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# **MUNICIPAL BOND CREDIT REPORT**

First Quarter 2016

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**RESEARCH REPORT**

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## MARKET SUMMARY

### Municipal Issuance Overview – Primary Market

According to Thomson Reuters, long-term public municipal issuance volume totaled \$96.5 billion in the first quarter of 2016, an increase of 26.2 percent from the prior quarter (\$76.4 billion) but a decline of 7.3 percent year-over-year (y-o-y) (\$104.0 billion). Including private placements<sup>1</sup> (\$2.6 billion), long-term municipal issuance for 1Q'16 was \$99.3 billion.

Tax-exempt issuance totaled \$89.3 billion in 1Q'16, an increase of 32.6 percent q-o-q but a decline of 5.9 percent y-o-y. Taxable issuance totaled \$6.4 billion in 1Q'16, an increase of 23.8 percent q-o-q but a 6.4 percent decline y-o-y. AMT issuance was \$0.8 billion, a decline of 79.7 percent q-o-q and 66.3 percent y-o-y.

By use of proceeds, primary and secondary education led issuance totals in 1Q'16 (\$24.6 billion), followed by general purpose (\$24.4 billion), and higher education (\$10.4 billion).

Notable sectors that saw increased y-o-y issuance were water and sewer facilities (\$10.2 billion, an increase of 20.0 percent and 7.9 percent q-o-q and y-o-y, respectively) and economic development (\$2.3 billion, an increase of 3.8 percent and 26.3 percent q-o-q and y-o-y respectively).

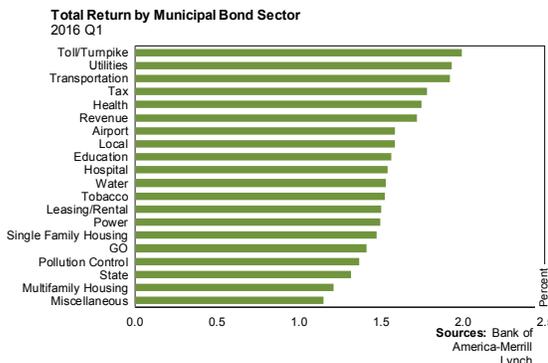
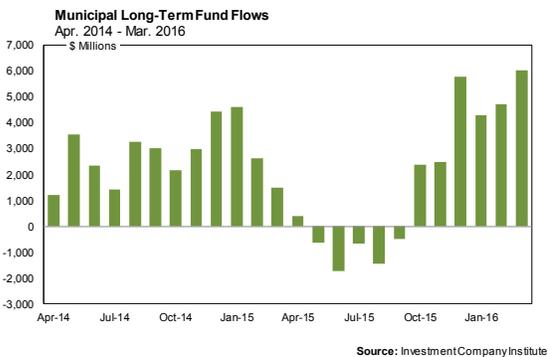
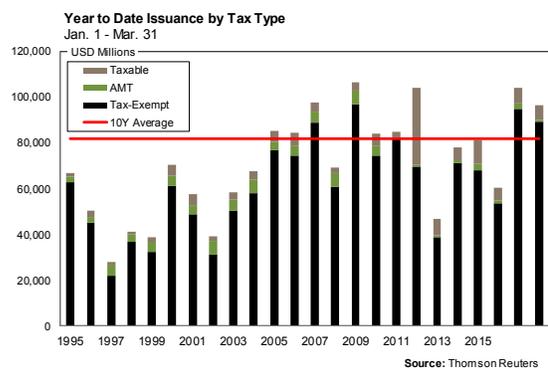
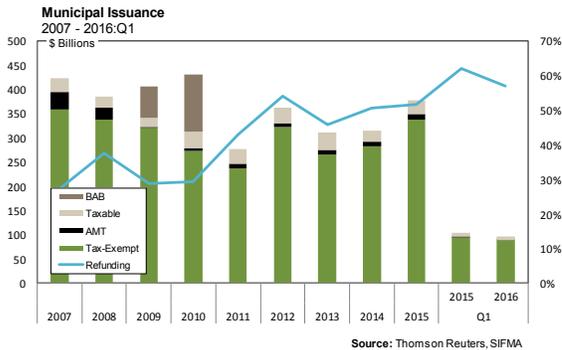
Refunding volumes as a percentage of issuance rose slightly from the prior quarter, with 51.5 percent of issuance attributable to refundings compared to 43.6 percent in 4Q'15, but was a decline compared to the 62.2 percent in 1Q'15.<sup>2</sup>

### Yields, Inflows, and Total Return

Ratios of 10-year tax-exempt AAA GOs and similar-maturity Treasuries rose sharply in the first quarter on a q-o-q basis, ending at 99.2 percent end-March 2016 from 88.1 percent end-December 2015 but fell on a y-o-y basis (103.7 percent end-March 2015).

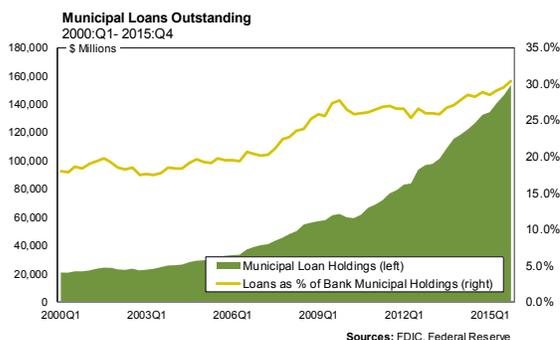
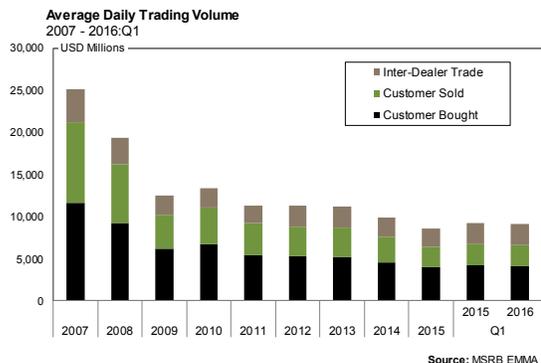
According to the Investment Company Institute (ICI), first quarter net flow into long-term municipal funds was positive, with \$15.0 billion of inflow in 1Q'16 compared to \$10.6 billion of outflow from 4Q'15 and \$8.7 billion of inflow y-o-y.

According to Bank of America-Merrill Lynch indices, municipals returned 1.64 percent in the first quarter of 2016. Build America Bonds (BABs) returned 4.67 percent, outperforming similarly-rated corporates (3.7 percent). Within the municipal asset class, toll/turnpike, utilities, and transportation had the greatest positive returns for the first quarter.



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

<sup>2</sup> Percentages represent both full refundings and the half the dollar amount of deals that contain both refundings and new financing. For just refunding, refunding volumes represent 42.3 percent of issuance in 1Q'16, 32.9 percent in 4Q'15, and 51.0 percent in 1Q'15.



## Trading Activity and Broker-Dealers

Trading activity rose q-o-q to \$9.1 billion daily in 1Q'16, a 33.1 percent increase from 4Q'15 (\$6.9 billion) but a 1.0 percent decline from 1Q'15 (\$9.2 billion). By number of trades, trading activity rose on a q-o-q and y-o-y basis, rising 11.7 percent and 0.9 percent, respectively.

Holdings of municipal bonds by broker-dealers fell to \$14.0 billion in 4Q'15, a decline of 11.9 percent and 25.9 percent q-o-q and y-o-y.

Bank holdings of both municipal loans and bonds rose in 4Q'15 from the prior quarter, to \$153.4 billion (from \$146.2 billion) and \$352.0 billion (from \$348.5 billion), respectively. Excluding municipal loans, the municipal bond market grew slightly in 1Q'16. The five sectors that grew the most q-o-q in municipal bonds outstanding were: appropriations (14.3 percent), not-for-profit foundations (9.2 percent), nuclear (7.5 percent), intragovernmental lease (5.4 percent), and tax-guaranteed airport (5.1 percent). The five sectors that shrank the most q-o-q were: public transportation (25.7 percent), non-toll highway (19.2 percent), not-for-profit membership organization (8.4 percent), metro development (4.9 percent), and assisted living (4.1 percent).

