



FINANCIAL MANAGERS SOCIETY, NEW YORK AND NEW JERSEY CHAPTER

Municipal Bond Market Outlook: 2016, Focus on State and Local Government Credit Quality

January 14, 2016

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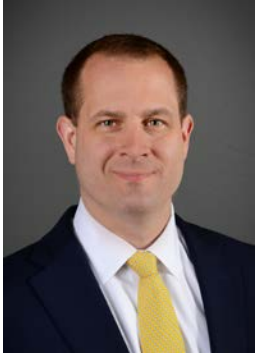
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INTRODUCTION

Section 1

Municipal Bond Market Outlook: 2016

Tom Kozlik, Municipal Strategist



Tom Kozlik is a Managing Director and Municipal Strategist for PNC Capital Markets LLC (PNCCM). In his role, Tom publishes regular municipal bond market commentary, provides information about the strengths and weaknesses of municipal market credit profiles, and evaluates municipal bond investment portfolios.

Tom has 15 years of experience in the municipal bond industry, having held positions at Janney Capital Markets, Bear Stearns, and UBS Investment Bank. His work has been quoted in various periodicals including the *Wall Street Journal*, *Barron's*, *Bloomberg*, and *The Bond Buyer*, and he has appeared as a guest municipal market expert on CNBC and Fox Business News. Tom has been voted to the Smith's Research and Gratings Municipal Research All-Star Team, to the Institutional Investor's All-America Fixed-Income Research Team, and named as One of the Most Helpful Analysts in Municipal Bonds by Greenwich Associates.

Tom graduated from the Schreyer's Honors College at the Pennsylvania State University with a bachelor's degree in political science with honors and earned a master's of governmental administration from the Fels Institute of Government at the University of Pennsylvania. He is currently the president of the Philadelphia Area Municipal Analyst Society.

Highlights and Contact Information

Media & Commentary

- [PNC Municipal Bond Market Commentary is available here – sign up to receive notifications](#)
- [The Municipal Market in 2016: Themes to Consider, Dec. 2015](#)
- [The Illusion of Cities' Recovery from the Recession, *Governing* Sept 2015](#)
- [U.S. State Fiscal Health: Let's Hear It for the States, Let's Give the States a Hand, *PNC Muni Commentary*](#)

Contact Information:

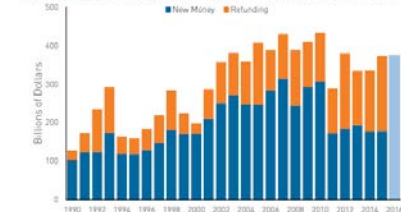
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U.S. MUNICIPAL BOND MARKET The Municipal Market in 2016: Themes to Consider

- Total municipal bond issuance for 2014 will probably come in between \$325 billion and \$375 billion.
- We expect refunding issuance to continue to be driven by the interest-rate environment. There are likely still going to be refunding opportunities; issuers can take advantage of in 2014. New money issuance will almost certainly remain below the 2001-10 average.
- A need to upgrade infrastructure exists throughout the United States. The problem is that revenues to support new debt service are scarce. Policy makers' political will in support of infrastructure is waning, despite recent proposals and rhetoric.
- Public finance issuers have largely not been able to take advantage of the low-interest-rate environment to finance new infrastructure. Impediments are likely to continue into 2016. We do not think issuer enthusiasm for a taxable Build America Bond (BAB) product is very high, partly because of the [ongoing rate volatility](#).
- The U.S. economy has continued to slowly strengthen in 2015, despite worries about China and Europe and intermittent concerns about domestic data.
- The PNC Economics Department indicates the ["Economy Continues to Expand at End of 2015 With Solid Job Growth"](#). Sto Hellem's group continues to think the Federal Reserve ["is on track for a December rate hike"](#), which would occur at the December 15-16 Federal Open Market Committee meetings.
- Municipal bond market credit conditions are favorable, overall. Credit quality is and will remain stable for most public finance entities into next year. We are observing that an increasing number of public finance credit profiles are improving.
- Issuers with stable to improving credit profiles are those that have actively adjusted to the new post-2008 recession fiscal reality. The year 2015 could be the first since the 2009

Municipal Bond Issuance for 2016 Will Be in Line with Recent Experience



MUNICIPAL COMMENTARY December 7, 2015

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Municipal bond market credit conditions are favorable, overall.



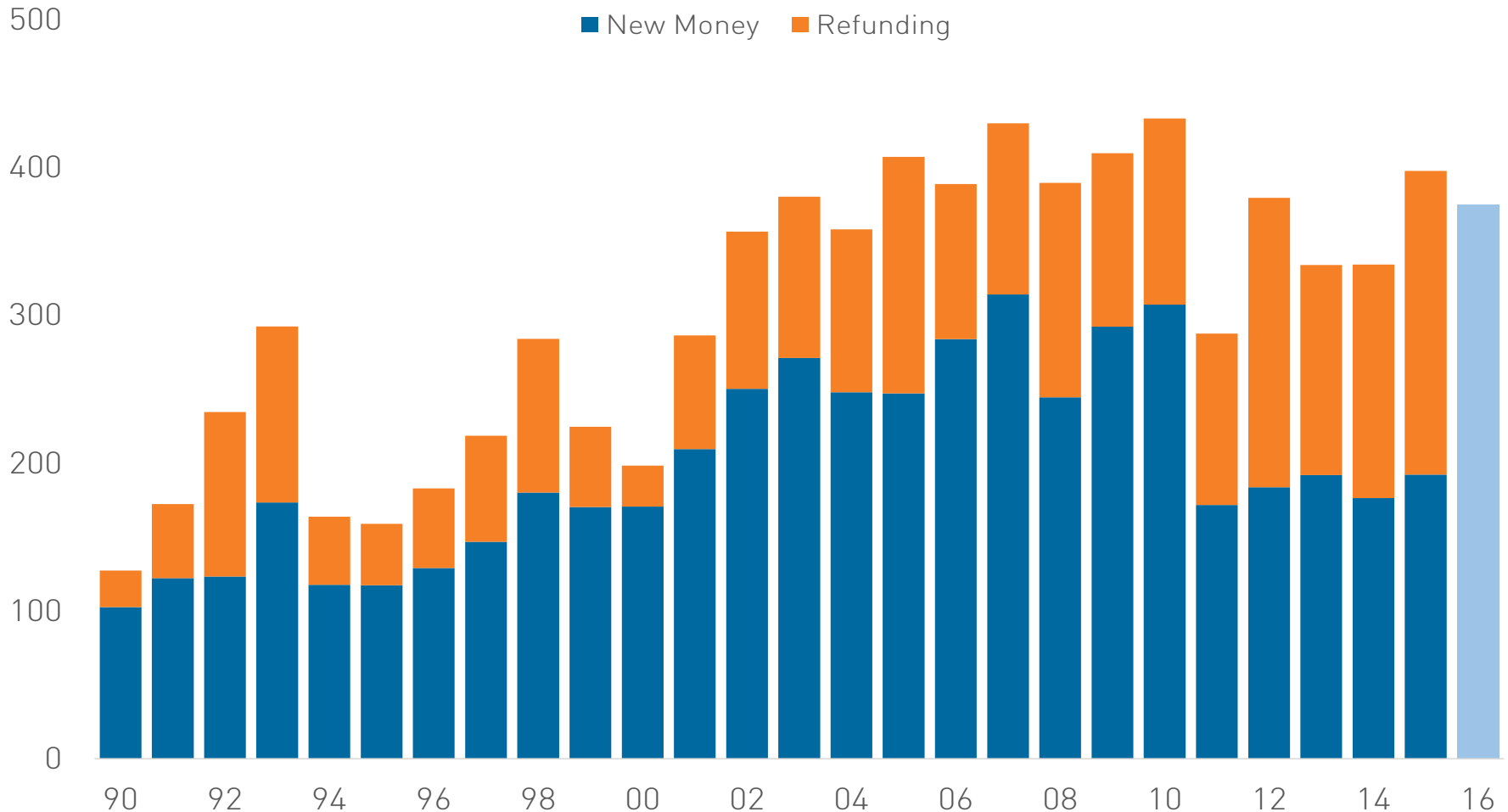
MUNICIPAL BOND MARKET OUTLOOK: 2016

Section 2

Municipal Bond Market Outlook: 2016

Issuance Forecast: \$325-\$375 billion for 2016, Review Forecasts, Relationship to Infrastructure

Municipal Bond Issuance for 2016 Will Be in Line With Recent Experience



Source: Thomson Reuters, The Bond Buyer and PNC Capital Markets. 2015 issuance is through Dec. 31, 2015.

