

SECTOR IN-DEPTH

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US Public Pensions

Pension Liabilities Rise for Most of 50 Largest Local Governments

Pension burdens increased in fiscal 2013 for 31 of the 50 largest local governments. We define the largest governments by fiscal 2013 debt outstanding. Looking ahead to fiscal 2014 reporting, we expect moderate declines in Moody's Adjusted Net Pension Liabilities (ANPLs) due to strong investment performance, particularly for those governments with fiscal years ending June 30.

- » **Overall, pension burdens moderately increased from 2012 to 2013.** Among the 50 largest local governments, the median ANPL increased from 175% to 204% of revenues. The median ANPL relative to full value remained at 2.6% among the top 50. Increases in pension burdens for Chicago Public Schools (Ba3 negative) and the City of Detroit, MI (B3 stable) were among the highest relative to revenues and to full value.¹ The City of Houston, TX (Aa2 negative) experienced the largest growth in ANPL relative to revenues, increasing from 3.1 to 4.6 times revenues in fiscal 2013. After Detroit and Chicago Public Schools, Fairfax County, VA (Aaa negative) experienced the largest ANPL rise relative to full value, an increase from 4.4% to 6.9% of full value.
- » **Discount rates in 2013 were higher than in 2012, resulting in lower ANPLs.** ANPLs for the 21 issuers with actuarial valuation dates tied to 2013 discount rates used in our pension adjustments declined by an average of 13%. Conversely, ANPLs for the 29 issuers with actuarial valuations for their largest pension plan tied to 2012 discount rates increased by an average of 37%. Differences among issuers driven by differences in valuation dates will be significantly reduced under new accounting rules phasing into effect in 2014 and 2015.
- » **Fiscal 2014 pension disclosures point to moderate declines in ANPL for many local governments.** The available June 30, 2014 financial reporting for several large multi-employer cost-sharing plans indicates that ANPLs generally declined in 2014, driven by very strong investment performance, although not in all cases. Lower discount rates and less favorable investment performance for fiscal years ended six months later, in December 2014, point to ANPL increases.
- » **Pension cost and liability burdens still vary widely.** Pension costs are not a substantial burden for a significant portion of the largest local governments. Actuarial costs amounted to less than 5% of revenues for 14 out of the 50 largest, including several Texas school districts receiving state support for pensions. On the other hand, heavy and growing pension leverage persists for those entities with the most material contribution shortfalls, such as Chicago, IL (Ba1 negative), Cook County, IL (A2 negative) and Memphis, TN (Aa2 negative).

Pension burdens moderately increased from fiscal 2012 to fiscal 2013

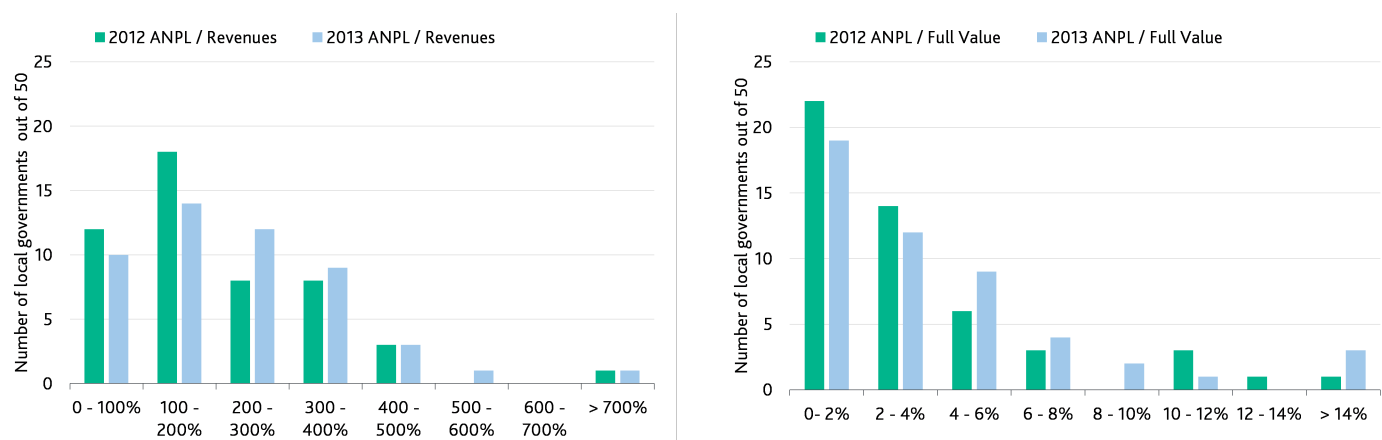
In aggregate, fiscal 2013 ANPLs for the 50 largest local governments increased 14%, to \$365 billion, from \$320 billion in fiscal 2012. ANPLs increased for 31 of the 50 largest local governments. Los Angeles County's (Aa2 stable) ANPL increased by \$13.1 billion to \$32.3 billion, the largest year-over-year nominal increase and largely driven by a 154 basis point decline in the discount rate we apply to the county's pension liability. In contrast, Chicago's ANPL declined by \$3 billion to \$29 billion, representing the largest nominal decrease in fiscal 2013, largely driven by a 90 basis point increase in discount rates.

Houston's ANPL relative to revenues increased sharply to 458% from 312%, which was the largest increase by this measure among the largest 50 local governments. Not only did the discount rates applied to Houston's plans under our adjustments drop by 154 basis points, but the city's reported unfunded actuarial accrued liabilities (UAALs) also increased by 16% to \$3 billion in aggregate. Mounting pension challenges contributed to our recent assignment of a negative outlook to Houston's rating. Detroit's ANPL increase to 21% from 12% of its tax base, measured by Full Value, was the most significant of the largest 50.

Relative to revenues and to full value, fiscal 2013 ANPLs exhibited a moderate shift toward heavier burdens, with a small number of outliers continuing to exhibit exceptionally large burdens. The fiscal 2013 median ANPL increased from 175% to 204% of operating revenues, but remained level relative to full value, at 2.6% (see Exhibit 1).

Exhibit 1

Pension Burdens Increased Moderately for 50 Largest Local Governments



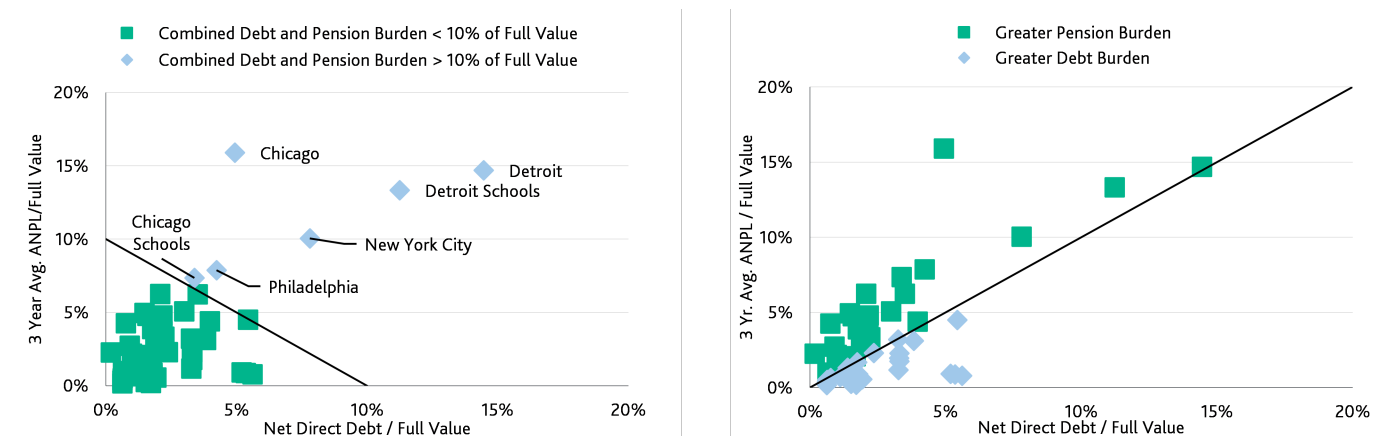
Sources: Issuer and plan Comprehensive Annual Financial Reports (CAFRs), Moody's Investors Service

Pension burdens measured as three-year average ANPLs under our general obligation rating methodology, combined with net direct debt obligations, represented less than 10% of tax bases for most of the largest local governments in 2013. However, there were several exceptions. Chicago, Detroit and Philadelphia, PA (A2 stable) each had combined debt and three-year average ANPL burdens in excess of 10% of full value in fiscal 2013. In the cases of Chicago and Detroit, their respective public school districts also had combined debt and pension burdens in excess of 10% of full value in fiscal 2013, on top of the city's leverage. New York City's (Aa2 stable) direct debt and pension obligations amounted to 18% of full value, although no other local governments share an overlapping tax base with New York City. For example, the city's data represents both city and public school operations.

