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# **MUNICIPAL BOND CREDIT REPORT**

Second Quarter 2016

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**RESEARCH REPORT**

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## MARKET SUMMARY

### Municipal Issuance Overview – Primary Market

According to Thomson Reuters, long-term public municipal issuance volume totaled \$119.0 billion in the second quarter of 2016, an increase of 24.5 percent from the prior quarter (\$95.5 billion) and an increase of 7.3 percent year-over-year (y-o-y) (\$110.9 billion). Including private placements<sup>1</sup> (\$3.0 billion), long-term municipal issuance for 2Q'16 was \$124.5 billion. Year to date ending June 30, municipal issuance totaled \$214.5 billion, well above the ten-year average of \$190.6 billion although nearly unchanged from last year's year to date issuance of \$214.5 billion.

Tax-exempt issuance totaled \$104.9 billion in 2Q'16, an increase of 19.0 percent and 4.8 percent, respectively, q-o-q and y-o-y. Taxable issuance totaled \$6.8 billion in 2Q'16, an increase of 3.8 percent q-o-q but a 14.4 percent decline y-o-y. AMT issuance was \$7.3 billion, an eightfold increase q-o-q and a 153.7 percent decline y-o-y.

By use of proceeds, general purpose led issuance totals in 2Q'16 (\$28.7 billion), followed by primary & secondary education (\$21.0 billion) and higher education (\$11.4 billion).

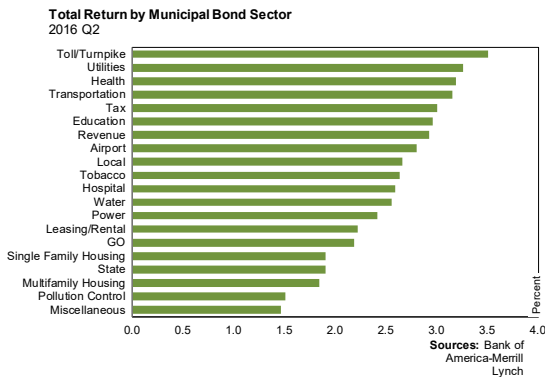
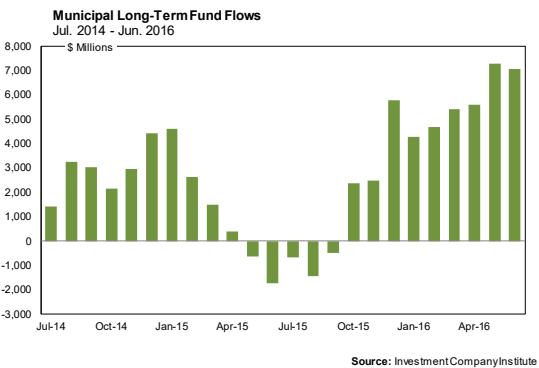
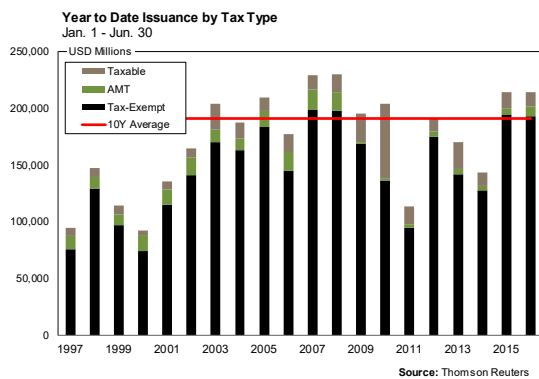
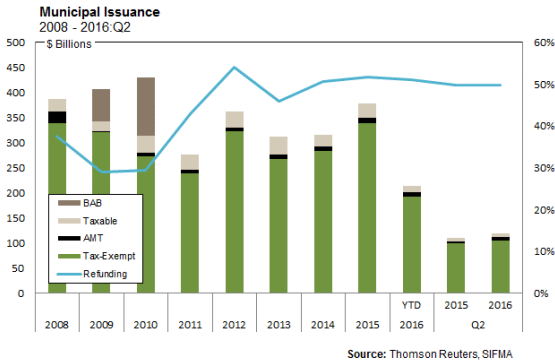
Refunding volumes as a percentage of issuance fell slightly from the prior quarter, with 49.7 percent of issuance attributable to refundings compared to 52.6 percent in 1Q'16, but was unchanged from 2Q'15.

### Yields, Inflows, and Total Return

Ratios of 10-year tax-exempt AAA GOs and similar-maturity Treasuries fell in the second quarter on a q-o-q basis, ending at 92.5 percent end-June 2016 from 99.2 percent end-March 2016 and 100.9 percent end-June 2015.

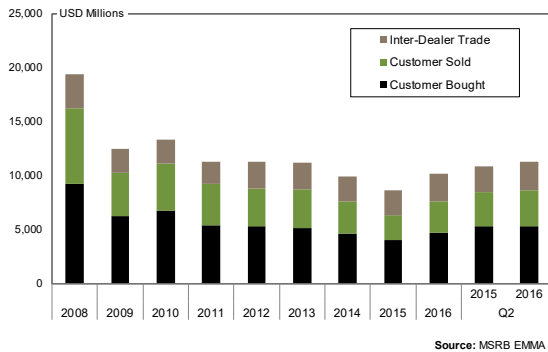
According to the Investment Company Institute (ICI), first quarter net flow into long-term municipal funds was positive, with \$20.0 billion of inflow in 2Q'16, up from \$14.4 billion of inflow from 1Q'16 and \$2.0 billion of outflow y-o-y.

According to Bank of America-Merrill Lynch indices, municipals returned 2.7 percent in the second quarter of 2016. Build America Bonds (BABs) returned 5.07 percent, outperforming similarly-rated corporates (2.9 percent). Within the municipal asset class, toll/turnpike, utilities, and health care outperformed, while pollution control, multifamily, and state issues underperformed in the second quarter.

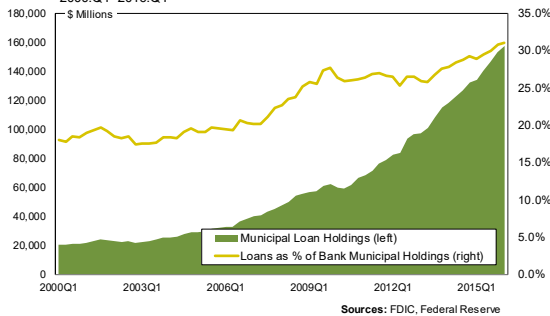


<sup>1</sup> Private placement figures are excluded in charts and tables.

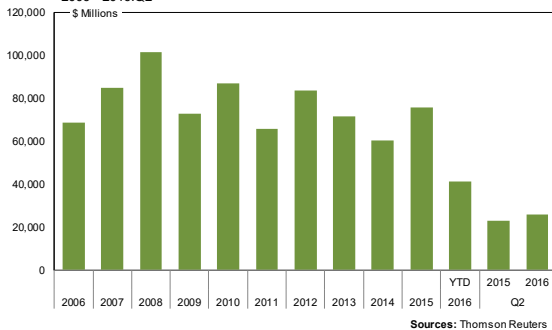
**Average Daily Trading Volume**  
2008 - 2016:Q2



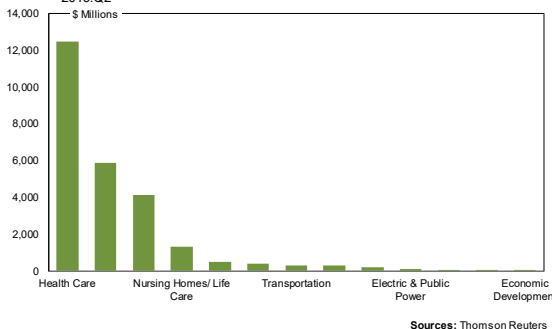
**Municipal Loans Outstanding**  
2000:Q1 - 2016:Q1



**Conduit Issuance**  
2006 - 2016:Q2



**Conduit Issuance by Use of Proceeds**  
2016:Q2



**Trading Activity and Broker-Dealers**

Trading activity rose q-o-q to \$11.3 billion daily in 2Q'16, a 23.3 percent increase from 1Q'16 (\$9.1 billion) and a 3.8 percent increase from 2Q'15 (\$10.9 billion). By number of trades, however, trading activity fell on a q-o-q and y-o-y basis, falling 1.5 percent and 10.0 percent, respectively.

Holdings of municipal bonds by broker-dealers rose to \$18.8 billion in 1Q'16, an increase of 34.3 percent q-o-q but a decline of 8.7 percent y-o-y. Holdings by foreign investors rose to \$89.2 billion in 1Q'16 from \$87.2 billion in 4Q'15, largely driven by the need for yield given negative-yielding assets in a nearly a third of the global sovereign bond market.

Bank holdings of both municipal loans and bonds continued to rise in 1Q'16 to \$507.5 billion (from \$498.9 billion). Loans rose to \$157.3 billion in 1Q'16 (from \$153.4 billion in 4Q'15), while bonds rose to \$350.2 billion from \$345.5 billion q-o-q.

Excluding loans and prerefunded deals, municipal bonds outstanding shrank 0.2 percent q-o-q. The five sectors that grew the most q-o-q in municipal bonds outstanding were: not-for-profit research (13.9 percent), special assessment (13.0 percent), bond bank (12.4 percent), airport (4.5 percent), and charter schools (4.4 percent). The five sectors that shrank the most q-o-q were: not-for-profit foundation (8.9 percent), local single-family housing (7.1 percent), lottery (6.6 percent), not-for-profit human service providers (6.4 percent), and solid waste (6.1 percent).

**CDS Update**

According to DTCC, \$825.3 million of credit default swap contracts on municipal names were executed in the second quarter, an increase of 184.7 percent and 73.9 percent, respectively, q-o-q and y-o-y. Texas led state totals in dollar volume of contracts (\$221.8 billion), followed by Illinois (\$209.9 billion).

The default of Puerto Rico on July 1 constituted a failure to pay credit event by the ISDA determinations committee, with a resulting auction to determine payouts to be held in August.