## CDS Update

According to DTCC, \$289.9 million of credit default swap contracts on municipal names were executed in the first quarter, a decline of 5.4 percent q-o-q but an increase of 45.9 percent y-o-y. Illinois continued to lead state totals (\$122.8 million) in 1Q'16.

## 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 first quarter, with \$1.1 billion issued in 1Q'16, a decline of 33.4 percent but an increase of 16.5 percent, respectively, q-o-q and y-o-y.

After years of extremely low rates, the SIFMA Municipal Swap index - a seven-day high-grade market index comprised of tax-exempt VRDOs - surged at the end of the first quarter, ending March at 0.4 percent. The swap index averaged 0.08 percent throughout 1Q'16, seven single basis points higher than 4Q'15's average (0.01 percent) and six basis points lower than 1Q'15's average (0.02 percent).

Issuance of floating rate notes ("FRN") (both LIBOR- and SIFMA- indexed, among others) declined in the first quarter, with issuance of just \$31.8 million, a 89.3 percent and 98.4 percent decline, respectively, q-o-q and y-o-y.

## State & Government Update

According to Nelson A. Rockefeller Institute of Government, tax data for the third quarter of 2015 show a mixed picture. Total state tax revenue grew by 3.8 percent y-o-y, with growth reported in all major sources of state tax revenues: individual income grew 6.5 percent, corporate income tax revenue grew by 1.0 percent, while sales tax and motor fuel tax grew by 3.2 and 5.3 percent, respectively.<sup>3</sup> The institute also noted that states were likely to have little or no growth in income tax in 2016.

<sup>3</sup> Nelson A. Rockefeller Institute of Government, "Softening Third-Quarter Growth in State Taxes, Weak Forecasts for Fiscal 2016 and 2017," March 7, 2016.

## CHARTS &amp; DATA

LONG-TERM MUNICIPAL STATE ISSUANCE, 1Q'16<sup>4</sup>\$ Millions<sup>5</sup>

State	Total	Bond Type		Tax Type			Funding Type			
		G.O.	Revenue	AMT	Tax-Exempt	Taxable	New Financing	Refinancing	Refunding & New Refinancing	New Refunding
Alabama	1,435.8	484.5	951.3	-	1,416.3	19.6	916.3	-	93.0	426.6
Alaska	362.5	186.6	175.9	19.7	342.7	-	134.8	-	33.0	194.7
American Samoa	0.0									
Arizona	1,035.9	361.2	674.7	-	1,016.9	18.9	408.5	-	129.3	497.9
Arkansas	481.3	168.3	313.0	-	464.1	17.1	75.9	-	108.3	297.1
California	14,342.5	6,958.4	7,384.1	28.3	13,854.2	460.1	4,697.8	-	4,007.9	5,636.8
Colorado	1,104.7	411.9	692.8	-	949.8	154.8	334.8	-	498.4	271.5
Connecticut	1,639.4	1,049.5	589.9	44.6	1,592.4	2.5	1,197.3	-	59.8	382.3
District of Columbia	550.1	-	550.1	-	550.1	-	103.1	-	57.9	389.1
Delaware	432.8	251.3	181.5	20.2	412.6	-	382.1	-	-	50.7
Florida	5,240.4	257.5	4,982.9	-	3,940.7	1,299.7	2,335.7	-	600.1	2,304.6
Georgia	1,206.2	821.6	384.6	-	1,200.1	6.1	706.0	-	143.4	356.8
Guam	143.3	-	143.3	-	143.3	-	143.3	-	-	-
Hawaii	760.8	760.8	-	-	725.7	35.0	535.0	-	225.7	-
Idaho	239.0	110.9	128.1	-	239.0	-	115.3	-	74.9	48.9
Illinois	3,384.9	2,818.9	566.0	-	3,169.8	215.1	1,939.6	-	99.8	1,345.4
Indiana	1,407.2	66.3	1,340.9	-	1,399.2	8.0	388.8	-	481.6	536.8
Iowa	479.6	287.0	192.6	22.5	437.4	19.7	270.2	-	10.6	198.9
Kansas	954.5	532.2	422.3	-	949.7	4.7	354.7	-	184.9	414.9
Kentucky	2,038.3	212.9	1,825.4	-	1,960.0	78.3	357.5	-	709.0	971.8
Louisiana	530.7	119.1	411.6	-	517.4	13.3	86.7	-	102.0	342.1
Maine	96.0	61.0	35.0	-	96.0	-	91.7	-	-	4.3
Maryland	1,570.3	885.1	685.2	-	1,542.9	27.4	310.4	-	227.2	1,032.7
Massachusetts	3,086.9	1,731.5	1,355.4	35.7	3,024.9	26.2	1,445.8	-	542.6	1,098.5
Michigan	3,182.2	2,319.9	862.3	-	2,799.7	382.5	960.0	-	687.1	1,535.1
Minnesota	2,110.6	1,368.2	742.4	-	2,083.4	27.2	1,590.3	-	19.1	501.2
Mississippi	304.3	45.7	258.6	-	303.3	1.0	109.7	-	58.9	135.7
Missouri	1,797.9	583.7	1,214.2	6.3	1,375.6	416.1	354.6	-	722.9	720.5
Montana	138.6	138.6	-	-	138.6	-	107.9	-	-	30.8
Nebraska	618.2	176.3	441.9	1.6	616.6	-	260.4	-	42.2	315.6
Nevada	1,557.0	957.0	600.0	-	1,506.5	50.4	75.8	-	414.9	1,066.3
New Hampshire	105.0	105.0	-	-	105.0	-	88.1	-	16.9	-
New Jersey	1,744.3	905.2	839.1	21.5	1,718.1	4.8	338.1	-	347.4	1,058.8
New Mexico	495.8	170.9	324.9	22.8	423.2	49.8	310.3	-	160.3	25.2
New York	9,577.1	1,830.6	7,746.5	38.6	9,283.6	254.9	4,223.6	-	833.4	4,520.0
North Carolina	1,715.8	730.2	985.6	-	1,267.0	448.8	390.5	-	-	1,325.3
North Dakota	105.0	91.3	13.7	-	105.0	-	59.6	-	0.6	44.9
Ohio	3,144.8	1,408.6	1,736.2	-	2,319.4	825.4	1,356.6	-	487.6	1,300.5
Oklahoma	788.1	440.5	347.6	-	776.1	12.0	726.8	-	-	61.2
Oregon	470.0	208.7	261.3	-	462.1	7.9	207.0	-	-	262.9
Pennsylvania	3,379.8	1,315.0	2,064.8	-	3,365.2	14.5	1,090.4	-	538.5	1,750.8
Puerto Rico	0.0									
Rhode Island	177.6	29.9	147.7	19.6	157.9	-	173.2	-	-	4.4
South Carolina	1,761.9	855.1	906.8	-	1,705.9	56.1	423.0	-	28.2	1,310.7
South Dakota	75.5	51.3	24.2	-	74.0	1.5	39.7	-	5.8	29.9
Tennessee	1,197.0	309.1	887.9	-	890.6	306.4	918.9	-	122.5	155.6
Texas	12,841.0	9,120.8	3,720.2	171.8	11,601.0	1,060.1	4,260.3	-	3,733.8	4,838.9
Utah	579.1	332.1	247.0	-	566.9	12.2	312.9	-	171.1	95.1
Vermont	229.0	16.4	212.6	14.6	214.4	-	206.0	-	-	23.0
Virgin Islands	0.0									
Virginia	1,318.3	656.0	662.3	-	1,318.3	-	66.1	-	867.4	384.8
Washington	2,530.1	1,521.1	1,009.0	-	2,483.8	46.3	694.8	-	108.1	1,727.2
West Virginia	84.6	-	84.6	25.0	49.5	10.1	57.8	-	-	26.8
Wisconsin	1,947.1	1,057.2	889.9	303.4	1,616.9	26.8	1,176.9	-	26.8	743.4
Wyoming	0.0									
<b>ALL</b>	<b>96,498.8</b>	<b>45,280.9</b>	<b>51,217.9</b>	<b>796.2</b>	<b>89,272.8</b>	<b>6,421.3</b>	<b>37,910.6</b>	<b>0.0</b>	<b>17,782.9</b>	<b>40,797.0</b>
<b>QoQ</b>	<b>26.2%</b>	<b>71.8%</b>	<b>2.3%</b>	<b>-79.7%</b>	<b>32.6%</b>	<b>23.8%</b>	<b>8.3%</b>	<b>-</b>	<b>9.2%</b>	<b>62.2%</b>
<b>YoY</b>	<b>-7.3%</b>	<b>-0.7%</b>	<b>-12.4%</b>	<b>-66.3%</b>	<b>-5.9%</b>	<b>-6.4%</b>	<b>36.9%</b>	<b>-</b>	<b>-23.7%</b>	<b>-23.2%</b>

