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# **MUNICIPAL BOND CREDIT REPORT**

Second Quarter 2017

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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 \$100.7 billion in the second quarter of 2017, an increase of 16.3 percent from the prior quarter (\$86.6 billion) but a decline of 15.8 percent year-over-year (y-o-y) (\$119.5 billion). As of the end of June, year-to-date municipal issuance totaled \$187.2 billion and was generally in line with the 10-year average of \$185.7 billion. Including private placements<sup>1</sup> (\$4.6 billion), long-term municipal issuance for 2Q'17 was \$105.1 billion.

Tax-exempt issuance totaled \$87.6 billion in 2Q'17, an increase of 14.4 percent q-o-q but a decline of 16.9 percent y-o-y; year to date, tax-exempt issuance was \$164.2 billion. Taxable issuance totaled \$9.3 billion in 2Q'17, an increase of 29.0 percent q-o-q and an increase of 36.4 percent y-o-y; year to date, taxable issuance totaled \$16.6 billion. AMT issuance was \$3.7 billion in 2Q'17, an increase of 35.3 percent q-o-q but a decline of 48.3 percent y-o-y; year to date, AMT volumes were \$6.5 billion.

By use of proceeds, general purpose led issuance totals in 2Q'17 (\$22.0 billion), followed by primary & secondary education (\$20.6 billion) and water & sewer facilities (\$10.4 billion). Refunding volumes rose slightly to comprise 40.8 percent of issuance in 2Q'17 from 34.2 percent in the prior quarter but were a decline from 51.5 percent year-over-year.<sup>2</sup>

Yields, Inflows, and Total Return

Ratios of 10-year tax-exempt AAA GOs and similar-maturity Treasuries fell in the first quarter on a q-o-q basis, averaging 89.6 percent in 2Q'17 from 95.6 percent in 1Q'17.

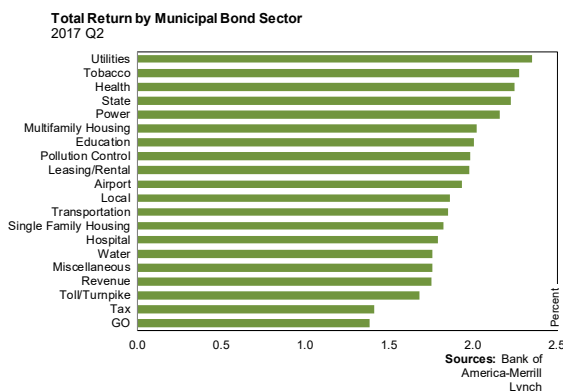
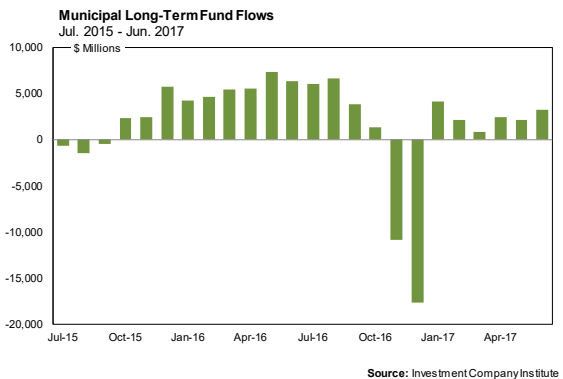
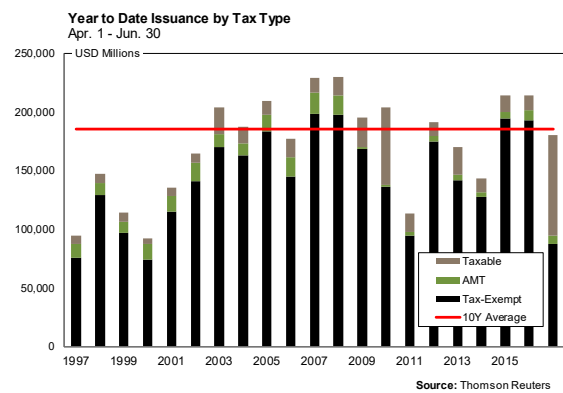
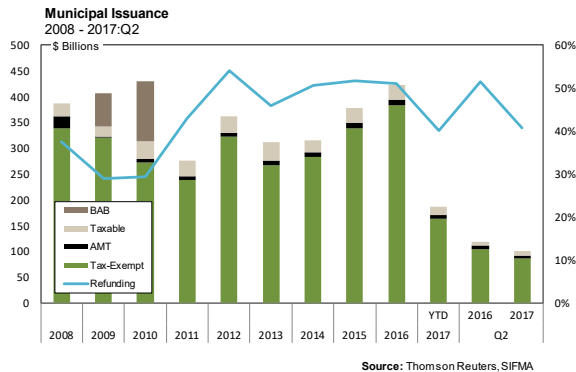
According to the Investment Company Institute (ICI), first quarter net flow into long-term tax-exempt funds was positive, with \$7.9 billion of net inflow in 2Q'17 compared to \$7.1 billion of inflow from 1Q'17 and \$19.2 billion of inflow y-o-y.

According to Bank of America-Merrill Lynch indices, municipals gained 2.9 percent in the second quarter of 2017. The utilities, tobacco, and health sectors had the strongest performance within the individual sectors (2.4 percent, 2.3 percent and 2.3 percent respectively) in 2Q'17 while general obligation (G.O.), tax, and toll/turnpike underperformed relative to other municipal sectors (1.4 percent, 1.4 percent and 1.7 percent total return, respectively). Build America Bonds (BABs) gained 2.9 percent, outperforming both tax exempts bonds (2.2 percent) and similarly-rated corporate bonds (2.0 percent) in 2Q'17.

Year to date ending June, tax-exempt municipals returned 3.4 percent, Build America Bonds returned 4.2 percent, and investment grade corporates returned 3.3 percent.

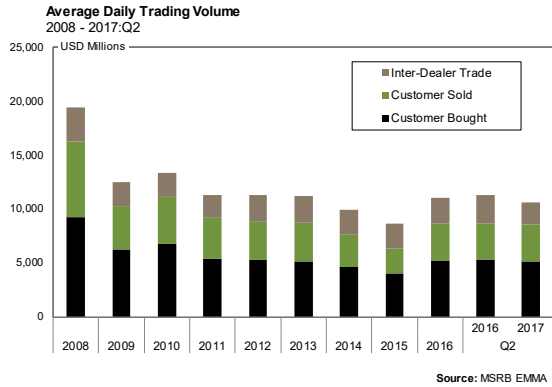
Trading Activity and Bank Holdings

Trading activity fell q-o-q to \$10.6 billion daily in 2Q'17, a 5.1 percent decrease from 1Q'17 (\$11.1 billion) and a 6.2 percent decline from 2Q'16 (\$11.3 billion). By number of trades, trading activity also fell 5.6 percent on a q-o-q basis but rose 9.7 percent on a y-o-y basis.



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

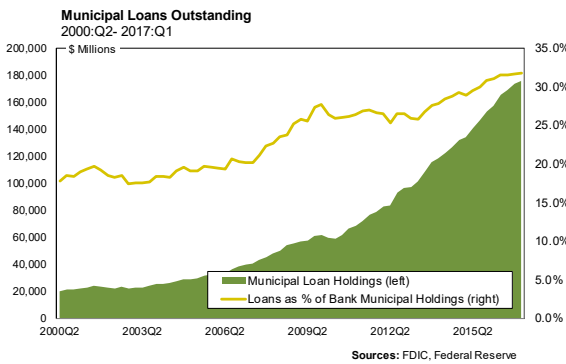
<sup>2</sup> Percentages represent both full refundings and the half the dollar amount of deals that contain both refundings and new financing.



Bank holdings of both municipal loans and bonds rose in 1Q'17 from the prior quarter to \$176.0 billion (from \$173.7 billion) and \$378.2 billion (from \$375.4 billion), respectively.

**Bond Insurance Update**

Insured municipal issuance totaled \$6.6 billion in 2Q'17, a 27.4 percent increase q-o-q (\$5.2 billion) but a decline of 7.5 percent y-o-y (\$7.1 billion). Year-to-date ending June, insured bond issuance totaled \$11.8 billion, down 8.5 percent from the first half of 2016. At its peak in 2005, nearly 60 percent of all municipal issuance by dollar amount was insured; at its low in 2012, only 3.6 percent was insured. Since the low, insured bonds issuance has gradually picked up to represent approximately 6 percent of all issuance by 2014 and has stayed relatively steady by proportion since then.

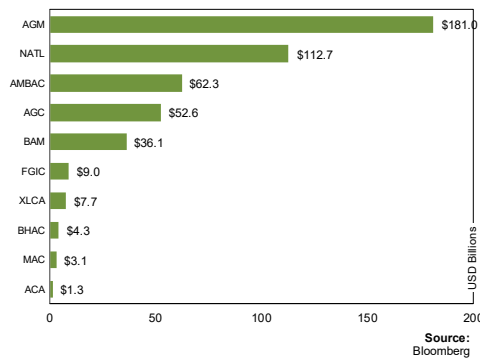


By outstanding, \$468.1 billion, or approximately 12.9 percent, of all municipal bonds outstanding, were insured as of the end of June.

**ARS, FRN and VRDO Update**

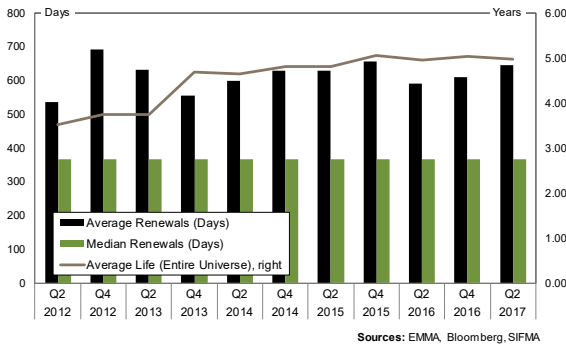
Issuance of variable-rate demand obligations (VRDOs), puttable long-term municipal bonds with interest rates that reset periodically, continue to remain muted in the second quarter. A total of \$1.1 billion was issued in 2Q'17, an increase of 13.3 percent q-o-q but a decline of 65.0 percent y-o-y. Outstanding volumes continue to decline, with \$158.1 billion outstanding as of the end of June 2017, a decline of 1.7 percent q-o-q and a decline of 8.8 percent from June 2016; from its peak of \$442.8 billion in November 2008, the market has shrunk by 64.3 percent altogether. For the first half of 2017, \$2.0 billion of VRDOs were issued.

**Outstanding Insured Municipal Bonds by Insurer**  
2017:Q2



The SIFMA Municipal Swap index, a seven-day high-grade market index comprised of tax-exempt VRDOs, ended June at 0.91 percent, averaging 0.84 percent throughout 2Q'17, 15 basis points wider than than 1Q'17's average (0.84 percent) and 44 basis points wider than 2Q'16's average (0.40 percent).

