

Financial Economics and MVLs: Should public retirement systems disclose the market values of their liabilities?

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Introductory remarks

- Why should you care about this issue?
 - It is perhaps the hottest topic of the day in the public retirement systems area.
- Who are we and why are we here?
 - Bill (Pension accounting guru): favors MVL disclosure
 - Dave (Actuary to many public retirement systems): opposes MVL disclosure
- Who do we speak for?
 - Ourselves – only! (although we both know lots of people who agree with us)
 - The views presented are ours, and not those of our employer, the actuarial organizations we belong to, or the sponsoring organization of this conference.

What we agree about

- Public pension plans are promises by public entities to pay pensions after retirement to their employees
- Pension benefits accrue over the working lifetime of the employees
- The cost of providing pensions is part of the wage cost of the public entity
- Pension obligations are a form of debt
 - The borrower is the public entity
 - The lenders are the employees who are receiving a future promise in lieu of current wages

What we don't agree about

- How to value the pension obligation at any point in time
 - Note that we don't necessarily disagree on issues of intergenerational equity, investment selection and the ideal size of the fund
- The investment and funding issues are ultimately more important, but today we will address only the valuation issue

What IS the Market Value of Liabilities (MVL)?

- Really the “Fair Value” since the market is thin or nonexistent
- The present value of obligations accrued to date and likely to be paid in the future.
 - Best estimates of future demographic experience
 - No allowance for future salary increases, future accruals
 - Discount rate at close to risk-free rate.

Who needs to know the MVL?

- Users of financial statements
 - Taxpayers
 - Lenders
 - Legislators and Executive Branch
- Employers and employees concerned with total wages
 - The MVL is NOT necessarily used to calculate contributions to the pension fund

How do you measure the MVL?

- Obviously large, obviously complicated
- Start with something simpler
- Let's say the state of East Devon is to pay a group of employees \$1 million 5 years from now
 - Borrowing rate is 5%
 - Risk-free rate is 4%
- We can analogize to publicly traded debt

How do you measure the MVL?

- Backed by the full faith and credit of East Devon.
- No sinking fund.
- Discounted at 5%, \$1 M due in 5 years amounts to \$784K.
- Discounted at 4%, \$1 M due in 4 years amounts to \$822K.
- Considering the constitutional protections, a good case for the higher figure.
- Is there any reason to value it at less than 784K?

How do you measure the MVL?

- What if East Devon sets aside a sinking fund to systematically accumulate the \$1 M needed in 5 years? Would that mean increasing or decreasing the discount rate?
- If this were other than pension debt, we would expect to lower the discount rate, perhaps to 4.5%?
- Why? The debt is more secure than ever and bondholders could be expected to accept a lower interest rate because of the greater security.
- Would it make a difference if the sinking fund were invested in equities? Maybe, but not much. Perhaps the debt would trade at 4.75%.

How do you measure the MVL?

- BUT current pension accounting says to discount this debt at the expected rate of return on the assets, 8% say, for a debt of \$681 K.
- If only we could apply the same principles to all our debt!!! We borrow at 5% receiving \$784K in cash and book a liability of \$681K for a balance sheet gain of \$103K.

“The quickest way to double your money is to fold it in half and put it back in your pocket.”

– Zen saying

How about the counterparty?

- How does an employee, say Charles Schmidlap, value the obligation? Assuming he is well-advised.
- He regards the obligation as constitutionally protected and worth at least what a bond would sell for on the open market. He might well treat the obligation as risk-free (i.e., 4%).
- Conclusion, Mr. Schmidlap would value his asset at somewhere between 4 and 5%.
- If East Devon charges him less, it's giving something away for nothing.

How do you use the MVL?

- Merely knowing the MVL isn't terribly useful when looking at a financial statement
- More important is the funded ratio – the ratio of the market value of assets to the MVL
- And more important still is the trend of funded ratios over time
- For example, deteriorating funded ratios suggest reexamination of benefit design, funding policy, investment policy
- It's the first step, not the last, in assessing the health of the pension system

Public Pension Underfunding

- Some estimates at the end of 2005
 - Outstanding state bonds \$798B
 - Unfunded pensions (bwg rate) 862B
 - Unfunded pensions (riskless rate) 1,900B
 - Other postretirement obligations 380B
- These numbers are substantially greater than the 2005 balance sheet numbers
- Unchecked but reasonable

Source is Novy-Marx and Rauh, *The Intergenerational Transfer of Public Pension Promises*, May 2008 (available on web from SSRN)

How underpricing plays out over time

- Systematic underpricing
 - Increases the risk of future negatives as
 - Increasing and unexpected demands on future tax revenues
 - Declining attractiveness of state or municipality as a place to live and do business
 - Increased costs to borrow
 - Provides employees with unduly liberal benefits, thereby increasing wage costs
 - Encourages financial gimmickry such as pension obligation bonds

The other side responds: Just Say NO to MVL!