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

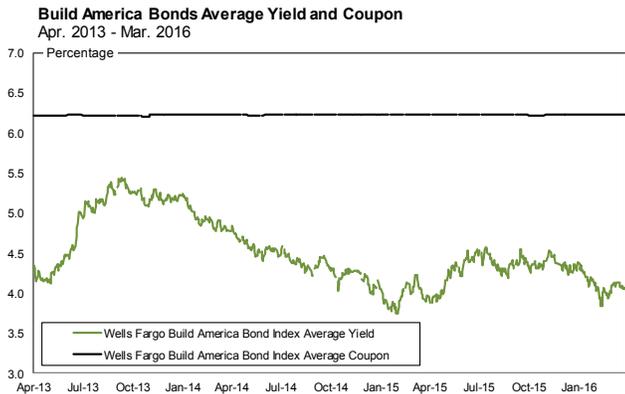
State	Total	Coupon Type							
		Convertible	Fixed Rate	Linked Rate	Variable Rate			Short (VRDO)	Zero
					Variable Rate Long	Variable Rate No Put			
Alabama	1,435.8	-	1,435.9	-	-	-	-	-	-
Alaska	362.5	-	362.5	-	-	-	-	-	-
American Samoa	0.0	-	-	-	-	-	-	-	-
Arizona	1,035.9	-	1,010.8	-	25.0	-	-	-	-
Arkansas	481.3	-	481.3	-	-	-	-	-	-
California	14,342.5	-	13,695.1	-	552.0	-	65.3	30.1	-
Colorado	1,104.7	-	1,104.6	-	-	-	-	-	-
Connecticut	1,639.4	-	1,599.4	-	-	-	40.0	-	-
District of Columbia	550.1	-	525.1	-	25.0	-	-	-	-
Delaware	432.8	-	432.8	-	-	-	-	-	-
Florida	5,240.4	3.9	5,236.5	-	-	-	-	-	-
Georgia	1,206.2	-	1,206.2	-	-	-	-	-	-
Guam	143.3	-	143.3	-	-	-	-	-	-
Hawaii	760.8	-	760.8	-	-	-	-	-	-
Idaho	239.0	-	239.0	-	-	-	-	-	-
Illinois	3,384.9	-	3,371.5	-	-	-	9.7	3.7	-
Indiana	1,407.2	-	1,307.2	-	-	-	100.0	-	-
Iowa	479.6	-	439.6	-	-	-	40.0	-	-
Kansas	954.5	-	954.4	-	-	-	-	-	-
Kentucky	2,038.3	-	2,038.3	-	-	-	-	-	-
Louisiana	530.7	-	499.0	31.8	-	-	-	-	-
Maine	96.0	-	96.0	-	-	-	-	-	-
Maryland	1,570.3	-	1,570.3	-	-	-	-	-	-
Massachusetts	3,086.9	-	3,058.9	-	28.0	-	-	-	-
Michigan	3,182.2	-	3,182.2	-	-	-	-	-	-
Minnesota	2,110.6	-	2,103.6	-	-	-	7.0	-	-
Mississippi	304.3	-	304.3	-	-	-	-	-	-
Missouri	1,797.9	-	1,759.3	-	-	-	17.8	20.9	-
Montana	138.6	-	138.6	-	-	-	-	-	-
Nebraska	618.2	-	618.2	-	-	-	-	-	-
Nevada	1,557.0	-	1,556.9	-	-	-	-	-	-
New Hampshire	105.0	-	105.0	-	-	-	-	-	-
New Jersey	1,744.3	-	1,721.8	-	22.5	-	-	-	-
New Mexico	495.8	-	495.8	-	-	-	-	-	-
New York	9,577.1	-	9,171.3	-	-	-	405.7	-	-
North Carolina	1,715.8	-	1,715.8	-	-	-	-	-	-
North Dakota	105.0	-	105.0	-	-	-	-	-	-
Ohio	3,144.8	-	3,141.3	-	-	-	-	-	3.5
Oklahoma	788.1	-	784.1	-	4.0	-	-	-	-
Oregon	470.0	-	470.0	-	-	-	-	-	-
Pennsylvania	3,379.8	-	3,107.3	-	232.2	-	40.3	-	-
Puerto Rico	0.0	-	-	-	-	-	-	-	-
Rhode Island	177.6	-	164.4	-	13.2	-	-	-	-
South Carolina	1,761.9	-	1,751.4	-	-	-	10.5	-	-
South Dakota	75.5	-	75.5	-	-	-	-	-	-
Tennessee	1,197.0	-	1,197.0	-	-	-	-	-	-
Texas	12,841.0	-	12,094.9	-	450.4	-	250.0	37.6	-
Utah	579.1	-	579.1	-	-	-	-	-	-
Vermont	229.0	-	229.0	-	-	-	-	-	-
Virgin Islands	0.0	-	-	-	-	-	-	-	-
Virginia	1,318.3	-	1,268.3	-	-	-	50.0	-	-
Washington	2,530.1	-	2,522.7	-	-	-	7.4	-	-
West Virginia	84.6	-	84.6	-	-	-	-	-	-
Wisconsin	1,947.1	-	1,939.0	-	-	-	8.1	-	-
Wyoming	0.0	-	-	-	-	-	-	-	-
<b>ALL</b>	<b>96,498.8</b>	<b>3.9</b>	<b>93,954.9</b>	<b>31.8</b>	<b>1,352.3</b>	<b>0.0</b>	<b>1,051.8</b>	<b>95.8</b>	
<b>QoQ</b>	<b>26.2%</b>	<b>-90.8%</b>	<b>28.4%</b>	<b>-89.3%</b>	<b>38.1%</b>		<b>-33.4%</b>	<b>-75.4%</b>	
<b>YoY</b>	<b>-7.3%</b>		<b>-6.1%</b>	<b>-98.4%</b>	<b>132.2%</b>		<b>16.5%</b>	<b>-82.9%</b>	

