

# Fuzzy Math

## Public Pensions are Underfunded — How Bad Is It?

BY RENEE COURTOIS HALTOM

About 7.7 million retirees in the United States currently receive benefits from public-sector pension plans. Another 19 million workers will one day be added to the recipient list. They work or have worked for states, municipalities, police forces, and schools. Public pensions hold more than \$3 trillion in assets, and disbursed more than \$175 billion in benefits to retirees in fiscal year 2008 — nearly \$23,000 a year for each of those current retirees, according to the U.S. Census Bureau.

But public pension funding levels have fallen precariously low in some cases. The financial crisis carved a 25 percent dent in the median plan's assets in 2008. In better times, investment returns can cover three-quarters of a public pension plan's costs for the year (employee and employer contributions make up the rest). Poor asset performance has drawn attention to worsening funding positions of the plans over the last two recessions.

Funding levels always fluctuate with the business cycle. But many commentators say the problems are different this time: The recent recession was the second major market decline in a single decade, and now underfunding is both severe and pervasive across plans. The worst projections suggest plans will start running out of money in less than a decade. Since states are required to balance their budgets each year, that means any shortfalls may be covered by taxpayers.

In aggregate, public pensions were about 84 percent funded in fiscal year 2008 (the last year for which a comprehensive estimate is available), according to a recent report by the Pew Center on the States, a Washington, D.C.-based think tank that studies state issues. That's a gap of \$452 billion.

And pensions aren't the only public obligation coming due. Adding in promised health care and other nonpension benefits for retirees makes the shortfalls look even larger. The Pew Center estimates there are \$587 billion of these liabilities outstanding, with less than 5 percent of them funded as of fiscal year 2008. Only two states, Alaska and Arizona, had funded more than half of health and other nonpension benefit liabilities. This is largely because states were not required by official accounting standards to acknowledge and report the liabilities until 2006. Many funded them on a pay-as-you-go basis until just recently, so they're in the process of catching up on funding. Still, combining the unfunded liabilities of public pensions and other public worker retirement benefits yields a gap of about \$1 trillion. That roughly equals states' total outstanding bond debt as of 2008, and almost one-third of the Pew Center's estimate of total retirement liabilities.

Looking at pensions alone, Illinois is in the worst shape, with assets equaling just 54 percent of liabilities, followed by Kansas (59 percent) and Oklahoma (61 percent). Half the states' plans were fully funded as recently as 2000. By 2008 only four states met that bar. The Federal Reserve's Fifth District includes states on both ends of the performance

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spectrum (see chart page 17). North Carolina is in good shape at 99 percent; only four states nationally were better funded in 2008. In contrast, only six states were performing worse than West Virginia. It was funded at 64 percent. Before the recession the state was on a track toward improvement, in part by having made large annual contributions over the last decade.

Sizing the shortfalls is not easy. The asset side of the equation is skewed by “smoothing” investment gains or losses, usually over five years, to get a better sense of trend performance. Though this is standard accounting practice, it makes both exceptional and dismal years, like recent ones, look moderate. West Virginia is one of three states that doesn’t smooth at all, so on paper it took a larger hit than most in 2008, partially explaining its poor performance. But for the other 47 states, smoothing means the gap is likely to appear larger once reports on fiscal year 2009 begin to trickle out, says Kil Huh, Pew Center research director and one author of its recent report. As recent bad years replace more distant good years in the smoothing sample, funding levels will look worse.

Meanwhile, estimating the true size of liabilities is not straightforward. That requires translating tomorrow’s benefit obligations into today’s dollars, a practice called discounting. A small change in the discount rate can cause huge swings in how large liabilities appear, so the choice of rate is important — and quite controversial. Many economists say public pensions currently use assumptions that are much too optimistic, which understates liabilities and encourages plans to set aside less money today.

It is not necessarily troublesome if a plan is underfunded; it’s a matter of degree. “A plan that’s funded at 40 percent probably has an underfunding problem. A plan that’s funded at 80 percent is not necessarily in as bad a condition,” says Keith Brainard of the National Association of State Retirement Administrators, whose members are public pension sponsors. “The more important factor is whether the pension plan is causing fiscal stress for the plan’s sponsor, the employer: the state, the school district, the city.”

