



MUNICIPAL BOND CREDIT REPORT

Third 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 \$108.4 billion in the third quarter of 2016, a decline of 9.2 percent from the prior quarter (\$119.5 billion) but an increase of 25.8 percent year-over-year (y-o-y) (\$86.1 billion). Including private placements¹ (\$3.8 billion), long-term municipal issuance for 3Q'16 was \$112.2 billion. Year to date ending September 30, municipal issuance totaled \$323.4 billion, well above the ten-year average of \$276.5 billion.

Tax-exempt issuance totaled \$98.1 billion in 3Q'16, a decline of 29.3 percent but an increase of 29.3 percent, respectively, q-o-q and y-o-y. Taxable issuance totaled \$7.9 billion in 3Q'16, an increase of 15.8 percent q-o-q and a 0.6 percent increase y-o-y. AMT issuance was \$2.3 billion, a decline of 67.8 percent and 1.5 percent, respectively, q-o-q and y-o-y.

By use of proceeds, general purpose led issuance totals in 3Q'16 (\$29.0 billion), followed by primary & secondary education (\$17.0 billion) and water & sewer facilities (\$10.7 billion).

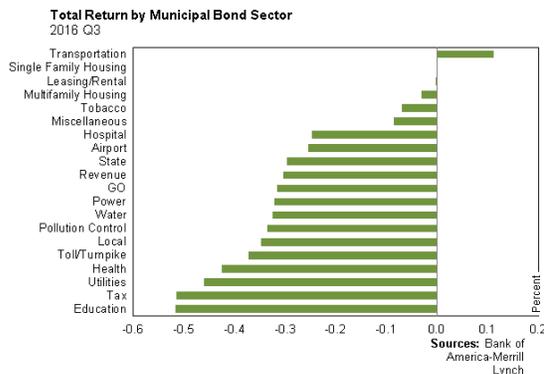
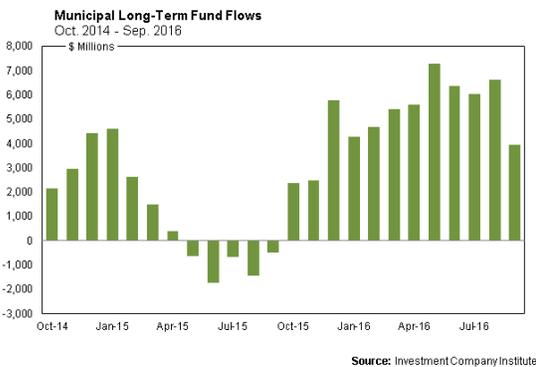
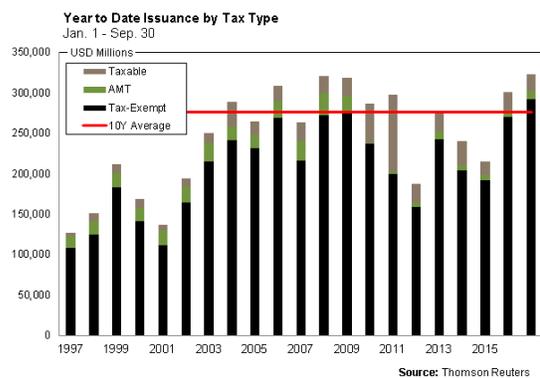
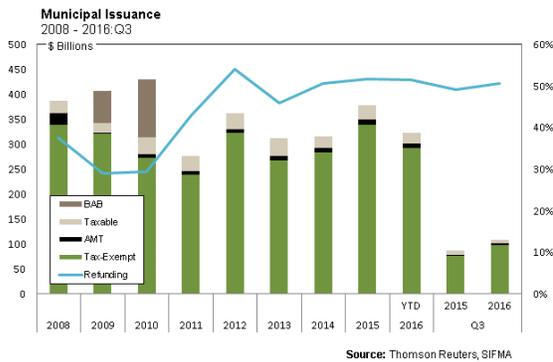
Refunding volumes as a percentage of issuance fell slightly from the prior quarter, with 50.6 percent of issuance attributable to refundings compared to 51.2 percent in 2Q'16, but was higher than from 3Q'15 (48.9 percent).

Yields, Inflows, and Total Return

Ratios of 10-year tax-exempt AAA GOs and similar-maturity Treasuries rose in the third quarter on a q-o-q basis ending at 95.5 percent end-September 2016 from 92.5 percent end-June 2016 but was well below the 102.7 percent end-September 2015.

According to the Investment Company Institute (ICI), third quarter net flow into long-term municipal funds was positive, with \$16.6 billion of inflow in 3Q'16, down from \$19.2 billion of inflow in 2Q'16 but up from the \$2.6 billion of outflow at the same time last year.

According to Bank of America-Merrill Lynch indices, municipals had a negative total return of 0.31 percent in the third quarter of 2016. Build America Bonds (BABs) returned 0.44 percent, underperforming similarly-rated corporates, which were up by 0.89 percent. Within the municipal asset class only transportation had a positive total return in the third quarter, returning 0.11 percent while all other municipals had negative returns.



¹ Private placement figures are excluded in charts and tables.

Trading Activity and Broker-Dealers

Trading activity rose q-o-q to \$11.7 billion daily in 3Q'16, a 3.8 percent increase from 2Q'16 (\$11.3 billion) and a 54.2 percent increase from 3Q'15 (\$7.6 billion). By number of trades, however, trading activity continued to fall on a q-o-q and y-o-y basis, falling 8.3 percent and 7.8 percent, respectively.

Holdings of municipal bonds by broker-dealers rose to \$19.7 billion in 2Q'16, an increase of 4.8 percent q-o-q and an increase of 3.7 percent y-o-y. Holdings by foreign investors continued to rise to \$89.7 billion in 2Q'16 from \$88.2 billion in 1Q'16 driven by the need for yield.

Bank holdings of both municipal loans and bonds continued to rise in 3Q'16 to \$524.1 billion (from \$507.5 billion). Loans rose to \$165.4 billion in 2Q'16 (from \$157.3 billion in 1Q'16), while bonds rose to \$358.7 billion from \$350.2 billion q-o-q.

CDS Update

According to DTCC, \$154.5 million of credit default swap contracts on municipal names were executed in the third quarter, a decline of 81.3 percent and 92.8 percent, respectively, q-o-q and y-o-y. Illinois led state totals in dollar volume of contracts (\$33.0 billion), followed by Florida (\$30.0 billion).

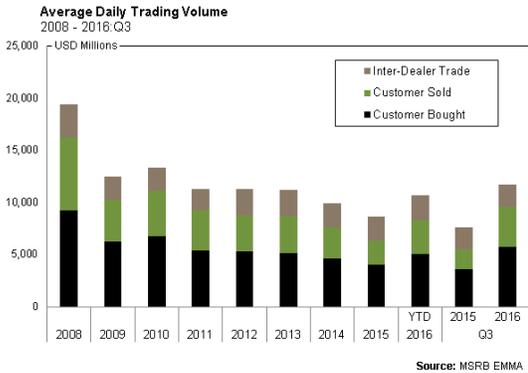
VRDO and FRN Update

Issuance of variable-rate demand obligations (VRDOs), puttable long-term municipal bonds with interest rates that reset periodically, fell in the third quarter, with \$2.1 billion issued in 3Q'16, a decline of 29.6 percent q-o-q but an increase of 3.3 percent y-o-y. Year to date, VRDO issuance totaled \$6.3 billion, already exceeding volumes from last year.

Issuance of floating rate notes ("FRN") (both LIBOR- and SIFMA- indexed, among others) fell in the third quarter, with issuance of \$126.7 million, a decline of 53.7 percent and 71.5 percent, respectively, q-o-q and y-o-y. Year to date, FRN issuance totaled \$0.4 million, well below the pace to match 2015 volumes.