A comparison of debt and three-year average pension burdens on an individualized basis shows a more equal distribution of liabilities between pensions and debt. Pension burdens exceeded debt burdens for 26 of the 50 largest governments (see Exhibit 2).

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Exhibit 2

Direct Debt and Pensions Significantly Leverage Several Large Local Government Tax Bases

All data represents fiscal 2013 reporting. Philadelphia implemented a significant change to its tax base valuation, effective with 2014 data. We have incorporated that re-assessment into this data set.

Sources: Issuer and pension plan CAFRs, Moody's Investors Service

The \$365 billion in aggregated fiscal 2013 single-year ANPLs for the 50 largest exceeded by 71% the \$213 billion in Net Direct Debt for the same group of issuers, highlighting the significance of pension leverage facing the local government sector. Importantly, much of this difference is driven by New York City, Los Angeles County, Chicago, the City of Los Angeles (Aa2 stable) and Chicago Public Schools. The \$199 billion in combined single-year ANPLs for these five issuers amounted to more than double their combined net direct debt of \$88 billion. Comparatively small, the District of Columbia (Aa1 stable) exhibits the largest excess of net direct debt over its pension burden, at \$6.8 billion.

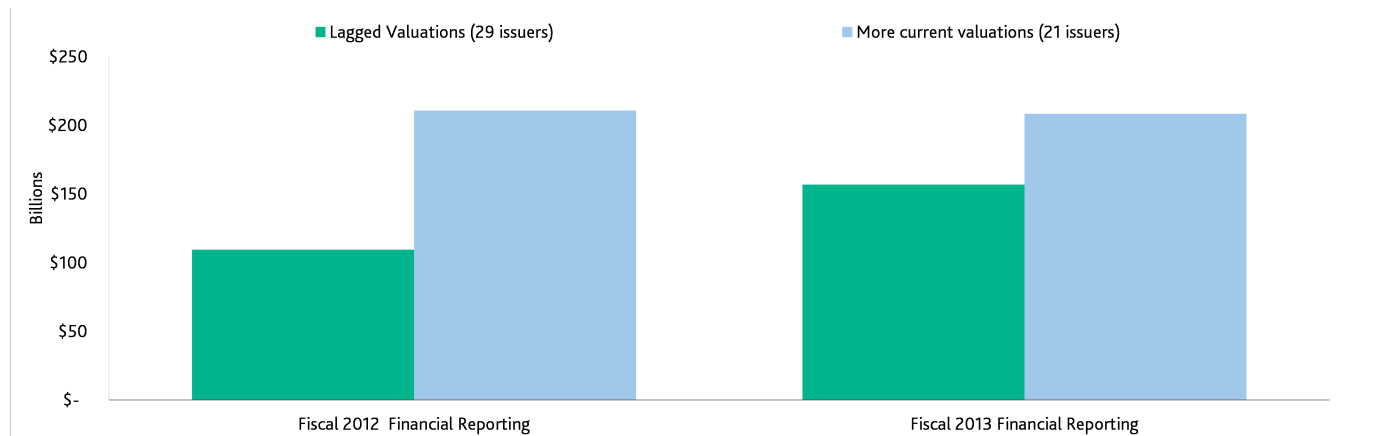
Mixed ANPL changes in fiscal 2013 tied to differences in discount rates

Our pension adjustments tie actuarial valuation dates to market-based discount rates in valuing liabilities. Since the actuarial valuation dates of reported pension information within fiscal 2013 government financial disclosures varies between 2012 and 2013 calendar years, these timing differences resulted in two distinct groups of results. For the 29 issuers whose largest pension plan reporting was based on 2012 actuarial results, ANPLs increased by 37% on average. The ANPLs for the other 21 issuers that reported based on 2013 actuarial results decreased by an average of 13%.

In aggregate, ANPLs for the 21 issuers with more current 2013 discount rates declined by \$2.2 billion (1%), while aggregate ANPLs for the 29 issuers with lagged 2012 discount rates increased by \$45.5 billion, or 43% (see Exhibit 3).

Exhibit 3

Fiscal 2013 ANPLs Generally Grew for Lagged Reporters, Declined for Local Governments with More Current Valuations



Issuers with January 1, 2013 actuarial valuations are considered "lagged" with other 2012 valuation dates for the purposes of this analysis, as we apply a discount rate tied to December 31, 2012 to those reported liabilities. New York City restated its 2013 pension assets and liabilities under GASB standard 68 in its 2014 CAFR. Our adjustments reflect that restatement.

Sources: Plan CAFRs, Moody's Investors Service

Fiscal 2014 pension disclosures point to moderate declines in ANPLs for many local governments

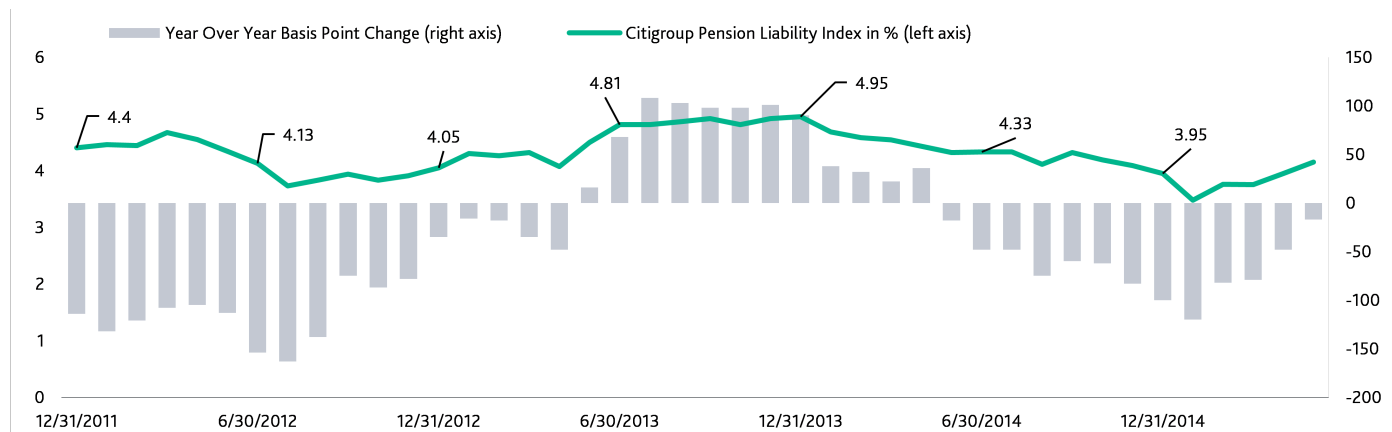
The available 2014 financial reporting for several large multi-employer cost-sharing plans indicates that ANPLs will generally decline in 2014, driven by very strong investment performance for pension plans with fiscal years ended June 30, 2014. However, this positive experience is not expected for all fiscal 2014 reporting. Lower discount rates and weaker investment performance will push up ANPLs based on December 2014 reporting (applicable to Chicago, for example).