**Liquidity Facility Renewals by Same Liquidity Provider**  
2012:Q2 - 2017:Q2

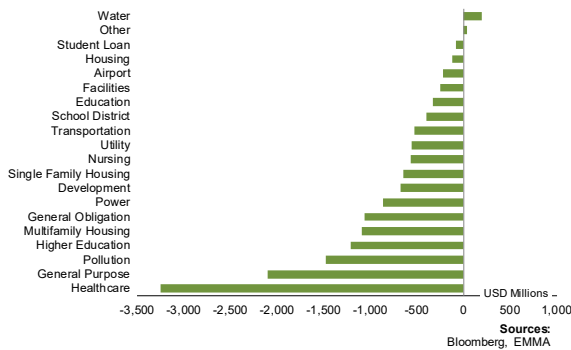


As of the end of June, \$21.7 billion of VRDO liquidity facilities were scheduled to expire in 2017 with an additional \$36.7 billion in 2018 for a total of \$58.4 billion of liquidity facilities on 2,598 CUSIPs, a relatively manageable rate given the current stability of liquidity providers in this space. VRDO liquidity facility renewals with the same liquidity provider on approximately 863 unique CUSIPs averaged 645.9 days from the original expiration date, rising from 608.3 days in 4Q'16. The median extension, however, continues to remain unchanged at 1 year (365 days). The average tenor of a liquidity facility of the entire universe of VRDOs was approximately 4.98 years, falling slightly from 4Q'16. However, excluding self-liquidity deals, the average remaining tenor of liquidity facilities in the entire VRDO universe was 3.87 years, down slightly from the 3.94 years in 4Q'16.

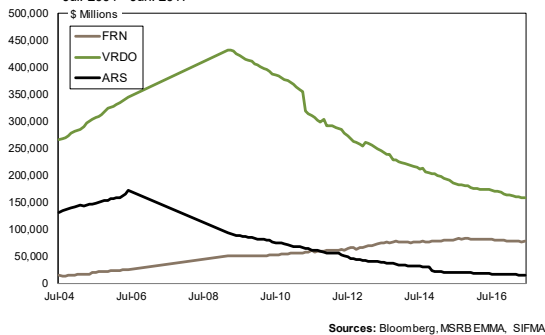
Unlike VRDOs, floating rate bond issuance declined quarter over quarter with \$606.3 million issued in 2Q'17, a 36.5 percent decline q-o-q but an increase of 121.6 percent y-o-y. For the first half of 2017, \$1.6 billion of floating rate bonds were issued. At end-June, \$77.9 billion of floating rate bonds were outstanding, a decline of 0.2 percent q-o-q and a 4.1 percent decline y-o-y. Both the LIBOR and SIFMA swap index remain popular benchmark indices for floating rate issuance.

Auction rate securities (ARS) continue to remain in run off mode, with \$15.4 billion of ARS outstanding end-June, a decline of 7.0 percent q-o-q and 18.0

**VRDO Net Issuance by Industry, Year over Year Q2 2017**



**Municipal ARS, FRN, and VRDO Outstanding Jul. 2004 - Jun. 2017**



percent y-o-y. From its peak of \$205.6 billion in December 2017, the market has declined 92.5 percent. Student loan ARS continues to remain an outsized portion (34 percent) of remaining ARS outstanding, followed by healthcare (20 percent).

**Government & Rating Update**

On May 3, the Fiscal Oversight Board of Puerto Rico officially filed for bankruptcy under Title III of the PROMESA Act with \$74 billion in bond debt. In early July, the Puerto Rico Electric Power Authority’s (PREPA) defaulted on its \$9 billion debt and also filed for bankruptcy under Title III of the PROMESA Act in early July.

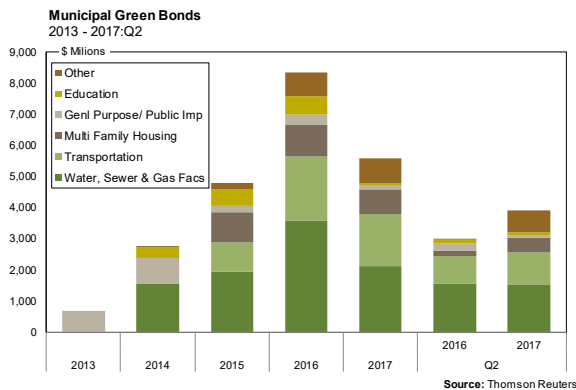
In May, Moody’s Investor Services and Fitch Ratings cut Connecticut’s rating, to A1 (from Aa3) and A+ (from AA-) respectively, noting the state’s limited ability to address its increasing budget gap. In June, Moody’s and Standard & Poor’s downgraded Illinois (to Baa3 from Baa2 and to BBB- from BBB respectively) on the state’s budget woes, while Fitch Ratings downgraded Massachusetts to AA (from AA+) on state’s declining reserves and increasing debt levels.

Among the larger cities, Fitch upgraded Jersey City in April to AA- (from A-) while Moody’s upgraded Los Angeles’s rating in June to Aa2 (from Aa1).

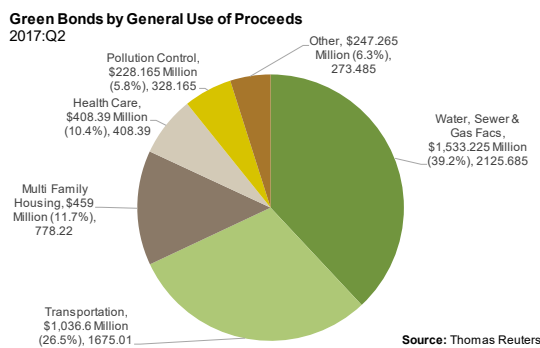
According to the Nelson A. Rockefeller Institute of Government, while first quarter figures for state tax revenue for the first quarter of 2017 were strong (3.4 percent growth), preliminary figures for state tax revenue for the second quarter of 2016 appear to be far weaker than expected.<sup>3</sup> April tax returns were extremely weak, with state income tax revenue down 4 percent from the prior year; 24 out of 41 states reported revenue falls, particularly among the New England and mid-Atlantic states. Although several states expected declines in tax revenue for April or May, revenue was weaker than expected, with a 6.4 percent median shortfall. The shortfall may multiple fronts: from taxpayers shifting taxable income into 2017 in anticipation of tax cuts or a weaker than expected economy.

<sup>3</sup> The Nelson A. Rockefeller Institute of Government, “By the Numbers: Shortfalls on States’ April Tax Returns: Trump Effect, Weak Economy, or Both?,” July 2017.

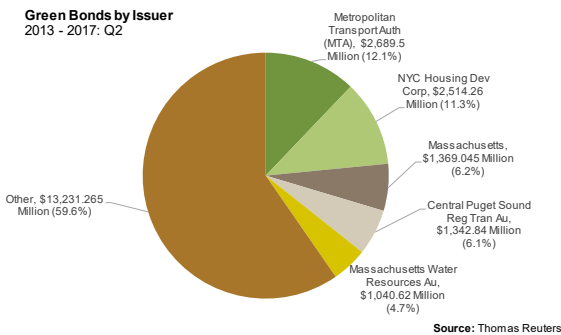
## GREEN BOND UPDATE, 1H 2017



Green bond issuance totaled \$3.91 billion in the second quarter of 2017, an increase of 133.4 percent in 1Q'17 from \$1.68 billion and an increase of 30.7 percent y-o-y from \$2.99 billion. For the first half of 2017, green bond issuance totaled \$5.59 billion, up 24.6 percent from the first half of 2016. Water, sewer and gas facilities and transportation continue to generally remain the largest sectors in the green bond sector, typically accounting for more than half of all issuance since 2014.



Issuers from 10 states issued green bonds in 2Q'17. Issuers from California and New York collectively issued 72.20 percent of the green bonds in 2Q'17, issuing \$1.69 billion and \$1.14 billion respectively. The top use of proceeds in California's green bond issuance was for water, sewer and gas facilities (\$635.51 million), health care (\$408.39 million), transportation (\$356.34 million), and pollution control (\$228.17 million). Top use of proceeds for New York green bonds totaled \$680.27 million for the transportation sector, followed by \$459 million for multifamily housing.



A Kansas issuer (Lawrence City) debuted as a green bond issuer for the first time in 2Q'17 with a \$11.38 million deal for electric and public power, making Kansas the 25th state to issue a green bond in the municipal market. Additionally, 8 issuers debuted green bonds for the first time in the second quarter: California Health Facilities Finance Authority (CA), San Francisco Bay Area Rapid Transit District (CA), California Pollution Control Finance Authority (CA), Denver City and County Board of Water Commission(CO), Fort Bend Independent School District (TX), King County (WA), Santa Clara County Ferromont Union High School District (CA), and Long Beach City (CA).

For the first half of 2017, the biggest issuers were Metropolitan Transport Authority (NY) (\$1.32 billion, transportation), followed by NYC Housing Development Corporation (NY) (\$589.52 million, multifamily housing), and California Infrastructure & Economic Development Bank (\$450 million, water, sewer and gas).

