



MUNICIPAL BOND CREDIT REPORT

Fourth Quarter 2016

RESEARCH REPORT

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MARKET SUMMARY

Municipal Issuance Overview – Primary Market

According to Thomson Reuters, long-term public municipal issuance volume totaled \$100.3 billion in the fourth quarter of 2016, a decline of 7.5 percent from the prior quarter (\$108.5 billion) but an increase of 31.1 percent year-over-year (y-o-y) (\$76.5 billion). Including private placements¹ (\$4.5 billion), long-term municipal issuance for 4Q'16 was \$104.9 billion. Despite the fourth quarter decline, full year issuance was \$423.8 billion, an increase of 12.2 percent from 2015 well above the 10-year average of \$372.0 billion. Including private placements, full year issuance was \$445.8 billion.

Tax-exempt issuance totaled \$91.2 billion in 4Q'16, a decline of 7.3 percent q-o-q but an increase of 35.2 percent y-o-y. For the full year, tax-exempt issuance was \$383.1 billion, an increase of 13.2 percent from the prior year. According to respondents to the 2017 SIFMA Municipal Bond Issuance Survey (“Survey”), tax-exempt issuance was expected to decline to \$375.0 billion in 2017.²

Taxable issuance totaled \$7.3 billion in 4Q'16, a decline of 7.3 percent q-o-q but an increase of 40.0 percent y-o-y. For the full year, taxable issuance was \$28.5 billion, an increase of 2.2 percent from 2015. Survey respondents expect taxable issuance to increase slightly to \$30 billion in 2017. AMT issuance was \$1.9 billion in 4Q'16, a decline of 18.4 percent q-o-q and 52.1 percent y-o-y. For the full year, AMT issuance was \$12.2 billion, 8.1 percent above 2015 volumes. Survey respondents expect AMT issuance to stay largely unchanged for 2017, with \$12.5 billion in expected volume.

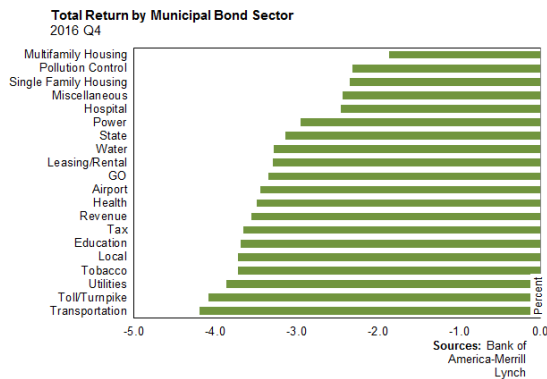
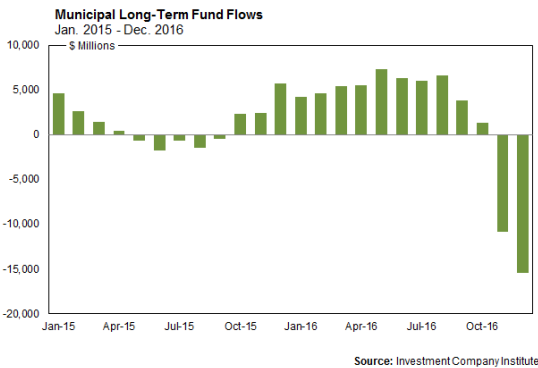
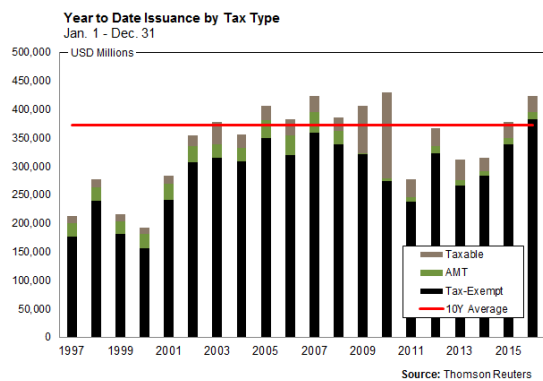
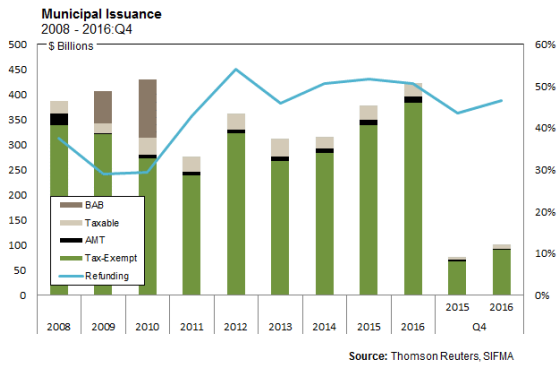
By use of proceeds, general purpose led issuance totals in 4Q'16 (\$22.7 billion), followed by primary & secondary education (\$19.0 billion), and water & sewer (\$10.7 billion). For the full year, general purpose led issuance totals (\$103.7 billion), followed by primary & secondary education (\$81.9 billion), and water & sewer (\$44.1 billion). Survey respondents expect general purpose to remain the largest category for 2017.

Refunding volumes comprised 46.6 percent of issuance in 4Q'16, declining slightly from the prior quarter (52.3 percent) but was an increase year-over-year (43.5 percent).³ For the full year, refunding volumes comprised 50.7 percent of all issuance, down slightly from 2015 (51.8 percent). Survey respondents expect refunding volumes as a percentage of total issuance to decline to 42 percent in 2017.

Yields, Inflows, and Total Return

Ratios of 10-year tax-exempt AAA GOs and similar-maturity Treasuries rose in the fourth quarter on a q-o-q basis and a y-o-y basis, averaging at 97.2 percent in 4Q'16 from 93.3 percent in 3Q'16 and 95.7 percent in 4Q'15.

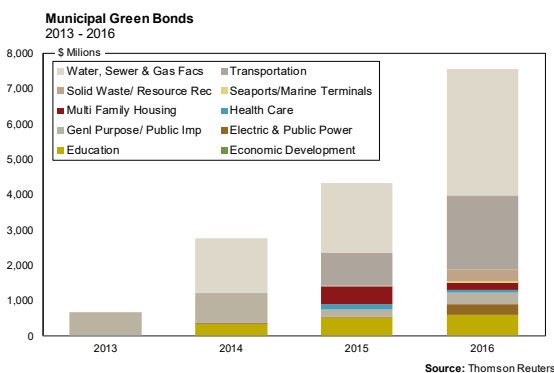
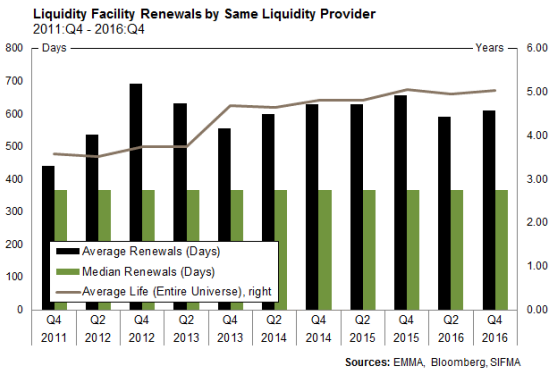
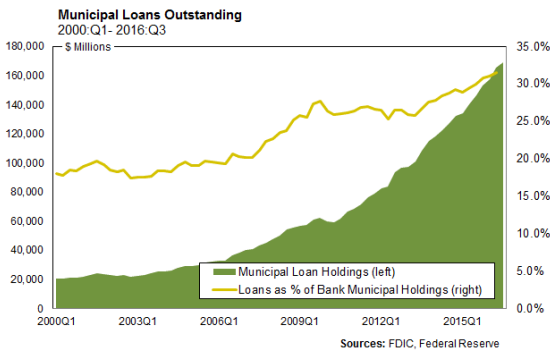
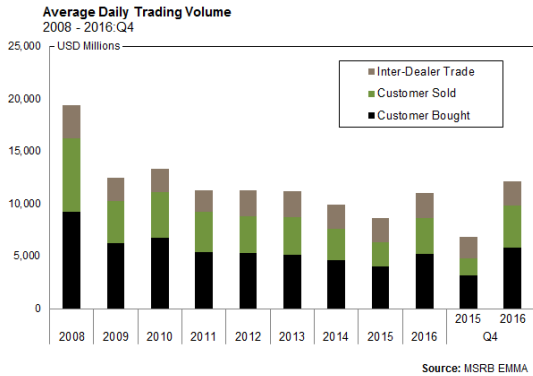
According to the Investment Company Institute (ICI), fourth quarter net flow into long-term tax-exempt funds was negative, with \$24.9 billion of net outflow in 4Q'16 compared to \$16.5 billion of outflow from 3Q'16 and \$10.6 billion of inflow y-o-y. For the full year, approximately \$25.2 billion of net inflow was recorded, up from the \$14.8 billion of inflow from the prior year.



¹ Private placement figures are excluded in charts and tables.

² SIFMA 2017 Municipal Bond Issuance Survey, February 2017.

³ Percentages represent both full refundings and the half the dollar amount of deals that contain both refundings and new financing.



According to Bank of America-Merrill Lynch indices, municipals lost 3.5 percent in the fourth quarter of 2016 but returned 0.4 percent in the full year. The housing sector, both single- and multi-family (2.35 percent loss and 1.86 percent loss, respectively), and pollution control (2.31 percent loss) had the strongest performance within the individual municipal sectors in 4Q'16; for the full year, all sectors except GO and state sectors had positive returns. Build America Bonds (BABs), however, underperformed both tax-exempts and similarly-rated corporate bonds in 4Q'16 but outperformed both in the full year, losing 4.8 percent in 4Q'16 and gaining 5.1 percent for the entire year.

Trading Activity

Trading activity rose q-o-q to \$12.1 billion daily in 4Q'16, a 3.9 percent increase from 3Q'16 (\$11.7 billion) and 77.0 percent from 4Q'15 (\$6.9 billion). By number of trades, trading activity also rose on a q-o-q and y-o-y basis, rising 23.1 percent and 24.2 percent y-o-y. For the full year, average trading daily volume by dollar volume was \$11.1 billion, an increase of 28.4 percent from 2015 (\$8.6 billion daily); by number of trades, volume was 36,964 trades, an increase of 1.0 percent from 2015.

Broker-Dealers and Holdings

As of the end of 2016, approximately 20 broker dealers exited either the municipal broker or dealer business, while 12 entered either business, not including firms newly registered in 2016. Including closures throughout the year, 1,214 broker-dealers registered with FINRA were involved in the municipal broker business line, a decline of 5.8 percent y-o-y, while 520 broker-dealers were involved in the municipal dealer business line, a decline of 3.3 percent. Figures echo the overall continuing trend of consolidation within the industry.

Broker Dealers						
Year	2011	2012	2013	2014	2015	2016
FINRA BD - Municipal Broker Business	1,582	1,514	1,453	1,350	1,289	1,214
FINRA BD - Municipal Dealer Business	653	629	605	569	538	520
FINRA BD - Both Business Lines	554	536	518	486	462	446
FINRA BD - Total	1,681	1,607	1,540	1,433	1,365	1,288
Addendum: MSRB BD & Bank Dealers (year ending October)						
	1,841	1,787	1,705	1,625	1,541	1,448

Bank holdings of both municipal loans and bonds rose in 3Q'16 from the prior quarter, to \$169.2 billion (from \$165.5 billion) and \$366.3 billion (from \$358.6 billion), respectively. Excluding municipal loans and prefunded bonds, the municipal bond market shrank approximately 0.6 percent in 4Q'16. The five sectors that grew the most y-o-y in municipal bonds outstanding by percentage were: airport tax (30.7 percent), special assessment (23.7 percent), not-for-profit research (24.3 percent), appropriations (20.9 percent), and charter schools (19.6 percent). The five sectors that shrank the most y-o-y were: local single-family housing (26.8 percent), public transportation (26.6 percent), not-for-profit membership organization (25.5 percent), and solid waste (20.6 percent).