State & Government Update

According to the Nelson A. Rockefeller Institute², preliminary tax revenues for the second quarter declined 2.1 percent y-o-y, driven by a weak stock market slowing growth in sales tax and withholding collections. Personal income tax revenue fell 4.5 percent in the second quarter, sales tax grew 2.2 percent, and corporate taxes declined by 9.2 percent; most states expected tax revenue to remain weak in 2017.



² Nelson A. Rockefeller Institute, "Weak Stock Market and Declines in Oil Prices Depressed State Tax Revenue," September 2016.

CHARTS & DATA

LONG-TERM MUNICIPAL STATE ISSUANCE, 3Q'16³\$ Millions⁴

State	Total	Bond Type		Tax Type			Funding Type			
		G.O.	Revenue	AMT	Tax-Exempt	Taxable	New Financing	Refinancing	Refunding & New Refinancing	Refunding
Alabama	1,234.2	188.9	1,045.3	-	1,177.5	56.7	91.9	-	484.9	657.4
Alaska	255.5	-	255.5	31.3	224.2	-	150.0	-	47.5	58.0
American Samoa	0.0	-	-	-	-	-	-	-	-	-
Arizona	1,713.8	940.2	773.6	-	1,711.6	2.1	437.2	-	51.2	1,225.5
Arkansas	516.5	270.8	245.7	-	516.1	0.3	57.5	-	62.9	396.0
California	15,919.2	7,128.3	8,790.9	672.9	13,936.6	1,309.7	2,809.4	-	5,628.3	7,481.6
Colorado	1,555.1	298.7	1,256.4	-	1,542.5	12.6	505.4	-	145.8	904.0
Connecticut	2,086.7	850.1	1,236.6	65.8	1,758.1	262.9	1,039.9	-	985.8	61.1
District of Columbia	0.0	-	-	-	-	-	-	-	-	-
Delaware	21.0	-	21.0	-	20.1	0.9	21.0	-	-	-
Florida	5,274.1	641.7	4,632.4	146.4	4,567.5	560.3	1,111.6	-	426.9	3,735.7
Georgia	1,216.0	172.8	1,043.2	-	1,191.3	24.8	617.6	-	170.3	428.2
Guam	275.2	-	275.2	-	275.2	-	-	-	236.6	38.6
Hawaii	1,434.6	782.0	652.6	-	1,365.7	68.9	-	-	1,186.3	248.4
Idaho	228.5	49.8	178.7	30.4	197.9	0.4	126.0	-	-	102.6
Illinois	4,090.8	1,033.5	3,057.3	38.3	3,813.6	238.9	1,331.5	-	1,058.1	1,701.1
Indiana	2,145.7	127.6	2,018.1	-	2,114.6	31.1	993.5	-	114.7	1,037.5
Iowa	607.9	277.7	330.2	-	606.4	1.6	315.0	-	18.2	274.7
Kansas	1,415.3	1,143.9	271.4	-	1,391.0	24.2	397.1	-	263.2	754.9
Kentucky	2,051.9	256.6	1,795.3	125.0	1,902.1	24.8	714.4	-	554.0	783.5
Louisiana	1,238.3	596.7	641.6	-	1,148.3	90.0	882.6	-	-	355.7
Maine	242.9	99.3	143.6	28.0	173.5	41.5	159.5	-	57.9	25.6
Maryland	815.4	262.0	553.4	-	337.8	477.6	353.3	-	395.3	66.9
Massachusetts	3,059.3	1,391.3	1,668.0	191.5	2,853.3	14.4	1,319.8	-	533.1	1,206.3
Michigan	4,253.7	1,918.1	2,335.6	196.9	3,496.3	560.4	870.4	-	743.2	2,640.1
Minnesota	2,874.5	1,518.6	1,355.9	-	2,723.8	150.8	1,331.8	-	52.4	1,490.3
Mississippi	542.3	75.4	466.9	-	406.9	135.5	341.1	-	-	201.3
Missouri	1,351.7	221.0	1,130.7	-	1,078.9	272.8	624.8	-	103.5	623.3
Montana	213.7	60.8	152.9	-	213.7	-	45.5	-	-	168.2
Nebraska	1,130.4	284.5	845.9	11.8	1,116.2	2.4	429.3	-	68.1	633.1
Nevada	734.0	572.5	161.5	-	727.3	6.6	-	-	12.7	721.3
New Hampshire	144.4	144.4	-	-	144.4	-	29.8	-	10.0	104.6
New Jersey	2,117.0	899.3	1,217.7	7.3	1,992.4	113.8	821.2	-	309.9	982.4
New Mexico	414.7	111.3	303.4	-	390.1	24.6	107.6	-	75.3	231.8
New York	11,808.7	2,521.2	9,287.5	81.2	10,487.4	1,240.2	9,386.2	-	987.6	1,435.0
North Carolina	1,428.7	765.9	662.8	-	1,428.7	-	494.1	-	159.1	775.5
North Dakota	270.7	39.7	231.0	5.2	246.7	18.8	202.9	-	16.4	51.4
Ohio	2,929.8	1,302.4	1,627.4	-	2,753.3	176.5	1,372.4	-	390.1	1,167.3
Oklahoma	602.8	91.2	511.6	-	584.1	18.8	421.4	-	-	181.4
Oregon	1,584.5	417.3	1,167.2	11.5	1,206.5	366.4	729.9	-	351.1	503.5
Pennsylvania	5,681.6	2,444.5	3,237.1	-	5,533.6	147.9	2,975.8	-	902.6	1,803.1
Puerto Rico	0.0	-	-	-	-	-	-	-	-	-
Rhode Island	792.8	11.1	781.7	149.7	643.1	-	206.8	-	-	586.0
South Carolina	946.8	257.6	689.2	-	918.1	28.7	482.4	-	-	464.4
South Dakota	95.3	92.4	2.9	-	95.3	-	28.9	-	-	66.4
Tennessee	1,093.9	653.0	440.9	24.6	993.6	75.7	690.6	-	45.3	358.0
Texas	12,100.1	7,035.9	5,064.2	-	11,572.8	527.2	5,033.4	-	3,062.7	4,003.9
Utah	620.0	46.1	573.9	-	608.6	11.4	341.3	-	43.2	235.6
Vermont	119.1	-	119.1	10.1	109.0	-	89.0	-	-	30.1
Virgin Islands	0.0	-	-	-	-	-	-	-	-	-
Virginia	1,296.1	428.5	867.6	147.4	1,095.0	53.7	346.3	-	655.7	294.1
Washington	2,620.2	926.8	1,693.4	227.9	2,353.1	39.2	539.1	-	1,400.1	681.1
West Virginia	118.0	-	118.0	51.3	66.7	-	17.0	-	26.5	74.6
Wisconsin	3,036.8	1,894.4	1,142.4	33.8	2,303.2	699.9	1,125.0	-	81.3	1,830.6
Wyoming	85.6	-	85.6	49.5	36.1	-	85.6	-	-	-
ALL	108,405.8	41,245.8	67,160.0	2,337.8	98,149.8	7,915.0	42,603.8	0.0	21,917.8	43,881.7
QoQ	-9.2%	-15.4%	-5.0%	-67.8%	-6.8%	15.8%	-6.6%	-	-13.9%	-9.3%
YoY	25.8%	24.1%	27.0%	-1.5%	29.3%	0.6%	24.1%	-	15.2%	33.9%

