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Moody's Adjustments to U.S. State and Local Government Reported Pension Data

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On April 17, 2013, Moody's released its final adjustments to US State and Local Government Reported Pension Data. These changes have been finalized after the original Request for Comment ("RFC") released on July 2, 2012. In response to the RFC, PFM held multiple client webinars, developed an adjusted pension values calculator based on the proposed changes, and submitted a response to the proposed changes based on internal and client views and observations. The final criteria adopted by Moody's largely reflects the original RFC, and are expected to result in a significant increase of the unfunded pension liabilities as calculated by Moody's, and as compared to the amounts that are currently reported by the impacted issuers. As a result of the implementation of these changes, Moody's anticipates there will be no immediate rating actions for states, and less than 2% of local general obligations will be placed under review for potential downgrade. As of April 17, Moody's had placed 29 different local governments and school districts under review as a result of these adjustments.

The original proposed changes were partitioned into four major categories:

I. Multiple-employer cost-sharing plan liabilities will be allocated to specific government employers based on proportionate shares of total plan contributions
II. Accrued actuarial liabilities will be calculated using a high-grade long-term corporate bond index discount rate (5.5% for 2010 and 2011)
III. Where possible, asset smoothing will be eliminated in favor of market or fair value as of the actuarial reporting date
IV. Annual pension contributions will be adjusted to reflect the foregoing changes as well as a common amortization period

The below table, populated with information from the Moody's finalized report, outlines the adjustments that Moody's will make, and provides a comparison to the originally proposed changes. Note that the six changes include adjustments to the calculation assumptions that are component pieces of the above described major categories.

Summary of Moody's Initial Proposed Changes and Changes to be Implemented

	Proposed Adjustment	Final Adjustment
1.	Combine debt and pension into one metric	Evaluate debt and pension separately
2.	Allocate cost-sharing plans based on share of contributions	No change from proposal
3.	Adjust annual contribution by amortizing unfunded liability on a level-dollar basis over a 17 year period	Use same methodology but over a 20 year period
4.	Replace asset smoothing with use of current fair value of assets	No change from proposal
5.	Discount pension liabilities using corporate long-term bond index	No change from proposal
6.	Use common duration for liability adjustment	No change from proposal

Source: Moody's Report "Adjustments to US State and Local Government Reported Pension Data" dated April 17, 2013

Despite some minor modifications, each of the new adjustments largely resembles the original proposal. Though not outlined as one of the four major categories, Moody's original proposal to combine the evaluation of debt and pension liabilities into a single metric is not included in the final changes, reflecting the substantially different nature of these types of obligations. Moody's has made these changes as part of an "effort to bring greater transparency and consistency to the analysis and pension liabilities." The final specifications of Moody's adjustments are outlined below.

1. **Debt and Pension metrics will be evaluated separately**

Rather than combining debt and pension evaluation and metrics, as originally proposed, Moody's will measure them separately.

Recognizing the differentiating factors that exist between debt and pension liabilities, Moody's will separate the treatment of these two items in terms of evaluation and determination of metrics. This is a prudent approach, as debt liabilities are contractual, obligatory, and subject to default whereas future pension liability payments are estimated and can be adjusted through policy actions and are not generally subject to default. Furthermore, this is consistent with the rating agency view of debt as a 'hard' liability, and pension obligations as a 'soft' liability.

2. **Multiple-employer cost-sharing plan liabilities will be allocated to specific government employers based on proportionate shares of total plan contributions**

The changes will be implemented unaltered from those outlined in the original RFC.

