Municipal Market Insight

May 2018

Portfolio Advisory Group – U.S. Fixed Income Strategies

What's inside

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Treasury market selloff impacts munis

The Federal Reserve's May meeting came and went as expected, with no change to monetary policy and only slight tweaks to the statement language. Market participants were focused on how the Fed might characterize recent data points showing accelerating inflation pressures—raising the risk that this meeting's statement could set the stage for a more aggressive Fed. Curiously, and in a dovish nod to markets, the Fed is still characterizing market-based inflation expectations as "low." Combine that with the Fed's commitment to a symmetric inflation goal, and it's clear the Fed still seeks further work to be done on the inflation front, likely keeping the rate hike pace gradual. We maintain our view the Fed will hike rates twice more this year, including next month, and perhaps only once or twice in 2019 before we see the Fed hitting the pause button to assess the need for further hikes.

As the 10-year Treasury yield rapidly moved toward 3% at the beginning of April, volatility in the Treasury market spiked, which weighed on muni returns. The Merrill Lynch MOVE Index, a measure of Treasury market volatility spiked over 10% in the month. This volatility caused munis to post a negative 0.36% for April.

U.S. Treasury rate forecasts (% as of April 30, 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 (4/1/18)	2.56%	2.04%	2.74%	2.42%	2.97%	2.95%
Midmonth (4/15/18)	2.67%	2.08%	2.83%	2.39%	3.03%	2.94%
End of month (4/30/18)	2.80%	2.19%	2.95%	2.49%	3.12%	3.09%

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

RBC Wealth Management

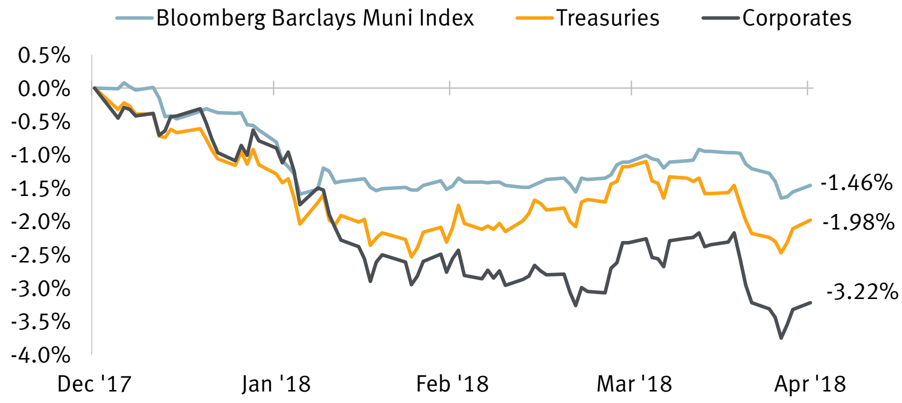
Munis are off to their worst start in 25 years.

Market investment strategy & market commentary

Munis disappoint in April amid interest rate fears

After posting slight gains in March and hopes of momentum in the market, munis were unable to ward off a Treasury market selloff, posting negative returns for the third time this year. As a result, munis are off to their worst start in 25 years as anxiety over rising interest rates and Treasury market weakness has taken its toll on investors, leaving many on the sidelines. The recent selloff in munis pushed muni/ Treasury ratios to their most attractive levels since the beginning of April. Despite underperforming in April, munis returned -0.36%, outpacing Treasuries and the corporate bond market which returned -0.81% and -0.93%, respectively. Munis have returned -1.46% year to date, outpacing Treasuries at -1.98% and corporate bonds at -3.22% over the same period.