Municipal Bond Market Outlook: 2016

Issuance Forecasts Range from \$450 to \$325 Billion for 2016

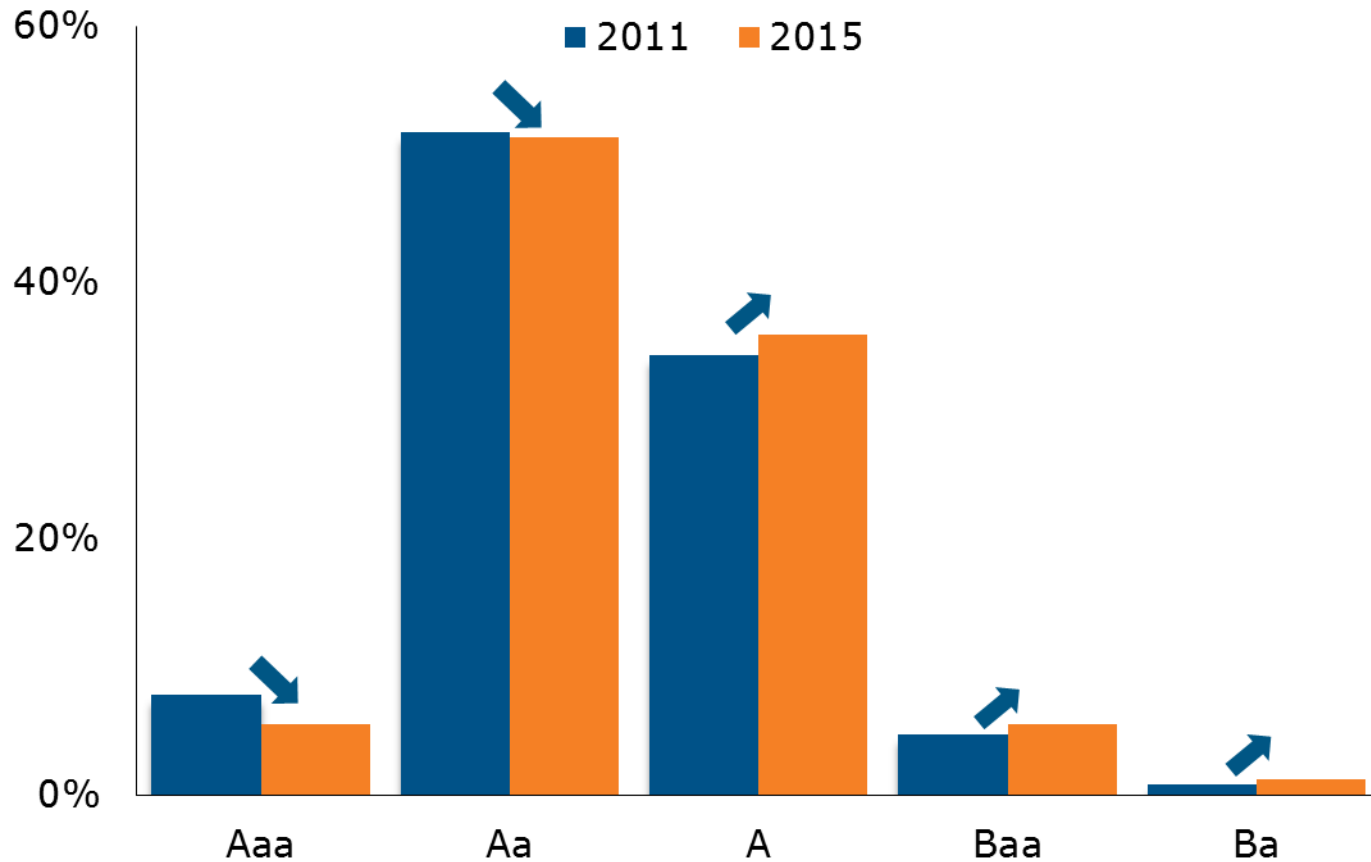
2016 Predictions for Municipal Bond Issuance



Municipal Bond Market Outlook: 2016

Municipal Credit Conditions Remain Overall Favorable, Quality Remains High, but It Is Falling

Comparison of Moody's Public Finance Ratings Distribution as of Jan. 1, 2015



Municipal Bond Market Outlook: 2016

Recent Evolution in Observations About Municipal Credit

- Municipal bond credit conditions are favorable overall to start 2016– **Key Theme**
- We are observing that an increasing number of credit profiles improved in 2015, can in 2016
- Let's review the evolution:
- 2009 and 2010: focus on finding the next sub-prime market
- Dec 2010: [Day of Reckoning Segment on 60 Minutes](#):
 - “You could see 50 sizable defaults. Fifty to 100 sizable defaults. More. This will amount to hundreds of billions of dollars’ worth of defaults,” said Meredith Whitney during an interview
- No looming crisis, factors stressing issuers- emphasis on outliers
- In a matter of only a few years, many went from not paying close attention to municipal credit (and/or relying on insurance); many were questioning credit quality, while analysts vehemently defended municipals, and now perhaps some missing some trends that are pointing to important “pockets” of credit deterioration
- What is happening?
- New fiscal reality – **Key Theme**
- Important to recognize the current landscape, but also the trends/views that lead up to 2016

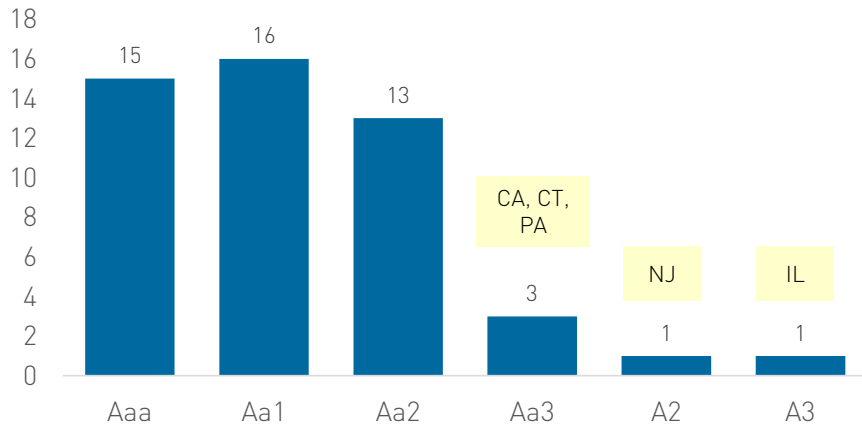
STATE AND LOCAL GOVERNMENT CREDIT FOCUS

Section 3

State and Local Government Credit Focus

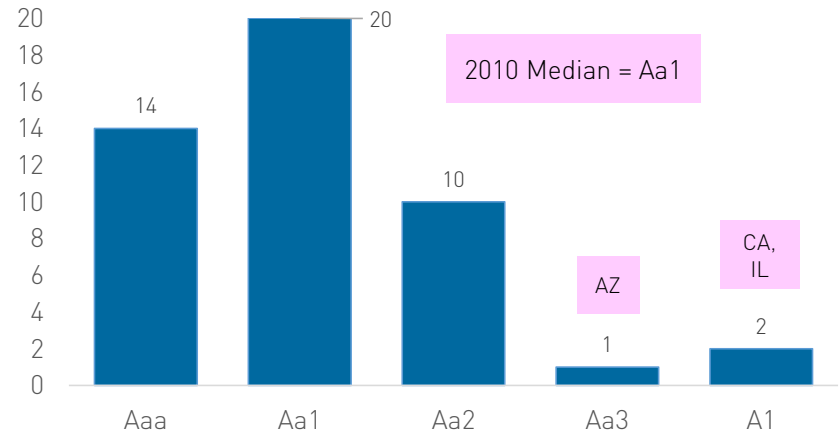
Let's Hear It for the States, Let's Give the States a Hand- Overall State Credit Quality Remains High

U.S. State Rating Distribution (as of Oct 15, 2015)