CDS Update

According to DTCC, \$105.0 million of credit default swap contracts on municipal names were executed in the fourth quarter, a decline of 32.0 percent q-o-q and 65.7 percent y-o-y. Illinois and California led state totals (\$50.0 million) in 4Q'16. At the end of the fourth quarter, \$3.04 billion net notional of municipal CDS contracts were outstanding, up slightly from the prior quarter (\$2.88 billion), partly due to the appearance of new first time names in 4Q'16: Wisconsin (\$10.2 million), South Carolina (\$65.7 million), and Virginia (\$24.4 million).

Broker-Dealers Dropping Municipal Business Lines,

2016	Broker	Dealer
ABRAMSON FINANCIAL, LLC	*	
AEGIS INVESTMENTS, INC.	*	
AUSTIN ATLANTIC CAPITAL INC.		*
BRICKELL GLOBAL MARKETS, INC.	*	
CHATSWORTH SECURITIES LLC	*	
CLEARY GULL INC.	*	
CREDIT AGRICOLE SECURITIES (USA) INC.	*	*
CURIAN CLEARING, LLC	*	
EIDE BAILLY SECURITIES, LLC	*	
GUGGENHEIM INVESTOR SERVICES, LLC	*	
HAPOLIM SECURITIES USA, INC.		*
INVEST FINANCIAL CORPORATION	*	*
J.A. GLYNN INVESTMENTS, LLC.	*	
MARIANA CAPITAL USA, LLC	*	
NATIONAL PLANNING CORPORATION		*
PETER R. MACK & CO., INC.	*	
SEVEN POINTS CAPITAL, LLC	*	*
SPENCER CLARKE LLC	*	*
STAR MOUNTAIN ADVISORS, LLC	*	
WACHTEL & CO., INC.	*	

Broker-Dealers Adding Municipal Business Lines,

2016	Broker	Dealer
APEXUS CAPITAL LLC	*	*
BMA SECURITIES, LLC		*
EXOTIX USA INC.	*	
FLOW TRADERS U.S. LLC		*
GE CAPITAL MARKETS, INC.	*	
IMPACTIVE ADVISORS LLC	*	
INTEGRITY BROKERAGE SERVICES, INC.	*	
INVESTMENT CENTERS OF AMERICA, INC.		*
MCAP LLC	*	*
MONERE INVESTMENTS, INC.		*
SII INVESTMENTS, INC.		*
SOVEREIGN GLOBAL ADVISORS LLC	*	

Bank Liquidity Provider Rankings

Then...	12/31/2015
Bank	Percentage
JPM	14.0%
BOA	10.3%
WF	10.0%
US Bank	7.1%
TD	5.3%
RBC	4.4%
PNC	4.1%
Tokyo Mitsubishi UFJ	3.9%
Sumitomo Mitsui	3.7%
State Street	3.5%
Citi	3.3%
Landesbank Hessen-Thrhn	3.1%
Barclays	3.1%
Mizuho	3.0%
Northern Trust	2.6%
Everyone Else	18.5%
# of Banks	151

...And Now

Bank	12/31/2016
Bank	Percentage
JPM	12.6%
BOA	11.2%
WF	9.0%
US Bank	7.0%
TD	5.8%
Tokyo Mitsubishi UFJ	4.2%
RBC	4.2%
Sumitomo Mitsui	4.1%
Landesbank Hessen-Thrhn	3.9%
PNC	3.9%
Citi	3.9%
Barclays	3.5%
State Street	3.4%
BMO Harris	3.2%
Mizuho	3.0%
Everyone Else	17.1%
# of Banks	143

Green Bonds Update

At the end of 2016, \$15.3 billion of green bonds have been issued in the municipal market, with nearly half (\$7.6 billion) from 2016 alone. The municipal green bond market now encompasses 24 states and 10 industries, ranging from economic development to water and sewer facilities. The majority of deals from 2013 to 2016 come from clean water deals, followed by general purpose. New York has issued the largest dollar volume of green bonds to date (\$2.98 billion), followed closely by Massachusetts (\$2.87 billion) California (\$2.08 billion), and Washington (\$1.60 billion).

VRDO, FRN, and ARS Update

Issuance of variable-rate demand obligations (VRDOs), puttable long-term municipal bonds with interest rates that reset periodically, fell in the fourth quarter, with \$736.6 million issued in 4Q'16, a decline of 69.2 percent and 53.4 percent, respectively, q-o-q and y-o-y. For the full year, VRDO issuance totaled \$7.2 billion up from the all time low reached in the prior year of \$6 billion.

On net, VRDO outstandings also continued to decline, ending 4Q'16 at \$164.7 billion, a decline of 2.9 percent from 3Q'16 and 7.3 percent from end-December 2015. Declines y-o-y were led by nursing home (25.7 percent), power (21.4 percent), and student loans (21.0 percent). Since 2008, the market has been steadily shrinking; from the high of \$442.8 billion in November of 2008, the VRDO market has declined in size by 62.9 percent.

As of end-December, \$40.5 billion of VRDO liquidity facilities were scheduled to expire in 2017, with an additional \$33.0 billion in 2018, for a total of \$73.5 billion of liquidity facilities on 3,171 CUSIPs within two years. VRDO liquidity facility renewals with the same liquidity provider on approximately 1,080 unique CUSIPs averaged 608.3 days from the original expiration date, rising from 589.7 days in 2Q'16. 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 5.04 years, rising slightly from 2Q'16. However, excluding self-liquidity deals, the average remaining tenor of liquidity facilities in the entire VRDO universe averaged 3.94 years, up slightly from the 3.88 years in 2Q'16.

While large banks continue to maintain their presence in the municipal VRDO market as liquidity providers, the number of banks in the market continue to dwindle in response to the continued decline in VRDOs outstanding, albeit at a slower pace than years past. As of the end of December 2016, 143 banks were providing liquidity, down slightly from 151 at the end of 2015. Foreign banks continue to maintain or grow their presence slightly as liquidity providers while US banks have generally reduced market share (with Citigroup as a notable lone exception).

The SIFMA Municipal Swap index, a seven-day high-grade market index comprised of tax-exempt VRDOs, ended December at 0.72 percent, averaging 0.67 percent throughout 4Q'16, 10 basis points higher than than 3Q'16's average (0.55 percent) and 64 basis points higher than 4Q'15's average (0.01 percent).

Issuance of floating rate notes ("FRN") (both LIBOR- and SIFMA- indexed, among others) increased substantially in the fourth quarter, with issuance of \$1.4 billion, a tenfold increase q-o-q and fourfold increase y-o-y. For the full year, however, FRN issuance totaled \$1.8 billion, well below the \$5.1 billion from the prior year. As of end-December, \$77.0 billion of FRNs were outstanding, a decline of 0.8 percent q-o-q and 6.9 percent y-o-y. LIBOR continues to remain a popular index for FRNs and represents approximately 61.9 percent of existing municipal FRNs (rising from 59.7 percent end-December

2015), while the SIFMA swap index represents 30.0 percent (down from 32.7 percent end-December 2015).

Auction rate securities (ARS) continue to steadily decline as they remain in run-off mode for the ninth consecutive year, with approximately \$17.0 billion outstanding at the end of December 2016, a decline of 5.2 percent and 15.3 percent, respectively, q-o-q and y-o-y.

Issuer Update

As of the end of 2016, there were approximately 30,700 issuers with outstanding municipal debt in the marketplace, a decline of 0.7 percent from mid-2016.

CHARTS & DATA

LONG-TERM MUNICIPAL STATE ISSUANCE, 4Q'16⁴\$ Millions⁵

State	Total	Bond Type			Tax Type			Funding Type			
		G.O.	Revenue		AMT	Tax-Exempt	Taxable	New Financing	Refinancing	Refunding & New Refinancing	New Refunding
Alabama	1,941.7	219.3	1,722.4	-	1,371.5	570.1	1,381.9	-	185.1	374.6	
Alaska	322.2	309.1	13.1	29.4	292.8	-	80.5	-	210.0	31.7	
American Samoa	0.0	-	-	-	-	-	-	-	-	-	
Arizona	2,906.0	58.0	2,848.0	-	2,900.1	5.8	348.1	-	200.0	2,357.9	
Arkansas	734.1	324.4	409.7	7.8	574.0	152.4	293.6	-	161.2	279.4	
California	13,908.5	4,916.2	8,992.3	120.4	12,327.9	1,460.3	3,962.5	-	4,489.1	5,457.0	
Colorado	2,677.0	1,206.1	1,470.9	-	2,595.5	81.5	1,194.7	-	575.3	907.1	
Connecticut	1,727.1	1,353.8	373.3	107.5	1,605.2	14.4	1,257.6	-	29.2	440.3	
District of Columbia	589.5	589.5	-	-	589.5	-	-	-	589.5	-	
Delaware	25.7	8.1	17.6	-	25.7	-	8.1	-	-	17.6	
Florida	2,603.7	94.9	2,508.8	126.5	2,058.3	418.9	1,100.2	-	479.0	1,024.5	
Georgia	2,001.2	969.8	1,031.4	47.0	1,874.2	80.0	291.1	-	373.4	1,336.7	
Guam	0.0	-	-	-	-	-	-	-	-	-	
Hawaii	378.8	378.8	-	-	235.0	143.8	-	-	235.0	143.8	
Idaho	34.7	20.9	13.8	-	34.6	-	13.8	-	-	20.9	
Illinois	6,726.9	3,295.6	3,431.3	92.6	6,424.3	210.0	3,422.0	-	489.2	2,815.7	
Indiana	1,512.0	238.9	1,273.1	-	1,477.6	34.4	699.7	-	239.5	572.9	
Iowa	806.3	242.7	563.6	-	595.1	211.2	598.0	-	85.5	122.9	
Kansas	611.1	419.3	191.8	-	597.4	13.7	432.6	-	42.0	136.5	
Kentucky	821.7	41.8	779.9	4.9	725.2	91.6	319.4	-	175.6	326.7	
Louisiana	664.8	100.0	564.8	-	466.5	198.3	185.2	-	267.1	212.5	
Maine	112.9	10.9	102.0	-	109.1	3.8	112.9	-	-	-	
Maryland	2,269.9	820.9	1,449.0	15.0	2,254.4	0.5	1,633.8	-	70.5	565.7	
Massachusetts	4,481.5	1,346.8	3,134.7	56.3	4,378.0	47.1	1,382.0	-	1,032.3	2,067.2	
Michigan	2,320.7	246.6	2,074.1	-	2,240.7	80.1	218.6	-	1,395.1	707.1	
Minnesota	2,397.0	1,086.7	1,310.3	84.8	2,005.3	306.9	1,490.4	-	195.3	711.4	
Mississippi	410.4	355.3	55.1	13.9	304.0	92.5	355.0	-	30.2	25.3	
Missouri	1,189.0	496.6	692.4	-	1,136.9	52.0	806.5	-	1.1	381.4	
Montana	181.9	30.2	151.7	-	181.9	-	40.7	-	141.3	-	
Nebraska	872.4	389.4	483.0	29.0	768.1	75.4	559.9	1.8	166.9	143.9	
Nevada	569.2	453.9	115.3	-	569.2	-	148.8	-	340.6	79.9	
New Hampshire	431.6	130.5	301.1	-	410.3	21.4	140.2	-	147.0	144.4	
New Jersey	5,760.7	4,664.8	1,095.9	-	5,545.3	215.5	3,646.9	-	1,645.3	468.6	
New Mexico	346.2	233.6	112.6	18.3	308.8	19.1	340.4	-	-	5.7	
New York	7,460.2	1,782.7	5,677.5	493.3	6,468.3	498.6	2,935.4	-	2,002.7	2,522.0	
North Carolina	1,911.9	450.7	1,461.2	96.8	1,810.4	4.7	428.3	-	191.4	1,292.2	
North Dakota	168.1	125.0	43.1	-	166.1	1.9	31.6	-	4.1	132.4	
Ohio	2,297.3	785.6	1,511.7	33.1	2,226.6	37.7	642.1	-	455.2	1,200.1	
Oklahoma	1,147.0	82.7	1,064.3	-	1,095.6	51.4	273.6	-	87.9	785.5	
Oregon	1,218.7	441.9	776.8	-	1,206.4	12.4	264.0	-	321.7	633.0	
Pennsylvania	4,955.3	2,506.6	2,448.7	-	3,995.2	960.1	2,121.4	-	949.8	1,884.1	
Puerto Rico	0.0	-	-	-	-	-	-	-	-	-	
Rhode Island	255.1	255.1	-	-	255.1	-	255.1	-	-	-	
South Carolina	862.8	213.2	649.6	-	852.6	10.1	417.0	-	22.7	423.0	
South Dakota	271.7	32.8	238.9	-	218.0	53.7	64.2	-	126.1	81.4	
Tennessee	1,089.6	336.1	753.5	-	868.8	220.7	278.9	-	505.3	305.4	
Texas	9,310.7	5,374.2	3,936.5	324.9	8,733.8	252.0	4,120.0	-	2,589.3	2,601.5	
Utah	1,095.4	97.0	998.4	-	995.7	99.8	763.1	-	244.4	88.0	
Vermont	102.7	28.7	74.0	-	83.6	19.1	7.0	-	74.0	21.7	
Virgin Islands	34.0	34.0	-	-	34.0	-	34.0	-	-	-	
Virginia	2,228.0	580.1	1,647.9	99.2	1,960.0	168.8	791.9	-	1,086.9	349.1	
Washington	2,045.4	1,018.4	1,027.0	32.1	1,907.4	106.0	950.3	-	628.7	466.4	
West Virginia	301.1	53.4	247.7	-	296.4	4.7	144.4	-	4.3	152.4	
Wisconsin	1,146.0	741.3	404.7	46.2	938.4	161.4	838.7	-	124.3	183.0	
Wyoming	99.0	-	99.0	-	99.0	-	-	-	-	99.0	
ALL	100,336.4	39,992.9	60,343.5	1,879.0	91,193.8	7,263.8	41,826.1	1.8	23,410.1	35,099.5	
QoQ	-7.5%	-3.1%	-10.2%	-18.4%	-7.3%	-7.3%	4.5%	-	0.4%	-22.2%	
YoY	31.1%	51.7%	20.2%	-52.1%	35.2%	40.0%	19.2%	-	43.7%	39.5%	