## CHARTS &amp; DATA

LONG-TERM MUNICIPAL STATE ISSUANCE, 2Q'17<sup>4</sup>\$ Millions<sup>5</sup>

	Total	Bond Type		Tax Type			Funding Type			
		G.O.	Revenue	AMT	Tax-Exempt	Taxable	New Financing	Refinancing	Refunding & New Refinancing	New Refunding
State										
Alabama	1,853.5	214.4	1,639.1	-	1,825.5	28.0	706.2	-	841.3	305.9
Alaska	44.5	44.5	-	31.7	12.8	-	44.5	-	-	-
American Samoa	0.0									
Arizona	1,669.1	729.3	939.8	63.5	1,552.7	53.0	686.5	-	608.3	374.4
Arkansas	506.4	385.2	121.2	-	486.3	20.0	201.0	-	138.8	166.5
California	20,074.5	7,732.6	12,341.9	451.6	16,774.2	2,848.7	9,637.0	-	3,618.2	6,819.4
Colorado	1,658.5	360.0	1,298.5	-	1,569.5	89.0	1,057.8	-	316.1	284.6
Connecticut	1,136.0	223.7	912.3	59.6	1,074.4	2.0	549.4	-	34.6	552.1
District of Columbia	1,283.0	563.5	719.5	522.1	760.9	-	-	-	522.1	760.9
Delaware	217.8	110.8	107.0	-	217.8	-	-	-	217.8	-
Florida	1,998.7	474.2	1,524.5	-	1,913.6	85.0	970.4	-	177.3	850.9
Georgia	2,771.5	1,660.1	1,111.4	-	2,420.3	351.3	1,435.8	-	848.3	487.4
Guam	0.0									
Hawaii	1,253.6	988.6	265.0	265.0	943.6	45.0	620.0	-	139.2	494.4
Idaho	245.6	202.7	42.9	-	245.5	0.1	245.6	-	-	-
Illinois	2,528.7	821.2	1,707.5	278.1	2,078.1	172.5	813.2	-	980.9	734.5
Indiana	895.2	88.7	806.5	15.7	788.6	90.8	635.2	-	131.3	128.7
Iowa	683.0	475.0	208.0	1.7	618.4	62.9	414.4	-	87.0	181.6
Kansas	790.6	455.1	335.5	3.1	757.9	29.6	252.6	-	391.0	147.1
Kentucky	1,136.8	34.6	1,102.2	40.0	1,096.7	-	521.4	-	7.0	608.3
Louisiana	1,740.6	157.7	1,582.9	269.5	1,361.4	109.7	836.5	-	421.6	482.6
Maine	327.8	165.6	162.2	-	273.2	54.6	174.4	-	30.3	123.1
Maryland	1,882.8	435.8	1,447.0	11.3	1,572.6	299.0	912.6	-	252.5	717.7
Massachusetts	3,106.9	2,111.2	995.7	160.5	2,940.5	5.9	1,509.2	-	828.1	769.6
Michigan	1,169.1	1,019.2	149.9	-	1,015.1	154.0	697.2	-	215.9	256.0
Minnesota	1,267.2	734.8	532.4	83.5	1,110.4	73.4	731.5	-	215.4	320.4
Mississippi	880.9	615.9	265.0	14.4	859.5	7.1	223.7	-	535.7	121.5
Missouri	1,411.8	390.4	1,021.4	170.1	863.6	378.2	791.2	-	339.5	281.2
Montana	115.3	49.9	65.4	-	114.2	1.2	45.6	-	59.2	10.5
Nebraska	444.9	393.6	51.3	-	444.2	0.6	175.5	-	14.8	254.5
Nevada	836.3	488.4	347.9	146.3	690.0	-	308.4	-	407.9	120.0
New Hampshire	357.5	138.6	218.9	-	279.8	77.8	281.6	-	-	75.9
New Jersey	2,097.1	793.5	1,303.6	297.8	1,666.9	132.5	519.2	-	1,129.0	448.8
New Mexico	591.2	75.5	515.7	-	478.7	112.5	176.3	-	331.1	83.9
New York	12,637.1	1,438.3	11,198.8	413.0	10,351.3	1,872.8	5,555.8	-	2,235.2	4,846.1
North Carolina	1,054.3	106.2	948.1	34.1	1,015.9	4.3	448.6	-	555.7	50.0
North Dakota	282.5	85.0	197.5	-	256.2	26.3	254.4	-	-	28.2
Ohio	2,560.1	848.2	1,711.9	-	2,535.0	25.1	1,000.6	-	1,288.9	270.6
Oklahoma	779.9	344.2	435.7	-	765.8	14.0	601.1	-	40.8	137.9
Oregon	1,491.5	928.8	562.7	49.1	1,403.4	39.0	475.4	-	800.9	215.2
Pennsylvania	3,846.3	1,188.7	2,657.6	89.5	3,392.1	204.7	1,551.8	-	827.6	1,306.8
Puerto Rico	0.0									
Rhode Island	626.5	173.1	453.4	50.3	553.4	22.8	393.6	-	68.4	164.5
South Carolina	656.7	354.0	302.7	-	548.4	108.4	595.4	-	61.3	-
South Dakota	294.4	18.7	275.7	30.2	239.2	24.9	170.3	-	57.2	66.9
Tennessee	1,221.4	377.8	843.6	23.1	1,121.6	76.7	734.3	-	209.0	278.1
Texas	9,578.3	6,090.9	3,487.4	29.7	8,804.9	731.5	4,245.7	-	2,641.6	2,678.8
Utah	551.7	238.0	313.7	-	499.0	52.7	454.3	-	23.2	74.3
Vermont	195.7	59.8	135.9	50.4	145.2	-	71.0	-	67.7	57.0
Virgin Islands	0.0									
Virginia	1,957.3	881.1	1,076.2	-	1,717.9	239.4	1,206.9	-	292.6	457.8
Washington	1,699.3	773.1	926.2	-	1,628.4	70.9	715.9	-	855.6	127.9
West Virginia	51.8	41.1	10.7	-	51.9	-	43.8	-	5.4	2.6
Wisconsin	4,328.7	1,543.6	2,785.1	69.0	3,733.1	526.7	2,569.4	-	782.5	976.9
Wyoming	68.8	3.5	65.3	24.3	44.5	-	3.5	-	65.3	-
<b>ALL</b>	<b>100,858.7</b>	<b>38,628.4</b>	<b>62,230.3</b>	<b>3,748.2</b>	<b>87,614.1</b>	<b>9,324.6</b>	<b>47,265.7</b>	<b>0.0</b>	<b>24,719.1</b>	<b>28,702.0</b>
<b>QoQ</b>	<b>16.5%</b>	<b>-0.3%</b>	<b>30.1%</b>	<b>35.3%</b>	<b>14.4%</b>	<b>29.0%</b>	<b>16.4%</b>	<b>N/A</b>	<b>4.8%</b>	<b>28.4%</b>
<b>YoY</b>	<b>-15.6%</b>	<b>-20.9%</b>	<b>-12.0%</b>	<b>-48.3%</b>	<b>-16.9%</b>	<b>36.4%</b>	<b>5.1%</b>	<b>-100.0%</b>	<b>-4.7%</b>	<b>-41.0%</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		Variable Rate	
					Long	No Put	Short (VRDO)	Zero
Alabama	1,853.5	-	1,389.6	-	463.9	-	-	-
Alaska	44.5	-	44.5	-	-	-	-	-
American Samoa	0.0	-	-	-	-	-	-	-
Arizona	1,669.1	-	1,616.2	-	53.0	-	-	-
Arkansas	506.4	-	506.3	-	-	-	-	-
California	20,074.5	-	18,444.0	571.3	703.8	-	321.5	34.0
Colorado	1,658.5	-	1,658.5	-	-	-	-	-
Connecticut	1,136.0	-	740.9	-	395.1	-	-	-
District of Columbia	1,283.0	-	1,283.0	-	-	-	-	-
Delaware	217.8	-	217.8	-	-	-	-	-
Florida	1,998.7	-	1,998.6	-	-	-	-	-
Georgia	2,771.5	-	2,759.0	-	12.5	-	-	-
Guam	0.0	-	-	-	-	-	-	-
Hawaii	1,253.6	-	1,253.6	-	-	-	-	-
Idaho	245.6	-	245.6	-	-	-	-	-
Illinois	2,528.7	-	2,527.5	-	-	-	-	1.2
Indiana	895.2	-	893.2	-	-	-	-	2.0
Iowa	683.0	-	675.5	-	-	-	7.5	-
Kansas	790.6	-	790.6	-	-	-	-	-
Kentucky	1,136.8	-	1,101.5	-	35.2	-	-	-
Louisiana	1,740.6	-	1,740.6	-	-	-	-	-
Maine	327.8	-	288.2	-	-	-	39.6	-
Maryland	1,882.8	-	1,882.8	-	-	-	-	-
Massachusetts	3,106.9	-	3,106.9	-	-	-	-	-
Michigan	1,169.1	-	1,134.1	35.0	-	-	-	-
Minnesota	1,267.2	-	1,221.3	-	6.0	-	40.0	-
Mississippi	880.9	-	880.9	-	-	-	-	-
Missouri	1,411.8	-	1,411.1	-	-	-	-	0.7
Montana	115.3	-	115.3	-	-	-	-	-
Nebraska	444.9	-	444.9	-	-	-	-	-
Nevada	836.3	-	796.8	-	39.5	-	-	-
New Hampshire	357.5	-	357.6	-	-	-	-	-
New Jersey	2,097.1	-	2,097.1	-	-	-	-	-
New Mexico	591.2	-	530.9	-	60.3	-	-	-
New York	12,637.1	-	12,153.0	-	-	-	484.1	-
North Carolina	1,054.3	-	1,054.3	-	-	-	-	-
North Dakota	282.5	-	268.6	-	-	-	13.9	-
Ohio	2,560.1	-	2,539.7	-	4.5	-	15.0	0.9
Oklahoma	779.9	-	761.3	-	18.5	-	-	-
Oregon	1,491.5	149.4	1,199.8	-	-	-	44.0	98.2
Pennsylvania	3,846.3	-	3,595.3	-	-	-	90.9	-
Puerto Rico	0.0	-	-	-	-	-	-	-
Rhode Island	626.5	-	626.5	-	-	-	-	-
South Carolina	656.7	-	656.7	-	-	-	-	-
South Dakota	294.4	-	294.4	-	-	-	-	-
Tennessee	1,221.4	-	1,192.4	-	29.0	-	-	-
Texas	9,578.3	-	9,411.1	-	109.8	-	-	45.1
Utah	551.7	-	551.7	-	-	-	-	-
Vermont	195.7	-	195.7	-	-	-	-	-
Virgin Islands	0.0	-	-	-	-	-	-	-
Virginia	1,957.3	-	1,937.3	-	20.0	-	-	-
Washington	1,699.3	-	1,698.2	-	-	-	1.1	-
West Virginia	51.8	-	51.9	-	-	-	-	-
Wisconsin	4,328.7	-	4,325.4	-	2.0	-	1.3	-
Wyoming	68.8	-	68.8	-	-	-	-	-
<b>ALL</b>	<b>100,858.7</b>	<b>149.4</b>	<b>96,736.5</b>	<b>606.3</b>	<b>1,953.1</b>	<b>0.0</b>	<b>1,058.9</b>	<b>182.1</b>
<b>QoQ</b>	<b>16.5%</b>		<b>16.6%</b>	<b>-36.5%</b>	<b>76.4%</b>		<b>13.3%</b>	<b>-63.4%</b>
<b>YoY</b>	<b>-15.6%</b>		<b>-15.1%</b>	<b>121.6%</b>	<b>-0.9%</b>		<b>-65.0%</b>	<b>-43.1%</b>