2015 Median rating for states: Aa1

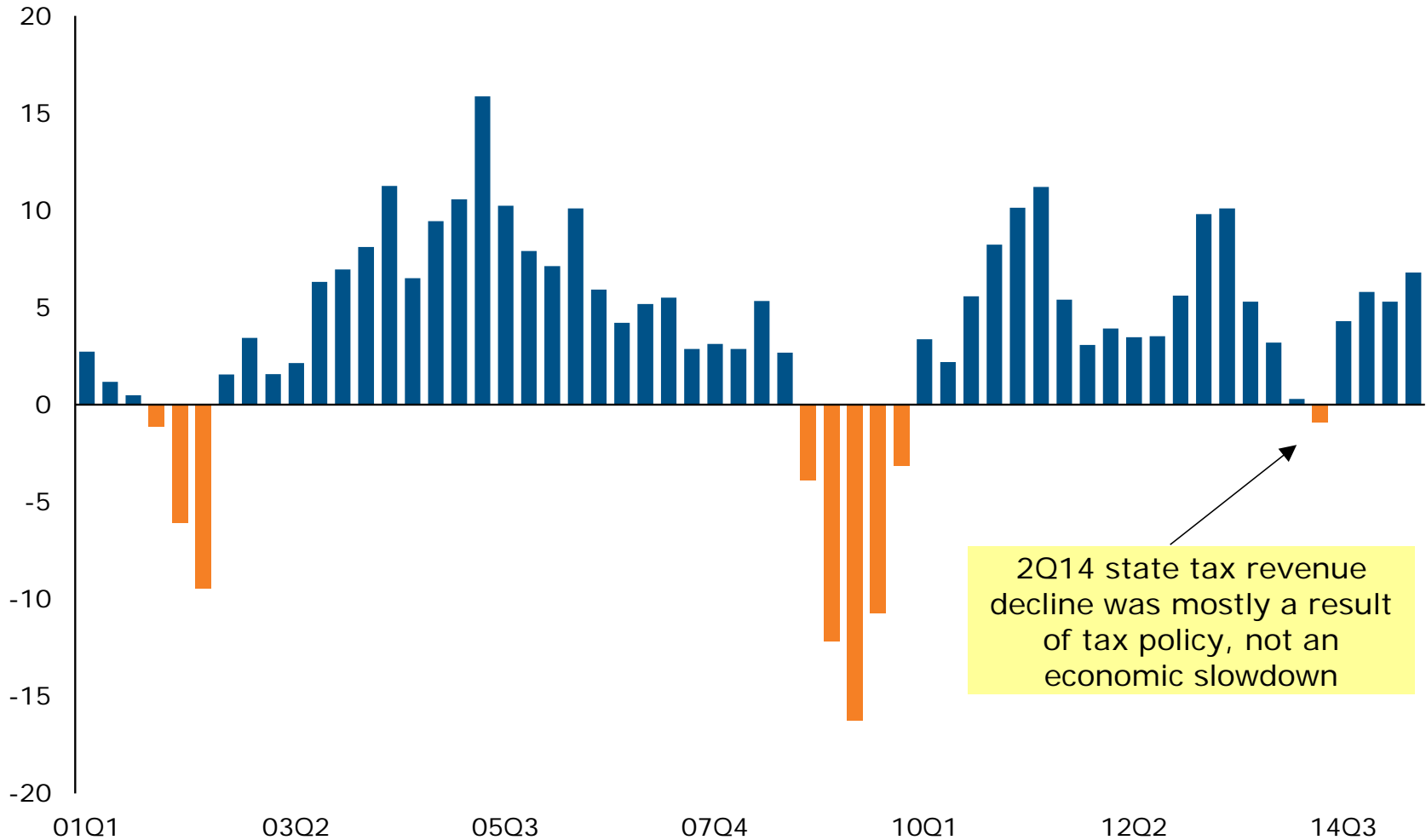
U.S. State Rating Distribution (as of Sept. 10, 2010)



2010 Median rating for states: Aa1

Municipal Bond Market Outlook: 2016

U.S. State Tax Revenue Rising, Quarterly Year Over Year Nominal \$ Change



2014 state tax revenue decline was mostly a result of tax policy, not an economic slowdown

Municipal Bond Market Outlook: 2016

A New Fiscal Reality

Lower State Tax Revenue Growth



THE NELSON A. ROCKEFELLER INSTITUTE OF GOVERNMENT
The public policy research arm of the State University of New York



BY THE NUMBERS BRIEF

DECEMBER 2015

States Forecast Slow Tax Revenue Growth in 2017 and Over the Longer Term

Lucy Dadayan and Donald J. Boyd

A new feature in our latest [State Revenue Report](#) demonstrated that many states are forecasting slower personal income tax and sales tax revenue growth in 2016 than in 2015. States are now preparing forecasts for fiscal year 2017, which will form the basis for spending decisions in governors' budgets to be released over the next several months.

States expect tax revenue growth to be slow again in 2017. States forecast weaker growth in revenues due in part to expected slower growth in the economy but also as a result of long-term demographic changes. Table 1 summarizes states' most recent forecasts for income and sales taxes, the two largest taxes, for thirty-nine states for which we were able to collect forecast data for fiscal years 2016 and 2017. (See Table 2 for individual states' forecasts.) The median state forecast for personal income tax growth is 4.4 percent in 2016 and 4.6 percent in 2017, both of which are down from state-estimated growth of 6.7 percent in 2015. Similarly, the median sales tax forecast slows from 4.7 percent in 2015 to 4.2 percent in 2016 and 3.9 percent in 2017. Fewer states are forecasting growth of more than 5 percent in both 2016 and 2017 than in 2015, for both the income tax and the sales tax. Overall, eighteen of thirty-three states with income tax forecasts are forecasting slower income tax growth in 2017 than in 2016, and nineteen of thirty-six states are forecasting slower sales tax growth.