In multiple-employer cost-sharing pension plans ("CSP"), the pooling of assets and liabilities can obscure the individual liabilities for participating employers. For some states, many key statistics in financial statements are reported for the entirety of the CSP of which they are sponsors. The new changes will allocate to state and rated local governments their proportionate shares of CSP unfunded liabilities based on the share of total plan contributions represented by each participating government's reported contribution. This is similar to GASB 68, which will require reporting based on proportionate participation in CSPs. State contributions made on behalf of local governments will be considered economic liabilities of the state, and in rare cases where there is not sufficient disclosure of information to determine a state's cost-sharing allocation, the state share will be assumed to be 100%. In cases where states report an Annual Required Contribution ("ARC") that is higher than actual contributions to the plan, the proportionate shares will be based on the ratios of states' ARCs to plans' total ARCs, rather than on actual contributions. In scenarios where the state may have ultimate legal liability for all benefits, but also assigns funding responsibility to other levels of government, Moody's will consider the state to have a contingent liability but would place more weight in the analysis on the primary liability of the various local governmental entities.

3. **Adjust annual contribution by adjusting normal cost and utilizing level-dollar amortization of the unfunded liability over a 20 year period**

The methodology of calculation remains unaltered from the initial proposal with the exception of shifting the level-dollar amortization period from the originally proposed 17 year period to a slightly longer, 20 year period.

Moody's has instituted a revised calculation of the necessary ongoing annual contributions made by government employers that result in fully funded plans to reflect the other adjustments they have made to pension liabilities.

The annual contribution is divided into two components:

- Employer Normal Cost ("ENC"), which is the present value of the employer's share of liabilities accrued in a given year net of annual employee contributions
- Amortization payment, which is equal to the amount necessary to eliminate the unfunded liability over a given amortization period, typically calculated as a level percent of payroll

The ENC will <u>not</u> be adjusted as part of these changes. Moody's has found the process too arduous to complete on a systematic basis given current reporting levels to revise this figure for the new methodology. However, the amortization payment will be calculated to reflect the adjusted unfunded liability, common amortization period, and level-dollar funding approach. The plan's adjusted net pension liability ("ANPL") will be amortized on a level-dollar basis over 20 years (representing a typical bond payment amortization) using the revised discount rate. The ANPL is the term used for Moody's revised unfunded liability figure, and is equal to Moody's calculation of accrued liabilities less plan assets at fair value.

4. **<u>Where possible, asset smoothing will be eliminated in favor of market or fair value as of the actuarial reporting date</u>**

The changes will be implemented unaltered from those outlined in the original RFC.

Based on responses to the RFC that were received, Moody's has agreed to review an issuer's ANPL on a three year average in addition to a review of the annual figures. This adjustment was made to accommodate concerns that the adjustments would produce a substantial amount of volatility in the ANPL calculation, and potentially to ratings as well.

In order to reduce the volatility of required contributions that can arise from swings in investment performance, public pension plans project future required contributions based on a general smoothing of market values by averaging in pension asset gains and losses over multiple years. Smoothing periods range from 0-15 years, with 3-5 being the most common, and the length of smoothing may change year to year for any given issuer. To make assumptions universally consistent, Moody's has instituted reporting the fair value of assets as of the valuation date, eliminating smoothing entirely. Although valuation dates themselves may be inconsistent across issuers' pension plans, attempting to evaluate all assets to a common date presents an unwanted additional level of imprecision to the process.

Moody's recognizes the role smoothing plays in minimizing the potential for undesirable service cuts or tax increases resulting from temporary market swings affecting pension assets. However, for the purposes of the changes, Moody's views the methodology solely for the purpose of assigning consistent and timely government bond ratings. The adjustments are not designed to prescribe a pension funding policy, which is where the concern over volatility is most pertinent. Instead, the only desired outcome is increased comparability and transparency of public pension liabilities in the ratings process.

5. **<u>Accrued actuarial liabilities will be calculated using a high-grade long-term corporate bond index discount rate</u>**

The changes that will be implemented are generally unaltered from those outlined in the original RFC.

Moody's will use the Citibank Pension Liability Index to discount accrued actuarial liabilities as originally proposed. Moody's will use the value of the Index at the time of the issuer's most recent pension evaluation, rather than a recent three month average, as originally proposed.

