

# UNMASKING HIDDEN COSTS: Best Practices for Public Pension Transparency

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In 2010, the pension plans of state and local governments came under increased scrutiny in response to their generally weak financial positions and mounting costs to taxpayers. By some measures, these funds are as much as \$3 trillion short of the assets they would need to cover the promises they have made to government workers and retirees. However, several shortcomings in these funds' financial disclosures have made it difficult for even lawmakers and policy experts to accurately evaluate pensions' actual financial condition.

There are several steps, over and above what the Government Accounting Standards Board already requires, that funds could take that would disclose their finances more fully. The recommendations lie in five areas:

- Discounting
  - a. In calculating their pension liabilities and funded status, pension funds should use a market-value discount rate.
  - b. The disclosure of the sum this method produces would accompany the existing disclosure, which rests on a discount rate based on expected returns on assets.
- Smoothing
  - a. Funds should use a standardized "smoothing" period of five years to calculate asset values.
  - b. Funds should also report funded status on the basis of a market value of assets with no smoothing.
- Accrual method
  - a. Funds should continue to use Entry Age Normal as a standard accrual method for calculating funded status when applying the standards stated above.
- Projections
  - a. Funds should issue annual five-year projections of contribution rates required of participating governments.
- Normal cost
  - a. Funds should calculate and report the normal cost of pension benefits using the market-value discount rate they use to calculate pension liabilities and funded status.

These steps would make it easier to answer such questions as: How well funded is a given state's pension plan? How much does a public employee's pension in a given state cost? And what effects are pension costs likely to have on the next few years' budgets?

The report also discusses which entities should be responsible for implementing these changes in disclosure policy. It argues that states should voluntarily adopt them, and that they should require municipalities to do so. The federal government should also take steps to encourage states to make the recommended disclosures. A bill currently before Congress, the Public Employee Pension Transparency Act, would give states financial incentives to make some of the disclosures that this report recommends.

This report does not recommend substantive changes to state and local governments' retirement benefit policies. A government could comply with all of the recommendations in this report and still leave payout amounts, retirement ages, and all other aspects of benefit packages unchanged. However, a clearer understanding of the extent of governments' liabilities, which these recommendations, if implemented, would afford, might lead governments to make substantive and meaningful reforms.

## ABOUT THE AUTHOR

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## UNMASKING HIDDEN COSTS: BEST PRACTICES FOR PUBLIC PENSION TRANSPARENCY

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Josh Barro

In the last year, the scope of state and local governments' obligations to their current and future retirees began to register as a matter of serious public concern. Governments' obligations to retired workers are similar in many ways to bond debt but are not necessarily reflected in conventional measures of government indebtedness. When these obligations are not fully offset by assets held in trust, they are said to be unfunded and to place a debt-like burden on future taxpayers.

The Pew Center on the States last winter released "The Trillion Dollar Gap,"<sup>1</sup> a report that estimated the total unfunded retiree benefit liability at \$1 trillion by adding up figures on the financial statements of state retirement systems. This figure is a large addition to the \$1 trillion of states' explicit outstanding long-term bond debt as of 2009.

The true size of the unfunded liability for retiree benefits is far larger. This is because governments use excessively optimistic assumptions when estimating the size of their pension liabilities. If less rosy accounting is used, with the (smaller) liabilities of local governments included, unfunded pension obligations total more than \$3 trillion. If the costs of health care for retirees (also called "Other Post Employment Benefits," or OPEB) are included, unfunded obligations amount to more than \$4 trillion.<sup>2,3</sup>

Anyone following press accounts of the issue should be forgiven for being confused about the total size of the unfunded liability.

Several factors make it challenging to size up pension and OPEB liabilities on an apples-to-apples basis, but the root cause is accounting rules that allow governments to report incomplete and overly optimistic information.

On an installment of CBS's *60 Minutes* airing on December 19, 2010, securities analyst Meredith Whitney characterized the opacity of state and local governments' recent financial statements as "the worst I've ever seen."<sup>4</sup> This is the same Meredith Whitney who spent the middle of the decade raising the alarm about hidden risk on bank balance sheets and foretelling the bursting of the mortgage bubble.

Bad accounting rules do more than just deceive taxpayers and bondholders. Pension accounting is so convoluted that it also deceives lawmakers themselves, many of whom make unsustainable pension promises simply because their true costs are hidden from them.

In this report, I make several recommendations for improving the transparency of financial information related to governments' pension and OPEB obligations. These recommendations do not have direct, substantive policy implications: a government could follow all recommendations in this report and still maintain its current pension and OPEB plans unchanged. Rather, adopting these standards would clarify the magnitude of states' total accrued liabilities and their annual impact on budgets. The availability of this information might lead states to adopt policies that would save taxpayers money in the long run.<sup>5</sup> Briefly, the recommendations address five areas of pension accounting:

**1. Discount Rates.** Retirement plans use a "discount rate" to convert pension or OPEB liabilities due far in the future into a present value. Government Accounting Standards Board (GASB) guidance leads plans to use discount rates that are unreasonably high. Such rates allow them to understate their true liabilities and claim to be better funded than they really are. Plans should additionally report their liabilities discounted at a lower rate that corresponds to the low risk borne by pensioners that they won't be paid. Doing this would result in plans' reporting a higher (and more

accurate) present-value liability and a lower ratio of assets to liabilities (the "funding ratio").