Cyclical High in Discount Rates That Drove Down 2013 ANPL Measures Reversed in 2014

Compared to the previous 18 months, ANPLs measured from June to December 2013 benefitted from a cyclical upturn in discount rates, based on the Citigroup Pension Liability Index (CPLI). For example, June 30, 2013 rates increased by 68 basis points over June 30, 2012, whereas the previous year had seen a 154 basis point decline. Looking ahead to 2014 measurements, falling discount rates will push up ANPLs, all else being equal. The CPLI in 2014 fell 48 basis points and 100 basis points for the two most common measurement dates, June 30 and December 31, respectively (see Exhibit 4).

Exhibit 4

Market-Based Discount Rates Have Cycled Between 3.5% and 5% Since 2011
Discount Rate Declines to Push Up ANPLs Based on 2014 Measurements



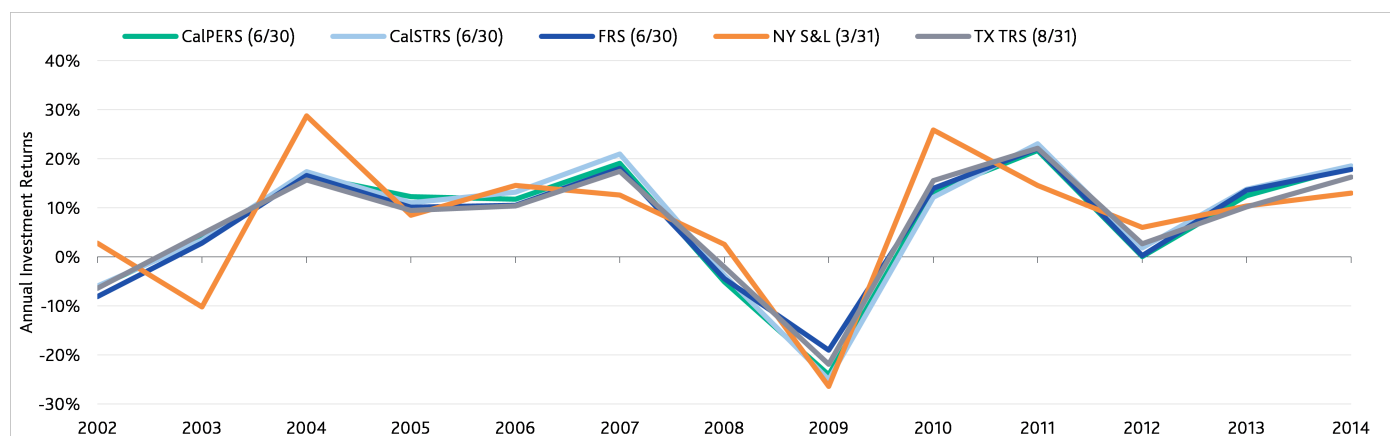
Source: Citigroup Pension Liability Index, Published by the Society of Actuaries

ANPLs Benefit from Strong Asset Performance in 2013 and First Half of 2014, December 2014 Returns Fall Below Return Targets

Following nearly flat returns in 2012, the largest local governments' pension plans generally achieved strong investment performance in 2013. Those plans with fiscal years ending June 30, achieved very strong investment performance in 2014 as well. For example, returns for both the [California Public Employees' Retirement System](#) (CalPERS, rated Aa2 stable) and California State Teachers' Retirement System exceeded 12% in 2013, while year-end June 30, 2014 returns were above 18% for both plans. These two retirement systems in California are the two largest US public plans, and combined with the Florida Retirement System (FRS), New York State and Local Retirement System (NY S&L) and Teachers Retirement System of Texas (TX TRS), comprise the five largest US public plans. There is also substantial participation in these five plans for the 50 largest local governments. Out of the 50 largest, 15 participate in at least one of these five retirement systems, and each experienced investment returns above 10% in fiscal 2014, far better than assumed (see Exhibit 5).

Exhibit 5

Local Governments Benefit From Strong Pension Asset Performance in 2013 and Much of 2014



CalPERS: California Public Employees Retirement System; CalSTRS: California Teachers' Retirement System; FRS: Florida Retirement System; NY S&L: New York State & Local Retirement System; TX TRS: Teachers Retirement System of Texas

Sources: Plan CAFRs and actuarial valuations

With plans generally adopting new public pension accounting standards beginning in fiscal 2014, funding disclosures will become more timely in some cases because assets and liabilities must be reported as of plan fiscal year ends, rather than actuarial valuation dates. For example, in its fiscal 2013 CAFR, CalSTRS provided plan funding disclosures as of the June 30, 2012 actuarial valuation. Under Governmental Accounting Standard Board (GASB) Statement 67, CalSTRS disclosed its plan assets and liabilities in its 2014 CAFR as of June 30, 2014, with those results "rolled-forward" from a June 30, 2013 actuarial valuation.

Based on available disclosures for June 30, 2014 reporting, we expect many local government ANPLs, such as New York City's, to moderately decline. However, some ANPLs, such as those of Texas school districts, will increase due in part to discount rate declines. Our adjustments will reflect plan-specific liability duration estimates for plans, often for the first time, under new GASB 67 disclosures. All else being equal, ANPLs will be pushed up for plans where duration estimates exceed our previous uniform 13 year assumption, and vice versa. (see Exhibit 6).

Exhibit 6

Moderate ANPL Declines Expected for Many Local Governments in Fiscal 2014

Some Issuers, such as Texas School Districts, Face ANPL Increases

Fiscal 2013									
Reporting Entity	Fiscal Year End	Accounting Standard	Actuarial Valuation Date		Reported Discount Rate	Reported UAAL (\$billions)	CPLI	Estimated Liability Duration	ANPL
CalSTRS	June 30, 2013	GASB 25	June 30, 2012		7.50%	\$70.5	4.13%	13.0	\$185.0
FRS	June 30, 2014	GASB 25	July 1, 2013		7.75%	\$22.4	4.81%	13.0	\$89.3
TX TRS	August 31, 2013	GASB 25	August 31, 2013		8.00%	\$28.9	4.86%	13.0	\$99.5
LA County Retirement Assoc.	June 30, 2013	GASB 25	June 30, 2012		7.60%	\$11.8	4.13%	13.0	\$38.8
New York City (Issuer Reporting)	June 30, 2013	GASB 68	June 30, 2011		7.00%	\$59.9	4.81%	10.7	\$100.5
Fiscal 2014									
Reporting Entity	Fiscal Year End	Accounting Standard	Actuarial Valuation Date	Measurement Date	Reported Discount Rate	Reported NPL (\$billions)	CPLI	Estimated Liability Duration	ANPL
CalSTRS	June 30, 2014	GASB 67	June 30, 2013	June 30, 2014	7.60%	\$58.44	4.33%	13.12	\$182.45
FRS	June 30, 2014	GASB 67	July 1, 2014	June 30, 2014	7.65%	\$6.10	4.33%	12.81	\$83.04
TX TRS	August 31, 2014	GASB 67	August 31, 2014	August 31, 2014	8.00%	\$26.72	4.11%	13.18	\$125.82
LA County Retirement Assoc.	June 30, 2014	GASB 67	June 30, 2013	June 30, 2014	7.63%	\$7.35	4.33%	12.84	\$34.24
New York City (Issuer Reporting)	June 30, 2014	GASB 68	June 30, 2012	June 30, 2014	7.00%	\$46.60	4.33%	10.54	\$98.54

Fiscal 2013 reporting for LA County Retirement Association does not reflect assumption revisions described in 2014 plan actuarial valuation. Fiscal 2013 GASB 68 measurement date for New York City is June 30, 2013.