⁴ Issuance totals do not include private placements.⁵ 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		Zero
					Long	No Put	Short (VRDO)		
Alabama	1,941.7	-	1,931.6	-	10.0	-	-	-	
Alaska	322.2	-	322.2	-	-	-	-	-	
American Samoa	0.0	-	-	-	-	-	-	-	
Arizona	2,906.0	-	2,906.0	-	-	-	-	-	
Arkansas	734.1	-	734.1	-	-	-	-	-	
California	13,908.5	2.0	13,430.0	-	29.7	-	240.3	206.6	
Colorado	2,677.0	-	2,568.3	108.7	-	-	-	-	
Connecticut	1,727.1	-	1,676.3	-	0.8	-	50.0	-	
District of Columbia	589.5	-	589.5	-	-	-	-	-	
Delaware	25.7	-	25.7	-	-	-	-	-	
Florida	2,603.7	-	2,543.7	-	-	-	60.0	-	
Georgia	2,001.2	-	1,989.0	-	12.2	-	-	-	
Guam	0.0	-	-	-	-	-	-	-	
Hawaii	378.8	-	378.8	-	-	-	-	-	
Idaho	34.7	-	34.6	-	-	-	-	-	
Illinois	6,726.9	-	6,201.9	475.0	-	-	50.0	-	
Indiana	1,512.0	-	1,501.1	-	10.9	-	-	-	
Iowa	806.3	-	751.3	-	-	10.0	45.0	-	
Kansas	611.1	-	602.9	-	-	-	8.2	-	
Kentucky	821.7	-	813.1	-	-	-	8.5	-	
Louisiana	664.8	-	664.8	-	-	-	-	-	
Maine	112.9	-	112.9	-	-	-	-	-	
Maryland	2,269.9	-	2,269.9	-	-	-	-	-	
Massachusetts	4,481.5	-	4,383.7	88.5	9.3	-	-	-	
Michigan	2,320.7	-	2,308.8	-	12.0	-	-	-	
Minnesota	2,397.0	-	2,341.8	-	-	-	55.2	-	
Mississippi	410.4	-	399.4	-	-	-	11.0	-	
Missouri	1,189.0	-	1,188.9	-	-	-	-	0.1	
Montana	181.9	-	181.9	-	-	-	-	-	
Nebraska	872.4	-	833.5	-	-	-	39.0	-	
Nevada	569.2	-	569.2	-	-	-	-	-	
New Hampshire	431.6	-	431.7	-	-	-	-	-	
New Jersey	5,760.7	-	5,733.1	-	-	-	27.6	-	
New Mexico	346.2	-	346.1	-	-	-	-	-	
New York	7,460.2	-	6,878.2	269.0	165.3	-	53.7	93.9	
North Carolina	1,911.9	-	1,897.1	-	14.8	-	-	-	
North Dakota	168.1	-	168.1	-	-	-	-	-	
Ohio	2,297.3	-	2,226.7	-	-	-	64.6	6.1	
Oklahoma	1,147.0	-	1,147.0	-	-	-	-	-	
Oregon	1,218.7	-	1,218.8	-	-	-	-	-	
Pennsylvania	4,955.3	-	4,955.3	-	-	-	-	-	
Puerto Rico	0.0	-	-	-	-	-	-	-	
Rhode Island	255.1	-	255.1	-	-	-	-	-	
South Carolina	862.8	-	846.4	-	16.3	-	-	-	
South Dakota	271.7	-	271.7	-	-	-	-	-	
Tennessee	1,089.6	-	1,032.1	-	4.5	-	23.5	29.5	
Texas	9,310.7	-	9,077.3	-	218.5	-	-	14.9	
Utah	1,095.4	-	643.2	452.3	-	-	-	-	
Vermont	102.7	-	102.7	-	-	-	-	-	
Virgin Islands	34.0	-	34.0	-	-	-	-	-	
Virginia	2,228.0	-	2,228.0	-	-	-	-	-	
Washington	2,045.4	-	2,045.4	-	-	-	-	-	
West Virginia	301.1	-	301.1	-	-	-	-	-	
Wisconsin	1,146.0	-	1,146.0	-	-	-	-	-	
Wyoming	99.0	-	99.0	-	-	-	-	-	
ALL	100,336.4	2.0	97,339.0	1,393.5	504.3	10.0	736.6	351.1	
QoQ	-7.5%		-6.6%	999.8%	-47.8%		-69.2%	-55.5%	
YoY	31.1%	-95.3%	32.9%	367.6%	-48.5%		-53.4%	-9.8%	

LONG-TERM MUNICIPAL STATE ISSUANCE, FULL YEAR 2016⁶

State	Total	Bond Type			Tax Type			Funding Type			
		G.O.	Revenue	AMT	Tax-Exempt	Taxable	New Financing	Refinancing	Refunding & New Refinancing	New Refunding	
Alabama	6,030.7	1,300.7	4,730.0	-	5,338.3	692.4	3,228.2	-	1,082.3	1,720.2	
Alaska	1,172.2	727.8	444.4	80.4	1,091.8	-	537.7	-	350.1	284.3	
American Samoa	0.0	-	-	-	-	-	-	-	-	-	
Arizona	7,518.5	2,264.6	5,253.9	-	7,452.0	66.6	1,722.5	-	824.3	4,971.8	
Arkansas	2,231.4	1,037.1	1,194.3	7.8	1,970.6	253.1	568.4	-	337.0	1,326.1	
California	60,993.3	24,463.9	36,529.4	1,110.8	55,552.3	4,330.2	13,776.5	-	20,194.1	27,022.8	
Colorado	7,383.6	2,236.7	5,146.9	4.6	7,124.7	254.3	2,588.7	-	1,954.9	2,840.0	
Connecticut	7,798.8	4,669.2	3,129.6	348.4	7,168.3	282.1	4,419.5	-	1,138.8	2,240.5	
District of Columbia	2,274.6	1,021.4	1,253.2	362.7	1,911.9	-	781.9	-	647.4	845.2	
Delaware	597.7	344.9	252.8	20.2	576.5	0.9	431.9	-	-	165.7	
Florida	17,168.8	2,293.5	14,875.3	406.8	14,378.7	2,383.3	5,373.1	-	2,180.5	9,615.2	
Georgia	7,112.0	3,685.4	3,426.6	99.4	6,635.3	377.3	3,023.1	-	1,654.1	2,434.7	
Guam	418.5	-	418.5	-	418.5	-	143.3	-	236.6	38.6	
Hawaii	2,913.6	2,261.0	652.6	-	2,546.1	367.5	535.0	-	1,647.0	731.6	
Idaho	809.3	191.3	618.0	42.6	681.0	85.8	442.2	-	74.9	292.3	
Illinois	18,564.5	9,441.2	9,123.3	252.2	17,287.3	1,025.0	8,495.8	-	3,150.4	6,918.3	
Indiana	6,946.1	512.7	6,433.4	304.9	6,388.9	252.4	2,649.4	4.0	1,441.7	2,851.1	
Iowa	3,228.3	1,371.2	1,857.1	25.6	2,893.4	309.3	1,539.9	-	192.2	1,496.2	
Kansas	3,557.2	2,518.9	1,038.3	-	3,513.0	44.1	1,346.9	-	692.5	1,517.8	
Kentucky	5,760.7	576.8	5,183.9	129.9	5,319.5	311.4	1,630.9	-	1,573.4	2,556.4	
Louisiana	3,236.9	1,334.2	1,902.7	-	2,847.3	389.6	1,352.2	-	371.1	1,513.7	
Maine	955.0	261.5	693.5	28.0	842.8	84.2	772.8	-	57.9	124.3	
Maryland	6,896.5	3,542.6	3,353.9	337.9	6,014.8	543.8	4,415.9	-	710.5	1,770.1	
Massachusetts	14,605.9	6,573.7	8,032.2	623.5	13,593.3	389.1	5,807.3	-	2,933.6	5,865.0	
Michigan	12,085.0	6,274.0	5,811.0	203.2	10,307.3	1,574.5	3,005.0	-	3,396.7	5,683.4	
Minnesota	9,345.8	5,308.8	4,037.0	147.9	8,654.2	543.7	5,336.0	-	800.8	3,209.0	
Mississippi	1,430.0	515.0	915.0	13.9	1,184.8	231.2	824.4	-	89.1	516.5	
Missouri	5,820.1	1,800.3	4,019.8	6.3	5,029.5	784.3	1,985.1	-	1,202.9	2,632.1	
Montana	669.8	295.6	374.2	-	669.7	-	306.6	-	141.3	221.9	
Nebraska	3,249.2	1,034.0	2,215.2	42.3	3,049.6	156.3	1,418.2	1.8	298.7	1,529.5	
Nevada	3,789.0	2,448.9	1,340.1	138.7	3,593.3	57.1	225.0	-	1,266.0	2,298.0	
New Hampshire	896.8	493.2	403.6	-	875.4	21.4	285.3	-	270.2	341.2	
New Jersey	12,155.2	7,510.4	4,644.8	221.3	11,580.1	350.4	5,847.2	-	2,599.2	3,705.3	
New Mexico	1,869.0	601.2	1,267.8	41.0	1,692.6	135.4	938.5	-	599.5	331.0	
New York	42,426.0	8,740.6	33,685.4	4,237.2	35,287.5	2,901.3	23,646.2	-	6,068.5	12,736.4	
North Carolina	6,611.4	2,207.2	4,404.2	96.8	6,034.7	480.0	1,611.0	-	532.4	4,468.1	
North Dakota	890.5	389.9	500.6	69.5	799.3	21.7	389.5	-	22.7	478.3	
Ohio	10,879.1	4,542.6	6,336.5	131.6	9,660.0	1,087.5	4,526.2	-	1,527.4	4,833.1	
Oklahoma	3,358.0	986.6	2,371.4	-	3,185.9	172.1	2,067.5	-	122.7	1,167.8	
Oregon	4,353.9	1,634.2	2,719.7	26.5	3,810.6	516.8	1,653.5	-	833.5	1,866.9	
Pennsylvania	19,941.3	8,983.6	10,957.7	-	18,682.2	1,259.2	6,874.1	-	4,463.5	8,603.7	
Puerto Rico	0.0	-	-	-	-	-	-	-	-	-	
Rhode Island	1,839.8	664.3	1,175.5	259.8	1,563.3	16.6	702.1	-	43.4	1,094.2	
South Carolina	5,232.5	1,638.5	3,594.0	27.0	4,756.9	448.5	2,192.3	-	563.7	2,476.4	
South Dakota	591.4	216.6	374.8	-	491.6	99.8	216.2	-	131.9	243.3	
Tennessee	4,696.8	2,086.4	2,610.4	48.7	3,810.8	837.4	2,389.6	-	740.3	1,567.0	
Texas	50,823.7	30,406.0	20,417.7	1,022.2	47,409.4	2,384.0	18,170.8	-	12,623.1	20,021.8	
Utah	3,013.7	558.9	2,454.8	-	2,880.2	133.5	1,860.1	-	563.3	590.3	
Vermont	684.2	114.0	570.2	52.7	612.4	19.1	408.0	-	168.3	107.9	
Virgin Islands	34.0	34.0	-	-	34.0	-	34.0	-	-	-	
Virginia	8,354.5	2,351.4	6,003.1	246.7	7,679.6	428.3	2,147.1	-	4,204.4	2,003.1	
Washington	10,345.6	6,085.6	4,260.0	290.5	9,709.4	345.8	3,467.7	-	2,849.0	4,029.0	
West Virginia	844.7	65.2	779.5	76.3	752.9	15.5	241.6	-	30.8	572.4	
Wisconsin	9,349.9	4,928.2	4,421.7	594.5	7,703.7	1,051.7	4,180.7	-	1,833.9	3,335.3	
Wyoming	184.5	-	184.5	49.5	135.0	-	36.1	-	-	148.4	
g ALL	423,939.5	175,545.5	248,394.0	12,229.8	383,182.2	28,515.5	162,568.7	5.8	91,432.5	169,953.2	