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

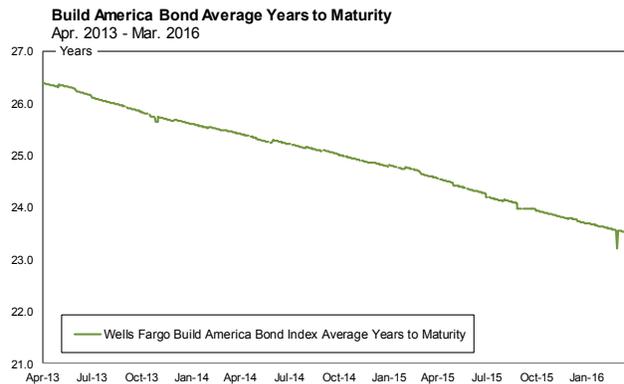
\$ Millions

Use of Proceeds	1Q'15	4Q'15	1Q'16	Q-o-Q	Y-o-Y
Airports	1,834.6	4,119.4	582.8	-85.9%	-68.2%
Assisted Living	53.8	48.5	27.3	-43.7%	-49.3%
Bridges	854.0	1,350.7	658.8	-51.2%	-22.9%
Childrens hospital	267.4		228.9		-14.4%
Civic & convention centers	398.2	1,128.7	459.0	-59.3%	15.3%
Combined utilities	188.3	491.5	333.5	-32.1%	77.1%
Cont Care Retirement Community	788.8	721.1	255.4	-64.6%	-67.6%
Correctional facilities	267.9	457.9	101.0	-77.9%	-62.3%
Economic development	1,851.1	2,253.2	2,338.4	3.8%	26.3%
Fire stations & equipment	87.7	105.7	118.4	12.0%	35.0%
Flood control	327.9	253.1	85.5	-66.2%	-73.9%
Gas	13.4	27.1	618.9	2183.8%	4518.7%
General acute care hospital	6,757.7	3,435.0	5,852.5	70.4%	-13.4%
General Medical	138.1		200.3		45.0%
General purpose /public improvement	26,153.8	15,596.4	24,396.7	56.4%	-6.7%
Government buildings	387.3	469.6	283.1	-39.7%	-26.9%
Higher education	13,274.2	3,892.1	10,445.8	168.4%	-21.3%
Hospital equipment loans		9.5		-100.0%	
Industrial development	240.9	328.5	26.3	-92.0%	-89.1%
Libraries & museums	47.7	479.7	211.5	-55.9%	343.4%
Mass transportation	4,086.2	2,666.8	3,223.3	20.9%	-21.1%
Multi family housing	1,161.8	1,867.3	1,006.3	-46.1%	-13.4%
Nursing homes		53.9	37.6	-30.2%	
Office buildings		3.1	59.8	1829.0%	
Other education	134.3	70.2	48.1	-31.5%	-64.2%
Other recreation	69.3	59.8	41.3	-30.9%	-40.4%
Parking facilities	95.3	132.8	39.6	-70.2%	-58.4%
Parks, Zoos & Beaches	329.6	349.6	205.5	-41.2%	-37.7%
Police stations & equipment	9.4	5.0	32.9	558.0%	250.0%
Pollution control	90.0	276.6	637.3	130.4%	608.1%
Primary & secondary education	25,154.8	14,772.3	24,595.0	66.5%	-2.2%
Public power	3,253.7	3,702.2	3,487.7	-5.8%	7.2%
Sanitation	91.2	203.5	58.4	-71.3%	-36.0%
Seaports /marine terminals	161.2	297.4	171.8	-42.2%	6.6%
Single family housing	1,360.9	2,460.5	2,051.7	-16.6%	50.8%
Single speciality hospital	94.3	389.3	35.3	-90.9%	-62.6%
Solid waste	156.6	152.3	17.9	-88.2%	-88.6%
Stadiums & sports complexes	120.0	205.2	119.1	-42.0%	-0.8%
Student loans	437.2	76.0		-100.0%	-100.0%
Telecommunications	19.6	2.9		-100.0%	-100.0%
Theatres		0.8		-100.0%	
Toll roads, highways & streets	3,919.6	5,061.1	3,239.5	-36.0%	-17.4%
Water & sewer facilities	9,417.4	8,465.2	10,158.3	20.0%	7.9%
<b>ALL</b>	<b>104,095.2</b>	<b>76,441.5</b>	<b>96,490.5</b>	<b>26.2%</b>	<b>-7.3%</b>