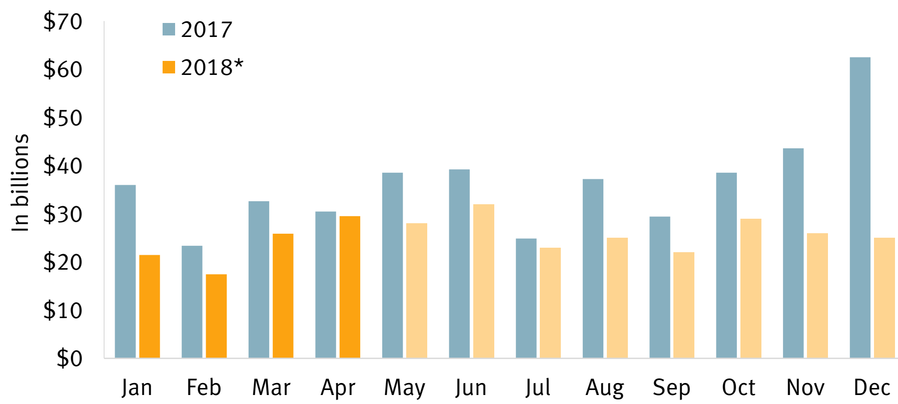
Year-to-date returns



Source - RBC Wealth Management, Bloomberg; data through 4/30/18

December's record $62.5B of issuance was a major contributor to the 29.6% drop in first-quarter issuance, April's $29.5B returned the market to a semblance of normalcy, leaving the market on pace to issue about $302B and well below last year's approximate $430B.

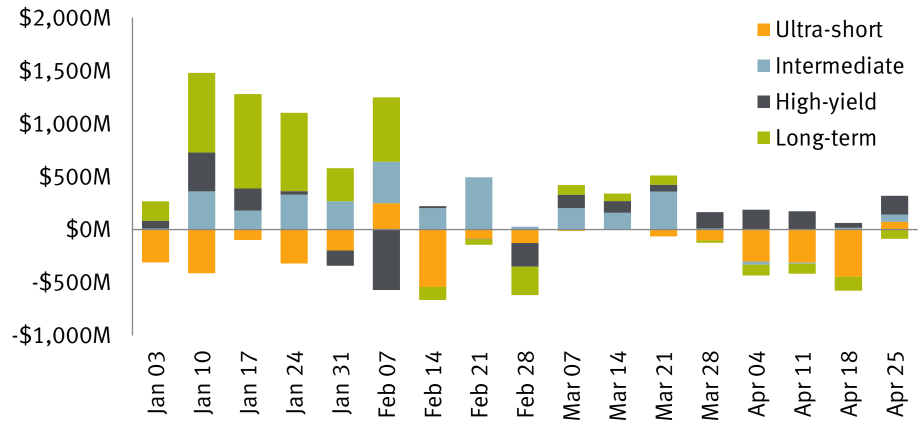
Year-over-year issuance comparison



*2018 actual data is displayed in dark orange; 2018 estimates in light orange
Source - RBC Capital Markets, *The Bond Buyer*; data through 4/30/18

Despite this year's weakness, demand has remained one of the bright spots of the market. Muni mutual funds have seen inflows 11 of the first 17 weeks of the year through April 30, gaining almost $2.9B. We believe the market has flushed out early uncertainty that forced it to navigate through strong headwinds experienced the first four months of the year. Market fundamentals remain strong, and our expectations of a decline in issuance amid strong demand should provide the catalyst for munis to post strong results the remainder of the year.

2018 muni fund flow



Source - RBC Wealth Management, Lipper; data through 4/25/18

Looking ahead, over the next few months, muni market fundamentals favor a rally.

Looking ahead, over the next few months, muni market fundamentals favor a rally as investors are poised to receive payments from maturing debt and interest payments that outpace projected supply. Further supporting a market recovery, foreign investors continue increasing their holdings of tax-exempt bonds amid lower yields overseas. Foreign investors' holdings jumped to $100.2B at the end of 2017, the largest jump since 2008. We favor intermediate to long-term maturities which, continue to present value for investors. Muni bonds maturing in the 15- and 20-year spaces are yielding 96% and 99%, respectively, of similar dated Treasuries. We think investors with shorter investment horizons should focus on maturities in the 10-year space where munis are yielding 88% of similar dated Treasuries.

This month's Puerto Rico focus: Oversight board certifies a new fiscal plan

The Puerto Rico Oversight, Management and Economic Stability Act (PROMESA) oversight board certified a new fiscal plan on April 19, 2018, that suggests an average 33% annual debt repayment through fiscal 2023. This latest certified plan is an improvement from the 26% proposed recovery in the oversight board's original certified fiscal plan dated March 2017 and a material improvement from the commonwealth's zero recovery proposal in its January 2018 submission. The improving recovery prospects reflect the extensive federal aid package Puerto Rico is receiving due to Hurricane Maria, along with other fiscal control requirements.