³ Issuance totals do not include private placements.⁴ 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	1,234.2	-	1,234.2	-	-	-	-	-
Alaska	255.5	-	255.5	-	-	-	-	-
American Samoa	0.0	-	-	-	-	-	-	-
Arizona	1,713.8	-	1,713.8	-	-	-	-	-
Arkansas	516.5	-	516.4	-	-	-	-	-
California	15,919.2	-	15,250.0	100.0	385.7	-	120.8	62.8
Colorado	1,555.1	-	1,532.4	-	-	-	22.7	-
Connecticut	2,086.7	-	2,039.2	-	-	-	47.5	-
District of Columbia	0.0	-	-	-	-	-	-	-
Delaware	21.0	-	21.0	-	-	-	-	-
Florida	5,274.1	-	5,126.5	-	55.3	-	-	92.3
Georgia	1,216.0	-	1,216.1	-	-	-	-	-
Guam	275.2	-	275.2	-	-	-	-	-
Hawaii	1,434.6	-	1,434.6	-	-	-	-	-
Idaho	228.5	-	198.2	-	-	-	30.4	-
Illinois	4,090.8	-	4,090.8	-	-	-	-	-
Indiana	2,145.7	-	2,145.7	-	-	-	-	-
Iowa	607.9	-	574.5	-	-	-	33.4	-
Kansas	1,415.3	-	1,415.2	-	-	-	-	-
Kentucky	2,051.9	-	1,830.9	-	-	-	221.0	-
Louisiana	1,238.3	-	1,201.4	-	36.8	-	-	-
Maine	242.9	-	215.0	-	-	-	28.0	-
Maryland	815.4	-	815.4	-	-	-	-	-
Massachusetts	3,059.3	-	2,841.5	-	-	-	-	217.7
Michigan	4,253.7	-	4,110.5	26.7	-	-	116.5	-
Minnesota	2,874.5	-	2,874.5	-	-	-	-	-
Mississippi	542.3	-	542.4	-	-	-	-	-
Missouri	1,351.7	-	1,351.7	-	-	-	-	-
Montana	213.7	-	213.7	-	-	-	-	-
Nebraska	1,130.4	-	1,130.4	-	-	-	-	-
Nevada	734.0	-	734.0	-	-	-	-	-
New Hampshire	144.4	-	144.4	-	-	-	-	-
New Jersey	2,117.0	-	2,113.5	-	-	-	-	-
New Mexico	414.7	-	268.7	-	146.0	-	-	-
New York	11,808.7	-	10,361.1	-	273.5	-	839.8	334.3
North Carolina	1,428.7	-	1,428.7	-	-	-	-	-
North Dakota	270.7	-	270.6	-	-	-	-	-
Ohio	2,929.8	-	2,753.1	-	30.5	-	144.9	1.2
Oklahoma	602.8	-	565.6	-	15.3	-	22.0	-
Oregon	1,584.5	-	1,563.4	-	-	-	-	21.0
Pennsylvania	5,681.6	-	5,670.0	-	-	-	-	11.6
Puerto Rico	0.0	-	-	-	-	-	-	-
Rhode Island	792.8	-	792.8	-	-	-	-	-
South Carolina	946.8	-	932.9	-	14.0	-	-	-
South Dakota	95.3	-	95.3	-	-	-	-	-
Tennessee	1,093.9	-	1,089.8	-	4.1	-	-	-
Texas	12,100.1	-	11,800.3	-	-	-	290.6	9.2
Utah	620.0	-	401.1	-	-	-	200.0	18.9
Vermont	119.1	-	119.1	-	-	-	-	-
Virgin Islands	0.0	-	-	-	-	-	-	-
Virginia	1,296.1	-	1,296.1	-	-	-	-	-
Washington	2,620.2	-	2,620.3	-	-	-	-	-
West Virginia	118.0	-	118.0	-	-	-	-	-
Wisconsin	3,036.8	-	3,000.5	-	-	-	9.9	26.5
Wyoming	85.6	-	85.6	-	-	-	-	-
ALL	108,405.8	0.0	104,391.6	126.7	961.2	0.0	2,127.5	795.5
QoQ	-9.2%		-8.4%	-53.7%	-49.5%		-29.6%	148.4%
YoY	25.8%		26.0%	-71.5%	126.2%		3.3%	185.7%

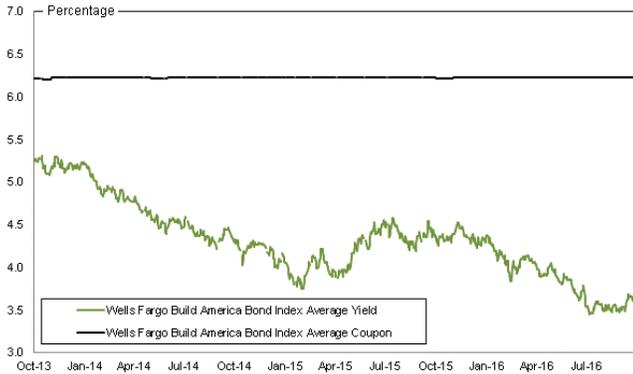
LONG-TERM MUNICIPAL ISSUANCE BY GENERAL USE OF PROCEEDS

\$ Millions

Use of Proceeds	3Q'15	2Q'16	3Q'16	Q-o-Q	Y-o-Y
General purpose /public improvement	22,074.6	27,916.9	29,040.1	4.0%	31.6%
Primary & secondary education	16,849.4	21,269.7	16,997.8	-20.1%	0.9%
Water & sewer facilities	7,504.0	12,254.2	10,729.7	-12.4%	43.0%
General acute care hospital	3,279.8	10,513.8	10,037.1	-4.5%	206.0%
Higher education	8,018.6	12,906.1	9,942.3	-23.0%	24.0%
Toll roads, highways & streets	4,748.7	5,464.4	4,705.1	-13.9%	-0.9%
Mass transportation	4,084.9	4,116.1	4,330.4	5.2%	6.0%
Public power	3,135.0	3,873.9	3,970.2	2.5%	26.6%
Single family housing	2,385.1	2,792.9	3,263.7	16.9%	36.8%
Airports	3,021.7	5,227.0	2,746.3	-47.5%	-9.1%
Economic development	2,646.1	2,650.6	2,493.2	-5.9%	-5.8%
Multi family housing	837.6	1,475.6	1,606.1	8.8%	91.8%
Cont Care Retirement Community	946.5	1,205.8	1,307.8	8.5%	38.2%
Civic & convention centers	1,105.2	135.1	1,022.2	656.6%	-7.5%
Stadiums & sports complexes	500.0	537.0	898.7	67.4%	79.7%
Seaports /marine terminals	329.6	13.6	697.3	5027.2%	111.6%
Pollution control	390.5	389.0	673.2	73.1%	72.4%
Libraries & museums	55.6	91.4	624.5	583.3%	1023.2%
Gas	326.9	582.4	408.0	-29.9%	24.8%
Government buildings	819.5	312.0	402.2	28.9%	-50.9%
Correctional facilities	204.8	233.4	319.4	36.8%	56.0%
Combined utilities	168.9	463.6	270.2	-41.7%	60.0%
Parks, Zoos & Beaches	288.4	125.0	247.2	97.8%	-14.3%
Childrens hospital	153.2	248.2	217.1	-12.5%	41.7%
Parking facilities	79.8	159.8	187.1	17.1%	134.5%
Sanitation	49.3	232.7	135.1	-41.9%	174.0%
Single speciality hospital	37.3	428.0	134.4	-68.6%	260.3%
Assisted Living	132.9	53.8	129.5	140.7%	-2.6%
Other recreation	200.5	292.9	110.3	-62.3%	-45.0%
Theatres	41.6	90.1	96.4	7.0%	131.7%
General Medical	303.2	234.8	96.0	-59.1%	-68.3%
Police stations & equipment	6.9	105.5	83.7	-20.7%	1113.0%
Other education	130.9	396.5	82.6	-79.2%	-36.9%
Solid waste	15.5	82.6	79.5	-3.8%	412.9%
Fire stations & equipment	80.9	134.5	77.3	-42.5%	-4.4%
Telecommunications	350.0	61.9	77.0	24.4%	-78.0%
Flood control	174.7	86.7	74.3	-14.3%	-57.5%
Industrial development	103.5	436.7	42.2	-90.3%	-59.2%
Nursing homes	15.5	11.0	36.5	231.8%	135.5%
Bridges	525.2	1,136.0	8.7	-99.2%	-98.3%
Agriculture			2.0		
Office buildings	19.4	82.8		-100.0%	-100.0%
Student loans		627.9		-100.0%	