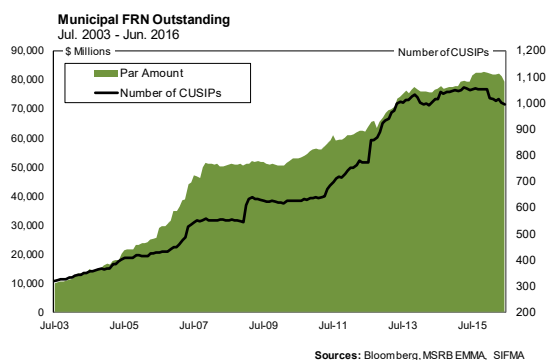
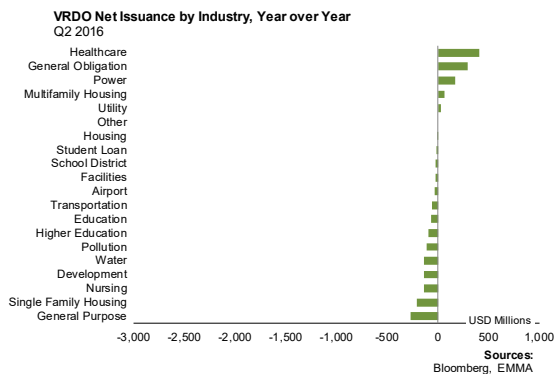
**Conduit Issuance**

Conduit issuance was \$25.8 billion in 2Q'16, a growth of 66.3 percent and 11.9 percent, respectively, q-o-q and y-o-y. Year-to-date, issuance totaled \$41.3 billion, on track to slightly exceed 2015 volumes (full year 2015: \$75.6 billion). Issuance in the second quarter was concentrated heavily in the health care sector (\$12.4 billion, or 48 percent), followed by education (\$5.9 billion, or 23 percent) and airports (\$4.1 billion, or 16 percent). Currently, there are \$573.8 billion of outstanding conduit bonds as of the end of June.

**VRDO and FRN Update**

Issuance of variable-rate demand obligations (VRDOs), puttable long-term municipal bonds with interest rates that reset periodically, rose in the second quarter, with \$2.7 billion issued in 2Q'16, an increase of 144.0 percent and 79.9 percent, respectively, q-o-q and y-o-y. Year to date, VRDO issuance totaled \$3.9 billion, on track to surpass last year's low volume of \$6.0 billion.

On net, VRDO outstandings declined slightly, ending 2Q'16 at \$174.6 billion, a decline of 0.2 percent from 1Q'16 and 6.6 percent from end-June 2015. Declines in outstanding stabilized in the second quarter even as rates spiked sharply; year over year, declines were led by student loans (56.2 percent), nursing (20.7 percent), and education (18.8 percent).



As of end-June, \$22.4 billion of VRDO liquidity facilities were scheduled to expire in 2016, with an additional \$38.6 billion in 2017, for a total of \$61.1 billion of liquidity facilities on 2,958 CUSIPs within two years. VRDO liquidity facility renewals with the same liquidity provider on approximately 780 unique CUSIPs averaged 589.7 days from the original expiration date, falling from 655.7 days in 4Q'15. The median extension, however, continues to remain unchanged at 1 year (365 days). The average life of a liquidity facility of the entire universe of VRDOs is approximately 4.9 years, falling slightly from 4Q'15. However, excluding self-liquidity deals, the average remaining tenor of liquidity facilities in the entire VRDO universe averaged 3.9 years, down slightly from the 4.04 years in 4Q'15.

Issuance of floating rate notes (“FRN”) (both LIBOR- and SIFMA- indexed, among others) rose slightly in the second quarter, with issuance of \$273.6 million, a sevenfold increase q-o-q but a 88.4 percent decline y-o-y. Year to date, FRN issuance totaled \$305.4 million, well below the pace to match 2015 volumes. As of end-June, \$79.2 billion of FRNs were outstanding, a decline of 3.1 percent q-o-q but unchanged y-o-y. LIBOR continues to remain a popular index for FRNs and rose to represent 60.0 percent of existing municipal FRNs (up from 59.2 percent end-March and 57.1 percent from end-June 2015), while the SIFMA swap indexed bonds declined slightly to represent 32.2 percent of outstanding volume, down from 33.1 percent end-March 2016 and 34.9 percent end-June 2015.

Auction rate securities (ARS) continue to steadily decline as they remain in run-off mode, with approximately \$19.0 billion outstanding at the end of June 2016, a decline of 2.8 percent and 7.6 percent, respectively, q-o-q and y-o-y.

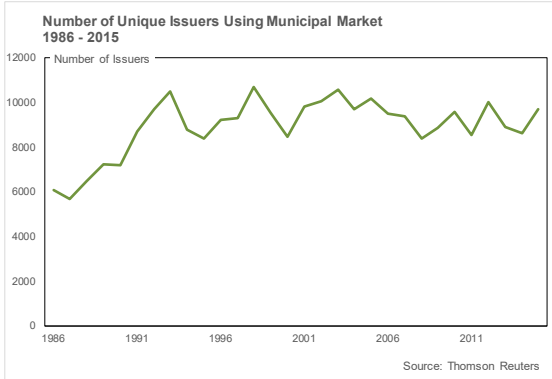
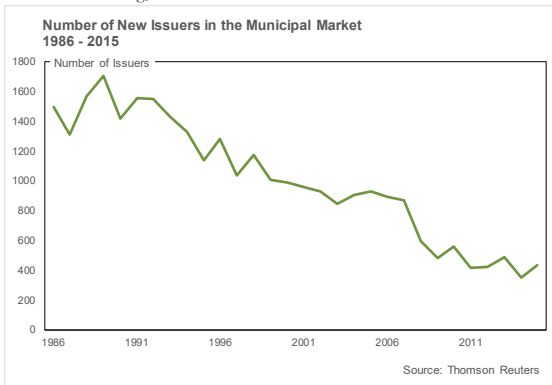
### State & Government Update

At the end of June, President Barack Obama signed a package of relief measures for Puerto Rico, the Puerto Rico Oversight, Management and Economic Stability Act (PROMESA), that, among other things, granted a stay from creditor litigation and created an oversight board to supervise budget, debt restructuring and debt negotiation. Of the approximately \$2 billion in principal and interest due on July 1<sup>st</sup>, Puerto Rico did not pay \$911 million of bond payments, of which \$779 million were its general obligation bonds.

## SNAPSHOT: MUNICIPAL ISSUERS

Municipal Issuer Type	Number of Issuers	Bond Type	Number of Issuers
City, Town or Village	9,004	Municipal	30,902
College or University	328	Corporate	6,643
Co-op Utility	16	Treasury	1
County/Parish	1,812	Agency*	6
Direct Issuer	184	ABS ex. CDOs	585
District	13,791	CDO	828
Indian Tribe	30	MBS	858
Local Authority	5,078		
State Authority	537		
State/Province	122		

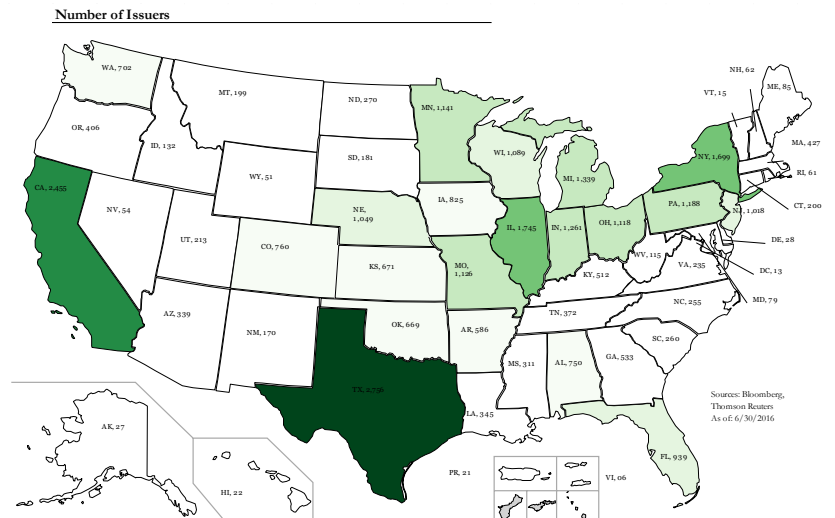
Data as of 6/30/2016  
Sources: Bloomberg, Thomson Reuters



The municipal market is characterized by an incredible number of issuers active in the marketplace, outstripping other debt sectors by multiples; currently, the municipal market has nearly five times the number of issuers than the corporate market. There are issuers from every state and several territories (e.g., Guam, American Samoa, the Northern Mariana Islands, etc.). As of the end of June, there were nearly 31,000 issuers with outstanding bonds in the municipal market, compared to approximately 6,600 in the corporate market, 1,400 in the asset-backed securities (ABS) & collateralized debt obligations (CDO) market, and 900 in the mortgage-backed securities (MBS) market.<sup>2</sup>

Approximately 435 new issuers tapped the municipal market in 2015, compared to the 10-year average of 601. While the number of new issuers in the marketplace has declined over the years, the number of issuers using the municipal market in any given year has climbed steadily since the 1970s before plateauing in the 1990s. In 2015, 9,696 issuers tapped the municipal market, compared to 9,190 issuers per year on average in the last ten years.

Roughly three fourths of active issuers have rated bonds<sup>3</sup> (defined as being rated by Moody's, Standard & Poor's, or Fitch Ratings), compared to half the corporate bond market.



<sup>2</sup> There is some double count from those issuers with bonds from various revenue streams.  
<sup>3</sup> Withdrawn, no rating, and paid in full ratings are not counted.

