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# **MUNICIPAL BOND CREDIT REPORT**

Third Quarter 2017

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**RESEARCH REPORT**

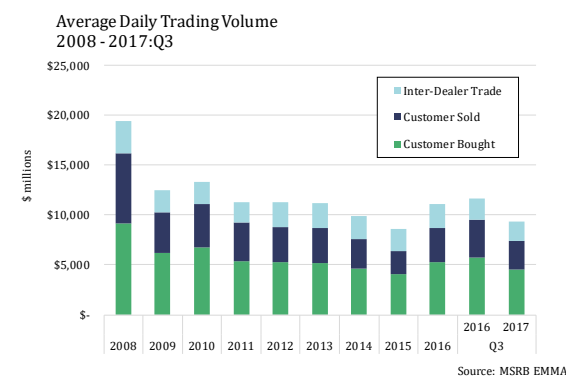
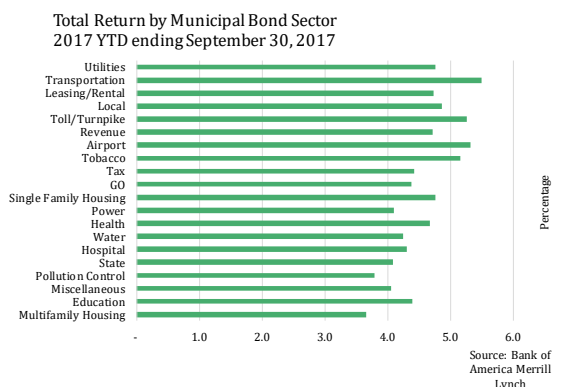
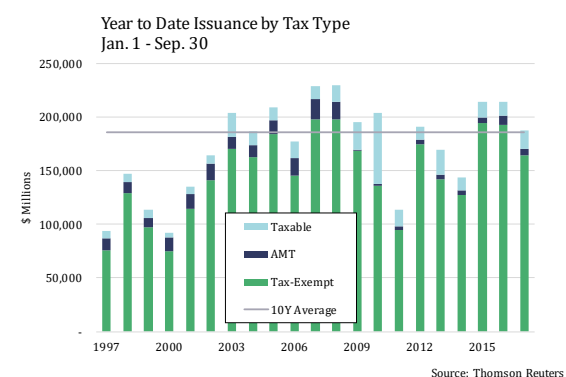
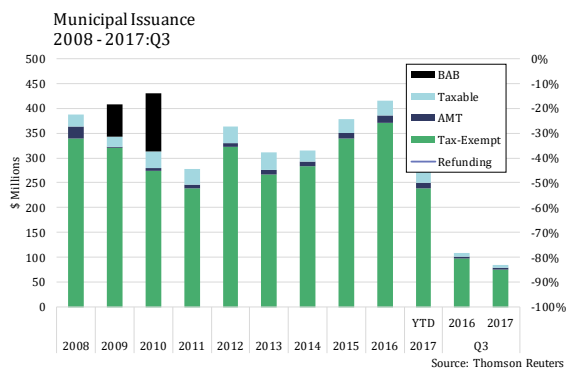
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## MARKET SUMMARY



### Municipal Issuance Overview – Primary Market

According to Thomson Reuters, long-term public municipal issuance volume totaled \$84.6 billion in the third quarter of 2017, a decline of 16.0 percent from the prior quarter (\$100.7 billion) and a decline of 22.0 percent year-over-year (y-o-y) (\$108.7 billion). As of the end of September, year-to-date municipal issuance totaled \$271.8 billion and was generally in line with the 10-year average of \$271.6 billion for the first three quarters of the year. Including private placements<sup>1</sup> (\$3.1 billion), long-term municipal issuance for 3Q'17 was \$87.6 billion.

Tax-exempt issuance totaled \$75.2 billion in 3Q'17, a decline of 14.0 percent q-o-q and a decline of 23.7 percent y-o-y; year to date, tax-exempt issuance was \$239.1 billion. Taxable issuance totaled \$5.9 billion in 3Q'17, a decline of 37.3 percent q-o-q and 25.1 percent y-o-y; year to date, taxable issuance totaled \$22.7 billion. AMT issuance was \$3.5 billion in 3Q'17, a decline of 7.9 percent q-o-q but an increase of 49.4 percent y-o-y; year to date, AMT volumes were \$10.0 billion year to date ending September.

By use of proceeds, general purpose led issuance totals in 3Q'17 (\$20.2 billion), followed by primary & secondary education (\$15.5 billion) and higher education (\$7.8 billion). Refunding volumes rose slightly to comprise 44.1 percent of issuance in 3Q'17 from 41.4 percent in the prior quarter but declined from 52.4 percent from the third quarter of 2016.<sup>2</sup>

### Yields, Inflows, and Total Return

Ratios of 10-year tax-exempt AAA GOs and similar-maturity Treasuries fell in the third quarter on a q-o-q basis, averaging 85.0 percent in 3Q'17 from 89.6 percent in 2Q'17.

According to the Investment Company Institute (ICI), first quarter net flow into long-term tax-exempt funds was positive, with \$7.3 billion of net inflow in 3Q'17 compared to \$8.0 billion of inflow from 2Q'17 and \$16.5 billion of inflow y-o-y.

According to Bank of America-Merrill Lynch indices, municipals gained 1.2 percent in the third quarter of 2017. The transportation, leasing/rental, and local sectors had the strongest performance within the individual municipal sectors (1.9 percent, 1.5 percent and 1.4 percent respectively) in 3Q'17 while multifamily, education, and miscellaneous underperformed relative to other municipal sectors (0.8 percent, 0.9 percent and 0.9 percent total return, respectively). Build America Bonds (BABs) gained 1.6 percent, outperforming both tax exempts bonds and similarly-rated corporate bonds (1.2 percent) in 3Q'17.

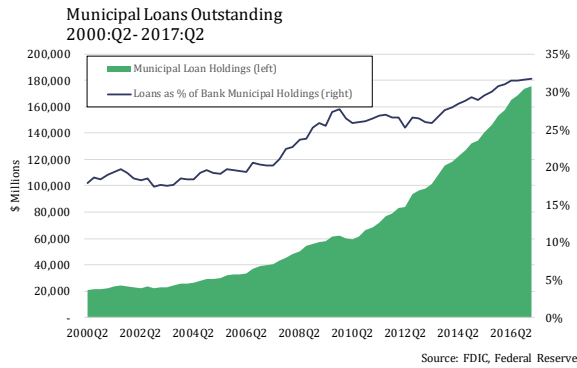
Year to date ending September, tax-exempt municipals returned 4.6 percent, Build America Bonds returned 0.4 percent, and investment grade corporates returned 0.9 percent.

### Trading Activity and Bank Holdings

Trading activity fell q-o-q to \$9.3 billion daily in 3Q'17, a 11.7 percent decrease from 2Q'17 (\$10.6 billion) and a 20.2 percent decline from 3Q'16 (\$11.7 billion). By number of trades, trading activity also fell 9.3 percent on

<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.



a q-o-q basis but rose 8.5 percent on a y-o-y basis.