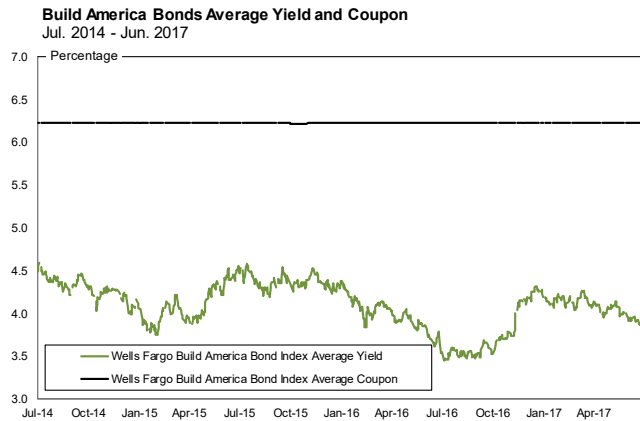


## LONG-TERM MUNICIPAL ISSUANCE BY GENERAL USE OF PROCEEDS

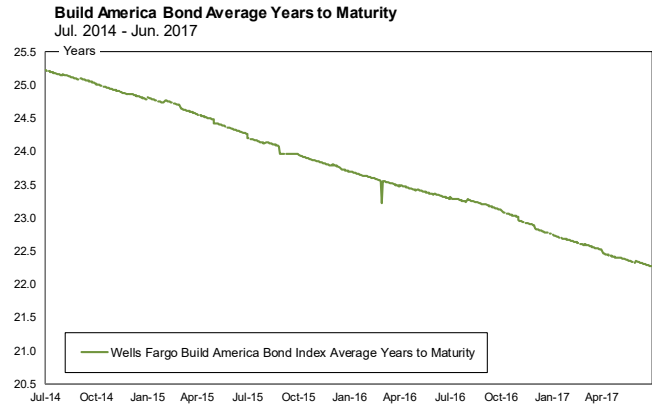
\$ Millions

Use of Proceeds	2Q'16	1Q'17	2Q'17	Q-o-Q	Y-o-Y
Airports	5,227.0	3,039.0	3,039.7	0.0%	-41.8%
Assisted Living	53.8	40.5	47.0	16.0%	-12.6%
Bridges	1,136.0	2,511.2	70.8	-97.2%	-93.8%
Childrens hospital	248.2	209.6	890.7	325.0%	258.9%
Churches Temples and Mosques		41.9		-100.0%	
Civic & convention centers	135.1	121.1	1,715.0	1316.2%	1169.4%
Combined utilities	617.4	184.0	489.0	165.8%	-20.8%
Cont Care Retirement Community	1,239.2	726.1	1,174.6	61.8%	-5.2%
Correctional facilities	233.4	124.0	346.3	179.3%	48.4%
Economic development	2,672.4	1,843.3	4,719.1	156.0%	76.6%
Fire stations & equipment	134.5	92.0	90.8	-1.3%	-32.5%
Flood control	86.7	69.3	123.6	78.4%	42.6%
Gas	582.4	58.9	450.7	665.2%	-22.6%
General acute care hospital	10,344.3	4,642.7	8,549.0	84.1%	-17.4%
General Medical	234.8	402.1		-100.0%	-100.0%
General purpose /publicimprovement	27,761.8	22,189.4	22,010.9	-0.8%	-20.7%
Government buildings	312.0	189.7	326.2	72.0%	4.6%
Higher education	13,057.5	12,203.4	9,267.3	-24.1%	-29.0%
Industrial development	430.6		265.0		-38.5%
Libraries & museums	91.4	146.7	89.3	-39.1%	-2.3%
Mass transportation	4,116.1	3,249.9	4,442.5	36.7%	7.9%
Multi family housing	1,496.8	1,304.4	1,986.9	52.3%	32.7%
Nursing homes	11.0	23.1	22.9	-0.9%	108.2%
Office buildings	82.8	8.5		-100.0%	-100.0%
Other education	396.5	162.5	121.5	-25.2%	-69.4%
Other recreation	292.9	46.5	68.6	47.5%	-76.6%
Parking facilities	159.8	69.6	71.8	3.2%	-55.1%
Parks, Zoos & Beaches	125.0	143.4	288.3	101.0%	130.6%
Police stations & equipment	105.5	25.0	114.8	359.2%	8.8%
Pollution control	389.0	270.5	387.9	43.4%	-0.3%
Primary & secondary education	21,342.9	18,698.2	20,627.0	10.3%	-3.4%
Public power	3,873.9	1,812.2	1,518.3	-16.2%	-60.8%
Sanitation	232.7	51.8	55.9	7.9%	-76.0%
Seaports / marine terminals	13.6	286.1	573.9	100.6%	4119.9%
Single family housing	2,792.9	1,687.0	3,243.6	92.3%	16.1%
Single speciality hospital	428.0	200.6	573.3	185.8%	33.9%
Solid waste	82.6	29.3	102.9	251.2%	24.6%
Stadiums & sports complexes	537.0	203.0	86.8	-57.2%	-83.8%
Student loans	627.9	430.0	588.2	36.8%	-6.3%
Telecommunications	61.9	19.7	19.3	-2.0%	-68.8%
Theatres	90.1	20.0		-100.0%	-100.0%
Toll roads, highways & streets	5,471.3	2,398.2	1,720.6	-28.3%	-68.6%
Water & sewer facilities	12,215.9	6,584.3	10,406.2	58.0%	-14.8%
<b>ALL</b>	<b>5,623.3</b>	<b>2,437.9</b>	<b>1,739.9</b>	<b>-28.6%</b>	<b>-69.1%</b>