Sources: Issuer and plan CAFRs, Moody's Investors Service

In contrast to the very strong returns experienced for fiscal years ended June 30, 2014, annual returns as of December 31, 2014 generally fell below plan targets. For example, Chicago's largest plan, the Municipal Employees' Annuity and Benefit Fund, experienced returns of 5.5% on a market value basis, according to the plan's December 31, 2014 actuarial valuation. (The plan returned 9.3%, above its 7.5% target, when considering asset values used for actuarial funding, or "smoothed" assets.) Similarly, the Colorado Public Employees Retirement Association, which oversees the Denver Public Schools' pension plan, returned 5.7% for the year ended December 31, 2014, less than its 7.5% target. CalPERS recently [announced preliminary 2.4% returns](#) for the year ended June 30, 2015, below its 7.5% assumption. This provides a leading indication that many US public plans will report returns similarly below their own targets.

Moody's Adjustments Provide Point-in-Time Balance Sheet Measure of US State and Local Government Pension Burdens

As detailed in our April 2013 methodology, "[Adjustments to US State and Local Reported Pension Data](#)," our adjustments to pension information reported by US state and local governments are an effort to improve transparency and consistency in our analysis of pension risk for the purpose of our independent credit analysis.

New public pension accounting standards, GASB Statements 67 and 68, will more closely align reported pension information with several key components of our adjustments. First, public plans and state and local governments will disclose assets at fair value, rather than actuarial ("smoothed") values. Second, government participants in multi-employer cost-sharing plans will disclose their proportional allocations of plan assets and liabilities under GASB 68, generally beginning with fiscal 2015 financial statements. Under GASB 68, state and local governments will report Net Pension Liabilities on government-wide balance sheets, also for the first time. Since we adopted our adjustments in April 2013, our credit assessments consider pensions as a debt-like, balance sheet obligation.

Our assessment of pension liabilities will continue to contrast with reported values due to fundamentally different approaches to discount rate assumptions. Our adjustments rely upon a high-grade, long-term taxable bond index rate as of the actuarial valuation date, or measurement date, to discount accrued pension liabilities. As such, we seek to measure liabilities representing benefit promises completely independent of asset performance and allocations as part of our credit assessments. Conversely, government pension accounting, under both new and expiring rules, generally relies on discount rates tied entirely or partially to assumptions about future asset returns.

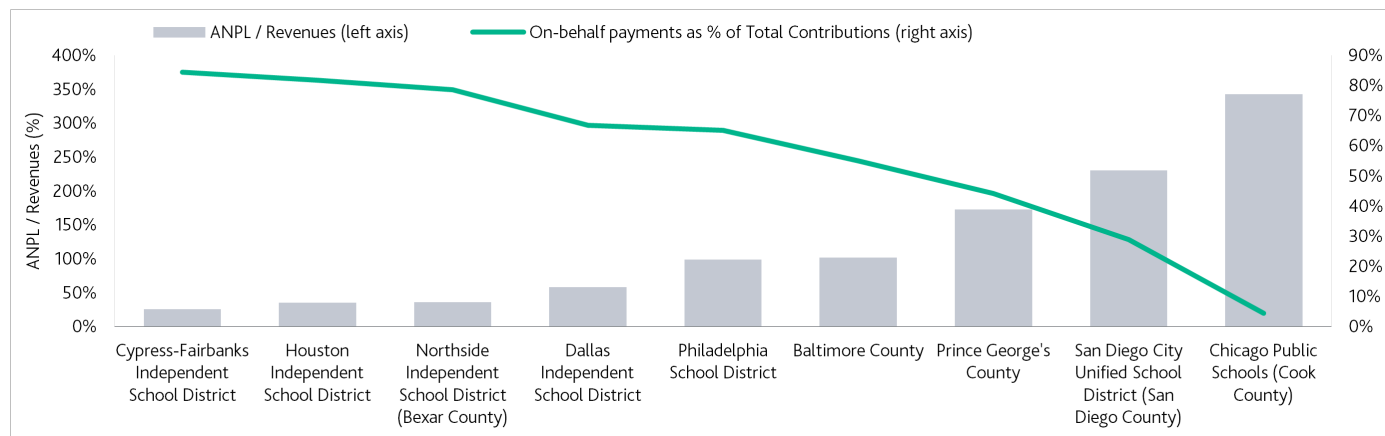
We dampen the impact of market volatility in our adjusted balance sheet metrics for state and local governments by using three-year averages in our state and local government rating methodologies. A trend of rising interest rates would be reflected in our metrics over a multiple-year period, although our credit analysis at any point in time is forward-looking.

Pension cost and liability burdens still vary widely

Pension costs are not a substantial burden for a significant number of the largest local governments. In fact, actuarial costs amounted to less than 5% of revenues for 14 out of the 50 largest, including the four Texas schools in our 50 largest. These four districts, and all others in Texas, receive "on-behalf" support from the state for nearly all of their pension costs. In comparison, the State of Illinois (A3 negative) currently only contributes a very small portion of pension costs for Chicago Public Schools (see Exhibit 7).

Exhibit 7

Some Local Government Pension Burdens Reduced by Substantial State Support



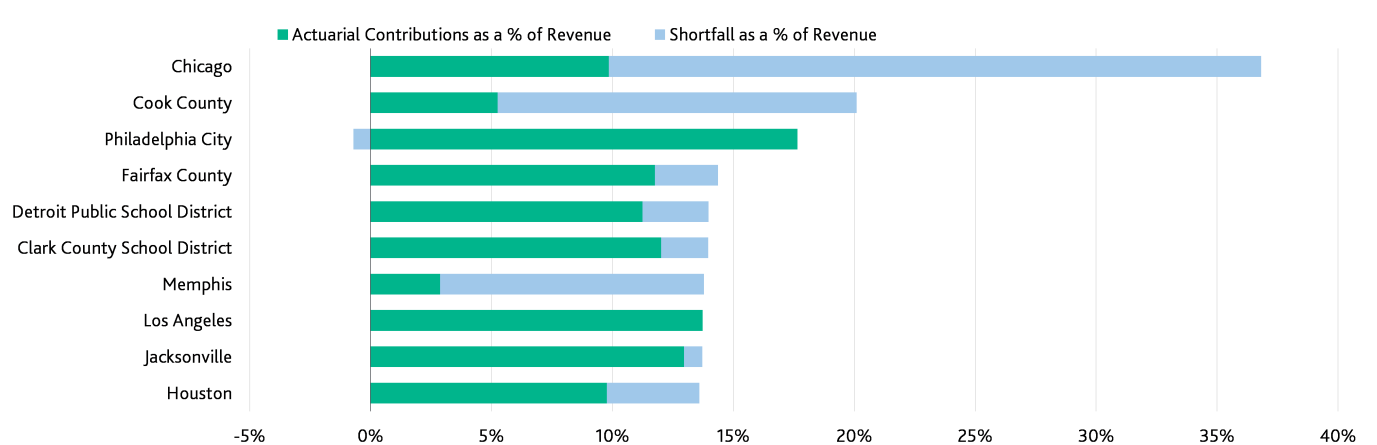
Sources: Issuer and plan CAFRs

Not all local governments with low pension burdens receive state support for these costs. For example, total actuarial costs tracked below 2% of revenues for Mecklenburg and Wake Counties, both of which are in North Carolina and rated Aaa stable. Both counties' ANPLs compared to revenues and full value are also among the lowest of the largest local governments.