Bank holdings of municipal loans rose in 2Q'17 from the prior quarter to \$180.3 billion (from \$176.0 billion) while holdings of bonds fell slightly to \$376.9 billion (from \$378.2 billion).

### Government & Rating Update

In August, both Fitch Ratings and Moody's Investor Services upgraded Wisconsin's rating to AA+ (from AA) and to Aa1 (from Aa2), respectively. In September, Standard and Poor's downgraded Pennsylvania to A+ (from AA-) due to budget issues. Shortly after the end of the third quarter, Fitch withdrew its IDR ratings for the Virgin Islands and Moody's further downgraded Puerto Rico to Ca (from Caa3) due to Hurricane Maria.

According to the Nelson A. Rockefeller Institute of Government, preliminary figures for the second quarter of 2017 indicate overall tax collections to be relatively weak, growing 2.3 percent.<sup>3</sup>

<sup>3</sup>SUNY Rockefeller Institute of Government, "[State Revenue Report #108 Volatility in State Tax revenues; Mounting Fiscal Uncertainties](#)," September 2017

## CHARTS &amp; DATA

LONG-TERM MUNICIPAL STATE ISSUANCE, 3Q'17<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 Refunding | New Refunding   |
| Alabama              | 989.8           | 134.1           | 855.7           | -              | 946.9           | 42.9           | 139.0           | -           | 365.0                     | 485.8           |
| Alaska               | 311.5           | 144.0           | 167.5           | -              | 297.5           | 13.9           | -               | -           | -                         | 311.4           |
| American Samoa       | 0.0             |                 |                 |                |                 |                |                 |             |                           |                 |
| Arizona              | 568.0           | 113.0           | 455.0           | -              | 556.3           | 11.7           | 524.0           | -           | 14.7                      | 29.3            |
| Arkansas             | 537.0           | 276.7           | 260.3           | -              | 534.0           | 3.0            | 344.7           | -           | 40.4                      | 151.9           |
| California           | 11,183.5        | 4,541.5         | 6,642.0         | 418.1          | 10,255.3        | 510.1          | 4,092.9         | -           | 3,453.2                   | 3,637.4         |
| Colorado             | 1,543.8         | 463.9           | 1,079.9         | 280.6          | 1,213.0         | 50.2           | 501.8           | -           | 313.6                     | 728.3           |
| Connecticut          | 598.6           | 423.6           | 175.0           | 53.7           | 544.9           | -              | 399.2           | -           | 118.2                     | 81.2            |
| District of Columbia | 660.5           | -               | 660.5           | -              | 626.1           | 34.4           | 626.1           | -           | -                         | 34.4            |
| Delaware             | 0.0             |                 |                 |                |                 |                |                 |             |                           |                 |
| Florida              | 4,403.1         | 952.9           | 3,450.2         | 1,335.2        | 2,554.7         | 513.2          | 2,205.4         | -           | 240.1                     | 1,957.6         |
| Georgia              | 1,693.5         | 79.1            | 1,614.4         | -              | 1,640.2         | 53.3           | 406.2           | -           | 568.4                     | 718.9           |
| Guam                 | 0.0             |                 |                 |                |                 |                |                 |             |                           |                 |
| Hawaii               | 1,059.1         | 763.2           | 295.9           | -              | 785.5           | 273.6          | 619.9           | -           | 420.3                     | 18.9            |
| Idaho                | 499.5           | 119.2           | 380.3           | -              | 206.1           | 293.4          | 306.2           | -           | -                         | 193.3           |
| Illinois             | 2,638.3         | 1,570.2         | 1,068.1         | -              | 2,465.3         | 173.0          | 1,001.9         | -           | 913.5                     | 722.9           |
| Indiana              | 892.0           | 62.5            | 829.5           | -              | 856.3           | 35.6           | 351.6           | -           | 154.0                     | 386.4           |
| Iowa                 | 427.3           | 233.8           | 193.5           | -              | 410.4           | 17.0           | 303.6           | -           | 31.7                      | 92.1            |
| Kansas               | 575.2           | 222.7           | 352.5           | -              | 572.9           | 2.3            | 426.1           | -           | 36.0                      | 113.0           |
| Kentucky             | 1,012.0         | 148.8           | 863.2           | -              | 916.9           | 95.2           | 389.1           | -           | 475.1                     | 147.8           |
| Louisiana            | 1,182.6         | 374.1           | 808.5           | -              | 1,178.5         | 4.1            | 593.2           | -           | -                         | 589.4           |
| Maine                | 415.5           | 111.6           | 303.9           | -              | 297.0           | 118.5          | 244.7           | -           | -                         | 170.8           |
| Maryland             | 2,871.5         | 1,863.8         | 1,007.7         | -              | 2,871.5         | -              | 1,587.2         | -           | 224.3                     | 1,060.0         |
| Massachusetts        | 1,197.5         | 529.9           | 667.6           | 213.9          | 981.9           | 1.8            | 745.8           | -           | 290.8                     | 160.9           |
| Michigan             | 864.9           | 386.1           | 478.8           | 86.8           | 702.6           | 75.5           | 298.7           | -           | 92.0                      | 474.2           |
| Minnesota            | 2,547.2         | 1,724.7         | 822.5           | -              | 2,407.1         | 140.1          | 1,186.4         | -           | 523.3                     | 837.6           |