⁶ Issuance totals do not include private placements.

State	Total	Coupon Type						
		Convertible	Fixed Rate	Linked Rate	Variable Rate		Variable Rate	
					Long	No Put	Short (VRDO)	Zero
Alabama	6,030.7	-	5,481.2	-	532.9	-	16.6	-
Alaska	1,172.2	-	1,172.2	-	-	-	-	-
American Samoa	0.0	-	-	-	-	-	-	-
Arizona	7,518.5	-	7,493.6	-	25.0	-	-	-
Arkansas	2,231.4	-	2,231.5	-	-	-	-	-
California	60,993.3	9.4	58,864.8	100.0	1,099.7	-	436.3	483.2
Colorado	7,383.6	-	7,021.8	108.7	-	-	253.1	-
Connecticut	7,798.8	-	6,906.1	-	400.1	-	492.6	-
District of Columbia	2,274.6	-	2,222.6	-	25.0	-	27.0	-
Delaware	597.7	-	597.6	-	-	-	-	-
Florida	17,168.8	3.9	16,832.2	-	55.3	-	185.0	92.3
Georgia	7,112.0	-	7,031.0	-	49.2	-	31.8	-
Guam	418.5	-	418.5	-	-	-	-	-
Hawaii	2,913.6	-	2,913.6	-	-	-	-	-
Idaho	809.3	-	757.4	-	-	-	51.9	-
Illinois	18,564.5	-	17,982.9	508.0	10.3	-	59.7	3.7
Indiana	6,946.1	-	6,714.7	-	129.4	-	100.0	2.0
Iowa	3,228.3	-	3,119.9	-	-	10.0	98.4	-
Kansas	3,557.2	-	3,549.0	-	-	-	8.2	-
Kentucky	5,760.7	-	5,531.3	-	-	-	229.5	-
Louisiana	3,236.9	-	3,168.4	31.8	36.8	-	-	-
Maine	955.0	-	927.0	-	-	-	28.0	-
Maryland	6,896.5	-	6,896.6	-	-	-	-	-
Massachusetts	14,605.9	-	14,241.3	88.5	37.3	-	21.2	217.7
Michigan	12,085.0	-	11,764.2	26.7	77.6	-	216.5	-
Minnesota	9,345.8	-	9,155.8	-	-	-	137.2	52.8
Mississippi	1,430.0	-	1,418.9	-	-	-	11.0	-
Missouri	5,820.1	-	5,781.3	-	-	-	17.8	20.9
Montana	669.8	-	669.7	-	-	-	-	-
Nebraska	3,249.2	-	3,179.2	-	-	-	69.0	-
Nevada	3,789.0	-	3,570.1	-	138.9	-	80.0	-
New Hampshire	896.8	-	896.7	-	-	-	-	-
New Jersey	12,155.2	-	12,096.7	-	50.1	-	-	5.0
New Mexico	1,869.0	-	1,723.0	-	146.0	-	-	-
New York	42,426.0	-	39,392.3	269.0	453.9	-	1,907.7	428.2
North Carolina	6,611.4	-	6,555.7	-	14.8	-	41.0	-
North Dakota	890.5	-	890.5	-	-	-	-	-
Ohio	10,879.1	-	10,297.8	-	48.5	-	520.6	19.8
Oklahoma	3,358.0	-	3,316.7	-	19.3	-	22.0	-
Oregon	4,353.9	-	4,304.7	-	-	-	28.1	21.0
Pennsylvania	19,941.3	-	19,166.7	140.6	232.2	-	390.2	11.6
Puerto Rico	0.0	-	-	-	-	-	-	-
Rhode Island	1,839.8	-	1,826.5	-	13.2	-	-	-
South Carolina	5,232.5	-	5,061.0	-	40.9	-	130.5	-
South Dakota	591.4	-	591.4	-	-	-	-	-
Tennessee	4,696.8	-	4,388.0	100.0	25.9	-	153.5	29.5
Texas	50,823.7	-	49,055.1	-	839.9	-	847.2	73.4
Utah	3,013.7	-	2,342.5	452.3	-	-	200.0	18.9
Vermont	684.2	-	684.1	-	-	-	-	-
Virgin Islands	34.0	-	34.0	-	-	-	-	-
Virginia	8,354.5	-	8,007.2	-	-	-	347.4	-
Washington	10,345.6	-	10,330.8	-	-	-	14.9	-
West Virginia	844.7	-	844.7	-	-	-	-	-
Wisconsin	9,349.9	-	9,129.1	-	70.6	-	72.4	77.8
Wyoming	184.5	-	184.5	-	-	-	-	-
ALL	423,939.5	13.3	408,734.1	1,825.6	4,572.8	10.0	7,246.3	1,557.8

LONG-TERM MUNICIPAL ISSUANCE BY GENERAL USE OF PROCEEDS

\$ Millions

Use of Proceeds	4Q'15	3Q'16	4Q'16	Q-o-Q	Y-o-Y	2016
Agriculture		2.0		-100.0%		2.0
Airports	4,119.4	2,746.3	3,891.1	41.7%	-5.5%	12,447.2
Assisted Living	48.5	145.4	151.8	4.4%	213.0%	378.2
Bridges	1,350.7	249.5	20.7	-91.7%	-98.5%	2,065.0
Childrens hospital		217.1	181.0	-16.6%		875.1
Churches Temples and Mosques			4.3			4.3
Civic & convention centers	1,128.7	1,021.7	322.7	-68.4%	-71.4%	1,938.5
Combined utilities	491.5	270.2	905.1	235.0%	84.2%	2,064.0
Cont Care Retirement Community	721.1	1,342.6	2,365.0	76.2%	228.0%	5,202.2
Correctional facilities	457.9	329.0	416.9	26.7%	-9.0%	1,080.3
Economic development	2,253.2	2,381.8	2,356.4	-1.1%	4.6%	9,848.1
Fire stations & equipment	105.7	77.3	95.3	23.3%	-9.8%	425.4
Flood control	253.1	74.3	312.5	320.6%	23.5%	605.4
Gas	27.1	408.0	10.3	-97.5%	-62.0%	1,619.6
General acute care hospital	3,435.0	10,044.3	8,916.0	-11.2%	159.6%	35,249.5
General Medical		46.9		-100.0%		481.9
General purpose /public improvement	15,596.4	28,905.9	22,677.9	-21.5%	45.4%	103,682.9
Government buildings	469.6	402.2	120.0	-70.2%	-74.4%	1,127.1
Higher education	3,892.1	10,250.1	8,824.4	-13.9%	126.7%	41,349.2
Hospital equipment loans	9.5				-100.0%	
Industrial development	328.5	149.9	85.1	-43.2%	-74.1%	698.0
Libraries & museums	479.7	624.5	162.6	-74.0%	-66.1%	1,090.0
Mass transportation	2,666.8	4,330.4	3,050.9	-29.5%	14.4%	14,775.1
Multi family housing	1,867.3	1,460.1	1,901.6	30.2%	1.8%	5,719.7
Nursing homes	53.9	36.5	25.1	-31.2%	-53.4%	110.2
Office buildings	3.1				-100.0%	142.6
Other education	70.2	82.6	21.4	-74.1%	-69.5%	548.7
Other recreation	59.8	110.3	393.4	256.7%	557.9%	837.8
Parking facilities	132.8	187.1	75.6	-59.6%	-43.1%	463.5
Parks, Zoos & Beaches	349.6	259.2	300.8	16.0%	-14.0%	890.5
Police stations & equipment	5.0	83.7		-100.0%	-100.0%	222.1
Pollution control	276.6	673.2	120.0	-82.2%	-56.6%	1,819.5
Primary & secondary education	14,772.0	16,810.8	18,989.4	13.0%	28.5%	81,883.0
Public power	3,702.2	3,985.7	2,609.3	-34.5%	-29.5%	13,956.6
Sanitation	203.5	135.1	447.7	231.4%	120.0%	874.0
Seaports / marine terminals	297.4	644.3	720.4	11.8%	142.2%	1,550.0
Single family housing	2,460.5	3,212.3	2,298.7	-28.4%	-6.6%	10,547.4
Single speciality hospital	389.3	134.4	51.9	-61.4%	-86.7%	649.6
Solid waste	152.3	79.5	330.2	315.3%	116.8%	510.2
Stadiums & sports complexes	205.2	927.0	11.3	-98.8%	-94.5%	1,594.3
Student loans	76.0		799.1		951.4%	1,427.0
Telecommunications	2.9	77.0	110.9	44.0%	3724.1%	249.8
Theatres	0.8	96.4	189.1	96.2%	23537.5%	375.6
Toll roads, highways & streets	5,061.1	4,465.9	5,035.3	12.7%	-0.5%	18,161.7
Tunnels			321.5			321.5
Veterans (excloding housing)			39.8			39.8
Water & sewer facilities	8,565.2	10,984.8	10,673.7	-2.8%	24.6%	44,055.4
ALL	76,541.2	108,465.3	100,336.2	-7.5%	31.1%	423,959.5