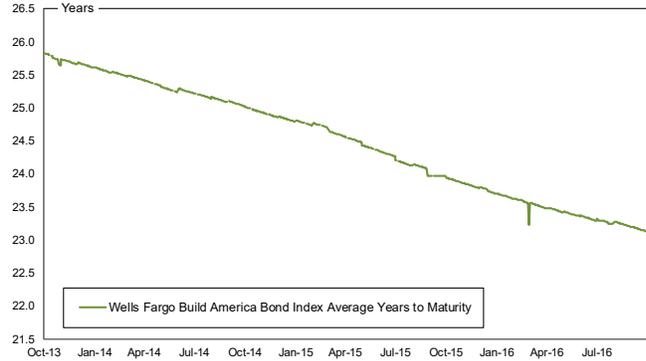
BUILD AMERICA BONDS

Build America Bonds Average Yield and Coupon
Oct. 2013 - Sep. 2016



Source: Wells Fargo

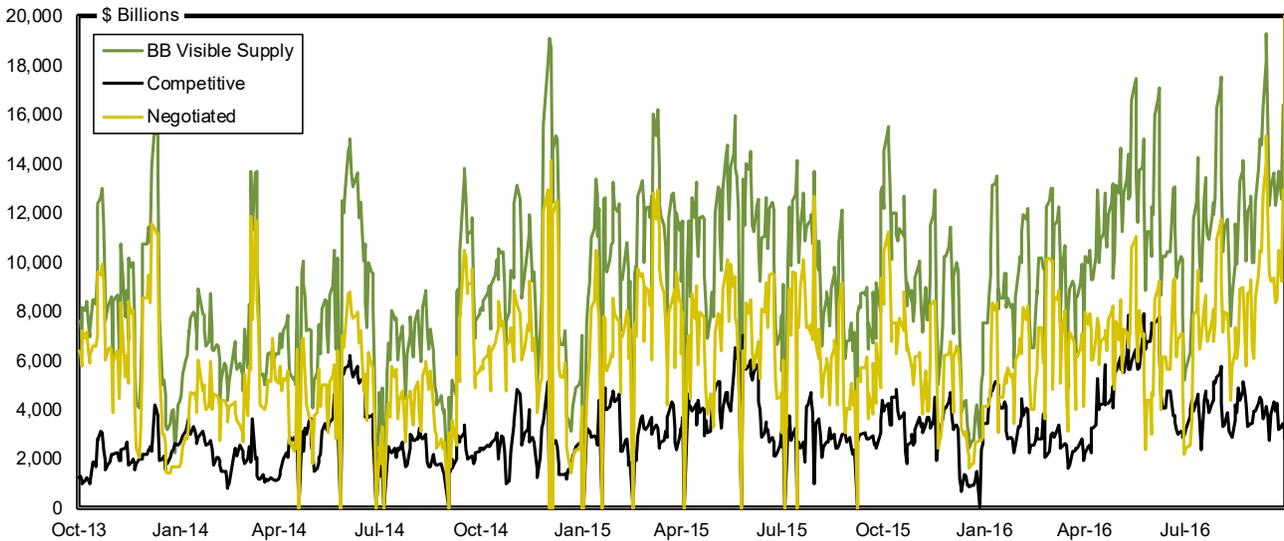
Build America Bond Average Years to Maturity
Oct. 2013 - Sep. 2016