## CHARTS &amp; DATA

LONG-TERM MUNICIPAL STATE ISSUANCE, 2Q'16<sup>4</sup>\$ Millions<sup>5</sup>

	Bond Type			Tax Type			Funding Type			
	Total	G.O.	Revenue	AMT	Tax-Exempt	Taxable	New Financing	Refinancing	Refunding & New Refinancing	New Refunding
State										
Alabama	1,421.4	408.0	1,013.4	-	1,375.4	46.0	956.5	-	264.4	200.4
Alaska	232.0	232.0	-	-	232.0	-	172.4	-	59.6	-
American Samoa	0.0									
Arizona	1,855.3	905.3	950.0	-	1,815.7	39.7	543.9	-	443.7	867.6
Arkansas	499.6	273.7	225.9	-	416.4	83.2	141.4	-	4.6	353.6
California	18,159.4	5,543.4	12,616.0	289.2	16,770.1	1,100.2	4,209.2	-	6,166.0	7,784.3
Colorado	2,042.6	320.1	1,722.5	4.6	2,032.6	5.4	1,040.3	-	245.0	757.4
Connecticut	2,322.2	1,479.0	843.2	130.6	2,189.2	2.3	958.7	-	166.7	1,196.8
District of Columbia	1,134.9	431.8	703.1	362.7	772.3	-	678.8	-	-	456.1
Delaware	118.1	85.5	32.6	-	118.1	-	20.8	-	-	97.3
Florida	4,050.5	1,384.9	2,665.6	134.0	3,812.2	104.3	1,228.7	-	588.1	2,233.7
Georgia	2,675.9	1,721.1	954.8	52.4	2,354.9	268.6	1,754.8	-	584.8	336.3
Guam	0.0									
Hawaii	0.0									
Idaho	285.5	9.6	275.9	12.2	209.5	63.8	165.6	-	-	119.9
Illinois	4,350.9	2,279.6	2,071.3	121.3	3,918.6	311.0	1,881.6	-	1,398.6	1,070.6
Indiana	1,873.3	94.9	1,778.4	304.9	1,389.6	178.9	1,100.3	4.0	227.6	541.5
Iowa	1,349.3	643.6	705.7	3.0	1,269.4	76.9	376.8	-	78.0	894.6
Kansas	572.9	423.6	149.3	-	571.4	1.5	168.2	-	202.5	202.3
Kentucky	848.9	65.5	783.4	-	732.2	116.7	313.1	-	61.4	474.4
Louisiana	803.2	518.5	284.7	-	715.1	88.1	197.8	-	2.0	603.4
Maine	531.2	118.3	412.9	28.0	464.2	39.0	501.5	-	-	29.7
Maryland	2,275.8	1,574.7	701.1	322.9	1,914.5	38.3	2,106.0	-	-	169.8
Massachusetts	3,935.3	1,959.1	1,976.2	340.0	3,294.1	301.3	1,636.9	-	580.5	1,717.9
Michigan	2,328.1	1,814.3	513.8	6.3	1,770.4	551.5	976.2	-	571.4	780.5
Minnesota	1,967.3	1,338.9	628.4	63.1	1,845.3	58.8	929.0	-	528.6	509.7
Mississippi	172.9	38.6	134.3	-	170.7	2.2	18.6	-	-	154.3
Missouri	1,477.4	495.0	982.4	-	1,434.0	43.4	490.7	-	204.3	782.4
Montana	135.5	65.9	69.6	-	135.5	-	112.5	-	-	23.0
Nebraska	590.1	180.1	410.0	-	510.6	78.4	134.6	-	21.6	432.9
Nevada	928.9	465.5	463.4	138.7	790.2	-	58.3	-	-	870.6
New Hampshire	215.7	103.4	112.3	-	215.7	-	86.5	-	96.3	32.9
New Jersey	2,533.2	1,041.1	1,492.1	192.5	2,324.4	16.3	1,044.4	-	279.6	1,209.2
New Mexico	612.4	85.5	526.9	-	570.5	41.9	180.3	-	363.9	68.3
New York	13,382.6	2,631.2	10,751.4	3,632.2	8,812.8	937.7	7,231.5	-	2,028.3	4,122.8
North Carolina	1,555.1	360.5	1,194.6	-	1,528.5	26.6	426.0	-	67.5	1,061.6
North Dakota	345.0	132.2	212.8	64.3	279.7	1.0	225.0	-	1.7	118.3
Ohio	2,536.8	1,028.2	1,508.6	98.6	2,347.9	90.3	1,192.7	-	194.5	1,149.6
Oklahoma	820.1	372.2	447.9	-	730.1	90.0	720.7	-	-	99.4
Oregon	1,080.7	566.2	514.5	15.0	935.6	130.1	337.5	-	295.3	448.0
Pennsylvania	5,722.5	2,515.4	3,207.1	-	5,593.8	128.7	2,545.7	-	990.3	2,186.6
Puerto Rico	0.0									
Rhode Island	603.6	387.8	215.8	90.4	496.6	16.6	303.3	-	-	300.3
South Carolina	1,593.2	312.7	1,280.5	27.0	1,212.6	353.6	1,378.6	-	4.1	210.6
South Dakota	148.9	40.0	108.9	-	104.2	44.7	83.4	-	-	65.5
Tennessee	1,341.8	788.3	553.5	24.1	1,083.2	234.5	579.8	-	49.6	712.4
Texas	16,419.6	8,738.3	7,681.3	525.5	15,348.7	545.3	5,228.5	-	2,697.4	8,493.8
Utah	729.4	83.7	645.7	-	719.2	10.1	442.9	-	104.7	181.7
Vermont	233.3	68.9	164.4	27.9	205.4	-	106.0	-	94.3	33.1
Virgin Islands	3,512.2	752.0	2,760.2	-	3,306.3	205.9	942.8	-	1,594.4	975.0
Virginia	3,149.9	2,619.3	530.6	30.5	2,965.1	154.3	968.6	-	637.1	1,544.3
Washington	341.1	11.9	329.2	-	340.4	0.7	22.4	-	-	318.7
West Virginia	3,160.0	1,235.3	1,924.7	211.1	2,785.2	163.7	1,337.8	-	1,273.4	548.8
Wisconsin	0.0									
Wyoming	0.0									
<b>ALL</b>	<b>118,975.5</b>	<b>48,744.6</b>	<b>70,230.9</b>	<b>7,253.0</b>	<b>104,930.1</b>	<b>6,791.5</b>	<b>48,257.6</b>	<b>4.0</b>	<b>23,171.8</b>	<b>47,541.9</b>
<b>QoQ</b>	<b>24.5%</b>	<b>7.3%</b>	<b>40.2%</b>	<b>811.0%</b>	<b>19.0%</b>	<b>3.8%</b>	<b>34.3%</b>		<b>24.6%</b>	<b>16.0%</b>
<b>YoY</b>	<b>7.3%</b>	<b>1.3%</b>	<b>11.8%</b>	<b>153.7%</b>	<b>4.8%</b>	<b>-14.4%</b>	<b>10.7%</b>		<b>-4.4%</b>	<b>10.4%</b>

<sup>4</sup> Issuance totals do not include private placements.<sup>5</sup> Due to securities falling into more than one category within subcategories, state breakouts are not identical to other non-state-specific breakdowns, particularly related to coupon types (e.g., zeros are higher by dollar amount when broken out by state but would instead be assigned to the convertible or fixed rate categories when not broken out by state). This is a quirk of the SDC database.

State	Total	Coupon Type							
		Convertible	Fixed Rate	Linked Rate	Variable Rate			Short (VRDO)	Zero
					Variable Rate Long	Variable Rate No Put			
Alabama	1,421.4	-	881.8	-	522.9	-	16.6	-	
Alaska	232.0	-	232.0	-	-	-	-	-	
American Samoa	0.0	-	-	-	-	-	-	-	
Arizona	1,855.3	-	1,855.3	-	-	-	-	-	
Arkansas	499.6	-	499.7	-	-	-	-	-	
California	18,159.4	-	17,586.2	-	382.3	-	2.7	188.3	
Colorado	2,042.6	-	1,812.2	-	-	-	230.5	-	
Connecticut	2,322.2	-	1,591.2	-	399.3	-	331.7	-	
District of Columbia	1,134.9	-	1,134.9	-	-	-	-	-	
Delaware	118.1	-	118.1	-	-	-	-	-	
Florida	4,050.5	-	3,925.5	-	-	-	125.0	-	
Georgia	2,675.9	-	2,622.0	-	37.0	-	17.0	-	
Guam	0.0	-	-	-	-	-	-	-	
Hawaii	0.0	-	-	-	-	-	-	-	
Idaho	285.5	-	285.6	-	-	-	-	-	
Illinois	4,350.9	-	4,307.6	33.0	10.3	-	-	-	
Indiana	1,873.3	-	1,752.8	-	118.5	-	-	2.0	
Iowa	1,349.3	-	1,349.3	-	-	-	-	-	
Kansas	572.9	-	572.9	-	-	-	-	-	
Kentucky	848.9	-	848.9	-	-	-	-	-	
Louisiana	803.2	-	803.2	-	-	-	-	-	
Maine	531.2	-	503.2	-	-	-	28.0	-	
Maryland	2,275.8	-	2,275.7	-	-	-	-	-	
Massachusetts	3,935.3	-	3,914.2	-	-	-	21.2	-	
Michigan	2,328.1	-	2,162.5	-	65.6	-	100.0	-	
Minnesota	1,967.3	-	1,839.4	-	-	-	75.0	52.8	
Mississippi	172.9	-	172.9	-	-	-	-	-	
Missouri	1,477.4	-	1,477.4	-	-	-	-	-	
Montana	135.5	-	135.5	-	-	-	-	-	
Nebraska	590.1	-	589.0	-	-	-	-	-	
Nevada	928.9	-	710.0	-	138.9	-	80.0	-	
New Hampshire	215.7	-	215.7	-	-	-	-	-	
New Jersey	2,533.2	-	2,528.2	-	-	-	-	5.0	
New Mexico	612.4	-	612.5	-	-	-	-	-	
New York	13,382.6	-	13,083.6	-	15.0	-	284.0	-	
North Carolina	1,555.1	-	1,514.2	-	-	-	41.0	-	
North Dakota	345.0	-	345.0	-	-	-	-	-	
Ohio	2,536.8	-	2,199.8	-	18.0	-	311.0	8.0	
Oklahoma	820.1	-	820.0	-	-	-	-	-	
Oregon	1,080.7	-	1,052.6	-	-	-	28.1	-	
Pennsylvania	5,722.5	-	5,431.2	140.6	-	-	150.7	-	
Puerto Rico	0.0	-	-	-	-	-	-	-	
Rhode Island	603.6	-	603.6	-	-	-	-	-	
South Carolina	1,593.2	-	1,462.6	-	10.6	-	120.0	-	
South Dakota	148.9	-	148.9	-	-	-	-	-	
Tennessee	1,341.8	-	1,094.5	100.0	17.3	-	130.0	-	
Texas	16,419.6	-	15,963.3	-	103.9	-	339.8	12.6	
Utah	729.4	-	729.3	-	-	-	-	-	
Vermont	233.3	-	233.3	-	-	-	-	-	
Virgin Islands	3,512.2	-	-	-	-	-	-	-	
Virginia	3,149.9	-	3,214.9	-	-	-	297.4	-	
Washington	341.1	-	3,142.4	-	-	-	7.5	-	
West Virginia	3,160.0	-	341.1	-	-	-	-	-	
Wisconsin	0.0	-	3,043.7	-	65.0	-	-	51.3	
Wyoming	0.0	-	-	-	-	-	-	-	
<b>ALL</b>	<b>118,975.5</b>	<b>0.0</b>	<b>113,739.4</b>	<b>273.6</b>	<b>1,904.6</b>	<b>0.0</b>	<b>2,737.2</b>	<b>320.0</b>	
<b>QoQ</b>	24.5%	<b>-100.0%</b>	22.1%	760.4%	72.8%		144.0%	229.6%	
<b>YoY</b>	7.3%		7.4%	<b>-88.4%</b>	170.6%		79.9%	<b>-30.0%</b>	



