Municipal Market
UPDATE
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SternBrothers&Co.
INVESTMENT BANKING SINCE 1917

- **Municipal Volume Continues to Soar**
- **Variable Rate Market Update**
- **Green Bonds Continued Growth**

Municipal Volume Continues to Soar

Municipal volume picked up where it left off for the month of October, reaching its highest level since 1985. The month ended with overall issuance totaling $53.16 billion, which is 51.4% higher than the $35.12 billion issued in October 2015. New money issues accounted for $21.62 billion of this total in 575 transactions. Refundings increased 60.2% for the same period last year, totaling $20.54 billion in 451 transactions compared to $12.82 billion in 397 transactions in 2015. Analysts attribute this growth in volume to concerns about rising interest rates and issuers making sure to complete their financings before the upcoming presidential election. October's overall volume is the highest level since December 1985.

The Municipal Market Data ("MMD") 'AAA' Muni Market 10-year yield ended October at 1.73%, 22 basis points ("bps") above its level at the end of September. The 30-year yield also increased, ending October at 2.56%, 25 bps above its level at the end of September. The 10-year US Treasury yield ended October at 1.84%, 24 bps above 1.60% at the end of September. The 30-year Treasury yield also rose, ending October at 2.58%, 26 bps above the level at which it ended September. As of October 31st, the ratios of 'AAA' General Obligation municipal yields to Treasury yields were:

Year	Yield	% Yield
1-Year	0.70/0.66	106.06%
5-Year	1.13/1.31	86.26%
10-Year	1.73/1.84	94.02%
30-Year	2.56/2.58	99.22%

Sources: The Bond Buyer, Bloomberg, US Department of Treasury, US Federal Reserve