| Mississippi          | 307.0           | 216.7           | 90.3            | 17.5           | 166.1           | 123.4          | 111.1           | -           | 4.2                       | 191.7           |
| Missouri             | 741.3           | 301.1           | 440.2           | -              | 740.9           | 0.3            | 366.9           | -           | 153.6                     | 220.8           |
| Montana              | 366.4           | 281.3           | 85.1            | 11.9           | 354.5           | -              | 302.8           | -           | -                         | 63.5            |
| Nebraska             | 325.7           | 120.9           | 204.8           | 41.8           | 283.7           | 0.2            | 121.3           | -           | 15.9                      | 188.6           |
| Nevada               | 143.5           | 83.4            | 60.1            | -              | 143.5           | -              | 48.0            | -           | -                         | 95.5            |
| New Hampshire        | 61.1            | -               | 61.1            | -              | 61.1            | -              | 61.1            | -           | -                         | -               |
| New Jersey           | 3,598.5         | 1,222.5         | 2,376.0         | -              | 3,470.3         | 128.2          | 1,326.5         | -           | 610.6                     | 1,661.3         |
| New Mexico           | 590.5           | 461.3           | 129.2           | -              | 590.5           | -              | 141.8           | -           | 390.2                     | 58.6            |
| New York             | 8,949.7         | 3,394.0         | 5,555.7         | 100.0          | 7,993.9         | 855.8          | 4,652.7         | -           | 939.9                     | 3,357.1         |
| North Carolina       | 1,823.1         | 448.2           | 1,374.9         | -              | 1,712.9         | 110.2          | 438.1           | -           | 174.9                     | 1,210.1         |
| North Dakota         | 304.0           | 219.3           | 84.7            | 8.2            | 295.8           | -              | 125.4           | -           | 71.5                      | 107.0           |
| Ohio                 | 3,070.9         | 1,108.6         | 1,962.3         | -              | 2,896.9         | 173.9          | 1,130.0         | -           | 175.0                     | 1,765.8         |
| Oklahoma             | 663.9           | 107.5           | 556.4           | -              | 485.3           | 178.6          | 361.5           | -           | 28.6                      | 273.8           |
| Oregon               | 1,570.1         | 1,144.2         | 425.9           | 22.8           | 1,362.6         | 184.8          | 1,132.9         | -           | 99.3                      | 337.9           |
| Pennsylvania         | 4,496.7         | 1,081.3         | 3,415.4         | 82.0           | 4,140.6         | 274.1          | 739.7           | -           | 2,276.6                   | 1,480.3         |
| Puerto Rico          | 0.0             |                 |                 |                |                 |                |                 |             |                           |                 |
| Rhode Island         | 170.3           | 5.4             | 164.9           | -              | 170.3           | -              | 47.1            | -           | 123.2                     | -               |
| South Carolina       | 1,170.4         | 622.9           | 547.5           | -              | 1,152.4         | 18.0           | 586.2           | -           | 45.9                      | 538.2           |
| South Dakota         | 610.4           | 44.4            | 566.0           | -              | 593.6           | 16.7           | 18.6            | -           | 100.6                     | 491.1           |
| Tennessee            | 1,154.9         | 224.9           | 930.0           | -              | 1,128.1         | 26.8           | 845.0           | -           | 101.0                     | 208.9           |
| Texas                | 8,957.4         | 5,652.4         | 3,305.0         | -              | 8,537.6         | 419.9          | 5,267.0         | -           | 1,377.5                   | 2,313.0         |
| Utah                 | 458.9           | 74.2            | 384.7           | -              | 451.4           | 7.5            | 87.0            | -           | 262.0                     | 109.9           |
| Vermont              | 229.6           | 208.0           | 21.6            | -              | 229.6           | -              | 153.7           | -           | 76.0                      | -               |
| Virgin Islands       | 0.0             |                 |                 |                |                 |                |                 |             |                           |                 |
| Virginia             | 1,866.1         | 532.4           | 1,333.7         | 233.0          | 1,152.1         | 481.0          | 1,331.6         | -           | 162.7                     | 371.9           |
| Washington           | 2,647.8         | 1,020.8         | 1,627.0         | 546.1          | 1,780.2         | 321.6          | 1,423.7         | -           | 626.3                     | 597.9           |
| West Virginia        | 176.1           | -               | 176.1           | -              | 174.0           | 2.0            | 25.0            | -           | 112.6                     | 38.4            |
| Wisconsin            | 1,420.3         | 667.6           | 752.7           | -              | 1,257.6         | 162.8          | 973.5           | -           | 135.9                     | 311.0           |
| Wyoming              | 12.0            | -               | 12.0            | -              | 12.0            | -              | -               | -           | -                         | 12.0            |
| <b>ALL</b>           | <b>84,558.5</b> | <b>34,482.7</b> | <b>50,075.8</b> | <b>3,451.6</b> | <b>75,158.4</b> | <b>5,948.6</b> | <b>39,111.9</b> | <b>0.0</b>  | <b>16,338.6</b>           | <b>29,107.8</b> |
| <b>QoQ</b>           | <b>-16.0%</b>   | <b>-10.9%</b>   | <b>-19.2%</b>   | <b>-7.9%</b>   | <b>-14.0%</b>   | <b>-37.3%</b>  | <b>-16.1%</b>   | <b>N/A</b>  | <b>-34.2%</b>             | <b>-0.3%</b>    |
| <b>YoY</b>           | <b>-22.2%</b>   | <b>-16.4%</b>   | <b>-25.8%</b>   | <b>49.4%</b>   | <b>-23.7%</b>   | <b>-25.1%</b>  | <b>-2.1%</b>    | <b>N/A</b>  | <b>-30.7%</b>             | <b>-35.5%</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.

