Municipal Market Insight

March 2018

Portfolio Advisory Group – U.S. Fixed Income Strategies

What's inside

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Munis succumb to Treasury market weakness

Munis suffered their second straight month of losses, driven by higher Treasury yields. Volatility in the Treasury market continued to spike in February following the release of the January payroll report on February 2. Despite getting off to a slow start, munis continued their streak of outperforming Treasuries. The muni market was partially buoyed by another dip in issuance, to $16B, down 18% from the prior month as municipalities avoided selling new deals amid market volatility and a rising rate environment. Buyers took a conservative approach by allocating funds mostly on the short end of the muni yield curve as concerns over higher inflation, additional budget spending, and faster economic growth presented barriers to investors allocating funds to the longer-dated maturities, which to us, being opportunistic, makes the long end of the municipal curve even more attractive.

Additionally, the Federal Reserve has signaled it is prepared to raise rates at its March 21 meeting, but market participants will be keeping a close eye on the Fed's rate forecasts for impending future rate hikes, and a more aggressive stance by the Fed could contribute to underperformance of short-dated munis, bolstering our conviction to extend out on the yield curve.

U.S. Treasury rate forecasts (% as of February 28, 2018)

	2018				2019			
	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
FF	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50
2-yr	2.10	2.35	2.55	2.75	3.00	3.25	3.40	3.55
5-yr	2.50	2.70	2.90	3.05	3.25	3.45	3.55	3.65
10-yr	2.80	3.00	3.15	3.30	3.45	3.60	3.70	3.75
30-yr	3.20	3.35	3.50	3.60	3.70	3.75	3.80	3.85

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 (2/1/18)	2.57%	1.86%	2.79%	2.39%	3.03%	2.93%
Midmonth (2/15/18)	2.65%	1.97%	2.91%	2.47%	3.17%	3.03%
End of month (2/28/18)	2.64%	1.97%	2.86%	2.47%	3.13%	3.06%

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

RBC Wealth Management

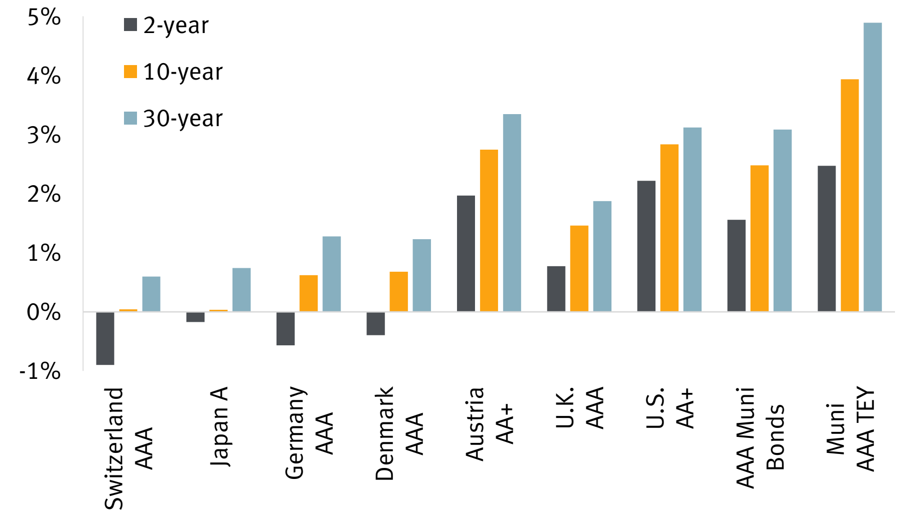
Investors have remained sidelined in the wake of continued market uncertainty, despite favorable supply and demand technicals.

Market investment strategy & market commentary

Another challenging month for munis

As was the case in January, Treasury market weakness continued roiling the municipal market despite issuance plunging 38% through the first two months of the year. Further complicating the muni landscape in February was oversized bid lists that have left issuers struggling to unload inventory on hand following December's record $65B issuance. As a result, investors have remained sidelined in the wake of continued market uncertainty, despite favorable supply and demand technicals. Further supporting our argument that munis remain attractive on a taxable-equivalent yield basis and assuming a 37% top tax rate, munis remain cheap to both Treasuries and sovereign alternatives.

