

U.S. Public Pensions At a Crossroad: Which Way Forward?

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Introduction

The objective of this paper is to provide a balanced discussion of the merits of current actuarial methodologies for U.S. Public Defined Benefit Pension Plans in light of a recent wave of global pension reform. This topic is particularly relevant as the Pension Protection Act of 2006 and FASB/IAS pension reform have required many private sector plans to move toward a market-based funding and accounting system.

This paper will:

- Provide an overview of public and private pension plans
- Review current public pension plan management
- Summarize criticisms of current public plan actuarial methods
- Provide a defense for the current public plan methods
- Preview one possible market-based public plan system
- Conclude with a prediction of what the future may hold

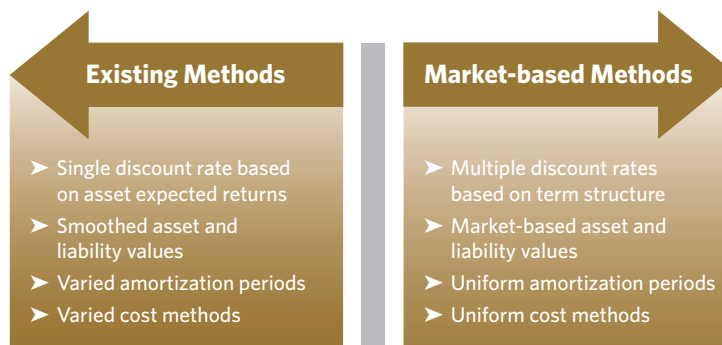
The Crossroad Defined

Will U.S. Public Pensions continue using traditional actuarial practices or move towards a market-based system?

Before we address this question, it is important to highlight key differences between governments and corporations:

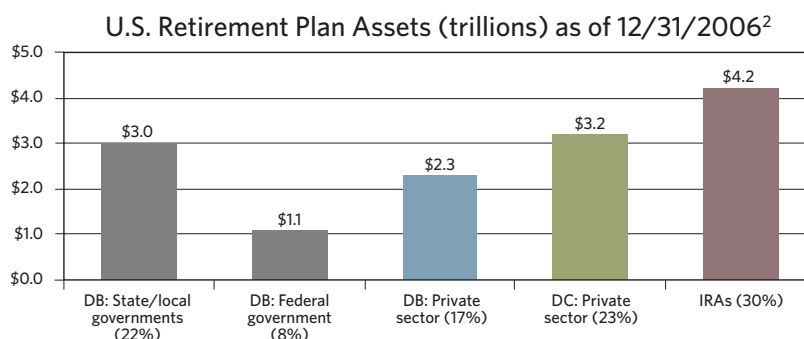
- Governments exist in perpetuity
- Governments are less likely to wind up in bankruptcy
- Most governments have an “unlimited” taxing ability

Do these differences support the continued use of existing traditional actuarial funding and accounting methodologies?



An Overview of U.S. Retirement Systems

Although the prevalence of defined benefit (DB) pension plans has been decreasing in the U.S. over the past quarter-century, public and private DB assets still represent 47% of total retirement assets. Defined benefit plans account for \$6.4 trillion of the \$13.8 trillion in U.S. Retirement Plan Assets.