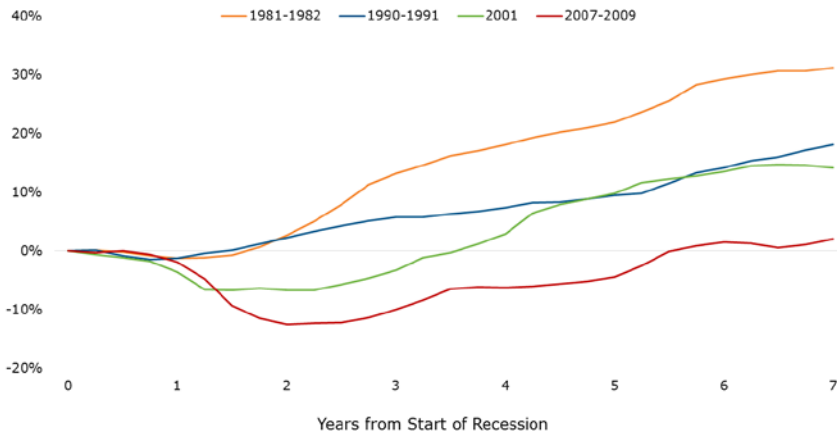
States are Projecting Lower Tax Growth

State	Forecast month	Personal Income Tax (\$ in Millions)					Sales Tax (\$ in Millions)				
		FY 2015 Forecast	FY 2016 Forecast	FY 2017 Forecast	% chg, 2015-16	% chg, 2016-17	FY 2015 Forecast	FY 2016 Forecast	FY 2017 Forecast	% chg, 2015-16	% chg, 2016-17
Arizona	May-15	3,572.8	3,671.3	3,843.7	2.8	4.7	4,127.9	4,276.3	4,507.7	3.6	5.4
Arkansas	May-15	2,596.4	2,660.7	2,684.9	2.5	0.9	2,212.7	2,273.0	2,353.4	2.7	3.5
California	May-15	75,384.0	77,700.0	81,700.0	3.1	5.1	23,684.0	25,240.0	25,800.0	6.6	2.2
Colorado	Sep-15	6,350.1	6,451.9	6,835.5	1.6	5.9	2,881.4	3,044.6	3,250.9	5.7	6.8
Connecticut	Nov-15	9,148.7	9,645.0	10,004.1	5.4	3.7	4,216.3	4,121.1	4,084.7	(2.3)	(0.9)
Delaware	Sep-15	1,251.9	1,306.7	1,372.1	4.4	5.0	N/A	N/A	N/A	N/A	N/A
Florida	Aug-15	N/A	N/A	N/A	N/A	N/A	21,062.7	21,957.0	23,178.9	4.2	5.6
Hawaii	Sep-15	1,987.8	2,058.5	2,163.8	3.6	5.1	2,992.7	3,185.4	3,362.1	6.4	5.5
Indiana	Apr-15	5,048.7	5,121.8	5,283.1	1.4	3.1	7,226.3	7,504.7	7,839.6	3.9	4.5
Iowa	Oct-15	4,207.3	4,490.5	4,743.0	6.7	5.6	2,753.0	2,805.5	2,912.0	1.9	3.8
Kansas	Nov-15	2,277.5	2,450.0	2,485.0	7.6	1.4	2,485.0	2,675.0	2,775.0	7.6	3.7
Kentucky	Oct-15	4,069.5	4,258.0	4,412.2	4.6	3.6	3,263.3	3,422.0	3,540.2	4.7	3.5
Louisiana	Aug-15	2,886.1	3,012.9	3,126.4	4.4	3.8	2,700.8	2,935.1	2,919.9	8.7	(0.5)
Maine	May-15	1,500.3	1,548.8	1,640.4	3.2	5.9	1,194.0	1,127.5	1,180.6	(5.6)	4.7
Maryland	Sep-15	8,346.1	8,745.3	9,173.3	4.8	4.9	4,350.7	4,543.1	4,710.1	4.4	3.7
Michigan	May-15	8,604.7	8,924.9	9,215.2	3.7	3.3	8,110.5	8,385.4	8,399.2	3.4	0.2
Minnesota	Feb-15	10,045.0	10,731.0	11,326.0	6.8	5.5	5,162.0	5,320.0	5,600.0	3.1	5.3
Mississippi	Oct-15	1,743.4	1,830.0	1,903.2	5.0	4.0	2,260.8	2,326.7	2,415.1	2.9	3.8
Montana	Apr-15	1,142.5	1,229.1	1,311.2	7.6	6.7	N/A	N/A	N/A	N/A	N/A
Nebraska	Aug-15	2,205.2	2,285.0	2,405.0	3.6	5.3	1,535.4	1,615.0	1,691.0	5.2	4.7
Nevada	May-15	N/A	N/A	N/A	N/A	N/A	1,037.8	1,098.1	1,158.3	5.8	5.5
New Mexico	Aug-15	1,340.0	1,379.0	1,440.0	2.9	4.4	2,211.0	2,302.5	2,399.7	4.1	4.2
New York	Aug-15	43,709.0	47,075.0	49,701.0	7.7	5.6	12,991.0	13,532.0	14,067.0	4.2	4.0
North Carolina	Mar-15	10,471.0	10,859.3	11,342.0	3.7	4.4	6,390.0	6,715.8	7,046.1	5.1	4.9
Ohio	Feb-15	10,163.5	8,179.2	8,172.9	(19.5)	(0.1)	10,304.1	11,874.9	12,722.3	15.2	7.1
Oregon	Sep-15	7,330.3	7,659.6	8,058.6	4.5	5.2	N/A	N/A	N/A	N/A	N/A
Pennsylvania	Dec-15	12,107.0	12,687.0	13,180.0	4.8	3.9	9,493.0	9,840.0	10,188.0	3.7	3.5
Rhode Island	Nov-15	1,227.6	1,214.9	1,265.4	(1.0)	4.2	963.4	981.0	1,015.0	1.8	3.5
South Carolina	Nov-15	3,661.2	3,888.1	4,066.7	6.2	4.6	2,643.7	2,785.5	2,928.8	5.4	5.0
South Dakota	Dec-15	N/A	N/A	N/A	N/A	N/A	836.6	872.6	904.9	4.3	3.7
Tennessee	Nov-15	303.4	325.6	341.0	7.3	4.7	7,706.1	8,140.9	8,575.7	5.6	5.3
Texas	Oct-15	N/A	N/A	N/A	N/A	N/A	28,787.4	29,143.7	30,546.2	1.2	4.8
Utah	Nov-15	3,157.7	3,320.9	3,466.6	5.2	4.4	1,715.0	1,780.3	1,852.4	3.8	4.0
Vermont	Jul-15	705.9	763.8	797.8	8.2	4.5	364.6	382.2	394.3	4.8	3.2
Virginia	Dec-15	12,328.7	12,778.0	13,162.4	3.6	3.0	3,235.4	3,397.7	3,528.9	5.0	3.9
Washington	Sep-15	N/A	N/A	N/A	N/A	N/A	8,802.3	9,368.6	9,798.5	6.4	4.6
West Virginia	Jan-15	1,809.6	1,860.5	2,009.0	2.8	8.0	1,253.5	1,281.3	1,325.4	2.2	3.4
Wisconsin	Jan-15	7,350.0	7,845.0	8,255.0	6.7	5.2	4,880.0	5,030.0	5,190.0	3.1	3.2
Wyoming	Oct-15	N/A	N/A	N/A	N/A	N/A	544.0	466.8	470.5	(14.2)	0.8
US Median		\$268,033	\$277,957	\$290,886	4.4	4.6	\$206,382	\$215,751	\$224,630	4.2	3.9

State and Local Government Credit Focus

“Lost Decade” of U.S. State Tax Revenues

% Change in State Tax Revenues, Start of Recession



U.S. State Fiscal Health Indicators

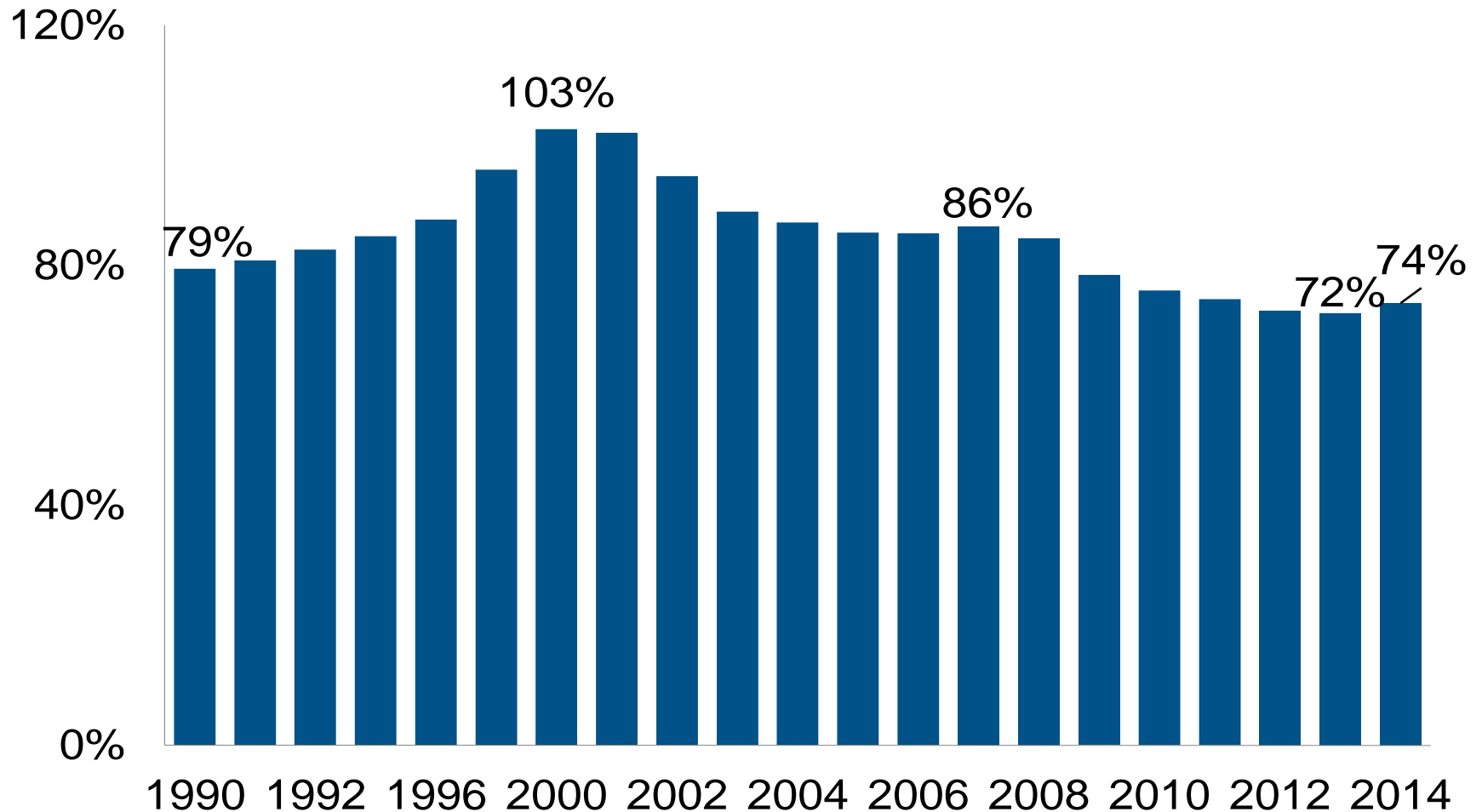
State	Bond Ratings (* lease or ICR)	Spread to 10Y MMD Jan 5, 15 (bps)	Spread to 10Y MMD Jul 8, 15 (bps)	FY16 Revenue Actions (\$)	High Ed Funding % Change per Pupil 08-15	K-12 Funding % Change per Pupil 08-15	"Seriously Delinquent Morts."* 1Q15	Unemployment Rate Apr 2015
Total/Average		17	21	\$61	-19.8%	-3.6%	4.2%	5.8%
Alabama	Aa1/AA/AA+	6	7	529	-36.6%	-17.8%	4.3%	6.1%
Alaska	Aaa/AAA/AAA	5	8	18	3.9%	16.4%	1.5%	6.8%
Arizona*	Aa2/AA-/NR	30	30	0	-47.0%	-17.5%	2.1%	5.8%
Arkansas	Aa1/AA-/NR	7	14	-12	-10.2%	-4.5%	4.0%	5.7%
California	Aa3/A+/A+	24	21	0	-11.1%	-3.2%	2.3%	6.4%
Colorado	Aa1/AA-/NR	19	18	0	-17.7%	-0.2%	1.8%	4.3%
Connecticut	AA3/AA/AA	29	48	580	-16.7%	9.1%	5.7%	6.0%
Delaware	Aaa/AAA/AAA	0	0	0	-26.7%	6.7%	5.3%	4.6%
Florida	Aa1/AAA/AAA	12	14	-487	-25.0%	-6.4%	7.5%	5.7%
Georgia	Aaa/AAA/AAA	0	0	0	-22.4%	-11.0%	4.0%	6.3%
Hawaii	Aa2/AA/AA	19	19	0	-20.4%	NA	4.7%	4.1%
Idaho*	Aa1/AA+/AA+	20	18	-25	-32.1%	-16.2%	2.1%	3.9%
Illinois	A3/A-/A-	140	187	0	-4.0%	-9.3%	5.4%	6.0%
Indiana*	Aaa/AAA/AAA	12	12	-5	-9.5%	NA	4.7%	5.1%
Iowa*	Aaa/AAA/AAA	12	12	0	-22.3%	NA	2.7%	3.8%
Kansas*	Aa2/AA-/NR	17	18	211	-20.7%	-14.6%	3.2%	4.4%
Kentucky*	Aa2/AA-/AA-	21	20	0	-27.6%	-11.4%	4.3%	5.1%
Louisiana	Aa2/AA/AA	19	49	0	-42.0%	-3.2%	4.5%	6.6%
Maine	Aa2/AA/AA	8	9	44	-13.4%	-13.3%	6.3%	4.7%
Maryland	Aaa/AAA/AAA	0	2	-152	-6.8%	5.4%	5.6%	5.3%
Massachusetts	Aa1/AA+/AA+	15	17	-150	-17.2%	6.3%	5.0%	4.6%
Michigan	Aa2/AA-/AA	29	28	200	-23.1%	-9.5%	2.9%	5.5%
Minnesota	Aa1/AA+/AA+	6	5	-65	-21.0%	3.8%	2.0%	3.8%
Mississippi	Aa2/AA/AA+	19	22	-79	-23.2%	-12.3%	5.3%	6.7%
Missouri	Aaa/AAA/AAA	3	3	0	-25.2%	3.6%	3.1%	5.8%
Montana	Aa1/AA/AA+	19	19	0	-2.0%	-2.2%	1.7%	3.9%
Nebraska*	Aa2/AAA/NR	19	17	0	-8.3%	0.1%	2.2%	2.6%
Nevada	Aa2/AA/AA+	23	24	251	-30.8%	-3.8%	5.6%	7.0%
New Hampshire	Aa1/AA/AA+	12	9	37	-26.8%	1.6%	3.0%	3.8%
New Jersey	A2/A/A	56	95	0	-22.0%	-0.3%	10.7%	6.5%
New Mexico	Aaa/AA+/NR	13	9	0	-32.2%	-8.1%	4.7%	6.2%
New York	Aa1/AA+/AA+	7	5	11	-7.0%	2.4%	8.1%	5.7%
North Carolina	Aaa/AAA/AAA	0	0	-6	-23.4%	-14.5%	3.5%	5.7%
North Dakota*	Aa1/AAA/NR	19	20	-76	35.5%	31.6%	1.1%	3.1%
Ohio	Aa1/AA+/AA+	19	18	-367	-22.6%	0.0%	4.9%	5.2%
Oklahoma	Aa2/AA+/AA+	19	20	0	-23.5%	-23.6%	4.2%	4.3%
Oregon	Aa1/AA+/AA+	10	10	0	-33.5%	2.3%	3.8%	5.3%
Pennsylvania	Aa3/AA-/AA-	31	62	4,555	-35.8%	1.1%	5.0%	5.4%
Rhode Island	Aa2/AA/AA	31	36	15	-21.1%	5.6%	5.7%	5.9%
South Carolina	Aaa/AA+/AAA	3	3	0	-37.9%	-10.2%	4.2%	6.8%
South Dakota*	Aa2/AAA/AA+	22	20	86	-14.8%	-8.1%	1.7%	3.8%
Tennessee	Aaa/AA+/AAA	3	3	0	-22.1%	-0.8%	3.7%	5.8%
Texas	Aaa/AAA/AAA	9	18	-2,242	-22.8%	-9.4%	2.8%	4.3%
Utah	Aaa/AAA/AAA	0	0	0	-16.3%	-13.7%	2.3%	3.5%
Vermont	Aaa/AA+/AAA	2	5	63	-15.4%	-0.1%	4.3%	3.6%
Virginia	Aaa/AAA/AAA	0	0	55	-24.5%	-11.0%	2.6%	4.9%
Washington	Aa1/AA+/AA+	19	23	22	-28.4%	5.9%	3.4%	5.4%
West Virginia	Aa1/AA/AA+	19	13	0	-23.0%	-2.2%	3.1%	7.2%
Wisconsin	Aa2/AA/AA	20	17	17	-16.5%	-14.6%	3.3%	4.6%
Wyoming*	NR/AAA/NR	10	10	0	5.4%	4.0%	1.5%	4.1%

