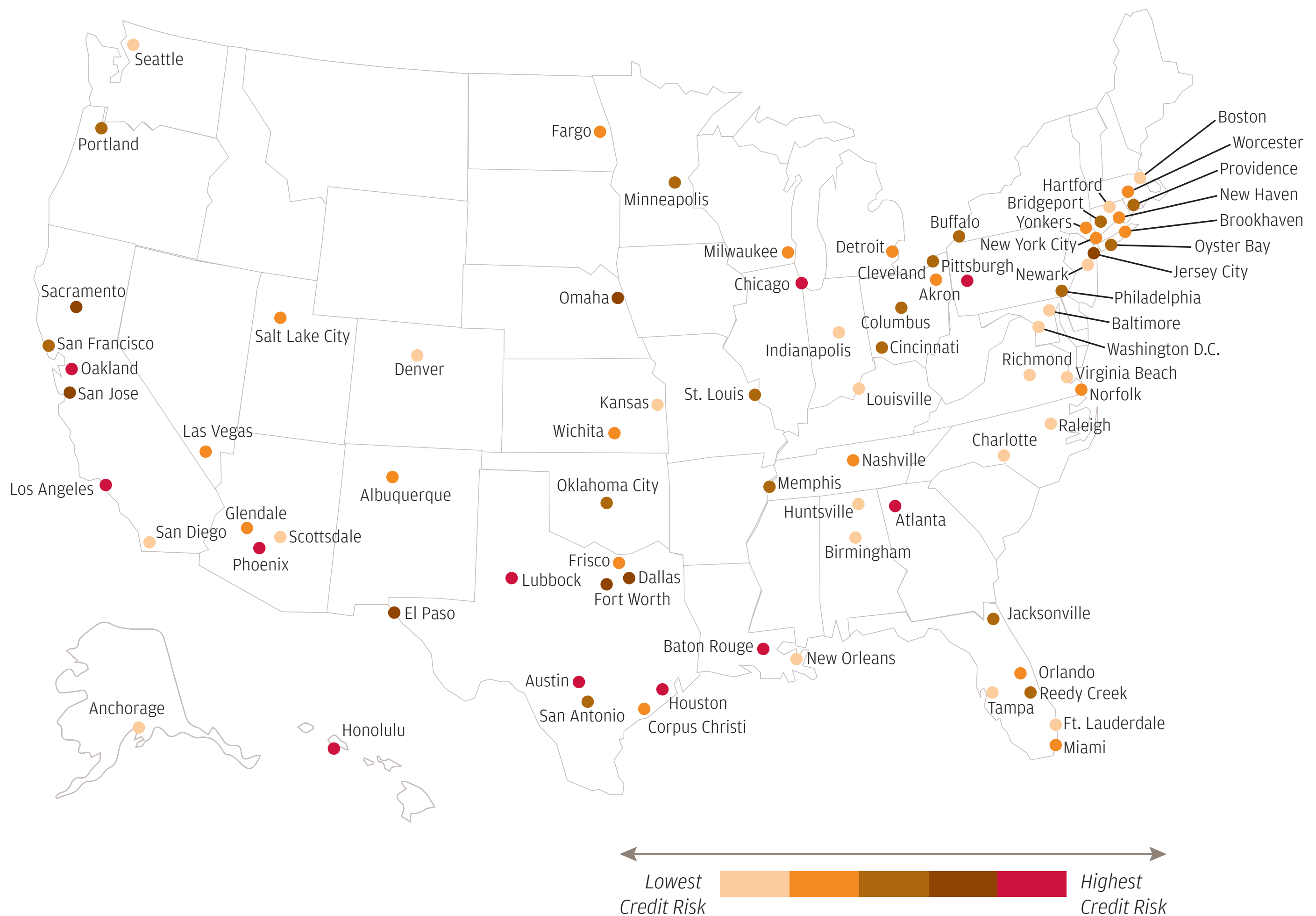
EYE ON THE MARKET • SPECIAL EDITION

The ARC and the Covenants 3.0

U.S. cities and counties

J.P. MORGAN ASSET MANAGEMENT



In this third installment of our *"ARC and the Covenants"* series, we look at the total indebtedness of US cities and counties, including general obligation debt and underfunded pension and retiree healthcare plans. While most US cities and counties have some time to undertake remediation measures to address underfunded plans, difficult choices will be required by some municipalities to meet all future obligations. Legal precedents from recent bankruptcies suggest that bondholders need to understand the totality of credit risks they face. While exemption from state and local taxation has value, investors must also weigh the benefits of portfolio diversification and the risks of concentration.

