risk premium.

Standard financial theory suggests that future streams of payment should be discounted at a rate that reflects their risk.[4] In the case of state and local pension plans, the risk is the uncertainty about whether payments will need to be made. Since these benefits are protected under most state laws, the payments are, as a practical matter, guaranteed. Consequently, to assess accurately the status of a plan warrants discounting its stream of future benefits by the risk-free interest rate.[5]

Just what rate best represents the riskless rate is a subject of debate.[6] Among the interest rates quoted in financial markets, those on Treasury securities probably come the closest to reflecting the yield that investors require for getting a specific sum of money in the future free of risk. Currently, the yield on 30-year Treasury bonds, about 4 percent, is likely artificially low due to the valuable liquidity these bonds offer investors.[7] Therefore, we increase the current rate by about 1 percentage point and use 5 percent for 2010.[8]

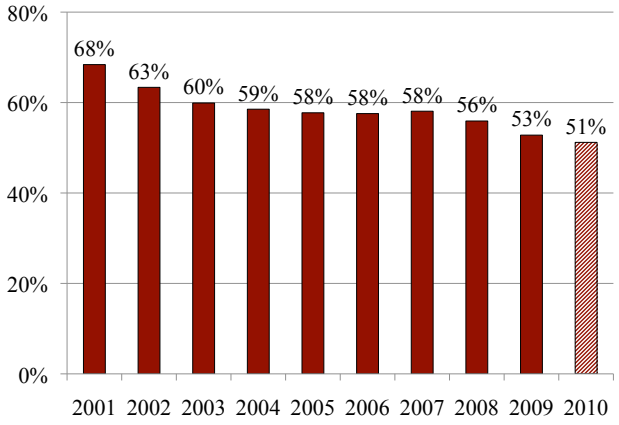
Figure 4 shows the value of liabilities for our sample of 126 plans under different interest rates. In 2010, the aggregate liability was $3.5 trillion, calculated under a typical discount rate of 8 percent. A riskless discount rate of 5 percent raises public sector liabilities to $5.2 trillion.

Figure 4. Aggregate State and Local Pension Liability under Alternative Discount Rates, 2010, Trillions



Note: The $3.5 trillion figure is the value of the liabilities for plans in our sample, which – on average – are discounted at a rate of about 8 percent.
Sources: Various 2010 actuarial valuations; and authors' calculations from the *Public Plans Database* (2009).

Figure 5. State and Local Funded Ratios with Liabilities Discounted by Riskless Rate, 2001-2010



Note: 2010 is authors' estimate.
Sources: Various 2010 actuarial valuations; and *Public Plans Database* (2001-2009).

Recalculating the liabilities for each plan based on the riskless rate in 2010 produces a funded ratio of 51 percent (see Figure 5) – $2.7 trillion in actuarial assets (the same value used earlier) compared to $5.2 trillion in liabilities. The 2010 ratio of 8-percent liability to 5-percent liability was applied retroactively to derive funded ratios for earlier years.

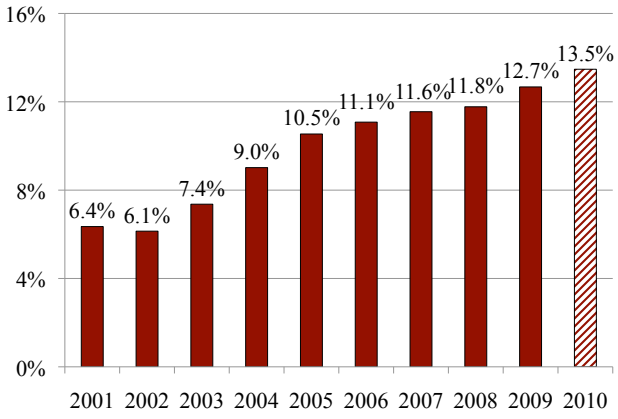
As discussed in an earlier *brief*, valuing pension liabilities using a riskless rate is often thought to have a number of implications – some valid and some not.[9] One valid implication is that such a change would probably make government officials and taxpayers less favorable toward increasing benefits when plans appear to be more than fully funded under the conventional 8-percent discount rate. One less valid implication is that changing the valuation of liabilities would necessarily have an enormous impact on required annual contributions. And a totally invalid implication is that the selection of the discount rate should dictate appropriate investments for public plans.[10]

Commitment to a Funding Schedule

Judging the adequacy of funding requires more than a snapshot of the ratio of assets to liabilities. The key issue is whether the sponsor has a funding plan and is sticking to it. One measure of this commitment is the extent to which plan sponsors contribute their ARC as defined by GASB. This measure equals normal cost – the present value of the benefits accrued in a given year – plus a payment to amortize the unfunded liability, generally over a 30-year period. Each year the plan sponsor reports the ratio of the employer's actual contribution to the ARC.