## MUNICIPAL BOND CREDIT REPORT

RESEARCH REPORT | 3Q | 2017

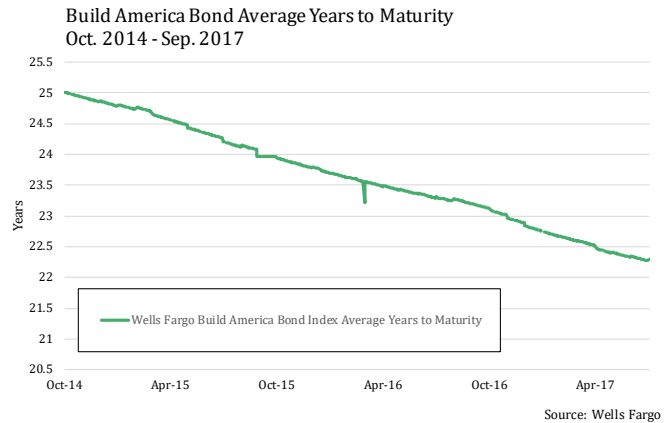
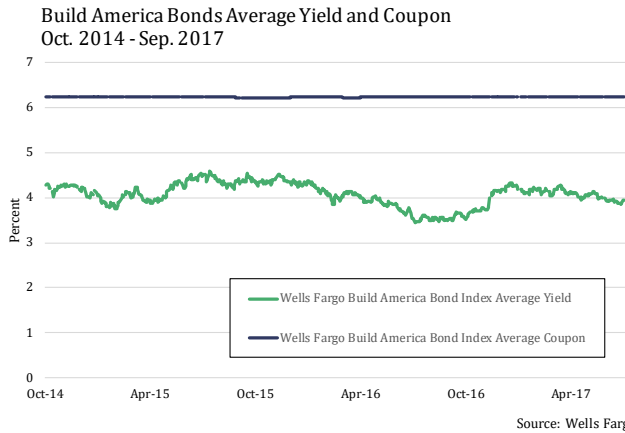
|                      | Total           | Coupon Type |                 |                |                       |                         | Variable<br>Rate Short<br>(VRDO) | Zero          |
|----------------------|-----------------|-------------|-----------------|----------------|-----------------------|-------------------------|----------------------------------|---------------|
|                      |                 | Convertible | Fixed Rate      | Linked Rate    | Variable<br>Rate Long | Variable<br>Rate No Put |                                  |               |
| State                |                 |             |                 |                |                       |                         |                                  |               |
| Alabama              | 989.8           | -           | 981.7           | -              | -                     | -                       | 8.1                              | -             |
| Alaska               | 311.5           | -           | 311.4           | -              | -                     | -                       | -                                | -             |
| American Samoa       | 0.0             | -           | -               | -              | -                     | -                       | -                                | -             |
| Arizona              | 568.0           | -           | 387.4           | -              | 171.9                 | -                       | 8.7                              | -             |
| Arkansas             | 537.0           | -           | 537.0           | -              | -                     | -                       | -                                | -             |
| California           | 11,183.5        | -           | 10,176.5        | -              | 659.6                 | -                       | 218.6                            | 128.8         |
| Colorado             | 1,543.8         | -           | 1,543.7         | -              | -                     | -                       | -                                | -             |
| Connecticut          | 598.6           | -           | 548.6           | -              | -                     | -                       | 50.0                             | -             |
| District of Columbia | 660.5           | -           | 660.5           | -              | -                     | -                       | -                                | -             |
| Delaware             | 0.0             | -           | -               | -              | -                     | -                       | -                                | -             |
| Florida              | 4,403.1         | -           | 4,350.4         | -              | 52.7                  | -                       | -                                | -             |
| Georgia              | 1,693.5         | -           | 1,673.8         | -              | 7.0                   | -                       | 12.7                             | -             |
| Guam                 | 0.0             | -           | -               | -              | -                     | -                       | -                                | -             |
| Hawaii               | 1,059.1         | -           | 709.0           | 350.0          | -                     | -                       | -                                | -             |
| Idaho                | 499.5           | -           | 406.9           | -              | -                     | -                       | 92.7                             | -             |
| Illinois             | 2,638.3         | -           | 2,637.7         | -              | -                     | -                       | -                                | 0.6           |
| Indiana              | 892.0           | -           | 883.7           | -              | 8.2                   | -                       | -                                | -             |
| Iowa                 | 427.3           | -           | 406.0           | -              | -                     | -                       | 21.3                             | -             |
| Kansas               | 575.2           | -           | 575.2           | -              | -                     | -                       | -                                | -             |
| Kentucky             | 1,012.0         | -           | 1,012.1         | -              | -                     | -                       | -                                | -             |
| Louisiana            | 1,182.6         | -           | 1,182.6         | -              | -                     | -                       | -                                | -             |
| Maine                | 415.5           | -           | 300.5           | -              | -                     | -                       | 115.0                            | -             |
| Maryland             | 2,871.5         | -           | 2,871.5         | -              | -                     | -                       | -                                | -             |
| Massachusetts        | 1,197.5         | -           | 1,136.7         | -              | 60.8                  | -                       | -                                | -             |
| Michigan             | 864.9           | -           | 756.0           | -              | -                     | -                       | 109.0                            | -             |
| Minnesota            | 2,547.2         | -           | 2,507.5         | -              | 39.7                  | -                       | -                                | -             |
| Mississippi          | 307.0           | -           | 127.1           | 162.4          | 17.5                  | -                       | -                                | -             |
| Missouri             | 741.3           | -           | 741.2           | -              | -                     | -                       | -                                | 0.0           |
| Montana              | 366.4           | -           | 366.4           | -              | -                     | -                       | -                                | -             |
| Nebraska             | 325.7           | -           | 281.6           | -              | -                     | -                       | 44.2                             | -             |
| Nevada               | 143.5           | -           | 143.5           | -              | -                     | -                       | -                                | -             |
| New Hampshire        | 61.1            | -           | 61.1            | -              | -                     | -                       | -                                | -             |
| New Jersey           | 3,598.5         | -           | 3,004.0         | 579.4          | 15.1                  | -                       | -                                | -             |
| New Mexico           | 590.5           | -           | 590.5           | -              | -                     | -                       | -                                | -             |
| New York             | 8,949.7         | -           | 8,837.8         | -              | -                     | -                       | 111.9                            | -             |
| North Carolina       | 1,823.1         | -           | 1,823.2         | -              | -                     | -                       | -                                | -             |
| North Dakota         | 304.0           | -           | 304.0           | -              | -                     | -                       | -                                | -             |
| Ohio                 | 3,070.9         | -           | 2,804.0         | 250.0          | -                     | 12.0                    | -                                | 4.9           |
| Oklahoma             | 663.9           | -           | 663.9           | -              | -                     | -                       | -                                | -             |
| Oregon               | 1,570.1         | -           | 1,529.1         | -              | -                     | -                       | 23.3                             | 17.7          |
| Pennsylvania         | 4,496.7         | -           | 4,421.6         | -              | 75.0                  | -                       | -                                | -             |
| Puerto Rico          | 0.0             | -           | -               | -              | -                     | -                       | -                                | -             |
| Rhode Island         | 170.3           | -           | 170.3           | -              | -                     | -                       | -                                | -             |
| South Carolina       | 1,170.4         | -           | 1,170.4         | -              | -                     | -                       | -                                | -             |
| South Dakota         | 610.4           | -           | 610.4           | -              | -                     | -                       | -                                | -             |
| Tennessee            | 1,154.9         | -           | 1,144.4         | -              | 10.5                  | -                       | -                                | -             |
| Texas                | 8,957.4         | -           | 8,792.1         | -              | 154.8                 | -                       | -                                | 10.6          |
| Utah                 | 458.9           | -           | 458.9           | -              | -                     | -                       | -                                | -             |
| Vermont              | 229.6           | -           | 229.6           | -              | -                     | -                       | -                                | -             |
| Virgin Islands       | 0.0             | -           | -               | -              | -                     | -                       | -                                | -             |
| Virginia             | 1,866.1         | -           | 1,802.7         | -              | 1.6                   | -                       | 61.8                             | -             |
| Washington           | 2,647.8         | -           | 2,647.9         | -              | -                     | -                       | -                                | -             |
| West Virginia        | 176.1           | -           | 176.1           | -              | -                     | -                       | -                                | -             |
| Wisconsin            | 1,420.3         | -           | 1,417.3         | -              | -                     | -                       | 3.0                              | -             |
| Wyoming              | 12.0            | -           | 12.0            | -              | -                     | -                       | -                                | -             |
| <b>ALL</b>           | <b>84,558.5</b> | <b>0.0</b>  | <b>80,887.5</b> | <b>1,341.8</b> | <b>1,274.4</b>        | <b>12.0</b>             | <b>880.3</b>                     | <b>162.6</b>  |
| <b>QoQ</b>           | <b>-16.0%</b>   |             | <b>-16.3%</b>   | <b>121.3%</b>  | <b>-35.2%</b>         | <b>N/A</b>              | <b>-20.8%</b>                    | <b>-11.8%</b> |
| <b>YoY</b>           | <b>-22.2%</b>   |             | <b>-22.5%</b>   | <b>555.5%</b>  | <b>31.8%</b>          | <b>N/A</b>              | <b>-61.9%</b>                    | <b>-79.4%</b> |

