

REPORT

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State and Local Pensions: A Primer for Municipal Investors

TOUGH TIMES BRING GREATER FOCUS

Public pension costs have come into sharp focus as the after effects of the “Great Recession” continue to influence municipal balance sheets, forcing elected officials to balance declining revenues against the need for government services. Media, academics and public watchdogs amplify this focus through oftentimes scathing critiques of public sector pension plans. In many instances these critiques aggregate state and/or municipal unfunded pension liabilities into a single figure, ostensibly to emphasize the scope of the problem.

Nuveen Asset Management (Nuveen) recognizes that unfunded pension liabilities – particularly defined benefit pension plans – may exert significant financial pressure on a number of states and localities nationwide. But we do not believe it is useful for municipal investors to consider this issue from a macro vantage point. Defined benefit plans promise specific future benefit levels regardless of annual plan contributions and investment performance. Defined contribution plans, by comparison, are similar to private sector 401(k) plans in that employees and/or employers contribute specific amounts annually without a guarantee of a specific benefit level upon retirement.

Aggregating pension liabilities may help one comprehend the scope of the issue, but it offers little or no analytical benefit to investors considering the purchase of securities issued by individual credits. The size and scope of issuers’ pension plans and funded ratios are highly diverse and individual to those credits. Therefore careful, individualized analysis of each issuer’s pension funding within the context of its overall credit profile is required.

This is not to say concerns over pension funding are overblown. For some issuers, unfunded pension liabilities have already, or soon will, compete directly with core governmental services for funding. Nuveen expects that most issuers will address this conflict through painful decisions involving increasing revenues, cutting expenditures and modifying pension plans. Pension funding is, for most issuers, a long-term problem, so these corrective steps may be taken over a long time period. However, we recognize that pension costs could threaten the solvency of weaker issuers in the most extreme circumstances.

As we further explore the issues surrounding pension funding, in this report we will:

- Explain how defined benefit municipal pension plan assumptions impact funded ratios.
- Describe how Nuveen analyzes municipal pension plans.
- Present a case study comparing two large cities’ pension plans.

Nuveen Asset Management recognizes that unfunded pension liabilities may exert significant financial pressure on a number of individual states and localities nationwide. But we believe careful, focused analysis of each issuer’s pension funding within the context of its overall credit profile is required, rather than considering the issue from the macro vantage point.

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ASSUMPTIONS DETERMINE FUNDED RATIOS

When analyzing an issuer's pension plan(s) it's common to focus on funded ratios (the ratio of plan assets to liabilities). Yet funded ratios are essentially an estimated measure by the issuer and its actuary of how well a plan is funded. These estimates are based upon a large number of assumptions – rates of return on investments, ages at which employees retire, lifespan of retirees, inflation, annual salary increases, etc. Changing one or more of these assumptions even slightly may significantly impact a plan's funded ratio.

For example, as shown in Exhibit 1, between fiscal years 2006 and 2007 the City of Evanston, Illinois, revised a number of assumptions pertaining to its two public safety pension plans that significantly changed each plan's reported unfunded liability and funded ratio.

Exhibit 1: Evanston's (IL) Pension Funding Assumptions and Unfunded Liabilities Fiscal Years 2006 and 2007

	Firefighters' Pension Fund		Police Pension Fund			
	FY06	FY07	FY06	FY07		
Assumptions						
Investment Rate of Return	7.50%	7.25%	7.50%	7.25%		
Projected Salary Increases	4.50%	5.00%	4.50%	5.00%		
Inflation	4.00%	3.50%	4.00%	3.50%		
Cost of Living Increases	0.50%	3.00%	0.50%	3.00%		
Pension Funding						
			% Change		% Change	
Actuarial Asset Value	\$40,653,428	\$ 43,742,297	7.6%	\$ 58,400,853	\$ 61,795,438	5.8%
Actuarial Accrued Liability	\$84,413,071	\$106,361,853	26.0%	\$112,448,880	\$139,371,086	23.9%
Unfunded Actuarial Accrued Liability	\$43,759,643	\$ 62,619,556	43.1%	\$ 54,048,027	\$ 77,575,648	43.5%
Funded Ratio	48.16%	41.13%		51.94%	44.34%	

Source: City of Evanston's Comprehensive Annual Financial Reports for Fiscal Years 2006, 2007 and 2008.

Evanston made what appear to be relatively modest changes to the assumptions used to determine the funded status of its public safety pension plans, yet the assumption changes – coupled with an additional year of investment performance – increased each plan's unfunded liability by more than 40 percent.