Conversely, pension costs and liability burdens remain a significant credit challenge for a number of the largest local governments. Pension contributions grew from 13% to 18% of revenues for Philadelphia, as the city hiked its contributions to meet actuarial requirements. Heavy and growing pension leverage also persists for those entities with the most material contribution shortfalls, such as Chicago and Cook County. Growing pension burdens, in part due to contributions shortfalls, have also driven outlook changes for highly-rated issuers such as Houston and Memphis (see Exhibit 8).

Exhibit 8

Actuarial Costs Grow Onerous for Some Local Government Budgets
Contribution Shortfalls Signal Structural Budget Imbalance, Akin to Borrowing for Operations



Actuarial costs include pro-rata shares of multi-employer cost sharing plan annual required contributions, allocated by Moody's. Reflects fiscal 2013 reporting only, thus subsequent funding changes are not reflected, such as a 2014 requirement for improved local government actuarial funding in Tennessee.

Sources: Issuer and plan CAFRs

Appendices

Table 9

Selected Characteristics of Local Government Pension Plans

Issuer	State	Underlying Rating	Number of Plans			Valuation Date for Largest Plan	Reported Discount Rate for Largest Plan (%)	Aggregate UAAL (\$000), including Moody's Pro-Rata Allocations of Cost Sharing Plans	Moody's Adjusted Discount Rate for Largest Plan (%)
			Single Employer/ Agent	Cost Sharing	Total				
Baltimore County	MD	Aaa	0	2	2	6/30/2012	7.25	1,594,540	4.13
Broward County School District	FL	Aa3	0	1	1	7/1/2013	7.75	1,118,453	4.81
Charlotte	NC	Aaa	2	2	4	12/31/2012	7.25	136,402	4.05
Chicago	IL	Ba1	4	0	4	12/31/2013	7.50	20,109,929	4.95
Chicago Public Schools (Cook County)	IL	Ba3	1	0	1	6/30/2012	8.00	8,011,584	4.13
Clark County	NV	Aa1	1	3	4	6/30/2013	8.00	3,177,142	4.81
Clark County School District	NV	A1	0	1	1	6/30/2013	8.00	3,219,276	4.81
Columbus	OH	Aaa	0	2	2	1/1/2013	8.25	1,166,614	4.05
Cook County	IL	A2	1	0	1	12/31/2013	7.50	5,255,132	4.95
Cypress-Fairbanks Independent School District	TX	Aa1	0	1	1	8/31/2013	8.00	408,433	4.86
Dallas	TX	Aa1	3	0	3	1/1/2013	8.50	1,750,000	4.05
Dallas Independent School District	TX	Aa1	0	1	1	8/31/2013	8.00	705,722	4.86
Denver City and County	CO	Aaa	2	2	4	1/1/2013	8.00	891,877	4.05
Denver County School District 1 (Denver County)	CO	Aa2	0	1	1	12/31/2013	7.50	709,977	4.95
Detroit	MI	B3	2	0	2	6/30/2012	8.00	984,900	4.13
Detroit Public School District	MI	Caa1	0	1	1	9/30/2012	8.00	953,939	3.94
Fairfax County	VA	Aaa	5	1	6	6/30/2012	7.00	5,863,595	4.13
Harris County	TX	Aaa	1	0	1	12/31/2012	8.00	514,730	4.05
Honolulu City and County	HI	Aa1	0	1	1	6/30/2013	7.75	1,282,754	4.81
Houston	TX	Aa2	3	0	3	7/1/2012	8.50	2,971,100	4.13
Houston Independent School District	TX	Aaa	0	1	1	8/31/2013	8.00	928,524	4.86
Jacksonville	FL	Aa2	3	1	4	9/30/2012	7.00	2,746,267	3.94
Kansas City	MO	Aa2	4	0	4	5/1/2012	7.50	611,182	4.55
King County	WA	Aaa	0	6	6	6/30/2012	7.90	215,514	4.13
Los Angeles	CA	Aa2	3	0	3	6/30/2013	7.75	9,768,794	4.81
Los Angeles CCD	CA	Aa1	1	2	3	6/30/2012	7.50	382,787	4.13
Los Angeles County	CA	Aa2	0	1	1	6/30/2012	7.60	11,770,061	4.13
Los Angeles Unified School District (Los Angeles County)	CA	Aa2	1	2	3	6/30/2012	7.50	4,682,157	4.13
Mecklenburg County	NC	Aaa	1	3	4	12/31/2012	7.25	11,845	4.05
Memphis	TN	Aa2	3	0	3	7/1/2013	7.50	1,006,869	4.81
Metro. Water Reclamation District of Chicago	IL	Aa2	1	0	1	12/31/2013	7.75	1,006,408	4.95
Miami-Dade County	FL	Aa2	1	1	2	7/1/2013	7.75	2,038,954	4.81
Miami-Dade County School District	FL	Aa3	0	1	1	7/1/2013	7.75	1,078,568	4.81
Montgomery County	MD	Aaa	0	1	1	6/30/2013	7.50	808,833	4.81
Nashville-Davidson	TN	Aa2	6	1	7	7/1/2012	7.50	757,239	4.13
Nassau County	NY	A2	0	2	2	4/1/2012	7.50	722,676	4.67
New York City	NY	Aa2	2	3	5	6/30/2013	7.00	59,941,136	4.81
Northside Independent School District (Bexar County)	TX	Aa1	0	1	1	8/31/2013	8.00	393,467	4.86
Palm Beach County School District	FL	Aa2	0	1	1	7/1/2013	7.75	603,088	4.81
Philadelphia City	PA	A2	2	0	2	7/1/2012	7.95	5,230,911	4.13

Philadelphia School District	PA	Ba3	0	1	1	6/30/2012	7.50	2,458,437	4.13
Phoenix	AZ	Aa1	3	1	4	6/30/2013	8.00	2,540,396	4.81
Prince George's County	MD	Aaa	10	4	14	7/1/2012	7.50	2,568,046	4.13
San Antonio	TX	Aaa	5	0	5	10/1/2012	7.50	540,945	3.94
San Diego City Unified School District (San Diego County)	CA	Aa3	0	2	2	6/30/2012	7.50	1,465,192	4.13
San Francisco City and County	CA	Aa1	3	0	3	7/1/2012	7.66	3,531,755	4.13
Santa Clara County	CA	Aa2	2	0	2	6/30/2013	7.50	2,653,628	4.81
Suffolk County	NY	A3	0	4	4	4/1/2012	7.50	625,683	4.67
Wake County	NC	Aaa	1	1	2	12/31/2012	7.25	11,139	4.05
Washington	DC	Aa1	1	0	1	10/1/2012	6.50	-252,955	3.94

Aggregate UAAL includes pro-rata allocations of cost-sharing plans by Moody's. Pension exposure related to component units, enterprises or non-operating funds is not removed from these values.