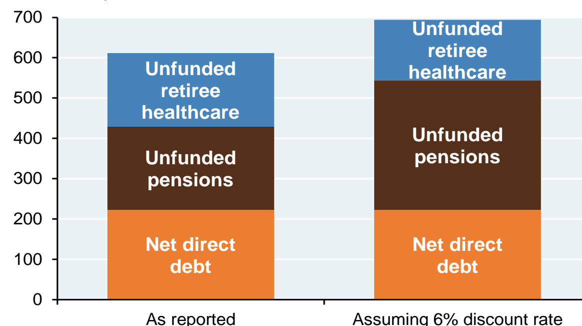
J.P.Morgan
Asset Management

The ARC and the Covenants: a comprehensive look at the credit risk of US cities and counties

Executive Summary

As managers of $70 billion in US municipal bonds across our asset management business (Q2 2017), we're very focused on credit risk of US municipalities. Last year, we completed our tri-annual credit review of US states. While a few states have very large debts relative to their revenues, many are in decent shape[1]. This summer, we completed a review of the largest US cities and counties. In general, US cities and counties have substantially more debt relative to their revenues than US states. While most have several years to undertake remediation measures, some very difficult choices will be required in order for them to meet all of their future obligations. And when these choices become untenable and rare municipal bankruptcies do occur, bondholders have usually received lower recoveries than pensioners.

Full accrual indebtedness of select US cities and counties, US$ billions

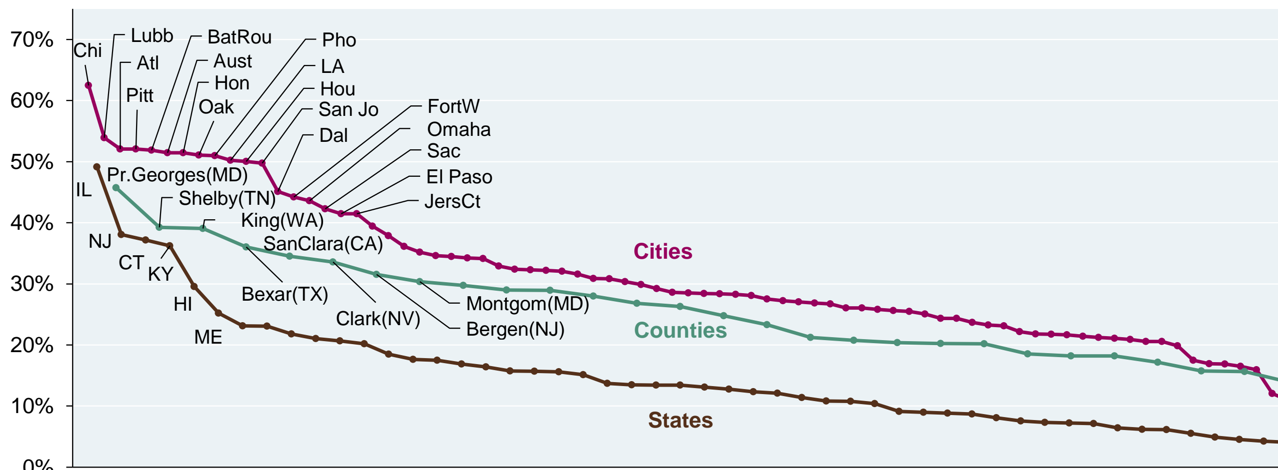


Source: JPMAM, Center for Retirement Research at BC, Moody's. FY 2015.

The concept of "debt" needs to be expanded when thinking about municipal credit risk, since general obligation bonds are only part of the picture. As "debt", we include unfunded obligations related to **pensions and retiree healthcare** along with bonds, leases and other obligations supported by each municipality's general account. As shown above, bonds and leases ("net direct debt") only represent around one third of the total debt of US cities and counties.