Interestingly, the certified plan mandates additional cost reductions including a 10% reduction in pension benefits and other labor-reform policies. However, Governor Ricardo Rosselló, who believes the oversight board lacks the legal authority to force the commonwealth to implement the changes, has publicly rejected the mandates. In response, the PROMESA board said it would sue the commonwealth to compel the government to implement the changes. Regrettably, we believe the squabbling will simply prolong the bankruptcy process.

The new certified plan does not designate amounts to the different debt obligations but instead only outlines how much money is available each year through 2023.

Individual recovery values will be outlined in a Plan of Adjustment (PoA), which is a formal debt restructuring document that will detail proposed recovery values for each of the island's debt obligations. The oversight board, tasked with creating the PoA, implied the plan would be released within the next couple of months. However, we believe the release will occur even later because of the lack of progress to date, and, if presented sooner, will be patently flawed given the complexity of the issues at hand.

Disregards security provisions

Similar to the original certified plan, this plan subordinates all debt obligations to the commonwealth's operations, which is contrary to the legal provisions of certain debt offerings and the enabling PROMESA law. In fact, Congressman Rob Bishop, a key architect of the PROMESA law, recently reminded the oversight board to "respect the relative priorities or lawful liens" of debt obligations and not "undermine the respect for the rule of law that is fundamental to efficient capital raising for municipalities across the United States."

> All involved parties know Puerto Rico cannot fully honor its entire debt burden and that certain essential services practically supersede the commonwealth's debt commitments.

All involved parties know Puerto Rico cannot fully honor its entire debt burden and that certain essential services practically supersede the commonwealth's debt commitments. Nevertheless, bondholders will litigate their legal rights to maximize recovery under the shadow of the commonwealth's essential service overhang. Positively, the PROMESA board has mandated additional cuts to pensions and elimination of certain anti-competitive labor laws. But, as a result, we are pessimistic materially greater cost reductions beyond those already proposed are achievable because the commonwealth is already vehemently opposing the current cuts, and thus further reductions could be seen as "morally" unconstitutional. That said, we believe additional cost reductions may be achieved if the commonwealth grossly misrepresented its essential service needs, which is possible given the lack of audited financial information since fiscal 2014.

Litigating security protections

Federal bankruptcy judge Laura Taylor Swain stated the debt security provisions—which are the underpinnings of bondholder protections—may be ripe for adjudication after the PROMESA board formally presents the PoA. Therefore, the bulk of the bondholder lawsuits will not begin until the PoA is formally introduced.

Parting thoughts

The oversight board certified the original fiscal plan in March 2017, yet a year later the island's debt restructuring plan remains opaque. We believe this second certified fiscal plan is simply a placeholder too because the plan's feasibility hinges upon the outcome of pending bondholder litigation. As such, the plan may need to be materially rewritten depending on the outcomes of the court cases.

Overall, we view the newest certified fiscal plan as a positive development, but the most recent recovery figures are still categorically fluid. Ultimate resolution will not present itself until the pivotal lawsuits are resolved, which may take years, or bondholders agree to amicable recovery terms.

We believe predicting individual recovery values for any credit at this juncture is still unproductive because the various lawsuits must be resolved before the market has sufficient clarity regarding security protections to arrive at an informed conclusion.

This month's state focus: Connecticut downgraded by S&P

Standard & Poor's downgraded the state's debt rating one notch, to A from A+, citing mounting debt ratios, which was triggered by the assumption of the city of Hartford's debt obligations. The rating agency also highlighted recent population declines, slow

> Connecticut's unfunded pension liability, as a percentage of the state's resources, is the second-highest among states.

economic growth, and the state's historical tendency to draw down reserves and deficit financing in times of fiscal imbalance. The state's challenges are buoyed by its high income levels, adequate liquidity, and sufficient fiscal monitoring.

Notably, Fitch and Moody's affirmed the state's GO ratings at A+ and A1, respectively, after factoring in the additional Hartford debt.

Finances

The state enacted its biennium budget (four months late) in October 2017, which will close a $3.5B deficit through tax increases, fund sweeps from other government reserves, and expenditure cuts. The budget process was complicated by a combination of subpar income tax revenue growth, increased pension and retirement health care costs, and legislative reluctance to tax its way out of this latest imbalance after receiving critical feedback from influential taxpayers. The state faced the negative optics of several prominent employers, including General Electric, leaving the state, which led to a political unwillingness to increase certain taxes for fear of losing more employers.