Before looking at contributions, it is important to note that the ARC has increased significantly in the last two years. The financial crisis led to higher unfunded liabilities and thereby increased the amortization component of the ARC. In 2010, the ARC was 13.5 percent of payroll (see Figure 6).

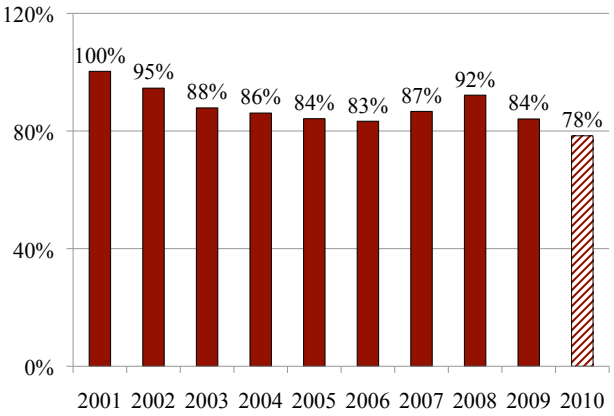
Figure 6. Annual Required Contribution as a Percent of Payroll, 2001-2010



Note: 2010 is authors' estimate.
Sources: Various 2010 actuarial valuations; and *Public Plans Database* (2001-2009).

Combine the higher ARC with a dramatic decline in state and local revenues and it is not surprising that the percent of ARC paid has fallen (see Figure 7 on the next page). In 2010, employer contributions equaled only 78 percent of the required payments. And these calculations are based on a discount rate of about 8 percent; critics would argue that the gap is much larger if liabilities were discounted at 5 percent. In any event, contributions falling short of the ARC mean that the funded situation of state and local plans will deteriorate over time.

Figure 7. Percent of Annual Required Contribution Paid, 2001-2010



Note: 2010 is authors' estimate.
Sources: Various 2010 actuarial valuations; and *Public Plans Database* (2001-2009).

Actions to Improve Funding

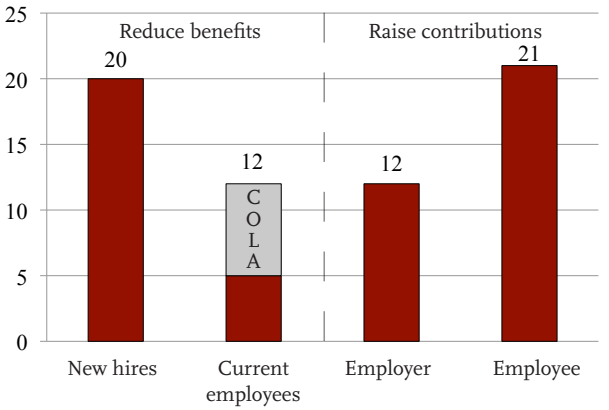
Offsetting the failure to pay the full ARC, states and localities have taken two types of actions to shore up their finances: 1) general reductions in payroll costs; and 2) specific changes to improve the viability of pension plans.

First, in response to the drop in revenues, states and localities are starting to freeze employee salaries and lay off workers. Both these steps will have an indirect, but important, impact on the existing pension liability. Currently, actuaries generally assume a 4.5 percent growth rate for wages. Given the current environment, it is likely that future wage growth will be lower. Reducing the wage growth assumption by 1 percentage point reduces the pension liability by about 2 percent.[11] Laying off workers also affects the current liability measure because benefits will be based on the worker's salary at termination, which is lower than the projected retirement salary assumed in the calculations.