**BUILD AMERICA BONDS**



Source: Wells Fargo

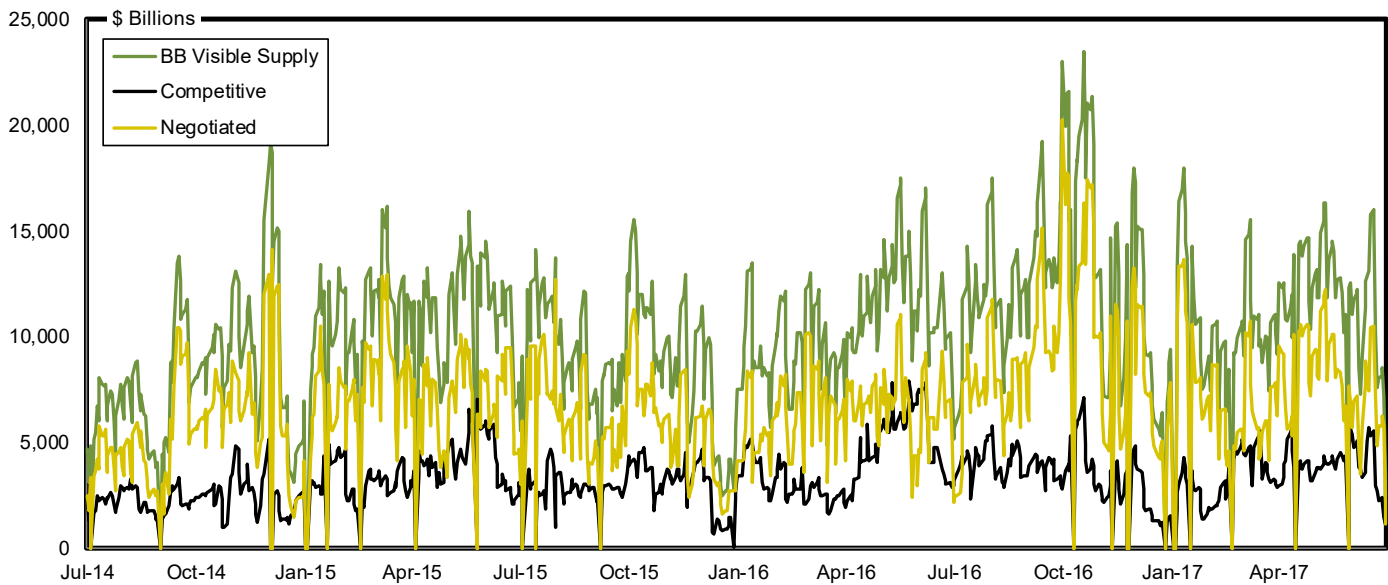


Source: Wells Fargo

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

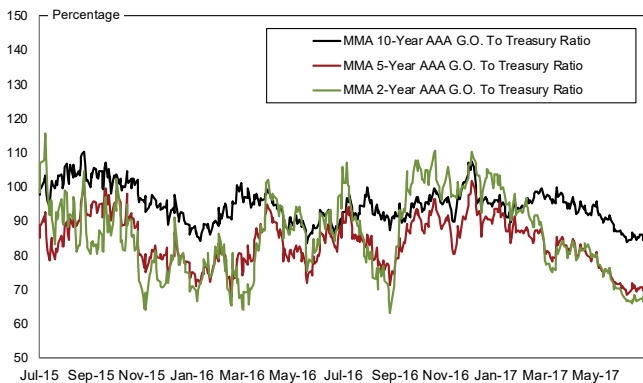
**Bond Buyer 30-Day Visible Supply**

Jul. 1, 2014 - Jun. 30, 2017



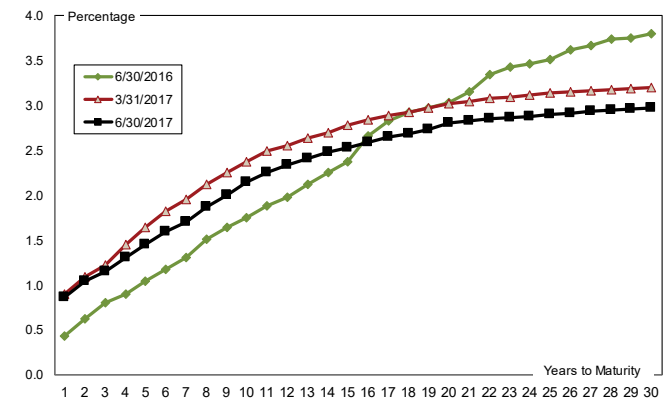
Source: Bond Buyer, Bloomberg

**2-, 5-, and 10-Year AAA G.O. to Treasury Ratios**  
Jul. 2015 - Jun. 2017

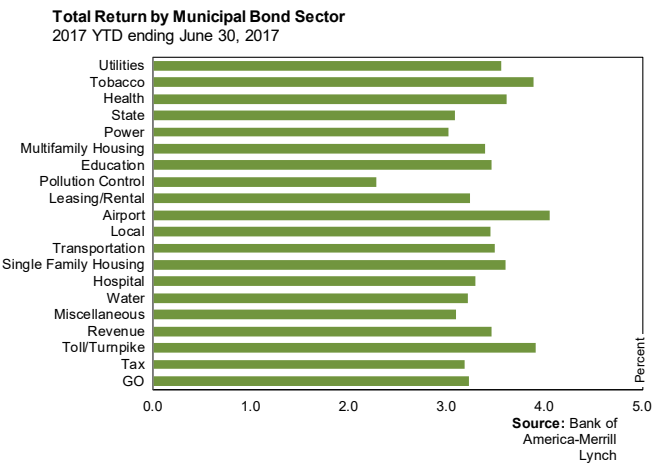
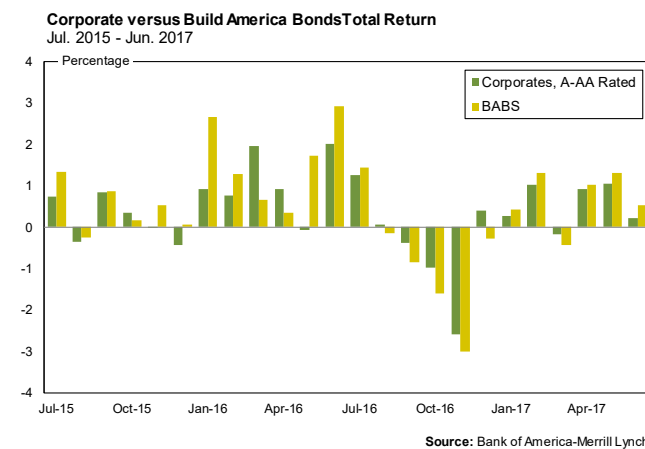
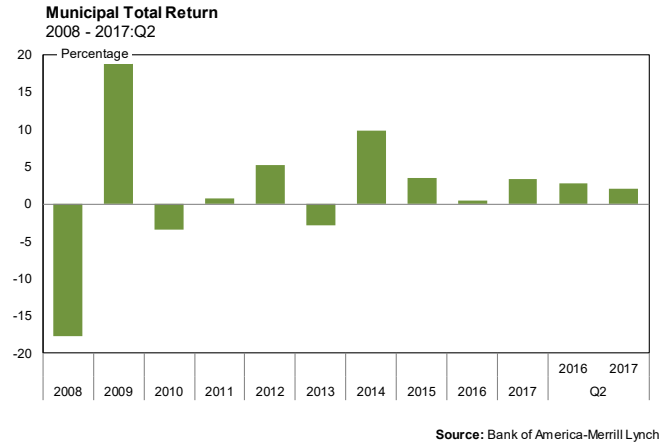
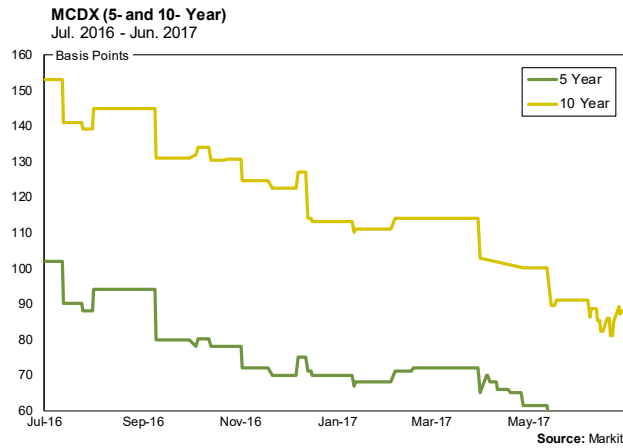


Source: Bloomberg

**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	
2017:Q1	1,061,056	543,704	1,017,805	2,622,565	325,821	229,060	135,574	\$690,455	
2017:Q2	995,014	542,188	979,241	2,516,443	323,575	212,510	129,401	\$665,486	
%Change	-6%	0%	-4%	-4%	-1%	-7%	-5%	-4%	

# of Trades										
	# of Trades				Par Amount (Millions)					
	0 - 100,000	100,001 - 500,000	500,001 - 1,000,000	1,000,000+	All Trades	0 - 100,000	100,001 - 500,000	500,001 - 1,000,000	1,000,000+	All Trades
2017:Q1	82%	12%	2%	4%	2,622,565	10%	11%	7%	71%	\$690,455
2017:Q2	81%	13%	3%	4%	2,516,443	10%	12%	8%	70%	\$665,486

Trades by Sector								
	Education	Health	Utility	Various Purpose	Transportation	Tax-Revenue	Other	Total (Millions)
2017:Q1	21%	10%	11%	12%	9%	9%	28%	\$690,455
2017:Q2	20%	11%	11%	10%	7%	10%	31%	\$665,486

Trades by Maturity						
	5+ Years to 10		10+ Years to 20		20+ Years	Total (Millions)
	1 Year or Less	1+ Year to 5 Years	Years	Years		
2017:Q1	4%	11%	15%	36%	35%	\$690,455
2017:Q2	4%	11%	15%	36%	35%	\$665,486

Trades by Source of Repayment					
	Revenue	General Obligation	Double Barrel	Not Available	Total (Millions)
2017:Q1	69%	28%	2%	0%	\$690,455
2017:Q2	70%	28%	2%	0%	\$665,486

Trades by Coupon Type					
	Fixed Rate	Variable Rate	Zero Coupon	Not Available	Total (Millions)
2017:Q1	62%	32%	5%	0%	\$690,455
2017:Q2	62%	34%	4%	0%	\$665,486

Source: MSRB EMMA

## MUNICIPAL CDS

CDS Yield Curves for Single Name States and New York City (bps) as of June 30, 2017

	6M	1Y	2Y	3Y	4Y	5Y	7Y	10Y
CA California	17.9	21.0	34.5	49.6	67.3	85.6	117.5	139.3
CT Connecticut	21.4	25.9	44.5	58.5	70.9	81.9	95.6	130.5
DE Delaware	16.8	20.1	26.1	31.0	30.7	32.0	39.8	58.8
FL Florida	9.2	11.5	22.4	33.0	46.6	54.5	69.6	91.2
IL Illinois	147.8	160.6	212.4	286.1	349.8	386.1	413.0	424
MA Massachusetts	15.0	17.9	23.5	44.2	46.8	50.6	55.9	93.7
MD Maryland	13.7	20.2	25.9	39.6	46.6	51.7	64.8	90.4
MI Michigan	8.0	8.2	19.7	30.0	34.6	41.9	64.4	78.3
MN Minnesota	9.6	11.7	17.1	24.2	28.9	35.1	48.4	62.5
NC North Carolina	16.8	19.3	21.3	28.2	31.1	34.2	37.4	64.9
NJ New Jersey	44.2	47.8	95.9	144.2	176.0	188.9	203.7	251.1
NV Nevada	16.6	18.3	23.1	29.0	32.3	34.3	46.0	78.4
NY New York	5.4	6.9	13.8	19.4	26.3	32.3	43.1	56.0
OH Ohio	13.2	18.1	23.2	31.4	36.8	45.4	63.0	76.6
PA Pennsylvania	28.7	32.5	43.2	70.6	82.0	88.1	102.3	151.1
RI Rhode Island	9.0	16.9	27.3	41.3	43.3	45.1	62.4	99.5
SC South Carolina	5.4	5.7	11.0	16.9	26.8	31.4	47.1	65.0
TX Texas	16.7	18.7	25.1	35.5	46.9	53.8	73.0	87.4
UT Utah	7.0	8.0	16.2	23.8	30.2	37.3	52.5	61.8
VA Virginia	15.3	21.0	27.0	33.0	31.4	31.8	36.4	51.6
WA Washington	4.1	6.6	12.9	23.5	35.1	46.1	60.8	75.5
WI Wisconsin								
NYC New York City	8.3	10.6	21.0	29.5	40.0	49.2	63.4	78.7

## CURRENT STATE GO RATING

State	Moody's	S&P	Fitch	State	Moody's	S&P	Fitch
Alabama	Aa1	AA	AA	Montana	Aa1	AA	AA+
Alaska	Aa3	AA	AA+	Nebraska			
American Samoa				Nevada	Aa2	AA	AA+
Arizona				New Hampshire	Aa1	AA	AA+
Arkansas	Aa1	AA		New Jersey	A3	A-	A
California	Aa3	AA-	AA-	New Mexico	Aa1	AA	
Colorado				New York	Aa1	AA+	AA+
Connecticut	A1	A+	A+	North Carolina	Aaa	AAA	AAA
District of Columbia	Aa1	AA	AA	North Dakota			
Delaware	Aaa	AAA	AAA	Ohio	Aa1	AA+	AA+
Florida	Aa1	AAA	AAA	Oklahoma	Aa2	AA	AA
Georgia	Aaa	AAA	AAA	Oregon	Aa1	AA+	AA+
Guam		BB-		Pennsylvania	Aa3	AA-	AA-
Hawaii	Aa1	AA+	AA	Puerto Rico	Caa3	D	D
Idaho				Rhode Island	Aa2	AA	AA
Illinois	Baa3	BBB-	BBB	South Carolina	Aaa	AA+	AAA
Indiana				South Dakota	Aaa	AA+	
Iowa				Tennessee	Aaa	AAA	AAA
Kansas				Texas	Aaa	AAA	AAA
Kentucky	Aa3	A+		Utah	Aaa	AAA	AAA
Louisiana	Aa3	AA-	AA-	Vermont	Aaa	AA+	AAA
Maine	Aa2	AA		Virgin Islands			
Maryland	Aaa	AAA	AAA	Virginia	Aaa	AAA	AAA
Massachusetts	Aa1	AA	AA+	Washington	Aa1	AA+	AA+
Michigan	Aa1	AA-	AA	West Virginia	Aa2	AA-	AA
Minnesota	Aa1	AA+	AAA	Wisconsin	Aa2	AA	AA
Mississippi	Aa2	AA	AA	Wyoming			
Missouri	Aaa	AAA	AAA				

