Municipal Market Insight

March 2019

Portfolio Advisory Group – U.S. Fixed Income Strategies

What's inside

Click here for authors' contact information.

"Late-cycle" investing

Come June the U.S. economic recovery will be the longest on record, but it has just been a middle-of-the-pack expansion characterized by average annual GDP growth of only slightly more than 2%. And while recoveries don't die of old age, fears of a recession are causing investors some consternation about the appropriate strategy for investing in the late stage of an economic cycle. While it pays to be cautious, we don't see an imminent recession. But given a more challenging backdrop we believe it's a good time to think ahead about de-risking and adding a "stabilizer" or two to municipal bond portfolios.

De-risking should be relatively easy to accomplish, in our view, by making a concerted effort to focus on higher-quality investment-grade issues/issuers instead of reaching for yield in riskier structures. Stabilizers can take a few forms—geographic diversification, focusing on higher coupons (4% or higher), and/or maintaining exposure to a wide swath of the muni yield curve. The muni yield curve is steep compared to U.S. Treasuries, so, in our opinion, it makes sense to extend maturities to 15–20 years where it is possible to capture almost 90% of the full muni curve.

The most recent comments from Fed policymakers add further support to the view that the current monetary policy tightening cycle is nearing an end, which, in our opinion, should cap interest rates near today's levels.

U.S. Treasury rate forecasts (% as of January 11, 2019)

	2019				2020			
	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
FF	2.75	3.00	3.00	3.00	3.00	3.00	3.00	3.00
2-yr	2.90	3.25	3.20	3.15	3.10	3.10	3.10	3.05
5-yr	2.95	3.30	3.30	3.20	3.20	3.20	3.15	3.10
10-yr	3.05	3.40	3.40	3.30	3.25	3.25	3.20	3.15
30-yr	3.25	3.60	3.60	3.50	3.45	3.40	3.35	3.30

Source - RBC Economics

Treasuries vs. municipals

	5-yr TSY	5-yr Muni	10-yr TSY	10-yr AAA Muni	30-yr TSY	30-yr AAA Muni
Beginning of month (2/1/19)	2.50%	1.97%	2.69%	2.47%	3.03%	3.03%
Mid-month (2/15/19)	2.49%	1.86%	2.66%	2.39%	2.99%	2.93%
End of month (2/28/19)	2.51%	1.67%	2.72%	2.10%	3.08%	2.98%

Source - Bloomberg (Treasury), Thomson Reuters TM3 (Municipals)

RBC Wealth Management

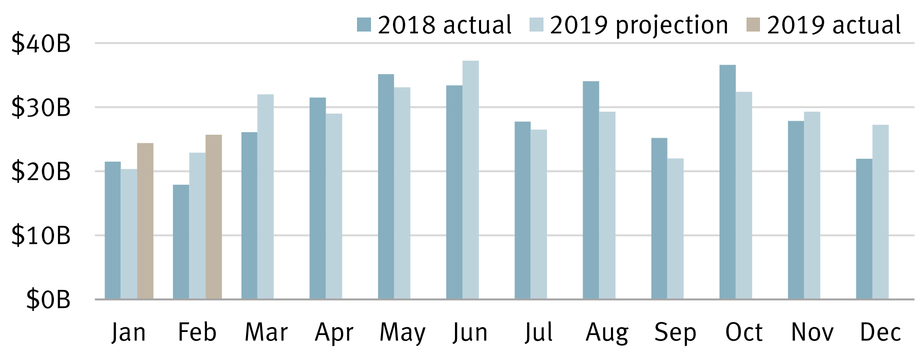
The rally allowed munis to outpace Treasuries for the fourth consecutive month.

Market investment strategy & market commentary

Market performance – Another solid month for munis

Despite a bump in supply in February, the muni rally that began in early November continued unabated in February as demand outstripped the slight increase in issuance year to date (YTD). Muni issuance in February jumped 45% y/y to $26B, exceeding RBC Capital Markets' projection by $3B.