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

\$ Millions

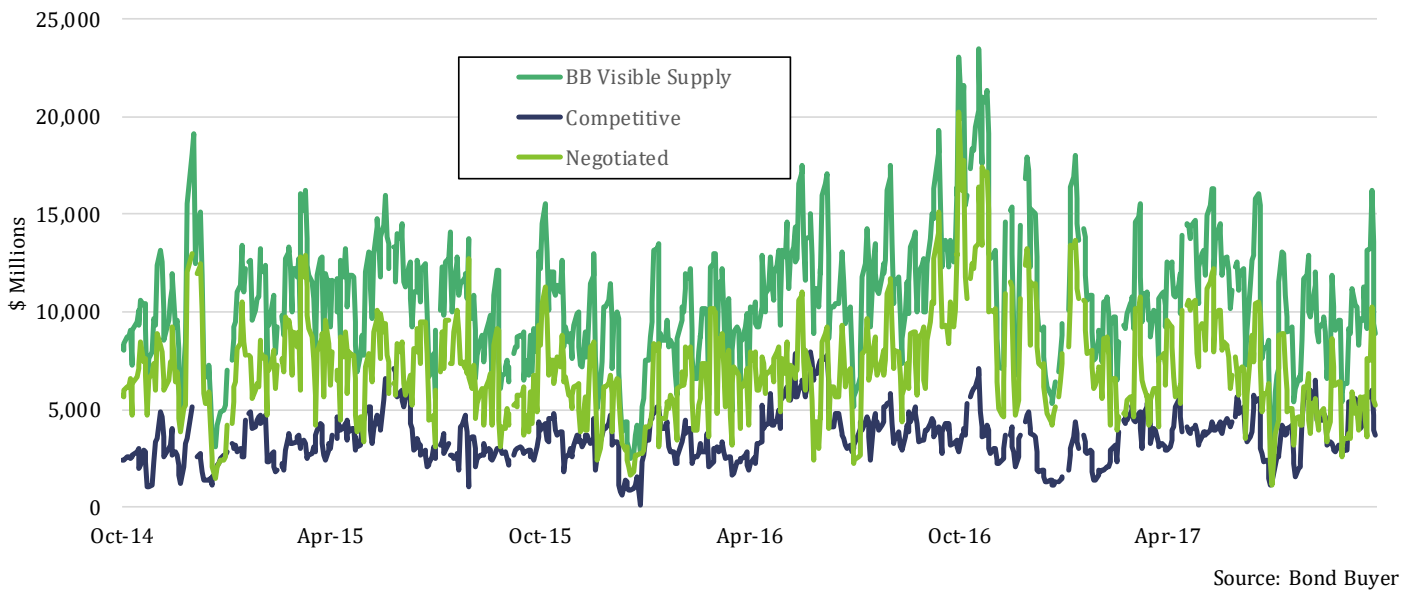
| Use of Proceeds                    | 3Q'16            | 2Q'17            | 3Q'17           | Q-o-Q         | Y-o-Y         |
|------------------------------------|------------------|------------------|-----------------|---------------|---------------|
| Agriculture                        | 2.0              |                  |                 |               | -100.0%       |
| Airports                           | 2,746.3          | 3,039.7          | 4,079.1         | 34.2%         | 48.5%         |
| Assisted Living                    | 145.4            | 47.0             |                 | -100.0%       | -100.0%       |
| Bridges                            | 249.5            | 70.8             | 2,243.0         | 3068.1%       | 799.0%        |
| Childrens hospital                 | 217.1            | 890.7            | 200.0           | -77.5%        | -7.9%         |
| Civic & convention centers         | 1,021.7          | 1,504.8          | 49.9            | -96.7%        | -95.1%        |
| Combined utilities                 | 270.2            | 496.3            | 730.1           | 47.1%         | 170.2%        |
| Cont Care Retirement Community     | 1,342.6          | 1,174.6          | 1,371.9         | 16.8%         | 2.2%          |
| Correctional facilities            | 329.0            | 380.2            | 290.7           | -23.5%        | -11.6%        |
| Economic development               | 2,386.6          | 5,082.9          | 1,700.8         | -66.5%        | -28.7%        |
| Fire stations & equipment          | 77.3             | 90.8             | 117.5           | 29.4%         | 52.0%         |
| Flood control                      | 74.3             | 121.0            | 54.1            | -55.3%        | -27.2%        |
| Gas                                | 408.0            | 450.7            | 291.2           | -35.4%        | -28.6%        |
| General acute care hospital        | 10,044.3         | 8,582.4          | 5,365.9         | -37.5%        | -46.6%        |
| General Medical                    | 46.9             |                  |                 |               | -100.0%       |
| General purpose /public improvemen | 28,992.3         | 21,714.6         | 20,178.2        | -7.1%         | -30.4%        |
| Government buildings               | 403.0            | 348.0            | 299.9           | -13.8%        | -25.6%        |
| Higher education                   | 10,250.1         | 9,396.9          | 7,780.7         | -17.2%        | -24.1%        |
| Industrial development             | 149.9            | 265.0            |                 | -100.0%       | -100.0%       |
| Libraries & museums                | 624.5            | 89.3             | 72.0            | -19.4%        | -88.5%        |
| Mass transportation                | 4,330.4          | 4,442.5          | 4,825.3         | 8.6%          | 11.4%         |
| Multi family housing               | 1,685.9          | 1,760.7          | 1,221.7         | -30.6%        | -27.5%        |
| Nursing homes                      | 36.5             | 22.9             | 52.6            | 129.7%        | 44.1%         |
| Office buildings                   |                  |                  | 79.4            |               |               |
| Other education                    | 82.6             | 104.6            | 124.1           | 18.6%         | 50.2%         |
| Other recreation                   | 110.3            | 68.6             | 71.6            | 4.4%          | -35.1%        |
| Parking facilities                 | 187.1            | 71.8             | 135.0           | 88.0%         | -27.8%        |
| Parks, Zoos & Beaches              | 259.2            | 288.1            | 151.2           | -47.5%        | -41.7%        |
| Police stations & equipment        | 83.7             | 114.8            | 15.2            | -86.8%        | -81.8%        |
| Pollution control                  | 673.2            | 387.9            | 133.6           | -65.6%        | -80.2%        |
| Primary & secondary education      | 16,810.8         | 20,620.9         | 15,495.3        | -24.9%        | -7.8%         |
| Public power                       | 3,985.7          | 1,511.0          | 1,290.7         | -14.6%        | -67.6%        |
| Sanitation                         | 135.1            | 55.9             | 60.1            | 7.5%          | -55.5%        |
| Seaports /marine terminals         | 644.3            | 503.6            | 55.0            | -89.1%        | -91.5%        |
| Single family housing              | 3,212.3          | 3,316.6          | 2,223.1         | -33.0%        | -30.8%        |
| Single speciality hospital         | 134.4            | 573.3            | 71.2            | -87.6%        | -47.0%        |
| Solid waste                        | 79.5             | 102.9            | 274.9           | 167.2%        | 245.8%        |
| Stadiums & sports complexes        | 927.0            | 86.8             | 233.9           | 169.5%        | -74.8%        |
| Student loans                      |                  | 588.2            |                 | -100.0%       |               |
| Telecommunications                 | 77.0             | 19.3             | 11.8            | -38.9%        | -84.7%        |
| Theatres                           | 96.4             |                  |                 |               | -100.0%       |
| Toll roads, highways & streets     | 4,465.9          | 1,763.9          | 6,919.7         | 292.3%        | 54.9%         |
| Veterans (excluding housing)       |                  | 2.4              | 74.7            | 3012.5%       |               |
| Water & sewer facilities           | 10,895.3         | 10,506.2         | 6,213.7         | -40.9%        | -43.0%        |
| <b>ALL</b>                         | <b>108,693.6</b> | <b>100,658.6</b> | <b>84,558.8</b> | <b>-16.0%</b> | <b>-22.2%</b> |