States and localities also have undertaken a number of changes specifically to improve the funding of their pension plans (see Figure 8). On the benefit side, 20 states have adjusted the benefit formula and/or the retirement age for new employees. These changes are limited to new employees because states' case law or their constitution generally precludes reducing *future* benefits for current employees. As a result, these changes will slow the growth in liabilities going forward but have no impact on the existing liability. A handful of states have attempted to cut the cost-of-living adjustment (COLA) for current retirees; these actions have resulted in lawsuits and the outcome is unclear. If the efforts succeed, they will reduce the current liabilities to the extent that higher COLA assumptions were embedded in the calculations.

On the contribution side, states have considerably more leeway to make changes and have raised both employer and employee contributions. Once these additional contributions kick in, they should reduce the shortfall on the ARC payments and improve the funding outlook.

Figure 8. Actions Taken by States to Improve Funding, 2008-2011



Source: National Conference of State Legislatures (2008-2011).

Conclusion

As predicted in last year's update, the funded status of state and local pension plans declined in 2010 as liabilities grew at their historical rate while asset values grew more slowly. The slow growth in actuarial assets reflects the actuaries' practice of smoothing market gains and losses over a five-year period.

The outlook for pension funding is mixed. First, one concern is that states and localities are falling behind in their ARC payments. They are generally covering normal costs, but are not making the amortization payments required to fully fund their pensions. Paying 100 percent of the ARC should be a priority for all plan sponsors.

Second, the stock market will likely have a negative impact in the near term, but a positive impact later. Specifically, the market would have to do very well in 2011 and 2012 to keep the actuarial valuation of assets from declining as the bull market years of 2006 and 2007 are dropped from the averaging calculations. However, looking further out – even if the stock market stays at its current level – the actuarial value of assets should pop up in 2014 and 2015 as the years 2008 and 2009 rotate out. If the stock market improves substantially, the funded status of plans should look even better by 2014.

Finally, one development that will clearly help plan funding is the reduction in the number of state and local workers, slowing of salary growth, and lower COLA payments, all of which could reduce existing liabilities. Pension changes that affect only new employees also will help, though their full impact will not be felt for a long time.

Endnotes

1 Munnell, Aubry, and Quinby (2010).

2 For the years 2001-2010, data are from the *Public Plans Database* (PPD). The sample covers the same plans as the *Public Fund Survey* (PFS) plus the University of California Retirement System. It represents about 90 percent of the assets in state-administered plans and 30 percent of those in plans administered at the local level. It differs from the PFS in three ways. First, it provides all information at the plan level rather than at the system level. Second, it includes a variety of actuarial data not available in the plan's Comprehensive Annual Financial Report (CAFR). Third, it presents the data on a consistent fiscal-year basis. For the years prior to 2001, the PENDAT data are used. These data cover the same sample as the Public Plans Database, plus an additional 150 local plans.

3 For those plans without published 2010 actuarial valuations, we took the percent change in actuarial assets between 2009 and 2010, calculated according to the plan's own methodology, and applied that change to its published 2009 GASB level of actuarial assets.

4 The analysis of choice under uncertainty in economics and finance identifies the discount rate for riskless payoffs with the riskless rate of interest. See Gollier (2001) and Luenberger (1997). This correspondence underlies much of the current theory and practice for the pricing of risky assets and the setting of risk premiums. See Sharpe, Alexander, and Bailey (2003); Bodie, Merton, and Cheeton (2008); and Benninga (2008).

5 Such an approach has been adopted by other public or semi-public plans. The Ontario Teachers' Pension Plan 2010 Report used a discount rate in the financial valuation of 4.05 percent, which was equal to the yield of long-term Government of Canada Real Return Bonds, plus 0.5 percent. In the Netherlands, fair value accounting for defined benefit plans has replaced the traditional actuarial approach (Ponds and van Riel 2007).

6 Researchers have laid out some general characteristics. The rate should reflect as little risk as the liabilities themselves, be based on fully taxable securities (because pension fund returns are not subject to tax), and not have a premium for liquidity (because most pension fund liabilities are long term and do not require liquidity).

7 The 30-year Treasury constant maturity series was discontinued on February 18, 2002, and re-introduced on February 9, 2006. Current rates are artificially low due to the recent financial crisis, since bond holders are willing to pay a premium for the security offered by Treasuries.

8 A 5-percent rate also is consistent, for example, with a riskless real rate of 2.5 percent and an inflation rate of 2.5 percent.