BUILD AMERICA BONDS



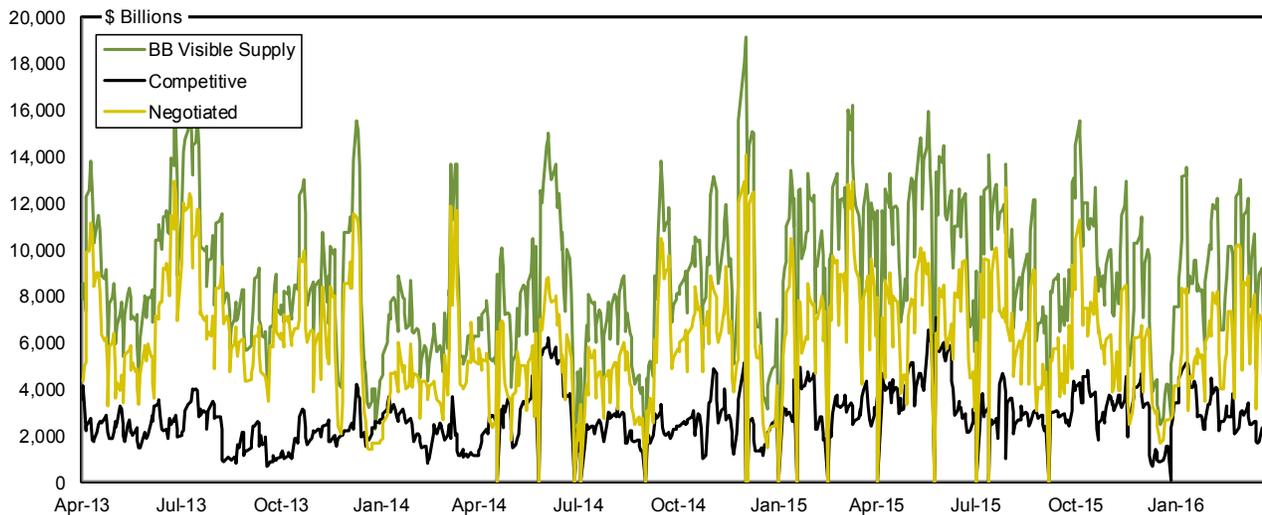
Source: Wells Fargo



Source: Wells Fargo

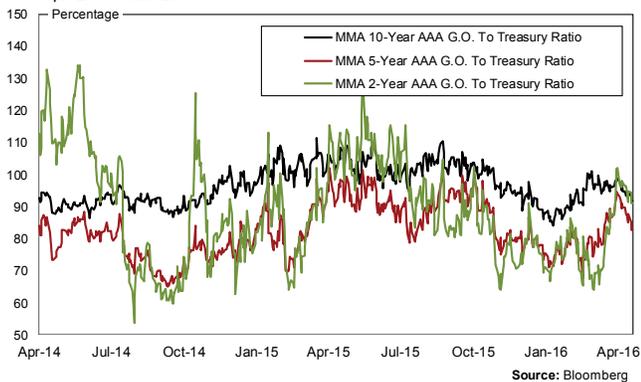
SUPPLY, YIELD CURVES, TOTAL RETURN, SPREADS & RATIOS

Bond Buyer 30-Day Visible Supply  
Apr. 1, 2013 - Mar. 31, 2016



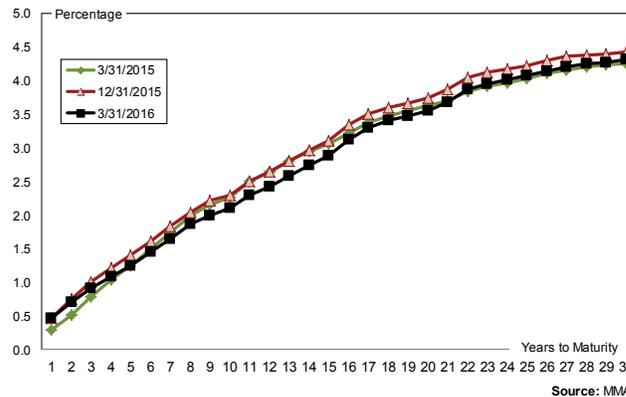
Source: Bond Buyer, Bloomberg

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

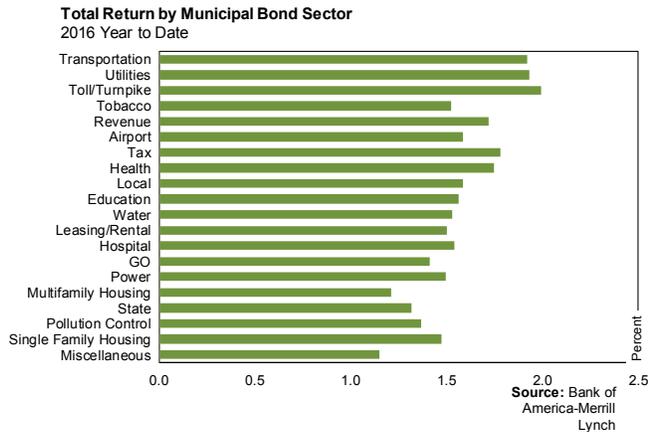
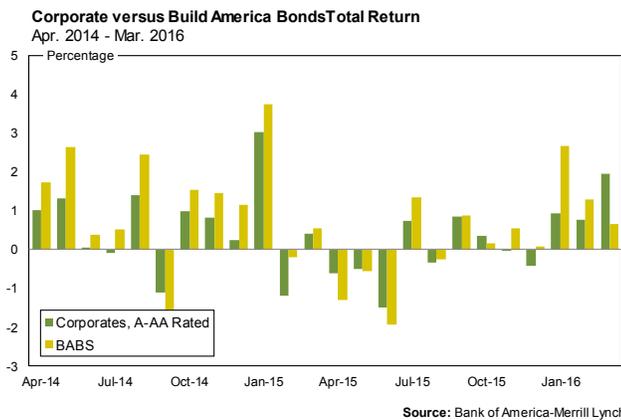
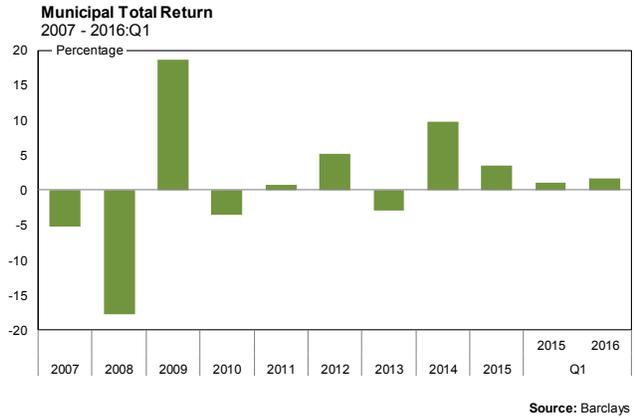
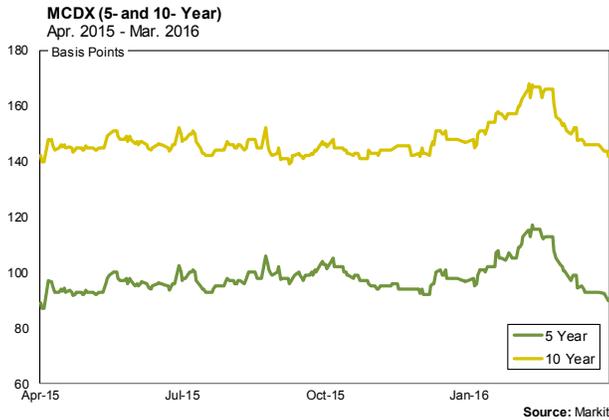


Source: Bloomberg

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	
2015:Q4	876,950	422,465	818,905	2,118,320	201,380	106,475	131,389	\$439,244	
2016:Q1	919,774	454,237	881,779	2,255,790	249,003	155,679	152,691	\$557,373	
%Change	5%	8%	8%	6%	24%	46%	16%	27%	

# of Trades										
	# 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
2015:Q4	82%	13%	2%	3%	2,118,320	13%	15%	10%	62%	\$439,244
2016:Q1	81%	13%	3%	3%	2,255,790	11%	14%	8%	67%	\$557,373

Trades by Sector								
	Education	Health	Utility	Various Purpose	Transportation	Tax-Revenue	Other	Total (Millions)
2015:Q4	19%	6%	12%	13%	12%	13%	25%	\$439,244
2016:Q1	23%	9%	12%	13%	8%	10%	25%	\$557,373

Trades by Maturity						
	1 Year or Less		5+ Years to 10 Years	10+ Years to 20 Years	20+ Years	Total (Millions)
2015:Q4	5%	13%	17%	34%	30%	\$439,244
2016:Q1	5%	12%	17%	35%	32%	\$557,373

Trades by Source of Repayment					
	Revenue	General Obligation	Double Barrel	Not Available	Total (Millions)
2015:Q4	66%	31%	3%	0%	\$439,244
2016:Q1	64%	33%	3%	0%	\$557,373

Trades by Coupon Type					
	Fixed Rate	Variable Rate	Zero Coupon	Not Available	Total (Millions)
2015:Q4	83%	13%	4%	0%	\$439,244
2016:Q1	73%	23%	4%	0%	\$557,373

Source: MSRB EMMA

## MUNICIPAL CDS

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

State	California	Connecticut	Florida	Illinois	Michigan	Nevada	New Jersey	New York	Ohio	South Carolina	Texas	New York City	Massachusetts	TOTAL	Average Contract Size
Jan-15	37.2		5.0	27.4			14.7				20.0			104.3	3.4
Feb-15			10.0		10.0		10.0				10.0			40.0	2.5
Mar-15		10.0		43.7			0.3				0.3			54.3	2.0
Apr-15				1.1			0.1				0.2			1.4	0.5
May-15	8.0			28.0			6.0				1.0			43.0	2.7
Jun-15	171.9		26.0	73.0	25.0		98.6	0.5				15.2	20.0	430.2	6.1
Jul-15	200.5	16.2	135.0	219.2	80.0	20.0	117.5	45.0	40.0		30.0	51.5	13.0	967.9	7.2
Aug-15	306.5	10.0	40.0	289.0	70.0		242.7	10.0	35.0		1.9	85.0		1,090.1	5.4
Sep-15								55.0				20.0		75.0	18.8
Oct-15	25.0	5.0			25.0			20.0					10.0	85.0	6.1
Nov-15	1.0		4.6	15.0	12.2		23.7	11.0		7.0	4.9	11.0	11.0	101.5	3.4
Dec-15			50.0	70.0										120.0	24.0
Jan-16				70.0				25.0						95.0	15.8
Feb-16	10.0	20.0	50.0	25.4					25.0			10.0	25.0	165.4	11.0
Mar-16				27.4										29.9	1.3
1Q16	10.0	20.0	50.0	122.8	0.0	0.0	0.0	25.0	25.0	0.0	2.1	10.0	25.0	289.9	6.7
Q-o-Q	-41.5%	300.0%	-8.5%	44.5%	-100.0%		-100.0%	-19.4%		-100.0%	-56.8%	-9.1%	19.0%	-5.4%	
Y-o-Y	-73.1%	100.0%	233.3%	72.6%	-100.0%		-100.0%				-93.1%			45.9%	

Source: DTCC

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

	6M	1Y	2Y	3Y	4Y	5Y	7Y	10Y
CA California	28.8	24.8	44.5	60.9	66.3	74.3	104.0	125.0
CT Connecticut	31.5	34.8	70.9	92.1	105.2	115.8	126.1	170.1
DE Delaware	19.0	20.9	29.4	34.0	32.3	33.0	41.5	63.0
FL Florida	18.9	19.5	33.5	43.6	42.1	43.0	49.4	89.8
IL Illinois	128.1	136.9	197.8	280.8	343.2	353.5	406.6	433.2
MA Massachusetts	18.6	20.0	28.3	50.0	49.3	51.4	57.8	98.5
MD Maryland	13.2	17.7	28.5	36.3	36.9	39.0	50.1	81.5
MI Michigan	38.0	38.5	50.2	58.3	65.1	73.6	100.1	111.8
MN Minnesota	11.9	13.3	20.2	27.5	30.9	35.4	46.6	62.5
NC North Carolina	18.9	19.6	24.0	30.3	32.2	34.7	37.9	67.0
NJ New Jersey	59.4	63.2	105.4	151.0	187.7	196.9	216.8	279.8
NV Nevada	25.2	25.9	34.2	42.5	44.3	46.5	58.1	96.3
NY New York	18.8	21.0	35.1	49.8	48.9	52.1	58.6	108.9
OH Ohio	21.2	23.7	31.9	42.9	47.4	52.6	66.1	103.3
PA Pennsylvania	40.5	43.7	57.2	86.1	99.1	105.5	114.2	173.7
PR Puerto Rico	11,871.3	8,998.4	5,096.8	4,010.5	3,412.8	3,028.6	2,566.0	2,223.0
RI Rhode Island	11.8	18.9	29.9	42.1	42.7	46.0	62.5	100.7
SC South Carolina	14.4	14.8	17.7	24.3	29.0	35.3	53.3	70.9
TX Texas	15.3	17.7	22.9	31.9	41.2	47.4	59.4	77.0
UT Utah	58.4	57.0	56.9	54.4	45.4	44.4	51.9	65.5
VA Virginia	20.8	24.8	28.9	34.8	35.1	36.4	39.2	55.8
WA Washington	14.7	15.2	18.7	22.3	29.3	46.5	53.1	75.8
WI Wisconsin	8.6	8.8	12.8	19.4	23.6	28.4	41.8	60.8
NYC New York City	32.2	36.3	60.8	69.6	74.2	78.9	97.4	135.2