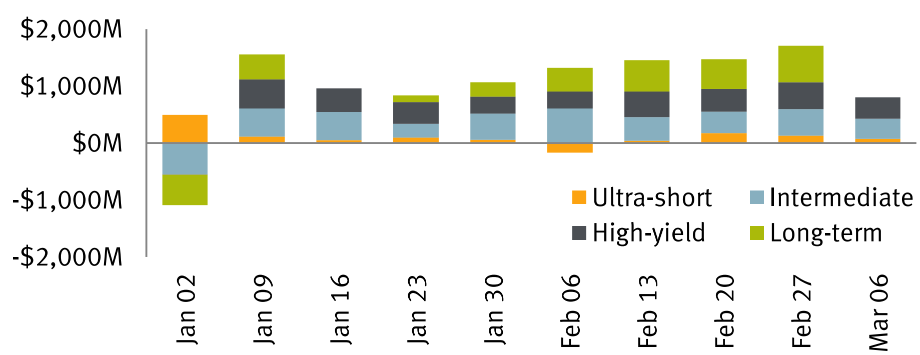
2019 issuance projections



Source - RBC Capital Markets

Demand for munis was driven in part by nine consecutive weeks of inflows, including six weeks in excess of $1B. Muni fund inflows have topped $10.4B YTD, with investors focused primarily on intermediate, high-yield, and long-term funds.

2019 muni fund flows



Source - Lipper U.S. Fund Flows, RBC Wealth Management; weekly data through 3/6/19

Strong demand pushed the benchmark 10-year muni to trade at 78.99% of Treasuries, the lowest since June 2007. The rally allowed munis to outpace Treasuries for the fourth consecutive month. Treasuries lost 0.27% in February, while munis returned 0.54%, according to the Bloomberg Barclays Municipal Bond Index. Munis have returned 1.30% through the end of February, outpacing Treasuries' 0.20% return but underperforming the 2.57% return of the Bloomberg Barclays Corporate Bond Index, which has seen strong results in both January and February.

Looking ahead: Tax season should boost munis

Following the recent pivot in the Fed's position on interest rate hikes and market expectations that the central bank will remain on hold, yields on the 30-year benchmark muni rallied to end February at 3.02%. The 30-year continued rallying through the beginning of March, closing at 2.89% as of March 11. RBC Capital Markets projects issuance of around $32B in March, while it expects $26.4B of debt

The shock of the limit on SALT deductions and higher tax bills could cause investors to seek out munis in an effort to shield their income from higher taxes.

to mature or be paid off early. Investors are also set to collect an additional $8.5B from interest payments as issuance is set to lag debt payments.

With taxpayers in high-tax states set to file their tax returns, the shock of the limit on state and local tax (SALT) deductions and higher tax bills could cause investors to seek out munis in an effort to shield their income from higher taxes. We expect strong demand will continue to drive yields lower and prices higher, leaving munis with the potential to post strong gains for the year. As of March 11, munis have returned 1.65% YTD. We believe investors should remain focused on higher-rated, intermediate-to-long-term investments with longer call protection in light of the Fed's signal of a pause in rate hikes.

This month's focus – S&P criteria change: Priority-lien tax revenue debt

Standard & Poor's published new priority-lien tax revenue debt criteria in October 2018 that, as a consequence, more closely aligns the rating of priority-lien tax pledge debt with the underlying municipality. For clarity, a priority-lien tax pledge has a specific statutory or contractual claim on pledged revenues. Examples would include sales taxes, hotel taxes, motor vehicle registration fees, court docket fees, and some payments in lieu of taxes (PILOTS).

S&P maintains roughly 1,300 ratings on priority-lien tax revenue debt, of which S&P anticipates 15%–25% of the ratings would not change, 40%–50% would rise or fall one notch, 15%–25% two notches, and 10%–20% three or more notches. On the whole, the rating agency projects upgrades will exceed downgrades.

S&P's new criteria reviews the credit quality of both the related municipality and the tax revenues supporting the debt obligation. The final rating is linked to the related municipality's creditworthiness but may be up to four notches above the municipality's rating. Factors that provide uplift include exceptional debt service coverage (>4.0x), S&P's belief that pledged revenues are neither legally or practically available to finance the related municipality's operations, limited scope of operations, and the related municipality does not benefit from the limited scope of operations.

In S&P's view, it is critical the rating reflects not only the pledged revenue stream, but also the environment in which the revenues are collected and the operating risk of the related municipality. We simply call it the Puerto Rico COFINA effect.