Source: Center on Budget and Policy Priorities, Census Bureau, Bureau of Labor Statistics, Inflation adjusted; and PNC Capital Markets.

Municipal Bond Market Outlook: 2016

Pension Funding Ratios Have Not Recovered to Pre-Crisis Levels

State and Local Pension Funded Ratios, Fiscal 1990-2014



State and Local Government Credit Focus

Local Government Credit Quality is High, But There are Pockets of Stress

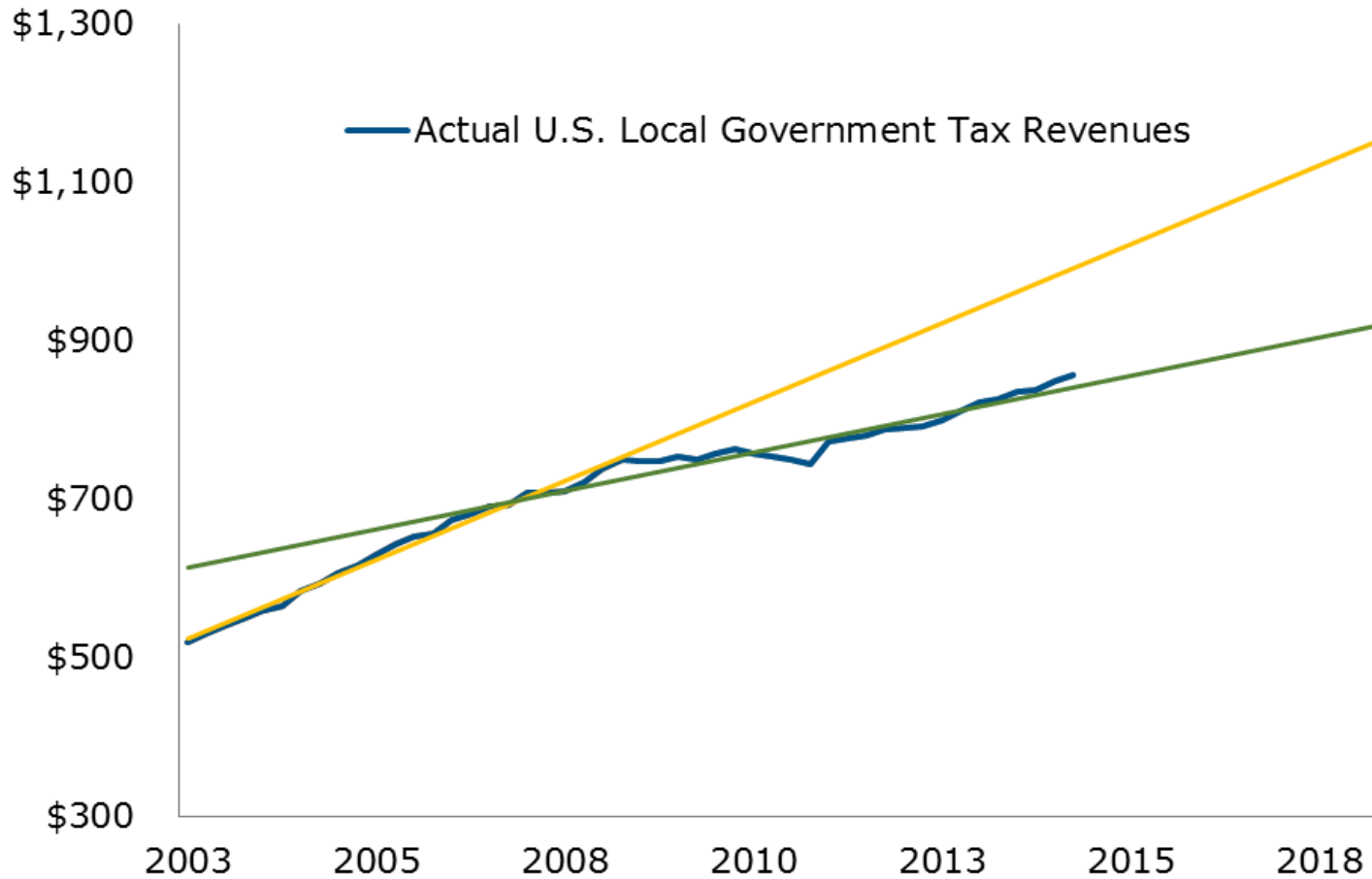
U.S. Local Government Ratings Distribution (Moody's Rated)