**2. Smoothing.** Most retirement plans do not recognize unusual gains or losses on assets immediately. Instead, they recognize them over a period of years—most often, five. Unfortunately, some plans have been changing their smoothing periods opportunistically: shortening them to recognize sharp gains quickly, or lengthening them to delay recognition of losses. Doing this allows funds to overstate the value of the assets they hold and thus make their unfunded liabilities seem smaller than they actually are. Plans should instead use a standardized smoothing period of no more and no less than five years at all times. They should also continue to separately report the market value of their assets as of particular dates and disclose the funding ratio on both a smoothed and an un-smoothed basis.

**3. Accrual Methods.** There are several ways to estimate the dollar value of the benefits that a mid-career employee has accrued to date. Each method will generate a different estimate. Wisely, GASB requires plans to present certain data using a standardized accrual method called "Entry Age Normal." This accrual method is designed to spread the recognition of costs associated with an employee's pension benefits across his or her career in proportion to the wages and salaries paid to that employee. This standard should be maintained.

**4. Projections.** When a pension plan's financial position deteriorates, actuaries direct the plan's sponsors (i.e., state and local governments) to contribute more money. But because of asset smoothing, it takes several years before a protracted decline in stock prices is fully recognized, forcing sponsors to deal with the shortfall by increasing their contribution rates. Pension fund managers know that stock-market losses, especially the steep ones of recent memory, are very likely to drive required employer contributions higher in the coming years, as past losses are gradually recognized. However, because most plans do not issue public projections of contribution rates, legislators do not necessarily have fair warning of these impending increases. Therefore, pension plans should annually

issue five-year projections of employer contribution rates, so that lawmakers can plan to accommodate rising pension costs in future budgets—or enact pension reforms to lower costs.

**5. Normal Cost.** The factors that obscure the aggregate cost of pension plans also obscure the cost per employee. Employer contributions are the basis for current measures (such as those published by the U.S. Bureau of Labor Statistics) of these costs, but they do not represent the full cost, which is the present value of the pension credit that employees receive for providing service in the current year. Public pension plans should report the market value of this ongoing cost, as private firms already do. This figure is the true “cost” of offering pension benefits, whether it is met with cash in the current year or by incurring a liability that will be covered in the future.

Finally, this report will discuss who should be responsible for implementing these recommendations. We think that states should voluntarily adopt these standards, and then require municipalities to adopt them.

The question of federal involvement is trickier. A bill currently before Congress, the Public Pension Transparency Act, would give states strong financial incentives to use market-based discount rates to calculate their funding ratios and to provide twenty years’ of future cost projections. (It should be noted that this bill, if enacted, would not obligate the states actually to make pension contributions derived from market-based discount rates; nor does this paper argue that they should be obligated.)

In general, the federal government should give leeway to states to manage their own finances. However, there are several good reasons for the federal government to use its fiscal powers to impel states to adopt all the disclosure recommendations made in this paper.

## I. DISCOUNT RATES <sup>6</sup>

The liability side of a pension plan’s balance sheet consists of a stream of promised payments to ben-

eficiaries. Some of these payments are due retired workers in as little as one month, and others will not come due for decades. In order to arrive at a present cost of that entire stream of liabilities, pension plans “discount” the cost of benefits to be paid in the future, as though the principal to cover the cost were already in the plan’s possession. Because invested capital grows over time, the growth of any sums set aside reduces the size of the contributions that the plan is obligated to make.

If, for example, \$10,000 is due in ten years, and a savings account or some other safe investment vehicle offers an interest rate of 3 percent, only \$7,441 would have to be set aside today. In this example, a 3 percent “discount rate”—the rate at which the principal due is discounted over a given period of time to produce the loan’s net present value—has been used to assess future obligations.

When discounting future obligations, pension funds follow the guidance of the Government Accounting Standards Board (GASB), an organization that establishes financial standards for state and local governments. According to the U.S. Government Accountability Office, GASB operates independently and lacks the authority to enforce its standards, but many state laws require local governments to follow them, and rating agencies will take into account whether GASB standards are followed.<sup>7</sup>

In its Statement 25, “Financial Reporting for Defined Benefit Pension Plans and Note Disclosure for Defined Contribution Plans,” GASB advises that a discount rate “be based on an estimated long-term investment yield for the plan, with consideration given to the nature and mix of current and expected plan investments.” (This language clearly contemplates a portfolio that includes investments with fluctuating yields.) In other words, pension funds should choose discount rates that equal the expected return on assets. So long as average returns are sufficient to cover a plan’s benefits, it is deemed fully funded, according to GASB standards, even if the riskiness of its investment choices creates a greater than 99 percent chance of a funding shortfall at some point, which taxpayers would be responsible for repairing.

Plans mostly invested in stocks and other equities use the stock market's higher returns over long periods of time as their rationale for using discount rates of about 8 percent. As University of Chicago economists Robert Novy-Marx and Joshua Rauh point out, GASB permits underfunded pension plans to increase their liability discount rates and thus reduce or eliminate their funding gap, simply by increasing the risk profile of their asset portfolio. For example, a plan with a 10 percent funding shortfall and expected asset returns of 7 percent would move into "surplus" if it contributed no additional funds and simply adjusted its asset mix to produce an expected 9 percent return. To Novy-Marx and Rauh, GASB's policy makes no more sense than allowing households to "write down the value of their mortgages by simply reallocating their savings from a money market account to an investment in the stock market."<sup>8</sup>

Unfortunately, a plan may fail to meet its return target for an extended period, or even experience a significant drop in asset values, as all pension funds of substantial size did in 2008–09. If such a period should persist long enough, pension reserves can drop to the point where states are forced to close the gap by drastically increasing pension contributions; indeed, contribution rates in most states are already climbing and can be expected to go much higher in the next several years. Governments' own indefinite existences do not give them the luxury of waiting indefinitely for the market to recover.