The S&P criteria change, and specifically tying the priority-lien tax revenue debt to the related municipality, is sensible in the wake of the Puerto Rico COFINA (sales tax) outcome.

The S&P criteria change, and specifically tying the priority-lien tax revenue debt to the related municipality, is sensible in the wake of the Puerto Rico COFINA (sales tax) outcome, especially since there is a dearth of municipal bankruptcy precedent to provide definitive guidance in adverse circumstances.

The highly structured Puerto Rico COFINA transaction highlighted the tail risks to dedicated-revenue bondholders in adverse circumstances. As a result, the rating agencies seem to be taking a more conservative stance if the legal documents do not provide absolute certainty during tail-risk scenarios. Unfortunately, providing absolute certainty is difficult given the limited municipal bankruptcy precedents, and is further compounded by each state's unique laws and protections. Also, we believe it is more defensible for rating agencies to lower a rating one or two notches as opposed to super-downgrading a credit in adverse circumstances.

Historically, municipal debt legal structures were not tightly written because muni bonds almost never defaulted, especially not at the state level. Furthermore, the complexities and subtleties of each state's laws made writing unassailable documents unnecessarily burdensome in the absence of defaults. As a result, the muni market accepts lax legal structures that may not sufficiently address tail-risk events.

And in the absence of solid legal precedents coupled with recent impressionable local rulings, we believe it is logical for rating agencies to more closely align any ratings even remotely tied to the underlying credit profile. Closer rating alignment is especially true for a challenged municipality because the legal standing may, in fact, be tested.

We believe the bigger takeaway is that the muni market is founded upon historical norms that have served the industry well, but these norms and legal understandings may be tested as bankruptcy taboos fall away.

Statutory liens on dedicated revenue streams with ample coverage should fare well in adverse circumstances.

We believe statutory liens on dedicated revenue streams with ample coverage should fare well in adverse circumstances, but even these protections are not absolute. Subjective factors such as “necessary and reasonable impairment” have crept into the equation in other municipal bankruptcies, yet should have no business in the equation, in our view.

Given the scarcity of municipal bankruptcies, there is very little judicial precedent, and even in the cases where there are precedents, the subtle differences of each security pledge combined with the uniqueness of different state laws make universal applicability challenging. S&P’s criteria change seems to address these uncertainties by tying all priority-lien tax pledges to the potential source of ancillary weakness.

Territorial updates

Guam – Trump’s emergency declaration may hurt the U.S. territory

President Donald Trump’s emergency declaration for the border wall would allow the president to divert up to $3.6B from military construction projects to build the wall with Mexico. The diversion of funds could threaten the finances of Guam, where the U.S. military has a major presence. A drop in military spending on the island could pose a risk to the economy and finances of the territory, which is heavily reliant on the U.S. military, Moody’s said in a recent report.

Puerto Rico – GO investors split

Let the fight begin! Hedge funds and investment firms owning Puerto Rico general obligation (GO) bonds are facing off against each other to see who has greater claim to the government’s cash. The fight stems from the PROMESA fiscal oversight board’s attempt to invalidate the island’s Series 2012 and 2014 GO bonds totaling approximately $6B. The oversight board is seeking to invalidate the two bond issues, arguing the island breached borrowing limits set in its constitution.

Puerto Rico – COFINA swap raises tax consequences

The exchange following the restructuring of debt issued by the Puerto Rico Sales Tax Financing Corp. (COFINA) included a basket of 14 new securities, which includes zero-coupon bonds, longer-dated securities, and taxable debt, despite the fact all the original debt issued was tax exempt. The exchange has caused anxiety among retail bondholders who remain uncertain how the IRS will treat the exchanged taxable debt. An IRS ruling that does not allow for the interest on the exchanged taxable bonds to remain exempt from federal taxes will negatively impact pricing on the bonds.

Puerto Rico – PROMESA board to appeal appointment ruling

The commonwealth’s oversight board is appealing a lower court’s decision that its members were wrongly appointed. The board, appointed in 2016 by federal law to help the commonwealth navigate its financial crisis, is also asking President Trump

Affected taxpayers collectively have $323B in state and local tax bills that cannot be deducted.

and the U.S. Senate to extend a 90-day court-imposed period to validate the current members or appoint new members.