The chart below shows our "**IPOD**" ratio for US states, cities and counties. This measure represents the percentage of a municipality's revenues that would be needed to pay interest on direct debt, and *fully* amortize unfunded pension and retiree healthcare obligations over 30 years, assuming a conservative return of 6% on plan assets. While there's no hard and fast rule, municipalities with IPOD ratios over 30% may eventually face very difficult choices regarding taxation, non-pension spending, infrastructure investment, contributions to unfunded plans and bond repayment.

The IPOD ratio: State, City and County debt burdens
% of municipality's revenues required to pay the sum of interest on net direct debt, the municipality's share of unfunded pension and retiree healthcare liabilities, and defined contribution plan payments; assuming 6% plan return and 30 year level dollar amortization



Source: J.P. Morgan Asset Management, Center for Retirement Research at Boston College, CAFRs, Moody's. FY 2015.

[1] "The ARC and the Covenants, 2.0: an update on the long-term credit risk of US states", Eye on the Market special edition, May 2016

In recognition of these challenges, many municipalities are making substantial annual contributions to underfunded plans. In the table below, we focus on municipalities with the largest **"funding gaps"**: the difference between what they're paying now, and what they would need to pay on a full accrual basis according to our IPOD ratio. The table summarizes a few key statistics:

- **Remediation:** the increase in taxes, cuts in direct non-pension spending or increase in worker contributions that would be needed to close the gap. These steps would need to take place every year for 30 years, and are computed on a mutually exclusive basis
- In the absence of remediation, and assuming contributions remain at current levels, **what returns would be needed** on pension and retiree healthcare assets over the next 30 years to fully meet future projected obligations? If there's a label in that column, it means there's no solution; see page 8 for more details. Note: OPEB is an acronym for retiree healthcare.
- If remediation doesn't happen, if municipalities maintain current contributions and if portfolio returns turn out to be just 6%, what might **future pension funding ratios** look like in 10 years? Note that for the most part, the ratios don't decline that much if current contributions are maintained
- A **risk indicator** which synthesizes our IPOD ratio with other factors that can mitigate or compound fiscal challenges: revenue and population growth; larger OPEB plans relative to pensions, which implies greater flexibility; and the speed with which pension dynamics worsen over time

Largest funding gaps				*30-year remediation (mut. exclusive)*					*W/O remediation, req. return on assets*		*Pension funding ratio*		
City	Current IPOD ratio	Norm. IPOD ratio	Funding gap	Tax increase		Cut in direct non-pension spending		Increase in worker contributions	B/E nom. pension return	B/E nom. OPEB return	Current	Est. in 10 yrs w/out remed @ 6% return*	Risk indicator
Chicago	35%	62%	27%	27%	or	14%	or	428%	17.9%	-11.7%	23%	15%	105
Houston	24%	50%	26%	26%	or	23%	or	772%	10.0%	Con<Serv	66%	58%	83
Austin	26%	51%	26%	26%	or	28%	or	287%	9.1%	Con<Serv	67%	67%	64
Dallas	20%	45%	25%	25%	or	30%	or	459%	11.1%	No solution	54%	62%	101
Baton Rouge	28%	52%	24%	24%	or	20%	or	525%	8.0%	Con<Serv	71%	67%	78
Fort Worth	21%	44%	24%	24%	or	20%	or	549%	11.0%	No solution	58%	59%	75
Oakland	29%	51%	22%	22%	or	22%	or	462%	8.1%	No solution	72%	71%	81
Phoenix	29%	51%	22%	22%	or	18%	or	404%	11.2%	6.7%	52%	56%	101
Jersey City	20%	41%	21%	21%	or	29%	or	510%	10.0%	Con<Serv	56%	67%	78
Pittsburgh	33%	52%	20%	20%	or	24%	or	333%	11.5%	No solution	45%	57%	93
Atlanta	33%	52%	19%	19%	or	15%	or	329%	8.2%	No solution	69%	68%	79
Sacramento	23%	42%	19%	19%	or	18%	or	301%	7.9%	Con<Serv	77%	75%	73
Minneapolis	18%	36%	18%	18%	or	13%	or	217%	8.3%	No solution	82%	74%	79
Los Angeles	33%	50%	18%	18%	or	19%	or	228%	7.2%	8.0%	84%	77%	78
Omaha	26%	44%	17%	17%	or	19%	or	286%	12.4%	No solution	48%	50%	80
Honolulu	34%	51%	17%	17%	or	21%	or	76121%	10.0%	32.8%	64%	65%	70
Cleveland	19%	35%	16%	16%	or	15%	or	207%	8.3%	16.2%	80%	70%	88
El Paso	26%	41%	16%	16%	or	16%	or	200%	8.0%	Con<Serv	83%	76%	65
Columbus	19%	34%	15%	15%	or	15%	or	243%	8.9%	18.7%	73%	65%	62
Cincinnati	16%	31%	15%	15%	or	15%	or	278%	9.3%	8.8%	60%	49%	82
County													
Cook(IL)	11%	30%	19%	19%	or	33%	or	577%	Con<Serv	Con<Serv	41%	65%	80
King(WA)	21%	39%	18%	18%	or	9%	or	301%	7.8%	No solution	84%	80%	71
Pr.Georges(MD)	30%	46%	16%	16%	or	18%	or	783%	8.0%	No solution	61%	63%	61
LA(CA)	14%	29%	15%	15%	or	14%	or	552%	7.0%	Con<Serv	87%	79%	61
SanClara(CA)	21%	34%	13%	13%	or	16%	or	282%	8.2%	10.9%	77%	74%	50
Bergen(NJ)	19%	32%	13%	13%	or	17%	or	558%	9.9%	No solution	55%	69%	56
Shelby(TN)	27%	39%	12%	12%	or	16%	or	217%	7.4%	19.7%	94%	84%	58
Suffolk(NY)	14%	26%	12%	12%	or	11%	or	3855%	6.9%	No solution	98%	86%	52