Source: Wells Fargo

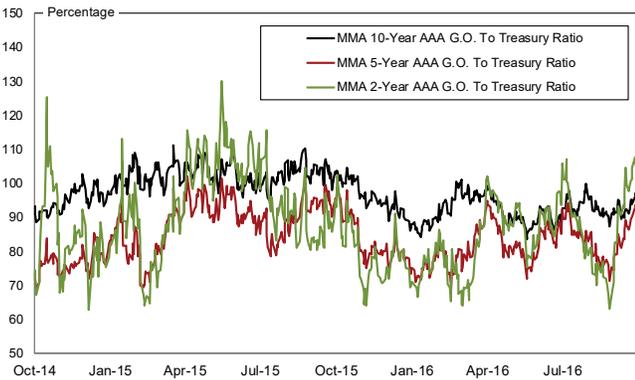
SUPPLY, YIELD CURVES, TOTAL RETURN, SPREADS & RATIOS

Bond Buyer 30-Day Visible Supply
Oct. 1, 2013 - Sep. 30, 2016



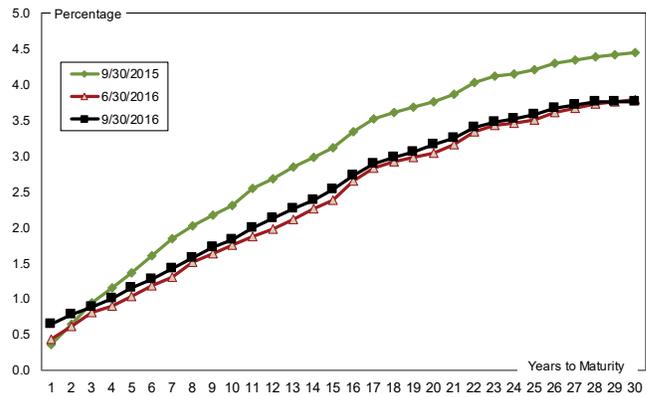
Source: Bond Buyer, Bloomberg

2-, 5-, and 10-Year AAA G.O. to Treasury Ratios
Oct. 2014 - Sep. 2016

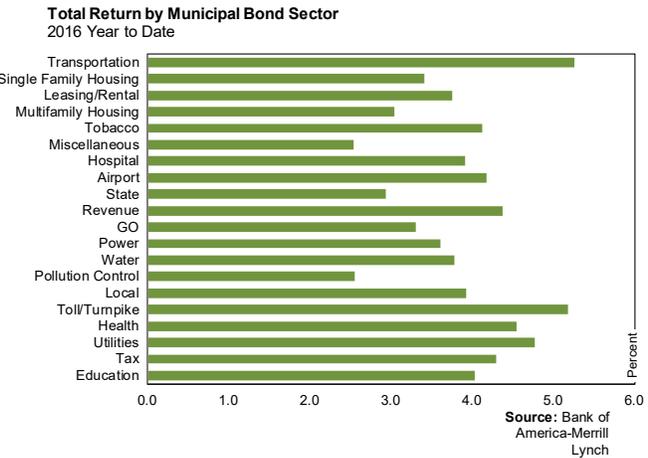
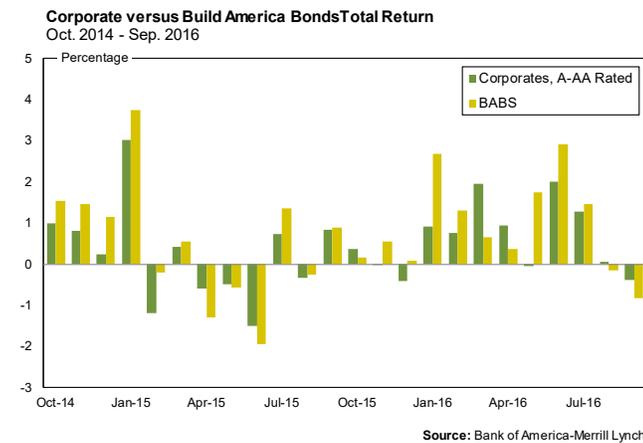
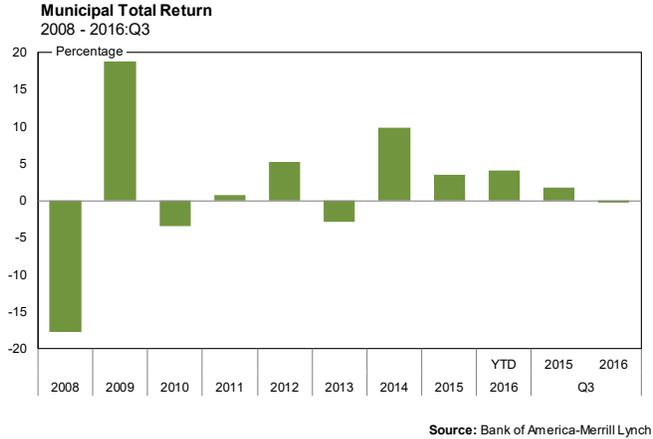
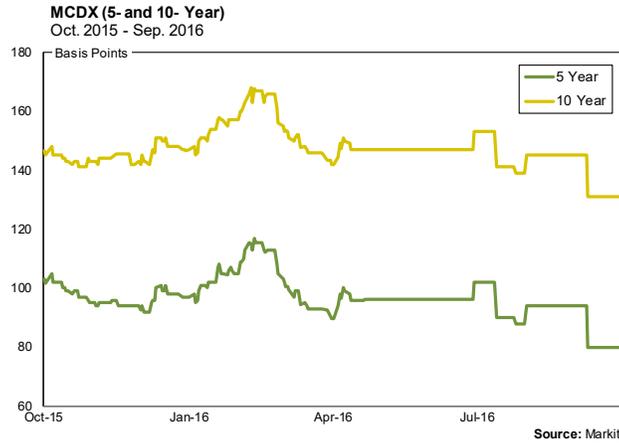


Source: Bloomberg

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:Q2	919,371	477,485	933,897	2,330,753	341,142	210,670	169,029	\$720,841	
2016:Q3	862,369	442,434	832,773	2,137,576	365,896	244,033	138,291	\$748,220	
%Change	-6%	-7%	-11%	-8%	7%	16%	-18%	4%	

	# of Trades				All Trades	Par Amount (Millions)				
	0 - 100,000	100,001 - 500,000	500,001 - 1,000,000	1,000,000+		0 - 100,000	100,001 - 500,000	500,001 - 1,000,000	1,000,000+	All Trades
2016:Q2	80%	13%	3%	4%	2,330,753	9%	11%	7%	74%	\$720,841
2016:Q3	80%	13%	3%	4%	2,137,576	8%	10%	8%	77%	\$748,220

	Trades by Sector							
	Education	Health	Utility	Various Purpose	Transportation	Tax-Revenue	Other	Total (Millions)
2016:Q2	20%	11%	12%	11%	9%	7%	30%	\$720,841
2016:Q3	17%	12%	13%	11%	8%	9%	30%	\$748,220

	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:Q2	6%	10%	15%	35%	34%	\$720,841
2016:Q3	5%	9%	13%	38%	35%	\$748,220

	Trades by Source of Repayment				
	Revenue	General Obligation	Double Barrel	Not Available	Total (Millions)
2016:Q2	68%	28%	3%	1%	\$720,841
2016:Q3	72%	26%	2%	0%	\$748,220

	Trades by Coupon Type				
	Fixed Rate	Variable Rate	Zero Coupon	Not Available	Total (Millions)
2016:Q2	62%	33%	4%	0%	\$720,841
2016:Q3	52%	45%	4%	0%	\$748,220

Source: MSRB EMMA

MUNICIPAL CDS

Market Risk Activity of Single-Name Municipal CDS (\$ millions) ⁵

State	California	Connecticut	Florida	Illinois	Michigan	Nevada	New Jersey	New York	Ohio	South Carolina	Texas	New York City	Massachusetts	TOTAL	Average Contract Size
Jul-15	200.5	16.2	135.0	219.2	80.0	20.0	117.5	45.0	40.0		30.0	51.5	13.0	967.9	7.2
Aug-15	306.5	10.0	40.0	289.0	70.0		242.7	10.0	35.0		1.9	85.0		1,090.1	5.4
Sep-15								55.0				20.0		75.0	18.8
Oct-15	25.0	5.0			25.0			20.0					10.0	85.0	6.1
Nov-15	1.0		4.6	15.0	12.2		23.7	11.0		7.0	4.9	11.0	11.0	101.5	3.4
Dec-15			50.0	70.0										120.0	24.0
Jan-16				70.0					25.0					95.0	15.8
Feb-16	10.0	20.0	50.0	25.4						25.0		10.0	25.0	165.4	11.0
Mar-16				27.4							2.1			29.5	1.3
Apr-16	1.9			54.2										56.1	5.1
May-16	20.8	0.1	23.3	115.7	3.4		30.8	34.5	150.2	18.0	221.8	37.5	13.5	669.3	15.2
Jun-16		24.0		40.0	2.5	18.4		5.0		10.0				99.9	3.2
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
3Q'16	0.1	10.0	30.0	33.0	5.0	20.0	0.0	28.0	0.0	0.0	25.0	3.4	0.0	154.5	3.9
Q-o-Q	-99.6%	-58.5%	28.6%	-84.3%	-14.6%	8.7%	-100.0%	-29.1%	-100.0%	-100.0%	-88.7%	-90.9%	-100.0%	-81.3%	
Y-o-Y	-100.0%	-61.8%	-82.9%	-93.5%	-96.7%	0.0%	-100.0%	-74.5%	-100.0%	-100.0%	-21.6%	-97.8%	-100.0%	-92.8%	