Labor concessions that produced savings in the current biennium will also help close the budget gap but will require wage increases in the next biennium, as well as prohibit layoffs for four years and extend non-wage benefit provisions to 2027.

Pensions

Connecticut's unfunded pension liability, as a percentage of the state's resources, is the second-highest among states. On a positive note, Connecticut contributes the full amount of its actuarially determined contribution (ADC) because it is required via bond indenture and collective bargaining agreements to make the full payment. Unfortunately, despite fully funding the ADC, the pension liability has grown because assumed investment returns historically have not been achieved.

Beyond pensions, the state is confronting other swelling fixed costs, including debt service and health care benefits, which account for a meaningful portion of the state's expenditures.

Debt burden

Connecticut's assumption of Hartford's debt is a mixed bag. On the positive side, it is reassuring to see the state supporting its local entities. On the negative side, the additional debt marginally complicates Connecticut's challenges and potentially creates a slippery moral hazard for the state if other municipalities seek similar bailouts instead of making politically difficult decisions.

On balance, we view the state's actions positively, but hope the state-imposed fiscal oversight requirements are sufficient deterrents to other Connecticut municipalities that may seek similar assistance, because wholesale irresponsibility at the local level could overwhelm the state.

Political will

Connecticut will need to continue increasing taxes and reducing services to maintain fiscal balance. Unfortunately, it is politically unpopular to raise taxes and equally unpopular to cut social programs, but ultimately that is what will be done absent a major resurgence in the state economy. The state may not be able to materially increase income taxes because ultra-high earners have already demonstrated a willingness to leave the state, but the state can increase numerous other taxes. Politicians and residents will protest, but ultimately the state will employ these measures, it is simply a question of when.

This month's city focus: Hartford – GO debt

Connecticut inked a financial assistance agreement, under which the state will cover Hartford's existing general obligation (GO) debt service as a full faith and credit obligation of the state. As a result, Hartford's total direct debt declined to $83M from $622M and annual debt service costs shrunk to $8M from $53M, which eliminates the city's ongoing structural imbalance and makes the remaining obligation more affordable.

All told, the city's financial outlook is much improved, and the state oversight should depoliticize the budgetary process and result in more fundamentally sound financial decisions. However, the city still faces future socioeconomic and tax base challenges, which creates longer-term uncertainty.

Territorial update

Puerto Rico – SEC ends investigation

The commonwealth sold $3.5B of general obligation bonds in March 2014 despite receiving speculative-grade ratings from the rating agencies. Prices on the bonds deteriorated rapidly causing bondholders to file complaints with the Securities and Exchange Commission (SEC). After a 3 1/2 year investigation into the commonwealth's 2014 general obligation bonds sale, the SEC ended its investigation without taking any enforcement action.

U.S. Virgin Islands – Seeking additional FEMA help

The U.S. territory is asking the Federal Emergency Management Agency to continue waiving cost sharing as the territory continues rebuilding following the destruction caused by Hurricanes Irma and Maria. The territories' three islands (St. Thomas, St. John, and St. Croix) have already received in excess of $1B in federal disaster assistance.

On May 2, Moody's said the $238M grant given to the Virgin Islands Water and Power Authority for permanent repairs to the island's electrical system is a positive development for the island's junk-grade bond rating.

State news

General Commentary – States remain conservative

For the fifth consecutive year, total net tax-supported debt grew under 2%, as state revenue coffers continued growing at a slow pace, which caused states to remain conservative when issuing new debt. Average net-tax supported debt among states was $1,477 per capita, with 31 states under that figure, according to a recent Moody's report. Connecticut, which has been in the top position each of the past three years, had the highest net tax-supported debt per capita of $6,544, while Nebraska had the lowest at $20.

Alaska – Budgeting comes down to the wire

The state had until April 15 to produce a budget, bonding bills, and changes to the state's pension obligation bond authority. The Democrat-controlled House of Representatives and the Republican-controlled Senate are close to reaching consensus. Both chambers have agreed to tap 5.25% from the Permanent Fund and pay a $1,600 annual dividend payment to state residents.