The assumptions employed by municipal issuers are as varied and diverse as the sector as a whole, underscoring the importance of viewing municipal pension plan funding from a micro, rather than macro, perspective. Aggregating the unfunded liabilities of state and local pension plans can be useful for gauging the impact of pension obligations on the economy as a whole and government policies, but it is less useful for making investment decisions that require case-by-case analysis.

A recent report by The Pew Center on the States entitled *The Trillion Dollar Gap: Underfunded State Retirement Systems and the Roads to Reform* took exactly this macro approach. The trillion dollar gap is the difference between the reported \$3.35 trillion the fifty states have promised in pension, health care and other retirement benefits and the \$2.35 trillion they've set aside to meet those promises. While the report correctly notes there is a wide diversity of funding levels amongst the states, the "trillion dollar gap" is actually a misnomer. The assets of one pension plan in one state should not be counted against the liabilities of another plan in another state. This holds true for multiple pension

plans sponsored by a single issuer – particularly if each plan utilizes different assumptions. While the two Evanston public safety pension plans shown in Exhibit 1 utilize the same core assumptions, the assets allocated to each plan are held in separate irrevocable trusts and cannot be used to fund one another's liabilities. Simply stated, the aggregation of unfunded liabilities within and among issuers is not a sound approach to understanding the scope of these liabilities.

NUVEEN'S CASE-BY-CASE APPROACH

Nuveen analyzes pension funding by reviewing each issuer's plan assumptions, annual pension contributions and funded ratios within the context of its overall credit profile. We do this by considering a number of statistics:

- Annual required contribution (ARC) as a percentage of operating budget, and the proportion of the ARC actually funded.
- Unfunded liability and debt as a percentage of the issuer's tax base.
- Unfunded liability per capita.
- Unfunded liability as a percentage of personal income.

Following are a few areas Nuveen considers when analyzing an issuer's pension obligations. It is not an exhaustive accounting of our analytical approach.

Return Smoothing. Many municipal entities report pension plan assets by smoothing annual returns – or averaging returns over a multi-year period. This moderates large positive or negative year-to-year swings in investment performance and, in the case of significant investment losses, can defer resultant increased contributions to pension plans meant to offset such investment losses. While some issuers report their plan assets on a current market basis, the majority smooth their returns over three to five years. A small number smooth their returns over an even longer time horizon. One prominent example, the California Public Employee Retirement System (CalPERS), smooths its returns over a fifteen year time horizon. The longer the smoothing period, the greater the likelihood the reported asset value will materially depart from current asset value.

Assumed Rate of Return and Discount Rate. The assumed rate of return is the expected long-term investment gain on assets put aside for pension payments. The discount rate is used to determine the present value of those future payments. Both rates are determined by the issuer, and the values chosen can significantly impact a pension plan's reported unfunded liability. If these rates are too aggressive, the liability may be underestimated.

Corporate issuers can assume a discount rate separately from the assumed rate of return. Conversely, municipal issuers follow accounting rules established by the Governmental Accounting Standards Board (GASB), which currently mandate that the assumed rate of return on investments also be used to discount long-term pension liabilities. For governments that report high expected rates of return, this implies not only that the annual required contribution might be too low, but also that the pension liabilities could be discounted at a rate that is too high.

In June 2010, GASB issued a "Preliminary Views" report on public pension accounting that would make a number of changes to their standards, including mandating that pension plans with insufficient assets to meet projected liabilities must discount those liabilities using rates of return associated with a high-quality municipal bond index. The GASB Preliminary View amounts to a request for comment and any changes to the discount rate could be materially different from this proposal.

In practice, many issuers report assumed rates of return ranging from roughly 6.0% to 9.5%. It is difficult to determine if an assumed rate of return is aggressive, as it entails determining how a particular plan's assets are allocated. Pension plans tend to allocate their assets to equities, fixed income and alternative investments in varying proportions. These specific investment allocations are not always disclosed in bond offering documents or issuers' ongoing financial disclosures to bondholders. Absent a complete understanding of a pension plan's investment allocations, investors should consider the historical performance of these various asset classes when determining whether an issuer's assumed rate of return is reasonable.