The pro-cyclical tendencies of capital markets make the manipulation of discount rates particularly costly for taxpayers. Even if an aggressively invested pool of assets turns out to be large enough on average to cover pension liabilities, taxpayers will be least able to pay the extra taxes to cover funding gaps when returns fall short, because shortfalls are most likely to occur during recessions.

Although windfalls, too, are possible, they come during economic boom times, when they are least needed, and don't necessarily accrue to taxpayers' advantage: many states, including New York, New Jersey, and California, have used the over-performance of pension investments to increase the generosity of pension

benefits rather than to tide over their plans' shortfalls. Effectively, taxpayers are providing insurance to pension funds by converting a risky investment return into a risk-free return. Current pension accounting treats this insurance as though it were costless.

For these reasons, financial economists object to the use of expected asset returns to discount liabilities. Their thinking is that public pension plans provide a benefit that is essentially guaranteed. But the gains and income on which pension plans rely to provide that benefit are not guaranteed and are thus potentially highly variable. To eliminate this mismatch, "discount rates should be derived from securities that have as little risk as the liabilities themselves,"<sup>9</sup> the "risk" of these liabilities being that a pension plan could somehow escape its obligations to beneficiaries, an exceedingly unlikely eventuality. The theory underlying this approach is commonly known as the "market value of liability" (MVL).

Just as GASB oversees public plans, the Financial Accounting Standards Board (FASB) oversees private plans. FASB guidance calls for private plans to discount their liabilities roughly in accordance with MVL. FASB's directive rests on the recognition that firms cannot pass on to plan participants the risk associated with higher returns. Paragraph 44A of FASB Statement 87 reads:

[A]n employer may look to rates of return on high-quality fixed-income investments in determining assumed discount rates. The objective of selecting assumed discount rates using that method is to measure the single amount that, if invested at the measurement date in a portfolio of high-quality debt instruments, would provide the necessary future cash flows to pay the pension benefits when due. Notionally, that single amount, the projected benefit obligation, would equal the current market value of a portfolio of high-quality zero coupon bonds whose maturity dates and amounts would be the same as the timing and amount of the expected future benefit payments.

Under IRS guidance, private plans generally choose a discount rate based on a blended average of corporate bonds in the Moody's Aa rating range, pegged

by Mercer Consulting, as of February 2011, as paying 4.99 percent over seven years or 5.88 percent over nineteen years; most public pension plans would use a discount rate in this range, depending on the demographic makeup of their participants. This yield reflects the degree of risk associated with high-quality corporate bonds; nearly risk-free assets such as U.S. Treasury bonds pay considerably less.

### *How Should Public-Employee Retirement Plans Select a Discount Rate?*

For the reasons laid out above, the discount rates used by public-employee pension plans are far too high and are leading those plans to understate their true liabilities—and therefore to overstate their funding levels. Congress can improve pension transparency by requiring pension plans to use a lower, standardized discount rate when reporting their liabilities, in addition to whatever reporting method they use today.

But how should that rate be chosen? My preference is to require discounting on the same basis on which private plans set their discount rates per FASB—the yields of Aa-rated corporate bonds. Doing this would have the advantage of being simple and in accordance with standard accounting practice. However, it is not exactly in accordance with MVL, as the risk associated with public-employee retiree benefits is not the same as the risk associated with a high-quality corporate bond.<sup>10</sup>

An alternative approach would be to discount pension benefits using Treasury bond yields. Treasury yields are lower than the yields of Aa-rated corporate bonds because Treasury bonds pose almost no risk, while high-quality corporate bonds pose some risk, though a low one. This approach assumes that there is nearly zero risk that retirees will not be paid their pension benefits and produces a very conservative (i.e., large) estimate of liabilities. According to the estimates of the American Enterprise Institute's Andrew Biggs, pension funding shortfalls as of mid-2008 under this approach exceeded \$3 trillion,<sup>11</sup> a figure that does not fully reflect even the stock-market crash of 2008–09.

Some pension funds, such as New York City's, already report their liabilities this way in addition to the traditional method. However, this approach can be criticized for exaggerating the ironclad nature of pension obligations and therefore the present cost of pension liabilities. If pension benefits are subject to any greater risk than Treasury bonds are, this approach leads plans to use a discount rate that is too low.

The most accurate way for a plan to choose a discount rate that matches the risks experienced by pension beneficiaries, and the way that Novy-Marx and Rauh use in their estimates, is to use the yield curve of General Obligation (GO) bonds issued by the state or municipality sponsoring the retiree benefit plan. In most cases, the yield curves of GOs, and thus the discount rate derived from them, are lower than the yield curves of high-quality corporate bonds but higher than those of Treasuries.<sup>12</sup>

Some states do not issue GO bonds, or do not issue bonds with terms similar to their pension liabilities, or issue bonds so thinly traded that up-to-date yield data are not available. In these instances, Novy-Marx and Rauh substitute a yield curve based on that of bonds issued by municipalities with the same credit rating.

While it hews admirably close to MVL, Novy-Marx and Rauh's method would have drawbacks if adopted by public pension funds themselves. One is that it requires development of a new index for each issuer, while the figures on which private pension plans rely are already available.