NUMBER OF ISSUERS CURRENTLY OUTSTANDING⁷

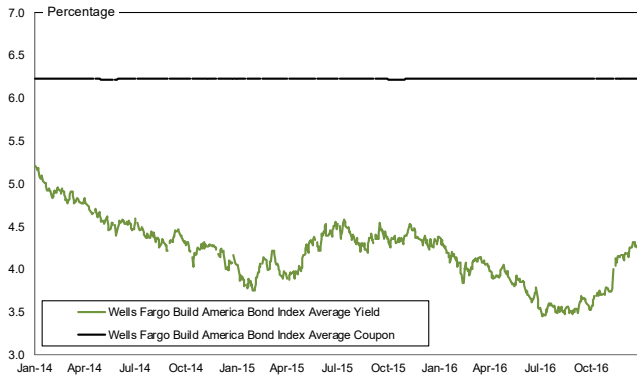
By Issuer Type (12/31/2016)

State	2Q'16	4Q'16	City, Town or Village	College or University	Co-op Utility	County /			District	Indian Tribe	Local Authority	State Authority	State / Province
						Parish	Direct	Issuer					
AK Alaska	27	26	13	1				2			1	7	2
AL Alabama	750	759	214	13		66	3	127			317	17	2
AR Arkansas	586	589	165	9		30	2	323			51	3	6
AS American Samoa	1	1										1	
AZ Arizona	339	331	54	6		8	6	182	4		58	10	3
CA California	2,455	2,434	370	6		40	8	1,156	3		815	28	8
CO Colorado	760	770	121	12		26	6	532	1		56	7	9
CT Connecticut	200	196	141	2	2		1	19	3		19	6	3
DC District of Columbia	13	13		1			2	1			5	3	1
DE Delaware	28	28	11	1		3	5				1	6	1
FL Florida	939	928	170	17		92	4	452	1		160	24	8
GA Georgia	533	526	71	1	1	48	1	111			281	6	6
GU Guam	8	8									1	6	1
HI Hawaii	22	22	2	1		3		1			3	4	8
IA Iowa	825	827	432	19	1	74	4	264			25	6	2
ID Idaho	132	128	18	3		4		81			13	4	5
IL Illinois	1,745	1,695	474	13	1	50	3	1,026			117	8	3
IN Indiana	1,261	1,224	297	7	1	42	7	454			402	14	
KS Kansas	671	661	261	15		61	1	244			73	4	2
KY Kentucky	512	509	80	8	1	74	3	215			111	16	1
LA Louisiana	345	351	54	4		27	2	210			40	12	2
MA Massachusetts	427	427	284	3	2	3	2	92			23	15	3
MD Maryland	79	79	26	5		23		4			13	6	2
ME Maine	85	85	50	1		5		14			7	7	1
MI Michigan	1,339	1,323	383	28		61	16	589			229	13	4
MN Minnesota	1,141	1,132	569	1	1	78	4	325	1		137	14	2
MO Missouri	1,126	1,111	332	11		54	6	623			75	9	1
MP Mariana Islands	3	2									1		1
MS Mississippi	311	309	106	3		59	1	111			25	3	1
MT Montana	199	197	27	1		12		143			7	6	1
NC North Carolina	255	252	85	19		73	1	6			58	9	1
ND North Dakota	270	280	120	3	1	19	2	119			9	7	
NE Nebraska	1,049	1,041	314	7	1	64	8	545			97	4	1
NH New Hampshire	62	59	25	1		7		15			3	7	1
NJ New Jersey	1,018	1,012	443	2		20		402			125	19	1
NM New Mexico	170	168	35	8		19	1	88			8	7	2
NV Nevada	54	54	10	2		7		22			8	2	3
NY New York	1,699	1,700	595	6		53	14	809	1		189	29	2
OH Ohio	1,118	1,100	352	18	1	89	9	551			64	14	2
OK Oklahoma	669	661	30	9		6	3	420	2		177	13	1
OR Oregon	406	402	125	6		18	2	208	3		28	8	4
OT Other Territories	5	5					5						
PA Pennsylvania	1,188	1,176	300	2		51	1	463			347	11	1
PR Puerto Rico	21	21	2	1				1				16	1
RI Rhode Island	61	60	35					3			11	10	1
SC South Carolina	260	258	54	4	1	38	3	93			40	24	1
SD South Dakota	181	179	51	1		13	1	103	2		1	6	1
TN Tennessee	372	377	131			78	3	77			84	3	1
TX Texas	2,756	2,791	575	16	1	125	15	1,699			338	21	1
UT Utah	213	209	84	5		15		65			32	7	1
VA Virginia	235	230	43	4		26	3	4			136	13	1
VI Virgin Islands	6	6										6	
VT Vermont	15	14	3	2				2				6	1
WA Washington	702	675	210	6		33	12	352	2		53	6	1
WI Wisconsin	1,089	1,088	556	3		66	1	372	3		79	5	3
WV West Virginia	115	114	29	7		22		28			18	9	1
WY Wyoming	51	51	8	4		10		14			9	6	
TOTAL	30,902	30,674	8,940	328	15	1,795	173	13,760	26		4,980	533	122

⁷ Source: Bloomberg, Thomson Reuters. Separate revenue streams are counted as separate issuers. Figures do not include tender option bond (TOB) or fund issuers.

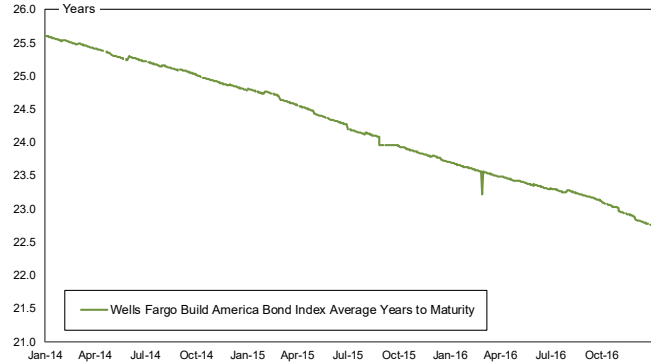
BUILD AMERICA BONDS

Build America Bonds Average Yield and Coupon
Jan. 2014 - Dec. 2016



Source: Wells Fargo

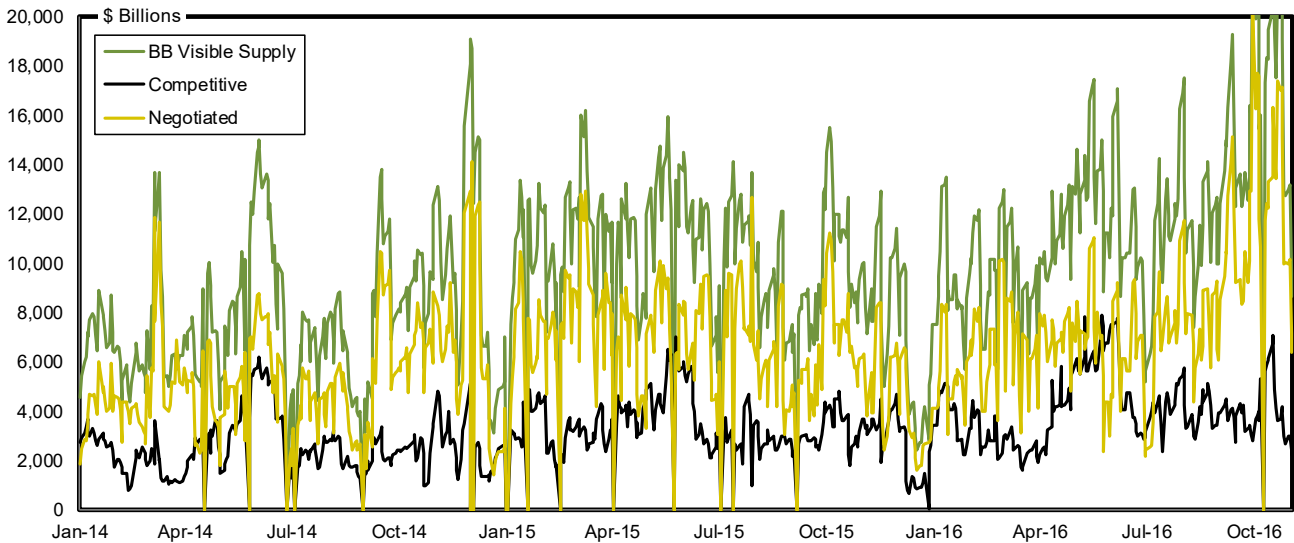
Build America Bond Average Years to Maturity
Jan. 2013 - Dec. 2016