State and Local Government Credit Focus

A New Fiscal Reality for Local Governments

Pace of Local Government Revenue Increases Not Keeping Up With Pre-Recession Trend

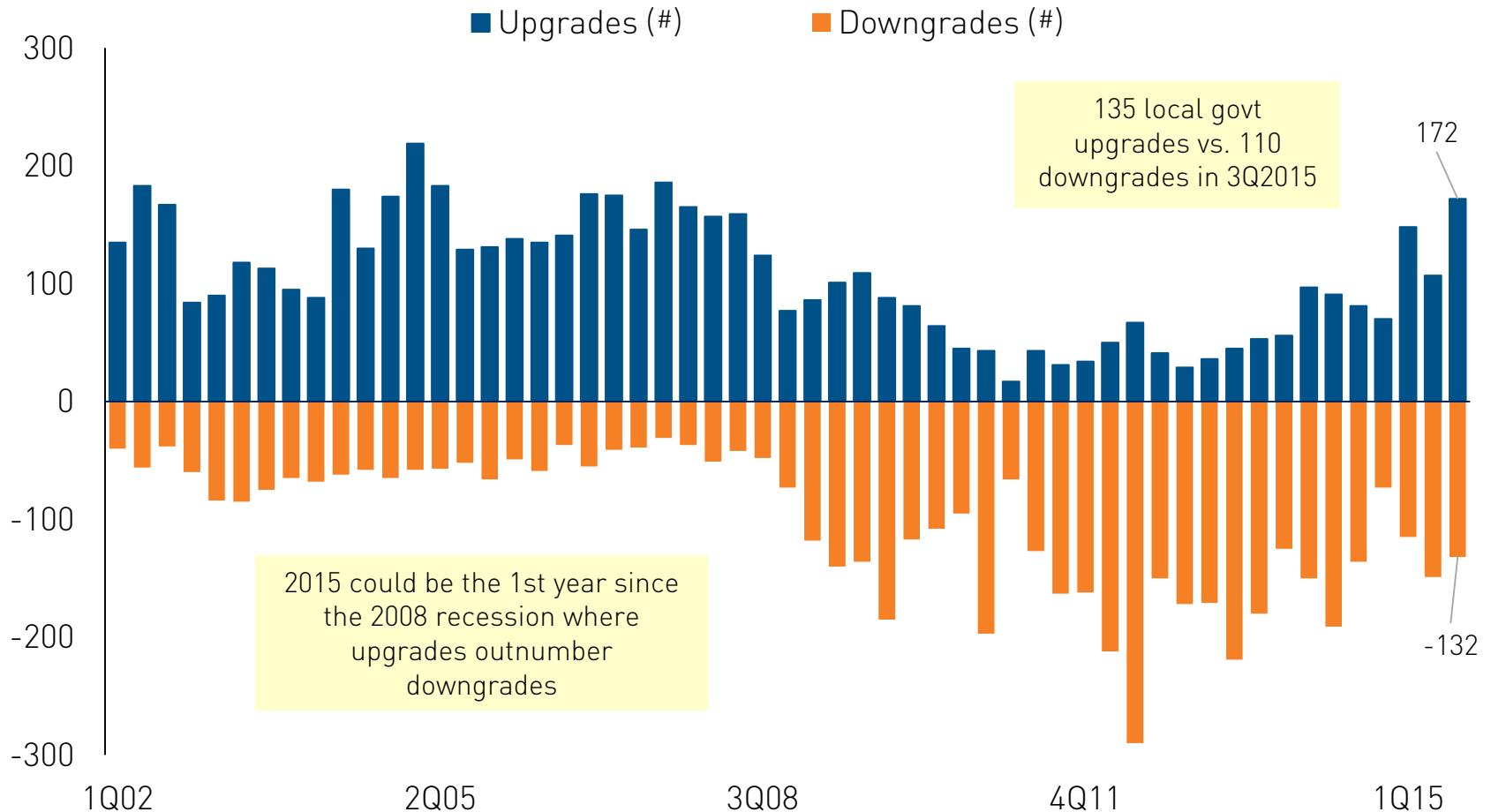


Source: U.S. Census Bureau and PNC Capital Markets. \$ in billions.

State and Local Government Credit Focus

of Upgrades is Rising, but # of Downgrades is Still Elevated

Number of Public Finance Upgrades & Downgrades (Moody's Rated)



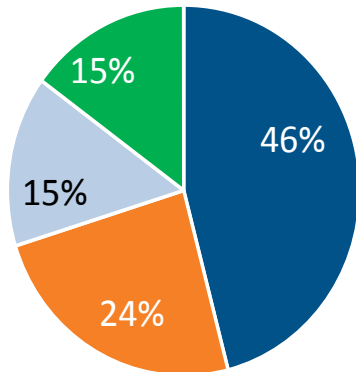
Source: Moody's and PNC Municipal Strategy. Data is through the 3Q15 per Moody's Nov. 5, 2015 report. There are about 8,300 Moody's rated local governments.

State and Local Government Credit Focus

Why are Local Governments Being Downgraded?

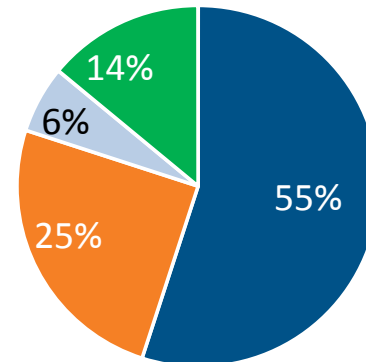
Reason for Downgrades, 2Q 2015 data

- Structural Imbalances
- Narrowing reserves
- Other, Weak Credit Profile
- Weakened Fin. Position



Reason for Downgrades, 2Q 2014 data

- Structural Imbalances
- Narrowing reserves
- Weak Credit Profile
- New Rating Criteria



Municipal Bond Market Outlook: 2016

Key Takeaways

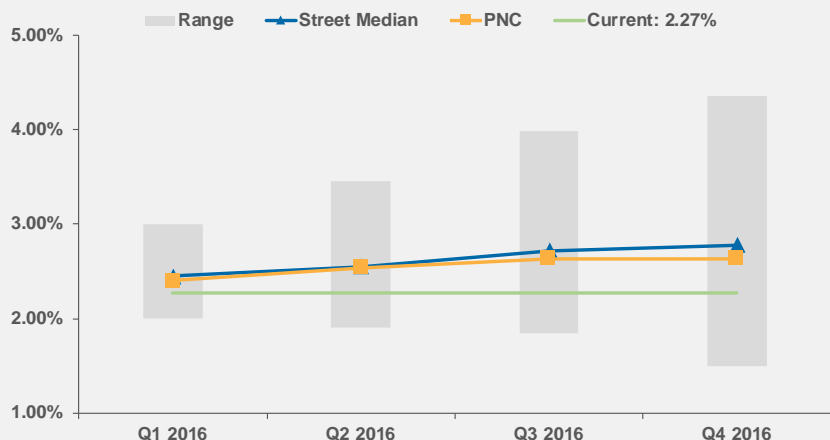
- Expect \$325-\$375B of volume in 2016, just under the \$398B of 2015
 - New money issuance likely to remain restrained in 2016, compared to 2001-2010
- Recognize current credit circumstances, compared to the evolution of observations
- Municipal bond credit conditions are favorable overall to start 2016– **Key Theme**
- We are observing that an increasing number of credit profiles improved in 2015, can in 2016
- The improving/stable profiles are those that years ago recognized the “new fiscal reality”
- Ongoing need for public finance issuers to balance revenues and expenditure demand
- Most state & local govts have well-funded pension plans
 - Underfunded dilemma is very much plan specific; not severe sector-wide, but it is worsening
 - Investors do need to take pension funding practices seriously
- Some credit profiles will deteriorate in 2016, not adjusted to new reality- **Key Theme**
- Local government downgrades still occurring at an above average pace
- Monitor credit profiles for signs of structural imbalance

APPENDIX: ECONOMIC GROUP FORECASTS, MMD

Section 4

PNC Economic Group and Street Interest Rate Forecasts

10 Yr. Treasury Forecasts



PNC Economics Group Fed Funds Rate Comment

[Market Expectations Survey dated Dec. 18, 2016](#): After increasing the federal funds rate in mid-December, the first hike since 2006, the FOMC will keep the rate in its new 0.25-.50 percent range at their late-January meeting. The next .025 percentage point rate increase is likely to come at the following meeting, in mid-March (15-16). From the PNC Economic Group

PNC Forecast











	Current	Q1 2016	Q2 2016	Q3 2016	Q4 2016
Effective Fed Funds Rate	0.20%	0.40%	0.65%	0.85%	0.90%
3 Month LIBOR	0.61%	0.65%	0.96%	1.20%	1.32%
2 Yr. Treasury	1.05%	1.12%	1.36%	1.57%	1.68%
10 Yr. Treasury	2.27%	2.40%	2.53%	2.63%	2.63%
30 Yr. Treasury	3.02%	3.10%	3.16%	3.21%	3.21%

Bloomberg Economic Survey - Median Street Forecasts

	Current	Q1 2016	Q2 2016	Q3 2016	Q4 2016
Fed Funds Target Rate *	0.50%	0.75%	0.88%	1.00%	1.25%
3 Month LIBOR	0.61%	0.73%	0.95%	1.15%	1.33%
2 Yr. Treasury	1.05%	1.15%	1.33%	1.50%	1.70%
10 Yr. Treasury	2.27%	2.45%	2.55%	2.72%	2.78%
30 Yr. Treasury	3.02%	3.20%	3.25%	3.30%	3.39%

Sources: Bloomberg December 2015 Economic Survey / PNC Economics: December 2015 Baseline Interest Rate Projections, as of December 17, 2015 / Current rates as of December 31, 2015. * Upper bound target rate.