Muni's cheap to the rest of developed economy debt



Source - RBC Wealth Management, Bloomberg; *Assumes 37% individual tax rate

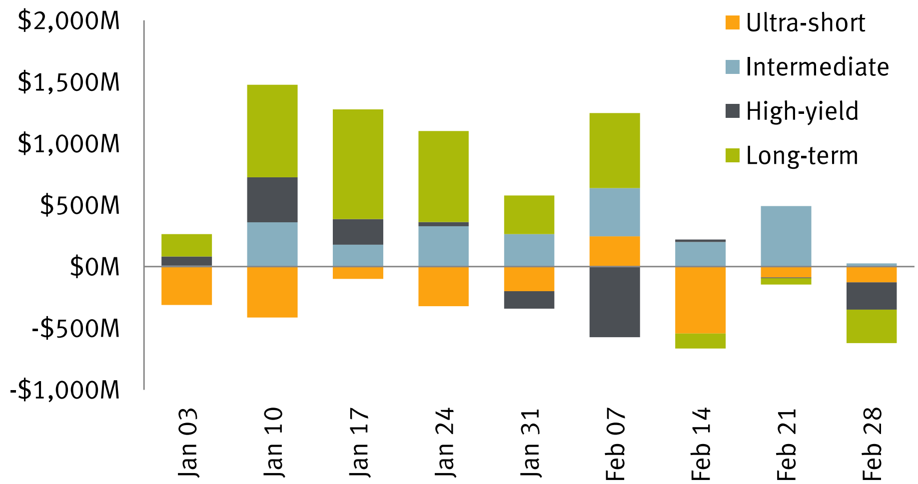
After returning -1.18% in January, the muni losing streak continued into February with a -0.30% return (-1.47% year to date). Muni returns have outperformed Corporate and Treasury bonds year to date, which have returned -2.10% and -2.56%, respectively, as of February 28, 2018.

Looking ahead, we believe equity market volatility and global economic uncertainty will remain catalysts to near-term muni market underperformance. If history is any guide, March may prove to be a challenging month for munis. RBC Capital Markets is projecting March issuance of $26B, compared with estimated redemptions of approximately $22.5B, positioning munis to post negative returns for a third consecutive month. We expect muni market stabilization after domestic and global market volatility subsides.

Diminished supply caused by the loss of "advance refunding" activity following passage of 2017 tax reform and our expectations of strong demand for munis support our positive bias for the muni market for 2018. Municipal bond funds have experienced inflows six of the first nine weeks of the year, further supporting our positive muni market bias.

Investors seeking to deploy cash should remain focused on intermediate to longer-dated securities where muni/Treasury ratios continue offering an attractive alternative to other fixed income asset classes.

2018 muni fund flow



Source - RBC Wealth Management, Lipper; data through 2/28/18

Investors seeking to deploy cash should remain focused on intermediate to longer-dated securities where muni/Treasury ratios continue offering an attractive alternative to other fixed income asset classes. Recent Treasury market weakness has pushed muni/Treasury ratios on 15-yr, 20-yr, and 30-yr bonds to 95%, 98%, and 98%, respectively as of February 28.

Puerto Rico's situation is fluid

The Commonwealth presented an updated fiscal plan to the Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA) board on February 12 that proposes an average 17% annual repayment through fiscal 2023, up from zero recovery through 2022 in its prior fiscal plan dated January 24. The significant shift in recovery prospects reflects the recently authorized federal aid package Puerto Rico is expected to receive, partially in light of Hurricanes Irma and Maria.

The additional federal assistance totals $18B, including $4.8B in Medicaid funding, which would shift the Commonwealth from a projected $3.4B operating *deficit* through fiscal 2022, as outlined in the January 24 plan, to a projected $3.4B operating *surplus* through fiscal 2023 in the most recent version.

The proposed fiscal plan does not designate amounts to the different debt obligations but instead only outlines how much money is available each year. Worth noting is that since the commonwealth acknowledged its economy will likely be more robust in later years, we believe it seems logical overall recovery rates should improve too.

Prices on Puerto Rico bonds have risen since the release of the newest fiscal plan, signaling greater investor optimism.