Source: Wells Fargo

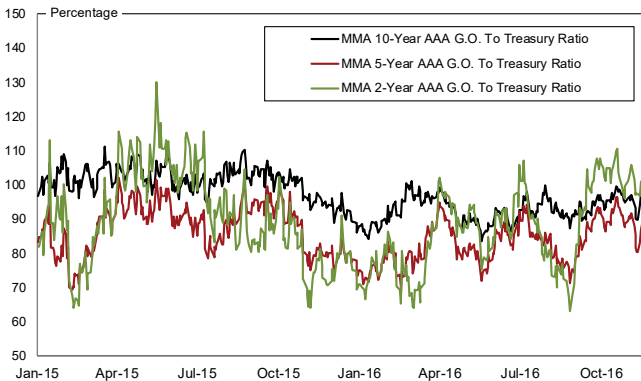
SUPPLY, YIELD CURVES, TOTAL RETURN, SPREADS & RATIOS

Bond Buyer 30-Day Visible Supply
Jan. 1, 2014 - Dec. 31, 2016



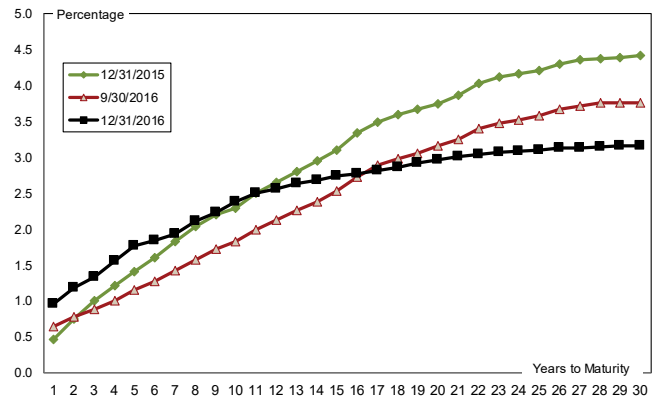
Source: Bond Buyer, Bloomberg

2-, 5-, and 10-Year AAA G.O. to Treasury Ratios
Jan. 2015 - Dec. 2016

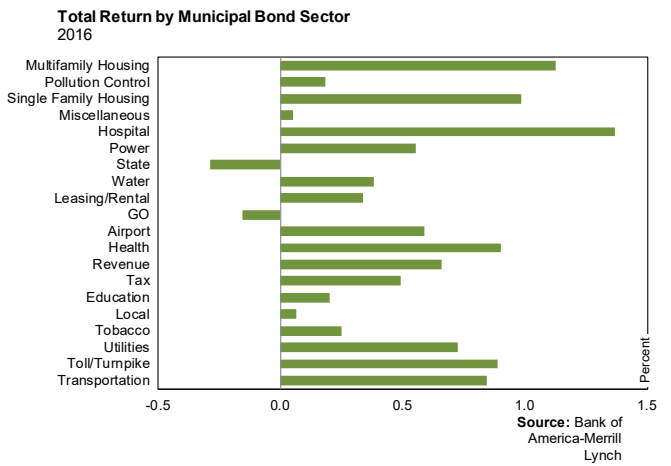
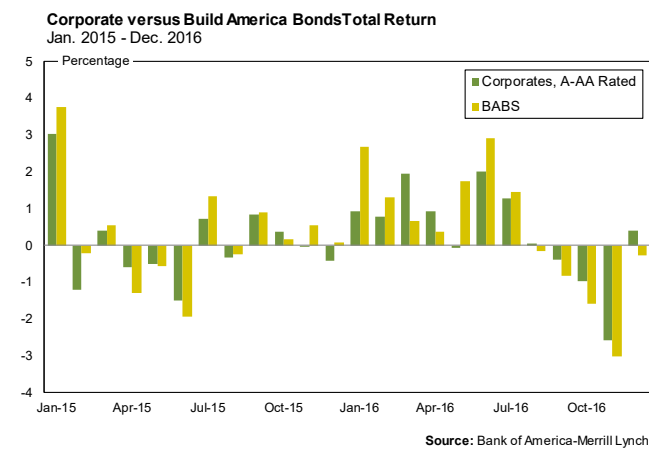
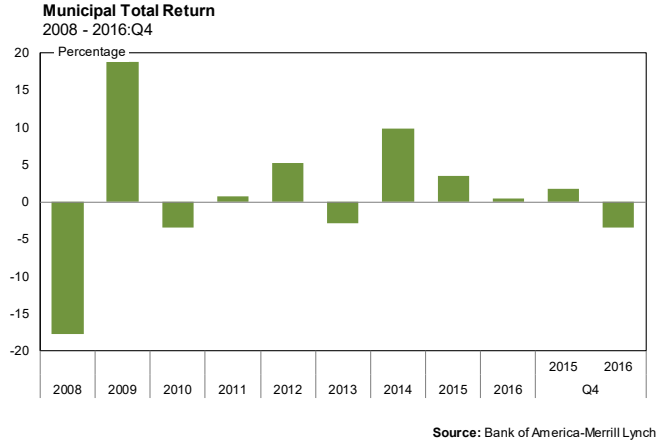
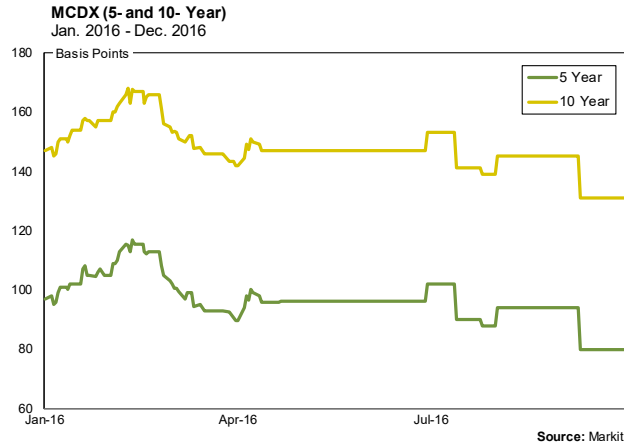


Source: Bloomberg

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:Q3	862,369	442,434	832,773	2,137,576	365,896	244,033	138,291	\$748,220	
2016:Q4	1,066,487	529,940	994,448	2,590,875	368,200	250,395	146,880	\$765,475	
%Change	24%	20%	19%	21%	1%	3%	6%	2%	

# 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	
2016:Q3	80%	13%	3%	4%	2,137,576	8%	10%	8%	77%	\$748,220	
2016:Q4	81%	13%	2%	4%	2,590,875	9%	11%	6%	74%	\$765,475	

Trades by Sector								
	Education	Health	Utility	Various Purpose	Transportation	Tax-Revenue	Other	Total (Millions)
2016:Q3	17%	12%	13%	11%	8%	9%	30%	\$748,220
2016:Q4	18%	13%	13%	10%	9%	9%	28%	\$765,475

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:Q3	5%	9%	13%	38%	35%	\$748,220
2016:Q4	4%	9%	15%	38%	33%	\$765,475

Trades by Source of Repayment					
	Revenue	General Obligation	Double Barrel	Not Available	Total (Millions)
2016:Q3	72%	26%	2%	0%	\$748,220
2016:Q4	72%	26%	2%	0%	\$765,475

Trades by Coupon Type					
	Fixed Rate	Variable Rate	Zero Coupon	Not Available	Total (Millions)
2016:Q3	52%	45%	4%	0%	\$748,220
2016:Q4	61%	36%	3%	0%	\$765,475

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
2015	3,818,304	1,909,214	3,495,262	9,222,780	1,020,580	582,145	568,359	\$2,171,084
2016	3,767,995	1,904,043	3,642,898	9,314,936	1,324,240	855,600	606,890	\$2,786,730
%Change	-1%	0%	4%	1%	30%	47%	7%	28%

# 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	
2015	82%	13%	2%	3%	9,222,780	11%	13%	8%	67%	\$2,171,084	
2016	80%	13%	3%	4%	9,314,936	9%	11%	7%	73%	\$2,786,730	

Trades by Sector								
	Education	Health	Utility	Various Purpose	Transportation	Tax-Revenue	Other	Total (Millions)
2015	20%	8%	13%	12%	9%	11%	27%	\$2,171,084
2016	19%	11%	13%	11%	8%	9%	29%	\$2,786,730

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)
2015	5%	12%	16%	33%	34%	\$2,171,084
2016	5%	10%	15%	37%	34%	\$2,786,730

Trades by Source of Repayment					
	Revenue	General Obligation	Double Barrel	Not Available	Total (Millions)
2015	66%	30%	3%	0%	\$2,171,084
2016	70%	28%	2%	0%	\$2,786,730

Trades by Coupon Type					
	Fixed Rate	Variable Rate	Zero Coupon	Not Available	Total (Millions)
2015	73%	23%	4%	0%	\$2,171,084
2016	61%	35%	4%	0%	\$2,786,730

Source: MSRB EMMA

MUNICIPAL CDS

Market Risk Activity of Single-Name Municipal CDS (\$ millions) ⁸

State	California	Connecticut	Florida	Illinois	Michigan	Nevada	New Jersey	New York	Ohio	South Carolina	Texas	New York City	Massachusetts	TOTAL	Average Contract Size
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	0.1	23.3	115.7	3.4		30.8	34.5	150.2	18.0	221.8	37.5	13.5	609.3	15.2
Jun-16		24.0		40.0	2.5	18.4		5.0		10.0				99.9	3.2
Jul-16			30.0		5.0	20.0		3.0			25.0			83.0	4.2
Aug-16				30.0								3.4		33.4	4.8
Sep-16	0.1	10.0		3.0				25.0						38.1	2.9
Oct-16														0.0	7.5
Nov-16														0.0	
Dec-16	50.0		50.0	5.0										105.0	15.0
4Q'16	50.0	0.0	50.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	105.0	7.3
Q-o-Q	49900.0%	-100.0%	66.7%	-84.8%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-32.0%	
Y-o-Y	92.3%	-100.0%	-8.5%	-94.1%	-100.0%		-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-65.7%	

Source: DTCC

CDS Yield Curves for Single Name States and New York City (bps) as of December 31, 2016

	6M	1Y	2Y	3Y	4Y	5Y	7Y	10Y
CA California	21.7	16.9	32.2	47.6	55.9	64.0	93.2	112.1
CT Connecticut	23.7	26.6	54.4	73.1	89.5	100.2	113.2	153.0
DE Delaware	19.4	21.0	31.3	35.7	33.5	33.2	41.2	60.8
FL Florida	14.6	15.8	35.3	50.0	45.1	43.3	48	88.2
IL Illinois	139.1	150.6	208.3	292.4	360.6	378.3	433.0	471.5
MA Massachusetts	18.0	19.0	29.5	51.7	50.1	51.9	58.3	98.3
MD Maryland	12.9	16.9	30.5	40.7	39.3	39.4	49.6	80.9
MI Michigan	9.9	10.2	25.5	39.2	49.4	55.5	80.2	97.9
MN Minnesota	11.3	12.4	21.1	29.1	31.1	35.7	48.9	64.2
NC North Carolina	19.5	20.2	24.9	32.1	33.1	34.7	37.9	66.9
NJ New Jersey	54.3	54.2	100.6	150.3	185.2	191.7	206.3	257.3
NV Nevada	20.5	21.2	28.6	35.8	39.1	41.4	54.0	89.0
NY New York	17.8	21.0	34.4	40.7	45.2	49.0	63.2	91.9
OH Ohio	17.3	19.7	26.4	35.6	41.0	46.8	59.7	95.3
PA Pennsylvania	33.2	37.3	50.5	82.0	96.5	102.5	113.3	167.2
RI Rhode Island	10.8	18.1	32.0	47.8	45.5	46.2	60.9	99.4
SC South Carolina	5.8	6.1	12.0	18.4	29.1	34.1	50.5	68.9
TX Texas	15.6	17.5	23.5	33.2	44.0	50.4	72.7	89.2
UT Utah	15.5	11.9	26.0	37.4	42.3	49.5	73.4	90.0
VA Virginia	15.4	20.2	25.4	31.9	32.9	33.6	37.9	53.6
WA Washington	5.8	7.5	14.7	24.9	37.0	48.7	63.9	77.5
WI Wisconsin	22.0	21.7	26.6	33.0	40.8	48.2	58.5	72.1
NYC New York City	25.5	30.2	49.2	58.2	64.7	70.1	87.5	120.4