State news

Impact of limits on SALT deductions

The Treasury Inspector General for Tax Administration (TIGTA) recently estimated that approximately 10.9 million taxpayers had tax bills above the $10,000 deduction cap following 2017's tax overhaul. These affected taxpayers collectively have $323B in state and local tax bills that cannot be deducted, according to a recent report by the TIGTA. The tax law change is being felt most in states such as California, Maryland, New Jersey, and New York, where tax bills are easily exceeding the threshold. Eight governors have formed a coalition to fight the SALT cap, but Senate Republicans have said they have no plans to revisit the issue.

Other state news

Alaska – Governor Mike Dunleavy's budget proposal for the upcoming fiscal year "could have significant negative impacts on credit quality" of the state's boroughs and school districts if adopted, according to a recent report issued by Fitch Ratings. The budget proposal would eliminate the state's school bond debt reimbursement program and cut school spending by 24%, creating budget stress for those issuers. The budget plan would also shift revenues from property taxes on oil and gas infrastructure to the state, where the North Slope would lose most of its revenues. Fitch said there would be no immediate rating changes because likelihood of passage was uncertain.

California – State lawmakers are seeking to ease the approval process for increasing school taxes. State Senators Jerry Hill and Ben Allen and Assembly members Marc Berman and Kevin Mullin introduced a bill that would ask voters to amend the state constitution to reduce the threshold of voter approval for school parcel taxes to 55% from the current two-thirds required. During the period from 2012 to 2017 more than 80% of the 26 school parcel tax measures that failed would have passed under the proposed threshold. If the new bill passes two-thirds of each legislative house, it would appear on the state 2020 ballot.

Connecticut – The state provided investors with some good news, projecting a $516B budget surplus for the current fiscal year. The new budget estimates reflect an improvement of $54.2M from last month and are a direct result of lower-than-expected spending, according to the state's Office of Policy and Management. The state projects its budget reserve fund will end the fiscal year (June 30) with $2.35B.

Illinois – Newly elected Governor JB Pritzker is projecting the state will incur a $3.2B budget deficit for FY2020, approximately 16% higher than previous estimates in November. The state's backlog of unpaid bills is likely to be $500M higher than the state previously stated, leaving Illinois needing years to dig out of its current fiscal distress.

New Jersey – The state's average property tax bill hit $8,767 last year, a record high for the Garden State, where residents are expected to be hurt by the cap on SALT deductions. The state's property taxes have increased 20% from 2009. The one bright spot was that property taxes increased by less than 1% for the first time in a decade, possibly signaling runaway spending is slowing in the state.

New Jersey – Standard & Poor's recently reported that the limit on SALT deductions may make it much more difficult for the state to balance its budget this year. The state's income tax revenues were down 4.8% in January and are down 6% so far for the current fiscal year (ends June 30).

A Pennsylvania plan to pass nuclear-subsidy legislation could raise consumer energy bills by 7% to 9% annually.

New York – Governor Andrew Cuomo has reportedly been working behind the scenes to convince Amazon founder and CEO Jeff Bezos to reconsider the company's decision to cancel plans to build a new headquarters in Long Island City. Local unions, businesses, community groups, and elected officials all signed an open letter asking Bezos to reconsider keeping the second headquarters in the Queens city.

Ohio – Governor Mike DeWine said he would propose an 18-cent per gallon increase in the state's gasoline tax to maintain and upgrade the state's roads and bridges as part of his transportation budget. The measure is expected to raise $1.2B for state roads.

Pennsylvania – A plan by the state to pass nuclear-subsidy legislation could raise consumer energy bills by 7% to 9% annually. The subsidies would benefit Exelon's Three Mile Island, Peach Bottom, and Limerick plants; Riverstone Holding's Susquehanna plant; and FirstEnergy's Beaver Valley plant. If approved, the bailout is expected to cost up to $700M.

State/territory credit ratings

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

Source - Fitch Ratings, Moody's Investors Service

Regional updates and other market news

Local issuer rating updates

New York City – On March 1, Moody's raised the city's rating one notch to Aa1, the agency's second-highest level. The upgrade affects $38B of outstanding GO debt and comes ahead of the city's plan to issue approximately $1B of GO debt. The move resulted from the city's strengthening and diversified economy, which has become less reliant on the volatile financial services industry. Further supporting the upgrade was the city's ability to reduce costs for debt service, pensions, and retiree health care.