2016 Federal Open Market Committee (FOMC) Voting Members / Meeting Schedule

FOMC Voting Members		Position	FOMC Meeting Dates	Projections / Press Conference
	Janet Yellen	Board of Governors, Chair	January 26-27	--
	William Dudley	New York, Vice Chairman	March 15-16	✓
	Stanley Fischer	Board of Governors	April 26-27	--
	Daniel Tarullo	Board of Governors	June 14-15	✓
	Jerome Powell	Board of Governors	July 26-27	--
	Lael Brainard	Board of Governors	September 20-21	✓
	Eric Rosengren	Boston	November 1-2	--
	Loretta Mester	Cleveland	December 13-14	✓
	Esther George	Kansas City		
	James Bullard	St. Louis		

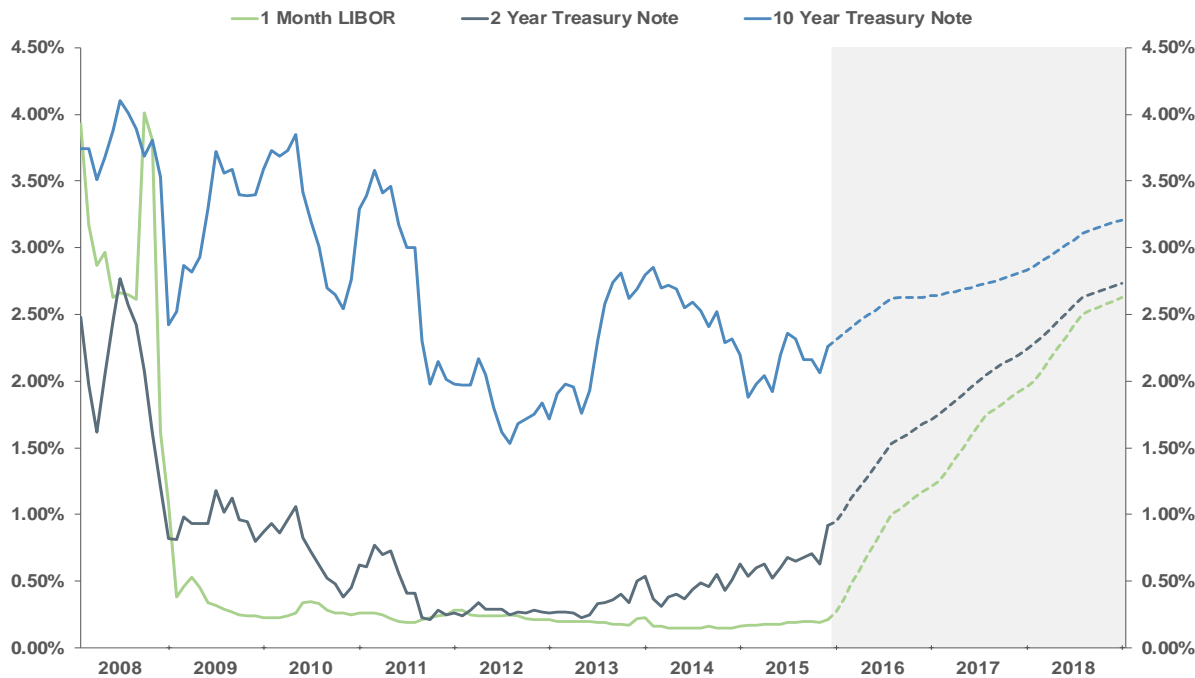
- Meetings associated with the 'Projections / Press Conference' indicate a release of the Summary of Economic Projections (SEP) and a press conference by the Chair.

*Source: Federal Open Market Committee
Note: Each meeting date is tentative until confirmed at the meeting immediately preceding it.*

PNC Economics Group Interest Rate Forecast

Interest Rate Forecast

	Current Rates	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
1 Month LIBOR	0.43%	0.48%	0.79%	1.04%	1.17%	1.33%	1.58%	1.79%	1.92%	2.08%	2.33%	2.53%	2.60%
2 Year Treasury Note	1.05%	1.12%	1.36%	1.57%	1.68%	1.80%	1.95%	2.09%	2.20%	2.33%	2.51%	2.65%	2.71%
10 Year Treasury Note	2.27%	2.40%	2.53%	2.63%	2.63%	2.66%	2.70%	2.75%	2.81%	2.90%	3.02%	3.13%	3.19%
2 / 10 Treasury Spread	1.22%	1.29%	1.17%	1.06%	0.96%	0.86%	0.75%	0.66%	0.61%	0.57%	0.51%	0.48%	0.48%



- PNC's interest rate forecast indicates a gradual increase in borrowing rates through 2018.
- This is consistent with prevailing market views which suggest higher interest rates in 2016, 2017, and 2018.
- Interest rates, at current levels, remain attractive, particularly when viewed over longer periods of time.

Source: PNC Economics: December 2015 Baseline Interest Rate Projections, as of December 17, 2015. Current rates as of December 31, 2015.

Note: Quarterly forecasts reflect the average of monthly forecasts in the table. Shading and dashed lines represent interest rate forecasts in the graph.

Changes in Yields and Ratios Across the Curves

AAA MMD / U.S. Treasuries

Maturity	Current			1 Month Change			6 Month Change			12 Month Change		
	AAA MMD	US Treasury	Ratio	AAA MMD (bps)	US Treasury (bps)	Ratio	AAA MMD (bps)	US Treasury (bps)	Ratio	AAA MMD (bps)	US Treasury (bps)	Ratio
2 Year	0.77%	1.05%	73.33%	5	12	(4.09%)	14	41	(25.10%)	29	39	0.61%
3 Year	0.99%	1.31%	75.57%	7	9	0.16%	6	31	(17.43%)	21	24	2.68%
5 Year	1.26%	1.76%	71.59%	0	12	(5.24%)	(12)	11	(12.05%)	(6)	11	(8.41%)
7 Year	1.54%	2.09%	73.68%	(6)	10	(6.72%)	(35)	1	(17.18%)	(15)	12	(12.10%)
10 Year	1.92%	2.27%	84.58%	(10)	6	(6.82%)	(36)	(8)	(12.44%)	(12)	10	(9.43%)
30 Year	2.82%	3.02%	93.38%	(14)	5	(6.29%)	(46)	(10)	(11.75%)	(4)	27	(10.62%)

Rates as of December 31, 2015

AAA MMD / LIBOR

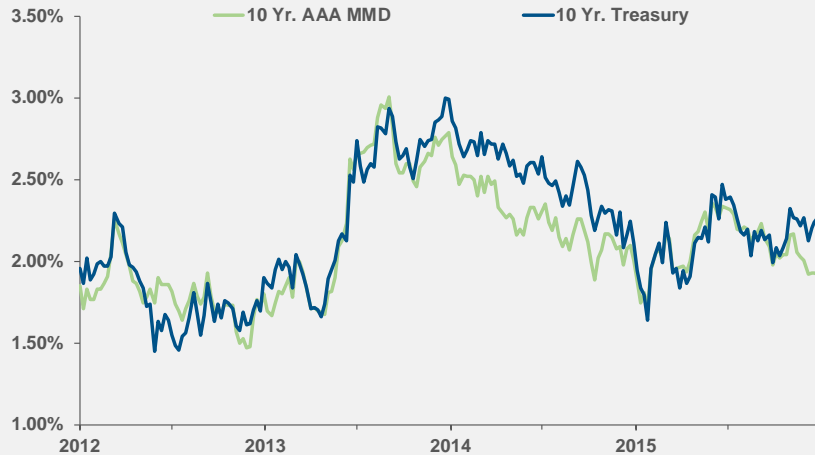
Maturity	Current			1 Month Change			6 Month Change			12 Month Change		
	AAA MMD	LIBOR	Ratio	AAA MMD (bps)	LIBOR (bps)	Ratio	AAA MMD (bps)	LIBOR (bps)	Ratio	AAA MMD (bps)	LIBOR (bps)	Ratio
2 Year	0.77%	1.18%	65.25%	5	19	(7.47%)	14	28	(4.75%)	29	28	11.92%
3 Year	0.99%	1.42%	69.72%	7	19	(5.08%)	6	17	(4.68%)	21	12	9.72%
5 Year	1.26%	1.74%	72.41%	0	17	(7.84%)	(12)	(5)	(4.68%)	(6)	(3)	(2.16%)
7 Year	1.54%	1.95%	78.97%	(6)	14	(9.42%)	(35)	(20)	(8.93%)	(15)	(9)	(3.87%)
10 Year	1.92%	2.19%	87.67%	(10)	12	(9.91%)	(36)	(27)	(5.01%)	(12)	(9)	(1.80%)
30 Year	2.82%	2.62%	107.63%	(14)	9	(9.36%)	(46)	(32)	(3.93%)	(4)	(8)	1.71%

Rates as of December 31, 2015

Sources: Thomson Reuters Municipal Market Monitor / Bloomberg. Note: AAA MMD assumes an optional 10-year par call.