## LONG-TERM MUNICIPAL ISSUANCE BY GENERAL USE OF PROCEEDS

\$ Millions

Use of Proceeds	2Q'15	1Q'16	2Q'16	Q-o-Q	Y-o-Y
General purpose / public improvement	27,340.5	24,418.6	28,697.1	17.5%	5.0%
Primary & secondary education	25,779.2	24,736.0	21,023.5	-15.0%	-18.4%
Higher education	11,412.9	9,120.7	12,863.8	41.0%	12.7%
Water & sewer facilities	9,860.8	10,165.4	12,029.1	18.3%	22.0%
General acute care hospital	7,679.1	5,852.5	10,470.3	78.9%	36.3%
Toll roads, highways & streets	4,334.9	3,189.3	5,464.4	71.3%	26.1%
Airports	1,648.7	582.8	5,227.0	796.9%	217.0%
Mass transportation	1,821.0	3,277.7	3,987.8	21.7%	119.0%
Public power	6,318.2	3,487.7	3,249.7	-6.8%	-48.6%
Single family housing	1,511.4	2,243.5	2,782.5	24.0%	84.1%
Economic development	3,568.2	2,471.9	2,537.1	2.6%	-28.9%
Multi family housing	1,891.1	861.3	1,470.6	70.7%	-22.2%
Bridges	510.0	658.8	1,136.0	72.4%	122.7%
Cont Care Retirement Community	842.9	255.4	1,061.8	315.7%	26.0%
Combined utilities	284.7	333.5	913.9	174.0%	221.0%
Student loans	932.1		627.9		-32.6%
Gas	41.2	618.9	582.4	-5.9%	1313.6%
Stadiums & sports complexes	659.3	119.1	464.4	289.9%	-29.6%
Single speciality hospital	78.5	35.3	428.0	1112.5%	445.2%
Industrial development	275.6	26.3	421.9	1504.2%	53.1%
Pollution control	19.1	637.3	389.0	-39.0%	1936.6%
Other education	134.0	48.1	353.5	634.9%	163.8%
General Medical	29.7	200.3	313.5	56.5%	955.6%
Government buildings	209.4	293.0	307.8	5.1%	47.0%
Other recreation	48.7	41.3	296.9	618.9%	509.7%
Childrens hospital	455.7	228.9	248.2	8.4%	-45.5%
Sanitation	197.2	58.4	232.7	298.5%	18.0%
Fire stations & equipment	101.0	118.4	160.8	35.8%	59.2%
Parking facilities	93.2	41.0	159.8	289.8%	71.5%
Correctional facilities	497.4	101.0	153.7	52.2%	-69.1%
Civic & convention centers	234.7	459.0	123.9	-73.0%	-47.2%
Parks, Zoos & Beaches	301.2	205.5	116.4	-43.4%	-61.4%
Police stations & equipment	64.6	32.9	105.5	220.7%	63.3%
Libraries & museums	129.6	211.5	91.4	-56.8%	-29.5%
Theatres			90.1		
Flood control	261.8	85.5	86.7	1.4%	-66.9%
Office buildings	113.3	59.8	82.8	38.5%	-26.9%
Solid waste	378.5	17.9	82.6	361.5%	-78.2%
Telecommunications	140.1		61.9		-55.8%
Assisted Living	42.5	27.3	53.8	97.1%	26.6%
Seaports / marine terminals	525.9	171.8	13.6	-92.1%	-97.4%
Nursing homes	151.5	37.6	11.0	-70.7%	-92.7%
<b>ALL</b>	<b>110,919.4</b>	<b>95,531.2</b>	<b>118,974.8</b>	<b>24.5%</b>	<b>7.3%</b>

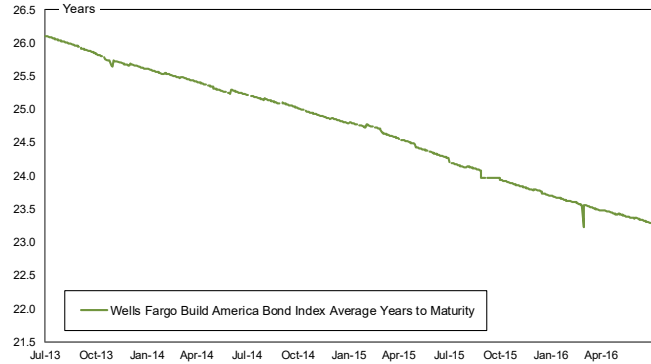
**BUILD AMERICA BONDS**

**Build America Bonds Average Yield and Coupon**  
Jul. 2013 - Jun. 2016



Source: Wells Fargo

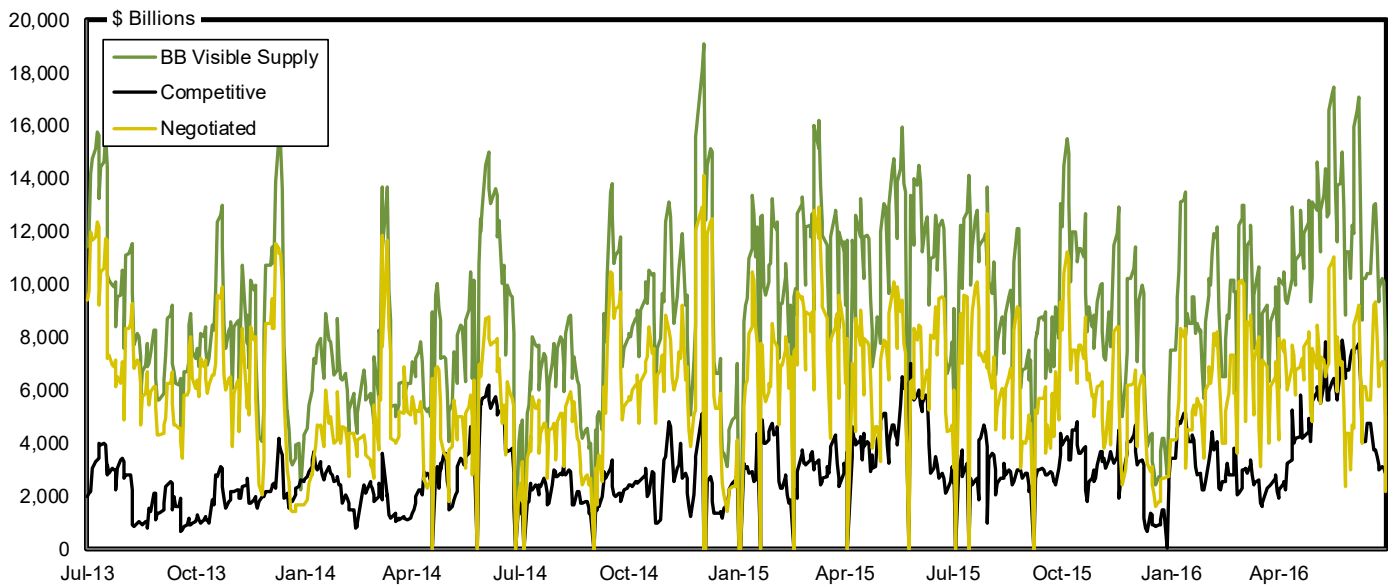
**Build America Bond Average Years to Maturity**  
Jul. 2013 - Jun. 2016