In public pension plans, the assumed rate of return on invested pension plan assets is also used as a discount rate that measures the present value of benefits accrued by current employees and retirees. Most public plans currently use discount rates—and assumed rates of return—in the range of 7.50% to 8.25%, but these values can and do vary across issuers. Moody's cites the following reasons for shifting from plan-by-plan determined discount rates to a common rate for state and local governments based on a high-grade bond index:

- The past decade's actual investment returns are inconsistent with assumptions made on future returns for public pension plans (the basis for current plan discount rates)
- This approach is consistent with Moody's net tax-supported debt figures which are discounted at their weighted average bond yield for use in credit evaluation
- A high-grade bond index is a reasonable proxy for a government's cost of financing portions of its pension liability with additional bonded debt
- High-grade bonds are an available investment that could be used in a low-risk strategy to "matchfund" pension assets and liabilities

For current adjustments, this would entail using a discount rate between 3.75% and 5.78%, depending on the date of the most recent pension evaluation, if the evaluation was performed since 2011. These discount rates are taken from Citibank's Pension Liability Index, a Aa-rated or better corporate bond index used to derive discount rates for pension plans in the private sector. For implementation, a 13-year duration estimate for all plans will be used: each plan's reported actuarial accrued liability ("AAL") is projected forward for 13 years (a median duration from a sample set of pension plans) at the plan's reported discount rate, and then discounted back at the new rate. Although different pension plans have unique characteristics that result in varying durations, plan durations are not typically reported, and calculating duration individually for each plan is not feasible at this point. Plan specific durations may eventually be incorporated as future GASB changes enable more information to be available. GASB 68 will require the disclosure of the impact a one percentage point change in the discount rate will have on liabilities, and this newly available information may allow Moody's to develop a more fine-grained duration assumption.

This adjustment, from plans' current discount rates (typically ranging from 7.5% to 8.25%) to a high-grade corporate bond index will in most instances account for the greatest portion of increases in calculated plan liabilities due to the changes. Presented below is a historical listing of the Citibank Pension Liability Index, and the estimated percentage increase in actuarial accrued liabilities that will result from using this new discount rate as compared to the same AAL calculated at an 8% discount rate.

Estimated Liability Impact of Implementing Citibank Pension Liability Index*

Date	Discount Rate	Liability Increase	Date	Discount Rate	Liability Increase
March, 2013	4.32%	157%	July, 2011	5.36%	138%
February, 2013	4.26%	158%	June, 2011	5.67%	133%
January, 2013	4.30%	157%	May, 2011	5.47%	136%
December, 2012	4.05%	162%	April, 2011	5.60%	134%
November, 2012	3.91%	165%	March, 2011	5.75%	131%
October, 2012	3.83%	167%	February, 2011	5.65%	133%
September, 2012	3.94%	165%	January, 2011	5.78%	131%
August, 2012	3.83%	167%	December, 2010	5.54%	135%
July, 2012	3.73%	169%	November, 2010	5.45%	136%
June, 2012	4.13%	161%	October, 2010	5.42%	137%
May, 2012	4.34%	157%	September, 2010	5.14%	142%
April, 2012	4.55%	153%	August, 2010	5.04%	144%
March, 2012	4.67%	150%	July, 2010	5.41%	137%
February, 2012	4.44%	155%	June, 2010	5.47%	136%
January, 2012	4.46%	154%	May, 2010	5.82%	130%
December, 2011	4.40%	155%	April, 2010	5.79%	131%
November, 2011	4.69%	150%	March, 2010	6.05%	127%
October, 2011	4.70%	150%	February, 2010	5.99%	128%
September, 2011	4.69%	150%	January, 2010	5.93%	129%
August, 2011	5.21%	141%	December, 2009	5.98%	128%

**All "Liability Increase" values are estimated and assume an original pension valuation using an 8% discount rate. All dates listed are end of month, and the date closest to the most recent pension evaluation date should be used in practice.*

Source: Society of Actuaries, http://www.soa.org/professional-interests/pension/resources/pen-resources-pension.aspx

6. Use of a 13 year common duration for implementation of discount rate adjustments

The changes will be implemented unaltered from those outlined in the original RFC.