- Several problems exist with use of the MVL, computed as described here, to measure funding progress of a public retirement system
 - Issues with measurement (present value of accrued benefits)
 - Issues with interest rate used (risk-free rate)
 - Issues with misuse/misinterpretation of information presented.

Problems with the liability measurement (PVAB)

- PVAB = present value of **accrued** benefits (i.e., benefits earned to date).
- Ignores effect on benefits for service rendered to measurement date of future salary increases.
- Importantly, all but a tiny minority of statewide retirement systems in the US base benefits on final average pay*, and funding methods used by these systems take future pay increases into account – as well they should.

*Source: Wisconsin Legislative Council, “2006 Comparative Study of Major Public Employee Retirement Systems”

Problems with the liability measurement (PVAB)

- The PVAB is potentially meaningful as a measurement of the liabilities of private-sector plans, for they often do terminate, and when they do it is necessary to purchase accrued benefits for remaining participants from an insurer.
- But public plans do not terminate in this manner
 - Sponsoring entity exists in perpetuity; does not go out of business.
 - Ability of governments to fulfill financial obligations is ultimately based on power of taxation, which never ends.

Problems with the interest assumption used for MVL

- For reasons Bill stated earlier, adherents of financial economics argue that liabilities should be valued at current yields on low- or no-risk bonds.
- However, this is based on analogies of pensions to bonds that may not apply for every purpose.
 - If states had **no** capacity to take risks in pursuit of higher long-term returns on pension assets, it would be appropriate . . . but that is not the case.
 - There is no market for buying and selling of pensions, so we don't know that the market would really value them using yields on low-risk bonds.
 - Pension-like liabilities (e.g., structured settlements) that are bought and sold are discounted at rates that are substantially higher than those on Treasuries or similar debt instruments.

Problems with the interest assumption used for MVL

- Here, too, differences between private- and public-sector environments are very important:
 - Private-sector plans are subject to risk of termination, upon which benefits will be purchased from an insurer, who will use rates on low-risk bonds to establish settlement cost.
 - Public plans, on the other hand, do not terminate with annuity purchases from insurers.
 - It is not at all inappropriate for a public plan to measure its funding progress on the basis of a realistic estimate of the return on the assets that will be held to cover them.

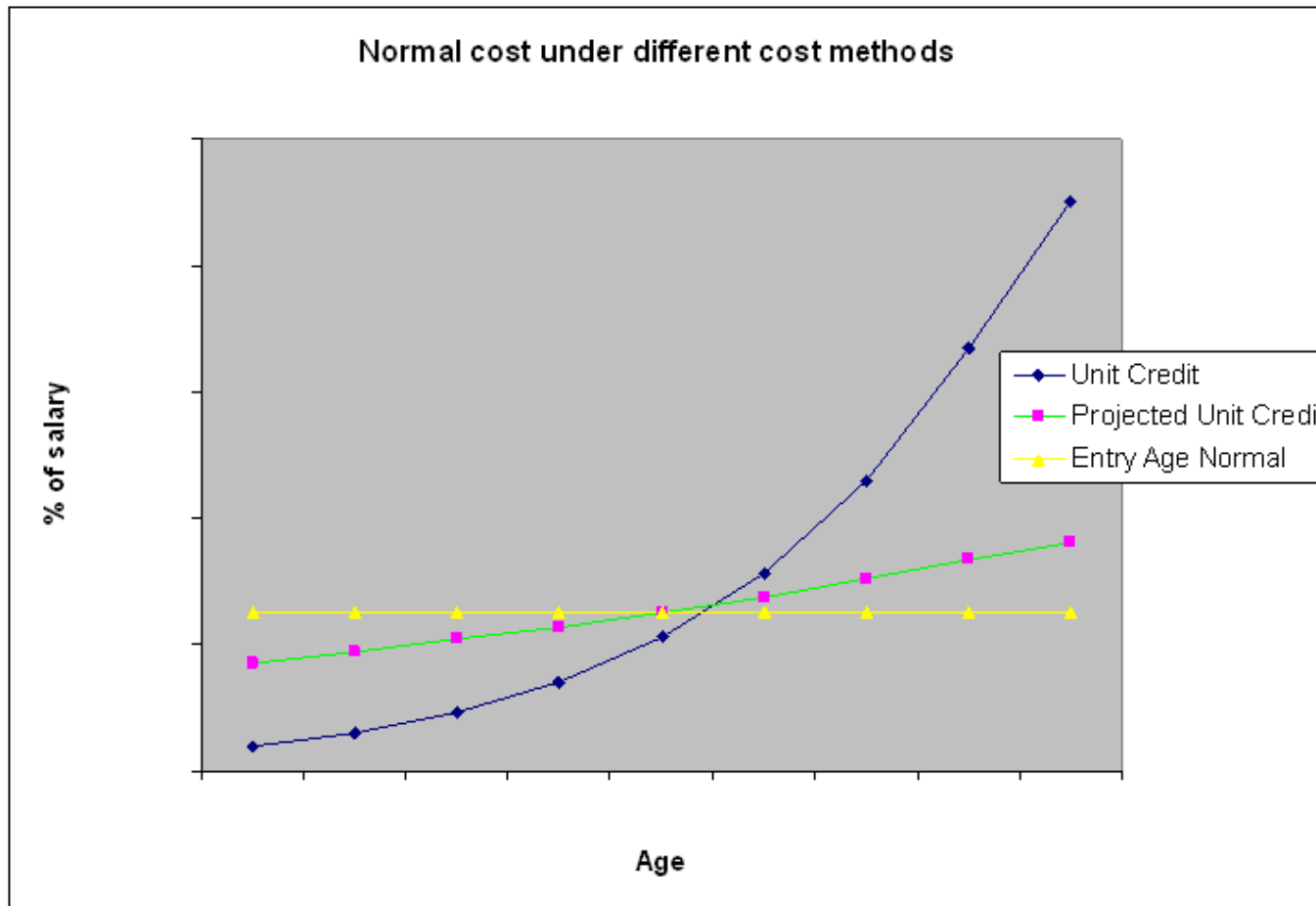
Possible misuse/misinterpretation of MVL

