



Pension Reform in Montana

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Assessing Montana's Pension Funding Shortfall

As the Montana legislature considers how to improve the funding status of its defined benefit plans, it is important that any changes to the pension system be based on an accurate accounting of the value of the benefits due to employees.

The current method used to value the state's pension liabilities is based on an approach contained in Government Accounting Standards Board (GASB) guidance 25 and Actuarial Standards of Practice (ASOP) 27 that obscures the full value of pension liabilities. The result is that US state and local pension plans face bigger funding gaps than is recognized. Under government accounting methods, US state plans face a total unfunded liability of \$842 billion; using the market valuation approach recommended by economists, this figure is closer to \$4.6 trillion.¹

According to the FY 2012 Actuarial Valuation reports, Montana's pension plans have accumulated a total unfunded liability of \$2.34 billion. The average funding ratio for Montana's eight plans is 75.2 percent. Under market-valuation, Montana's total unfunded liability increases to \$11 billion and the average funding level drops to 33.9 percent.²

¹ Andrew Biggs, "Public Sector Pensions: How Well Funded Are They, Really?" *State Budget Solutions*, July 2012, 1.

² Author's calculations taken from Montana Public Employees Retirement Board, Comprehensive Annual Financial Report for FY 2011, <http://mpera.mt.gov/docs/2011CAFR.pdf>.

The reason for this large discrepancy between government accounting methods and the market valuation approach is due to a powerful and basic assumption that guides the measurement of plan benefits: the selection of the discount rate used to calculate the present value of the pension liability.

Selecting a Discount Rate to Value Public Pension Liabilities

To determine the funding level of a pension plan requires comparing plan assets with plan liabilities (i.e., the benefits owed to employees). The plan sponsor is trying to determine if current assets are sufficient to cover the benefits promised to employees upon their retirement. To make this comparison between assets and liabilities requires converting the future value of plan benefits into a present value by “backing out” the interest earned on the benefit each year. The process of backing out those interest payments is known as “discounting,” or reverse compounding. A rate of interest must be selected to make this calculation. According to economic theory, the selection of a discount rate should be guided by considering the risk and timing of plan payments.

A public sector pension represents a promise on the part of the government to pay an employee a certain sum upon retirement, on a monthly basis, until their death, based on the employee’s years of service, a measure of final salary, a benefit multiplier, and age.

These employees’ benefits constitute a liability to the government—a stream of future cash flows that the government as employer must pay to its employees, much like a bond. The risk that must be considered is the likelihood that the payment will be made to retirees.

The pension benefit is risk-free, or guaranteed, from the vantage point of the worker. It is a near-certainty that the government will not opt to default on this payment. In Montana, accrued benefits are legally protected under the Contract Clause.³ Given this level of protection, the best match for a public sector pension is the yield of 15-year Treasury bonds. Fifteen years reflects the average duration of a plan with a mix of active and retired members.⁴

When Montana’s pension valuation reports were published, the yield on 15-year Treasury bonds was 2.03 percent. Montana’s pension plan liabilities are currently valued using a 7.75 percent discount rate, which is also the rate of return the plan expects to achieve on its investments. As Table 1 and Table 2 show, changing the discount rate has a powerful effect on the measurement of the liability. A one-percentage difference in the discount rate causes the liability to change by between 15 to 20 percent. Dropping the discount rate from 7.75 percent to 2.03 percent increases the present value of the liability dramatically and also increases the size of the contributions needed today to fund future benefits.

³ “Examination of Pension Funding Challenges Through Legal, Policy, Funding and Fiscal Lenses,” Montana Legislative Fiscal Division and Legislative Services Division, June 12, 2012, http://leg.mt.gov/content/Publications/fiscal/interim/2012_financemty_June/Examination%20of%20Pension%20Challenges.pdf.

⁴ See Ronald J. Ryan and Frank J. Fabozzi, “Rethinking Pension Liabilities and Asset Allocation,” *Journal of Portfolio Management* 28, no. 4 (Summer 2002).

Table 1 shows the size of the unfunded liability and funding ratios for each of Montana’s eight defined benefit plans under current accounting rules. The most well-funded plan is the Judiciary Retirement System (JRS), which is operating with a surplus of \$17 million and reports a funding ratio of 137 percent. The least well-funded plan is the Municipal Police Officers Retirement System (MPORS), with an unfunded liability of \$193 million and a funding ratio of 55 percent.