Source: Wells Fargo

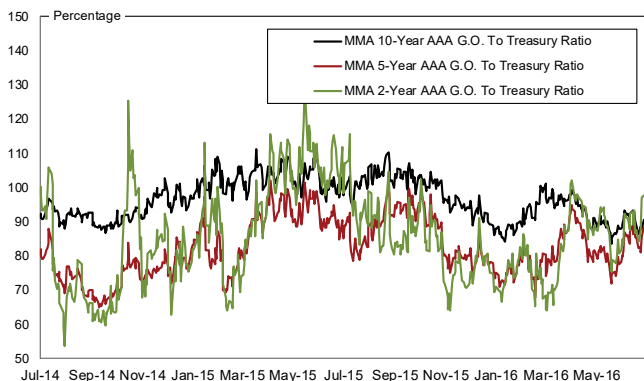
**SUPPLY, YIELD CURVES, TOTAL RETURN, SPREADS & RATIOS**

**Bond Buyer 30-Day Visible Supply**  
Jul. 1, 2013 - Jun. 30, 2016



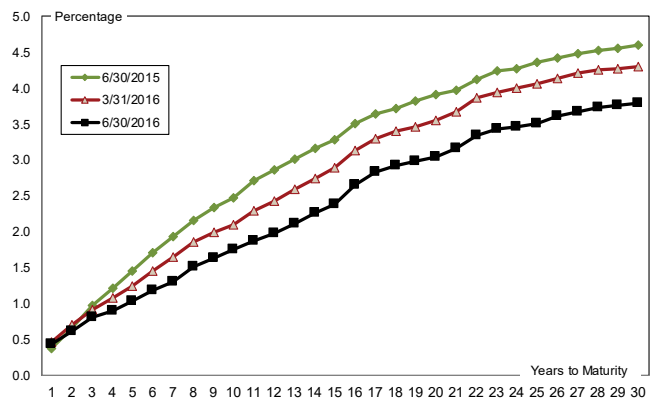
Source: Bond Buyer, Bloomberg

**2-, 5-, and 10-Year AAA G.O. to Treasury Ratios**  
Jul. 2014 - Jun. 2016

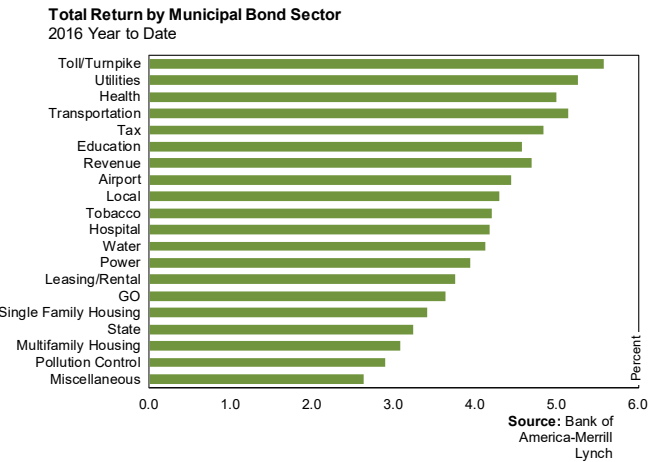
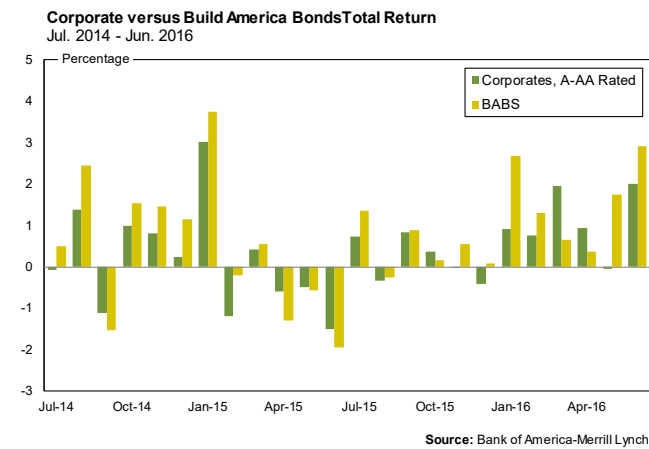
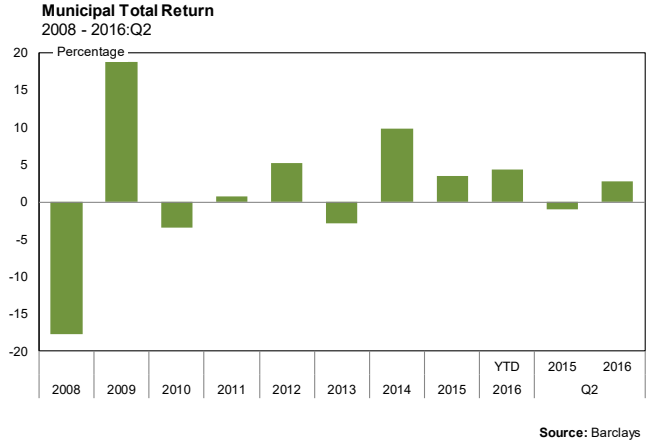
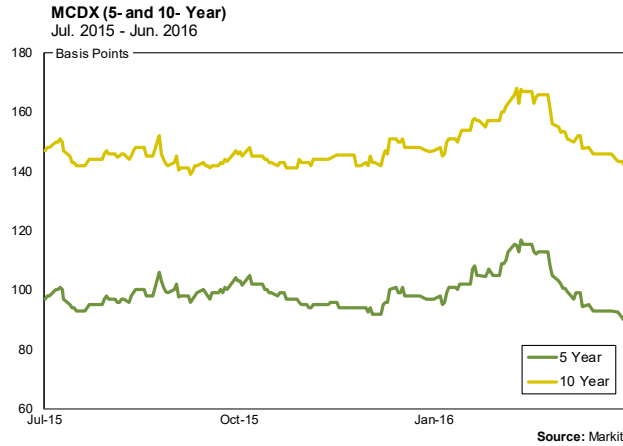


Source: Bloomberg

**MMA Yield Curves**



Source: MMA



**TRADING SUMMARY**

Total Number of Trades									
	# of Trades				Par Amount (Millions)				
	Customer Bought	Customer Sold	Inter-Dealer Trade	All Trades	Customer Bought	Customer Sold	Inter-Dealer Trade	All Trades	
2016:Q1	919,774	454,237	881,779	2,255,790	249,003	155,679	152,691	\$557,373	
2016:Q2	919,373	477,487	933,895	2,330,755	341,142	210,671	169,028	\$720,841	
%Change	0%	5%	6%	3%	37%	35%	11%	29%	

	# of Trades				All Trades	Par Amount (Millions)				
	0 - 100,000	100,001 - 500,000	500,001 - 1,000,000	1,000,000+		0 - 100,000	100,001 - 500,000	500,001 - 1,000,000	1,000,000+	All Trades
2016:Q1	81%	13%	3%	3%	2,255,790	11%	14%	8%	67%	\$557,373
2016:Q2	80%	13%	3%	4%	2,330,755	9%	11%	7%	74%	\$720,841

	Trades by Sector							
	Education	Health	Utility	Various Purpose	Transportation	Tax-Revenue	Other	Total (Millions)
2016:Q1	23%	9%	12%	13%	8%	10%	25%	\$557,373
2016:Q2	20%	11%	12%	11%	9%	7%	30%	\$720,841

	Trades by Maturity					
	1 Year or Less	1+ Year to 5 Years	5+ Years to 10 Years	10+ Years to 20 Years	20+ Years	Total (Millions)
2016:Q1	5%	12%	17%	35%	32%	\$557,373
2016:Q2	6%	10%	15%	35%	34%	\$720,841

	Trades by Source of Repayment				
	Revenue	General Obligation	Double Barrel	Not Available	Total (Millions)
2016:Q1	64%	33%	3%	0%	\$557,373
2016:Q2	68%	28%	3%	1%	\$720,841

	Trades by Coupon Type				
	Fixed Rate	Variable Rate	Zero Coupon	Not Available	Total (Millions)
2016:Q1	73%	23%	4%	0%	\$557,373
2016:Q2	62%	33%	4%	0%	\$720,841

Source: MSRB EMMA

## MUNICIPAL CDS

Market Risk Activity of Single-Name Municipal CDS (\$ millions) <sup>6</sup>

State	California	Connecticut	Florida	Illinois	Michigan	Nevada	New Jersey	New York	Ohio	South Carolina	Texas	New York City	Massachusetts	TOTAL	Average Contract Size
Apr-15				1.1			0.1				0.2			1.4	0.5
May-15	8.0			28.0			6.0				1.0			43.0	2.7
Jun-15	171.9		26.0	73.0	25.0		98.6	0.5				15.2	20.0	430.2	6.1
Jul-15	200.5	16.2	135.0	219.2	80.0	20.0	117.5	45.0	40.0		30.0	51.5	13.0	967.9	7.2
Aug-15	306.5	10.0	40.0	289.0	70.0		242.7	10.0	35.0		1.9	85.0		1,090.1	5.4
Sep-15								55.0				20.0		75.0	18.8
Oct-15	25.0	5.0			25.0			20.0					10.0	85.0	6.1
Nov-15	1.0		4.6	15.0	12.2		23.7	11.0		7.0	4.9	11.0	11.0	101.5	3.4
Dec-15			50.0	70.0										120.0	24.0
Jan-16				70.0					25.0					95.0	15.8
Feb-16	10.0	20.0	50.0	25.4						25.0		10.0	25.0	165.4	11.0
Mar-16				27.4							2.1			29.5	1.3
Apr-16	1.9			54.2										56.1	5.1
May-16	20.8		23.3	115.7	3.4		30.8	34.5	150.2	18.0	221.8	37.5	13.5	669.3	15.2
Jun-16		24.0		40.0	2.5	18.4		5.0		10.0				99.9	3.2
<b>2Q'16</b>	<b>22.7</b>	<b>24.1</b>	<b>23.3</b>	<b>209.9</b>	<b>5.9</b>	<b>18.4</b>	<b>30.8</b>	<b>39.5</b>	<b>150.2</b>	<b>28.0</b>	<b>221.8</b>	<b>37.5</b>	<b>13.5</b>	<b>825.3</b>	<b>9.6</b>
Q-o-Q	126.7%	20.4%	-53.3%	70.9%					500.6%	11.8%	10460.0%	274.9%	-46.2%	184.7%	
Y-o-Y	-87.4%		-10.2%	105.6%	-76.6%		-70.6%	7799.2%			18380.0%	146.6%	-32.7%	73.9%	

Source: DTCC

CDS Yield Curves for Single Name States and New York City (bps) as of June 30, 2016

	6M	1Y	2Y	3Y	4Y	5Y	7Y	10Y
CA California	25.5	21.2	36.6	53.4	60.7	69.9	99.2	118.8
CT Connecticut	28.2	31.0	60.1	81.1	96.6	109.2	120.1	162.1
DE Delaware	20.2	23.2	33.0	37.9	35.4	35.3	44.2	65.3
FL Florida	21.2	22.4	39.6	55.1	48.3	45.7	50.9	95.0
IL Illinois	127.4	144.1	208.7	295.9	364.2	378.0	433.5	477.1
MA Massachusetts	19.6	22.4	32.7	58.4	54.2	54.8	62.5	104.4
MD Maryland	15.0	20.5	33.3	45.1	42.2	41.5	51.9	86.2
MI Michigan	21.4	21.7	34.5	46.8	54.5	59.1	79.2	98.0
MN Minnesota	12.9	15.3	23.3	32.7	34.1	37.8	50.9	67.7
NC North Carolina	20.2	21.9	27.0	35.9	35.4	36.6	39.4	70.8
NJ New Jersey	61.1	61.8	110.5	160.5	196.4	203.6	215.9	270.4
NV Nevada	25.2	26.9	34.8	41.9	44.0	45.7	57.9	95.0
NY New York	21.6	25.8	41.7	47.4	51.6	54.9	70.4	103.9
OH Ohio	20.2	23.5	30.6	40.6	46.2	51.6	65.0	101.6
PA Pennsylvania	35.4	38.7	50.4	79.7	93.1	99.5	108.1	161.5
PR Puerto Rico	10,162.2	7,865.7	5,398.1	4,304.1	3,673.5	3,265.8	2,814.8	2,483.2
RI Rhode Island	13.3	22.1	35.3	54.2	49.7	49.1	64.4	106.9
SC South Carolina	11.6	12.3	14.9	20.9	32.0	37.8	55.9	74.7
TX Texas	14.8	16.7	22.1	31.3	41.5	47.6	58.9	80.1
UT Utah	35.9	30.2	36.7	45.0	48.2	52.7	73.5	90.2
VA Virginia	20.3	24.2	30.1	35.8	35.4	35.9	39.4	57.0
WA Washington	20.0	22.4	24.6	28.8	37.9	45.2	49.1	71.3
WI Wisconsin	6.9	7.2	10.7	16.4	24.2	28.6	41.6	60.6
NYC New York City	30.5	36.4	58.8	66.8	72.7	77.2	96.0	134.2

<sup>6</sup> "Market risk activity" (as defined by DTCC): The gross notional and contract counts include transaction types of new trades between two parties, a termination of an existing transaction, or the new leg of an assignment representing the trade between the step-in party and the remaining party. Excludes transactions which do not result in a change in the market risk position of the market participants, and are not market activity. For example, central counterparty clearing, and portfolio compression both terminate existing transactions and re-book new transactions or amend existing transactions. These transactions still maintain the same risk profile and consequently are not included as "market risk transfer activity."