That’s the feared outcome. Everyone is in agreement: Even if plans were to run out of money, pension benefits will be paid one way or another. That means either taxes must be raised or other government services reduced, both of which would be painful and would almost certainly harm local economies.

### **Making the ARC**

There are more than 2,500 public pension systems in the United States according to the Census, but the largest 75 plans account for more than 80 percent of assets and participants. Some states such as Hawaii and Maine have just one state-sponsored plan for all state and local government employees plus “special districts” like utilities, hospitals, and schools. Other states, like Pennsylvania and Illinois, have hundreds of independent public plans. In some states the localities pay as much as three-quarters of the total contri-

butions to state-administered plans, but in other states localities pay for none of them.

The array of structures and political dynamics causes funding levels to differ widely across plans, but some themes do emerge. Public pensions “got religion” about funding in the late 1970s and early 1980s, according to Alicia Munnell of the Center for Retirement Research (CRR) at Boston College. Public-sector employment grew in the 1960s and early 1970s, and a public study on the plans in 1978 brought some attention to the inconsistent and nontransparent treatment of their growing liabilities. Then stock market performance improved, and in 1986 the Governmental Accounting Standards Board (GASB) created the first standards for how public pensions should disclose plan assets and liabilities. As a whole they vastly improved their funding levels over time.

For the most part, that means they were diligent about making the annual required contribution (ARC). The ARC is the amount a plan sponsor must contribute in a given year, based on current liabilities and certain assumptions, in order for it to be fully funded as of some future date (up to 30 years out, depending on the plan). Experts say a plan consistently making its ARC payments is one of the most important ways to keep it healthy, since falling short in one year means more must be contributed in subsequent years to catch up.

The stock market boom of the late ’90s helped plans by beefing up asset performance. Funding looked rosy; some plans even became overfunded. Many plans succumbed to pressure to increase benefits or reduce contributions, just as plans were hit with a rough decade that included the 2001-2002 market slowdown and the recent financial crisis. That, combined with growing public awareness of the economic implications of the aging population, has brought considerable public attention to the health of public pensions.

Pension benefits to existing public-sector retirees go up but rarely go down. In good times public pensions often increase benefits — some states even have provisions whereby any excess returns are automatically devoted to increasing benefits — while in bad times many simply fail to make the full ARC payments. The vast majority of public pensions are defined benefit plans, in which the amount of benefits is guaranteed (versus defined contribution plans, where benefits are accrued based on how contributions perform once invested). In almost all states, public pensions are legally restricted from cutting benefits that have already accrued from past years of work. States that have tried face lawsuits, most notably the ongoing cases against the state pensions of Colorado, South Dakota, and Minnesota, which attempted to reduce cost of living adjustments (COLAs) already promised to existing and future retirees.

Public pensions have time and again been regarded by courts as a constitutionally protected contract between states and employees. In the face of severe fiscal crises, New York City in the 1970s and Orange County, Calif., in the 1990s both cut jobs, reduced services, and imposed losses on bondholders. Orange County even declared bankruptcy.

Yet neither failed to make full pension payments because the legal status of benefits is so well established.

This is true in the private sector as well, says Andrew Biggs of the American Enterprise Institute, a Washington, D.C.-based think tank. In general, accrued benefits are protected under the Employee Retirement Income Security Act (ERISA). But private employers have proven more willing to cut future benefits in bad years — raising the retirement age, suspending 401(k) matching for a period (private retirement plans are more likely to operate under a defined contribution framework), or changing benefit accrual rates. “I think that would be a better way of doing it in the sense that if your alternative is firing 10,000 teachers, you would instead scale down wages, scale down pension contributions,” he says. “It’s a badly designed thing but there’s a variety of reasons it says that way.”

### The Discounting Debate

How bad is underfunding? That centers on the question of whether tomorrow’s liabilities are being accurately measured.

Pension boards and policymakers base funding and benefit decisions in large part on the guidance of actuaries, who in turn look to the GASB. Its rules say future pension liabilities should be discounted using the plan’s expected rate of return on assets. Plans on average assume about an 8 percent return.