A second drawback of this method is that it effectively "rewards" issuers that have deteriorating credit by allowing them to use higher discount rates. It would do no harm if third-parties estimating pension liabilities did this. But allowing public pension funds to adjust their own discount rates on the basis of changes in their credit could create perverse incentives—which is why private pension plan sponsors are required to use discount rates based on Aa-rated bonds, regardless of their own creditworthiness.

A third potential drawback of Novy-Marx and Rauh's method is that retiree benefits might not be at risk to

the same extent that GO bonds are. Historically, it has been thought that retiree benefits are safer liabilities than bonds—that is, that retirees face less risk that their pension benefits will not be paid than bondholders face that their interest and principal will not be paid. This belief rests on a history of municipalities in bankruptcy (such as Orange County and the city of Vallejo, California) honoring their pension benefits while restructuring their debt.

But recent moves by several states (including Colorado, South Dakota, and Minnesota, and soon, perhaps, New Jersey) to reduce already accrued retiree benefits suggest that retiree benefits could actually be more risky than GO bonds. In either case, it is not clear that GO bonds are the perfect proxy for pension benefits from the standpoint of risk of nonpayment.

For offering the best combination of simplicity and accuracy, discounting should be based on an A-rated corporate bond yield, in my opinion. However, any of the approaches just discussed would offer a significant improvement over the status quo. All three reflect the cost of the implicit guarantees that taxpayers extend to pension beneficiaries and would therefore result in discount rates that are lower than those now prevailing.

## 2. SMOOTHING

Earlier this year, New Jersey became the first state ever to be sanctioned by the Securities and Exchange Commission for misleading bond investors. The SEC's objection to the quality of New Jersey's financial disclosures related, in significant part, to the way it practiced "smoothing" in its pension funds.<sup>13</sup>

Nearly all public pension funds delay the recognition of abnormal gains and losses. Their gradual recognition over a period of years prevents a fund's actuarial value of assets from changing sharply from one year to the next. Because asset value is one of the inputs that go into calculating the amount that governments must or should pay into a pension fund, smoothing protects cities and states from sudden demands for large cash infusions.

States undermine the integrity of the smoothing process by lengthening the smoothing period when the stock market is falling, or shortening the period when the market is rising, simply to keep down the payments they are obliged to make. This is what New Jersey did in 2001: it temporarily abandoned smoothing in its pension funds and set its actuarial valuation to equal its market valuation as of June 30, 1999. Because the dot-com stock bubble was close to its highest point on this date, New Jersey substantially boosted its pension plans' stated asset values and funding ratios. In fact, the market had already fallen about 10 percent since the valuation date by the time that New Jersey reset its valuation. Nevertheless, the state used this inflated asset value to justify a 9 percent benefit increase that it awarded to all pensioners.

New Jersey is not the only plan sponsor to adjust its smoothing practices when convenient: New York State reset one of its pension plans' asset valuations early in the last decade to take advantage of high market values. Other plans (including ones in Los Angeles, Arizona, West Virginia, and South Carolina) have recently gone in the other direction, lengthening smoothing periods in order to delay recognition of recent declines in value.

Aside from helping lawmakers hide the fiscal consequences of their pension policy choices, differences in smoothing practices across states make it difficult to compare the funded status of pension plans. While most pension plans smooth over a four- or five-year period, others smooth over as many as ten years. A handful of plans do not smooth their returns at all. Even without any trickery, these variations complicate comparisons and indicate a need for standardization.

### *How Should Public Pensions Smooth Asset Values?*

In place of the current system, which is internally inconsistent and creates opportunities for "creative" accounting, all states should report their asset values in two consistent ways. One way would be a funding ratio based on the simple market value of their plans' assets, fully recognizing all gains and losses as of the

reporting date, as well as a properly discounted liability measure, as described above in Section 1 (Discount Rates). Currently, all plans report the former, but few report the latter, so this ratio is rarely available.

The second way involves presenting a smoothed figure that results from a standard and reasonable system of calculation. Such a method would instantly recognize expected asset returns using a rate derived in the manner recommended above in Section 1. To the extent that returns exceeded or fell short of that rate, the difference would be recognized gradually over five years.

Why present two separate figures? The first offers a more accurate calculation of a plan's funding status: the share of present-value liabilities that are covered by assets actually held by the fund. The second adjusts for the vagaries of market performance, in order to accommodate states' and cities' obligation to balance their budgets annually, but provides a consistent benchmark for setting pension contribution rates.

### 3. ACCRUAL METHODS

When calculating the liabilities that they list on their balance sheets, public-employee pension plans must decide matters in addition to smoothing intervals and discount rates. Even before discounting the stream of future liabilities, they must determine which prospective payments should be included in that stream.

Consider an employee who has recently been hired and thus has been credited for retirement benefits reflecting only a few months of service. Should all the pension benefits that employee would receive if he worked in the system for thirty years be instantly recognized on the pension's balance sheet? That doesn't seem sensible: the employee has not fully earned those benefits—and may never earn them.

But say that there is another employee with nineteen and a half years of service; under the terms of that employee's plan, he is entitled to a far larger benefit if he retires in six months than if he retires today. If his pension plan accounts for only the benefits he would

get by retiring immediately, it would be missing a large contingent liability.

One method of calculating liability, called the "Entry Age Normal Method," deals with these issues by dividing the present value of the pension benefits that a new employee can expect to earn by the present value of all salary that he can expect to earn. This produces a ratio or percentage that is used to estimate the level of benefits that the employee has accumulated at any given point during his employment. With this method, a significant part of the second employee's jump in benefits would be reflected on the pension plan's books before he actually completed twenty years of service. But only a small portion of the benefits that might come due for our newly hired employee is counted.