**BUILD AMERICA BONDS**

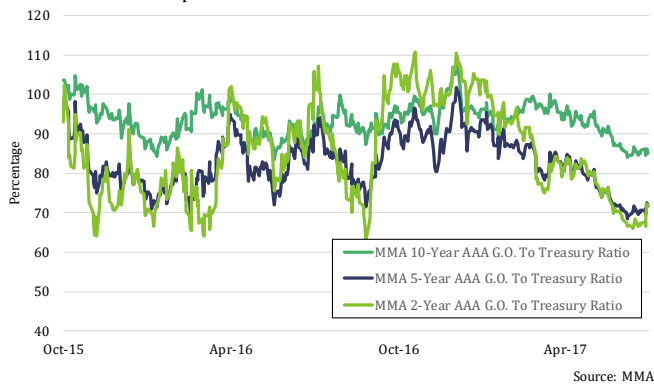


**SUPPLY, YIELD CURVES, TOTAL RETURN, SPREADS & RATIOS**

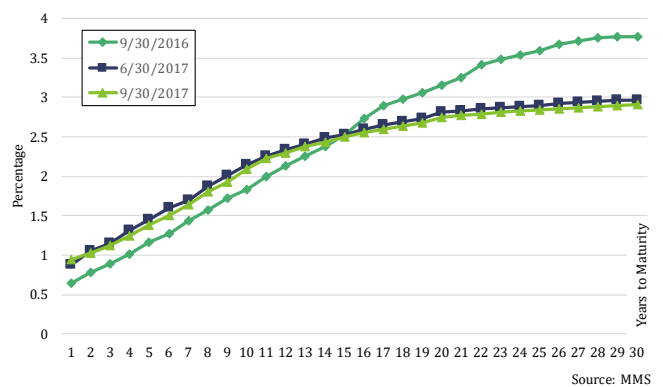
**Bond Buyer 30-Day Visible Supply**  
Oct. 1, 2014 - Sep. 30, 2017



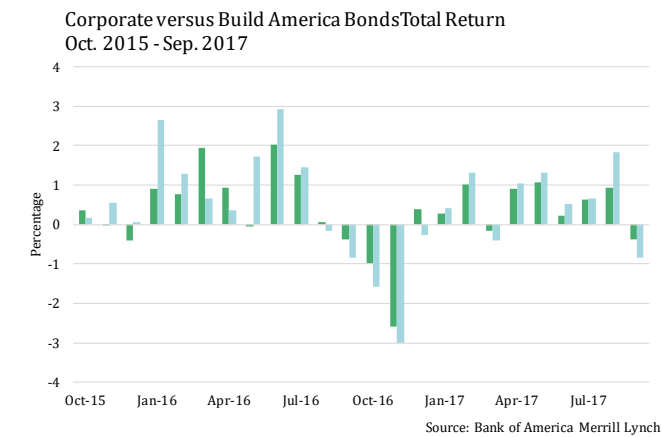
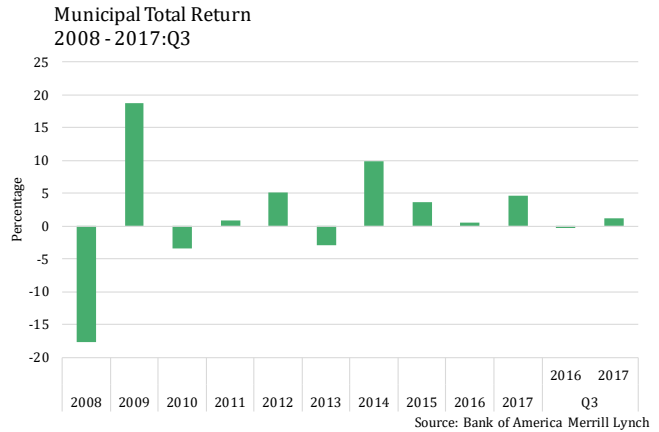
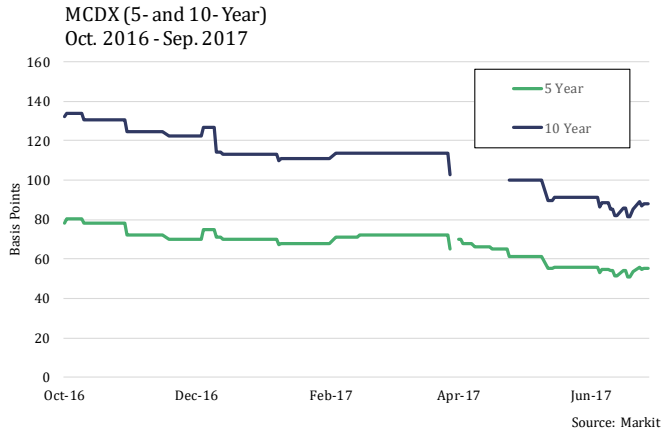
**2-, 5-, and 10-Year AAA G.O. to Treasury Ratios**  
Oct. 2015 - Sep. 2017



**MMA Yield Curves**







## TRADING SUMMARY

| Total Number of Trades |                 |               |                    |            |                       |               |                    |            |  |
|------------------------|-----------------|---------------|--------------------|------------|-----------------------|---------------|--------------------|------------|--|
|                        | # of Trades     |               |                    |            | Par Amount (Millions) |               |                    |            |  |
|                        | Customer Bought | Customer Sold | Inter-Dealer Trade | All Trades | Customer Bought       | Customer Sold | Inter-Dealer Trade | All Trades |  |
| 2017:Q1                | 1,061,056       | 543,704       | 1,017,805          | 2,622,565  | 325,821               | 229,060       | 135,574            | \$690,455  |  |
| 2017:Q2                | 995,014         | 542,188       | 979,241            | 2,516,443  | 323,575               | 212,510       | 129,401            | \$665,486  |  |
| %Change                | -6%             | 0%            | -4%                | -4%        | -1%                   | -7%           | -5%                | -4%        |  |