Other municipal-related news

Bond insurers gain – Puerto Rico settlements boost insurers

The three major bond insurers with exposure to Puerto Rico debt reported better-than-expected results following positive indications about Puerto Rico. The positive news stems from the completion of the COFINA restructuring, which generated positive loss revisions, and the First Circuit Court of Appeals ruling that the appointment of members to the PROMESA fiscal oversight board was unconstitutional.

Chicago – Next mayor faces steep hurdle

After announcing he would not seek re-election, the candidates to succeed Mayor Rahm Emanuel have been clashing over issues ranging from violent crime to fighting public corruption. The 14 candidates all agree the city's property taxes are too high and should not be raised.

Mayor Rahm Emanuel is credited with putting Chicago's four retirement plans on a path to solvency, but it came with a price.

Emanuel is credited with putting the city's four retirement plans on a path to solvency, but it came with a price. The city's effective residential tax rate rose by more than 35% from 2007 to 2016 and will limit the political options for whoever wins in an expected April 2 runoff election. Emanuel's last budget allocated $1.36B toward pension funds, with more than $905M of that coming from such property taxes. The fiscal stress caused Moody's to lower the city's rating to junk grade in 2015, with the surge in pension payments set to take effect after Emanuel leaves office, leaving his successor with limited options.

New York City home values could decline significantly

The Regional Plan Association, a Manhattan-based research and advisory group, said that New York City area home values could drop by as much as $20B if the sole commuter-rail link between Manhattan and New Jersey were to close for repairs. In addition to the decline in home values, the research group projects the U.S. economy would lose $16B and federal, state, and local taxes would lose $7B if the tunnel wasn't fully operational in four years. New Jersey Governor Phil Murphy has been in talks with the Trump administration to discuss the $30B Gateway project, which would include the tunnel repairs. The Trump administration said the federal government would not provide funding for a proposed second tunnel.

New York City's Metropolitan Transportation Authority (MTA) – Seeking fixes

Facing a revenue shortfall, the MTA voted to raise some fares for subway and bus riders. The proposal would keep the base subway fare at $2.75 while eliminating the 5% discount for purchasing multiple rides at one time. The cost of an unlimited pass would rise to $33 from $32, while the monthly pass would increase to $127 from $121.

New York City Mayor Bill de Blasio and Governor Andrew Cuomo recently agreed to back congestion pricing in midtown Manhattan in an effort to support a sweeping overhaul of the troubled transportation authority. The MTA also released a list of steps it is taking to reduce costs, including consolidating back office functions, The suspension of SLGS sales was necessary due to the statutory debt ceiling and will allow the Treasury to manage debt subject to the debt ceiling.

reducing vendor and contractor costs, freezing hiring, and improving efficiency of capital projects. In addition, the MTA is proposing fare increases every two years to meet rising costs.

Mayor de Blasio warned that funding the MTA with revenues from the city's budget would potentially damage the city's credit rating and imperil the city's basic infrastructure.

Philadelphia – Mayor proposes 2020 budget
Mayor Jim Kenney proposed a $5B 2020 fiscal spending plan that would improve the city's pension funding by 4.17%, or $29.8M, following decreases in 2018 and 2019. The plan also boosts the city's reserves while avoiding tax increases. The city's pension system is currently 45% funded with $4.4B of liabilities. Philadelphia has set an ambitious goal of achieving an 80% funded ratio in the next 12 years.

U.S. Treasury – Suspends SLGS sales
The U.S. Treasury's Bureau of Fiscal Service said it would suspend the sales of State and Local Government Series (SLGS) non-marketable Treasury securities. The suspension, which began March 1, will remain in effect indefinitely. The suspension was necessary due to the statutory debt ceiling and will allow the Treasury to manage debt subject to the debt ceiling.