The PROMESA board said it hopes to certify a final version of this new plan by March 30.

The amount of federal assistance Puerto Rico ultimately receives will be pivotal in determining recovery values.

Puerto Rico's potential recovery values

	2018	2019	2020	2021	2022	2023	Aggregate
Available Revenues ($M)	$807	$751	$17	$400	$638	$801	$3,414
Total Debt Service ($M)	$3,283	$3,827	$3,452	$3,439	$3,170	$3,062	$20,233
Aggregate Recovery	25%	20%	0%	12%	20%	26%	17%

Source - Puerto Rico fiscal plan; February 12, 2018

A winding road to ultimate recovery

The vacillating recovery values in such a short time period highlight the fluidity of the situation and the outsized impact certain events may have on ultimate recovery prospects. As we have mentioned in past issues of *Municipal Market Insight*, the amount of federal assistance Puerto Rico ultimately receives will be pivotal in determining recovery values. However, federal assistance is not the only factor that may have an outsized influence on final recovery values.

We believe security protections will be the apex factor in determining recovery values, with strong credits faring much better than lesser securities. However, investors should have no illusions that strong security protections will fully insulate them from impairment as we believe every security is going to be impacted.

Disregards security provisions

The newest fiscal plan still does not respect constitutional or contractual rights or the dedication of available revenues, which explicitly violates the terms of the PROMESA law. The commonwealth's restructuring proposal continues to subordinate all debt obligations to the commonwealth's operations, which is contrary to the legal provisions of certain debt offerings and the PROMESA law.

At the expense of sounding like a broken record, we accept the fact that Puerto Rico cannot fully honor all its debt obligations, and we recognize that certain essential services practically supersede all debt commitments. However, we also believe a valid fiscal plan cannot flippantly dismiss fundamental requirements of the PROMESA law, and not all current expenditures are necessary for an adequately functioning government. During trying times such as these, a municipality must fundamentally revamp how it provides services or risk repeating the past.

Zero creditability

The administration's scorched-earth tactics and deliberate fiscal obfuscation have created a combative environment whereby creditors are unwilling to accept any commonwealth assertions without independent validation. It appears the federal government is also wary of the Puerto Rico's maneuvers because federal officials have delayed releasing disaster funds and have imposed conditions for their release, which is atypical.

From the courts

Federal bankruptcy judge Laura Taylor Swain recently ruled that she is not authorized under the PROMESA law to interfere with Puerto Rico's properties and revenues. The implication of her ruling is Puerto Rico may continue its current actions as long as they do not run afoul of the PROMESA board's directives.

Thankfully, Judge Swain also stated the debt security provisions—which are the underpinnings of bondholder protections—may be ripe for adjudication after the PROMESA board formally presents the Plan of Adjustment (PoA). The PoA is a formal debt restructuring document that will detail proposed recovery values for each of the island's 18 different debt obligations. Unfortunately, we estimate the PoA will not be presented for at least another year given the lack of progress to date coupled with the complexity of the issues at hand.

What's next?
To date, Puerto Rico's bankruptcy has been turbulent, and we believe future events should prove to be equally unsettled. The commonwealth's draconian posture and fiscal obfuscation discourages compromise, instead embolding creditors to wait until after the Plan of Adjustment (PoA) is released to litigate their rights. Unfortunately, we predict the plan will not be released for at least another year.

Predicting individual recovery values for any credit is fruitless because of the security provision quagmire, which is not going to be resolved until after the PoA is released.

At this point, predicting individual recovery values for any credit is fruitless because of the security provision quagmire, which is not going to be resolved until after the PoA is released.

Any ruling may be appealed; however, objectors may be required to post significant bonds to proceed with the appeal.

Territorial updates

Guam – Cash crunch could further impact rating

The U.S. territory's Office of Finance and Budget estimates the government is facing a $67M shortfall in tax revenues. With six months left in Guam's fiscal year, government officials said the revenue shortfall was primarily due to tax reform passed in 2017. S&P warned Guam it could lower the island's rating deeper into junk territory. Guam has $10M of general obligation debt rated BB- and $177M in certificates of participation (COPs) rated B+.