Interest Rate Movements since 2012

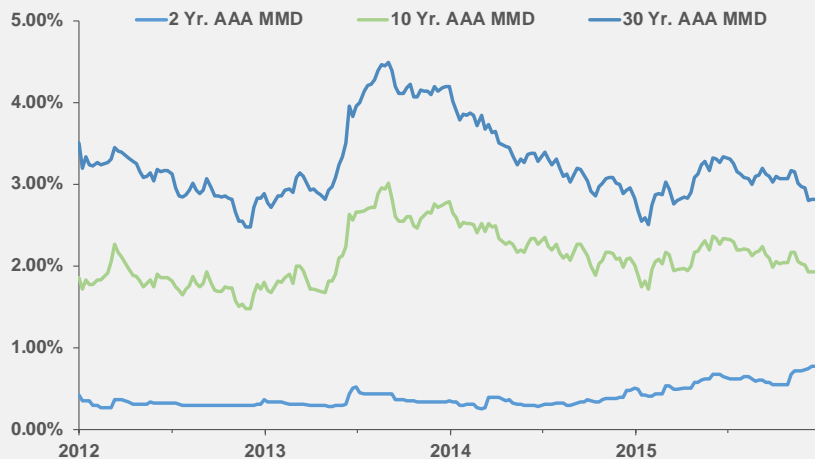
10 Yr. AAA MMD vs. 10 Yr. Treasury



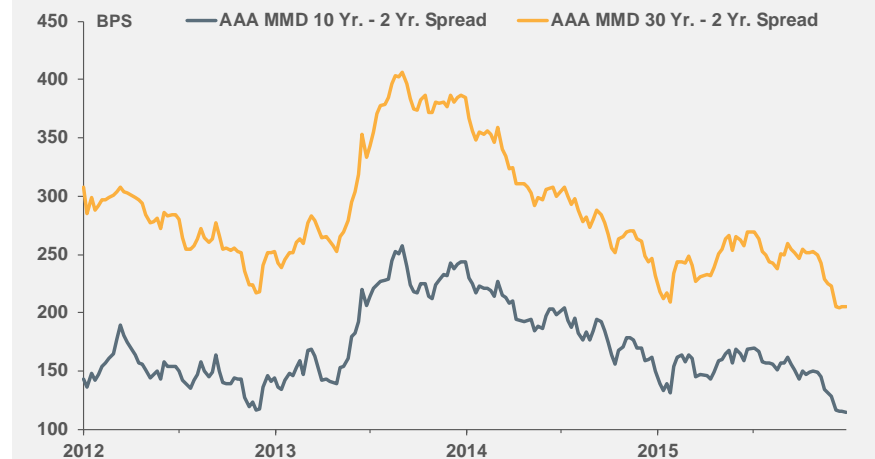
AAA MMD since 2012

Maturity	Current	Average	Min	Max
2 Year	0.77%	0.40%	0.25%	0.77%
3 Year	0.99%	0.61%	0.36%	1.06%
5 Year	1.26%	1.07%	0.62%	1.60%
7 Year	1.54%	1.57%	0.89%	2.30%
10 Year	1.92%	2.12%	1.47%	3.04%
30 Year	2.82%	3.26%	2.47%	4.51%

AAA MMD



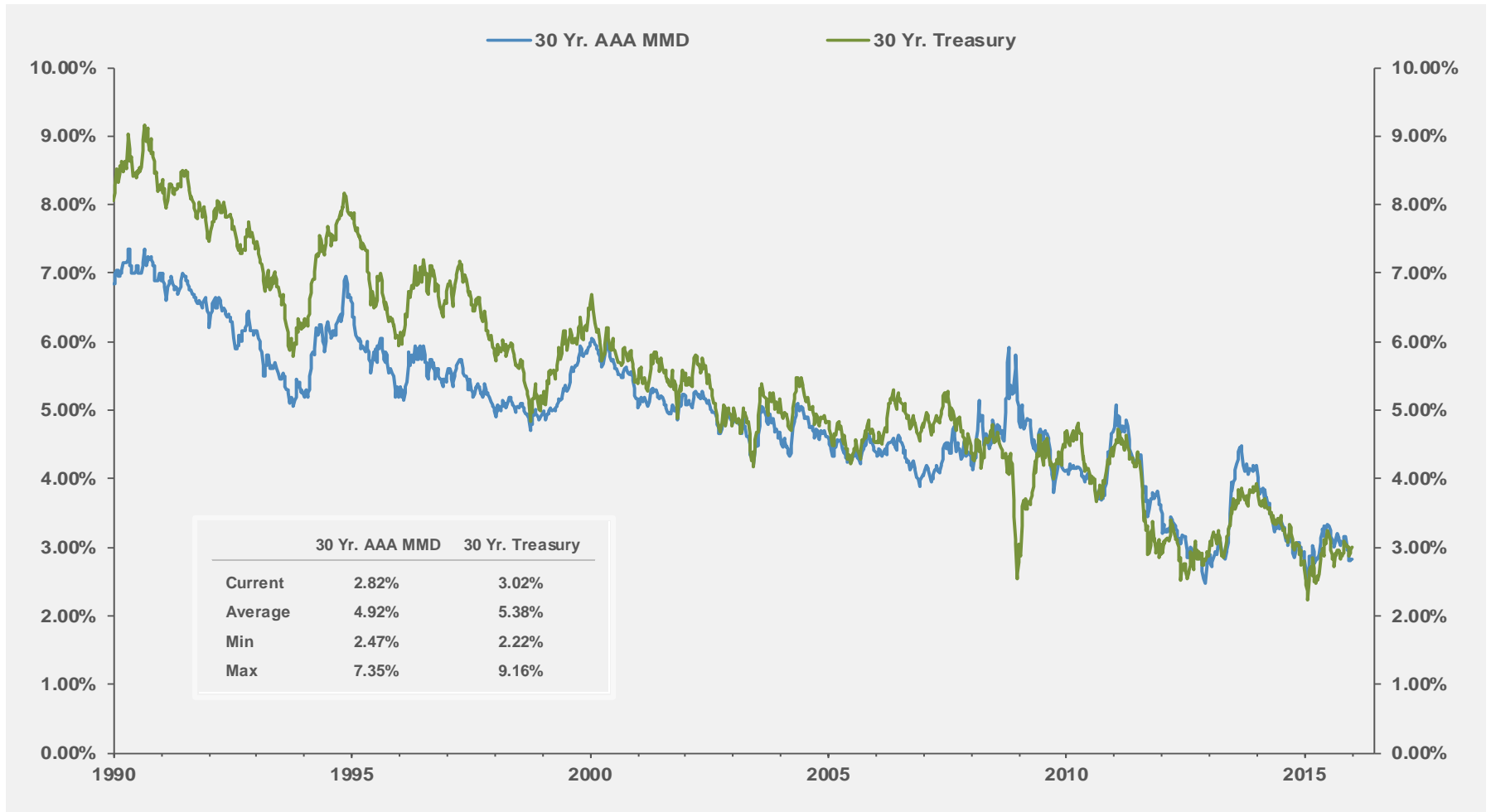
AAA MMD Yield Curve Stepness



Sources: Thomson Reuters Municipal Market Monitor / Bloomberg, as of December 31, 2015. Note: Graphs reflect weekly data while the calculations for the table represent daily data.

A Long Term Trend of Falling Interest Rates

Historical 30 Yr. AAA MMD and 30 Yr. Treasury Rates



Sources: Thomson Reuters Municipal Market Monitor / Bloomberg, as of December 31, 2015. Note: Weekly data. AAA MMD assumes an optional 10-year par call.

DISCLOSURE

Section 5

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