Source: DTCC

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

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

⁵ "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 Type⁶

\$ Millions

State	Total Outstanding	G.O.	Revenue	Due in 13 Months	Long-Term	2016:Q2 Total	% Change
						Outstandin	
AK Alaska	9,938.9	2,503.6	7,435.3	1,020.3	8,918.6	10,189.1	-2.5%
AL Alabama	32,347.3	6,396.5	25,950.8	2,139.9	30,207.4	31,975.1	1.2%
AR Arkansas	13,552.1	6,137.9	7,414.2	1,135.9	12,416.2	13,583.8	-0.2%
AS American Samoa	78.1		78.1		78.1	78.9	-1.0%
AZ Arizona	48,501.4	9,759.7	38,741.7	4,993.8	43,507.6	48,667.8	-0.3%
CA California	515,909.8	197,846.9	318,062.9	36,571.4	479,338.3	519,710.7	-0.7%
CO Colorado	53,535.1	11,603.7	41,931.4	4,907.6	48,627.5	52,339.6	2.3%
CT Connecticut	48,023.8	26,046.2	21,977.6	6,442.7	41,581.1	47,087.7	2.0%
DC District of Columbia	29,320.5	3,505.0	25,815.5	1,662.8	27,657.7	30,278.3	-3.2%
DE Delaware	6,783.4	2,519.7	4,263.7	678.6	6,104.8	6,910.7	-1.8%
FL Florida	134,217.2	15,791.1	118,426.1	11,858.2	122,359.1	135,311.0	-0.8%
GA Georgia	65,639.3	15,778.5	49,860.8	6,473.3	59,166.0	65,969.7	-0.5%
GU Guam	2,644.3	19.7	2,624.6	77.9	2,566.4	2,608.5	1.4%
HI Hawaii	17,149.2	10,628.2	6,520.9	1,666.5	15,482.7	16,422.6	4.4%
IA Iowa	19,260.1	6,038.6	13,221.5	2,305.2	16,954.9	19,302.0	-0.2%
ID Idaho	6,267.5	1,806.5	4,461.0	940.9	5,326.6	6,517.2	-3.8%
IL Illinois	153,689.9	79,222.1	74,467.7	15,180.8	138,509.1	152,963.3	0.5%
IN Indiana	46,389.6	1,151.9	45,237.8	5,258.7	41,130.9	47,391.2	-2.1%
KS Kansas	23,278.8	10,353.0	12,925.8	2,892.3	20,386.5	23,536.6	-1.1%
KY Kentucky	33,108.5	1,969.3	31,139.1	4,034.0	29,074.5	32,710.4	1.2%
LA Louisiana	33,381.9	7,091.4	26,290.5	2,442.7	30,939.2	33,515.8	-0.4%
MA Massachusetts	92,703.0	36,392.6	56,310.4	11,054.7	81,648.4	92,046.3	0.7%
MD Maryland	50,516.7	25,472.1	25,044.6	5,983.9	44,532.8	50,888.8	-0.7%
ME Maine	7,960.3	1,858.9	6,101.4	967.9	6,992.4	7,925.7	0.4%
MI Michigan	75,640.1	25,119.3	50,520.8	6,908.1	68,732.0	74,086.3	2.1%
MN Minnesota	49,765.8	25,823.8	23,942.0	5,909.4	43,856.4	48,787.2	2.0%
MO Missouri	45,599.4	9,096.5	36,502.9	3,734.4	41,865.0	45,902.7	-0.7%
MS Mississippi	16,090.4	6,144.9	9,945.6	1,765.0	14,325.4	16,087.5	0.0%
MT Montana	3,861.6	1,334.0	2,527.6	490.5	3,371.0	3,955.8	-2.4%
NC North Carolina	47,596.1	11,568.3	36,027.9	4,854.8	42,741.3	47,681.2	-0.2%
ND North Dakota	5,125.1	1,852.8	3,272.3	590.2	4,534.9	5,038.3	1.7%
NE Nebraska	18,219.2	5,590.8	12,628.4	1,940.7	16,278.4	17,893.0	1.8%
NH New Hampshire	7,649.2	2,238.6	5,410.5	882.6	6,766.5	7,778.5	-1.7%
NJ New Jersey	113,066.1	23,121.3	89,944.8	16,071.8	96,994.3	113,306.4	-0.2%
NM New Mexico	13,069.9	3,166.2	9,903.6	1,877.9	11,191.9	13,371.1	-2.3%
NV Nevada	24,343.3	12,718.2	11,625.1	2,623.5	21,719.8	24,478.6	-0.6%
NY New York	373,362.4	71,600.1	301,762.3	34,221.9	339,140.5	371,027.6	0.6%
OH Ohio	103,397.4	29,447.7	73,949.6	9,691.6	93,705.7	102,100.4	1.3%
OK Oklahoma	18,894.3	3,821.1	15,073.2	3,183.7	15,710.6	18,937.8	-0.2%
OR Oregon	34,564.2	19,542.6	15,021.6	3,713.9	30,850.2	34,255.5	0.9%
OT Other Territories	10,792.2	197.5	10,594.6	1,274.7	9,517.4	10,316.9	4.6%
PA Pennsylvania	119,252.8	43,124.9	76,127.9	11,278.9	107,973.9	119,443.6	-0.2%
PR Puerto Rico	99,861.1	12,378.8	87,482.4	4,098.6	95,762.5	100,001.8	-0.1%
RI Rhode Island	10,726.3	1,663.1	9,063.2	879.3	9,847.1	10,630.6	0.9%
SC South Carolina	41,985.1	9,468.4	32,516.6	3,701.8	38,283.3	41,189.8	1.9%
SD South Dakota	4,687.5	963.7	3,723.7	421.1	4,266.4	4,752.3	-1.4%
TN Tennessee	36,962.5	14,390.9	22,571.7	4,141.2	32,821.4	36,794.8	0.5%
TT Trust Territories	117.2	79.0	38.2	0.8	116.4	258.5	-54.7%
TX Texas	315,620.1	158,261.5	157,358.6	24,255.5	291,364.6	316,339.4	-0.2%
UT Utah	19,606.6	5,743.4	13,863.2	2,096.1	17,510.5	19,414.6	1.0%
VA Virginia	57,184.8	12,482.1	44,702.7	5,960.4	51,224.4	58,044.3	-1.5%
VI Virgin Islands	2,276.5		2,276.5	160.7	2,115.9	2,353.4	-3.3%
VT Vermont	4,604.7	675.5	3,929.2	288.6	4,316.1	4,805.7	-4.2%
WA Washington	80,606.1	39,819.8	40,786.3	8,346.5	72,259.6	81,043.7	-0.5%
WI Wisconsin	45,005.6	21,996.6	23,009.1	6,036.1	38,969.6	43,943.5	2.4%
WV West Virginia	10,036.8	725.4	9,311.4	701.7	9,335.0	10,074.5	-0.4%
WY Wyoming	2,527.4	141.4	2,385.9	279.0	2,248.4	2,469.5	2.3%
TOTAL (9/30/2016)	3,256,294.4	1,054,191.5	2,202,102.8	###	2,953,223.2	3,254,495.4	0.1%
TOTAL (6/30/2016)	3,254,495.4	1,056,171.9	2,198,323.5	###	3,091,523.4		
% Change	0.1%	-0.2%	0.2%	86.0%	-4.5%		