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

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

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

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

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

Source: MSRB EMMA

## MUNICIPAL CDS

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

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

## CURRENT STATE GO RATING

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

## OUTSTANDING MUNICIPAL DEBT

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

\$ Millions

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

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

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

\$ Millions

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

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

## MUNICIPAL BOND CREDIT REPORT

RESEARCH REPORT | 3Q | 2017

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

\$ Millions

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

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

## MUNICIPAL BOND CREDIT REPORT

RESEARCH REPORT | 3Q | 2017

Addendum Tables –Rating and Industry<sup>9</sup>

\$ Millions

| State                   | Total Outstanding | Rated       | AAA       | AA          | A         | BBB       | HY        | Industry                               | Amount      |
|-------------------------|-------------------|-------------|-----------|-------------|-----------|-----------|-----------|--|-------------|
| AK Alaska               | 10,616.0          | 9,363.3     | 276.2     | 5,867.0     | 2,516.9   | 385.0     | 318.2     | Other                                  | 526.3       |
| AL Alabama              | 37,193.1          | 31,189.0    | 741.0     | 15,519.4    | 11,316.2  | 770.1     | 2,842.4   | Appropriations                         | 112,474.9   |
| AR Arkansas             | 14,546.3          | 11,774.3    | 203.5     | 8,342.7     | 2,799.0   | 424.0     | 5.2       | Airport                                | 97,221.2    |
| AS American Samoa       | 78.1              | 78.1        | -         | -           | -         | -         | -         | Airport Tax-Guaranteed                 | 99.9        |
| AZ Arizona              | 57,348.3          | 45,642.2    | 2,394.5   | 28,252.1    | 10,956.5  | 2,648.4   | 1,390.7   | Assisted Living                        | 1,715.2     |
| CA California           | 591,628.3         | 476,212.7   | 14,060.8  | 304,459.0   | 118,108.9 | 21,555.4  | 18,028.7  | Ad Valorem Baked Lease Revenue         | 6,708.9     |
| CO Colorado             | 63,246.6          | 49,294.2    | 2,923.7   | 28,185.9    | 9,546.2   | 8,015.1   | 623.3     | Bond Bank                              | 13,022.9    |
| CT Connecticut          | 51,485.0          | 47,439.3    | 10,236.5  | 5,518.5     | 30,326.0  | 776.1     | 582.2     | Continuing Care Retirement             | 29,292.6    |
| DC District of Columbia | 31,965.0          | 24,225.1    | 287.1     | 15,599.6    | 5,522.8   | 2,244.5   | 571.2     | Community Development                  | 6,759.3     |
| DE Delaware             | 7,643.6           | 6,968.0     | 2,636.2   | 2,318.9     | 1,109.4   | 781.9     | 121.6     | Charter Schools                        | 12,720.2    |
| FL Florida              | 144,219.4         | 114,342.7   | 2,430.6   | 50,344.6    | 56,108.5  | 4,670.5   | 788.4     | Community College District             | 41,619.9    |
| GA Georgia              | 74,887.0          | 56,465.9    | 14,835.7  | 18,882.9    | 19,652.9  | 2,552.3   | 542.2     | Other                                  | 7.2         |
| GU Guam                 | 3,182.8           | 2,479.7     | -         | (330.8)     | 923.3     | 1,646.7   | 240.4     | Economic/Industrial Development        | 88,431.3    |
| HI Hawaii               | 21,114.6          | 16,799.7    | 151.3     | 13,687.5    | 2,253.2   | 595.9     | 111.8     | Secondary Education                    | 32,747.9    |
| IA Iowa                 | 21,450.3          | 17,231.0    | 2,005.9   | 7,330.9     | 5,170.8   | 397.7     | 2,325.6   | Secondary Education - Lease Backed     | 53,605.0    |
| ID Idaho                | 7,529.9           | 4,967.6     | 527.4     | 2,081.0     | 2,144.5   | 99.9      | 114.8     | Gas Contract                           | 19,208.4    |
| IL Illinois             | 167,028.2         | 143,764.8   | 4,627.3   | 33,463.8    | 43,325.0  | 43,293.1  | 19,055.6  | General Obligation                     | 691,265.0   |
| IN Indiana              | 48,832.9          | 39,596.4    | 4,226.1   | 17,811.6    | 14,788.7  | 1,938.2   | 831.8     | General Obligation Districts (Other)   | 26,317.4    |
| KS Kansas               | 26,739.4          | 21,372.4    | 1,593.9   | 11,639.7    | 7,777.6   | 166.3     | 194.9     | General Obligation Hospital            | 7,696.3     |
| KY Kentucky             | 36,652.8          | 30,871.5    | 1,136.7   | 12,339.6    | 13,225.3  | 4,007.7   | 162.3     | Government Paid Lease                  | 87,671.0    |
| LA Louisiana            | 37,492.5          | 31,438.7    | 1,398.7   | 10,589.2    | 15,456.7  | 2,460.1   | 1,334.0   | General Revenue Tax-Guaranteed         | 17,186.7    |
| MA Massachusetts        | 106,957.9         | 88,726.9    | 11,229.8  | 63,428.1    | 10,173.4  | 3,673.4   | 222.2     | Higher Education                       | 242,707.1   |
| MD Maryland             | 58,452.5          | 48,372.3    | 22,881.6  | 16,450.5    | 5,883.2   | 2,988.8   | 168.1     | Healthcare (General) Tax-Guaranteed    | 2,232.7     |
| ME Maine                | 8,323.4           | 7,516.9     | 105.6     | 4,350.4     | 2,332.7   | 53.3      | 674.9     | Hospital                               | 257,692.9   |
| MI Michigan             | 80,022.1          | 62,396.6    | 5,973.9   | 30,121.7    | 21,789.7  | 1,622.4   | 2,889.0   | Hotel Occupancy                        | 5,395.2     |
| MN Minnesota            | 53,760.5          | 45,213.2    | 7,657.9   | 30,155.1    | 5,957.2   | 808.1     | 634.9     | Housing Tax- Guaranteed                | 1,020.0     |
| MO Missouri             | 49,154.6          | 39,492.1    | 3,159.5   | 23,225.8    | 10,711.0  | 1,953.2   | 442.6     | Intergovernmental Lease                | 5,474.4     |
| MS Mississippi          | 18,152.3          | 14,555.8    | 218.4     | 10,751.9    | 2,366.9   | 1,037.1   | 181.5     | Income Tax                             | 70,618.8    |
| MT Montana              | 4,262.6           | 3,477.3     | 345.9     | 1,512.5     | 1,601.6   | 17.4      | -         | Independent Living                     | 8.1         |
| NC North Carolina       | 54,128.9          | 43,592.8    | 13,170.5  | 19,116.9    | 9,762.6   | 1,519.2   | 23.5      | Correctional Facilities                | 2,609.5     |
| ND North Dakota         | 5,473.0           | 4,610.3     | 248.6     | 2,644.6     | 1,282.1   | 367.7     | 67.3      | Local multifamily housing              | 33,040.3    |
| NE Nebraska             | 20,324.2          | 15,710.1    | 344.2     | 8,738.7     | 5,409.1   | 1,061.7   | 156.4     | Loan Pool                              | 10,576.6    |
| NH New Hampshire        | 8,513.9           | 7,124.8     | 457.8     | 4,243.4     | 1,794.6   | 551.2     | 77.8      | Lottery                                | 4,744.4     |