9 Using a riskless rate may reduce the incentive to invest in riskier assets to reduce the size of the liability under current GASB reporting standards. In addition, it may also discourage the use of Pension Obligation Bonds.

10 See Munnell et al. (2010) for a detailed discussion.

11 Authors' calculations using ProVAL actuarial software.

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APPENDIX

Table. Ratio of Assets to Liabilities for State and Local Plans 2001-2009, and Projections for 2010

Plan Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Alabama ERS	100.2	95.4	91.1	89.7	84.0	81.1	79.0	75.7	71.4	66.8 *
Alabama Teachers	101.4	97.4	93.6	89.6	83.6	82.8	79.5	77.6	74.7	71.0 *
Alaska PERS	100.9	75.2	72.8	70.2	65.7	78.2	77.8	78.8	63.0	66.0 *
Alaska Teachers	95.0	68.2	64.3	62.8	60.9	67.8	68.2	70.2	57.0	59.5 *
Arizona Public Safety Personnel	126.9	113.0	100.9	92.4	81.3	76.7	65.2	68.8	70.0	67.7
Arizona SRS	115.1	106.4	98.4	92.5	86.1	84.3	83.3	82.1	79.0	75.2
Arkansas PERS	105.6	100.1	94.5	88.7	86.1	83.4	89.1	89.7	78.0	74.1
Arkansas Teachers	95.4	91.9	85.9	83.8	80.4	80.3	85.3	84.9	75.7	73.8
California PERF	111.9	95.2	87.7	87.3	87.3	87.2	87.2	86.9	83.3	80.8 *
California Teachers	98.0		84.8	84.7	85.7	87.0	88.8	87.3	78.2	71.5 **
Chicago Teachers	100.0	96.3	92.0	85.8	79.0	78.0	80.1	79.4	73.6	67.1
City of Austin ERS	96.4	86.9	86.9	80.8	78.0	75.9	78.3	65.9	71.8	71.3 *
Colorado Municipal	104.3	93.6	80.2	77.2	78.0	79.5	81.2	76.4	76.2	77.0 *
Colorado School	98.2	87.9	75.2	70.1	73.9	74.1	75.5	70.1	69.2	63.7 *
Colorado State	98.2	87.9	75.2	70.1	71.5	73.0	73.3	67.9	67.0	61.2 *
Connecticut SERS	63.1	61.6	56.7	54.5	53.3	53.2	53.6	51.9	N/A	44.4
Connecticut Teachers	N/A	75.9	N/A	65.3	N/A	59.5	N/A	70.0	N/A	61.4
Contra Costa County	87.6	89.6	85.4	82.0	84.8	84.3	89.9	88.4	83.8	69.6 **
DC Police & Fire	82.5	77.8	79.6	83.3	86.5	91.6	101.0	99.8	100.7	107.3
DC Teachers	99.2	98.8	95.8	94.0	94.3	111.2	111.6	108.2	110.8	118.3
Delaware State Employees	112.4	109.6	106.9	103.0	101.6	101.7	103.7	103.1	98.8	96.0
Denver Employees	99.5	101.7	98.0	99.1	97.3	98.6	98.2	91.8	88.4	86.8 *
Denver Schools	96.5	90.9	90.6	88.2	87.9	88.3	87.7	84.3	88.3	90.5 *
Duluth Teachers	107.6	100.4	95.7	91.8	86.3	84.1	86.8	82.1	76.5	81.7
Fairfax County Schools	103.0	95.6	90.1	84.9	84.9	86.4	88.0	76.9	76.5	76.5 **
Florida RS	117.9	115.0	114.2	112.1	107.3	105.6	105.6	105.3	87.1	86.6
Georgia ERS	101.7	101.1	100.5	97.6	97.2	94.5	93.0	89.4	85.7	80.1
Georgia Teachers	103.9	102.0	101.1	100.9	98.0	96.5	94.7	91.9	87.2	82.6 *
Hawaii ERS	90.6	84.0	75.9	71.7	68.6	65.0	67.5	68.8	64.6	60.0 *
Houston Firefighters	112.9	97.6	N/A	88.2	86.1	87.0	91.1	95.6	95.4	93.4
Idaho PERS	96.2	84.1	83.1	91.0	93.5	94.6	104.9	92.8	73.7	78.6
Illinois Municipal	106.4	101.5	97.6	94.3	94.6	95.3	96.1	84.3	83.2	83.3
Illinois SERS	65.8	53.7	42.6	54.2	54.4	52.2	54.2	46.1	43.5	46.1
Illinois Teachers	59.5	52.0	49.3	61.9	60.8	62.0	63.8	56.0	52.1	48.4
Illinois Universities	72.1	58.9	53.9	66.0	65.6	65.4	68.4	58.5	54.3	51.7
Indiana PERF	105.0	99.2	102.9	100.1	96.4	97.6	98.2	97.5	93.1	85.2