RBC Wealth Management retail trading (2/1/19 – 2/28/19)

Top 10 CUSIPs selling volume to retail customers

CUSIP	Description	Maturity	Coupon	Volume
530574NF5	LIBERTY HILL ISD-BLDG	02/01/2049	5.00	9,706
66285WYF7	N TX TOLLWAY AUTH-BAM	01/01/2048	5.00	5,959
13032UCL0	CA HLTH FIN AUTH-A	11/15/2041	5.00	5,576
13063C5D8	CALIFORNIA	08/01/2046	5.00	4,224
6460665S5	NJ EDL FACS-A-REF-BAM	07/01/2045	5.00	4,017
041806QS2	ARLINGTON HGR EDU FIN	12/01/2048	5.00	3,742
59259Y5K1	MTA-A1-BAM-TCRS	11/15/2045	5.00	3,577
59261AYC5	MTA-C-1-AGM	11/15/2056	5.25	3,469
646140DE0	NJ TPK AUTH-A-BAM	01/01/2048	5.00	2,863
57582RQQ2	MASSACHUSETTS ST	11/01/2044	5.00	2,732

Top 10 CUSIPs buying volume from retail customers

CUSIP	Description	Maturity	Coupon	Volume
64972HZW5	NYC TRANS FIN AUTH-S1	07/15/2035	5.00	2,237
59259Y5J4	MET TRAN AUTH-B	11/15/2055	5.25	1,894
64577FCD5	NJ ECON DEV-RUTGERS	06/15/2046	5.00	1,540
74529JPX7	PR SALES TAX FING-A1	07/01/2058	5.00	1,531
13063BWB4	CA ST	04/01/2042	5.00	1,519
802498SD8	SANTA MONICA USD-D	08/01/2043	5.00	1,509
74529JQG3	PR SALES TAX FING-A1	07/01/2046	0.00	1,486
64972HZ21	NYC TRANS FIN AUTH	07/15/2037	5.00	1,156
64972GCE2	NYC MUN WTR FIN-EE	06/15/2047	5.00	991
74529JQH1	PR SALES TAX FING-A1	07/01/2051	0.00	939

Source - RBC Wealth Management

RBC Capital Markets institutional trading (2/1/19 – 2/28/19)

Top 10 CUSIPs selling volume to institutional customers

CUSIP	Description	Maturity	Coupon	Volume
44244CNE3	HOUSTON-B-REF-COMB	11/15/2042	5.00	45,921
59334DLE2	MIAMI-DADE CO WTRSWR	10/01/2043	5.00	34,618
072024SU7	BAY AREA TOLL AUTH-C1	04/01/2045	2.64	26,488
79766DLW7	SAN FRANCISCO APRT-A	05/01/2036	5.00	23,893
010268BX7	ALABAMA FEDERAL AID H	06/01/2037	5.00	22,636
544495Z72	LOS ANGELES DEPT WTR	07/01/2047	5.00	22,490
25476FXM5	DIST OF COLUMBIA	10/15/2034	5.00	21,358
167593H62	CHICAGO O'HARE ARPT-C	01/01/2049	4.47	21,168
072024VU3	BAY AREA TOLL AUTH-A	04/01/2045	2.63	20,597
91412GU94	UNIV CA-AX-TXBL	07/01/2025	3.06	17,758

Top 10 CUSIPs buying volume from institutional customers

CUSIP	Description	Maturity	Coupon	Volume
59334DLE2	MIAMI-DADE CO WTRSWR	10/01/2043	5.00	34,582
56035DAL6	MAIN ST GAS-B-VAR	04/01/2048	2.43	27,720
544495Z72	LOS ANGELES DEPT WTR	07/01/2047	5.00	22,474
25476FXM5	DIST OF COLUMBIA	10/15/2034	5.00	21,340
072024VU3	BAY AREA TOLL AUTH-A	04/01/2045	2.63	20,584
91412GU94	UNIV CA-AX-TXBL	07/01/2025	3.06	17,993
59261ADF1	METRO TRANSP AUTH-A2	11/15/2022	5.00	17,870
072024SU7	BAY AREA TOLL AUTH-C1	04/01/2045	2.64	17,359
250433TT6	DESERT SANDS USD-2014	08/01/2044	4.00	16,925
253363LB9	DICKINSON ISD-REF	02/15/2028	6.00	16,271