An Overview of U.S. Public and Private Defined Benefit Pensions

| Comparison Item | Public Defined Benefit Pensions | Private Defined Benefit Pensions |
|---|--|---|
| Description | Pension plans sponsored by: federal, state, county, and municipal governments; school districts; certain other special-purpose entities | Any pension plan that files an IRS / DOL / PBGC Form 5500 (or equivalent) with the Internal Revenue Service in accordance with ERISA |
| Number of plans | Approximately 2,700 plans ¹ | Approximately 48,000 plans ¹ |
| Participants | Approximately 27 million ¹ | Approximately 42 million ¹ |
| Assets | Approximately \$4.1 trillion ² | Approximately \$2.3 trillion ² |
| Percentage of workers covered by DB plan only | 80% for state and local governments ³ | 10% for private-sector ³ |
| Representative benefit | 2% x final average pay x service ³ | 1.5% x final average pay x service ³ |
| Benefit protection | Often constitutionally guaranteed (state-by-state basis) | Accrued benefits guaranteed; PBGC protects benefits up to certain level |
| Cost of living adjustments | Common | Uncommon |
| Participant contributions | Typical | Not typical |
| Participant social security coverage | For state and local plans, coverage is state-specific (72% coverage ³) | Virtually all employees are covered; coverage percentage is 98% ³ |
| Governance | Governed by state constitutional, statutory, and case law; exempt from many requirements of ERISA | Regulated at the federal level: U.S. Department of Treasury (under IRC), U.S. Department of Labor (under ERISA) |
| Plan administration | For state and local plans, a board of trustees establishes an overall policy: which may include adopting actuarial assumptions, setting financial and reporting procedures, and setting an investment policy. Financial reporting based on GAS accounting rules. | Trustees typically fund in accordance with the Pension Protection Act of 2006; plan financial and reporting typically based on FAS/IAS accounting procedures; trustees typically set an investment policy |

Sources:

1. Employee Benefit Research Institute, *Databook on Employee Benefits*, 2007

2. Federal Reserve, *Flow of Funds Accounts of the United States*, 2007

3. Center for State & Local Government Excellence, *State and Local Pensions Are Different From Private Plans*, 2007

Public Plan Defined Benefit Management

Funding

Given the long-term nature and security of public pensions, plan management is generally focused on long-term cost, not short-term market-related solvency. Many practitioners take the view that long-term cost is minimized if investment earnings are maximized thus reducing contributions while covering future benefit payments and plan expense.

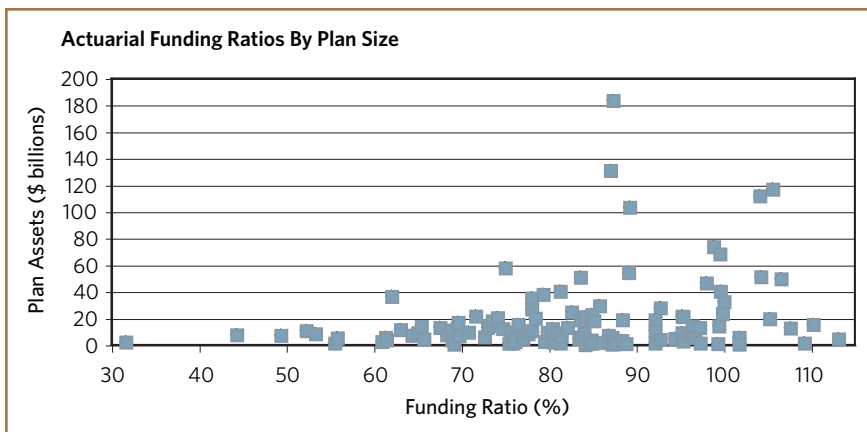
The most common cost method used for public plans is **Entry Age Normal (EAN)**.

Cost methods allocate cost for pension plans over different periods of time and are used to determine the plan's *Normal Cost (NC)*, which is a measure of the present value of benefits accrued in a given year. Under EAN, the normal cost is calculated to produce a level pattern of cost over an employee's career, which is a desirable characteristic for public plan policymakers seeking stable annual pension contributions.

The *Actuarial Accrued Liability (AAL)* is the accumulation of prior normal costs, with adjustments for interest and salary increases. The AAL reflects the present value of benefits for current retirees and approximates the value of accrued benefits for active employees. **The discount rate used to calculate AAL is based on the long term expected return of the plan assets, often 7 to 9%.**

The *Actuarial Value of Assets (AVA)* is the primary asset value measure. The AVA is based on various market values over time but smoothed to dampen volatility. **Smoothing periods are typically between three to five years.**

The actuarial funding ratio, the most common metric for evaluating the health of a pension plan, is the AVA divided by AAL. Current public plan actuarial funding ratios range from 30% to 120%.