## OUTSTANDING MUNICIPAL DEBT

Outstanding by Type, Maturity, and Security Type<sup>7</sup>

\$ Millions

State	Total Outstanding	G.O.	Revenue	Due in 13 Months	Long-Term	2016:Q1 Total Outstanding	% Change
AK Alaska	10,189.1	2,697.1	7,492.0	544.8	9,644.3	10,225.1	-0.4%
AL Alabama	31,975.1	6,452.6	25,522.5	1,032.9	30,942.2	31,662.9	1.0%
AR Arkansas	13,583.8	6,191.3	7,392.5	519.3	13,064.5	13,839.2	-1.8%
AS American Samoa	78.9		78.9		78.9	78.9	0.0%
AZ Arizona	48,667.8	9,835.6	38,832.2	2,473.4	46,194.5	51,228.6	-5.0%
CA California	519,710.7	199,282.7	320,427.9	19,672.8	500,037.8	520,855.7	-0.2%
CO Colorado	52,339.6	11,313.4	41,026.2	2,157.0	50,182.7	53,302.3	-1.8%
CT Connecticut	47,087.7	25,865.8	21,221.8	3,652.1	43,435.6	47,312.2	-0.5%
DC District of Columbia	30,278.3	3,755.0	26,523.3	1,154.7	29,123.6	29,593.9	2.3%
DE Delaware	6,910.7	2,636.5	4,274.1	364.5	6,546.1	7,072.0	-2.3%
FL Florida	135,311.0	15,320.5	119,990.5	5,882.4	129,428.6	139,150.8	-2.8%
GA Georgia	65,969.7	16,285.1	49,684.7	3,550.3	62,419.4	65,728.3	0.4%
GU Guam	2,608.5	19.7	2,588.7	37.8	2,570.7	2,614.3	-0.2%
HI Hawaii	16,422.6	10,085.6	6,337.0	879.7	15,542.8	16,733.5	-1.9%
IA Iowa	19,302.0	5,951.0	13,351.1	1,168.6	18,133.5	20,128.0	-4.1%
ID Idaho	6,517.2	1,876.6	4,640.6	771.9	5,745.3	6,499.7	0.3%
IL Illinois	152,963.3	79,488.9	73,474.4	7,917.9	145,045.4	152,079.6	0.6%
IN Indiana	47,391.2	1,128.0	46,263.2	3,249.4	44,141.8	47,361.8	0.1%
KS Kansas	23,536.6	10,352.0	13,184.6	1,548.0	21,988.5	23,766.3	-1.0%
KY Kentucky	32,710.4	1,753.0	30,957.4	2,365.5	30,345.0	33,290.0	-1.7%
LA Louisiana	33,515.8	7,047.5	26,468.3	1,637.9	31,877.9	33,545.6	-0.1%
MA Massachusetts	92,046.3	35,916.7	56,129.6	5,319.2	86,727.1	93,152.2	-1.2%
MD Maryland	50,888.8	25,847.4	25,041.4	3,013.3	47,875.5	50,084.5	1.6%
ME Maine	7,925.7	1,830.5	6,095.2	508.4	7,417.3	7,421.9	6.8%
MI Michigan	74,086.3	24,925.3	49,161.0	3,404.1	70,682.3	75,906.7	-2.4%
MN Minnesota	48,787.2	25,531.3	23,255.9	3,061.1	45,726.1	47,646.6	2.4%
MO Missouri	45,902.7	9,074.1	36,828.6	1,925.7	43,977.0	46,041.4	-0.3%
MS Mississippi	16,087.5	6,254.3	9,833.3	815.3	15,272.3	16,396.3	-1.9%
MT Montana	3,955.8	1,337.2	2,618.5	245.9	3,709.9	4,010.3	-1.4%
NC North Carolina	47,681.2	11,108.3	36,572.9	2,475.5	45,205.7	48,527.6	-1.7%
ND North Dakota	5,038.3	1,841.4	3,196.9	338.1	4,700.3	5,044.2	-0.1%
NE Nebraska	17,893.0	5,487.9	12,405.1	1,092.5	16,800.5	17,819.8	0.4%
NH New Hampshire	7,778.5	2,264.5	5,514.1	445.4	7,333.2	7,956.5	-2.2%
NJ New Jersey	113,306.4	23,438.8	89,867.6	9,203.0	104,103.4	115,734.8	-2.1%
NM New Mexico	13,371.1	3,359.9	10,011.3	984.9	12,386.2	13,717.8	-2.5%
NV Nevada	24,478.6	12,588.4	11,890.2	1,400.8	23,077.7	25,895.1	-5.5%
NY New York	371,027.6	72,374.1	298,653.5	20,740.0	350,287.6	372,145.5	-0.3%
OH Ohio	102,100.4	29,198.9	72,901.5	5,098.0	97,002.4	102,146.7	0.0%
OK Oklahoma	18,937.8	3,875.0	15,062.7	1,582.2	17,355.6	18,991.1	-0.3%
OR Oregon	34,255.5	19,228.0	15,027.4	2,227.1	32,028.4	34,957.2	-2.0%
OT Other Territories	10,316.9	197.7	10,119.2	414.2	9,902.7	9,433.5	9.4%
PA Pennsylvania	119,443.6	42,977.8	76,465.8	6,302.6	113,141.0	121,122.7	-1.4%
PR Puerto Rico	100,001.8	12,349.6	87,652.2	1,985.1	98,016.7	100,674.9	-0.7%
RI Rhode Island	10,630.6	1,790.6	8,840.0	441.7	10,188.9	10,777.6	-1.4%
SC South Carolina	41,189.8	9,178.1	32,011.7	1,830.6	39,359.2	34,742.7	18.6%
SD South Dakota	4,752.3	955.1	3,797.2	213.2	4,539.1	4,760.5	-0.2%
TN Tennessee	36,794.8	14,194.4	22,600.3	2,174.3	34,620.4	37,422.8	-1.7%
TT Trust Territories	258.5	80.4	178.2	140.8	117.7	261.5	-1.1%
TX Texas	316,339.4	159,650.2	156,689.2	12,517.2	303,822.2	310,252.8	2.0%
UT Utah	19,414.6	5,691.5	13,723.1	1,182.0	18,232.6	19,764.3	-1.8%
VA Virginia	58,044.3	12,694.1	45,350.2	3,042.2	55,002.1	58,078.1	-0.1%
VI Virgin Islands	2,353.4		2,353.4	66.3	2,287.1	2,368.7	-0.6%
VT Vermont	4,805.7	723.0	4,082.8	149.6	4,656.1	4,769.0	0.8%
WA Washington	81,043.7	40,281.1	40,762.6	3,997.3	77,046.4	80,225.8	1.0%
WI Wisconsin	43,943.5	21,721.3	22,222.2	3,493.7	40,449.7	43,259.9	1.6%
WV West Virginia	10,074.5	725.9	9,348.6	408.7	9,665.8	10,169.5	-0.9%
WY Wyoming	2,469.5	141.4	2,328.0	151.2	2,318.3	2,540.0	-2.8%
TOTAL (6/30/2016)	3,254,495.4	1,056,171.9	2,198,323.5	162,972.1	3,091,523.4	3,260,289.5	-0.2%
TOTAL (3/31/2016)	3,260,289.5	1,059,174.6	2,201,114.9	171,317.3	3,088,972.2		
% Change	-0.2%	-0.3%	-0.1%	-4.9%	0.1%		

<sup>7</sup> Outstanding includes both short- and long-term municipal debt, including certain preferred fund shares (e.g., VRDPS). "Due in 13 months" looks at original maturity and will not include securities with short puts unless original maturity is within 13 months. Outstanding does not include refunded (inclusive of prerefunded) debt and derivatives. See additional tables for prerefunded and derivatives debt. The chart replaces "Outstanding by Insurance" from prior municipal reports. For comparability against Federal Reserve's Flow of Funds, aggregate prerefunded with outstanding but not derivatives; differences between the two aggregates afterward are due to underlying database differences (Fed: Mergent; these tables: Bloomberg).