Illinois – Another budget stalemate?

Illinois lawmakers, with one month left in the legislative session, have made little headway on a FY2019 budget. As a result, lawmakers are pushing forward a measure aimed at allowing the state treasurer to purchase overdue state vendor bills. The legislation cleared the Senate and is expected to be heard by a House committee in early May. The state's current backlog of invoices stands at $6.8B following the issuance of muni bonds to reduce the backlog which reached a record $16.7B last fall.

Illinois lawmakers have made little headway on a FY2019 budget.

Governor Matt Bevin vetoed the state's two-year operating budget.

Governor Bruce Rauner is projecting the state will end the current fiscal year with a $7.7B backlog.

Kentucky – A budget veto

Governor Matt Bevin vetoed the state's two-year operating budget that calls for $480M in tax increases to fund record increases in public education spending. Bevin argued that the tax increases would not generate as much money as projected and would generate a $50M budget deficit if enacted. Lawmakers included a 6% percent sales tax on certain service industries along with a $0.50 per pack tax hike on cigarettes.

New Jersey – New governor, same obstacles

Democratic Governor Phil Murphy's recently released $37.4B budget "does not significantly change" New Jersey's financial outlook, despite a slight improvement to the state's retirement system. The system's funding level improved to 35.8% (July 1, 2017) up from 30.9% a year earlier. The budget, while increasing the funding level to $3.2B, or 28% higher than the current year, remains well below half the amount actuaries say is needed

State/territory credit ratings

On April 13, 2018, S&P downgraded Connecticut one-notch to "A" from "A+" following an increase in the state's tax-backed debt ratios, and the state's recent bailout of Hartford.

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

Oklahoma – Governor approves tax hikes

On March 29, Governor Mary Fallin signed bills raising taxes by approximately $523M for fiscal 2019. The tax increases, the first in nearly 30 years, came after the governor called two special sessions to address budget shortfalls. The tax increases include $1 per pack on cigarettes, $0.03 per gallon on gasoline, $0.06 per gallon on diesel fuel, and a 5% gross production tax on oil (up from 2%). A majority of the new revenues, or $470M, are planned to be used for new expenditures and raises for state employees. The state had been mired in a teachers strike which closed schools for just under two weeks.

Texas – Sales tax revenue outperforms

The state ended the first quarter with sales tax revenue growing 8.3%, driven by a 7.2% increase in March, with $2.4B of sales tax collections. March, usually the state's weakest month for tax collections, experienced increases in virtually every economic sector as both business and consumer spending spark tax collections in the state.

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Regional updates and other market news

Atlantic City – Continues its rebound

On April 4, Atlantic City, operating under state supervision, successfully issued $49.2M of federally taxable, deferred contribution refunding bonds. The bonds were issued under New Jersey's Qualified Bond Act program, and proceeds would be used to pay state approved deferred pension and health care payments that were due in 2015, when the city was facing insolvency as a result of a $101M budget deficit.

Chicago – Jumps into the gun control debate

Governor Rahm Emanuel introduced the "Safe Guns Policy" ordinance that is set for a hearing this spring and has the support of Finance Committee Chairman Edward Burke. If enacted, the ordinance would set parameters for financial firms conducting business with the city. Firms would be required to file an affidavit stating that their business clients adhere to multiple gun control measures advocated by the city. Financial institutions would be precluded from doing business with the city if they do not adhere to the Safe Guns Policy.

First Energy Corp. – Reaches a settlement

FirstEnergy reached an agreement with holders of $1.8B of pollution control notes issued by its bankrupt subsidiary First Energy Solutions Corp., which calls for a combination of cash payments and tax notes. The agreement is contingent on the sale of assets that if successful is expected by sellers to generate approximately $628M of value to bondholders.

Hudson Yards, NY – Gets new tenant

Pfizer Inc. agreed to relocate its corporate headquarters, signing a 20-year lease to occupy 15 floors at the Spiral, currently under construction at Hudson Yards. Pfizer expected to begin occupying the building starting in 2022.