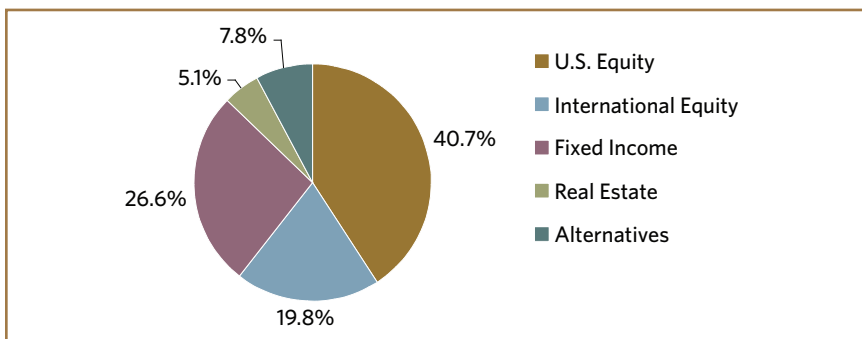


Source: Data from the Public Fund Survey Website, October 2007

The *Annual Requirement Contribution (ARC)* is the current year's NC plus an amortization of the actuarial deficit. If the plan is in a surplus position, the plan may not be required to make contributions. **The amortization period for actuarial deficits is typically quite long, usually between 30 to 40 years.**

Investments

The most common interpretation of fiduciary investment standards is based on the *Prudent Investor Rule*. Trustees must diversify, analyze risk at the portfolio level, examine performance, and monitor fees. The average asset allocation for public pension plans is **60% equity, 27% fixed income, 5% real estate, and 8% alternatives** according to a recent survey of the largest 1,000 public defined benefit plans:



Source: Pensions & Investments, January 21, 2008

Accounting

The Governmental Accounting Standards Board (GASB) oversees reporting for state and local governments.

GASB 25 requires the disclosure of market and actuarial asset values, actuarial liabilities, funding progress, contribution requirements, among other items.

GASB 27 requires plans to disclose their *Annual Pension Cost (APC)*. The APC equals the funding ARC plus an amortization for past under- or overcontributions, if applicable. In the event of past under- or overcontributions, the employer must establish a *Net Pension Obligation (NPO)*. A liability NPO balance must be placed in a general long-term debt account group. An asset NPO balance must be disclosed but isn't recognized on the financial statements.

“We can’t begin to improve the fiscal standing of public pension funds until we can accurately assess their financial health”

Source: New York Times, Ex-Chief of S.E.C. Arthur Levitt Jr., says *Pension Funds in Danger*, October 31, 2007

Criticisms of Public Plan Actuarial Methods

1. Discount Rates Are Not Market-Related

Many financial economists believe that public pension plan liabilities should be valued the same way financial markets value the debt of governments. They see no difference between the promise to pay a pension benefit and the promise to pay the coupon and principal payments of a government-issued bond. These advocates believe that the value of the pension promises should be independent of how the assets backing the promises are invested.

Market-based advocates believe that the discount rate methodology:

- Should not be based on the expected return of plan assets
- Should be based on a yield curve and not a single rate; the yield curve would provide a unique rate for each expected payment
- Should reflect the sponsor’s ability to pay the promised benefit (the government is not expected to default, similar to coupon or principal payments on government bonds)

Market-based advocates believe that using a single discount rate based on the expected return of plan assets (e.g., 8%):

- Assumes equity risk premium before it is earned
- Understates liability values by 20 to 40%
- Fails to communicate the value of benefit promises to taxpayers
- Inadvertently shifts burden to pay on future generations
- Provides an incentive to invest in risky assets since the increased expected return would lower actuarial liabilities
- May encourage policy makers to increase benefits at a time when it may not be prudent to do so

2. Smoothing Masks Transparency

Market-based advocates claim that smoothing mechanisms hinder plan management by distorting the economic reality of asset and liability values. They believe that market-based measures of asset and liability values are more understandable and less subjective.