Exhibit 2 shows historical returns for equity and fixed income investments. The equity market is inherently volatile; depending on the time frame studied, its nominal rates of return have either lagged or exceeded those assumed by state and local government pension plans. Additionally, as of August 31, 2010, various fixed income yields ranged from 2.47% to 5.48%. For example, assuming a 60% weighting to equities yielding 8.3% and a 40% weighting to fixed income yielding 5.0%, a blended yield of roughly 7.0% could be expected. Pension funds may also allocate a portion of their funds to alternative investments, which could provide higher yields than equities or fixed income. Higher returns, however, also imply greater risk and volatility. Therefore, investors should view pension plans with high assumed rates of return with greater skepticism than those that assume more moderate rates of return.

Exhibit 2: Equity and Fixed Income Returns

S&P 500 Average Annual Returns through 8/31/2010		
Years	Nominal	Real
10	-1.81%	-4.08%
20	8.31%	5.60%
30	10.45%	6.96%
40	10.00%	5.36%

Fixed Income Yields as of 8/31/2010	
10-year Treasury Note	2.47%
Corporate bonds (Moody's Aaa-rated)	4.26%
Corporate bonds (Moody's Baa-rated)	5.48%

Source: S&P 500; Federal Reserve Board, Bloomberg Finance L.P. Indices are unmanaged and unavailable for direct investment. Index returns include reinvestment of dividends and do not reflect investment advisory and other fees that would reduce performance in an actual client account. S&P 500 Index is a market-value-weighted benchmark of common stock performance provided by Standard & Poor's Corporation. It currently includes 500 of the largest stocks (in terms of stock market value) in the United States; prior to March 1957 it consisted of 90 of the largest stocks. A 10-year Treasury note is a debt obligation issued by the U.S. Treasury with a term between one and ten years. Corporate Aaa- and Baa-rated bond yields are derived by Moody's from pricing data on a regularly-replenished population of nearly 90 seasoned corporate bonds in the U.S. market, each with current outstandings over \$100 million and remaining maturities of at least 20 years.

Annual Required Contributions and Annual Pension Cost. When an actuary conducts an annual analysis of a pension fund, an annual required contribution (ARC) is determined based upon the assumptions employed. The ARC represents the amount required to be contributed to the pension plan to amortize the unfunded liability over a specific time period such that the plan will have sufficient future assets to pay retiree benefits. The actuary will also calculate an Annual Pension Cost (APC), which includes the current ARC, prior shortfalls between ARCs and actual contributions and interest on those shortfalls.

Nuveen takes a dim view of issuers that routinely fail to contribute the ARC/APC to its pension plan(s). This is a key difference between Nuveen’s approach and that of the rating agencies. In many cases, the agencies measure an issuer’s financial health nearly exclusively by their ability to maintain a balance of revenues and expenses within its General Fund, regardless of pension funding. Ironically, one way issuers facing declining revenues and/or increasing expenses maintain their General Fund balances is by contributing less than the ARC to their pension plan(s).

One such case in point is Cook County (IL). In June 2010, the county issued general obligation bonds for a number of purposes, including catch-up contributions to its pension plan. During fiscal 2008 (the most recent audited financial statement released by the county as of the date of this report) the county contributed just 52.9% of the actuarially determined ARC to its pension plan. Despite this low contribution rate – and the issuance of pension obligation bonds to help buttress a deteriorating pension plan – Standard & Poor’s (S&P) lauded the county’s “very strong reserves” in its pre-sale research report while noting:

“The county reported a \$71.3 million general fund shortfall in the fiscal year ended November 30, 2008. This brought its unreserved fund balance to \$103.6 million, which is a level we consider to be strong at 8.1% of expenditures.”

Taken in isolation, the county’s unreserved fund balance may be considered healthy. But a very different picture emerges in the context of the underfunding of its pension plan, as shown in Exhibit 3.

Exhibit 3: Cook County’s (IL) Pension Funding and Unreserved General Fund Balance Fiscal Year 2008

Annual Required Contribution (ARC)	\$283,892,734
Actual Contribution	\$150,227,360
Contribution Percentage	52.9%
Shortfall	\$133,665,374
Unreserved General Fund Balance	\$103,565,761
Shortfall/Unreserved General Fund Balance	129.1%

Source: Cook County’s Comprehensive Annual Financial Report for Fiscal Year 2008.

In fiscal year 2008, Cook County shorted the ARC to its pension plan by more than \$133.6 million – a figure that exceeds its unreserved General Fund balance by \$30 million. Had Cook County made a full contribution to its pension plan in fiscal 2008, it conceivably would have exhausted its unreserved General Fund balance, leaving it with a deficit balance of -\$30.1 million, equivalent to -2.4% of expenditures. The S&P report makes no mention of the pension underfunding, and as a result presents a starkly different account of the county’s financial health than that revealed by Nuveen’s analysis.