Is that too optimistic? Accountants and economists tend to disagree on this issue. Actuaries point out, correctly, that public pensions have averaged more than 9 percent returns over the past 25 years. They say this makes their assumptions both realistic and the truest indication of how much would have to be put aside today in order to reach tomorrow’s funding goals.

Economists, on the other hand, would ask how certain are the future obligations. Can public funds reduce benefits or otherwise step down from liabilities if funding falls short? History has proven that they cannot, so pension liabilities are a “risk-free obligation” in finance parlance. Therefore, public pensions should measure liabilities as if they were going to invest all contributions in very safe but relatively low-yielding assets, such as Treasury bonds. Discounting at a risk-free rate would reflect the risk of payments from a taxpayer’s perspective, and accordingly calls for public funds to set aside more money today. Public pensions could still invest funds in the same equities and other risky assets that have historically produced favorable returns on average, however. Economists argue that discounting is mostly about measuring the liabilities accurately.

The Pew Center’s estimate of a \$452 billion gap in pension funding takes the GASB-recommended discounting method as given. An alternative, more pessimistic scenario is presented by researchers Joshua Rauh and Robert Novy-Marx of Northwestern University and the University of Chicago, respectively. They re-estimated the liabilities of the 116 largest pension plans sponsored by the 50 states using GASB discounting methods. Those plans had stated liabilities of \$2.98 trillion and assets of \$1.94 trillion in 2008.

But by discounting liabilities at a Treasury rate, they find that liabilities actually exceed \$5 trillion, and the funding gap is greater than \$3 trillion — more than \$10,000 for every individual in the United States. Ohio is in the worst shape under their methodology in terms of its unfunded liabilities as a percent of tax revenues. The state would need to devote almost nine years of tax revenue solely to pension funding simply to catch up to already-made promises.

An alternative way to assess the seriousness of underfunding is to estimate when state plans will run out of money based on current assets and future payments to retirees. In a study published earlier this year, Rauh assumed that all future contributions would exactly cancel out any future additions to liabilities. The result: Seven states would run out of money by the end of 2020 — even if they do actually realize 8 percent returns on investments.

Munnell and her colleagues performed what perhaps may be thought of as a more charitable exercise. They took into account that plans could use the contributions of future workers to fund payments for today’s retirees. That would hurt the long-term funding position of plans, but could prove useful in a funding pinch. Their analysis, too, shows many plans running out of money in the next couple of decades. But it pushes the date of insolvency out far enough, arguably, for plans to improve funding levels and realize an improvement in asset performance. In other words, the best guess about when the day of reckoning will arrive depends crucially on one’s assumptions.

When private pensions ran into underfunding problems in the 1980s, the federal government responded by recognizing that many fund sponsors did not have the wherewithal to increase contributions when the return on equities fell short of expectations, writes Munnell with CRR colleagues Richard Kopcke, Jean-Pierre Aubry, and Laura Quinby. The private pension insolvencies placed enormous strain on the Pension Benefit Guaranty Corporation (PBGC), which insures a fraction of private pensions. The solution drawn by the government for the private sector was to establish minimum contribution standards anchored by more conservative assumptions about the returns fund managers would earn over time on pension assets.

But administrators of public funds argue their plans are different. Corporations could go bankrupt at any time, leaving the PBGC footing the bill, and therefore are required to maintain a much shorter, more conservative focus, Brainard says. This differs from the “going concern” nature of public employers, especially of the largest plans, which are state-sponsored and not likely to go bankrupt any time soon. “As a result it’s more reasonable for these entities to keep a longer term focus, to invest on a longer term basis.” That’s why public plans are allowed to stretch their target for full funding over 20 or 30 years. “There’s no compelling reason at any point that a public pension plan should necessarily be fully funded.”

But some caution is warranted because of who bears the risk in the event that a fund runs out of money, Biggs says.

“If a corporation earns a profit or loss on operations, it’s not the corporation that bears it; it’s passed on to the shareholders or the employees,” says Biggs. Similarly, if the government comes up short on pension payments, it’s not actually the government that bears the burden. “It’s people who pay taxes to the government, people who would be employees of the government, or other beneficiaries of the government. It’s the stakeholders.”