Source: J.P. Morgan Asset Management, Center for Retirement Research at BC, City/county CAFRs. FY 2015. * See page 9 for details on calculations and assumptions.

The table on the prior page assumes that municipalities are aiming for 100% funding ratios, and will meet retiree healthcare obligations as projected. In practice, many municipalities target funding ratios of ~80%, and are making reductions to retiree healthcare plans and costs. Both would reduce remediation costs shown in the table.

Before going further, I want to be clear about something. "The ARC and the Covenants" refers to the means by which municipalities address underfunded pension and retiree healthcare plans: through an "annual required contribution", or ARC. Public sector workers[2] form a critical part of our civil society. They risk their lives to rescue and protect us when we're in danger; they make our lives safer, cleaner and more efficient; they educate our children; they enforce the rule of law and provide remedies when laws are broken; they ensure access to clean air, water and food; and they heal us when we're sick. The legal, medical, environmental and educational problems sometimes found in other countries are a reminder of what life might be like without them. They have earned the benefits they accrued and which were granted by state and local legislatures, and have the right to expect them to be paid[3].

The body of the paper walks through pension and OPEB funding ratios, how much municipalities are currently contributing, why our normalized estimates are usually higher than current contributions, and our remediation and break-even return analysis. There's also a section on what pension funding ratios might look like in 10 years, and a section on our risk indicator. We include a link to supplementary materials on data, methodology, assumptions, scenario analysis and recent legal precedents.

As was the case with our 2016 analysis of US states, this was a challenging project. State and local disclosures are at times contradictory, incomplete or unclear, and thousands of data elements have to be compiled one by one since no databases exist that contain them. **That's why this is such a rewarding project: the end result is a comprehensive vision of an opaque universe of issuers whose bonds often represent the safe harbor in client portfolios.** At a time of tight spreads in credit markets, more comprehensive credit risk measures can help guide the rebalancing of municipal portfolios.

Michael Cembalest
JP Morgan Asset Management

To read the full piece, click on the following link:
The ARC and the Covenants 3.0: US Cities and Counties

[2] State and local employment is currently 13% of total non-farm employment, the lowest level since 1970.

[3] **How do US public sector pensions compare to private sector pensions?** According to the Boston College Center for Retirement Research, public sector wages are around 9.5% lower than private sector wages, after adjusting for education, demographics and other factors. After incorporating modestly higher pension and OPEB benefits for public sector workers, BC found that public sector wages are **roughly equal** to the private sector.

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