Changing the discount rate to the yield on 15-year Treasury bonds increases the size of the unfunded liability and reveals that plans are more deeply underfunded than under current actuarial assumptions. The funding ratio of Montana’s least well-funded plan, MPORS, drops from 55 percent to 24 percent.

The dramatic difference in the size of the liability produced by market valuation has led some to argue that market valuation is simply an attempt to make public plans look bad. But this is simply not the case.

Choosing a discount rate to value a stream of future cash flows is not a matter of cherry-picking interest rates to arrive at an acceptable figure. Instead, the selection of the rate is guided by the principle of matching the guarantee and timing of benefit payments.

Accounting assumptions that are devised to deliberately lower (or increase) the size of the present value only serve to artificially suppress an underlying economic reality concerning the real value of these benefits. In other words, as economist M. Barton Waring has noted, “the economics will catch up with the accounting eventually.”⁵

Waring further notes in his recent book, *Pension Finance*, “Best practices for estimating a discount rate, which are well established in all fields except actuarial pension finance treat the discount rate as identical to the opportunity cost of capital—that is the market cost of borrowing money or using capital on a basis that reflects all fully—diversified, market-related risks.”⁶

GASB 25’s guidance effectively links together the expected performance of plan assets to the value of plan liabilities—an approach that violates economic theory as well as the practice of financial markets. Instead, assets and liabilities should be kept separate for valuation purposes.⁷ The issue of how to select a discount rate to value a stream of future payments is noncontroversial among economists. The University of Chicago’s IGM Economic Expert panel survey of academic economists found that 98 percent agreed that US state and local governments understate their pension obligations by selecting discount rates that are too high.⁸

⁵ M. Barton Waring, *Pension Finance: Putting the Risks and Costs of Defined Benefit Plans Back Under Your Control* (Hoboken: John Wiley & Sons, 2012).

⁶ Ibid.

⁷ For a discussion of pension liability valuation see, Robert Novy-Marx and Joshua Rauh, “Public Pension Promises: How Big Are They and What Are They Worth?” Also, Waring, *Pension Finance*.

⁸ See IGM Forum, “U.S. State Budgets,” October 1, 2012, http://www.igmchicago.org/igm-economic-experts-panel/poll-results?SurveyID=SV_87dlrIXQvZkFB1r.

The independence of plan assets and liabilities for the purpose of valuation is perhaps best explained by way of analogy. The value of a home mortgage is independent from the performance of the mortgage-holder's 401K plan. While a mortgage-holder may have a good year in their investments, this fact does not allow the debtor to change the underlying value of their mortgage and cut the monthly payment in half.

The practice of valuing pension liabilities based on expected asset returns has both helped to create and expose large funding gaps in plans due to the market crash in 2007. Plans are under pressure to increase annual contributions at a time when it is more difficult to do so.

GASB's New Guidance: GASB 67

In an effort to address the problem of linking the measurement of plan liabilities to the performance of plan assets, GASB has recently issued new guidance contained in GASB 67.⁹ The new guidance is solely for reporting and not funding purposes. GASB 67 suggests that when selecting a discount rate to value plan liabilities, actuaries may apply the expected rate of return on plan assets to the funded portion of plan liabilities. To value the unfunded portion of the liability, the actuary may use the index rate for a 20-year tax-exempt general obligation bond rated AA or higher.¹⁰ This rule seems to make intuitive sense. It suggests that liabilities backed by plan assets may be valued based on a higher-risk discount rate and those that are unfunded are to be valued more conservatively. However, GASB 67 fails to capture the true value of the funded portion of the liability. As with GASB 25, this new guidance rests on unsound logic and gives plans the appearance of robust funding levels based on expected asset returns.

The practical result of GASB 67 is poorly funded plans will show greater funding gaps in their annual reports, whereas plans that appear well-funded under GASB 25 will show a more modest decline in plan funding. The reason is simple arithmetic. Where unfunded liabilities are larger under GASB 25, the lower discount rate will be applied to a larger portion of the total liability, causing a greater proportion of the liability to increase in size.

Another problem that flows from the new guidance is that plan managers may be encouraged to take on greater levels of risk by pursuing higher asset returns to improve funding levels for reporting purposes. Montana's current asset portfolio does not appear to have made a dramatic swing toward higher-return/higher-risk investments. This is a good sign that Montana is not adopting a "double down on risk" approach to improve plan-funding metrics. To reduce the chance that investment decisions are influenced by the incentives contained in GASB 67,

⁹ GASB, "Financial Reporting for Pension Plans: An Amendment of GASB Statement No. 25," Statement No. 67 of the Government Accounting Standards Board, Government Accounting Standards Series No. 327-B, June 2012,

<http://www.gasb.org/cs/BlobServer?blobkey=id&blobwhere=1175824320579&blobheader=application%2Fpdf&blobcol=urldata&blobtable=MungoBlobs>.