Source - RBC Capital Markets

Bond Buyer indexes

Weekly	Current 2/28/19	Previous 2/21/19	2019 high	Date	2019 low	Date
Bond Buyer Revenue Bond Index	4.66%	4.70%	4.71%	(2/14)	4.56%	(1/03)
Bond Buyer 20-Bond Index	4.19%	4.23%	4.24%	(2/14)	4.09%	(1/03)
Bond Buyer 11-Bond Index	3.66%	3.70%	3.71%	(2/14)	3.58%	(1/03)

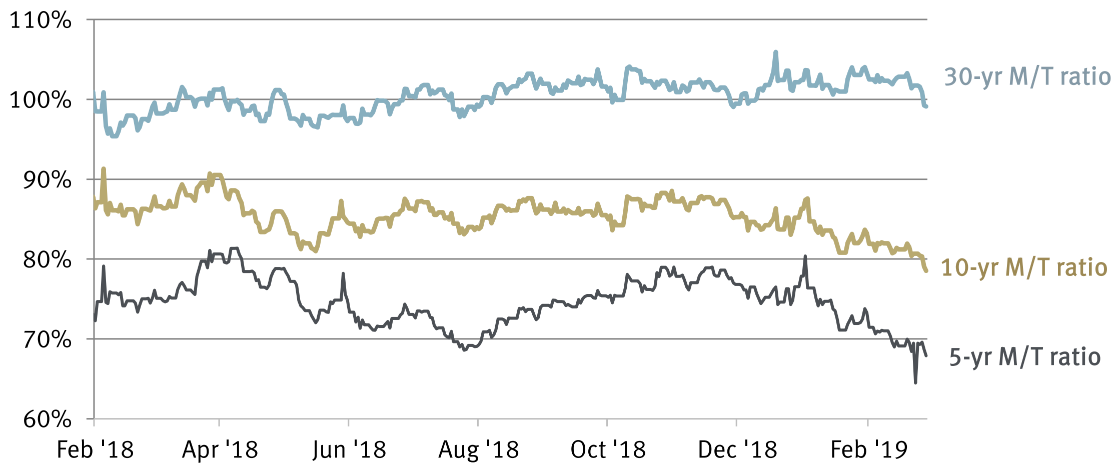
Source - *The Bond Buyer*

Barclays Municipal Index returns

	INDEX								
	1 Month	5 Year (4-6)	10 Year (8-12)	15 Year (12-17)	Long Bond (22+)	AAA	AA	A	BAA
Month-to-date total return	0.54%	0.49%	0.55%	0.58%	0.64%	0.46%	0.51%	0.60%	0.48%
Year-to-date total return	1.30%	1.40%	1.64%	1.41%	1.20%	1.27%	1.24%	1.37%	1.40%