Source: Issuer and pension plan comprehensive annual financial reports, Moody's Investors Service

Table 10

**Moody's Adjusted Net Pension Liability (ANPL) Rankings
Ranked by 3 Year Average ANPL**

Rank	Issuer	State	Aggregate UAAL (\$000), including Moody's Pro- Rata Allocations of Cost Sharing Plans	Fiscal Year 2013 Single- Year ANPL (\$000)	ANPL net of Self Supporting Enterprises, Non-Major Funds, and Component Units (\$000)	3 Year Avg. ANPL - Net of Support
1	New York City	NY	59,941,136	100,472,019	100,472,020	86,232,897
2	Chicago	IL	20,109,929	32,116,438	28,923,567	29,800,034
3	Los Angeles County	CA	11,770,061	38,795,985	32,303,864	23,478,640
4	Los Angeles	CA	9,768,794	28,243,752	19,332,268	17,808,297
5	Chicago Public Schools (Cook County)	IL	8,011,584	18,569,286	18,222,574	13,775,618
6	Cook County	IL	5,255,132	10,253,551	10,253,551	11,162,909
7	Los Angeles Unified School District (Los Angeles County)	CA	4,682,157	13,783,754	13,560,318	11,056,731
8	Fairfax County	VA	5,863,595	15,120,123	13,891,263	9,972,775
9	Philadelphia City	PA	5,230,911	11,476,649	9,404,444	7,878,480
10	Clark County School District	NV	3,219,276	8,230,986	8,230,986	7,519,268
11	Houston	TX	2,971,100	11,786,550	9,680,827	7,324,546
12	San Francisco City and County	CA	3,531,755	14,459,598	6,735,936	5,931,694
13	Miami-Dade County	FL	2,038,954	8,390,170	6,241,417	5,338,558
14	Dallas	TX	1,750,000	7,656,825	6,330,440	5,229,534
15	Clark County	NV	3,177,142	8,017,729	4,680,858	5,196,183
16	Miami-Dade County School District	FL	1,078,568	4,289,861	4,289,861	4,074,967
17	Jacksonville	FL	2,746,267	5,633,646	4,566,970	4,017,437
18	Broward County School District	FL	1,118,453	4,448,497	4,448,497	3,887,032
19	Phoenix	AZ	2,540,396	5,547,855	4,340,501	3,883,913
20	Santa Clara County	CA	2,653,628	6,609,003	3,676,883	3,121,022
21	Detroit	MI	984,900	5,451,737	3,697,719	2,639,459
22	Columbus	OH	1,166,614	3,820,819	2,997,755	2,536,643
23	Denver County School District 1 (Denver County)	CO	709,977	2,097,670	2,097,670	2,458,528
24	Denver City and County	CO	891,877	3,111,358	3,111,358	2,456,898
25	Prince George's County	MD	2,568,046	5,578,021	2,794,855	2,400,728
26	Detroit Public School District	MI	953,939	2,547,751	2,547,751	2,394,988
27	San Diego City Unified School District (San Diego County)	CA	1,465,192	4,167,904	2,769,994	2,278,193
28	Palm Beach County School District	FL	603,088	2,398,700	2,398,700	2,177,318
29	Metro. Water Reclamation District of Chicago	IL	1,006,408	1,902,899	1,902,899	2,086,594
30	Honolulu City and County	HI	1,282,754	2,673,660	2,064,626	2,068,953
31	Harris County	TX	514,730	2,642,481	2,533,746	2,036,633
32	Nashville-Davidson	TN	757,239	2,619,438	2,619,438	1,974,492

33	Nassau County	NY	722,676	3,125,498	2,847,207	1,850,965
34	Philadelphia School District	PA	2,458,437	6,209,831	2,173,441	1,759,065
35	Memphis	TN	1,006,869	2,802,651	1,767,460	1,662,230
36	Suffolk County	NY	625,683	2,750,642	2,537,697	1,643,726
37	San Antonio	TX	540,945	3,106,932	1,939,631	1,633,592
38	Baltimore County	MD	1,594,540	4,215,459	1,972,533	1,593,676
39	Montgomery County	MD	808,833	2,302,801	1,347,157	1,375,996
40	Kansas City	MO	611,182	1,870,920	1,690,364	1,293,226
41	Washington	DC	-252,955	1,661,957	1,661,957	1,199,781
42	King County	WA	215,514	2,680,024	1,625,030	1,145,202
43	Los Angeles CCD	CA	382,787	1,197,595	1,197,594	987,495
44	Dallas Independent School District	TX	705,722	2,426,833	805,650	895,396
45	Houston Independent School District	TX	928,524	3,193,004	585,125	633,204
46	Charlotte	NC	136,402	906,780	686,002	565,641
47	Northside Independent School District (Bexar County)	TX	393,467	1,353,051	289,628	302,670
48	Mecklenburg County	NC	11,845	457,078	388,913	288,851
49	Cypress-Fairbanks Independent School District	TX	408,433	1,404,516	219,430	271,291
50	Wake County	NC	11,139	314,502	310,016	236,073

Moody's nets out support for pensions from sources such as state on-behalf payments, enterprises and non-operating funds based on financial reporting and issuer-provided responses.

Source: Issuer and pension plan comprehensive annual financial reports, Moody's Investors Service

Table 11

**Adjusted Pension and Net Direct Debt Burdens Relative to Tax Base Size
Ranked by 3 Year Average ANPL Relative to Full Value**

Rank	Issuer	State	2013 Single Year		
			ANPL as % of Full Value	3 Year Avg. ANPL as % of Full Value	Net Direct Debt as % of Full Value
1	Chicago	IL	15.4%	15.9%	4.9%
2	Detroit	MI	20.6%	14.7%	14.5%
3	Detroit Public School District	MI	14.2%	13.3%	11.2%
4	New York City	NY	11.7%	10.0%	7.8%
5	Philadelphia City	PA	9.4%	7.9%	4.2%
6	Chicago Public Schools (Cook County)	IL	9.7%	7.4%	3.4%
7	Dallas	TX	7.6%	6.2%	2.1%
8	Columbus	OH	7.4%	6.2%	3.5%
9	Jacksonville	FL	5.8%	5.1%	3.0%
10	Fairfax County	VA	6.9%	5.0%	1.5%
11	Houston	TX	6.3%	4.8%	2.2%
12	Clark County School District	NV	5.2%	4.8%	1.6%
13	Kansas City	MO	5.9%	4.5%	5.4%
14	Memphis	TN	4.7%	4.4%	4.0%
15	Los Angeles	CA	4.6%	4.3%	0.8%
16	San Francisco City and County	CA	4.4%	3.9%	1.8%
17	Phoenix	AZ	4.2%	3.8%	2.2%
18	Clark County	NV	3.0%	3.4%	2.2%
19	Denver County School District 1 (Denver County)	CO	2.7%	3.2%	3.3%
20	Denver City and County	CO	4.1%	3.2%	2.0%
21	Nashville-Davidson	TN	4.1%	3.1%	3.8%
22	Prince George's County	MD	3.5%	3.0%	1.9%
23	Cook County	IL	2.5%	2.7%	0.9%
24	Los Angeles Unified School District (Los Angeles County)	CA	2.8%	2.3%	2.4%
25	San Antonio	TX	2.7%	2.3%	3.3%
26	Los Angeles County	CA	3.1%	2.3%	0.2%
27	Broward County School District	FL	2.5%	2.2%	1.0%
28	Miami-Dade County	FL	2.4%	2.1%	1.7%
29	Baltimore County	MD	2.4%	2.0%	3.3%
30	Philadelphia School District	PA	2.2%	1.8%	3.3%

31	San Diego City Unified School District (San Diego County)	CA	2.1%	1.7%	1.7%
32	Miami-Dade County School District	FL	1.6%	1.5%	1.2%
33	Honolulu City and County	HI	1.3%	1.3%	1.4%
34	Palm Beach County School District	FL	1.5%	1.3%	1.1%
35	Dallas Independent School District	TX	1.1%	1.2%	3.3%
36	Santa Clara County	CA	1.2%	1.0%	0.6%
37	Northside Independent School District (Bexar County)	TX	0.9%	0.9%	5.2%
38	Nassau County	NY	1.4%	0.9%	1.8%
39	Cypress-Fairbanks Independent School District	TX	0.7%	0.9%	5.4%
40	Montgomery County	MD	0.8%	0.8%	1.8%
41	Washington	DC	1.1%	0.8%	5.6%
42	Harris County	TX	0.9%	0.7%	1.1%
43	Suffolk County	NY	1.0%	0.6%	0.8%
44	Charlotte	NC	0.8%	0.6%	1.5%
45	Houston Independent School District	TX	0.5%	0.6%	1.9%
46	Metro. Water Reclamation District of Chicago	IL	0.5%	0.5%	0.6%
47	King County	WA	0.5%	0.4%	0.6%
48	Mecklenburg County	NC	0.3%	0.2%	1.5%
49	Wake County	NC	0.3%	0.2%	1.7%
50	Los Angeles CCD	CA	0.2%	0.2%	0.6%