## OUTSTANDING MUNICIPAL DEBT

Outstanding by Type, Maturity, and Security Type<sup>6</sup>

\$ Millions

State	Total Outstanding	G.O.	Revenue	Due in 13 Months	Long-Term	2017:Q1 Total Outstanding	% Change
AK Alaska	10,616.0	2,908.7	7,707.3	711.7	9,904.3	10,734.3	-1.1%
AL Alabama	37,193.1	7,112.6	30,080.5	1,158.4	36,034.7	36,475.4	2.0%
AR Arkansas	14,546.3	6,437.0	8,109.3	670.3	13,876.1	14,743.2	-1.3%
AS American Samoa	78.1		78.1		78.1	78.1	0.0%
AZ Arizona	57,348.3	12,156.6	45,191.8	4,540.1	52,808.3	58,065.5	-1.2%
CA California	591,628.3	231,340.0	360,288.4	25,548.5	566,079.8	586,730.8	0.8%
CO Colorado	63,246.6	16,269.6	46,977.0	2,073.7	61,173.0	64,008.3	-1.2%
CT Connecticut	51,485.0	27,653.7	23,831.3	3,940.3	47,544.8	51,502.8	0.0%
DC District of Columbia	31,965.0	3,871.6	28,093.4	808.2	31,156.8	31,868.5	0.3%
DE Delaware	7,643.6	3,102.4	4,541.2	535.2	7,108.4	7,460.0	2.5%
FL Florida	144,219.4	15,367.6	128,851.8	7,490.7	136,728.7	149,182.5	-3.3%
GA Georgia	74,887.0	19,410.7	55,476.3	4,288.3	70,598.8	73,143.3	2.4%
GU Guam	3,182.8	396.2	2,786.6	51.4	3,131.4	3,184.3	0.0%
HI Hawaii	21,114.6	14,116.3	6,998.3	1,136.3	19,978.3	20,068.9	5.2%
IA Iowa	21,450.3	6,269.8	15,180.5	1,351.0	20,099.2	22,448.2	-4.4%
ID Idaho	7,529.9	2,634.3	4,895.7	1,251.5	6,278.4	6,916.8	8.9%
IL Illinois	167,028.2	80,636.7	86,391.6	8,768.5	158,259.7	166,558.3	0.3%
IN Indiana	48,832.9	1,195.8	47,637.1	3,555.9	45,277.0	48,459.8	0.8%
KS Kansas	26,739.4	12,695.9	14,043.5	1,624.9	25,114.6	26,256.9	1.8%
KY Kentucky	36,652.8	1,877.6	34,775.2	2,420.4	34,232.4	36,323.6	0.9%
LA Louisiana	37,492.5	8,058.1	29,434.4	1,594.8	35,897.7	37,154.2	0.9%
MA Massachusetts	106,957.9	40,669.6	66,288.3	6,285.2	100,672.7	107,012.2	-0.1%
MD Maryland	58,452.5	30,265.3	28,187.2	3,742.0	54,710.5	58,689.4	-0.4%
ME Maine	8,323.4	1,966.2	6,357.2	585.9	7,737.5	8,131.4	2.4%
MI Michigan	80,022.1	25,225.1	54,797.0	3,879.4	76,142.7	82,302.5	-2.8%
MN Minnesota	53,760.5	28,125.5	25,635.0	3,170.7	50,589.7	53,009.1	1.4%
MO Missouri	49,154.6	9,954.6	39,200.0	2,157.8	46,996.8	48,973.7	0.4%
MS Mississippi	18,152.3	7,262.6	10,889.7	1,027.7	17,124.5	17,559.9	3.4%
MT Montana	4,262.6	1,474.1	2,788.5	321.5	3,941.1	4,166.1	2.3%
NC North Carolina	54,128.9	12,527.7	41,601.2	2,885.8	51,243.1	54,722.0	-1.1%
ND North Dakota	5,473.0	1,971.3	3,501.7	299.2	5,173.8	5,475.6	0.0%
NE Nebraska	20,324.2	6,112.3	14,211.8	1,191.7	19,132.4	20,335.7	-0.1%
NH New Hampshire	8,513.9	2,477.8	6,036.0	553.9	7,959.9	8,246.0	3.2%
NJ New Jersey	122,993.2	25,064.6	97,928.6	10,703.7	112,289.5	125,291.0	-1.8%
NM New Mexico	14,372.6	3,521.9	10,850.7	1,269.0	13,103.6	14,381.4	-0.1%
NV Nevada	27,594.3	14,860.5	12,733.8	1,722.6	25,871.7	28,211.6	-2.2%
NY New York	402,945.1	76,999.6	325,945.5	23,244.2	379,700.9	401,129.2	0.5%
OH Ohio	111,043.5	32,381.8	78,661.7	5,583.3	105,460.1	110,543.1	0.5%
OK Oklahoma	20,813.0	4,208.3	16,604.7	2,012.5	18,800.5	21,052.9	-1.1%
OR Oregon	41,710.3	23,117.2	18,593.1	2,431.9	39,278.4	42,093.8	-0.9%
OT Other Territories	10,539.4	50.0	10,489.4	50.8	10,488.6	10,793.3	-2.4%
PA Pennsylvania	135,133.4	48,485.5	86,647.8	7,320.6	127,812.8	134,559.2	0.4%
PR Puerto Rico	100,485.3	12,378.8	88,106.5	3,779.3	96,706.0	100,647.6	-0.2%
RI Rhode Island	11,849.3	2,079.0	9,770.3	508.3	11,340.9	11,830.7	0.2%
SC South Carolina	38,539.1	9,247.0	29,292.1	1,974.8	36,564.3	38,604.9	-0.2%
SD South Dakota	5,132.3	1,073.8	4,058.5	244.1	4,888.2	5,093.7	0.8%
TN Tennessee	43,315.7	16,719.8	26,595.9	2,681.5	40,634.2	43,753.4	-1.0%
TT Trust Territories	112.0	75.9	36.0		112.0	115.0	-2.7%
TX Texas	360,663.6	185,544.2	175,119.5	13,581.2	347,082.5	354,392.4	1.8%
UT Utah	24,453.3	6,689.0	17,764.3	1,586.3	22,867.0	25,099.4	-2.6%
VA Virginia	66,086.9	15,426.1	50,660.8	3,465.5	62,621.4	65,657.4	0.7%
VI Virgin Islands	2,291.6		2,291.6	86.1	2,205.5	2,296.7	-0.2%
VT Vermont	4,782.5	762.7	4,019.8	154.7	4,627.8	4,658.9	2.7%
WA Washington	92,297.6	45,914.8	46,382.8	5,666.9	86,630.7	92,702.6	-0.4%
WI Wisconsin	54,944.5	25,091.4	29,853.1	4,264.4	50,680.1	51,659.3	6.4%
WV West Virginia	10,330.0	753.7	9,576.3	411.7	9,918.3	10,582.2	-2.4%
WY Wyoming	2,379.4	133.3	2,246.1	164.0	2,215.4	2,394.6	-0.6%
TOTAL (6/30/2017)	3,627,213.8	1,192,121.9	2,435,092.0	192,528.3	3,434,685.5	3,617,532.0	0.3%
TOTAL (3/31/2017)	3,617,532.0	1,186,028.9	2,431,503.1	181,391.3	3,436,140.8		
% Change	0.3%	0.5%	0.1%	6.1%	0.0%		

<sup>6</sup> As of the first quarter 2017, outstanding totals includes both short- and long-term municipal debt and now includes all refunded (inclusive of preredempted) debt, but does not include municipal derivatives. Data prior to 1Q'17 excluded refunded debt from general totals. "Due in 13 months" looks at original maturity and will not include securities with short puts unless original maturity is within 13 months. Differences between this data and the Federal Reserve Flow of Funds are due to underlying database differences (Fed: Mergent; these tables: Bloomberg) as well as the growth of the municipal direct loan market. Fixed rate debt does not include those multimodal bonds that are currently in long-term fixed rate mode.

Outstanding and by Tax Status, Coupon, Use of Proceeds<sup>7</sup>

\$ Millions

State	Total Outstanding	Tax-Exempt	BQ	AMT	Taxable	Fixed	Zero	FRN	Other
AK Alaska	10,616.0	9,138.0	51.1	420.8	1,006.0	8,435.6	159.9	394.7	1,625.8
AL Alabama	37,193.1	29,023.0	3,901.9	893.9	3,374.3	29,227.2	973.5	303.9	6,688.5
AR Arkansas	14,546.3	9,808.9	3,212.2	273.4	1,251.9	13,386.7	240.1	528.2	391.4
AS American Samoa	78.1	44.2			33.9	78.1			-
AZ Arizona	57,348.3	51,271.3	907.3	995.7	4,174.1	51,813.6	30.0	706.4	4,798.3
CA California	591,628.3	481,073.2	10,343.1	18,089.8	82,122.2	448,395.3	71,544.6	8,631.3	63,057.2
CO Colorado	63,246.6	49,820.7	2,841.4	2,625.1	7,959.4	50,334.7	6,047.9	1,152.5	5,711.6
CT Connecticut	51,485.0	40,463.5	1,686.9	1,284.9	8,049.7	43,393.9	457.2	2,224.5	5,409.5
DC District of Columbia	31,965.0	24,893.7	2.0	3,728.9	3,340.5	22,552.3	5,596.6	107.6	3,708.6
DE Delaware	7,643.6	5,915.2	61.6	281.9	1,384.8	6,232.5	0.4		1,410.7
FL Florida	144,219.4	118,251.0	931.1	11,058.9	13,978.3	123,569.9	3,185.8	2,177.4	15,286.3
GA Georgia	74,887.0	60,186.0	1,406.5	2,961.2	10,333.4	60,385.8	1,697.1	1,657.2	11,147.0
GU Guam	3,182.8	2,967.7		180.6	34.4	3,067.3	115.5		-
HI Hawaii	21,114.6	17,125.1		1,379.0	2,610.5	20,664.2	19.5	114.7	316.2
IA Iowa	21,450.3	14,121.1	4,863.8	472.3	1,993.0	18,725.0	551.8	542.5	1,631.0
ID Idaho	7,529.9	6,138.2	424.7	279.6	687.4	6,541.3	103.4	434.4	450.8
IL Illinois	167,028.2	116,198.1	11,343.2	5,080.1	34,406.9	133,544.2	19,801.8	3,074.2	10,608.1
IN Indiana	48,832.9	36,094.6	3,408.1	3,697.2	5,633.1	39,802.2	908.2	1,159.5	6,963.0
KS Kansas	26,739.4	18,238.0	4,456.1	319.5	3,725.8	25,630.4	274.7	142.1	692.2
KY Kentucky	36,652.8	26,312.2	3,972.8	1,435.4	4,932.4	31,548.0	398.5	1,655.3	3,050.9
LA Louisiana	37,492.5	29,761.3	1,655.2	2,011.4	4,064.6	30,828.9	1,083.6	1,456.4	4,123.6
MA Massachusetts	106,957.9	91,264.3	3,525.2	3,589.3	8,579.1	92,724.8	1,087.0	2,481.3	10,664.8
MD Maryland	58,452.5	49,643.3	222.0	1,667.5	6,919.8	52,855.9	132.0	419.1	5,045.4
ME Maine	8,323.4	6,349.4	599.4	431.2	943.4	7,682.9		15.0	625.5
MI Michigan	80,022.1	60,425.4	4,582.0	2,794.5	12,220.3	61,366.6	6,815.5	2,481.4	9,358.6
MN Minnesota	53,760.5	39,465.1	7,331.5	1,468.7	5,495.2	47,718.6	881.2	900.8	4,259.9
MO Missouri	49,154.6	32,417.3	5,322.6	1,121.8	10,292.8	38,288.0	864.5	3,817.5	6,184.6
MS Mississippi	18,152.3	12,740.3	1,686.9	238.2	3,486.8	13,900.8	3.0	243.2	4,005.3
MT Montana	4,262.6	2,574.5	635.7	178.1	874.3	3,058.2	10.9	508.7	684.9
NC North Carolina	54,128.9	45,951.0	313.1	1,071.4	6,793.4	45,443.4	291.5	2,600.6	5,793.4
ND North Dakota	5,473.0	3,891.4	934.9	188.5	458.2	5,174.0		87.7	211.3
NE Nebraska	20,324.2	14,645.9	3,583.1	445.8	1,649.5	18,682.8	-	253.2	1,388.2
NH New Hampshire	8,513.9	6,031.0	331.1	465.3	1,686.5	6,827.4	66.8	762.2	857.5
NJ New Jersey	122,993.2	95,332.7	6,143.5	5,711.4	15,805.5	102,890.7	13,261.7	1,775.6	5,065.3
NM New Mexico	14,372.6	11,833.8	961.6	354.1	1,223.1	12,026.1	7.5	1,139.0	1,200.0
NV Nevada	27,594.3	22,639.0	221.5	1,914.0	2,819.9	23,107.5	983.0	125.7	3,378.2
NY New York	402,945.1	326,113.1	7,408.5	19,260.7	50,162.8	332,092.4	15,407.2	5,117.4	50,328.0
OH Ohio	111,043.5	82,946.0	6,813.8	2,266.8	19,016.9	86,567.7	8,543.2	595.3	15,337.2
OK Oklahoma	20,813.0	15,849.3	1,768.1	786.8	2,408.8	19,090.1	56.3	760.7	905.8
OR Oregon	41,710.3	29,462.8	1,322.8	1,080.3	9,844.4	35,847.5	3,787.6	191.7	1,883.5
OT Other Territories	10,539.4	4,229.3		6,269.4	40.7	848.5			9,690.9
PA Pennsylvania	135,133.4	103,389.7	12,641.9	4,979.3	14,122.4	113,075.8	4,318.3	5,377.7	12,361.5
PR Puerto Rico	100,485.3	82,261.3		203.9	18,020.2	56,356.0	37,384.0	1,706.0	5,039.3
RI Rhode Island	11,849.3	10,064.9	263.9	632.0	888.5	9,369.7	1,542.3	459.8	477.5
SC South Carolina	38,539.1	32,203.6	632.8	874.0	4,828.7	31,790.2	2,408.7	2,361.3	1,978.9
SD South Dakota	5,132.3	3,318.7	797.3	152.3	864.0	4,787.3		136.5	208.6
TN Tennessee	43,315.7	33,586.3	2,686.1	1,008.1	6,035.2	36,195.7	1,928.6	300.0	4,891.4
TT Trust Territories	112.0	75.9		36.0	-	112.0			-
TX Texas	360,663.6	279,160.3	26,787.3	15,828.5	38,887.6	299,206.5	17,437.0	11,531.2	32,488.9
UT Utah	24,453.3	18,010.6	748.7	1,010.8	4,683.3	20,130.4	171.6	2,115.0	2,036.3
VA Virginia	66,086.9	54,519.6	264.6	2,218.9	9,083.7	59,823.0	1,620.8	8.2	4,634.9
VI Virgin Islands	2,291.6	2,156.9		26.7	108.0	2,243.4	48.1		-
VT Vermont	4,782.5	3,507.4	12.5	449.9	812.8	3,748.1		1,343.7	(309.3)
WA Washington	92,297.6	74,589.5	3,472.7	3,390.4	10,845.0	85,316.0	1,897.0	813.7	4,270.9
WI Wisconsin	54,944.5	37,315.7	7,637.1	1,543.5	8,448.2	50,254.1	532.9	970.1	3,187.3
WV West Virginia	10,330.0	6,003.9	342.8	641.8	3,341.6	6,900.6	2,063.4	50.2	1,315.8
WY Wyoming	2,379.4	1,669.9	77.6	474.3	157.6	1,627.7			751.7
TOTAL (6/30/2017)	3,627,213.8	2,842,483.9	165,541.3	142,243.7	476,945.0	2,955,287.3	236,741.6	77,912.1	357,272.8
TOTAL (3/31/2017)	3,617,532.0	2,834,442.4	165,914.4	144,191.9	472,983.2	2,936,355.0	239,317.9	78,092.5	363,766.7
% Change	0.3%	0.3%		-1.4%	0.8%	0.6%	-1.1%	-0.2%	-1.8%