Pension plans are already required to use this method in preparing the Statement of Funding Progress included in pension plans' Comprehensive Annual Financial Reports, even if they use other (generally, less conservative) methods to prepare the rest of their financial statements. This requirement should be maintained.

### 4. PROJECTIONS

Because lawmakers will have left office long before all the bills come due, they see no political benefit in providing for a solvent but distant future. However, given the right information, they might concern themselves with medium-term costs. Unfortunately, most pension funds do no forward projections of employer contribution rates, so lawmakers operate with little information about what pension costs are likely to be in the medium term.

Employer contribution rates are a function of a fund's financial position—the larger the unfunded liability, the more that participating governments are told to pay into the pension fund. In most states, employees pay a fixed percentage of salary (or, in a few cases, nothing at all), while employers pay a fluctuating percentage of salary, depending on market performance.

**Table I. Analysis of Funding Progress**  
**New York State Teachers' Retirement System (dollars in millions)**

FY Ending	Actuarial Value of Assets	Actuarial Value of Benefit Liability	Funding Ratio (Actuarial)	Market Value of Assets	Market Value of Benefit Liability	Funding Ratio (Market)
2006	\$78,335	\$76,353	103%	<b>\$91,492</b>	<b>\$107,658</b>	<b>85%</b>
2007	\$82,859	\$79,537	104%	<b>\$104,913</b>	<b>\$112,147</b>	<b>94%</b>
2008	\$88,255	\$82,778	107%	<b>\$95,769</b>	<b>\$116,593</b>	<b>82%</b>
2009	\$88,806	\$86,062	103%	<b>\$72,464</b>	<b>\$121,219</b>	<b>60%</b>
2010*	\$86,823	\$89,570	97%	<b>\$76,967</b>	<b>\$126,160</b>	<b>61%</b>

\* 2010 figures estimated

Above is a sample Analysis of Funding Progress chart that incorporates the first three recommendations in this paper. While the columns in plain typeface are already included in today's typical comprehensive financial annual report (CAFR), the columns in bold are new. In addition to taking the traditional approach to presenting their ratio of assets and liabilities, plans would present this "funding ratio" on a market-value basis.

As is the case today, the Entry Age Normal Method would be used to calculate the accrued-liabilities component of both actuarial and market-value funding ratios. To comply with this paper's recommendation 2, the actuarial value of assets should be calculated on the basis of a five-year smoothing period.

These tables will make clear that pension plans' funded status is both less strong than is indicated by present reporting practice, and can fluctuate sharply from year to year with moves in the stock market.

This moving target, calculated by pension actuaries, is called the "Annual Required Contribution" (ARC). In most states, the contribution is required only as a matter of accounting, not as a matter of law—state lawmakers must agree to make the contribution, or force local governments to do so. Sometimes, governments ignore this guidance, but they can put off making the ARC payment for only so long: employer contributions must eventually rise after stock-market losses, or pension funds will run out of money.

Because of smoothing, ARC rates will rise gradually for a period of years following a sharp stock-market decline. Fund managers should tell legislators what the size and rate of the increase will be so that they can make the necessary provision in their budgets and implement pension reforms before costs explode. Projecting the cost of other post-employment benefits is important as well, but in a different way. Because

most states either do not pre-fund their OPEB obligations or began doing so only recently, stock-market performance has had little effect on contribution rates. Indeed, in states where OPEB is not pre-funded, each year's OPEB cost is simply the current-year cost of providing health coverage to qualifying retirees. But health-care costs are rising sharply and will therefore inevitably place significant burdens on budgets in future years. Calculating that rising burden is a matter not just of prudence but of necessity.

*What's Happening Now*

Currently, employer contribution rates in most pension systems are rising sharply as a result of poor stock-market performance. Politicians, aware of that, have begun enacting pension reforms, most of which are fairly timid and apply only to new workers. But because

pension systems generally do not project future-year ARC rates, lawmakers may not be fully aware of how far contribution rates are from peaking—most should not peak until roughly fiscal year 2015—or how much more they will rise.

Consider the New York State Teachers' Retirement System (NYSTRS), which covers most public school teachers in New York outside New York City. School districts made a pension contribution in fall 2010 equal to 6.19 percent of payroll. They know that the

payment in fall 2011 will be higher—8.62 percent of payroll—and as of November 2010, they had received guidance that the fall 2012 payment (which is actually based on payrolls for the school year beginning in fall 2011) will likely rise to 11.0–11.5 percent of payroll.