⁸ "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 Type⁹

\$ Millions

State	Total Outstanding	G.O.	Revenue	Due in 13 Months	Long-Term	2016:Q3 Total Outstandin	% Change
AK Alaska	9,812.9	2,538.9	7,274.0	543.8	9,269.1	9,938.9	-1.3%
AL Alabama	32,685.9	6,334.0	26,351.9	1,131.9	31,554.0	32,347.3	1.0%
AR Arkansas	13,564.1	6,208.3	7,355.8	653.5	12,910.6	13,552.1	0.1%
AS American Samoa	78.1		78.1		78.1	78.1	0.0%
AZ Arizona	48,025.2	9,715.4	38,309.9	2,477.9	45,547.3	48,501.4	-1.0%
CA California	514,309.0	198,382.5	315,926.5	21,005.2	493,303.8	515,909.8	-0.3%
CO Colorado	53,580.5	12,082.5	41,498.0	2,891.2	50,689.3	53,535.1	0.1%
CT Connecticut	48,078.2	26,271.5	21,806.6	3,613.5	44,464.7	48,023.8	0.1%
DC District of Columbia	29,426.4	3,886.6	25,539.8	948.5	28,477.9	29,320.5	0.4%
DE Delaware	6,705.4	2,493.7	4,211.6	358.6	6,346.7	6,783.4	-1.2%
FL Florida	132,946.4	15,734.2	117,212.1	6,557.3	126,389.0	134,217.2	-0.9%
GA Georgia	64,145.2	15,075.3	49,069.9	3,613.7	60,531.5	65,639.3	-2.3%
GU Guam	2,624.6	15.2	2,609.3	40.3	2,584.3	2,644.3	-0.7%
HI Hawaii	16,547.0	10,227.9	6,319.1	970.3	15,576.7	17,149.2	-3.5%
IA Iowa	19,774.8	6,170.8	13,604.0	1,120.2	18,654.6	19,260.1	2.7%
ID Idaho	6,158.7	1,803.6	4,355.1	721.0	5,437.8	6,267.5	-1.7%
IL Illinois	151,930.7	77,208.6	74,722.1	8,121.1	143,809.6	153,689.9	-1.1%
IN Indiana	45,180.4	1,141.8	44,038.6	3,188.0	41,992.4	46,389.6	-2.6%
KS Kansas	23,123.5	10,367.9	12,755.6	1,508.3	21,615.2	23,278.8	-0.7%
KY Kentucky	32,637.4	1,820.2	30,817.2	2,464.7	30,172.7	33,108.5	-1.4%
LA Louisiana	33,233.0	7,101.9	26,131.1	1,424.1	31,808.9	33,381.9	-0.4%
MA Massachusetts	93,148.6	36,616.4	56,532.2	6,652.9	86,495.7	92,703.0	0.5%
MD Maryland	51,360.1	25,862.4	25,497.7	3,131.0	48,229.1	50,516.7	1.7%
ME Maine	7,423.1	1,809.1	5,614.1	486.7	6,936.4	7,960.3	-6.7%
MI Michigan	73,734.4	24,675.4	49,059.0	3,272.6	70,461.8	75,640.1	-2.5%
MN Minnesota	49,963.6	26,126.5	23,837.1	4,283.4	45,680.2	49,765.8	0.4%
MO Missouri	45,725.7	9,283.6	36,442.2	2,034.6	43,691.1	45,599.4	0.3%
MS Mississippi	16,021.0	6,177.9	9,843.0	983.2	15,037.8	16,090.4	-0.4%
MT Montana	3,782.1	1,349.4	2,432.8	245.5	3,536.7	3,861.6	-2.1%
NC North Carolina	46,678.7	11,504.8	35,174.0	2,715.9	43,962.8	47,596.1	-1.9%
ND North Dakota	5,073.1	1,954.8	3,118.4	313.9	4,759.2	5,125.1	-1.0%
NE Nebraska	18,255.4	5,589.1	12,666.3	1,128.0	17,127.5	18,219.2	0.2%
NH New Hampshire	7,416.1	2,200.7	5,215.4	407.0	7,009.1	7,649.2	-3.0%
NJ New Jersey	115,142.0	23,385.3	91,756.6	11,042.1	104,099.8	113,066.1	1.8%
NM New Mexico	13,269.8	3,341.1	9,928.8	996.8	12,273.1	13,069.9	1.5%
NV Nevada	23,817.3	12,512.0	11,305.4	1,455.5	22,361.9	24,343.3	-2.2%
NY New York	371,465.0	72,929.8	298,535.1	21,304.1	350,160.9	373,362.4	-0.5%
OH Ohio	100,707.6	28,209.0	72,498.7	5,289.1	95,418.6	103,397.4	-2.6%
OK Oklahoma	18,556.6	3,820.8	14,735.8	1,587.6	16,969.0	18,894.3	-1.8%
OR Oregon	34,881.4	19,687.2	15,194.2	2,206.8	32,674.6	34,564.2	0.9%
OT Other Territories	9,998.5	50.0	9,948.5	252.8	9,745.7	10,792.2	-7.4%
PA Pennsylvania	118,979.6	43,462.1	75,517.4	6,166.4	112,813.1	119,252.8	-0.2%
PR Puerto Rico	99,791.0	12,378.8	87,412.2	2,607.0	97,183.9	99,861.1	-0.1%
RI Rhode Island	10,510.1	1,656.8	8,853.3	434.7	10,075.4	10,726.3	-2.0%
SC South Carolina	36,151.2	8,791.9	27,359.4	2,407.2	33,744.0	41,985.1	-13.9%
SD South Dakota	4,776.8	968.1	3,808.7	213.1	4,563.6	4,687.5	1.9%
TN Tennessee	36,712.6	14,540.4	22,172.2	2,293.5	34,419.1	36,962.5	-0.7%
TT Trust Territories	117.2	79.0	38.2	0.8	116.4	117.2	0.0%
TX Texas	318,567.9	161,371.5	157,196.4	12,742.0	305,825.8	315,620.1	0.9%
UT Utah	20,240.7	5,720.6	14,520.2	1,132.4	19,108.4	19,606.6	3.2%
VA Virginia	57,627.8	12,254.5	45,373.3	3,213.8	54,414.0	57,184.8	0.8%
VI Virgin Islands	2,292.5		2,292.5	75.4	2,217.1	2,276.5	0.7%
VT Vermont	4,215.9	677.8	3,538.0	142.2	4,073.7	4,604.7	-8.4%
WA Washington	79,310.9	38,962.5	40,348.4	4,257.7	75,053.2	80,606.1	-1.6%
WI Wisconsin	45,500.9	22,334.0	23,166.9	3,457.2	42,043.7	45,005.6	1.1%
WV West Virginia	10,154.8	708.5	9,446.3	350.9	9,803.9	10,036.8	1.2%
WY Wyoming	2,279.7	140.1	2,139.5	151.1	2,128.6	2,527.4	-9.8%
TOTAL (12/31/2016)	3,238,216.8	1,055,712.7	2,182,504.2	172,787.5	3,065,429.3	3,256,294.4	-0.6%
TOTAL (9/30/2016)	3,256,294.4	1,054,191.5	2,202,102.8	303,071.1	2,953,223.2		
% Change	-0.6%	0.1%	-0.9%	-43.0%	3.8%		

⁹ 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, Industry¹⁰

\$ Millions

State	Total Outstanding	Tax-Exempt	AMT	Taxable	Fixed	Zero	FRN	Other	Industry	Total Outstanding
AK Alaska	9,812.9	8,264.1	415.6	1,133.2	7,530.2	162.6	394.7	1,725.3	Airport	88,518.9
AL Alabama	32,685.9	25,032.5	902.1	6,751.3	25,085.1	998.4	303.9	6,298.5	Development	100,461.6
AR Arkansas	13,564.1	8,816.7	307.2	4,440.1	12,351.6	251.3	528.2	433.0	Education	686,151.7
AS American Samoa	78.1	44.2		33.9	78.1			-	GO	649,585.6
AZ Arizona	48,025.2	42,182.1	969.3	4,873.8	42,535.4	30.0	625.0	4,834.8	Healthcare	249,832.5
CA California	514,309.0	410,311.3	17,602.4	86,395.3	380,504.1	62,161.6	9,728.8	61,914.4	Housing	127,510.3
CO Colorado	53,580.5	40,260.4	2,566.7	10,753.4	43,775.5	3,291.8	1,046.8	5,466.3	Other	664,306.4
CT Connecticut	48,078.2	37,413.5	1,212.7	9,452.0	40,551.4	457.2	2,074.6	4,995.0	Public Facilities	12,993.8
DC District of Columbia	29,426.4	22,631.2	3,467.0	3,328.3	19,730.5	5,596.6	107.6	3,991.8	Student Loan	27,478.7
DE Delaware	6,705.4	5,009.6	286.9	1,408.8	5,350.0	2.3		1,353.0	Transportation	212,428.7
FL Florida	132,946.4	108,097.5	10,413.9	14,435.0	112,061.8	2,882.4	2,749.5	15,252.7	Utilities	418,948.6
GA Georgia	64,145.2	49,826.7	3,077.8	11,240.7	51,051.7	72.5	1,657.2	11,363.8	TOTAL	3,238,216.8
GU Guam	2,624.6	2,409.4	180.7	34.4	2,509.1	115.5		-		
HI Hawaii	16,547.0	12,825.8	1,112.3	2,608.9	16,095.9	19.5	114.7	316.9		
IA Iowa	19,774.8	12,553.8	497.8	6,723.2	17,105.4	551.8	542.5	1,575.1		
ID Idaho	6,158.7	4,806.3	290.8	1,061.7	5,193.8	103.4	434.4	427.1		
IL Illinois	151,930.7	101,285.3	4,994.6	45,650.8	123,878.3	14,168.3	1,662.2	12,221.9		
IN Indiana	45,180.4	32,305.8	3,882.2	8,992.4	35,778.8	965.2	1,020.2	7,416.2		
KS Kansas	23,123.5	15,490.7	344.8	7,288.0	21,801.2	274.7	142.5	905.0		
KY Kentucky	32,637.4	22,370.6	1,386.3	8,880.4	27,357.7	398.5	1,760.8	3,120.4		
LA Louisiana	33,233.0	25,677.8	1,779.2	5,776.0	27,271.3	164.9	1,656.4	4,140.5		
MA Massachusetts	93,148.6	77,589.2	3,478.1	12,081.3	78,747.0	1,000.8	2,668.3	10,732.5		
MD Maryland	51,360.1	42,805.2	1,851.0	6,703.8	45,335.7	121.1	419.1	5,484.2		
ME Maine	7,423.1	5,502.6	461.6	1,459.0	6,770.3		15.0	637.8		
MI Michigan	73,734.4	54,550.2	2,607.2	16,577.0	55,267.3	6,851.9	2,377.2	9,237.9		
MN Minnesota	49,963.6	36,115.1	1,427.1	12,421.4	43,759.8	858.9	740.8	4,604.0		
MO Missouri	45,725.7	29,781.1	927.4	15,017.2	34,750.0	808.0	3,817.5	6,350.1		
MS Mississippi	16,021.0	10,833.3	255.6	4,932.1	11,746.2	3.0	243.2	4,028.6		
MT Montana	3,782.1	2,120.0	198.0	1,464.1	2,695.7	10.2	370.4	705.8		
NC North Carolina	46,678.7	38,697.4	1,213.8	6,767.6	37,859.3	249.6	2,084.6	6,485.2		
ND North Dakota	5,073.1	3,512.4	190.7	1,370.1	4,787.2		87.7	198.3		
NE Nebraska	18,255.4	12,907.7	398.6	4,949.1	16,604.4	-	253.2	1,397.9		
NH New Hampshire	7,416.1	4,850.5	497.5	2,068.1	5,550.1	68.8	762.2	1,035.0		
NJ New Jersey	115,142.0	87,129.6	6,204.6	21,807.8	92,359.7	13,457.2	1,975.5	7,349.6		
NM New Mexico	13,269.8	10,857.2	386.8	2,025.9	10,915.6	8.6	1,148.3	1,197.4		
NV Nevada	23,817.3	19,244.3	1,649.3	2,923.8	19,325.9	983.0	125.7	3,382.8		
NY New York	371,465.0	297,090.8	19,945.2	54,429.0	301,512.1	14,300.4	4,866.0	50,786.4		
OH Ohio	100,707.6	73,072.1	2,325.3	25,310.2	75,816.2	8,446.8	578.1	15,866.5		
OK Oklahoma	18,556.6	13,586.0	900.6	4,070.0	16,602.9	57.1	810.7	1,085.9		
OR Oregon	34,881.4	22,735.7	921.3	11,224.4	30,017.7	2,925.0	191.7	1,747.0		
OT Other Territories	9,998.5	4,350.5	5,606.3	41.7	881.1			9,117.4		
PA Pennsylvania	118,979.6	88,450.0	5,233.2	25,296.3	97,494.4	4,045.1	5,203.8	12,236.3		
PR Puerto Rico	99,791.0	85,404.5	203.9	14,182.6	55,741.4	37,306.1	1,706.0	5,037.4		
RI Rhode Island	10,510.1	8,682.8	674.5	1,152.9	7,875.2	1,754.4	459.8	420.7		
SC South Carolina	36,151.2	29,901.8	902.9	5,346.6	29,400.6	2,407.8	2,361.3	1,981.5		
SD South Dakota	4,776.8	2,965.2	214.6	1,597.0	4,348.3		136.5	291.9		
TN Tennessee	36,712.6	27,236.3	1,012.8	8,463.4	31,097.6	260.3	367.0	4,987.7		
TT Trust Territories	117.2	79.0	38.2	-	117.2			-		
TX Texas	318,567.9	241,324.6	15,688.4	61,554.9	259,855.3	14,350.2	12,239.9	32,122.5		
UT Utah	20,240.7	14,607.8	212.5	5,420.4	16,037.1	114.2	1,701.3	2,388.0		
VA Virginia	57,627.8	46,102.8	2,225.7	9,299.3	51,474.6	1,617.0	16.2	4,520.0		
VI Virgin Islands	2,292.5	2,154.3	26.7	111.4	2,244.3		48.1	-		
VT Vermont	4,215.9	2,927.8	428.5	859.6	3,108.3		1,343.7	(236.1)		
WA Washington	79,310.9	62,112.8	3,473.2	13,724.8	72,379.0	1,894.2	735.9	4,301.9		
WI Wisconsin	45,500.9	29,769.2	1,544.4	14,187.3	41,143.5	487.8	603.1	3,266.5		
WV West Virginia	10,154.8	5,703.8	721.7	3,729.3	6,652.2	2,070.2	50.2	1,382.3		
WY Wyoming	2,279.7	1,538.2	495.0	246.5	1,508.1			771.6		
TOTAL (12/31/2016)	3,238,216.8	2,483,907.1	140,232.3	614,077.5	2,589,378.4	209,174.5	77,009.8	362,654.2		
TOTAL (9/30/2016)	3,256,294.4	2,494,642.4	145,398.9	616,219.2	2,587,515.6	213,466.6	77,659.3	377,652.9		

¹⁰ 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.