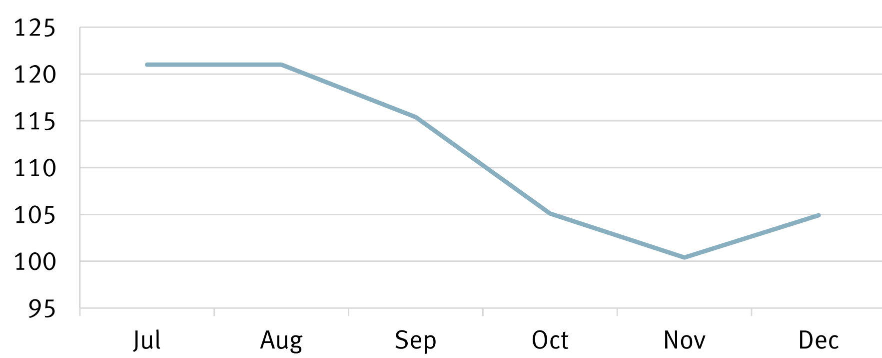
Puerto Rico – Economy continues lagging

The island's economy continues struggling to return to pre-hurricane levels of economic activity. The Government Development Bank's Economic Activity Index (GDB-EAI) as of December 2017 was down 14% from a year earlier. The island's recovery from the hurricanes has been slow to materialize with December marking the first month the index was up (4.5%) since July.

Puerto Rico – Judge issues ruling

Judge Laura Taylor Swain, charged with overseeing the island's bankruptcy ruled against Ambac Assurance's adversary proceeding against the Puerto Rico Highways and Transportation Authority. Ambac had filed seven claims for relief, some of them consisting of multiple parts. The judge dismissed a majority of the claims and said the timing to rule on the remaining claims was not at hand, postponing the rulings to a later date.

2017 GDB-Econcmic Acitivty Index



Source - http://www.gdb-pur.com

After Hurricanes Irma and Maria caused major destruction, the Virgin Islands government has been operating under duress, facing headwinds on multiple fronts.

Virgin Islands – Facing headwinds

After Hurricanes Irma and Maria caused major destruction, the government has been operating under duress, facing headwinds on multiple fronts. Governor Kenneth Mapp and the legislature decided to scrap their 2017–2018 budget, opting to operate on the prior year's budget. The islands, grappling with a hurricane-damaged economy, high debt, and uncertainty regarding access to capital markets are struggling to maintain balance during the current fiscal year which began October 1.

State news

California – Homelessness crisis

State Assemblyman Phil Ting, D-San Francisco introduced Assembly Bill 3171, with the support of the mayors from 11 of the state's largest cities, which is aimed at helping tackle the state's homelessness crisis. The state's homeless population increased 13% in 2016 and almost 14% in 2017. The bill would allocate $1.5B of the state's $6.1B surplus to help fund homeless shelters, rent vouchers, and permanent supportive housing.

Connecticut – Governor and treasurer in disagreement

State Treasurer Denise Nappier urged state lawmakers to reject a plan by Governor Dannel Malloy to delay payments to the Teachers' Retirement System, arguing that such a measure would cause the state to violate a 2008 bond covenant. The governor asked legislators to push out payments amid growing budget deficits, arguing the state cannot afford the required $4B–$6B in annual payments due to the system. A covenant violation could trigger another state downgrade, potentially raising long-term borrowing costs for a state that is facing growing deficits.

Illinois – Governor unveils election year budget

Governor Bruce Rauner's proposed $38B budget, while authorizing $7.8B in new capital spending, shifts pension costs to public schools and universities as well as some health care expenses over a four-year period that would save the state approximately $696M. However, the budget changes would hurt local districts by cutting funding that was approved last summer. Chicago Public Schools stands to lose almost $200M in funding. The governor's budget is likely to spark fierce opposition from state lawmakers, and the state could experience another period of gridlock and budgetary uncertainty. In the event the state enters a long period of gridlock, rating agencies could take negative action on the state's rating.

Kentucky – A tax on opioids?