| NJ New Jersey           | 122,993.2         | 107,405.2   | 7,752.7   | 16,625.6    | 39,605.6  | 39,284.0  | 4,137.3   | Local Single family housing            | 2,639.9     |
| NM New Mexico           | 14,372.6          | 13,098.6    | 1,081.0   | 9,337.2     | 1,997.4   | 678.1     | 4.9       | Metro Development                      | 4,740.0     |
| NV Nevada               | 27,594.3          | 21,169.0    | 332.0     | 11,664.5    | 6,887.7   | 1,774.6   | 510.3     | Mellorooos                             | 13,121.6    |
| NY New York             | 402,945.1         | 342,494.2   | 22,766.6  | 234,732.4   | 68,159.1  | 13,043.4  | 3,792.6   | Miscellaneous                          | 45,219.7    |
| OH Ohio                 | 111,043.5         | 86,156.8    | 8,727.2   | 42,878.4    | 22,911.5  | 4,276.6   | 7,363.0   | Miscellaneous Tax                      | 70,078.6    |
| OK Oklahoma             | 20,813.0          | 17,066.8    | 2,458.7   | 7,235.4     | 6,181.2   | 958.8     | 232.7     | Mobile Home                            | 682.2       |
| OR Oregon               | 41,710.3          | 35,876.2    | 2,753.9   | 27,293.2    | 5,256.1   | 562.1     | 11.0      | Tobacco                                | 86,641.0    |
| OT Other Territories    | 10,539.4          | 9,233.9     | 2,359.6   | 6,623.7     | 28.9      | 221.7     | -         | Municipal Utilities                    | 63,395.8    |
| PA Pennsylvania         | 135,133.4         | 112,884.9   | 2,559.4   | 42,482.7    | 58,234.7  | 6,451.2   | 3,156.9   | Not for Profit Cultural                | 8,004.8     |
| PR Puerto Rico          | 100,485.3         | 83,283.7    | 153.9     | (463.5)     | 3,685.3   | 97.5      | 79,810.5  | Not for Profit Foundation              | 1,019.4     |
| RI Rhode Island         | 11,849.3          | 10,086.1    | 861.8     | 4,161.3     | 2,456.4   | 865.1     | 1,741.4   | Not for Profit Human Service Provider  | 3,878.5     |
| SC South Carolina       | 38,539.1          | 30,960.7    | 2,044.3   | 11,534.2    | 16,493.1  | 880.7     | 8.4       | Not for Profit Membership Organization | 513.3       |
| SD South Dakota         | 5,132.3           | 4,616.2     | 1,095.7   | 1,932.2     | 1,517.4   | 19.3      | 51.7      | Not for Profit Research                | 2,640.6     |
| TN Tennessee            | 43,315.7          | 33,867.9    | 3,120.5   | 19,864.2    | 6,692.3   | 4,148.1   | 42.8      | Non-Toll Highway                       | 38,690.2    |
| TT Trust Territories    | 112.0             | 36.0        | -         | -           | -         | -         | 36.0      | Nuclear Power                          | 17,600.1    |
| TX Texas                | 360,663.6         | 299,380.9   | 132,067.3 | 90,885.3    | 55,576.1  | 17,180.6  | 3,671.6   | Nursing Home                           | 2,989.9     |
| UT Utah                 | 24,453.3          | 19,940.2    | 6,598.3   | 9,628.0     | 3,483.7   | 135.9     | 94.3      | Pension                                | 19,336.0    |
| VA Virginia             | 66,086.9          | 55,172.0    | 15,684.4  | 31,499.5    | 3,085.8   | 2,662.9   | 2,239.5   | Payment in Lieu of Taxes               | 8,565.0     |
| VI Virgin Islands       | 2,291.6           | 2,201.6     | -         | -           | 91.6      | 44.5      | 2,065.4   | Parking Facility                       | 3,218.3     |
| VT Vermont              | 4,782.5           | 4,122.9     | 54.6      | 2,300.0     | 1,576.1   | 175.9     | 16.3      | Parking Facility - Guaranteed          | 1,165.6     |
| WA Washington           | 92,297.6          | 78,871.7    | 4,964.6   | 62,494.9    | 9,380.5   | 1,791.5   | 240.3     | Port/Marinas                           | 39,603.5    |
| WI Wisconsin            | 54,944.5          | 41,493.9    | 2,010.4   | 29,812.6    | 8,206.6   | 908.8     | 555.6     | Public Power Systems                   | 83,809.0    |
| WV West Virginia        | 10,330.0          | 9,045.4     | 290.1     | 909.6       | 4,142.9   | 987.8     | 2,715.0   | Public Transportation                  | 33,553.0    |
| WY Wyoming              | 2,379.4           | 2,213.6     | 196.8     | 814.8       | 1,107.8   | 94.3      | -         | Private Religious School               | 2,870.2     |
| TOTAL (6/30/2017)       | 3,627,213.8       | 2,982,984.0 | 352,420.3 | 1,470,888.7 | 778,850.0 | 212,325.6 | 168,421.3 | Sales                                  | 103,486.8   |
| TOTAL (3/31/2017)       | 3,617,532.0       | 3,284,629.9 | 395,338.5 | 1,754,747.9 | 750,606.3 | 218,076.1 | 165,778.0 | School Districts                       | 410,723.9   |
| % Change                | 0.3%              | -9.2%       | -10.9%    | -16.2%      | 3.8%      | -2.6%     | 1.6%      | Self Appropriation                     | 122.8       |
|                         |                   |             |           |             |           |           |           | Shell Record                           | 1,109.1     |
|                         |                   |             |           |             |           |           |           | State Multifamily Housing              | 39,210.7    |
|                         |                   |             |           |             |           |           |           | Solid Waste                            | 4,706.8     |
|                         |                   |             |           |             |           |           |           | Special Assessment                     | 5,216.0     |
|                         |                   |             |           |             |           |           |           | State Single-family Housing            | 41,018.1    |
|                         |                   |             |           |             |           |           |           | Student Housing                        | 9,778.7     |
|                         |                   |             |           |             |           |           |           | Student Loan Revenue                   | 26,616.8    |
|                         |                   |             |           |             |           |           |           | Telecom                                | 992.5       |
|                         |                   |             |           |             |           |           |           | Tax Increment Financing                | 30,985.9    |
|                         |                   |             |           |             |           |           |           | Toll Roads                             | 125,095.8   |
|                         |                   |             |           |             |           |           |           | Indian Tribal                          | 1,659.5     |
|                         |                   |             |           |             |           |           |           | Municipal Utility District             | 9,873.0     |
|                         |                   |             |           |             |           |           |           | Water & Sewer Guaranteed               | 3,956.4     |
|                         |                   |             |           |             |           |           |           | Water & Sewer                          | 276,767.5   |
|                         |                   |             |           |             |           |           |           | Total                                  | 3,627,213.8 |

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

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