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

## OUTSTANDING MUNICIPAL DEBT

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

\$ Millions

State	Total Outstanding	G.O.	Revenue	Due in 13 Months	Long-Term	2015:Q4 Total Outstanding	% Change
AK Alaska	10,225.1	2,685.7	7,539.4	603.4	9,621.7	10,112.4	1.1%
AL Alabama	31,662.9	6,262.8	25,400.1	1,064.8	30,598.1	30,959.7	2.3%
AR Arkansas	13,839.2	6,155.4	7,683.8	555.6	13,283.6	14,055.7	-1.5%
AS American Samoa	78.9		78.9		78.9	55.9	41.1%
AZ Arizona	51,228.6	11,580.5	39,648.1	2,349.6	48,879.0	50,396.2	1.7%
CA California	520,855.7	199,810.3	321,045.4	21,431.0	499,424.7	516,819.1	0.8%
CO Colorado	53,302.3	11,279.0	42,023.3	3,442.8	49,859.5	52,681.7	1.2%
CT Connecticut	47,312.2	26,120.9	21,191.3	3,618.6	43,693.5	46,506.0	1.7%
DC District of Columbia	29,593.9	3,456.5	26,137.5	871.7	28,722.2	29,468.4	0.4%
DE Delaware	7,072.0	2,661.3	4,410.7	333.9	6,738.0	7,012.7	0.8%
FL Florida	139,150.8	15,895.8	123,255.0	6,326.7	132,824.0	137,482.4	1.2%
GA Georgia	65,728.3	15,479.4	50,248.9	3,354.7	62,373.7	65,684.1	0.1%
GU Guam	2,614.3	19.7	2,594.6	37.6	2,576.7	2,471.1	5.8%
HI Hawaii	16,733.5	10,282.1	6,451.3	870.5	15,863.0	16,196.8	3.3%
IA Iowa	20,128.0	6,281.9	13,846.0	1,170.8	18,957.2	19,922.1	1.0%
ID Idaho	6,499.7	1,896.1	4,603.7	716.9	5,782.8	6,324.8	2.8%
IL Illinois	152,079.6	78,304.5	73,775.1	8,375.8	143,703.8	151,360.5	0.5%
IN Indiana	47,361.8	1,104.7	46,257.1	2,874.9	44,486.9	47,934.4	-1.2%
KS Kansas	23,766.3	10,090.0	13,676.4	1,601.5	22,164.8	23,395.8	1.6%
KY Kentucky	33,290.0	1,757.9	31,532.1	2,027.6	31,262.4	33,038.7	0.8%
LA Louisiana	33,545.6	7,006.4	26,539.3	1,314.1	32,231.5	33,332.9	0.6%
MA Massachusetts	93,152.2	35,668.4	57,483.8	6,512.3	86,639.9	92,042.4	1.2%
MD Maryland	50,084.5	25,108.6	24,975.9	3,198.9	46,885.6	49,695.2	0.8%
ME Maine	7,421.9	1,822.4	5,599.5	501.1	6,920.8	7,393.9	0.4%
MI Michigan	75,906.7	26,204.7	49,701.9	3,489.3	72,417.4	74,751.6	1.5%
MN Minnesota	47,646.6	24,607.4	23,039.2	2,960.0	44,686.6	48,072.6	-0.9%
MO Missouri	46,041.4	8,903.6	37,137.9	1,945.8	44,095.6	46,073.4	-0.1%
MS Mississippi	16,396.3	6,348.0	10,048.2	849.2	15,547.1	16,565.2	-1.0%
MT Montana	4,010.3	1,355.7	2,654.6	230.3	3,780.0	3,932.8	2.0%
NC North Carolina	48,527.6	11,617.4	36,910.2	2,750.1	45,777.6	48,990.1	-0.9%
ND North Dakota	5,044.2	1,871.8	3,172.4	325.0	4,719.2	4,951.8	1.9%
NE Nebraska	17,819.8	5,468.9	12,350.9	856.0	16,963.8	17,764.3	0.3%
NH New Hampshire	7,956.5	2,288.3	5,668.2	435.6	7,520.9	7,955.3	0.0%
NJ New Jersey	115,734.8	24,990.3	90,744.5	11,019.2	104,715.6	116,145.9	-0.4%
NM New Mexico	13,717.8	3,387.6	10,330.2	980.7	12,737.1	13,500.2	1.6%
NV Nevada	25,895.1	13,532.5	12,362.6	1,150.8	24,744.4	24,968.5	3.7%
NY New York	372,145.5	76,534.1	295,611.4	22,894.3	349,251.2	370,178.6	0.5%
OH Ohio	102,146.7	29,012.4	73,134.3	5,241.0	96,905.7	101,722.4	0.4%
OK Oklahoma	18,991.1	3,969.4	15,021.7	1,573.7	17,417.5	18,532.2	2.5%
OR Oregon	34,957.2	19,821.9	15,135.3	2,389.5	32,567.8	34,805.7	0.4%
OT Other Territories	9,433.5	50.0	9,383.6	334.5	9,099.1	9,468.8	-0.4%
PA Pennsylvania	121,122.7	43,114.8	78,007.8	6,910.1	114,212.5	120,846.4	0.2%
PR Puerto Rico	100,674.9	12,801.0	87,873.9	1,923.1	98,751.9	100,834.0	-0.2%
RI Rhode Island	10,777.6	1,700.0	9,077.6	506.6	10,270.9	10,835.5	-0.5%
SC South Carolina	34,742.7	8,469.0	26,273.7	2,080.9	32,661.9	35,173.2	-1.2%
SD South Dakota	4,760.5	940.5	3,820.1	209.3	4,551.3	4,817.9	-1.2%
TN Tennessee	37,422.8	14,438.9	22,983.9	2,042.5	35,380.4	36,933.3	1.3%
TI Trust Territories	261.5	83.3	178.2	140.0	121.5	263.5	-0.8%
TX Texas	310,252.8	156,035.5	154,217.4	12,252.0	298,000.8	307,347.4	0.9%
UT Utah	19,764.3	6,179.2	13,585.1	1,192.3	18,572.0	20,008.4	-1.2%
VA Virginia	58,078.1	12,794.7	45,283.4	3,064.7	55,013.4	58,003.8	0.1%
VI Virgin Islands	2,368.7		2,368.7	65.6	2,303.1	2,368.7	0.0%
VT Vermont	4,769.0	725.8	4,043.2	141.9	4,627.1	4,771.9	-0.1%
WA Washington	80,225.8	38,522.6	41,703.2	3,987.7	76,238.1	79,490.7	0.9%
WI Wisconsin	43,259.9	21,757.4	21,502.5	3,759.4	39,500.4	43,014.5	0.6%
WV West Virginia	10,169.5	766.2	9,403.3	349.1	9,820.4	10,127.3	0.4%
WY Wyoming	2,540.0	151.5	2,388.5	112.7	2,427.3	2,578.1	-1.5%
TOTAL (3/31/2016)	3,260,289.5	1,059,174.6	2,201,114.9	171,317.3	3,088,972.2	3,240,137.6	0.6%
TOTAL (12/31/2015)	3,240,137.6	1,047,695.8	2,192,441.8	164,424.1	3,075,657.5		
% Change	0.6%	1.1%	0.4%	4.2%	0.4%		

<sup>7</sup> Outstanding includes both short- and long-term municipal debt, including certain preferred fund shares (e.g., VRDPS). "Due in 13 months" looks at original maturity and will not include securities with short puts unless original maturity is within 13 months. Outstanding does not include refunded (inclusive of prerefunded) debt and derivatives. See additional tables for prerefunded and derivatives debt. The chart replaces "Outstanding by Insurance" from prior municipal reports. For comparability against Federal Reserve's Flow of Funds, aggregate prerefunded with outstanding but not derivatives; differences between the two aggregates afterward are due to underlying database differences (Fed: Mergent; these tables: Bloomberg). Those CUSIPs unverified by Bloomberg are not included in the total; this affects approximately \$100 million outstanding.