3. Varied Cost Methods Are Confusing

Certain market-based advocates believe the use of many different types of actuarial cost methods (e.g., Entry Age Normal, Aggregate, Unit Credit) is confusing, subjective, and may create unintended intergenerational issues. For example, most public pension plans use the Entry Age Normal cost method while most corporate plans use the Projected Unit Credit cost method. The use of different cost methods makes comparison challenging across plans. They feel taxpayers and other stakeholders may be better served by using one uniform cost method for all public pension plans.

Advocates of the current system believe government sponsors should be focused on funding future pension commitments, not pricing and funding market-based values

Defending Current Public Plan Actuarial Methods

1. Public Plans are Permanent

Unlike corporate pension plans, public plans are long-term ongoing entities backed by the full faith and credit of the government sponsor. Advocates of the current system are quick to point out that governments can always raise taxes or print more money to ensure that the benefit payments are made. Sponsors of corporate pension plans always face the threat of bankruptcy, which is one of the reasons stakeholders such as the Pension Benefit Guarantee Company (PBGC) are interested in a market-based solvency liability measure. Corporate pension plan sponsors are also free to freeze and/or terminate pension plans essentially at will and with little or no repercussion.

2. Market-based Measures are Irrelevant

Advocates of the current system believe government sponsors should be focused on funding future pension commitments, not pricing and funding market-based values, since there is virtually no solvency risk to measure.

These advocates also believe that the development of a market liability would be challenging or even misleading for the following reasons:

- Certain actuarial cost methods do not define an accrued liability
- Estimated future benefit payments are not known with certainty due to uncertainty of actuarial assumptions (e.g., mortality, future salary increases, future cost of living increases, withdrawal and retirement assumptions)
- Lack of matching assets for pension commitment (e.g., 50 year inflation-indexed bond)

3. Consequences of a Market Approach

Advocates of the current system believe the disclosure of a market-based liability measure could trigger an unfavorable scenario for defined benefit public pension plan participants.

If governments were to disclose the plan's market liability value, stakeholders would notice a 20-40% increase in liability values. The media would highlight funding significant shortfalls and lawmakers would be castigated. This negative publicity would force policy makers into action, which might include freezing future benefit accruals for those in the plan, and replacing the pension plan with a Defined Contribution (DC) plan.

Similar to the trend seen with private plans, a market approach for public plans could lead to millions of government employees facing new risks associated with DC plans (i.e. risk of outliving your resources, investment risk), leaving their previously secured retirement to chance and increasing the retirement burden to society.

A Market-Based Preview?

Can we develop a system that delivers the funding predictability desired by policymakers and provides the market-based components demanded by reform advocates, without alarming policymakers and plan participants?

Below is a peek at what a market-based system might look like.

Measurement

Asset Measurement

- Assets reflected at **market value** (no smoothing) as of valuation date

Actuarial Cost Method

- A **uniform actuarial cost method** would be used for every public pension plan

Two Liability Measures

1. **Market Liability:** A new liability measure. The discount rates would be based on a treasury spot curve, which represents a series of market-based unique rates for different points in time. This curve reflects the risk-free nature of the underlying bonds which is similar to the risk-free nature of the government pension promise.
2. **Ongoing Liability:** Similar to the existing liability measure. The discount rate would be based on the expected return of the plan assets. This measure enables the sponsors to continue their focus on long-term plan management.

Funding

Traditional actuarial valuations are based on the actuary's "best guess" of future events such as investment return, life expectancy, and participant behaviors. This "best guess" is an average, so it will either be too high or too low half of the time.