Plan Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Indiana Teachers[a]	43.0	42.1	44.4	44.8	43.4	44.3	45.1	48.2	41.9	44.3
Iowa PERS	97.2	92.6	89.6	88.6	88.7	88.4	90.2	89.1	81.2	81.4
Kansas PERS	84.8	77.6	75.2	69.8	68.8	69.4	70.8	58.8	63.7	61.4 *
Kentucky County	141.0	125.3	114.1	101.0	90.7	81.4	80.1	77.1	70.6	65.5
Kentucky ERS	125.8	110.7	98.0	85.8	74.6	61.3	58.4	54.2	46.7	40.3
Kentucky Teachers	90.8	86.6	83.5	80.9	76.3	73.1	71.9	68.2	63.6	61.0
LA County ERS	100.0	99.4	87.2	82.8	85.8	90.5	93.8	94.5	88.9	83.3 **
Louisiana SERS	74.2	70.2	66.2	59.6	61.5	64.3	67.2	67.6	60.8	57.7
Louisiana Teachers	78.4	73.9	68.8	63.1	64.6	67.5	71.3	70.2	59.1	54.4
Maine Local	108.2	122.8	116.3	112.1	114.2	112.2	113.6	112.7	102.5	92.9
Maine State and Teacher	73.1	69.6	67.6	68.5	69.8	71.3	74.1	74.1	67.7	65.9
Maryland PERS	102.2	98.0	93.1	91.2	86.7	80.4	77.3	74.6	61.2	59.7
Maryland Teachers	95.3	92.0	92.8	92.8	89.3	84.2	81.1	79.6	66.1	65.4
Massachusetts SERS	94.0	79.5	83.9	82.8	81.5	85.1	89.4	71.6	76.5	81.0
Massachusetts Teachers	76.2	64.5	69.6	67.6	67.2	71.0	73.9	58.2	63.0	67.1 *
Michigan Municipal	84.3	79.8	78.7	76.7	76.0	76.4	77.3	75.0	75.5	78.1 *
Michigan Public Schools	96.5	91.5	86.5	83.7	79.3	87.5	88.7	83.6	78.9	71.1 **
Michigan SERS	107.6	98.7	88.8	84.5	79.8	85.1	86.2	82.8	78.0	72.6 **
Minneapolis ERF	93.3	92.3	92.3	92.1	91.7	92.1	85.9	77.0	56.7	65.6
Minnesota PERF	87.0	85.0	81.3	76.7	74.5	74.7	73.3	73.6	70.0	76.4
Minnesota State Employees	112.1	104.5	99.1	100.1	95.6	96.2	92.5	90.2	85.9	87.3
Minnesota Teachers	105.8	105.3	103.1	100.0	98.5	92.1	87.5	82.0	77.4	78.5
Mississippi PERS	87.5	83.4	79.0	74.9	72.4	73.5	73.7	72.9	67.3	64.2
Missouri DOT and Highway Patrol	66.1	61.5	56.4	53.4	53.9	55.5	58.2	59.1	47.3	42.2
Missouri Local	104.0	100.4	96.4	95.9	95.1	95.3	96.1	97.5	80.0	81.0
Missouri PEERS	103.1	97.6	81.9	82.7	83.3	80.5	83.2	82.5	80.7	79.1
Missouri State Employees	97.0	95.9	90.9	84.6	84.9	85.3	86.8	85.9	83.0	80.4
Missouri Teachers	99.4	95.3	81.1	82.0	82.7	82.6	83.5	83.4	79.9	77.7
Montana PERS	N/A	100.0	N/A	86.7	85.5	88.3	91.0	90.2	83.5	74.2
Montana Teachers	N/A	77.3	N/A	77.4	74.4	76.9	80.4	80.7	67.4	65.4
Nebraska Schools	87.2	94.9	90.6	87.2	85.6	87.2	90.5	90.6	86.6	82.5 *
Nevada Police Officer and Firefighter	78.9	78.1	73.9	71.7	69.8	68.9	71.1	70.8	68.9	67.8
Nevada Regular Employees	85.5	83.5	83.2	80.5	77.3	76.5	78.8	77.7	73.4	71.2
New Hampshire Retirement System	85.0	82.1	75.0	71.1	60.3	61.4	67.0	67.8	58.3	58.5
New Jersey PERS	117.1	107.3	97.9	91.3	85.3	78.0	76.0	73.1	64.9	62.0