Kentucky lawmakers are contemplating a $0.25 per-dose opioid tax, $0.50 per-pack increase of the cigarette tax, and suspension of film tax credits to fund the state's 2019–2020 biennial budget. The opioid and cigarette taxes are expected to generate $377M in tax revenue over the two-year budget period, according to the Appropriations and Revenue Committee. The budget increases funding to both the Kentucky Retirement System and Teachers Retirement System to its actuarially required contribution of $4.8B for both funds.

Minnesota – A reversal of fortune

After projecting an annual budget deficit of $188M, across-the-board revenue improvements including sales and income taxes enabled the state to revise its revenue projections. The state's reversal of fortunes has the state projecting a $329M surplus in the two-year budget which began July 1. The state is estimating revenue collections will top $44B, up $353M from the November forecast due to improvements in the economy.

New Jersey Governor Phil Murphy's administration amended the expected rate of return to 7.5%.

New Jersey – Kicking the can down the road

With the state and its local governments facing growing pension fund contribution requirements based on a 7% expected rate of return assumption, Governor Phil Murphy's administration amended the expected rate of return to 7.5%. The upward revision is expected by the governor's office to reduce state and local pension contribution requirements by $238M and $415M, respectively. The state expects to gradually lower the expected rate of return to reduce pressure on the both state and local governments.

Oregon – Voters approve funding measures

Oregon voters approved a ballot measure that kept temporary taxes in place to fund Medicaid and close the budget gap. Measure 101, part of the state's 2017–19 biennial budget, consists of a 1.5% tax on some insurers and managed care organizations and 0.7% tax on large hospitals. The combined take from the taxes is $605M which would leverage $1.9B in federal funding and would help the state close a $2.4B budget gap. Shortly after the taxes were upheld, Moody's said keeping the taxes in place was a "credit positive."

State/territory credit ratings

State/Territory	Fitch	Moody's	Standard & Poor's
Alabama	AA+	Aa1	AA
Alaska	AA	Aa3	AA
Arizona	-----	Aa2	AA
Arkansas	-----	Aa1	AA
California	AA-	Aa3	AA-
Colorado	-----	Aa1	AA
Connecticut	A+	A1	A+
Delaware	AAA	Aaa	AAA
Florida	AAA	Aa1	AAA
Georgia	AAA	Aaa	AAA
Hawaii	AA	Aa1	AA+
Idaho	AA+	Aa1	AA+
Illinois	BBB	Baa3	BBB-
Indiana	AAA	Aaa	AAA
Iowa	AAA	Aaa	AAA
Kansas	-----	Aa2	AA-
Kentucky	AA-	Aa3	A+
Louisiana	AA-	Aa3	AA-
Maine	AA	Aa2	AA
Maryland	AAA	Aaa	AAA
Massachusetts	AA+	Aa1	AA
Michigan	AA	Aa1	AA-
Minnesota	AAA	Aa1	AA+
Mississippi	AA	Aa2	AA
Missouri	AAA	Aaa	AAA
Montana	AA+	Aa1	AA
Nebraska	-----	-----	AAA

State/Territory	Fitch	Moody's	Standard & Poor's
Nevada	AA+	Aa2	AA
New Hampshire	AA+	Aa1	AA
New Jersey	A	A3	A-
New Mexico	-----	Aa1	AA
New York	AA+	Aa1	AA+
North Carolina	AAA	Aaa	AAA
North Dakota	-----	Aa1	AA+
Ohio	AA+	Aa1	AA+
Oklahoma	AA	Aa2	AA
Oregon	AA+	Aa1	AA+
Pennsylvania	AA-	Aa3	A+
Rhode Island	AA	Aa2	AA
South Carolina	AAA	Aaa	AA+
South Dakota	AAA	Aaa	AAA
Tennessee	AAA	Aaa	AAA
Texas	AAA	Aaa	AAA
Utah	AAA	Aaa	AAA
Vermont	AAA	Aaa	AA+
Virginia	AAA	Aaa	AAA
Washington	AA+	Aa1	AA+
West Virginia	AA	Aa2	AA-
Wisconsin	AA+	Aa1	AA
Wyoming	-----	-----	AAA
District of Columbia	AA	Aa1	AA
Guam	-----	-----	BB-
Puerto Rico	-----	Ca	D
Virgin Islands	-----	-----	-----

Blue text indicates ICR (Issuer Credit Rating); all other ratings are GO
Source - Fitch Ratings, Moody's Investors Service, Standard & Poor's

Oregon voters approved a ballot measure that kept temporary taxes in place to fund Medicaid and close the budget gap.