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

\$ Millions

State	Total Outstanding	Tax-Exempt	AMT	Taxable	Fixed	Zero	Other	Industry	Total Outstanding
AK Alaska	10,225.1	8,588.0	489.6	1,147.4	7,881.2	162.6	2,181.3	Airport	84,661.4
AL Alabama	31,662.9	24,432.9	1,046.0	6,184.0	24,561.9	1,008.9	6,092.1	Development	105,150.5
AR Arkansas	13,839.2	8,956.8	325.4	4,557.0	12,346.3	259.3	1,233.7	Education	690,188.8
AS American Samoa	78.9	44.2			78.9		-	GO	652,265.2
AZ Arizona	51,228.6	44,818.5	1,194.3	5,215.8	46,025.4	31.9	5,171.3	Healthcare	251,950.3
CA California	520,855.7	415,195.9	18,151.1	87,508.7	379,968.4	65,895.1	74,992.2	Housing	127,228.2
CO Colorado	53,302.3	39,407.7	2,802.3	11,092.4	43,801.2	3,140.3	6,360.8	Other	666,098.7
CT Connecticut	47,312.2	36,566.4	1,192.1	9,553.7	39,827.5	457.2	7,027.5	Public Facilities	13,551.1
DC District of Columbia	29,593.9	22,500.6	3,727.2	3,366.1	19,683.7	5,611.4	4,298.9	Student Loan	29,821.5
DE Delaware	7,072.0	5,322.5	314.9	1,434.5	5,697.2	4.3	1,370.4	Transportation	214,370.8
FL Florida	139,150.8	113,483.0	11,303.2	14,364.6	117,399.0	3,036.5	18,715.3	Utilities	425,002.9
GA Georgia	65,728.3	51,379.3	3,180.5	11,168.5	52,533.6	74.2	13,120.6	TOTAL	3,260,289.5
GU Guam	2,614.3	2,385.7	188.6	40.1	2,498.9	115.5	-		
HI Hawaii	16,733.5	13,022.3	1,255.3	2,455.9	16,271.5	26.0	436.0		
IA Iowa	20,128.0	12,915.7	538.1	6,674.1	17,685.4	551.8	1,890.8		
ID Idaho	6,499.7	4,932.8	376.8	1,190.1	5,324.1	103.4	1,072.2		
IL Illinois	152,079.6	99,980.6	5,323.1	46,775.9	122,043.3	15,186.1	14,850.2		
IN Indiana	47,361.8	33,779.8	4,208.6	9,373.4	35,883.5	1,000.4	10,477.9		
KS Kansas	23,766.3	15,768.2	389.3	7,608.8	22,329.8	331.5	1,105.1		
KY Kentucky	33,290.0	22,476.8	1,593.1	9,220.1	27,323.8	470.6	5,495.6		
LA Louisiana	33,545.6	25,933.5	1,908.2	5,704.0	27,211.9	212.2	6,121.6		
MA Massachusetts	93,152.2	77,210.2	3,612.4	12,329.7	77,788.2	1,090.3	14,273.7		
MD Maryland	50,084.5	41,845.4	1,757.5	6,481.7	44,041.5	135.2	5,907.8		
ME Maine	7,421.9	5,388.5	535.3	1,498.2	6,762.9		659.0		
MI Michigan	75,906.7	55,847.2	2,884.2	17,175.2	56,504.7	7,385.4	12,016.6		
MN Minnesota	47,646.6	34,325.0	1,436.0	11,885.6	41,566.6	771.9	5,308.1		
MO Missouri	46,041.4	30,138.8	1,051.4	14,851.2	34,270.7	825.7	10,945.1		
MS Mississippi	16,396.3	10,964.3	330.7	5,101.3	11,932.4	3.0	4,460.9		
MT Montana	4,010.3	2,240.3	250.6	1,519.4	2,873.3	10.2	1,126.9		
NC North Carolina	48,527.6	40,156.9	1,252.5	7,118.2	38,719.2	257.3	9,551.2		
ND North Dakota	5,044.2	3,428.8	244.2	1,371.2	4,613.7		430.6		
NE Nebraska	17,819.8	12,594.1	469.9	4,755.8	16,135.2	-	1,684.6		
NH New Hampshire	7,956.5	5,122.7	583.5	2,250.4	5,878.3	75.7	2,002.5		
NJ New Jersey	115,734.8	86,272.1	6,560.4	22,902.3	90,667.9	14,221.5	10,845.5		
NM New Mexico	13,717.8	11,099.3	445.5	2,173.1	11,296.2	9.7	2,411.8		
NV Nevada	25,895.1	20,938.8	1,955.0	3,001.3	21,391.6	917.0	3,586.4		
NY New York	372,145.5	299,846.3	18,796.5	53,502.7	300,614.1	14,596.8	56,934.6		
OH Ohio	102,146.7	73,407.3	2,375.8	26,363.6	76,011.5	8,575.4	17,559.9		
OK Oklahoma	18,991.1	13,837.5	944.9	4,208.8	16,920.1	78.3	1,992.8		
OR Oregon	34,957.2	22,574.9	1,078.3	11,304.1	29,800.3	3,066.4	2,090.6		
OT Other Territories	9,433.5	2,066.3	7,323.6	43.7	924.7		8,508.8		
PA Pennsylvania	121,122.7	90,451.3	5,602.7	25,068.7	96,035.9	4,887.2	20,199.6		
PR Puerto Rico	100,674.9	82,698.4	219.1	17,757.4	56,577.0	37,335.0	6,762.9		
RI Rhode Island	10,777.6	8,677.5	739.6	1,360.4	7,936.3	1,754.4	1,086.8		
SC South Carolina	34,742.7	28,741.0	958.9	5,042.8	28,807.6	2,418.7	3,516.5		
SD South Dakota	4,760.5	2,895.2	298.0	1,567.4	4,239.2	4.0	517.3		
TN Tennessee	37,422.8	28,465.5	1,206.3	7,751.0	31,299.9	674.1	5,448.8		
TT Trust Territories	261.5	223.3	38.2	-	121.5		140.0		
TX Texas	310,252.8	233,979.0	15,460.5	60,813.3	249,423.1	15,968.3	44,861.4		
UT Utah	19,764.3	13,879.5	231.7	5,653.1	15,991.2	81.9	3,691.3		
VA Virginia	58,078.1	46,230.9	2,347.9	9,499.2	51,367.1	1,619.3	5,091.6		
VI Virgin Islands	2,368.7	2,205.6	46.5	116.6	2,320.6	48.1	-		
VT Vermont	4,769.0	2,911.5	456.8	1,400.8	3,029.1	2,120.4	(380.5)		
WA Washington	80,225.8	62,330.9	3,650.8	14,244.2	72,828.5	2,120.4	5,276.8		
WI Wisconsin	43,259.9	28,026.7	1,648.6	13,584.6	38,502.9	355.2	4,401.7		
WV West Virginia	10,169.5	5,610.0	759.7	3,799.8	6,489.2	2,077.7	1,602.6		
WY Wyoming	2,540.0	1,631.1	618.9	289.9	1,681.9		858.0		
TOTAL (3/31/2016)	3,260,289.5	2,490,153.2	147,679.9	622,421.7	2,581,740.3	221,163.6	457,385.6		
TOTAL (12/31/2015)	3,240,137.6	2,470,804.9	147,882.7	621,438.2	2,557,662.8	220,991.7	382,192.1		
% Change	0.6%	0.8%	-0.1%	0.2%	0.9%	0.1%	19.7%		

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

Addendum Tables –Build America Bonds, Prerefunded, Derivatives, and Rating<sup>9</sup>