<sup>7</sup> As of the first quarter 2017, outstanding totals includes both short- and long-term municipal debt and now includes all refunded (inclusive of preredefined) debt, but does not include municipal derivatives. Data prior to 1Q'17 excluded refunded debt from general totals. "Due in 13 months" looks at original maturity and will not include securities with short puts unless original maturity is within 13 months. Differences between this data and the Federal Reserve Flow of Funds are due to underlying database differences (Fed: Mergent; these tables: Bloomberg) as well as the growth of the municipal direct loan market. Fixed rate debt does not include those multimodal bonds that are currently in long-term fixed rate mode.

Addendum Tables –Build America Bonds, Prerefunded, Derivatives and Insured<sup>8</sup>

\$ Millions

State	Total Outstanding	BAB Only	VRDO Only	ARS Only	Prerefunded Only	All Refunded	Derivatives Only	Insured
AK Alaska	10,616.0	354.3	1,448.4		720.5	790.6	138.2	1,129.2
AL Alabama	37,193.1	562.1	2,459.7	748.7	3,454.0	3,821.1	594.4	7,760.0
AR Arkansas	14,546.3	26.3	297.9		728.9	900.9	0.0	1,880.2
AS American Samoa	78.1							-
AZ Arizona	57,348.3	1,943.3	1,854.4	89.7	5,702.2	7,724.2	1,213.5	7,902.3
CA California	591,628.3	37,258.9	21,029.9	1,260.0	43,734.7	62,957.5	17,278.4	104,459.3
CO Colorado	63,246.6	4,001.6	2,843.6	104.0	4,237.6	7,818.4	2,570.7	9,045.4
CT Connecticut	51,485.0	1,862.3	2,045.2	337.9	1,854.6	2,116.9	699.8	4,032.3
DC District of Columbia	31,965.0	1,855.0	1,403.6	281.5	1,943.1	2,173.7	1,006.7	4,908.0
DE Delaware	7,643.6	497.9	556.0	2,290.9	535.9	546.9	420.9	225.9
FL Florida	144,219.4	5,445.2	5,543.5	515.9	10,008.0	13,213.0	4,942.3	22,996.8
GA Georgia	74,887.0	3,687.7	3,006.1		6,492.0	9,415.9	1,238.7	8,228.7
GU Guam	3,182.8				539.2	559.8		410.9
HI Hawaii	21,114.6	1,171.1	25.9		2,339.8	3,821.3	377.5	765.0
IA Iowa	21,450.3	494.0	1,515.8	88.4	1,648.5	2,142.7	319.9	1,252.8
ID Idaho	7,529.9	162.5	289.4		554.8	614.1	82.7	670.1
IL Illinois	167,028.2	9,643.5	6,835.9	101.4	7,809.7	15,865.3	5,949.5	36,054.6
IN Indiana	48,832.9	1,798.1	2,857.0	220.0	3,363.0	4,422.7	1,163.8	6,116.7
KS Kansas	26,739.4	1,444.0	396.0	121.9	2,091.5	3,269.4	215.4	3,784.2
KY Kentucky	36,652.8	1,920.2	1,301.0	10.1	3,659.4	3,965.9	354.4	4,823.3
LA Louisiana	37,492.5	607.9	3,135.6	265.3	3,248.2	4,384.3	382.9	6,220.9
MA Massachusetts	106,957.9	4,803.7	5,338.3	1,059.8	11,331.1	13,550.6	4,010.6	11,193.4
MD Maryland	58,452.5	3,212.5	2,077.7	13.4	5,197.0	5,891.8	654.1	2,273.5
ME Maine	8,323.4	77.1	432.6		499.6	638.8	33.4	786.7
MI Michigan	80,022.1	1,771.2	3,412.8		4,836.2	6,483.2	2,315.0	13,587.0
MN Minnesota	53,760.5	976.4	1,965.3	163.3	2,943.6	4,488.5	515.2	2,340.7
MO Missouri	49,154.6	2,810.6	2,056.9	803.5	2,507.3	3,434.7	921.9	3,795.4
MS Mississippi	18,152.3	764.9	3,148.7		1,716.0	1,911.3	146.8	1,793.9
MT Montana	4,262.6	27.9	85.1		158.2	186.9	276.5	149.2
NC North Carolina	54,128.9	1,577.6	3,222.9	45.6	6,683.8	7,755.5	1,025.0	3,907.8
ND North Dakota	5,473.0	22.0	205.1		174.0	210.2	78.0	650.8
NE Nebraska	20,324.2	897.5	656.3		1,425.9	1,671.6	440.1	452.2
NH New Hampshire	8,513.9	352.4	502.9	153.7	877.1	969.1	118.4	659.2
NJ New Jersey	122,993.2	6,522.7	2,193.4	573.6	6,277.3	10,064.5	3,245.1	27,027.4
NM New Mexico	14,372.6	240.5	428.7		904.0	966.8	322.8	580.9
NV Nevada	27,594.3	2,130.6	2,074.3		2,749.1	3,580.0	1,005.4	3,532.1
NY New York	402,945.1	20,507.0	35,829.5	2,850.0	18,107.9	28,906.0	9,948.3	30,490.6
OH Ohio	111,043.5	6,668.2	4,589.6	425.2	6,599.8	7,765.6	1,746.1	8,829.0
OK Oklahoma	20,813.0	590.0	352.2	66.9	1,386.1	1,518.5	338.7	1,404.3
OR Oregon	41,710.3	931.6	1,154.9	235.0	3,936.6	4,282.5	176.7	5,892.2
OT Other Territories	10,539.4						6,133.8	100.0
PA Pennsylvania	135,133.4	4,817.1	5,487.7	22.5	11,718.0	15,770.8	3,540.3	29,955.0
PR Puerto Rico	100,485.3	1,013.0			12.9	775.4	1,177.8	23,298.6
RI Rhode Island	11,849.3		467.6	60.0	923.9	1,324.2	155.0	1,853.4
SC South Carolina	38,539.1	840.7	662.7	25.0	2,501.4	2,938.2	969.7	3,275.3
SD South Dakota	5,132.3	298.3	256.0	10.0	85.7	239.2	123.5	380.8
TN Tennessee	43,315.7	1,777.0	2,447.1	44.7	3,585.2	6,049.8	585.9	3,563.1
TT Trust Territories	112.0							-
TX Texas	360,663.6	16,419.5	11,596.2	1,929.9	33,253.1	37,839.0	5,318.0	37,562.5
UT Utah	24,453.3	2,860.0	1,383.9	391.1	2,227.5	2,619.4	755.3	2,396.3
VA Virginia	66,086.9	3,529.3	2,078.3	15.1	6,774.9	7,567.6	809.8	1,703.1
VI Virgin Islands	2,291.6	37.3				4.2		300.4
VT Vermont	4,782.5	122.6	174.9		416.7	421.4	29.3	456.7
WA Washington	92,297.6	5,886.8	2,243.2		9,265.1	11,046.7	1,976.6	6,097.5
WI Wisconsin	54,944.5	1,573.7	1,338.3		5,141.7	6,982.0	1,281.6	4,002.4
WV West Virginia	10,330.0	88.2	764.3	77.3	345.0	373.5	40.6	1,016.6
WY Wyoming	2,379.4	124.0	651.1		105.0	131.4		97.7
TOTAL (6/30/2017)	3,627,213.8	169,007.5	158,123.1	15,323.9	259,332.5	348,883.6	89,164.6	468,072.3
TOTAL (3/31/2017)	3,617,532.0	169,551.0	160,896.3	16,564.9	267,953.8	353,757.6	88,505.3	496,542.0
% Change	0.3%	-0.3%	-1.7%	-7.5%	-3.2%	-1.4%	0.7%	-5.7%

<sup>8</sup> As of the first quarter 2017, outstanding totals includes both short- and long-term municipal debt and now includes all refunded (inclusive of prerefunded) debt, but does not include municipal derivatives. Data prior to 1Q'17 excluded refunded debt from general totals. "Due in 13 months" looks at original maturity and will not include securities with short puts unless original maturity is within 13 months. Differences between this data and the Federal Reserve Flow of Funds are due to underlying database differences (Fed: Mergent; these tables: Bloomberg) as well as the growth of the municipal direct loan market. Fixed rate debt does not include those multimodal bonds that are currently in long-term fixed rate mode.