⁶ 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, Industry⁷

\$ Millions

State	Total Outstanding	Tax-Exempt	AMT	Taxable	Fixed	Zero	Other
AK Alaska	9,938.9	8,371.7	429.7	1,137.5	7,634.1	162.6	2,142.2
AL Alabama	32,347.3	25,225.3	922.5	6,199.4	24,750.6	1,006.0	6,590.7
AR Arkansas	13,552.1	8,802.7	315.8	4,433.6	12,232.1	251.3	1,068.7
AS American Samoa	78.1	44.2			78.1		-
AZ Arizona	48,501.4	42,576.4	1,001.9	4,923.1	42,890.0	30.0	5,581.4
CA California	515,909.8	411,296.2	18,342.9	86,270.7	379,792.3	62,606.3	73,511.1
CO Colorado	53,535.1	39,838.6	2,736.7	10,959.8	43,843.7	3,095.6	6,595.8
CT Connecticut	48,023.8	37,230.3	1,266.7	9,526.8	40,286.4	457.2	7,280.2
DC District of Columbia	29,320.5	22,510.6	3,481.4	3,328.5	19,477.5	5,596.6	4,246.4
DE Delaware	6,783.4	5,070.3	297.4	1,415.8	5,417.2	2.5	1,363.7
FL Florida	134,217.2	109,293.3	10,579.1	14,344.9	113,242.5	2,922.9	18,051.9
GA Georgia	65,639.3	51,265.8	3,132.7	11,240.9	52,350.4	74.2	13,214.7
GU Guam	2,644.3	2,426.8	180.7	36.8	2,528.9	115.5	-
HI Hawaii	17,149.2	13,405.1	1,208.2	2,535.9	16,680.5	19.5	449.2
IA Iowa	19,260.1	12,557.0	508.7	6,194.4	16,891.0	551.8	1,817.3
ID Idaho	6,267.5	4,896.3	299.3	1,072.0	5,270.4	103.4	893.7
IL Illinois	153,689.9	101,488.8	5,345.4	46,855.7	124,652.7	14,987.5	14,049.7
IN Indiana	46,389.6	33,423.1	3,926.6	9,040.0	36,418.6	973.8	8,997.2
KS Kansas	23,278.8	15,589.1	396.7	7,293.0	21,933.6	293.9	1,051.3
KY Kentucky	33,108.5	22,646.3	1,551.2	8,911.0	27,538.6	416.6	5,153.2
LA Louisiana	33,381.9	25,616.8	1,877.8	5,887.4	27,262.6	177.7	5,941.5
MA Massachusetts	92,703.0	76,936.0	3,583.1	12,183.9	78,014.1	1,007.4	13,681.6
MD Maryland	50,516.7	41,812.2	1,872.3	6,832.2	44,326.9	123.3	6,066.5
ME Maine	7,960.3	5,937.4	541.6	1,481.3	6,952.9		1,007.3
MI Michigan	75,640.1	55,863.3	2,921.5	16,855.4	56,311.1	7,300.0	12,029.0
MN Minnesota	49,765.8	36,204.8	1,416.8	12,144.1	43,539.9	859.4	5,366.5
MO Missouri	45,599.4	29,574.0	1,004.9	15,020.5	34,409.1	812.1	10,378.2
MS Mississippi	16,090.4	10,827.4	271.6	4,991.5	11,757.7	3.0	4,329.7
MT Montana	3,861.6	2,162.9	223.4	1,475.2	2,755.7	10.2	1,095.8
NC North Carolina	47,596.1	39,425.7	1,240.6	6,929.8	37,879.8	249.6	9,466.7
ND North Dakota	5,125.1	3,534.6	216.8	1,373.8	4,819.7		305.4
NE Nebraska	18,219.2	12,764.0	401.2	5,054.0	16,544.0	-	1,675.2
NH New Hampshire	7,649.2	4,952.9	523.4	2,172.9	5,759.0	74.0	1,816.2
NJ New Jersey	113,066.1	84,565.9	6,472.6	22,027.6	88,505.4	14,118.9	10,441.8
NM New Mexico	13,069.9	10,637.3	402.8	2,029.7	10,715.3	8.6	2,346.0
NV Nevada	24,343.3	19,832.1	1,705.6	2,805.6	19,944.0	983.0	3,416.3
NY New York	373,362.4	298,676.8	20,528.6	54,157.0	302,198.9	14,078.3	57,085.2
OH Ohio	103,397.4	74,881.9	2,383.7	26,131.8	77,979.6	8,582.7	16,835.1
OK Oklahoma	18,894.3	13,821.8	902.1	4,170.4	16,834.7	67.3	1,992.3
OR Oregon	34,564.2	22,308.7	980.6	11,274.9	29,644.1	2,926.0	1,994.1
OT Other Territories	10,792.2	4,712.5	5,961.7	118.0	1,023.5	12.0	9,756.7
PA Pennsylvania	119,252.8	89,264.2	5,310.6	24,678.0	96,801.7	4,167.7	18,283.3
PR Puerto Rico	99,861.1	85,443.3	219.1	14,198.7	55,795.2	37,306.1	6,759.8
RI Rhode Island	10,726.3	8,696.5	850.5	1,179.3	8,064.5	1,754.4	907.4
SC South Carolina	41,985.1	34,823.6	1,149.2	6,012.3	30,947.4	2,906.3	8,131.3
SD South Dakota	4,687.5	2,885.8	232.9	1,568.8	4,219.4	4.0	464.1
TN Tennessee	36,962.5	27,548.4	1,132.4	8,281.7	30,867.6	659.6	5,435.3
TT Trust Territories	117.2	79.0	38.2	-	117.2		-
TX Texas	315,620.1	238,887.6	15,495.1	61,237.3	255,756.0	15,209.0	44,655.1
UT Utah	19,606.6	13,940.7	223.0	5,442.9	15,790.4	114.2	3,702.0
VA Virginia	57,184.8	45,568.7	2,286.1	9,330.1	50,855.7	1,619.3	4,709.8
VI Virgin Islands	2,276.5	2,120.4	44.7	111.4	2,228.4	48.1	-
VT Vermont	4,604.7	2,907.5	463.8	1,233.4	3,117.4		1,487.3
WA Washington	80,606.1	62,966.9	3,569.2	14,070.1	73,343.9	2,020.1	5,242.0
WI Wisconsin	45,005.6	29,324.5	1,636.7	14,044.4	40,422.8	519.3	4,063.5
WV West Virginia	10,036.8	5,560.3	744.1	3,732.4	6,424.8	2,077.7	1,534.3
WY Wyoming	2,527.4	1,618.6	647.1	261.7	1,675.9		851.4
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	455,312.2
TOTAL (6/30/2016)	3,254,495.4	2,491,433.1	149,620.4	613,407.2	2,576,959.4	218,479.6	379,831.8
% Change	0.1%	0.1%	-2.8%	0.5%	0.4%	-2.3%	19.9%