Outstanding and by Tax Status, Coupon, Use of Proceeds, Industry<sup>8</sup>

\$ Millions

State	Total Outstanding	Tax-Exempt	AMT	Taxable	Fixed	Zero	FRN	Other	Industry	Total Outstanding
AK Alaska	10,189.1	8,561.5	427.8	1,199.8	7,826.2	162.6	394.7	1,805.6	Airport	88,459.4
AL Alabama	31,975.1	24,913.8	926.7	6,134.7	24,389.7	1,008.4	347.9	6,229.1	Development	106,305.7
AR Arkansas	13,583.8	8,924.1	319.3	4,340.3	12,344.1	251.3	528.2	460.1	Education	687,122.9
AS American Samoa	78.9	44.2	-	-	78.9	-	-	-	GO	650,132.8
AZ Arizona	48,667.8	42,649.2	1,034.7	4,983.9	42,978.5	30.0	625.0	5,034.3	Healthcare	252,596.3
CA California	519,710.7	415,041.8	18,005.7	86,663.2	381,106.7	65,145.6	10,032.6	63,425.7	Housing	127,041.3
CO Colorado	52,339.6	38,543.0	2,742.3	11,054.4	42,473.6	3,140.6	1,105.6	5,619.7	Other	663,064.5
CT Connecticut	47,087.7	36,439.0	1,272.1	9,376.6	39,206.1	457.2	2,081.5	5,342.9	Public Facilities	13,385.6
DC District of Columbia	30,278.3	22,852.4	4,081.0	3,344.9	20,473.7	5,607.2	210.3	3,987.1	Student Loan	29,244.5
DE Delaware	6,910.7	5,184.1	308.1	1,418.5	5,549.7	3.9	-	1,357.0	Transportation	213,962.8
FL Florida	135,311.0	110,032.2	11,238.6	14,040.2	113,632.2	3,058.9	3,104.8	15,515.0	Utilities	423,176.7
GA Georgia	65,969.7	51,482.2	3,170.3	11,317.3	52,872.0	74.2	1,793.5	11,230.1	TOTAL	3,254,492.4
GU Guam	2,608.5	2,383.1	188.6	36.8	2,493.0	115.5	-	-		
HI Hawaii	16,422.6	12,635.5	1,213.4	2,573.7	15,956.0	19.5	114.7	332.4		
IA Iowa	19,302.0	12,655.3	513.2	6,133.5	17,013.5	551.8	11.5	1,725.2		
ID Idaho	6,517.2	5,043.1	384.2	1,090.0	5,436.3	103.4	434.4	543.1		
IL Illinois	152,963.3	101,417.3	5,379.0	46,175.1	123,828.2	15,044.7	2,456.5	11,633.9		
IN Indiana	47,391.2	34,091.3	3,994.9	9,305.0	36,103.3	989.0	1,020.2	9,278.7		
KS Kansas	23,536.6	15,577.8	382.8	7,576.0	22,225.1	295.9	181.1	834.4		
KY Kentucky	32,710.4	22,105.3	1,553.9	9,051.3	27,039.9	436.6	1,885.9	3,348.1		
LA Louisiana	33,515.8	25,602.6	1,895.2	6,018.0	27,206.6	212.2	1,936.8	4,160.2		
MA Massachusetts	92,046.3	77,045.8	3,644.8	11,355.7	77,599.0	1,086.3	2,876.6	10,484.4		
MD Maryland	50,888.8	42,328.2	2,182.2	6,378.4	44,828.4	123.3	479.3	5,457.7		
ME Maine	7,925.7	5,950.4	572.5	1,402.8	6,956.9	-	15.0	953.8		
MI Michigan	74,086.3	54,595.9	2,857.8	16,632.7	54,724.8	7,301.1	2,624.9	9,435.5		
MN Minnesota	48,787.2	35,291.2	1,513.0	11,983.0	42,455.4	859.4	740.8	4,731.7		
MO Missouri	45,902.7	30,144.6	1,022.2	14,735.9	34,207.5	834.0	3,987.5	6,873.7		
MS Mississippi	16,087.5	10,781.1	298.9	5,007.5	11,657.9	3.0	243.2	4,183.5		
MT Montana	3,955.8	2,252.6	224.6	1,478.5	2,827.7	10.2	370.4	747.5		
NC North Carolina	47,681.2	39,228.3	1,275.0	7,177.9	37,622.5	258.0	2,077.6	7,673.1		
ND North Dakota	5,038.3	3,493.3	298.2	1,246.8	4,682.1	-	87.7	268.5		
NE Nebraska	17,893.0	12,500.7	402.6	4,989.8	16,222.8	-	253.2	1,417.1		
NH New Hampshire	7,778.5	4,992.6	557.5	2,228.4	5,819.8	74.0	762.2	1,122.6		
NJ New Jersey	113,306.4	84,497.2	6,685.8	22,123.4	89,940.6	14,171.8	1,933.3	7,260.8		
NM New Mexico	13,371.1	10,857.5	405.7	2,108.0	10,973.7	8.6	1,158.0	1,230.8		
NV Nevada	24,478.6	19,855.6	1,844.6	2,778.3	19,939.2	983.0	-	3,556.4		
NY New York	371,027.6	295,505.6	22,018.6	53,503.4	298,573.2	14,553.4	5,015.7	52,885.2		
OH Ohio	102,100.4	73,612.5	2,420.9	26,067.0	76,279.4	8,576.5	671.1	16,573.4		
OK Oklahoma	18,937.8	13,729.0	925.8	4,283.0	16,857.1	67.6	943.3	1,069.8		
OR Oregon	34,255.5	22,217.9	1,007.0	11,030.5	29,230.4	2,903.6	223.8	1,897.7		
OT Other Territories	10,316.9	3,831.2	6,366.5	119.1	1,025.9	12.0	-	9,279.0		
PA Pennsylvania	119,443.6	89,577.4	5,471.8	24,394.4	95,706.8	4,852.2	5,170.7	13,713.9		
PR Puerto Rico	100,001.8	85,093.7	219.1	14,689.0	55,357.8	37,421.6	1,709.1	5,513.4		
RI Rhode Island	10,630.6	8,691.0	737.7	1,201.9	7,927.4	1,754.4	459.8	488.9		
SC South Carolina	41,189.8	33,853.1	1,102.7	6,234.0	30,049.9	2,903.4	1,813.7	6,422.8		
SD South Dakota	4,752.3	2,923.3	238.5	1,590.5	4,274.1	4.0	86.5	387.7		
TN Tennessee	36,794.8	27,481.6	1,138.7	8,174.5	30,676.0	667.5	515.5	4,935.8		
TT Trust Territories	258.5	220.4	38.2	-	118.5	-	-	140.0		
TX Texas	316,339.4	239,977.9	15,644.5	60,716.9	256,011.6	15,988.6	12,637.3	31,701.8		
UT Utah	19,414.6	13,667.3	230.9	5,516.3	15,710.0	81.9	1,254.1	2,368.6		
VA Virginia	58,044.3	46,842.7	2,133.8	9,067.8	51,938.6	1,619.3	16.2	4,470.2		
VI Virgin Islands	2,353.4	2,193.7	46.5	113.3	2,305.3	48.1	-	-		
VT Vermont	4,805.7	2,951.5	454.1	1,400.1	3,129.7	-	1,343.7	332.4		
WA Washington	81,043.7	63,186.6	3,600.2	14,256.9	73,787.7	2,047.0	735.9	4,473.1		
WI Wisconsin	43,943.5	28,710.9	1,663.9	13,568.6	39,238.5	479.8	703.1	3,522.1		
WV West Virginia	10,074.5	5,567.5	749.4	3,757.7	6,405.7	2,077.7	50.2	1,540.9		
WY Wyoming	2,469.5	1,604.5	602.8	262.1	1,614.0	-	-	855.5		
TOTAL (6/30/2016)	3,254,495.4	2,491,433.1	149,620.4	613,407.2	2,576,959.4	218,479.6	79,224.6	379,831.8		
TOTAL (3/31/2016)	3,260,289.5	2,490,153.2	147,679.9	622,421.7	2,581,740.3	221,163.6	81,773.1	375,612.4		
% Change	-0.2%	0.1%	1.3%	-1.4%	-0.2%	-1.2%	-3.1%	1.1%		

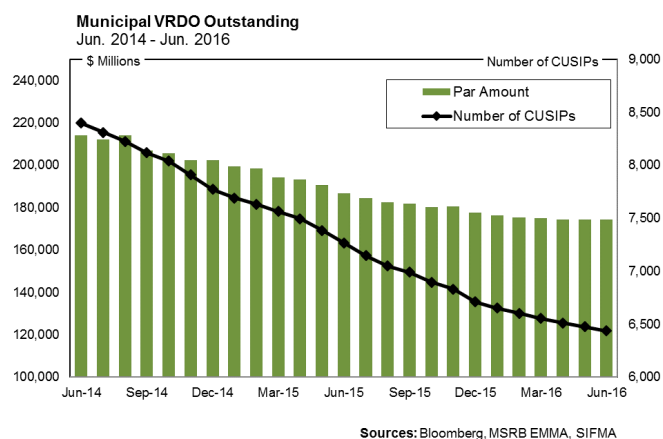
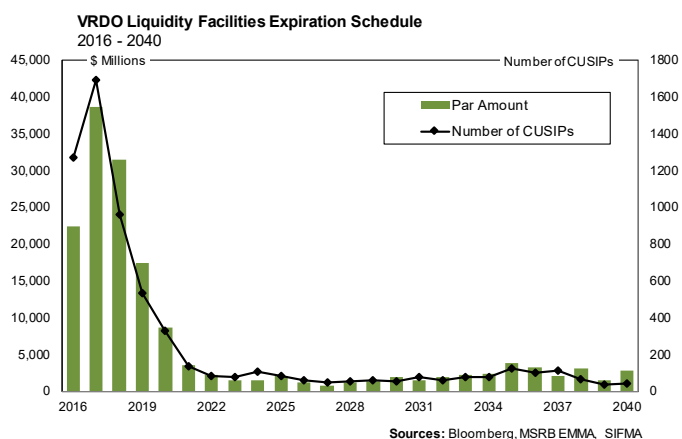
<sup>8</sup> Outstanding does not include refunded (inclusive of prerefunded) debt and derivatives. See additional tables for prerefunded and derivatives debt. The chart replaces "Outstanding by Insurance" from prior municipal reports. For comparability against Federal Reserve's Flow of Funds aggregate prerefunded with outstanding but not derivatives; differences between the two aggregates afterward are due to underlying database differences (Fed: Mergent; these tables: Bloomberg) as well as the growth of the municipal direct loan market, which is largely not CUSIP-based. Fixed rate debt does not include those multimodal bonds that are currently in long-term fixed rate mode.