What school districts don't know is how much payments will continue to rise. Because NYSTRS smoothes unusual asset returns over a period of five years, poor returns in FY09 will not be fully recognized until FY14—and FY14 performance will be used to determine

**Table 2. Projected Average Employer Contribution Rates  
New York State Pension Funds**

	2011	2012	2013	2014	2015	2016
<i>Teacher's Retirement System (TRS)</i>						
Base	6%	9%	12%	16%	22%	25%
Low Returns	6%	9%	12%	17%	23%	27%
High Returns	6%	9%	12%	16%	21%	23%
<i>Employee Retirement System (ERS)</i>						
Base	12%	16%	19%	21%	23%	20%
Low Returns	12%	16%	19%	22%	25%	24%
High Returns	12%	16%	18%	20%	20%	16%
Amortized Base	10%	11%	12%	14%	17%	19%
<i>Police and Fire Retirement System (PFRS)</i>						
Base	18%	21%	23%	26%	28%	25%
Low Returns	18%	21%	24%	27%	30%	29%
High Returns	18%	21%	23%	25%	25%	21%
Amortized Base	18%	19%	20%	21%	23%	25%
Base = 7.5% for ERS and PFRS; 8% for TRS Low Returns = 5% High Returns = 11% Amortized rate assumes Base returns and includes repayment of amortized amounts from prior years						
<i>Source: Authors' calculations based on pension system data.</i>						

Above is a table of projected contribution rates taken from E.J. McMahon's and my paper for the Empire Center for New York State Policy, "New York's Exploding Pension Costs." Plans that adopted the above recommendation would include similar charts in their CAFRs. Note that this chart shows employer pension contributions as a percentage of payroll. Information is most helpful to state and local lawmakers in this form. They would be in a good position to project the size of payrolls in future years, and from these to estimate pension costs.

employer contributions that will not be made until fall 2015. Even though school districts already expect employer contribution rates nearly to double in two years, rates have just begun to rise, despite the fact that the stock market has recovered a significant part of its losses from FY09. In a recent report, my colleague E. J. McMahon and I estimated that NYSTRS contribution rates will reach about 23 percent by 2015—that is, school districts will have to make a pension contribution roughly equal to 23 percent of teacher salaries, which also will have risen.<sup>14</sup>

In short, pension contributions are expected to rise by a factor of five in five years—from \$900 million to \$4.5 billion. To cover just that increase, school property taxes will need to rise by 3.5 percent in each of the next five years.<sup>15</sup> A somewhat less sharp, but still severe, rise is expected in contribution rates to the New York State and Local Retirement System (NYSLRS), which covers most non-teacher public employees in New York State.

A version of this story can be expected to play out in pension systems all over the country. Pension systems that started off more poorly funded will actually see less sharp rises, partly because their contribution rates were already high and partly because less money to invest reduces a fund's exposure to stock-market swings, all things being equal. But almost everywhere, significant rises will occur for several years to come.

### *Providing Advance Warning*

If a crisis that will require a combination of tax increases and service cuts is brewing, it's best to know about it far in advance; so every year, public pension systems should make a projection of ARC rates under a number of scenarios and publicly disclose the results. In one scenario, the fund would hit its targets each year; a second scenario would project returns several points above expectations; and a third, several points below.

The hope is that these projections would restrain legislators' rampant optimism or irresponsibility while also making it easier for them to keep pensions well funded. In New York, court decisions obligate state and local governments to pay the ARC rate every year. But lawmakers in other states sometimes disregard the ARC, especially when it rises sharply. Their excuse is that the need for a rise in the contribution rate was unforeseen and cannot be accommodated in the current budget without drastic increases in taxes or cuts in services.

Years of advance notice should deprive legislators of this excuse. Instead, they could make room in the budget for the rise in contributions, or implement savings that bend the pension cost curve downward. And if these projections were made public, politi-

## The Utah Experience

In 2009, newly elected Utah state senator Dan Liljenquist, a former management consultant with Bain & Company, was unexpectedly put in charge of the Senate subcommittee on retirement. Upon being shown a chart of past contribution rates, he asked, "Where is the contribution rate going to go?" The fund's actuaries said that they had never been asked that question before.

The answers were alarming: contribution rates were going to rise precipitously, crowding out funding of basic services in the budgets of the state and its localities. This information catalyzed support for pension reform in Utah and led the legislature, in early 2010, to pass one of the country's most aggressive pension reforms of recent years. As a result, employer contribution rates will still rise but not as sharply as they otherwise would have.

cians could talk to voters about how to deal with the coming explosion in pension costs, instead of merely reacting to the latest burst of bad news, which is the norm today.

## 5. NORMAL COST

A lot of attention in the last year has focused on pinning down the aggregate cost of pensions, but a related question has generally gone without good answers: How much are the pension benefits provided to each employee worth? Unfortunately, a lot of data cited on this question are misleading because of deficiencies in public pension accounting.

### *Measuring the Wrong Costs*

The true cost of pension benefits is the increase in the present value of pension liabilities when an employee earns another year of service credit. This is known as the “normal cost.” Pension funds must calculate this figure in order to discover the magnitude of their aggregate liabilities. While corporations disclose their pension plans’ normal cost both clearly and separately from other changes to liabilities in their annual 10-K filings, most public pension plans do not.

As a result, most measures of pension “cost” are really measures of employers’ contribution to pension plans. The Bureau of Labor Statistics (BLS) provides data on retirement benefit costs for state and local government employees, using employer contributions as a proxy for pension cost. This practice is misleading and tends to understate public pensions’ true cost.

The grossest deception results from some governments’ recent practice of shirking their obligation to make contributions to their employees’ pension plans. As a result, these governments show up in the BLS data as having no employer cost for pensions in the current year. But that cannot be so: by promising pension benefits, states are incurring pension obligations that will have to be honored in future years. Failing to set aside money to do this does not free them from the obligation.

Even pension contributions that take into account actuarial guidance do not necessarily equal pension costs. This is because a required pension contribution consists of two components: a payment to cover normal cost; and a payment to amortize any accrued but unfunded liability.<sup>16</sup> The amortization payment is not truly a current-year compensation cost; it is essentially a repayment of debt that was incurred to compensate employees in previous years.