For purposes of implementing the change to the discount rate for calculating accrued actuarial liabilities, Moody's will utilize a 13 year common duration for all plans. Moody's admits to this being an imperfect adjustment, however, in seeking to meet their objective of transparency and comparability views this as the most appropriate time frame to utilize.

Impact and Implementation

As a result of the implementation of these changes, Moody's anticipates there will be no immediate rating actions for states, and less than 2% of local general obligations will be placed under review for potential downgrade. As of April 17, Moody's had placed 29 different local governments and school districts under review as a result of these adjustments. A list of these issuers is provided as a separate attachment accompanying this document. Any revised ratings will be for issuers' whose ANPL identifies them as a significant outlier in their rating category. Moody's anticipates no more than a two notch downgrade for any ratings revisions. In addition to U.S. state and local governments, impacted entities will include issuers in the public university, public power, water, sewer, and transportation sectors, and any other GASB reporters. Though Moody's has indicated that pension costs are not generally a significant driving factor within these sectors, any substantial changes to these issuers' pension liabilities using the revised reporting methodology will be taken into account. Issuers in the private non-profit sector, such as hospitals, and private higher education will not have these changes applied, since they must already meet uniform reporting standards dictated by the Financial Accounting Standards Board.

The changes that have been adopted by Moody's as part of this exercise remain subject to future adjustments, particularly as new information on issuers' pension liabilities become available after the implementation of the new GASB 68 reporting guidelines. Some of the adjustments outlined above may be applied on a temporary basis and potentially replaced as more refined information becomes available on a more universal basis. Moody's anticipates new data detailing an issuer's pension expense, normal cost, and share of cost-sharing plan liabilities may be used to replace some of Moody's current adjustments, or refine the existing methodology.

The information needed to calculate these new figures will be required to be provided by issuers on a timely basis. Moody's will decline to assign a rating for, or withdraw outstanding ratings from, any issuer who lacks sufficient availability of this information. Though Moody's recognizes pension valuations typically lag a government's financial reporting, any valuation that falls more than 24 months behind the standard financial reporting will be considered "non-timely" and subject to a ratings withdrawal. Annual pension statistics will be produced by Moody's for states and the largest local governments.

Further information on the application of these reporting changes to the ratings process can be found in "US States Rating Methodology" (where the adjusted pension data comprises the 10% of a state's overall score as part of the debt category) and "General Obligation Bonds Issued by US Local Governments" (where the adjusted pension data is a component within the 10% weighted Debt Profile category).

<u>Pension Measure Section of State Scorecard (10% of total score)</u>

Sub-Factor	Measurement	Aaa	Aa1	Aa2	Aa3	A	Baa and below
Pension Measure	3 Year Average ANPL/ Total Governmental Fund Revenues	<25%	25%-40%	40%-80%	80%-120%	120%-180%	>180%

Source: Moody's April 17, 2013 US States Rating Methodology

<u>Local Government Threshold Criteria*</u>

Measurement	Aaa	Aa	A	Baa
ANPL/Revenues	3x	4x	5x	6x

*Issuers whose ANPL/Revenue for fiscal 2011 exceeded their rating category threshold were put on review for possible downgrade

Source: Moody's April 29, 2013 Moody's Adopts State and Local Pension Adjustments

Aggregate Impact of Moody's Adjustments

Figure ($, billions)	50 States	Rated Local Governments
Reported AAL	$1,427	$1,577
Reported AVA	$1,019	$1,203
Median Discount Rate	8.00%	7.50%
Market Value of Assets	$948	N/A*
Moody's Adjusted Pension Liability	$1,912	$2,114
Moody's Adjusted Net Pension Liability	$964	$911
Median Discount Rate for Moody's Adjustments	5.67%	5.54%
Amortized Adjusted Net Pension Liability	$76	$73
Adjusted Net Pension Liability as % of US GDP	6.48%	6.22%