¹⁰ Ibid, 19. Specifically, if the current and projected plan assets (with respect to current employees) would not be expected to meet all future plan benefits, then the benefits not covered by projected plan assets would be discounted by a yield or index rate for a 20-year tax-exempt general obligations bonds with an average rating AA/Aa or higher.

Montana's Pension Board should ask actuaries to value the plan's liabilities based on their market equivalent in timing and risk and not based on the returns expected on plan assets.

Market valuation of plan liabilities will give the Board an accurate assessment of the plan's true liability and enable policymakers to adequately address funding shortfalls.

As an example, the state of Florida requested that the actuarial firm it employs to perform a valuation of the Florida Retirement System liability perform an analysis based on changing the investment return assumption.¹¹ At minimum, this analysis requested by the FRS gives plan managers a picture of how sensitive the measurement of the plan's liability is to assumptions concerning the discount rate and how this affects contribution policy. It is important to note however, that the discount rate should not be cherry-picked to fit a particular fiscal scenario.

As Montana considers how to best stabilize its pension systems and provide the state's public workers with sustainable and reliable retirement benefits, the first step toward this goal should be a market-valuation of the plan's pension liabilities. Only then can lawmakers decide how to best steward workers' and taxpayers' resources and structure retirement benefits for its employees.

About the Author

Eileen Norcross is a senior research fellow at the Mercatus Center at George Mason University. Before joining Mercatus, Eileen was a Warren Brookes Fellow at the Competitive Enterprise Institute where she focused on trade and tax policies affecting the European Union and the United States. Previously, Eileen worked as a consultant for KPMG's transfer pricing division. Eileen holds a master's degree in economics and a bachelor's in economics and US history from Rutgers University. Her current research areas include economic development policy, urban economies, the US budget, and tax and fiscal policy.

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The ideas presented in this document do not represent official positions of the Mercatus Center or George Mason University.

¹¹ See <http://www.floridahasarighttoknow.com/docs/StatePensionActuaryLetter.pdf>.

APPENDIX: TABLES

Table 1: Montana's Defined Benefit Pension Plans as Reported¹²

Plan	Actuarial Value of Assets	Actuarial Value of Liabilities	Unfunded Liability	Funding Ratio
PERS	\$3,816,919,734	\$5,661,281,490	\$1,844,361,756	67%
JRS	\$63,194,986	\$46,189,947	\$(17,005,039)	137%
MPORS	\$234,025,065	\$427,257,330	\$193,232,265	55%
FURS	\$233,121,145	\$377,211,275	\$144,090,130	62%
GWPORS	\$97,691,102	\$128,926,514	\$31,235,514	76%
SRS	\$211,535,253	\$284,559,171	\$73,023,918	74%
HPORS	\$96,655,208	\$167,823,843	\$71,168,635	58%
VFCA	\$26,530,929	\$27,013,221	\$9,614,772	73%

Table 2: Montana's Defined Benefit Pension Plans on a Market Valuation Basis

	Actuarial Value of Assets	Actuarial Value of Liabilities	Unfunded Liability	Funding Ratio	Market Value of Liability	Market Value Unfunded Liability	Funding Ratio
PERS	\$3,816,919,734	\$5,661,281,490	\$1,844,361,756	67%	\$12,830,856,034	\$8,890,980,048	31%
JRS	\$63,194,986	\$46,189,947	\$(17,005,039)	137%	\$104,685,937	\$39,927,431	62%
MPORS	\$234,025,065	\$427,257,330	\$193,232,265	55%	\$968,345,648	\$729,709,195	24%
FURS	\$233,121,145	\$377,211,275	\$144,090,130	62%	\$854,920,140	\$617,266,981	28%
GWPORS	\$97,691,102	\$128,926,514	\$31,235,514	76%	\$292,201,959	\$192,566,927	34%
SRS	\$211,535,253	\$284,559,171	\$73,023,918	74%	\$644,931,322	\$428,265,718	34%
HPORS	\$96,655,208	\$167,823,843	\$71,168,635	58%	\$380,359,742	\$281,068,497	26%
VFCA	\$26,530,929	\$27,013,221	\$9,614,772	73.4%	\$81,921,432	\$54,908,211	33%

¹² Ibid, Comprehensive Annual Financial Report for FY 2011.