Figure 1 - 10 Year AAA MMD and 10 Year US Treasury

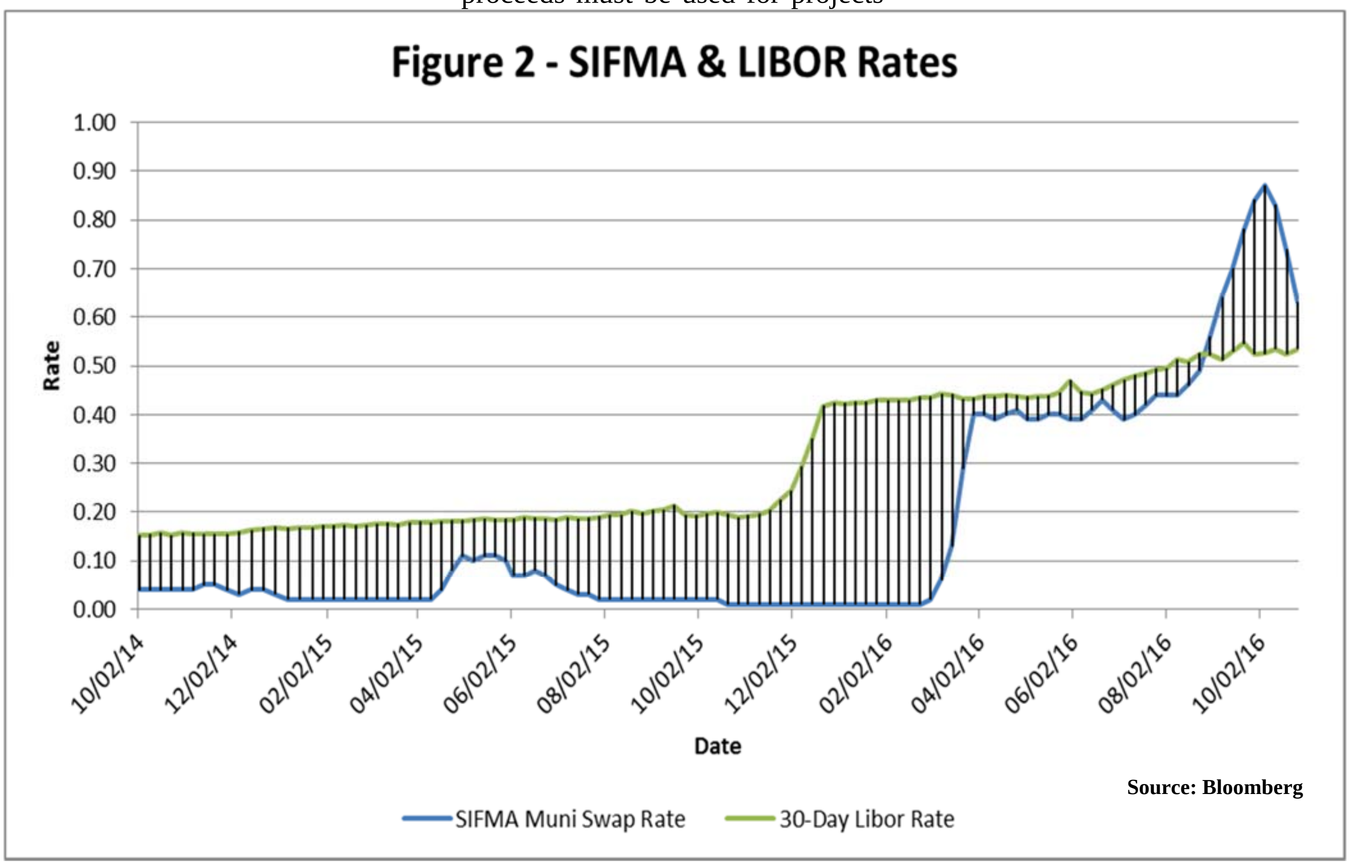
Source: Bloomberg

Variable Rate Market Update

an average of high-grade, tax-exempt, variable rate bonds, ended October at .56%, down 28 basis points from the level at which it ended in September. The 30-day LIBOR increased in September, ending the month at .53378%, up from .53111% at the end of July. Please refer to Figure 2 for historical SIFMA and LIBOR rates.

Green Bonds Continued Growth

We have discussed the emerging financing tool of "Green Bonds" in this space before, and in what we hope will be an appreciated attempt to discuss something other than the upcoming U.S. elections, we thought this would be a good time to revisit them. For those unfamiliar, "Green" is a designation given to bonds which meet certain agreed upon criteria developed by the International Capital Markets Association, which loosely governs the ultimate use of proceeds. The proceeds must be used for projects which meet certain standards for environmental sustainability set forth by the EPA. Somewhat unique among financial tools, the Green Bond designation is assigned solely in consideration of the proceeds and without regard as to industry or even country of origin. The end goal is to encourage and otherwise guide investment towards those capital projects which will, at least according to the architects of the guidelines, confer positive environmental benefits. The Green Bond designation is assigned by one of a handful of disparate companies



who evaluate the use of the eventual proceeds against the criteria in a process not dissimilar to that of obtaining a credit rating; albeit with very dissimilar criteria.

Although a relatively new endeavor according to a report from Moody's, which recently entered the Green Bond assessment business itself, it appears to be gaining some traction with issuers. The 3rd quarter of 2016 witnessed \$26 billion of bonds designated as green come to market and \$63.2 billion through the first nine months of the year. This compares to \$27.2 billion for the first nine months of 2015, a 132% increase for this year.

Perhaps more interesting than how many green bonds have been issued, however, is who issued them and what for. According to Moody's report, China was the country with the most in new Green Bond issuance in the 3Q with a 44.2% share of the market. Supranational development banks were also big supporters as one might expect, but surprisingly, Mexico was third with 8.1% of the market led by Mexico City's Airport. In fact, Moody's reports that all of the top four issuers were from emerging markets ("EM") if you include China as still an EM. The U.S. dropped to 7% of 3Q issuance after being over 20% for the first two quarters. As far as proceeds, renewable energy projects and energy efficient buildings were the largest two categories, but proceeds were used for a variety of sustainable projects including waste management, clean transportation, and clean water projects.

In our view, the Green Bond designation has some apparent flaws, which perhaps should not be surprising given the early stage of the effort. The lack of consistency in the application of the standards, a problem which has plagued the established credit rating agencies throughout their existence as well, is an obvious one which may become mitigated as the market matures. Some, like the inherent fungibility of money will probably always complicate what is at heart an effort to attach specific dollars to specific projects. Whether paying for the Green Bond assessment can be proven to be worth it economically to the issuer is another consideration, especially within our field of public finance with its concomitant obligation to steward the public.