*ANPL for local governments not based on market value of assets due to data availability
Source: Moody's April 17, 2013 Adjustments to US State and Local Government Reported Pension Data

Finalized Changes Compared to GASB 68

Element	Moody's Proposal	GASB 68
Implementation Date	April 2013	All fiscal years starting after June 15, 2014
Asset Smoothing	Eliminate in favor of market or fair value	Eliminate in favor of market or fair value
Discount Rate	Common high-grade corporate rate as of plan evaluation date	Plan-specific investment return blended with municipal bond index, dependent on funding history
Cost-Sharing Plan Allocation	Proportionate share of total plan annual contributions	Proportionate share based on contributions
Annual Cost	Employer normal cost plus 20 year level-dollar amortization of ANPL	Annual pension expense reporting replaces ARC approach

PFM Position on Moody's Methodology

The overarching goal of providing more consistency in the reporting of pension assets, liabilities, and costs, thus improving comparability and transparency is laudable. However, we believe the timing and proposed implementation of Moody's proposed pension evaluation methodology will not, in the aggregate, create more consistency and transparency, but rather may create confusion and unnecessary unease amongst municipal market participants.

As noted, one of the primary problems with the proposed changes is the perceived mismatch between the stated urgency of the proposed changes and the expectation of Moody's that there will be minimal impact to ratings as a result of the changes (Moody's comments that States will not see ratings changes and has placed 29 local issuers under review). If the ratings impacts are minimal, PFM believes that our clients and market participants would be better served by waiting for the implementation of the new GASB approach before implementing changes to the ratings process surrounding pensions. GASB has released new accounting standards for reporting pension data by pension plans and participating employers. Most of the same topics Moody's addresses in this new methodology are addressed by GASB, but using slightly different methods. Moody's appears to be jumping ahead of GASB with its new approach to evaluating pension liabilities that is somewhat at odds with the GASB standards to be implemented in the next couple of years, yet they say the new methodology will not impact states' ratings. It is our view that the proposed methodology may create more confusion about the status of public pension funding levels versus waiting for implementation of the new GASB standards and using that data to inform Moody's ratings methodology.

The area of most concern from our perspective is the use of a high-grade corporate bond rate to discount pension liabilities in combination with the elimination of asset smoothing in favor of market or fair value pricing. The result of these changes is to dramatically increase the measured liability and introduce a significant potential for volatility from both the asset and liability side into the pension liability reported in Moody's rating reports. Making the aforementioned changes to liability determination will present unforeseen problems. Among the potential problems presented by this methodology are the intergenerational transfer of liabilities and potential to produce year-to-year volatility in the Moody's determined funding requirements that, if implemented, could undermine public perception of the liability and be at odds with policymakers' long-term decisions, and myriad other issues.

Further, Moody's rationale that existing discount rates are not supported by the recent decade of returns ignores the fact that pensions are multi-generational investments and benefit plans with time horizons of 50 or more years in many cases. Investment performance data from the National Association of State Retirement Administrators ("NASRA") demonstrates that over long periods (including the recent market declines) investment rate assumptions and discount rates in the 7% or 8% range have not been unreasonable. Median returns for 126 state and local pension plans (as of December 31, 2012) are outlined in the table to the right.

Time Frame	Median Return
10 years	7.5%
20 years	7.9%
25 years	8.9%

Finally, while Moody's attempts to build consistency into some of the headline assumptions and methodological issues relating to pension liabilities, they determined that changes to numerous other variables that could enhance consistency, comparability, and transparency would be left alone, such as a common valuation date, mortality tables, and actuarial cost methods. As a result of these timing and implementation issues, we believe issuers, Moody's, and the market, would be better served by waiting for the GASB standards to be implemented and using those data results. The adjustments that have been announced by Moody's appear to be expedited, and run the risk of producing pension data that are no less flawed than the numbers that exist today but could cause further confusion surrounding this issue and could lead to misguided concerns regarding an already scrutinized area which deserves thoughtful evaluation.