Regional updates and other market news

Las Vegas, Nevada – Tourism continues dropping

It has been more than five months since the mass shooting in Las Vegas and there are no signs of recoveries in tourism or gaming revenues. In January, visits to the city dropped 3.3%, while gaming revenue of $554.8M on the strip was 8.89% lower than the prior year's monthly grab. The decline in gaming revenue marks the steepest drop for a month and the biggest since the October 1 shooting.

New York City – Consequences of tax reform

Mayor Bill de Blasio's recently introduced $88.67B preliminary FY2019 budget is facing uncertainty following passage of 2017 federal tax reform legislation and state aid cuts. The city could take a $700M hit including almost $400M to its already embattled Health and Hospitals Corp. The city's spending growth in the mayor's budget is being fueled by personnel costs and debt service payments with little spending apportioned on new or expanded programs.

Permanent School Fund (PSF), Texas – Rating affirmed

On March 5, Moody's affirmed the Aaa rating of the Texas PSF's bond guarantee program. The rating affirmation affects approximately $74.8B in guaranteed debt. The rating outlook is stable. In affirming the rating, Moody's cited the strong liquidity and growing assets of the fund, program mechanics, and the stable underlying credit quality of the school districts guaranteed by the program.

Philadelphia, Pennsylvania – School funding

Mayor Jim Kenney's FY2019 $4.7B budget seeks to raise property taxes 6% to help close the school district's growing budget deficit. The city's school district, the ninth largest in the country, is expected to run a deficit topping $900M by 2023, according to the mayor's office. The school district has been under the supervision of the state-run School Reform Commission, which has overseen the district since December 2001, and commissioners voted last November to return oversight to a locally appointed school board effective July 1, 2018.

Iron County Hospital District, Missouri – Second bankruptcy filing of the year

The hospital district, which owns one hospital in Pilot Knob, Missouri, filed for Chapter 9 bankruptcy protection from its creditors. The district listed liabilities of between $10M and $50M, including approximately $6.5M of bonds outstanding compared with assets between $1M and $10M. This district is the second municipal entity to file for Chapter 9 bankruptcy protection in 2018. Surprise Valley Health Care District in Cedarville, CA, was the first.

Pittsburgh, Pennsylvania – Once near bankruptcy, now a national model

In 2003, the city was on the brink of bankruptcy. It laid off nearly 500 employees, and closed recreation centers and swimming pools, while cutting other government services, and the city was placed in the state's Act 47 program. The city, in the program for the past 14 years, is ready to exit it following Governor Tom Wolf's declaration the city was no longer distressed. Over the course of the past 14 years, the city has managed to rebrand itself as a hub for education and health care as well as technology and culture. As a result, the city's economy rebounded and the city has been rewarded with 11 rating agency upgrades and is currently rated AA- by S&P and Fitch Ratings and A1 by Moody's.

Suffolk County, New York – Show-term borrowing vetoed

Suffolk County Comptroller John Kennedy's attempt to float $565M of short-term borrowing was vetoed by Suffolk County Executive Steve Bellone on January 19. Suffolk County is New York State's second-largest government. An attempt by county

Over the course of the past 14 years, Pittsburgh has managed to rebrand itself as a hub for education and health care as well as technology and culture.

legislators to override the veto fell two votes short. According to Bellone, the veto was meant to maintain checks and balances in the county's procurement system which requires the comptroller to request a waiver from the county committee to seek out financing.