⁷ 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 Rating⁸

\$ Millions

State	Total Outstanding	BAB Only	Prerefunded Only	All Refunded	Derivatives Only	Rated	AAA	AA	A	BBB	HY
AK Alaska	9,938.9	357.7	649.7	884.7	131.6	9,559.9	313.4	6,033.9	2,531.9	354.3	326.5
AL Alabama	32,347.3	573.6	3,392.6	3,972.4	1,283.8	30,114.2	718.2	16,282.6	8,960.7	1,275.6	2,877.1
AR Arkansas	13,552.1	28.6	974.5	1,049.0	0.0	11,567.3	224.7	8,512.9	2,395.3	415.6	18.8
AS American Samoa	78.1	-	-	-	-	-	-	-	-	-	-
AZ Arizona	48,501.4	1,946.3	4,023.1	6,551.4	1,214.0	44,574.0	2,377.3	28,299.7	9,576.3	3,266.5	1,054.1
CA California	515,909.8	37,471.4	39,712.6	63,136.5	17,746.7	464,649.2	13,147.0	305,578.7	107,204.2	21,168.4	17,550.9
CO Colorado	53,535.1	4,025.0	6,136.5	10,234.4	2,853.0	47,224.3	2,991.3	26,776.4	9,372.3	7,571.0	513.3
CT Connecticut	48,023.8	1,868.3	2,506.4	3,238.6	817.4	46,054.5	9,251.1	28,753.3	6,660.5	1,136.1	253.5
DC District of Columbia	29,320.5	1,870.8	1,461.3	1,766.9	1,070.4	23,691.5	291.7	11,789.6	8,777.0	2,438.9	394.4
DE Delaware	6,783.4	497.9	535.1	687.5	197.9	6,617.0	2,380.7	2,570.3	1,125.4	461.0	79.6
FL Florida	134,217.2	5,450.3	10,518.4	15,482.9	5,857.6	117,321.9	2,605.5	56,947.7	52,104.9	4,798.0	865.7
GA Georgia	65,639.3	3,688.2	5,022.2	7,442.5	1,217.3	56,945.0	14,222.0	18,757.6	20,931.3	2,476.8	557.4
GU Guam	2,644.3	-	539.2	565.4	-	2,499.9	-	-	934.5	1,471.4	94.0
HI Hawaii	17,149.2	1,199.4	2,146.3	3,417.7	322.1	16,727.9	156.0	13,176.8	2,743.3	538.9	113.0
IA Iowa	19,260.1	610.6	1,573.5	2,151.8	281.4	17,081.9	1,713.5	7,883.0	4,621.2	370.6	2,493.5
ID Idaho	6,267.5	162.8	608.7	770.3	82.7	4,837.3	468.8	2,219.2	1,891.1	143.3	114.8
IL Illinois	153,689.9	9,845.6	7,207.7	16,189.2	5,385.7	146,399.2	4,741.9	44,285.5	35,202.4	46,113.2	16,056.2
IN Indiana	46,389.6	1,816.5	3,562.0	4,416.0	1,475.1	41,403.0	4,328.1	20,560.9	13,525.0	2,356.9	632.0
KS Kansas	23,278.8	1,481.4	1,967.7	3,284.6	191.2	20,955.0	1,859.1	11,684.0	7,155.5	131.6	124.8
KY Kentucky	33,108.5	1,962.9	3,414.1	4,217.9	330.8	31,069.7	1,253.8	14,282.6	12,534.5	2,898.9	99.9
LA Louisiana	33,381.9	625.4	3,256.8	4,798.2	557.6	31,612.1	1,743.2	12,640.9	12,136.7	3,600.3	1,490.9
MA Massachusetts	92,703.0	4,817.4	9,397.7	11,698.3	4,171.2	87,991.1	11,205.6	64,193.4	9,901.8	2,508.7	181.6
MD Maryland	50,516.7	3,253.3	4,415.7	4,892.6	589.1	46,797.3	21,693.6	17,687.0	4,849.0	2,043.1	524.5
ME Maine	7,960.3	85.2	553.1	821.4	71.8	7,425.5	136.0	4,620.7	1,944.9	366.1	357.9
MI Michigan	75,640.1	1,802.5	5,381.7	8,928.2	2,134.3	64,342.9	5,593.4	34,029.4	16,212.6	5,275.6	3,231.8
MN Minnesota	49,765.8	1,018.0	2,828.9	4,904.9	544.9	45,599.3	6,844.9	31,975.9	5,508.4	729.2	540.9
MO Missouri	45,599.4	2,857.3	4,224.7	5,753.9	747.4	38,982.8	4,351.5	22,770.6	9,738.3	1,890.1	232.4
MS Mississippi	16,090.4	764.9	1,365.0	1,493.0	173.0	14,502.7	211.5	10,719.6	2,304.8	1,208.8	58.0
MT Montana	3,861.6	29.2	155.4	189.3	-	3,251.6	345.9	1,682.1	1,206.1	17.5	-
NC North Carolina	47,596.1	1,588.3	6,810.3	8,854.7	980.0	44,756.1	12,674.5	21,537.8	9,323.1	1,171.1	49.6
ND North Dakota	5,125.1	25.8	155.9	237.6	65.9	4,576.0	248.6	2,639.6	1,323.7	346.8	17.4
NE Nebraska	18,219.2	900.8	2,123.5	2,441.4	452.8	15,146.9	293.3	9,486.0	3,798.6	1,412.7	156.4
NH New Hampshire	7,649.2	354.9	571.1	631.9	169.0	7,287.3	148.2	4,921.8	1,753.5	344.3	119.5
NJ New Jersey	113,066.1	6,532.7	5,640.8	10,120.6	2,931.9	105,898.6	7,257.5	22,007.6	66,655.6	5,517.9	4,460.0
NM New Mexico	13,069.9	243.1	1,091.7	1,164.7	336.6	12,740.8	989.6	9,989.5	1,082.0	674.8	4.9
NV Nevada	24,343.3	2,142.3	2,690.4	3,372.0	1,026.8	21,576.7	274.9	13,582.9	6,948.4	307.8	528.4
NY New York	373,362.4	20,567.9	16,627.7	30,954.8	9,915.4	342,753.3	18,277.8	242,315.4	65,057.4	12,292.0	4,810.7
OH Ohio	103,397.4	6,768.8	7,763.7	8,657.1	1,556.1	85,651.3	8,578.6	45,574.3	21,312.9	2,822.5	7,362.9
OK Oklahoma	18,894.3	598.9	518.6	605.5	428.0	16,722.4	2,293.9	7,922.2	5,755.9	516.4	233.9
OR Oregon	34,564.2	956.9	4,477.7	4,786.9	156.3	32,898.8	1,191.9	27,596.8	3,574.9	505.1	30.2
OT Other Territories	10,792.2	-	6.0	12.0	5,500.4	8,594.6	1,435.5	6,739.9	48.9	248.5	121.8
PA Pennsylvania	119,252.8	4,853.1	9,991.0	14,713.2	3,099.5	113,015.1	2,537.8	50,356.8	51,365.0	5,685.7	3,069.7
PR Puerto Rico	99,861.1	1,013.0	48.4	848.0	1,159.4	83,853.6	172.6	27.2	3,588.5	97.5	79,967.9
RI Rhode Island	10,726.3	-	796.0	1,215.5	192.1	10,254.9	825.4	4,587.8	2,011.6	873.4	1,956.8
SC South Carolina	41,985.1	859.4	3,938.9	4,699.6	695.0	36,562.5	2,128.6	17,659.4	15,693.1	1,027.0	54.4
SD South Dakota	4,687.5	306.9	182.3	337.5	125.3	4,375.6	950.0	1,852.0	1,553.8	19.8	-
TN Tennessee	36,962.5	1,787.6	4,035.9	6,580.6	629.2	33,838.8	3,201.8	19,850.5	6,565.0	4,198.9	22.6
TT Trust Territories	117.2	-	-	-	-	38.2	-	-	-	-	38.2
TX Texas	315,620.1	16,583.9	37,782.7	49,301.4	5,880.0	292,420.1	126,399.4	96,319.1	49,947.2	16,215.2	3,539.3
UT Utah	19,606.6	2,877.1	2,498.6	3,260.9	711.9	17,723.7	6,470.6	9,066.1	2,033.2	77.0	76.8
VA Virginia	57,184.8	3,613.8	7,180.7	8,107.5	777.5	53,945.0	14,949.8	31,682.6	2,733.3	2,338.1	2,241.2
VI Virgin Islands	2,276.5	37.3	-	4.2	-	2,224.7	-	18.0	93.3	44.5	2,068.9
VT Vermont	4,604.7	122.6	504.6	641.5	29.3	4,387.1	34.1	2,883.9	1,344.7	108.1	16.3
WA Washington	80,606.1	5,906.7	11,755.5	13,183.4	1,947.3	78,123.4	1,714.2	65,816.4	8,778.5	1,543.4	270.9
WI Wisconsin	45,005.6	1,633.6	3,789.9	4,644.6	1,103.6	40,803.5	1,776.1	30,122.5	7,631.0	992.8	281.1
WV West Virginia	10,036.8	88.2	403.7	557.5	42.7	8,998.0	308.7	1,293.5	3,800.4	787.1	2,808.2
WY Wyoming	2,527.4	131.2	-	-	-	2,483.8	198.5	1,049.6	1,050.7	185.0	-
TOTAL (9/30/2016)	3,256,294.4	170,605.5	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
TOTAL (6/30/2016)	3,254,495.4	170,889.4	243,056.8	-	94,979.0	2,951,679.9	330,582.4	1,484,484.1	796,248.8	179,831.5	162,964.9
% Change	0.1%	-0.2%	6.5%	-	-5.9%	0.2%	0.0%	5.9%	-10.0%	-1.4%	1.3%

⁸ 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.

A DESCRIPTION OF THE TERMINOLOGY IN THE MUNICIPAL BOND CREDIT REPORT

Long-Term Municipal Issue: municipal securities with a maturity of 13 months or longer at the time the municipal security is issued.⁹

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

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

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

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

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

Moody's Ratings¹⁰

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

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

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

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

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

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

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

⁹Authors' own definition.

¹⁰Moody's.com, "Ratings Definitions."

risk.

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

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

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

C: obligations rated C are the lowest rated class of bonds and are typically in default, with little prospect for recovery of principal or interest.¹¹

Standard and Poor's Ratings¹²

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

Long-term issue credit ratings are based on:

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

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

AA: very strong capacity to meet financial commitments.

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

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

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

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

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

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

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

Fitch Ratings

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

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

¹¹The lowest rating is a "D" at both Moody's and Standard and Poor's.

¹²Standardandpoors.com "Long-Term Issue Credit Ratings," May 17, 2002.

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

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

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

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

General Use of Proceeds: Refers to the type of project the proceeds or funds received from bond issuance are used. In the Municipal Bond Credit Report, the use of proceed classifications are general government use, education, water, sewer and gas, health care and a miscellaneous category, "other."¹³

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

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

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

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

¹³Authors' own definition.

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