The biggest problem with using pension contributions as a measure of pension cost is that plans are determining their contribution amounts on the basis of unreasonably high discount rates. Just as excessively high discount rates cause plans to understate their liabilities in the aggregate, they cause plans to understate the normal cost of pension benefits accrued by employees in a given year. This means that even if a government were making its ARC payment in full and the ARC did not include an amortization component, the pension contribution would fail to reflect the full normal cost on a market-value basis.

Several recent studies from left-of-center think tanks—most notably, the Economic Policy Institute—have challenged the idea that public employees earn more than their private-sector counterparts. But as Andrew Biggs of the American Enterprise Institute has written, a key weakness of these studies is their use of pension contributions as a proxy for pension costs.<sup>17</sup>

Biggs notes a fall 2010 study from the University of California at Berkeley’s Center for Employment and Wage Dynamics, which found that public employees in California earn only 2.3 percent more than comparably situated private employees. The CEWD study counts California public workers as receiving pension benefits worth 8.2 percent of salary. However, Biggs notes that CEWD’s data actually show that:

California public employers are paying 8.2 percent of employee compensation toward pensions, but that is only around half what employers *should* be paying. And since public pension benefits are guaranteed, that extra amount will be paid sooner or later. A good guess of true public pension

compensation is to divide the reported pension contribution of 8.2 percent by the 50 percent funding level of California pensions, producing a value for promised pension benefits of 16 percent of compensation. This increases the 2 percent pay advantage that the CEWD study already acknowledges to a public sector pay premium of around 10 percent.<sup>18</sup>

CEWD and BLS also fail to count the value of retiree health-care benefits. While few private employees receive any retirement health benefits at all, public employees generally do receive them, with California workers receiving especially generous ones. Including

the effect of retiree health benefits pushes the pay gap in California to approximately 18 percent.

*What Taxpayers Need to Know*

Employer contributions are important—after all, they are a current-year cash cost in state and local budgets. Responsible lawmakers will want to know how much they have to budget for pension payments in future years.

But normal cost is also important, as it represents the true present cost of pension benefits as they accrue, whether financed with a cash contribution or implicit

**Table 3. Market Value Normal Costs**  
*Normal cost as a percentage of covered payroll*  
 Sample State Public Employees' Retirement Fund

<b>Plan</b>	<b>Normal cost</b>
Teachers' plan A – Tier I	16.5%
Teachers' plan B – Tier I	15.8%
Teachers' plan – Tier II	14.0%
Police plan A – Tier I	23.6%
Police plan B – Tier I	23.4%
Police plan – Tier II	21.6%
Firefighters' plan – Tier I & II	23.6%
General employees' plan – Tier I	14.8%
General employees' plan – Tier II	12.1%

Every pension fund CAFR should contain a chart reflecting a normal cost of benefits by plan that is calculated on the basis of a market value discount rate. Again, as with contribution rates, normal cost is expressed as a percentage of payroll.

Besides offering benefit plans for particular categories of employee (teachers, firefighters, et al.), many pension funds offer several different plans for each category, from which the localities participating would choose. In addition, benefit "tiers" that are established for employees hired after a certain date will have different normal costs from tiers composed of employees hired earlier. Plans serving one category of employee may have normal costs that differ from plans serving another category.

The retirement fund depicted above offers several retirement-plan options, broken down by tier and job classification. This fund is one of those that offer more than one plan for certain categories of employee.

borrowing. “Buy now, pay later” pension practices cannot hide from calculations of normal cost, which is why it’s so important to know what normal cost is.

Normal cost is also an important aspect of the debate over public-employee compensation. When politicians, squeezed by rising contribution rates, call for pension reforms, unions respond that their members are already underpaid and cannot be expected to bear a benefit cut. Sometimes they will be right. But accurate calculations of normal cost—of pensions as well as OPEB—are essential to evaluating these claims.

It is simple for pensions to disclose their normal cost. Indeed, in order to calculate market-value liabilities, as discussed above in Section 1, they must calculate normal cost. This figure should be disclosed in a government’s comprehensive annual financial report instead of being left to sit in a file at pension fund headquarters. Funds should also disclose normal cost by class of employee—because some categories of employee, such as police officers and firefighters, who are typically allowed to retire earlier, have higher normal cost—and as a percentage of payroll.

Doing this would make it possible to say definitively—and with far greater precision than Biggs’s back-of-the-envelope calculations—how much any given public employee’s retirement benefits are worth, thus allowing a fair and accurate comparison with his counterparts in the private sector.

## 6. IMPLEMENTATION: WHO SHOULD DO THIS?

Assuming that policymakers see merit in the above recommendations, who should ensure that they are carried out? It would be simplest if governments adopted these policies voluntarily. There is nothing to stop any agency from reporting the information in this report in the manner recommended; indeed, several funds are already doing so. For example, New York City’s pension funds already report their assets and liabilities on a market-value basis.

All municipalities should do so, and states should ensure that they do. Municipalities are creatures of

the states, and states therefore have a legal basis for imposing mandates on them. It is certainly in states’ self-interest to do so, since municipalities that become insolvent under the burden of their obligations to retirees are likely to turn to their states for help, as the city of Central Falls, Rhode Island, crushed by pension and OPEB plans, did recently.

The tougher question is what, if anything, the federal government should do to require or induce states and municipalities to adopt these accounting standards. As a general rule, the federal government should leave states alone to establish their own fiscal practices. However, two factors justify federal intervention to enforce pension transparency. One is that the foregoing measures are simply transparency measures—they do not force any state to adopt or to change any of its policies. Enhanced reporting is not cost-free but isn’t a heavy burden on administrators or taxpayers either.