Addendum Tables –Build America Bonds, Prerefunded, Derivatives, and Rating¹¹

\$ Millions

State	Total Outstanding	BAB Only	VRDO Only	ARS Only	Prerefunded Only	All Refunded	Derivatives Only	Rated	AAA	AA	A	BBB	HY
AK Alaska	9,812.9	357.7	1,450.6		754.8	822.2	107.2	9,448.7	289.4	6,098.4	2,382.5	352.0	326.5
AL Alabama	32,685.9	572.1	2,539.2	798.7	3,642.2	3,876.7	619.0	30,447.9	712.1	16,535.0	9,108.1	1,217.7	2,875.0
AR Arkansas	13,564.1	27.6	326.8		1,045.6	1,245.3	0.0	11,673.5	210.9	8,644.6	2,384.1	415.0	18.8
AS American Samoa	78.1												
AZ Arizona	48,025.2	1,946.3	1,870.8	129.7	6,429.5	9,166.8	1,242.1	44,156.4	2,377.3	28,093.2	9,342.9	3,060.7	1,282.3
CA California	514,309.0	37,460.8	22,175.3	1,357.3	45,253.3	61,115.0	17,053.5	463,285.6	12,771.0	310,036.2	101,616.7	21,193.9	17,667.7
CO Colorado	53,580.5	4,009.7	3,012.3	104.0	4,365.5	8,047.1	2,629.8	46,950.5	2,969.4	26,889.8	9,018.0	7,551.5	521.7
CT Connecticut	48,078.2	1,865.6	2,214.7	337.9	2,126.5	2,399.6	726.7	46,180.0	9,318.6	28,864.2	6,687.1	852.3	457.8
DC District of Columbia	29,426.4	1,870.8	1,451.2	281.5	1,669.2	1,710.2	1,012.1	23,828.8	289.9	11,938.8	8,767.5	2,414.1	418.5
DE Delaware	6,705.4	497.9	566.7	2,290.9	448.3	453.2	197.9	6,558.4	2,354.1	2,226.2	1,116.0	782.8	79.3
FL Florida	132,946.4	5,450.3	5,677.0	515.9	11,592.1	16,055.6	5,606.4	116,103.4	2,524.3	56,341.0	51,616.3	4,615.8	1,006.0
GA Georgia	64,145.2	3,688.1	3,348.7	122.6	6,435.3	8,430.3	1,207.2	55,887.9	13,949.3	20,200.2	18,621.5	2,562.3	554.6
GU Guam	2,624.6				539.2	559.8		2,480.2			921.5	1,469.7	89.0
HI Hawaii	16,547.0	1,194.9	26.5		2,714.6	3,829.1	341.3	16,192.3	156.0	13,263.2	2,135.3	525.1	112.6
IA Iowa	19,774.8	610.6	1,544.2	88.4	1,686.8	2,293.6	281.3	17,596.6	1,891.4	8,232.6	4,712.9	367.3	2,392.4
ID Idaho	6,158.7	162.8	293.3		637.3	689.3	82.7	4,762.8	463.4	2,177.4	1,877.6	129.6	114.8
IL Illinois	151,930.7	9,781.7	7,183.8	101.4	7,751.7	15,327.2	5,832.2	144,826.1	4,435.9	42,483.1	36,005.6	45,563.7	16,337.8
IN Indiana	45,180.4	1,815.1	2,944.4	220.0	3,608.2	4,907.0	1,379.2	40,309.1	4,232.5	20,054.9	13,178.6	2,049.0	794.1
KS Kansas	23,123.5	1,477.7	579.5	121.9	2,009.7	3,131.4	236.5	20,961.3	1,649.1	11,950.9	7,071.1	168.1	122.1
KY Kentucky	32,637.4	1,929.6	1,320.3	10.1	3,610.6	3,867.1	354.1	30,668.1	1,190.4	14,168.8	12,406.5	2,739.7	162.8
LA Louisiana	33,233.0	612.7	3,253.4	265.3	3,445.0	4,554.6	556.8	31,629.9	1,730.0	12,579.8	12,901.9	2,916.4	1,501.5
MA Massachusetts	93,148.6	4,804.9	5,812.3	1,081.5	11,694.9	13,491.1	4,285.3	88,697.6	10,811.0	65,178.0	9,693.4	2,790.2	225.1
MD Maryland	51,360.1	3,223.2	2,274.2	13.4	4,965.2	5,368.1	578.6	47,509.4	22,420.3	17,639.3	4,618.2	2,307.0	524.5
ME Maine	7,423.1	82.8	460.0		524.1	550.1	71.8	7,270.9	131.4	4,498.5	1,918.9	364.3	357.9
MI Michigan	73,734.4	1,801.7	3,688.2		5,606.1	7,266.0	2,179.0	62,604.2	5,444.3	32,864.2	19,659.8	1,560.4	3,075.6
MN Minnesota	49,963.6	1,012.5	2,350.6	163.3	2,779.2	4,537.0	511.6	45,752.9	6,778.9	32,171.8	5,406.5	765.2	630.6
MO Missouri	45,725.7	2,845.2	2,189.5	803.5	3,339.0	4,524.5	773.6	39,140.1	4,300.1	22,701.0	10,034.1	1,773.6	331.2
MS Mississippi	16,021.0	764.9	3,162.3		1,371.9	1,460.9	146.9	14,388.9	215.7	10,755.0	2,176.2	1,184.4	57.6
MT Montana	3,782.1	28.8	85.1		178.1	214.2		3,213.3	345.9	1,543.6	1,306.3	17.5	-
NC North Carolina	46,678.7	1,583.8	3,430.4	45.6	7,681.0	8,746.8	959.6	43,825.5	13,336.2	20,300.6	9,030.7	1,137.8	20.3
ND North Dakota	5,073.1	25.6	192.0		230.4	309.6	65.1	4,511.8	248.6	2,629.4	1,271.7	345.6	16.5
NE Nebraska	18,255.4	897.5	663.3		1,789.6	2,047.5	496.4	15,309.5	310.4	9,662.6	3,736.3	1,443.8	156.4
NH New Hampshire	7,416.1	354.9	525.3	153.7	910.9	1,004.6	139.1	7,142.6	145.2	4,804.6	1,760.1	354.8	77.8
NJ New Jersey	115,142.0	6,526.1	2,385.7	1,241.0	5,896.8	9,638.5	3,018.9	108,304.1	7,157.4	22,202.1	40,002.3	34,480.2	4,462.2
NM New Mexico	13,269.8	243.1	431.2		901.1	964.1	330.7	12,943.3	1,037.6	10,150.3	1,070.4	680.1	4.9
NV Nevada	23,817.3	2,138.9	2,106.4	39.5	3,020.0	3,412.0	997.4	20,946.5	212.4	12,992.1	6,931.5	297.0	513.5
NY New York	371,465.0	20,557.3	36,235.8	3,203.4	16,042.4	23,288.6	10,073.8	340,457.6	18,961.4	240,836.3	63,658.5	12,373.6	4,627.8
OH Ohio	100,707.6	6,728.0	4,803.5	425.2	7,133.1	8,009.2	1,497.1	83,476.9	8,481.7	44,579.9	20,044.7	2,940.8	7,429.8
OK Oklahoma	18,556.6	590.0	363.9	194.8	1,202.6	1,310.4	513.2	16,411.5	2,427.5	7,646.6	5,565.2	539.5	232.7
OR Oregon	34,881.4	937.5	1,135.0	235.0	4,458.8	4,668.5	178.3	33,228.0	1,275.2	27,530.2	3,847.0	545.4	30.2
OT Other Territories	9,998.5							5,936.4	8,620.9	1,555.9	6,675.0	31.5	237.0
PA Pennsylvania	118,979.6	4,847.2	5,871.6	22.5	10,954.2	14,511.1	3,218.1	112,647.1	2,533.8	50,254.5	51,066.0	5,782.9	3,009.9
PR Puerto Rico	99,791.0	1,013.0			48.4	847.7	1,156.7	83,760.5	156.5	26.0	3,514.9	97.5	79,965.7
RI Rhode Island	10,510.1		473.0	60.0	849.4	1,210.9	175.5	10,070.0	823.7	4,367.8	2,155.8	844.4	1,878.3
SC South Carolina	36,151.2	852.3	718.0	25.0	2,966.7	3,361.4	748.6	31,636.6	2,074.3	13,409.5	15,264.6	879.9	8.4
SD South Dakota	4,776.8	303.5	307.4	10.0	179.0	317.9	123.5	4,497.9	1,056.8	1,935.7	1,463.3	19.4	22.8
TN Tennessee	36,712.6	1,787.6	2,530.2	44.7	4,198.2	6,588.1	626.1	33,482.0	3,243.6	19,823.1	6,162.2	4,212.2	41.0
TT Trust Territories	117.2							38.2					38.2
TX Texas	318,567.9	16,443.4	11,734.9	1,929.9	40,383.1	44,314.8	6,017.7	296,107.4	129,382.5	96,259.9	50,917.1	15,862.9	3,685.0
UT Utah	20,240.7	2,871.2	1,428.6	391.1	2,404.6	3,154.0	711.2	18,307.5	6,403.4	9,605.1	2,132.7	89.8	76.6
VA Virginia	57,627.8	3,605.7	2,121.5	15.1	7,372.6	8,131.6	780.2	54,505.8	14,750.1	32,292.2	2,678.3	2,544.0	2,241.2
VI Virgin Islands	2,292.5	37.3			4.2	2,206.7		2,206.7			93.3	44.5	2,068.9
VT Vermont	4,215.9	122.6	202.5		408.7	412.1	29.3	3,977.2	48.4	2,415.5	1,327.7	169.2	16.3
WA Washington	79,310.9	5,888.2	2,305.2		10,855.3	12,061.5	1,926.6	76,927.8	2,230.3	63,958.9	8,999.9	1,531.9	206.8
WI Wisconsin	45,500.9	1,599.0	1,434.3	35.7	3,672.1	4,182.0	1,038.2	41,051.9	1,755.0	30,442.8	7,522.7	1,039.5	291.9
WV West Virginia	10,154.8	88.2	765.1	77.3	352.1	425.3	40.6	9,194.0	289.5	1,437.6	3,884.4	776.7	2,805.9
WY Wyoming	2,279.7	126.3	715.1		105.0	136.6		2,244.7	198.5	974.8	976.5	94.9	-
TOTAL (12/31/2016)	3,238,216.8	170,064.3	164,680.8	16,879.2	274,239.9	352,951.6	88,811.1	2,946,113.4	334,058.3	1,565,342.6	681,794.5	201,074.5	166,088.1
TOTAL (9/30/2016)	3,256,294.4	170,605.5	177,542.3	17,879.6	258,915.8	372,874.3	89,359.6	2,958,964.8	330,501.6	1,571,613.4	716,874.1	177,379.7	165,145.4
% Change	-0.6%	-0.3%	-7.2%	-5.6%	5.9%	-5.3%	-0.6%	-0.4%	1.1%	-0.4%	-4.9%	13.4%	0.6%

¹¹ 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.

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