Nuveen also reviews APCs and ARCs in terms of an issuer’s annual budget. For example, an ARC or APC that represents 5% of an issuer’s annual revenues is seen as much more affordable than those that represent upwards of 15% or more of revenues. In instances where an issuer is unable to fund its full ARC/APC, we may also use U.S. Census estimates of population and income to place the shortfall in proportion to earned income within that municipality. This provides a means of determining the economic impact that may be required to truly meet these retirement obligations.

The following example demonstrates these techniques by comparing the defined benefit pension obligations of Chicago, IL, to San Diego, CA. San Diego continues to face political squabbling regarding its pensions, as well as intensive media attention on its defined benefit pension plan – with some city critics recommending bankruptcy to address the

issue. But our analysis shows that San Diego's pension problems pale in comparison to those of Chicago, where pensions have received scant attention from elected officials and the media in recent years; and no one is publicly discussing bankruptcy. Exhibit 4 shows the similarity of the two cities' core pension assumptions.

Exhibit 4: Actuarial Assumptions Employed by Chicago and San Diego

	Chicago				San Diego
	Municipal Employees	Laborers'	Policemen's	Firemen's	
Assumed Rate of Return	8.0%	8.0%	8.0%	8.0%	7.75%
Annual Salary Increase	2.0%	1.9%	2.7%	2.7%	4.0%
Annual Inflation	3.0%	3.0%	3.0%	3.0%	2.0%
Smoothing Period (Years)	5	5	5	5	5
Amortization Period (Years)	30	30	30	30	20

Source: Chicago and San Diego Comprehensive Annual Financial Reports for Fiscal Year 2009; San Diego City Employees' Retirement System June 30, 2009 Actuarial Valuation.

The two cities employ similar actuarial assumptions, so they make an interesting side-by-side comparison of their respective ARCs and unfunded liabilities, as shown in Exhibit 5.

Exhibit 5: Comparison of the Pension Plans of Chicago and San Diego

	Chicago					San Diego
	Municipal Employees	Laborers'	Policemen's	Firemen's	Total	
Annual Required Contribution (\$000s)	\$413,506	\$33,517	\$339,488	\$203,867	\$990,378	\$165,704
Actual Contribution (\$000s)	\$148,046	\$14,627	\$172,044	\$89,212	\$423,929	\$163,614
% of ARC Contributed	35.8%	43.6%	50.7%	43.8%	42.8%	98.7%
Plan Assets (\$000s)	\$6,295,788	\$1,601,352	\$3,884,978	\$1,269,231	\$13,051,359	\$4,175,229
Plan Liabilities (\$000s)	\$10,830,119	\$1,975,749	\$8,736,102	\$3,428,838	\$24,970,808	\$6,281,636
Unfunded Liabilities (\$000s)	\$4,534,331	\$374,397	\$4,851,124	\$2,159,607	\$11,919,459	\$2,106,407
Funded Ratio	58.1%	81.1%	44.5%	37.0%	NA*	66.5%
2008 U.S. Census Population Estimate					2,725,206	1,251,184
Per Capita Unfunded Liability					\$4,374	\$1,684
Per Capita Income					\$26,814	\$32,716
Income (\$000s)					\$73,073,674	\$40,933,736
Unfunded Liabilities/Income					16.31%	5.15%
General Fund Revenues (\$000s)					\$2,561,626	\$1,014,631
ARC/General Fund Revenues					38.7%	16.3%
Actual Contribution/General Fund Revenues					16.5%	16.1%
Unfunded ARC/Income					0.78%	0.01%

Source: Chicago and San Diego Comprehensive Annual Financial Reports for Fiscal Year 2009; U.S. Census Bureau 2006-2008 Estimates; San Diego City Employees' Retirement System June 30, 2009 Actuarial Valuation.

*As stated earlier in this report, it is not appropriate to combine the assets of one pension plan against the liabilities of another plan.

Chicago maintains four defined benefit pension plans while San Diego offers one. The combined unfunded liability of Chicago's plans exceeds \$11.9 billion – more than five times San Diego's unfunded liability of \$2.1 billion. The per capita unfunded liability reduces this disparity somewhat, but Chicago's \$4,374 per capita unfunded liability is still more than 2.6 times as large as that of San Diego.