The other factor is that the federal government, for better or worse, has significant interests in the continued solvency of the states. The federal government subsidizes state and municipal borrowing at significant expense—not just through the Build America Bonds program but also through the tax subsidy that it extends to traditional municipal bonds—and it has an interest in ensuring that the sums effectively borrowed are used responsibly.

There is also some risk that the federal government will one day be called in to shore up an ailing pension fund, should a state or large municipality default on its bonds and cause a panic in the financial markets. The political impetus for such a bailout is likely to be strong and come from corporate as well as union interests. It is not clear that the federal government can credibly promise not to bail out states or cities that fail.

One key lesson of the financial crisis of 2008 is that entities that are “too big to fail” cannot be trusted to regulate themselves. Municipal and state governments have strong incentives to avoid insolvency—but the prospect of a federal bailout weakens them. In light of the moral hazard that is created by what such governments may assume to be an implicit guarantee of their pension obligations, tougher reporting requirements

enforced by the federal government would seem to be a very mild and very prudent form of coercion.

### *Current Legislation*

Congress is considering pushing states to adopt at least part of this transparency agenda. The Public Employee Pension Transparency Act, sponsored by U.S. Rep. Devin Nunes (R-Calif.), is a good first step. It would, roughly speaking, require state and local pension funds and OPEB plans to adopt this report's approach to the setting of discount rates. The Nunes

bill would also go much further than this report by requiring pension funds to issue twenty-year projections of expected employer contributions.

Governments could opt out of the requirements but then would be unable to issue tax-exempt bonds. Shrewdly, the legislation ties federal subsidy of borrowing to sound financial disclosure practices without directly obligating states to adopt federal standards. Such an approach should be extended to the other transparency proposals made in this paper. Honest reporting and farsighted budgeting and policymaking depend on their adoption as well.

## ENDNOTES

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3. Estimates of total state and local unfunded OPEB liabilities have ranged from \$1 trillion to \$1.5 trillion. The \$1 trillion estimate was first reported in a 2005 *New York Times* article ("The Next Retirement Time Bomb," Dec. 11, 2005). In 2006, a Cato Institute analysis put the figure at \$1.4 trillion (Chris Edwards and Jagadeesh Gokhale, "Unfunded State and Local Health Costs: \$1.4 Trillion," *Cato Tax and Budget Bulletin*, No. 40.) In a 2007 research note, Credit Suisse estimated the total at \$1.5 trillion ("You Dropped a Bomb on Me, GASB," *Equity Research, Accounting & Tax Note*, March 22, 2007).
4. "State Budgets: The Day of Reckoning." *60 Minutes*, CBS. December 19, 2010. Available at: <http://www.cbsnews.com/stories/2010/12/19/60minutes/main7166220.shtml>.
5. Many states are currently considering reforms that would reduce the cost to taxpayers of pension benefits, including less generous benefit formulas for new or existing workers, higher retirement ages, and higher employee contributions to pension funds. More radically, Utah will move most new workers to a defined-contribution retirement plan or a sharply modified defined-benefit plan starting in July 2011. Michigan and Alaska already implemented reforms moving many workers to defined-contribution plans in 1997 and 2006, respectively.
6. This discussion of discount rate selection is adapted from Josh Barro and Stuart Buck, "Underfunded Teacher Pension Plans: It's Worse Than You Think," *Manhattan Institute Civic Report* 61, April 2010.
7. Testimony before the Joint Economic Committee of Barbara D. Bovbjerg, Director, Education, Workforce, and Income Security, U.S. Government Accounting Office, July 10, 2008, p. 7. Available at: <http://www.gao.gov/new.items/d08983t.pdf>
8. Robert Novy-Marx and Joshua Rauh, "The Crisis in Local Government Pensions in the United States" (October 2010), p. 2.
9. Brown, Jeffrey R., and David W. Wilcox. 2009. "Discounting State and Local Pension Liabilities." Paper submitted to AEA, session "Pensions and Health Care: Fiscal Challenges for State and Local Governments," p. 8.

10. It should be noted that private pension accounting is not exactly in accordance with MVL either, as an Aa bond rating is used for all firms, regardless of the firm's own credit quality. A firm whose credit is severely impaired—for example, with a credit rating of B—is reasonably likely to end up defaulting on its bond and pension obligations. However, it cannot use this greater probability of default to write down the amount of its pension obligation, as MVL would imply.
11. Andrew Biggs, "The Market Value of Public-Sector Pension Deficits." American Enterprise Institute, April 2010  
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14. "New York's Exploding Pension Costs." E.J. McMahon and Josh Barro. Empire Center for New York State Policy, December 2010. Available at: <http://www.empirecenter.org/Special-Reports/2010/12/pensionexplosion120710.cfm>
15. This estimate takes into account stock-market performance through June 30, 2010; strong performance since then would reduce this projected contribution rate, but not by more than a percentage point or two—assuming that NYSTRS hits its 8 percent targeted investment return from this point forward.
16. The aggregate funding method, used by some pension plans to determine contribution rates, does not explicitly separate the calculation of normal cost and amortization cost. However, these two factors constitute the "aggregate funding gap" calculated under that method.
17. "Public Employees, Still Overpaid." Andrew Biggs, The American, October 2010. Available at: <http://www.american.com/archive/2010/october/government-employees-still-overpaid>
18. Ibid.







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