Source: Issuer and pension plan comprehensive annual financial reports, Moody's Investors Service

Table 12

Adjusted Pension and Debt Burdens Relative to Revenues
Ranked by 3 Year Average ANPL Relative to Operating Revenues

Rank	Issuer	State	Fiscal 2013 Single-Year ANPL as % of Operating Revenues	3 Year Avg ANPL as % of Operating Revenues	Net Direct Debt as % of Operating Revenues
1	Chicago	IL	703%	724%	225%
2	Dallas	TX	506%	418%	139%
3	Los Angeles	CA	410%	378%	67%
4	Cook County	IL	346%	377%	125%
5	Metro. Water Reclamation District of Chicago	IL	324%	356%	437%
6	Jacksonville	FL	403%	355%	209%
7	Houston	TX	458%	346%	156%
8	Phoenix	AZ	343%	307%	177%
9	Denver County School District 1 (Denver County)	CO	257%	301%	305%
10	Detroit Public School District	MI	312%	293%	247%
11	Clark County	NV	255%	283%	189%
12	Clark County School District	NV	302%	276%	91%
13	Columbus	OH	314%	266%	149%
14	Chicago Public Schools (Cook County)	IL	343%	259%	119%
15	Memphis	TN	265%	249%	226%
16	Fairfax County	VA	333%	239%	71%
17	Detroit	MI	330%	235%	232%
18	Kansas City	MO	285%	218%	264%
19	Philadelphia City	PA	251%	211%	113%
20	Honolulu City and County	HI	204%	204%	214%
21	San Diego City Unified School District (San Diego County)	CA	230%	189%	195%
22	Miami-Dade County	FL	218%	187%	151%
23	Broward County School District	FL	193%	168%	76%
24	San Francisco City and County	CA	190%	168%	77%
25	King County	WA	237%	167%	290%
26	Los Angeles Unified School District (Los Angeles County)	CA	204%	166%	171%
27	Denver City and County	CO	205%	162%	102%
28	Los Angeles County	CA	221%	161%	13%
29	Santa Clara County	CA	182%	154%	99%
30	Prince George's County	MD	173%	148%	92%

31	San Antonio	TX	150%	127%	183%
32	Palm Beach County School District	FL	139%	126%	103%
33	Miami-Dade County School District	FL	132%	126%	94%
34	New York City	NY	142%	122%	95%
35	Nashville-Davidson	TN	152%	115%	141%
36	Los Angeles CCD	CA	130%	107%	404%
37	Harris County	TX	120%	96%	154%
38	Charlotte	NC	106%	88%	214%
39	Baltimore County	MD	101%	82%	136%
40	Philadelphia School District	PA	98%	80%	149%
41	Nassau County	NY	101%	66%	129%
42	Dallas Independent School District	TX	58%	64%	179%
43	Suffolk County	NY	94%	61%	73%
44	Montgomery County	MD	46%	46%	105%
45	Houston Independent School District	TX	35%	38%	130%
46	Northside Independent School District (Bexar County)	TX	36%	37%	213%
47	Cypress-Fairbanks Independent School District	TX	25%	31%	192%
48	Wake County	NC	32%	24%	215%
49	Mecklenburg County	NC	29%	21%	130%
50	Washington	DC	24%	18%	124%

Source: Issuer and pension plan comprehensive annual financial reports, Moody's Investors Service

Table 13

Budgetary Metrics: Annual Required Contribution (ARC)
Ranked by ARCs Relative to Operating Revenues

Rank	Issuer	State	Single Employer & Agent Plans	Pro-rata share of plan-level actuarial cost (allocated by Moody's)	Total	Actuarial Costs as % of Operating Revenue
1	Chicago	IL	1,515,739	-	1,515,739	37%
2	Cook County	IL	595,370	-	595,370	20%
3	Philadelphia City	PA	634,246	-	634,246	17%
4	Fairfax County	VA	288,416	311,230	599,646	14%
5	Detroit Public School District	MI	-	114,197	114,197	14%
6	Clark County School District	NV	-	380,673	380,673	14%
7	Memphis	TN	91,894	-	91,894	14%
8	Los Angeles	CA	646,910	-	646,910	14%
9	Jacksonville	FL	154,784	567	155,351	14%
10	Houston	TX	287,522	-	287,522	14%
11	Phoenix	AZ	166,929	188	167,117	13%
12	Metro. Water Reclamation District of Chicago	IL	74,774	-	74,774	13%
13	Kansas City	MO	74,889	-	74,889	13%
14	Columbus	OH	-	113,064	113,064	12%
15	Clark County	NV	-	216,484	216,484	12%
16	Dallas	TX	145,973	-	145,973	12%
17	New York City	NY	3,386,863	4,666,475	8,053,338	11%
18	Chicago Public Schools (Cook County)	IL	559,379	-	559,379	11%
19	Nashville-Davidson	TN	137,484	31,637	169,122	10%
20	King County	WA	-	64,553	64,553	9%
21	Los Angeles Unified School District (Los Angeles County)	CA	3,356	532,572	535,928	8%
22	Prince George's County	MD	110,617	18,519	129,136	8%
23	Denver County School District 1 (Denver County)	CO	-	64,938	64,938	8%
24	San Diego City Unified School District (San Diego County)	CA	-	93,501	93,501	8%
25	Honolulu City and County	HI	-	77,792	77,792	8%
26	San Antonio	TX	86,244	-	86,244	7%
27	Los Angeles County	CA	-	975,889	975,889	7%

28	Detroit	MI	73,090	-	73,090	7%
29	Denver City and County	CO	33,413	63,518	96,931	6%
30	Miami-Dade County	FL	-	180,336	180,336	6%
31	San Francisco City and County	CA	220,512	-	220,512	6%
32	Santa Clara County	CA	122,192	-	122,192	6%
33	Nassau County	NY	-	168,445	168,445	6%
34	Suffolk County	NY	-	150,047	150,047	6%
35	Broward County School District	FL	-	128,532	128,532	6%
36	Los Angeles CCD	CA	151	47,538	47,690	5%
37	Charlotte	NC	15,384	13,570	28,954	4%
38	Palm Beach County School District	FL	-	69,307	69,307	4%
39	Harris County	TX	80,867	-	80,867	4%
40	Miami-Dade County School District	FL	-	123,948	123,948	4%
41	Baltimore County	MD	-	67,353	67,353	3%
42	Philadelphia School District	PA	-	59,228	59,228	3%
43	Montgomery County	MD	-	74,815	74,815	3%
44	Washington	DC	102,721	-	102,721	1%
45	Dallas Independent School District	TX	-	20,553	20,553	1%
46	Wake County	NC	944	11,642	12,585	1%
47	Mecklenburg County	NC	992	14,717	15,708	1%
48	Northside Independent School District (Bexar County)	TX	-	7,121	7,121	1%
49	Houston Independent School District	TX	-	14,237	14,237	1%
50	Cypress-Fairbanks Independent School District	TX	-	5,292	5,292	1%

Source: Issuer and pension plan comprehensive annual financial reports, Moody's Investors Service.