\$ Millions

State	Total Outstanding	BAB Only Prerefunded	Derivatives Only	AAA	AA	A	BBB	HY	
AK Alaska	10,225.1	357.7	745.9	154.1	657.0	6,317.9	2,024.5	367.0	471.8
AL Alabama	31,662.9	581.3	2,909.8	643.6	837.4	15,187.5	9,079.8	1,287.9	724.4
AR Arkansas	13,839.2	29.9	665.1	0.0	404.8	8,570.9	2,356.6	469.5	22.0
AS American Samoa	78.9								
AZ Arizona	51,228.6	1,954.7	3,671.4	1,343.6	3,084.5	29,906.9	10,700.8	3,367.1	821.4
CA California	520,855.7	37,486.0	33,696.5	18,666.5	9,972.2	228,118.1	193,003.3	21,729.5	20,057.7
CO Colorado	53,302.3	4,027.1	5,019.7	2,245.9	3,021.5	26,334.4	11,369.7	6,053.1	464.6
CT Connecticut	47,312.2	1,879.3	2,136.6	911.7	9,295.8	28,794.8	6,584.4	480.1	208.8
DC District of Columbia	29,593.9	1,889.3	1,475.1	1,055.5	366.4	11,597.7	8,919.6	2,528.6	3,477.3
DE Delaware	7,072.0	510.0	567.6	199.5	2,521.1	2,739.1	1,119.7	465.0	58.6
FL Florida	139,150.8	5,494.9	10,936.6	6,845.9	2,729.7	58,599.0	56,420.1	4,662.5	682.2
GA Georgia	65,728.3	3,689.0	4,102.2	1,301.6	14,314.2	18,891.6	21,651.3	2,548.4	184.3
GU Guam	2,614.3		381.0		-	-	940.5	1,433.3	222.5
HI Hawaii	16,733.5	1,204.6	2,180.1	372.1	171.4	12,687.8	2,819.6	529.8	122.8
IA Iowa	20,128.0	640.5	778.3	289.7	1,804.1	8,153.4	4,863.9	338.9	2,319.5
ID Idaho	6,499.7	152.1	718.6	173.1	648.1	2,230.4	2,022.2	144.6	118.7
IL Illinois	152,079.6	9,925.6	6,926.1	6,307.2	5,248.9	45,246.6	32,376.6	46,939.9	6,349.6
IN Indiana	47,361.8	1,844.6	3,114.1	1,564.2	3,987.9	19,884.5	13,559.6	2,606.5	391.4
KS Kansas	23,766.3	1,509.5	1,741.7	202.3	1,808.8	13,691.7	5,659.4	127.6	125.3
KY Kentucky	33,290.0	2,010.1	3,012.8	342.1	1,381.2	14,116.1	13,145.3	2,570.3	99.0
LA Louisiana	33,545.6	626.3	4,213.4	1,190.4	2,616.0	11,875.9	11,492.0	4,399.2	194.0
MA Massachusetts	93,152.2	4,818.3	7,054.9	4,556.6	13,711.5	61,258.6	10,016.4	2,247.7	181.9
MD Maryland	50,084.5	3,257.4	5,479.1	605.8	20,350.1	18,615.3	5,150.6	1,731.9	448.1
ME Maine	7,421.9	85.2	456.3	72.8	92.1	4,566.2	2,166.4	176.2	77.5
MI Michigan	75,906.7	1,960.9	4,054.6	2,250.4	6,083.1	34,631.9	15,246.8	5,362.8	9,352.2
MN Minnesota	47,646.6	1,065.2	2,353.5	545.4	5,906.1	31,298.8	5,333.4	917.5	335.4
MO Missouri	46,041.4	2,867.9	4,668.1	904.1	4,331.7	22,956.0	10,188.1	1,661.9	156.5
MS Mississippi	16,396.3	764.9	1,272.4	205.4	338.5	10,857.2	2,426.6	1,025.3	55.8
MT Montana	4,010.3	29.2	171.6	4.2	345.9	1,734.3	1,226.7	19.3	-
NC North Carolina	48,527.6	1,592.0	5,818.5	1,062.1	12,598.1	22,991.9	9,550.0	1,220.3	51.3
ND North Dakota	5,044.2	27.3	139.1	54.9	270.9	2,533.4	1,384.6	291.4	15.2
NE Nebraska	17,819.8	902.6	1,900.6	374.8	362.4	9,162.4	3,672.5	1,675.2	37.9
NH New Hampshire	7,956.5	354.9	539.1	192.2	194.1	4,747.8	2,219.1	311.9	110.3
NJ New Jersey	115,734.8	6,535.5	4,890.6	6,371.7	7,721.2	20,871.0	70,149.0	5,709.1	4,382.8
NM New Mexico	13,717.8	245.7	1,001.2	330.7	1,118.8	10,520.8	1,044.2	606.2	77.0
NV Nevada	25,895.1	2,150.6	1,833.3	1,162.7	233.1	14,677.1	7,530.8	460.2	314.8
NY New York	372,145.5	20,576.0	16,038.2	10,737.3	18,384.1	240,485.2	61,409.5	12,360.9	8,453.5
OH Ohio	102,146.7	6,838.9	7,308.2	1,836.1	7,673.1	45,704.7	21,129.0	3,899.5	12,550.0
OK Oklahoma	18,991.1	629.3	523.8	422.0	2,525.2	7,749.3	5,813.9	559.5	239.6
OR Oregon	34,957.2	965.6	3,872.5	165.5	1,249.0	27,697.1	3,798.0	536.4	30.6
OT Other Territories	9,433.5			6,026.3	1,260.3	6,589.3	48.9	248.6	-
PA Pennsylvania	121,122.7	4,870.2	6,662.2	3,892.6	3,039.4	48,425.3	49,596.2	9,036.1	1,399.2
PR Puerto Rico	100,674.9	1,013.0	777.6	1,300.1	178.8	169.4	3,739.2	396.4	82,715.6
RI Rhode Island	10,777.6		568.5	216.1	884.8	4,542.6	2,294.2	938.4	1,744.0
SC South Carolina	34,742.7	874.4	4,009.8	770.2	1,851.4	13,992.2	13,210.7	1,512.8	8.5
SD South Dakota	4,760.5	309.2	181.3	159.6	228.5	2,610.0	1,567.9	26.8	-
TN Tennessee	37,422.8	1,801.0	3,522.3	622.1	1,316.8	22,436.9	6,825.0	4,035.8	22.4
TT Trust Territories	261.5				-	-	-	-	38.2
TX Texas	310,252.8	16,479.0	31,177.1	6,358.1	120,197.8	97,293.7	50,097.2	16,588.1	2,482.0
UT Utah	19,764.3	2,882.3	2,314.7	723.7	6,963.3	8,908.5	2,204.0	79.1	74.6
VA Virginia	58,078.1	3,653.6	6,483.9	836.2	15,581.3	31,618.4	2,877.3	2,403.6	2,139.0
VI Virgin Islands	2,368.7	37.3			-	-	116.0	1,970.2	138.2
VT Vermont	4,769.0	123.8	391.4	0.0	36.1	3,145.4	1,248.3	112.5	16.3
WA Washington	80,225.8	5,974.1	11,217.6	2,092.7	1,514.0	65,500.2	9,750.3	888.7	124.4
WI Wisconsin	43,259.9	1,671.1	3,487.9	1,064.9	1,719.0	29,467.7	7,073.9	721.5	432.6
WV West Virginia	10,169.5	88.2	190.9	42.7	347.5	1,830.9	3,460.3	953.6	2,603.9
WY Wyoming	2,540.0	133.8			232.0	1,003.3	1,072.1	194.2	-
TOTAL (3/31/2016)	3,260,289.5	171,390.4	229,353.4	99,769.3	323,711.2	1,493,537.1	804,745.9	183,928.7	167,925.0
TOTAL (12/31/2015)	3,240,137.6	171,782.2	208,219.3	102,592.1	318,909.8	1,476,892.5	806,735.7	184,641.3	167,714.0
% Change	0.6%	-0.2%	10.1%	-2.8%	1.5%	1.1%	-0.2%	-0.4%	0.1%

<sup>9</sup> 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.<sup>10</sup>

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

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

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

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

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

### **Moody's Ratings**<sup>11</sup>

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

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

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

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

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

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

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

<sup>10</sup> Authors' own definition.

<sup>11</sup> Moodys.com, "Ratings Definitions."

risk.

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

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

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

C: obligations rated C are the lowest rated class of bonds and are typically in default, with little prospect for recovery of principal or interest.<sup>12</sup>

### Standard and Poor's Ratings<sup>13</sup>

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

Long-term issue credit ratings are based on:

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

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

AA: very strong capacity to meet financial commitments.

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

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

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

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

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

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

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

### Fitch Ratings

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

Credit ratings are used by investors as indications of the likelihood of repayment in accordance

<sup>12</sup>The lowest rating is a "D" at both Moody's and Standard and Poor's.

<sup>13</sup>Standardandpoors.com "Long-Term Issue Credit Ratings," May 17, 2002.

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

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

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

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

**General Use of Proceeds:** Refers to the type of project the proceeds or funds received from bond issuance are used. In the Municipal Bond Credit Report, the use of proceed classifications are general government use, education, water, sewer and gas, health care and a miscellaneous category, "other."<sup>14</sup>

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

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

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

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

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<sup>14</sup>Authors' own definition.

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