Despite these growing pains and shortcomings, however, we believe that the initiative is a worthy one. As long as these efforts are in good faith and with honest disclosure, we see no problem in trying to attract capital from borrowers with a secondary motivation of investing in projects that align with their desired social outcome. Given its early adoption internationally, it may also even encourage investment overseas, which we still believe to be a positive despite that concept's lack of political fashionableness. If nothing else, it should be interesting to watch how far the Green Bond movement can make it and what ultimate effects it can have on the capital markets.

Sources: The International Capital Markets Association, Moody's

October 2016 Selected Bond Issues

Sale Date	Par ($ mil)	Issuer	Project	Ratings	Final Maturity	Yield	Spread to MMD	Notes
General Obligation and Essential Service Revenue								
10/20/2016	$89.22	City of Columbus, OH	General Obligation Refunding Bonds	Aaa/AAA/AAA	02/15/2028	2.060%	24	
10/17/2016	$8.00	City of Glendale, MO	General Obligation Bonds	/AA/	03/01/2036	2.650%	27	BQ
10/20/2016	$22.21	City of Decatur, IL	General Obligation (Green) Bonds	/AA/	03/01/2036	3.760%	140	Insured
10/31/2016	$25.00	City of Saint Louis, MO	General Obligation Bonds	/AA/	02/15/2036	3.460%	108	Insured
Education Sector								
Sale Date	**Par ($ mil)**	**Issuer**	**Project**	**Ratings**	**Final Maturity**	**Yield**	**Spread to MMD**	**Notes**
10/17/2016	$23.15	Arkansas State University	Revenue Refunding Bonds	A1/ /	03/01/2037	3.390%	98	
10/19/2016	$18.33	Ohio State Higher Educational Facilities Commission	Facilities Revenue Refunding Bonds	Baa1/ /	12/01/2037	3.710%	127	
10/25/2016	$23.47	University of Northern Colorado	Revenue Bonds	Aa2/ /	06/01/2046	3.080%	54	Insured
10/18/2016	$12.72	Missouri State University	System Revenue Bonds	A1/A+/	10/01/2039	3.400%	91	
Water/Utility Sector								
Sale Date	**Par ($ mil)**	**Issuer**	**Project**	**Ratings**	**Final Maturity**	**Yield**	**Spread to MMD**	**Notes**
10/04/2016	$7.95	Midway Sewerage Authority (PA)	Sewer Revenue Refunding Bonds	/AA/	09/01/2045	3.140%	79	Insured
10/12/2016	$23.73	City of Saginaw, MI	Water Supply System Revenue Refunding Bonds	/AA/	07/01/2036	3.250%	87	Insured
10/13/2016	$8.50	Upper Shenango Valley Water Pollution Control Authority (PA)	Sewer Revenue Refunding Bonds	/AA/	10/01/2037	3.260%	85	Insured
10/06/2016	$52.86	Delaware County PA Regional Water Quality Control Authority	Water & Sewer Revenue Bonds	Aa3/ /	11/01/2046	2.890%	44	

Source: Bloomberg

October 2016 Selected Bond Issues

Healthcare Sector

Sale Date	Par ($ mil)	Issuer	Project	Ratings	Final Maturity	Yield	Spread to MMD	Notes
10/20/2016	$58.32	Monroe County Hospital Authority	Hospital Revenue Refunding Bonds (Pocono Medical Center)	/A-/A-	07/01/2041	3.480%	99	
10/26/2016	$78.27	Oregon State Facilities Authority	Revenue Refunding Bonds (Samaritan Health Services Project)	/BBB+/	10/01/2046	3.530%	98	
10/28/2016	$31.85	Cape Girardeau County MO Industrial Development Authority	Revenue Refunding Bonds (St. Francis Medical Center)	/A+/AA-	06/01/2039	3.230%	73	
10/28/2016	$31.63	Washington State Health Care Facilities Authority	Revenue Bonds (Yakima Valley Memorial Hospital)	Baa3/ /	12/01/2046	4.080%	151	

Source: Bloomberg