RBC Wealth Management retail trading (2/1/18 – 2/28/18)

Top 10 CUSIPs selling volume to retail customers

CUSIP	Description	Maturity	Coupon	Volume
20282EAS5	CMWLTH FING AUTH	06/01/2039	4.00	8,911
796247CE2	SAN ANTONIO EDU FAC	06/01/2047	5.00	6,612
187145FD4	CLIFTON HRG ED FIN-A	08/15/2046	5.00	5,720
66285WWD4	N TX TOLL AUTH-A-REF	01/01/2048	5.00	5,535
763342UD2	RICHFIELD ISD #280-A	02/01/2043	3.50	3,369
235219ND0	DALLAS-REF & IMPT	02/15/2035	3.13	2,932
574296BW8	MARYLAND ST STADIUM	05/01/2047	5.00	2,846
414005WT1	HARRIS CNTY-A-REF	08/15/2047	5.00	2,611
97712DA71	WI HLTH & EDL FACS-C	02/15/2050	4.00	2,519
661765AU1	N RANGE CO MET DIST 1	12/01/2038	5.00	2,433

Top 10 CUSIPs buying volume from retail customers

CUSIP	Description	Maturity	Coupon	Volume
20282EAS5	CMWLTH FING AUTH	06/01/2039	4.00	0
796247CE2	SAN ANTONIO EDU FAC	06/01/2047	5.00	0
187145FD4	CLIFTON HRG ED FIN-A	08/15/2046	5.00	0
66285WWD4	N TX TOLL AUTH-A-REF	01/01/2048	5.00	0
763342UD2	RICHFIELD ISD #280-A	02/01/2043	3.50	0
235219ND0	DALLAS-REF & IMPT	02/15/2035	3.13	0
574296BW8	MARYLAND ST STADIUM	05/01/2047	5.00	0
414005WT1	HARRIS CNTY-A-REF	08/15/2047	5.00	0
97712DA71	WI HLTH & EDL FACS-C	02/15/2050	4.00	0
661765AU1	N RANGE CO MET DIST 1	12/01/2038	5.00	0

Source - RBC Wealth Management

RBC Capital Markets institutional trading (2/1/18 – 2/28/18)

Top 10 CUSIPs selling volume to institutional customers

CUSIP	Description	Maturity	Coupon	Volume
60637AFC1	MO HLTH & EDU-BJC	01/01/2039	4.50	69,939
574193PC6	MARYLAND ST-B-REF	08/01/2024	5.00	66,884
20281PKT8	CMWLTH FING AUTH-A	06/01/2038	3.86	46,573
514401AM0	LANCASTER PORT-REF	05/01/2038	1.77	33,793
09182NAJ9	BLACK BELT GAS DT-A	07/01/2046	4.00	32,349
25476FVC9	DIST OF COLUMBIA-D	06/01/2032	5.00	26,229
64986DFT7	NY ENVRNMNTL FACS-E	06/15/2047	5.00	25,530
25476FVF2	DIST OF COLUMBIA-D	06/01/2035	5.00	24,738
25476FVK1	DIST OF COLUMBIA-D	06/01/2042	5.00	23,267
647207AP4	NM ENERGY GAS VAR-B	11/01/2039	1.80	23,051

Top 10 CUSIPs buying volume from institutional customers

CUSIP	Description	Maturity	Coupon	Volume
59333PZ92	MIAMI-DADE CNTY REV	10/01/2040	5.00	45,908
79766DKJ7	SAN FRANCISCO CALIF C	05/01/2047	5.00	48,060
667274AC8	NORTHWELL HEALTHCARE INC	11/01/2047	4.26	36,942
91412GU94	UNIV CA-AX-TXBL	07/01/2025	3.06	33,803
57582RSB3	MASSACHUSETTS ST-B	01/01/2031	5.00	29,720
56035DAK8	MAIN STREET NATURAL G	04/01/2048	4.00	5,822
79766DGF0	SAN FRANCISCO-B-AMT	05/01/2046	5.00	27,572
7973555X8	SAN DIEGO USD-I	07/01/2047	4.00	18,488
626207YM0	MEAG TXB-PLT VOGTLE	04/01/2057	6.66	18,169
650035N20	NY ST URBAN DEV CORP	03/15/2028	5.00	0

Source - RBC Capital Markets

Bond Buyer indexes

Weekly	Current 2/28/18	Previous 2/22/18	2018 high	Date	2018 low	Date
Bond Buyer Revenue Bond Index	4.34%	4.35%	4.35%	(2/22)	3.92%	(1/04)
Bond Buyer 20-Bond Index	3.85%	3.86%	3.86%	(2/22)	3.44%	(1/04)
Bond Buyer 11-Bond Index	3.35%	3.36%	3.36%	(2/22)	2.94%	(1/04)