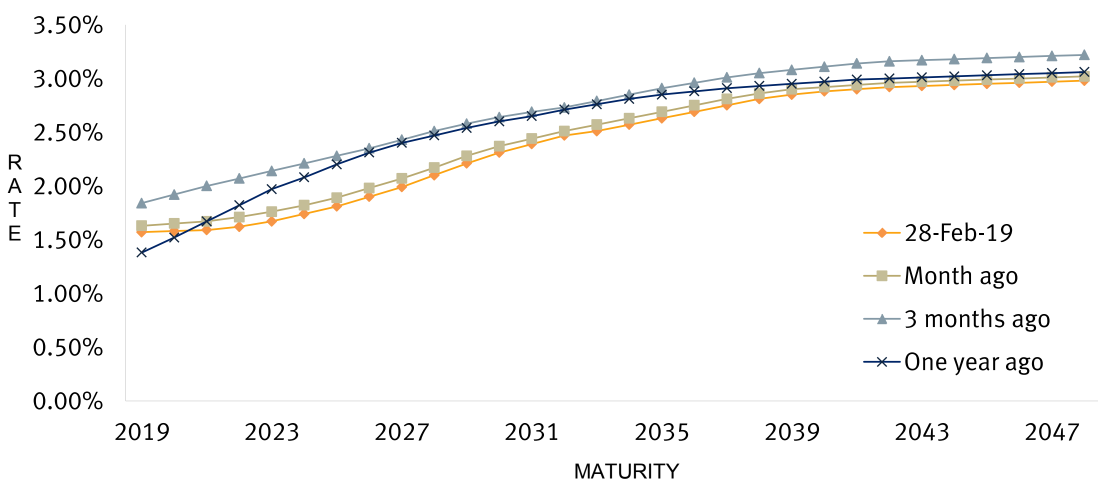
Source - Barclays; data through 2/28/19

Muni/Treasury ratio comparison



Source - RBC Wealth Management, Bloomberg; data through 2/28/19

Muni market data AAA yield curve



Source - RBC Wealth Management, Thomson Reuters TM3

Municipal bond insurers

Insurer	Moody's	Kroll Ratings
ACA	Not rated	Not rated
AMBAC	Not rated	Not rated
Assured Guaranty (AGC)	A3 (stable outlook)	AA (stable outlook)
Assured Guaranty Municipal Corp. (AGM)	A2 (stable outlook)	AA+ (stable outlook)
Berkshire Hathaway (BHAC)	Aa1 (stable outlook)	Not rated
Build America Mutual (BAM)	Not rated	Not rated
FGIC	Not rated	Not rated
Municipal Assurance Corporation	Not rated	AA+ (stable outlook)
National Public Finance (MBIA)	Baa2 (stable outlook)	Not rated
Syncora	Not rated	Not rated

Source - RBC Wealth Management; data through 2/28/19

Authors

Craig Bishop, Lead Strategist
craig.bishop@rbc.com; RBC Capital Markets, LLC

Remo Di Re, Senior Municipal Credit Strategist
remo.dire@rbc.com; RBC Capital Markets, LLC

James Mann, Head, U.S. Fixed Income Strategies Group
james.mann@rbc.com; RBC Capital Markets, LLC

Third-party disclaimer

References herein to “LIBOR”, “LIBO Rate”, “L” or other LIBOR abbreviations means the London interbank offered rate as administered by ICE Benchmark Administration (or any other person that takes over the administration of such rate).

Investment and insurance products offered through RBC Wealth Management are not insured by the FDIC or any other federal government agency, are not deposits or other obligations of, or guaranteed by, a bank or any bank affiliate, and are subject to investment risks, including possible loss of the principal amount invested.

Disclaimer

The information contained in this report has been compiled by RBC Wealth Management from sources believed to be reliable, but no representation or warranty, express or implied, is made by Royal Bank of Canada, RBC Wealth Management, its affiliates or any other person as to its accuracy, completeness or correctness. The material contained herein is not a product of any research department of RBC Capital Markets, LLC or any of its affiliates. Nothing herein constitutes a recommendation of any security or regarding any issuer; nor is it intended to provide information sufficient to make an investment decision. All opinions and estimates contained in this report constitute RBC Wealth Management’s judgment as of the date of this report, are subject to change without notice and are provided in good faith but without legal responsibility. This report is not an offer to sell or a solicitation of an offer to buy any securities. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Every province in Canada, state in the U.S., and most countries throughout the world have their own laws regulating the types of securities and other investment products which may be offered to their residents, as well as the process for doing so. As a result, the securities discussed in this report may not be eligible for sale in some jurisdictions. This report is not, and under no circumstances should be construed as, a solicitation to act as securities broker or dealer in any jurisdiction by any person or company that is not legally permitted to carry on the business of a securities broker or dealer in that jurisdiction. Nothing in this report constitutes legal, accounting or tax advice or individually tailored investment advice. This material is prepared for general circulation to clients and has been prepared without regard to the individual financial circumstances and objectives of persons who receive it. The investments or services contained in this report may not be suitable for you and it is recommended that you consult an independent investment advisor if you are in doubt about the suitability of such investments or services. To the full extent permitted by law neither RBC Wealth Management nor any of its affiliates, nor any other person, accepts any liability whatsoever for any direct or consequential loss arising from any use of this report or the information contained herein. No matter contained in this document may be reproduced or copied by any means without the prior consent of RBC Wealth Management. RBC Wealth Management is a division of RBC Capital Markets, LLC, member NYSE/FINRA/SIPC, which is an indirect wholly-owned subsidiary of the Royal Bank of Canada and, as such, is a related issuer of Royal Bank of Canada and part of the RBC Financial Group. Additional information is available upon request.