VARIABLE-RATE DEMAND OBLIGATIONS

Liquidity Facility Expiration Schedule, 2016 - 2030<sup>10</sup>  
As of June 30, 2016

By Type of Provider (\$ Millions)	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
<b>Bank</b>	2,539.5	3,706.5	2,919.8	2,986.7	3,646.8	5,301.7	2,442.9	2,313.7	4,010.5	3,018.5	3,610.9	3,835.6
<b>Corporate/Other</b>	44.8	250.4	29.5	17.3	49.0	113.1		70.0	3.9	19.5	15.0	
<b>US Agency</b>	88.6	180.1	79.1	33.9	182.7	271.8	23.8	162.2	490.5	129.0	92.8	112.2
By Number of Facilities												
<b># CUSIPs</b>	162	231	198	179	195	302	145	124	195	152	191	198
By Type of Provider (\$ Millions)												
	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18
<b>Bank</b>	2,494.5	2,539.8	2,480.6	3,073.1	2,319.1	4,172.1	1,805.3	1,488.0	2,874.1	2,230.6	1,889.2	2,250.7
<b>Corporate/Other</b>	34.9	69.7		76.7		87.9	23.1					
<b>US Agency</b>	65.6	104.8	309.5	120.0	167.0	158.1	12.3	10.8	573.2	130.3	2.0	234.2
By Number of Facilities												
<b># CUSIPs</b>	126	99	96	109	105	151	46	45	97	66	66	99
By Type of Provider (\$ Millions)												
	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
<b>Bank</b>	2,595.3	1,726.6	3,803.5	3,126.6	3,191.9	2,783.9	933.5	1,466.9	1,872.5	1,778.6	2,130.3	2,216.0
<b>Corporate/Other</b>			21.4		46.8	126.5						
<b>US Agency</b>	148.1	101.5	36.7	12.5	68.3	66.0	6.5	72.2	81.7	54.5	127.5	82.8
By Number of Facilities												
<b># CUSIPs</b>	104	69	80	86	92	109	39	44	53	47	65	55
By Type of Provider (\$ Millions)												
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Bank</b>	16,516.7	7,743.0	2,945.0	1,223.1	375.3	350.6	829.4	23.0	30.3	14.0	9.8	4.8
<b>Corporate/Other</b>	45.5	380.8	300.0	388.9	711.6	639.1	755.7	517.5	556.0	671.9	703.9	1,548.0
<b>US Agency</b>	795.1	584.2	229.5	533.2	379.2	448.4	468.3	634.7	222.2	534.8	624.8	384.9
By Number of Facilities												
<b># CUSIPs</b>	530	328	134	81	75	103	83	59	45	51	60	53



<sup>10</sup> For more detailed breakouts of VRDO data, please refer to the Variable Rate Demand Obligations December 2015 update at [sifma.org](http://sifma.org).



## A DESCRIPTION OF THE TERMINOLOGY IN THE MUNICIPAL BOND CREDIT REPORT

**Long-Term Municipal Issue:** municipal securities with a maturity of 13 months or longer at the time the municipal security is issued.<sup>11</sup>

**General Obligation (G.O.) Bonds:** bonds issued by state or local units of government. The bonds are secured by the full faith, credit and taxing power of the municipal bond issuer. Such bonds constitute debts by the issuer and often require approval by election prior to issuance. In the event of default, bondholders of G.O. bonds have the right to compel a tax levy or legislative appropriation to cover debt service.

**Revenue Bonds:** bonds payable from a specific source of revenue and to which the full faith and credit of an issuer and its taxing power are not pledged. Revenue bonds are payable from identified sources of revenue and do not permit the bondholders to compel taxation or legislative appropriation of funds not pledged for payment of debt service. Pledged revenues may be derived from sources such as the operation of the financed project, grants or a dedicated specialized tax. Generally, no voter approval is required prior to issuance of such obligations.

**Ratings:** are evaluations of the credit quality of bonds and other debt financial instruments made by rating agencies. Ratings are intended to measure the probability of the timely repayment of principal and interest on municipal securities. Ratings are typically assigned upon initial bond issuance. Ratings are periodically reviewed and may be amended to reflect changes in the issue or issuer's credit position. The ratings may be affected by the credit worthiness of the issuer itself or from a credit enhancement feature of the security such as guarantor, letter of credit provider, and bond insurer. Some rating agencies provide both long-term and short-term ratings on variable rate demand obligations. The ratings described herein are "long-term" ratings – that is, ratings applied to municipal bond issues with original maturity of 13 months or longer.

**State Rating:** indicates the G.O. credit rating a rating agency may apply to a state. The rating on a specific municipal bond issue or issuer located with the state may differ from the state rating.

**Rating Agency:** is a company that provides ratings that indicate the relative credit quality or liquidity characteristics of municipal securities as well as other debt securities. Moody's Investors Service ("Moody's") and Standard and Poor's are the largest agencies in terms of municipal securities rated, followed by Fitch Ratings.

### **Moody's Ratings**<sup>12</sup>

Moody's describes its municipal credit ratings as "opinions of the investment quality of issuers and issues in the U.S. municipal and tax-exempt markets. These ratings incorporate a rating agency's assessment of the probability of default and loss severity of issuers and issues."

Moody's ratings are based upon the analysis of four primary factors relating to municipal finance: economy, debt, finances and administrative/management strategies. The rating classifications are defined as:

**Aaa:** obligations rated Aaa are judged to be of the highest quality, with minimal credit risk.

**Aa:** obligations rated Aa are judged to be of high quality and are subject to very low credit risk.

**A:** obligations rated A are considered upper-medium grade and are subject to low credit risk.

**Baa:** obligations rated Baa are subject to moderate credit risk. They are considered medium-grade and as such may possess certain speculative characteristics.

**Ba:** obligations rated Ba are judged to have speculative elements and are subject to substantial credit

<sup>11</sup>Authors' own definition.

<sup>12</sup>Moody's.com, "Ratings Definitions."

risk.

B: obligations rated B are considered speculative and are subject to high credit risk.

Caa: obligations rated Caa are judged to be of poor standing and are subject to very high credit risk.

Ca: obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.

C: obligations rated C are the lowest rated class of bonds and are typically in default, with little prospect for recovery of principal or interest.<sup>13</sup>

### Standard and Poor's Ratings<sup>14</sup>

Standard and Poor's describes a municipal issue credit rating as "a current opinion of the credit worthiness with respect to a specific financial obligation(s) or a specific program. It takes into consideration the credit worthiness of credit enhancement on the obligation."

Long-term issue credit ratings are based on:

- Likelihood of payment—capacity and willingness to meet the financial commitment in accordance with the terms of the obligation;
- Nature of and provisions of the obligation; and
- Protection afforded by, and relative position of, the obligation in the event of bankruptcy, reorganization, or other arrangement under the laws of bankruptcy and other laws affecting creditors' rights.

AAA: extremely strong capacity to meet its financial commitments – the highest rating category.

AA: very strong capacity to meet financial commitments.

A: strong capacity to meet its financial commitments but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligors in the higher rated categories.

BBB: adequate capacity to meet its financial commitments though adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity to meet financial commitments.

Rating "BB", "B", "CCC", and "CC" are regarded as having significant speculative characteristics. 'BB' indicates the least degree of speculation and 'CC' the highest.

BB: less vulnerable in the near term than other lower-rated obligors. However, it faces major ongoing uncertainties and exposure to adverse business, financial, or economic conditions which could lead to inadequate capacity to meet its financial commitments.

B: an obligation rated 'B' is more vulnerable to nonpayment than obligations rated 'BB', but the capacity to meet its financial commitment. Adverse business, financial, or economic conditions will likely impair the capacity or willingness to meet financial obligations.

CCC: currently vulnerable, and is dependent upon favorable business, financial, and economic conditions to meet financial commitments.

CC: highly vulnerable and is dependent upon favorable business, financial and economic conditions.

### Fitch Ratings

Fitch Ratings provides an opinion on the ability of an entity or a securities issue to meet financial commitments such as interest, preferred dividends, or repayment of principal, on a timely basis.

Credit ratings are used by investors as indications of the likelihood of repayment in accordance with the terms on which they invested. Thus, the use of credit ratings defines their function: "investment grade" ratings (long-term 'AAA' - 'BBB' categories) indicate a relatively low probability of default,

<sup>13</sup>The lowest rating is a "D" at both Moody's and Standard and Poor's.

<sup>14</sup>Standardandpoors.com "Long-Term Issue Credit Ratings," May 17, 2002.

while those in the "speculative" or "non-investment grade" categories (international long-term 'BB' - 'D') may signal a higher probability of default or that a default has already occurred. Entities or issues carrying the same rating are of similar but not necessarily identical credit quality since the rating categories do not fully reflect small differences in the degrees of credit risk.

The ratings are based on information obtained directly from issuers, other obligors, underwriters, their experts, and other sources Fitch believes to be reliable. Fitch does not audit or verify the truth or accuracy of such information. Ratings may be changed or withdrawn as a result of changes in, or the unavailability of, information or for any other reasons.

Credit ratings do not directly address any risk other than credit risk. In particular, these ratings do not deal with the risk of loss due to changes in interest rates and other market considerations.

Note: "Not rated" refers to municipal bonds that were not rated by one of the major rating agencies listed above.

**General Use of Proceeds:** Refers to the type of project the proceeds or funds received from bond issuance are used. In the Municipal Bond Credit Report, the use of proceed classifications are general government use, education, water, sewer and gas, health care and a miscellaneous category, "other."<sup>15</sup>

**Municipal G.O. to Treasury Ratio:** is a common measure of credit risk of municipal bonds relative to risk-free securities, Treasuries. It is a measure comparable to the "spread to Treasury" measure in the taxable markets. Typically the municipal yield is typically less than 100 percent of the Treasury yield due to the tax-free nature of municipal securities.

**Credit Enhancement:** is the use of the credit of an entity other than the issuer to provide additional security in a bond. The term is usually used in the context of bond insurance, bank letters of credit state school guarantees and credit programs of federal and state governments and federal agencies but also may apply more broadly to the use of any form of guaranty secondary source of payment or similar additional credit-improving instruments.

**Bond Insurance:** is a guaranty by a bond insurer of the payment of principal and interest on municipal bonds as they become due should the issuer fail to make required payments. Bond insurance typically is acquired in conjunction with a new issue of municipal securities, although insurance also is available for outstanding bonds traded in the secondary market.

**Letter of Credit:** a commitment, usually made by a commercial bank, to honor demands for payment of a debt upon compliance with conditions and/or the occurrence of certain events specified under the terms of the commitment. In municipal financings, bank letters of credit are sometimes used as additional sources of security with the bank issuing the letter of credit committing to in the event the issuer is unable to do so.

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<sup>15</sup>Authors' own definition.

**Kyle Brandon**

Managing Director, Director of Research

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