[a] The reported funded ratios of the Indiana TRF is made up of two separately funded accounts, the pre-1996 account and the 1996 account. The pre-1996 account is for employees hired prior to 1996 and is funded under a pay-go schedule. The 1996 account is for employees hired afterwards and is pre-funded. The funded ratio for the pre-funded account is currently 94.7 percent. As expected, pay-go account has a much lower funded ratio of 33.1 percent.

Plan Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
New Jersey Police & Fire	100.8	95.8	88.4	84.0	80.1	78.4	77.6	74.3	70.8	69.0
New Jersey Teachers	108.0	100.0	92.7	85.6	79.1	76.3	74.7	70.8	63.8	57.6
New Mexico PERF	105.4	103.1	97.3	93.0	91.6	92.1	92.8	93.3	84.2	78.5
New Mexico Teachers	91.9	86.8	81.1	75.4	70.4	68.3	70.5	71.5	67.5	65.7
New York City ERS	117.4	112.0	104.0	94.5	88.4	82.3	79.0	79.7	78.7	76.2 *
New York City Teachers	98.0	93.6	88.2	81.1	77.1	71.8	69.6	65.2	64.1	64.9 *
New York State Teachers	125.0	99.6	99.4	99.2	98.8	102.6	104.2	106.6	103.2	100.3 **
North Carolina Local Government	99.3	99.4	99.3	99.3	99.4	99.5	99.5	99.6	99.5	101.5 *
North Carolina Teachers and State Employees	111.6	108.4	108.1	108.1	106.5	106.1	104.7	99.3	95.9	94.5 *
North Dakota PERS	110.6	104.2	98.1	94.0	90.8	88.8	93.3	92.6	85.1	73.4
North Dakota Teachers	96.4	91.6	85.1	80.3	74.8	75.4	79.2	81.9	77.7	69.8
NY State & Local ERS	118.5	117.8	98.3	100.9	102.8	104.1	105.8	107.3	101.0	97.8 *
NY State & Local Police & Fire	131.3	127.8	102.8	104.4	104.8	105.2	106.5	108.0	103.8	102.0 *
Ohio PERS	102.6	85.9	85.3	87.6	89.1	92.6	96.3	75.3	75.3	77.2 *
Ohio Police & Fire	92.7	82.6	86.5	80.9	78.4	78.2	81.7	65.1	72.8	69.7 *
Ohio School Employees	95.0	90.2	83.6	78.1	75.3	76.4	80.8	82.0	68.4	70.7
Ohio Teachers	91.2	77.4	74.2	74.8	72.8	75.0	82.2	79.1	60.0	58.4 *
Oklahoma PERS	82.6	79.8	76.8	76.1	72.0	71.4	72.6	73.0	66.8	66.0
Oklahoma Teachers	51.4	51.4	54.0	47.3	49.5	49.3	52.6	50.5	49.8	47.9
Oregon PERS	106.7	91.0	97.0	96.2	104.2	110.5	112.2	80.2	84.3	89.7 *
Pennsylvania School Employees	114.4	104.8	97.2	91.2	83.6	81.2	85.8	86.0	79.2	75.1
Pennsylvania State ERS	116.3	107.2	104.9	96.1	92.9	92.7	97.1	89.0	84.4	79.6 *
Phoenix ERS	102.5	91.6	88.5	84.2	84.2	81.3	83.9	79.1	75.3	69.3
Rhode Island ERS	77.6	72.6	64.3	59.4	55.8	53.4	56.2	61.5	58.5	54.6 *
Rhode Island Municipal	118.1	111.3	100.7	93.2	87.2	87.1	90.3	92.8	88.3	82.2 *
San Diego County	106.8	75.4	75.5	81.1	80.3	83.6	89.7	94.4	91.5	84.3
San Francisco City & County	129.0	117.9	109.0	103.8	107.6	108.6	110.2	103.8	97.0	91.1
South Carolina Police	94.6	93.0	91.5	87.7	87.4	84.7	84.7	77.9	76.3	73.7 *
South Carolina RS	87.4	86.0	82.8	80.3	71.6	69.6	69.7	69.3	67.8	65.9 *
South Dakota PERS	96.4	96.7	97.2	97.7	96.6	96.7	97.1	97.2	91.8	96.3