Passing risk on to subsequent generations is exactly what the GASB rules intend to avoid. “One of GASB’s main criteria is interperiod equity, that the current crop of taxpayers should pay for the services they receive,” Brainard says. “If we begin to charge for those services as if we’re going to achieve a risk-free return then we stand a very good chance, in our view, of overcharging the current crop of taxpayers and undercharging the future taxpayers,” he says. “You shouldn’t put it off to the future, but neither should the current crop of taxpayers pay for more than they are receiving.”

These multiple considerations show there are no easy answers to the discounting question. So the debate rages on — with little resolution. Munnell says economists and actuaries are talking past each other because they’re performing fundamentally different exercises.

“I think actuaries are in the business of best guesses. They’re trying to say, ‘Using our best guess, how much should you have to put aside to fund this plan and to pay off the unfunded liability? And our best guess is that we’re going to earn what we’ve earned in the past,’” she says. “And the economists say, ‘Listen, all I’m interested in is how big are your liabilities. And if you’re absolutely going to have to pay them, 100 percent, then they have to be discounted by a rate that reflects their riskiness.’”

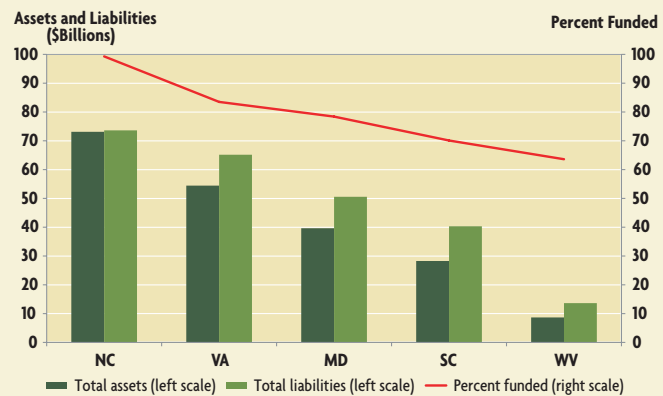
### No Quick Fix

Perhaps the greatest value of conservative discounting would be to limit the opportunity for reckless behavior. Munnell refers to CalPERS, the California public employee pension system, and the largest public pension fund in the nation. Funding in the late 1990s exceeded 110 percent using the expected return on assets. Times looked so good that it dramatically increased benefits, she says, and the state is still paying for that today. Using a risk-free discount rate, the plan would have appeared only 76 percent funded at the time. History has proven that it matters how big liabilities appear.

But for now, policymakers’ hands are tied, Munnell says. Suppose the pensions utilize 5 percent discounting as finan-

## Fifth District Funding

Pension funding levels in fiscal year 2008



NOTE: Data not available for Washington, D.C.

SOURCE: Pew Center on the States, “Trillion Dollar Gap,” February 2010

cial economists suggest. Then what? Liabilities would look larger, and therefore so would the ARC payments that would keep a given plan funded. But in reality there’s still not that much public pensions can do in the short term to improve their position. It would be difficult to increase contributions when state and local governments are struggling through fiscal woes and depressed economies. They can’t reduce benefits for existing retirees, as legal precedent has thus far proven.

Benefits can be reduced for future workers but the potentially significant cost associated with that is to render public sponsors less competitive as employers. So keeping pensions healthy is not the only factor public entities are dealing with, Brainard says. “It’s also the risk of being able to ensure that we have the resources necessary to provide public services: Schools are taught, streets are policed, fires are fought.”

At any rate, that wouldn’t help their finances until years to come. “It’s like turning a major tank ship in the sea,” says Huh of the Pew Center. “You make these small adjustments and you get on a different path. That’s basically what we’re seeing with the pension system.” For example, about 20 years ago Minnesota increased its retirement age for new employees, from 65 to 66. “But now 70 percent of the work force is covered by that one year change. It has managed to save the state about \$650 million.”

In the end, it may be a waiting game. Improving funding levels will depend largely on a recovering economy and financial market. It remains to be seen whether the current focus on public pension health will hold when the economy recovers.

**RF**

## READINGS

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