Looking forward, however, let's consider the proportion of each city's annual required contribution contributed and the impact a full contribution would have upon Chicago's annual budget and economy as a whole. Both cities contributed just over 16% of their General Fund revenues to their pension plans during fiscal year 2009. For San Diego, this constituted nearly full funding of its obligation to the pension plan in fiscal 2009. Chicago's contribution amounted to anywhere from 36% to 46% of the amount due to each of its pension plans. Moreover, full funding of these ARCs would have consumed nearly 40% of Chicago's General Fund revenues in 2009, while full funding by San Diego would have increased the percentage of General Fund revenues consumed to 16.3% from 16.1%.

The economic impact of meeting this challenge differs widely between the two cities as well. While San Diego would need to draw an additional 0.01% of the income earned by its citizens annually to fully fund its ARC and nearly 3.2% to account for the entire unfunded liability, Chicago would need to draw an additional 0.78% of its citizenry's income to fully meet its annual obligation and 16.3% of the annual income to match the entire unfunded liability. While both cities contribute a sizeable portion of their annual revenues to their pension plans, it's clear that Chicago – not San Diego – faces a much more daunting challenge by its pension obligations both in the near and long term.

Unfunded Liabilities. While funded ratios provide a quick and easy measure of the health of an issuer's pension plan(s), funded ratios may be deceiving in that they lack the context of that issuer's ability to meet the unfunded liability through its operating budget and tax base. For example, while an individual pension plan may be 40% funded, the unfunded liability may represent only a modest portion of that issuer's tax base. If unfunded liabilities present a greater proportion of an issuer's taxable assessed value than does its debt – regardless of the plan's funded ratio – the issuer could be considered to have a significant unfunded liability regardless of the plan's funded ratio; particularly if the issuer is failing to make a full ARC/APC payment annually.

CONCLUSION

State and local pensions – and the challenges they pose for the municipal asset class – are highly individualized and should be viewed by investors on an issuer by issuer basis. The "Great Recession" has heightened public awareness of municipal retirement benefits and the need for elected officials to prioritize all government expenses against one another. As taxpayers come to better understand the scope and depth of municipal liabilities associated with current and long-term retirement benefits obligations – and the extent to which they may compete with core governmental services – elected officials will be more empowered to address the issue; whether by negotiating with public employee unions to increase contributions and/or modify benefits or through some other means.

Nuveen expects that most issuers with heavy pension obligations will come to grips with these liabilities through a series of perhaps painful measures, but ultimately we don't expect debt service to bondholders to be imperiled. In many cases, the solutions to these long-term challenges will be implemented over many years; as the political and economic conditions allow. For a troubled few credits, however, it may be exceedingly difficult to obtain the financial wherewithal or negotiating leverage with their unions to achieve necessary modifications to the pension plans and their funding sources. Investors seeking exposure to the municipal asset class, but wishing to avoid issuers with intractable pension problems, should look past the headlines and conduct fundamental credit research on individual issuers.

RISKS AND OTHER IMPORTANT CONSIDERATIONS

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SOURCES

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Glossary

Annual required contribution (ARC) is the actuarially determined amount of funding required to amortize a pension plan's unfunded liability such that the pension plan is expected to have sufficient assets to meet all future pension payments.

Annual pension cost (APC) reflects the annual required contribution as well as shortfalls between prior ARCs and actual employee contributions as well as interest on those shortfalls.

Assumed rate of return is the projected long term rate of return on pension investments assumed by the issuer and the actuary and is used, among other things, to determine annual required contribution.

Defined benefit pension plans guarantee specific benefit levels to pensioners regardless of contributions over time or investment performance.

Defined contribution plans require specific employee and/or employer contributions over time without guaranteeing specific benefit levels to pensioners upon retirement.

Discount rate is the rate by which projected future pension distributions are discounted to arrive at a present value of the payment stream.

Funded ratio is a measure of a pension plans' funding level determined by dividing the value of the assets by the discounted value of the projected future benefit payments.

General Fund is, for most tax supported issuers, the primary operating fund through which general government revenues and expenses are recorded. Revenues recorded in the General Fund are typically available for a wide array of government purposes, while other funds may have more restricted purposes.

Return smoothing is the process by which a pension plan's asset value is smoothed by weighting returns on those assets over two or more years. This may smooth returns by muting the effect of year-to-year swings in investment performance.

Unreserved fund balance is the portion of a fund's retained assets that are not reserved for a specific purpose. For instance, a city may have a \$1 million General Fund balance that includes \$500,000 reserved for the following year's budget and \$500,000 that is unreserved and available for other purposes.

Source: Nuveen Asset Management.