Plan Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
St. Louis School Employees	80.5	82.1	84.0	86.3	87.6	87.2	87.6	87.6	88.4	88.5*
St. Paul Teachers	81.9	78.8	75.6	71.8	69.6	69.1	73.0	75.1	72.2	68.0
Texas County & District	89.3	88.7	90.5	91.0	91.4	94.3	94.3	88.6	89.8	87.6*
Texas ERS	104.9	102.5	97.6	97.3	94.8	95.2	95.6	92.6	89.8	85.4
Texas LECOS	131.6	124.7	111.5	109.3	103.1	101.7	98.0	92.0	89.7	86.3
Texas Municipal	85.0	84.2	82.6	82.8	82.7	82.1	73.7	74.4	75.8	83.8*
Texas Teachers	102.5	96.3	94.5	91.8	87.1	87.3	89.2	90.5	83.1	82.9
TN Political Subdivisions	90.4	N/A	91.9	N/A	92.7	N/A	89.5	N/A	86.3	83.4*
TN State and Teachers	99.6	N/A	99.8	N/A	99.8	N/A	96.2	N/A	90.6	92.1*
University of California	147.7	138.4	125.7	117.9	110.3	104.1	104.8	103.0	94.8	86.7
Utah Non-contributory	102.8	92.2	94.4	92.3	93.2	95.8	95.1	84.2	85.6	82.2
Vermont State Employees	93.0	97.4	97.5	97.6	97.8	99.3	100.8	94.1	78.9	81.2
Vermont Teachers	89.0	89.5	89.6	90.2	90.7	84.6	84.9	80.9	65.4	66.5
Virginia Retirement System[b]	107.3	101.8	96.4	90.3	81.3	80.8	82.3	84.0	80.2	75.4*
Washington LEOFF Plan 1	129.1	119.5	112.2	109.0	113.7	117.2	122.5	128.4	125.4	121.6*
Washington LEOFF Plan 2	218.9	208.7	100.0	100.0	186.3	180.7	120.2	126.4	119.9	111.6*
Washington PERS 1	97.3	92.1	82.3	81.5	73.8	73.8	70.9	70.8	70.1	67.9*
Washington PERS 2/3	201.8	193.2	184.9	179.7	175.9	169.5	101.5	101.1	99.3	95.2*
Washington School Employees Plan 2/3	215.5	200.7	176.5	178.5	172.6	163.3	106.8	104.3	100.4	93.6*
Washington Teachers Plan 1	100.2	97.5	89.0	88.0	80.1	80.2	76.5	76.5	75.2	72.4*
Washington Teachers Plan 2/3	223.9	212.1	191.1	193.9	192.0	183.0	112.7	107.9	101.8	93.3*
West Virginia PERS	84.4	75.4	73.1	80.0	83.6	86.8	97.0	84.2	65.9	74.6
West Virginia Teachers	21.0	19.2	19.1	22.2	24.6	31.6	51.3	50.0	41.3	46.5
Wisconsin Retirement System	96.5	97.1	99.2	99.4	99.5	99.6	99.6	99.7	99.8	99.6*
Wyoming Public Employees	103.2	92.2	91.7	85.0	95.1	94.4	94.0	78.6	87.5	84.9*

* Numbers are authors' estimates.
** Received from plan administrator.
Sources: Various 2010 actuarial valuations; and *Public Plans Database* (2001-2009).
[b] The funded ratios presented represent the "VRS" plan only for the state employees, teachers and political subdivisions. They do not reflect the information in the other plans – SPORS, JRS and VaLORS.

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