Authorities need to look at a range of possibilities and their likelihood, not simply at an expected return-based forecast. An annual **probabilistic valuation** would enable the use of the market value of assets and market value of liabilities, without increasing the volatility of planned contributions. This approach is much more flexible, as it allows policy makers to determine the appropriate funding target and confidence level for a given time horizon for their plan. When given the choice, policy makers would likely establish stable contribution budgets

that would provide a 75% chance that assets would cover the pension promises over the long-term, as opposed to 50% associated with today's "best guess" valuation system. This would signal a shift towards a principles-based system, which would encourage more accountability and responsibility than the traditional system.

Investments

The investment strategy would be determined in conjunction with the planned contribution schedule using the results of the probabilistic valuation.

The optimal investment strategy will depend on the: long-term market funding target, long-term ongoing funding target, sponsor's ability (e.g., tax base, demographics) to take risk, current economic conditions, and other factors. A violation of the optimal funding target would provide a signal to actuaries and policymakers that contribution levels must increase in the next contribution budget cycle.

A government with a higher ability to take risk will likely have a higher allocation to equities. This government would likely have a lower market funding target and rely on expected returns (i.e. higher equity allocation) to "out-perform" the liabilities (e.g. to increase the funded status) over time to fill the funding gap. For example:

| Sample Public Plan | Ability to Take Risk | Equity Allocation | Market Funding Target Ratio | Ongoing Funding Target Ratio |
|--------------------|----------------------|-------------------|-----------------------------|------------------------------|
| Plan A | High | High | 70% | 100% |
| Plan B | Low | Low | 90% | 100% |

Plan Design

Policy makers would **specify in advance what ongoing and market funding ratio thresholds would be required to increase benefits.**

Accounting

Governments would **reflect the market value of assets and the market liability** on their balance sheet.

Disclosure items would include:

- Actual expected benefit payments for all years so any stakeholder could calculate the liability value most relevant to their needs
- Optimal funding targets, investment strategy, funding strategy, and risk tolerance discussion
- Material actuarial assumptions and methods in probabilistic actuarial valuation
- Plan design benefit increase triggers (see Plan Design section)

Public Relations

A significant effort would be required to **educate the media and stakeholders** that low market funded status ratios may not indicate that their plan is in poor condition.

Emphasis should be placed on the ongoing funding ratio and policymakers should exercise caution when communicating the market funded ratio.

What Does the Future Hold?

We know that all defined benefit plans face an unclear future. We live in a world where frequency of job changes and portability of assets have become the rule. Regulatory changes have led corporations to seek accounting and cash predictability; governments face increasing budgetary challenges, including retiree costs, that place pressure on fiscal health and service levels. Transparency is the new paradigm in the corporate pension world, and this increased transparency has permanently changed the outlook for, and management of, corporate defined benefit plans.

To date, public pension plans have avoided the changes to valuation, accounting and funding experienced by their corporate cousins. But it is difficult to imagine public plans avoiding some level of change over the next 5-10 years. While the exact change is unclear, signs point to a number of key areas:

1. Market-Based Valuation of Liabilities

While discount rates based on the expected return on assets are intuitive, use of market-based discount methodologies are likely. These methodologies may simply be a footnote and/or ancillary calculation independent of funding rules, but it will be difficult for public plans to avoid the introduction of new valuation methods given the impact of the PPA and FAS 158, and a trend toward market-based valuation methods.

2. Changes to Funding Policies

One could argue that pension reform in the corporate world was motivated by smoothing-driven funding holidays and a lack of discipline, resulting in severe under funding of plans that ultimately found their way to the PBGC. We have learned that prudent defined benefit plan management mandates a commitment to consistent plan funding, regardless of portfolio returns.

3. Revisiting Benefit Program Structure

While the benefits of public plans are often constitutionally guaranteed, and therefore protected from changes in benefit levels, it is likely that many public plans will face the question of whether the ongoing provision of pension benefits is in the best financial interest of the government. We believe that defined benefit programs are core to public employee benefit arrangements, but those public plans that are severely under funded will (and likely already have) begin considering alternative benefit options.



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