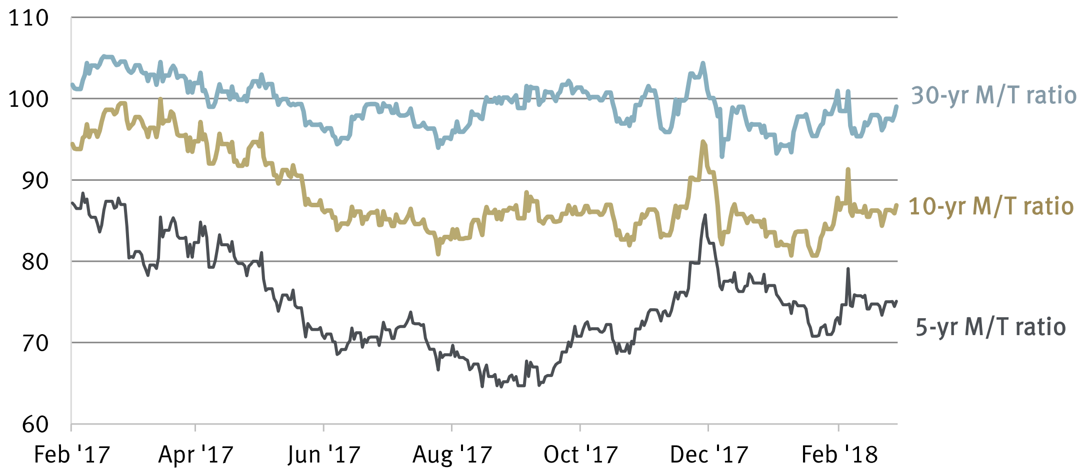
Source - *The Bond Buyer*

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	-0.30%	-0.30%	-0.43%	-0.36%	-0.42%	-0.32%	-0.29%	-0.28%	-0.33%
Year-to-date total return	-1.47%	-0.53%	-1.95%	-2.14%	-2.26%	-1.52%	-1.46%	-1.47%	-1.46%

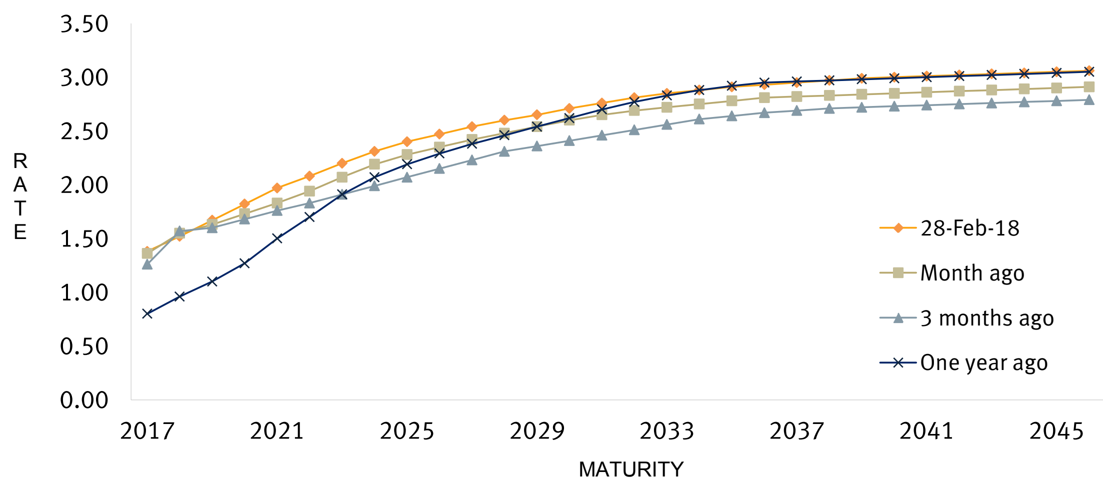
Source - Barclays, data as of 2/28/18

Muni/Treasury ratio comparison



Source - RBC Wealth Management, Bloomberg; data through 2/28/18

Muni market data AAA yield curve



Source - RBC Wealth Management, Thomson Reuters TM3

Municipal bond insurers

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

Source - RBC Wealth Management, data through 2/28/18

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