- Fundamental issue with MVL disclosure is that it appears to be a solution in search of a problem to solve.
 - Pension plan insolvency is not a problem in the public sector.
 - Even if it were, it is not clear how disclosing MVLs would alleviate or prevent it.
 - Health of large public retirement systems in US – measured on reasonable assumptions and under current GASB standards – is good:
 - 2006 Wisconsin Legislative Council survey: 85 statewide retirement systems had an average funded ratio of 82% based on interest rate assumptions that averaged just under 8%.
 - NASRA letter to ASB: aggregate funded percentage of public plans in the US is about 86%.

Possible misuse/misinterpretation of MVL

- A particular danger of requiring MVL disclosures is that it would lead to funding determined on the same basis.
 - Concern over funding/accounting mismatch led to replacement of GASB 5 with GASB 25/27 in the 1990s.
 - Extreme difference between accrued benefit (unit credit) cost method and those used by nearly all public retirement systems makes this a particularly disturbing possibility.
- Through its failure to anticipate the effect of future pay increases on liabilities for pay-based pensions, unit credit leads to an exponentially increasing pattern of costs over a participant's career (as shown on next slide).

Possible misuse/misinterpretation of MVL



Possible misuse/misinterpretation of MVL

- It is important to note that using MVL to assess a pay-based plan's funded status can lead to understatement as well as overstatement relative to liability measures that incorporate salary projection and are based on long-term expected rates of return.
- Even if MVL were coupled with existing GASB disclosures, the addition of this metric would cloud the picture that public retirement systems present to the world of their funding progress and make it harder to evaluate benefit design and funding decisions appropriately.

Who do you need to watch/talk to if you're concerned?

- GASB
 - On record as saying that “governmental accounting and financial reporting is – and should be – different.” (2006 white paper)
 - But, is presently engaged in a project “to consider the possibility of improvements to the existing standards of accounting and financial reporting“ for pension and other post-retirement benefits.
 - Invitation to Comment to be issued next year.

Who do you need to watch/talk to if you're concerned?

- Actuarial profession
 - ASOPs
 - Important for actuarial work in which the actuary is not constrained by statutes, regulations, and other legally binding authority.
 - Codify “generally accepted actuarial practice.”
 - Not possible to say at this point that financial economics represents generally accepted actuarial practice – but strong influence of financial economics on rules now applicable to private sector may change that.
 - Financial economics advocates: profession should not wait until financial economics is generally accepted (Open Letter to Actuarial Standards Board, 2004).

Who do you need to watch/talk to if you're concerned?

- Local authorities: could decide to adopt rules requiring MVL disclosure.
 - Financial-economics-based federal standards now applicable to private plans will surely attract attention.
 - May strengthen the arguments of those who want to move from DB to DC coverage in the public sector.
 - Important to understand the arguments for and against financial economics in addressing proposals for its use in the public sector.

A final note from the MVL side

- The typical investment strategies [of state pension funds] in conjunction with accounting rules makes the pension situation look much better than it actually is...pension funds could be shown to be in substantial surplus if only the government entities would invest pension assets in a ten-beta levered S&P500 Exchange Traded Fund (ETF). In that case, the “surplus” that would appear to emerge would justify withdrawals from public pension funds sufficient to pay down all outstanding state bonds and pay a \$5,000 dividend to every American citizen.” -- Novy-Marx and Rauh, *op. cit.*

Open Discussion