Table 14

Budgetary Metrics: Contributions
Ranked by Contributions Relative to Revenues

Rank	Issuer	State	Contributions (\$000) - Net of Enterprise and non-operating funds		Contribution (excluding Operating Revenues on behalf payments) as % of Operating Revenue	
			On Behalf Payments	Issuer Contributions	(\$000)	% of Operating Revenue
1	Philadelphia City	PA	-	660,622	3,741,603	18%
2	Metro. Water Reclamation District of Chicago	IL	-	92,944	586,881	16%
3	Los Angeles	CA	-	646,910	4,713,327	14%
4	Phoenix	AZ	-	167,120	1,266,017	13%
5	Jacksonville	FL	-	146,851	1,132,928	13%
6	Clark County School District	NV	-	327,549	2,725,928	12%
7	Fairfax County	VA	-	490,506	4,173,784	12%
8	New York City	NY	-	8,053,338	70,631,865	11%
9	Detroit Public School District	MI	-	91,877	817,296	11%
10	Dallas	TX	-	127,524	1,250,319	10%
11	Clark County	NV	-	186,273	1,834,549	10%
12	Chicago	IL	-	405,270	4,116,368	10%
13	Houston	TX	-	206,523	2,114,962	10%
14	Nashville-Davidson	TN	-	147,811	1,721,634	9%
15	Kansas City	MO	-	50,702	592,257	9%
16	Columbus	OH	-	76,571	954,478	8%
17	Prince George's County	MD	98,776	124,706	1,619,966	8%
18	King County	WA	-	48,649	684,720	7%
19	Honolulu City and County	HI	-	67,800	1,013,901	7%
20	San Antonio	TX	-	86,245	1,290,172	7%
21	Los Angeles County	CA	-	975,889	14,610,458	7%
22	Denver City and County	CO	-	94,632	1,516,755	6%
23	San Francisco City and County	CA	-	220,512	3,537,941	6%
24	Santa Clara County	CA	-	122,192	2,021,815	6%

25	San Diego City Unified School District (San Diego County)	CA	27,299	67,237	1,202,799	6%
26	Suffolk County	NY	-	150,047	2,686,172	6%
27	Cook County	IL	-	155,548	2,961,806	5%
28	Los Angeles Unified School District (Los Angeles County)	CA	-	317,118	6,658,519	5%
29	Miami-Dade County	FL	-	130,623	2,861,756	5%
30	Chicago Public Schools (Cook County)	IL	10,931	234,579	5,319,658	4%
31	Nassau County	NY	-	123,623	2,820,221	4%
32	Broward County School District	FL	-	93,100	2,308,720	4%
33	Charlotte	NC	-	25,386	644,595	4%
34	Harris County	TX	-	80,867	2,112,085	4%
35	Baltimore County	MD	82,150	67,353	1,949,224	3%
36	Los Angeles CCD	CA	-	31,199	919,328	3%
37	Denver County School District 1 (Denver County)	CO	-	25,157	816,793	3%
38	Palm Beach County School District	FL	-	50,201	1,724,890	3%
39	Memphis	TN	-	19,151	666,352	3%
40	Miami-Dade County School District	FL	-	89,780	3,244,727	3%
41	Montgomery County	MD	-	74,815	2,960,106	3%
42	Philadelphia School District	PA	78,262	42,141	2,209,808	2%
43	Washington	DC	-	102,721	6,854,593	1%
44	Dallas Independent School District	TX	37,091	18,433	1,388,712	1%
45	Wake County	NC	-	12,602	973,245	1%
46	Mecklenburg County	NC	-	15,341	1,355,804	1%
47	Northside Independent School District (Bexar County)	TX	24,291	6,626	808,331	1%
48	Houston Independent School District	TX	59,666	13,387	1,655,660	1%
49	Cypress-Fairbanks Independent School District	TX	27,114	5,020	872,011	1%
50	Detroit	MI	-	5,908	1,121,406	1%

Contributions relative to revenues exclude on-behalf payments.

Source: Issuer and pension plan comprehensive annual financial reports, Moody's Investors Service.

Table 15

**Fiscal 2013 Contribution Shortfalls Relative to ARCs
Ranked by Size of Contribution Shortfall Relative to Revenues**

Rank	Issuer	State	Contribution Shortfall (\$000) relative to Actuarial Costs - Net of Enterprise and non-operating fund support			Contribution Shortfalls as % of Operating Revenues
			Single-Employer & Agent Plans	Cost-Sharing Allocation by Moody's	Total	
1	Chicago	IL	1,110,469	-	1,110,469	27%
2	Cook County	IL	439,822	-	439,822	15%
3	Memphis	TN	72,743	-	72,743	11%
4	Chicago Public Schools (Cook County)	IL	324,800	-	324,800	6%
5	Detroit	MI	67,182	-	67,182	6%
6	Denver County School District 1 (Denver County)	CO	-	39,781	39,781	5%
7	Kansas City	MO	24,187	-	24,187	4%
8	Houston	TX	80,999	-	80,999	4%
9	Columbus	OH	-	36,493	36,493	4%
10	Los Angeles Unified School District (Los Angeles County)	CA	-	218,810	218,810	3%
11	Detroit Public School District	MI	-	22,320	22,320	3%
12	Fairfax County	VA	40,254	68,886	109,140	3%
13	King County	WA	-	15,904	15,904	2%
14	San Diego City Unified School District (San Diego County)	CA	-	26,263	26,263	2%
15	Clark County School District	NV	-	53,124	53,124	2%
16	Los Angeles CCD	CA	-	16,491	16,491	2%

17	Miami-Dade County	FL	0	49,713	49,713	2%
18	Clark County	NV	-	30,211	30,211	2%
19	Nassau County	NY	-	44,822	44,822	2%
20	Broward County School District	FL	-	35,432	35,432	2%
21	Dallas	TX	18,449	-	18,449	1%
22	Nashville-Davidson	TN	21,310	-	21,310	1%
23	Palm Beach County School District	FL	-	19,106	19,106	1%
24	Miami-Dade County School District	FL	-	34,168	34,168	1%
25	Honolulu City and County	HI	-	9,992	9,992	1%
26	Philadelphia School District	PA	-	17,087	17,087	1%
27	Jacksonville	FL	8,344	156	8,500	1%
28	Charlotte	NC	3,568	0	3,568	1%
29	Prince George's County	MD	-	4,431	4,431	0%
30	Dallas Independent School District	TX	-	2,120	2,120	0%
31	Denver City and County	CO	3,207	(908)	2,299	0%
32	Northside Independent School District (Bexar County)	TX	-	494	494	0%
33	Houston Independent School District	TX	-	850	850	0%
34	Cypress-Fairbanks Independent School District	TX	-	272	272	0%
35	Mecklenburg County	NC	368	-	368	0%
36	Suffolk County	NY	-	-	-	0%
37	Santa Clara County	CA	-	-	-	0%
38	San Francisco City and County	CA	-	-	-	0%
39	Baltimore County	MD	-	-	-	0%
40	Montgomery County	MD	-	-	-	0%
41	Los Angeles County	CA	-	-	-	0%
42	Los Angeles	CA	-	-	-	0%
43	New York City	NY	-	-	-	0%
44	Washington	DC	-	-	-	0%
45	Harris County	TX	0	-	0	0%
46	San Antonio	TX	0	-	0	0%
47	Phoenix	AZ	-	(3)	(3)	0%
48	Wake County	NC	(16)	-	(16)	0%
49	Philadelphia City	PA	(26,377)	-	(26,377)	-1%
50	Metro. Water Reclamation District of Chicago	IL	(18,170)	-	(18,170)	-3%

Negative values indicate contributions in excess of reported ARCs.

Source: Issuer and pension plan comprehensive annual financial reports, Moody's Investors Service

Endnotes

- 1 All data for the City of Detroit represents fiscal 2013 reporting from the city, and thus does not account for liability reductions that occurred as part of the city's bankruptcy. For further discussion of the impact of the city's liability adjustments, please see Moody's report entitled, "[Detroit's Proposal Favors Pensioners over Bondholders](#)."

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