Addendum Tables –Rating and Industry<sup>9</sup>  
\$ Millions

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<sup>9</sup> As of the first quarter 2017, outstanding totals includes both short- and long-term municipal debt and now includes all refunded (inclusive of prerefunded) debt, but does not include municipal derivatives. Data prior to 1Q'17 excluded refunded debt from general totals. Rating based on the lowest long-term rating assigned to the bond by Fitch Ratings, Moody's Investor Services, or Standard and Poor's; split-rated debt are therefore included in the HY category. Differences between this data and the Federal Reserve Flow of Funds are due to underlying database differences (Fed: Mergent; these tables: Bloomberg) as well as the growth of the municipal direct loan market. Fixed rate debt does not include those multimodal bonds that are currently in long-term fixed rate mode.



State	Total Outstanding	Rated	AAA	AA	A	BBB	HY	Industry	Amount
AK Alaska	10,616.0	9,363.3	276.2	5,867.0	2,516.9	385.0	318.2	Other	526.3
AL Alabama	37,193.1	31,189.0	741.0	15,519.4	11,316.2	770.1	2,842.4	Appropriations	112,474.9
AR Arkansas	14,546.3	11,774.3	203.5	8,342.7	2,799.0	424.0	5.2	Airport	97,221.2
AS American Samoa	78.1	78.1	-	-	-	-	-	Airport Tax-Guaranteed	99.9
AZ Arizona	57,348.3	45,642.2	2,394.5	28,252.1	10,956.5	2,648.4	1,390.7	Assisted Living	1,715.2
CA California	591,628.3	476,212.7	14,060.8	304,459.0	118,108.9	21,555.4	18,028.7	Ad Valorem Backed Lease Revenue	6,708.9
CO Colorado	63,246.6	49,294.2	2,923.7	28,185.9	9,546.2	8,015.1	623.3	Bond Bank	13,022.9
CT Connecticut	51,485.0	47,439.3	10,236.5	5,518.5	30,326.0	776.1	582.2	Continuing Care Retirement	29,292.6
DC District of Columbia	31,965.0	24,225.1	287.1	15,599.6	5,522.8	2,244.5	571.2	Community Development	6,759.3
DE Delaware	7,643.6	6,968.0	2,636.2	2,318.9	1,109.4	781.9	121.6	Charter Schools	12,720.2
FL Florida	144,219.4	114,342.7	2,430.6	50,344.6	56,108.5	4,670.5	788.4	Community College District	41,619.9
GA Georgia	74,887.0	56,465.9	14,835.7	18,882.9	19,652.9	2,552.3	542.2	Other	7.2
GU Guam	3,182.8	2,479.7	-	(330.8)	923.3	1,646.7	240.4	Economic/Industrial Development	88,431.3
HI Hawaii	21,114.6	16,799.7	151.3	13,687.5	2,253.2	595.9	111.8	Secondary Education	32,747.9
IA Iowa	21,450.3	17,231.0	2,005.9	7,330.9	5,170.8	397.7	2,325.6	Secondary Education - Lease Backed	53,605.0
ID Idaho	7,529.9	4,967.6	527.4	2,081.0	2,144.5	99.9	114.8	Gas Contract	19,208.4
IL Illinois	167,028.2	143,764.8	4,627.3	33,463.8	43,325.0	43,293.1	19,055.6	General Obligation	691,265.0
IN Indiana	48,832.9	39,596.4	4,226.1	17,811.6	14,788.7	1,938.2	831.8	General Obligation Districts (Other)	26,317.4
KS Kansas	26,739.4	21,372.4	1,593.9	11,639.7	7,777.6	166.3	194.9	General Obligation Hospital	7,696.3
KY Kentucky	36,652.8	30,871.5	1,136.7	12,339.6	13,225.3	4,007.7	162.3	Government Paid Lease	87,671.0
LA Louisiana	37,492.5	31,438.7	1,398.7	10,589.2	15,456.7	2,460.1	1,534.0	General Revenue Tax-Guaranteed	17,186.7
MA Massachusetts	106,957.9	88,726.9	11,229.8	63,428.1	10,173.4	3,673.4	222.2	Higher Education	242,707.1
MD Maryland	58,452.5	48,372.3	22,881.6	16,450.5	5,883.2	2,988.8	168.1	Healthcare (General) Tax-Guaranteed	2,232.7
ME Maine	8,323.4	7,516.9	105.6	4,350.4	2,332.7	53.3	674.9	Hospital	257,692.9
MI Michigan	80,022.1	62,396.6	5,973.9	30,121.7	21,789.7	1,622.4	2,889.0	Hotel Occupancy	5,395.2
MN Minnesota	53,760.5	45,213.2	7,657.9	30,155.1	5,957.2	808.1	634.9	Housing Tax- Guaranteed	1,020.0
MO Missouri	49,154.6	39,492.1	3,159.5	23,225.8	10,711.0	1,953.2	442.6	Intergovernmental Lease	5,474.4
MS Mississippi	18,152.3	14,555.8	218.4	10,751.9	2,366.9	1,037.1	181.5	Income Tax	70,618.8
MT Montana	4,262.6	3,477.3	345.9	1,512.5	1,601.6	17.4	-	Independent Living	8.1
NC North Carolina	54,128.9	43,592.8	13,170.5	19,116.9	9,762.6	1,519.2	23.5	Correctional Facilities	2,609.5
ND North Dakota	5,473.0	4,610.3	248.6	2,644.6	1,282.1	367.7	67.3	Local multifamily housing	33,040.3
NE Nebraska	20,324.2	15,710.1	344.2	8,738.7	5,409.1	1,061.7	156.4	Loan Pool	10,576.6
NH New Hampshire	8,513.9	7,124.8	457.8	4,243.4	1,794.6	551.2	77.8	Lottery	4,744.4
NJ New Jersey	122,993.2	107,405.2	7,752.7	16,625.6	39,605.6	39,284.0	4,137.3	Local Single family housing	2,639.9
NM New Mexico	14,372.6	13,098.6	1,081.0	9,337.2	1,997.4	678.1	4.9	Metro Development	4,740.0
NV Nevada	27,594.3	21,169.0	332.0	11,664.5	6,887.7	1,774.6	510.3	Melloroos	13,121.6
NY New York	402,945.1	342,494.2	22,766.6	234,732.4	68,159.1	13,043.4	3,792.6	Miscellaneous	45,219.7
OH Ohio	111,043.5	86,156.8	8,727.2	42,878.4	22,911.5	4,276.6	7,363.0	Miscellaneous Tax	70,078.6
OK Oklahoma	20,813.0	17,066.8	2,458.7	7,235.4	6,181.2	958.8	232.7	Mobile Home	682.2
OR Oregon	41,710.3	35,876.2	2,753.9	27,293.2	5,256.1	562.1	11.0	Tobacco	86,641.0
OT Other Territories	10,539.4	9,233.9	2,359.6	6,623.7	28.9	221.7	-	Municipal Utilities	63,395.8
PA Pennsylvania	135,133.4	112,884.9	2,559.4	42,482.7	58,234.7	6,451.2	3,156.9	Not for Profit Cultural	8,004.8
PR Puerto Rico	100,485.3	83,283.7	153.9	(463.5)	3,685.3	97.5	79,810.5	Not for Profit Foundation	1,019.4
RI Rhode Island	11,849.3	10,086.1	861.8	4,161.3	2,456.4	865.1	1,741.4	Not for Profit Human Service Provider	3,878.5
SC South Carolina	38,539.1	30,960.7	2,044.3	11,534.2	16,493.1	880.7	8.4	Not for Profit Membership Organization	513.3
SD South Dakota	5,132.3	4,616.2	1,095.7	1,932.2	1,517.4	19.3	51.7	Not for Profit Research	2,640.6
TN Tennessee	43,315.7	33,867.9	3,120.5	19,864.2	6,692.3	4,148.1	42.8	Non-Toll Highway	38,690.2
TT Trust Territories	112.0	36.0	-	-	-	-	36.0	Nuclear Power	17,600.1
TX Texas	360,663.6	299,380.9	132,067.3	90,885.3	55,576.1	17,180.6	3,671.6	Nursing Home	2,989.9
UT Utah	24,453.3	19,940.2	6,598.3	9,628.0	3,483.7	135.9	94.3	Pension	19,336.0
VA Virginia	66,086.9	55,172.0	15,684.4	31,499.5	3,085.8	2,662.9	2,239.5	Payment in Lieu of Taxes	8,565.0
VI Virgin Islands	2,291.6	2,201.6	-	-	91.6	44.5	2,065.4	Parking Facility	3,218.3
VT Vermont	4,782.5	4,122.9	54.6	2,300.0	1,576.1	175.9	16.3	Parking Facility - Guaranteed	1,165.6
WA Washington	92,297.6	78,871.7	4,964.6	62,494.9	9,380.5	1,791.5	240.3	Port/Marinas	39,603.5
WI Wisconsin	54,944.5	41,493.9	2,010.4	29,812.6	8,206.6	908.8	555.6	Public Power Systems	83,809.0
WV West Virginia	10,330.0	9,045.4	290.1	909.6	4,142.9	987.8	2,715.0	Public Transportation	33,053.0
WY Wyoming	2,379.4	2,213.6	196.8	814.8	1,107.8	94.3	-	Private Religious School	2,870.2
TOTAL (6/30/2017)	3,627,213.8	2,982,984.0	352,420.3	1,470,888.7	778,850.0	212,325.6	168,421.3	Sales	103,486.8
TOTAL (3/31/2017)	3,617,532.0	3,284,624.9	395,338.5	1,754,747.9	750,606.3	218,076.1	165,778.0	School Districts	410,723.9
% Change	0.3%	-9.2%	-10.9%	-16.2%	3.8%	-2.6%	1.6%	Self Appropriation	122.8
								Shell Record	1,109.1
								State Multifamily Housing	39,210.7
								Solid Waste	4,706.8
								Special Assessment	5,216.0
								State Single-family Housing	41,018.1
								Student Housing	9,778.7
								Student Loan Revenue	26,616.8
								Telecom	992.5
								Tax Increment Financing	30,985.9
								Toll Roads	125,095.8
								Indian Tribal	1,659.5
								Municipal Utility District	9,873.0
								Water & Sewer Guaranteed	3,956.4
								Water & Sewer	276,767.5
								Total	3,627,213.8

**Kyle Brandon**

Managing Director, Director of Research

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