Los Angeles, CA – Boosts borrowing for homeless

Mayor Eric Garcetti, in his 2018–19 budget, has more than doubled spending on the growing homeless crisis impacting the city. The mayor is proposing spending up to $430M, of which only 20% is expected to come from the city's general fund and to go directly to services provided to the homeless. The budget, which must be approved by the city council, calls for more than 50% of the budgeted money to come from long-term borrowing. Approximately $20M will fund the opening of new shelters. The mayor plans to provide $1.33M to each district in the city. If a district does not build a shelter within six month, the funds will be forfeited to another district.

Revenue uncertainty caused the Authority to require the county to implement $18M in spending cuts.

Michigan State University – Rating downgrade

S&P revised the university's AA+ rating to negative from stable as the fallout from the sexual abuse scandal surrounding Larry Nassar, a former university doctor and U.S. gymnastics team doctor, remains front and center. S&P said, "The negative outlook reflects our view of risk management issues stemming from recent state and national inquiries related to historical Title IX concerns on campus, which have resulted in numerable changes to senior leadership." S&P believes the scandal could have material effects on the university's overall enrollment and demand profile.

Moberly, Missouri – Eight years later

The Missouri city, which secured a 2010 $39M artificial sweetener plant with its appropriation-backed pledge and then failed to appropriate funds to meet debt service when the project's developer failed to meet debt service was returned to investment grade eight years later. The city's rating was raised to BBB from BB-, while the city's appropriation-backed rating was raised to BBB- from B+.

Nassau County, N.Y. – Budget rejected

Nassau County Executive Laura Curran, who took office January 1, submitted a revised spending plan to the Nassau County Interim Finance Authority after last year's $2.99B budget was rejected by the Authority. Revenue uncertainty caused the Authority to require the county to implement $18M in spending cuts. Curran's new budget includes $54.7M in savings and revenue enhancements, some of which may require legislative approvals. The revenue enhancers are expected to face headwinds from the Republican-controlled Nassau County Legislature.

New York City – de Blasio budget scrutinized

New York City Comptroller Scott Stringer criticized Mayor Bill de Blasio's $89.06B budget saying it increased spending and does very little to prepare the city for cuts expected to come down from Washington and future economic uncertainty. Stringer said the mayor should take advantage of the city's robust economy and strong one-time non-recurring revenue to boost current reserve levels. The mayor's budget includes $754M in savings, consisting of partial hiring freezes, city agency efficiencies, and debt service re-estimates. The $754M in savings will be offset by $530M of additional expenditures being shifted to the city by the state.

O'Hare International Airport, IL – Moody's negative on renovation

Chicago's planned $8.5B terminal renovation for O'Hare was deemed a credit negative by Moody's. The rating agency cited increasing (airport) leverage and rising airlines' costs that could affect the airport's competitive edge. Potential growth at the airport could also be affected. Chicago's Chief Financial Officer Carole Brown told the city's aldermen that she thinks the city, despite the increased airport debt, could maintain O'Hare's current rating.

RBC Wealth Management retail trading (4/1/18 – 4/30/18)

CUSIP	Description	Maturity	Coupon	Volume	CUSIP	Description	Maturity	Coupon	Volume
041806HC7	ARLINGTON HGR EDU-A	02/15/2046	5.00	6,836	69753RDG6	PALOMAR POMERADO-PREM	08/01/2039	0.00	4,168
13063DFR4	CALIFORNIA ST	10/01/2047	3.63	6,618	59261AMD6	MET TRANSPRTN AUTH NY	11/15/2048	4.00	2,886
130179NF7	CA EDU FACS AUTH-C	04/01/2048	4.00	5,213	010869EE1	ALAMEDA ETC CAB-REF-B	10/01/2027	0.00	2,214
56782TBK7	MARIN HEALTHCARE DIST	08/01/2047	4.00	5,205	45505MDG8	IN FIN WSTWTR-A-CWA	10/01/2039	5.00	2,179
13032UMM7	CA HLTH FACS-A2	11/01/2038	4.00	5,202	03789YCQ7	APPLE VLY SNR LVNG-A	01/01/2047	4.38	2,128
167727YL4	CHICAGO IL WSTWTR TRA	01/01/2052	4.00	5,153	900190GA1	TURLOCK IRR DIST-REF	01/01/2041	5.50	2,054
89602N3D4	TRIBORO BRIDGE-A-GEN	11/15/2050	5.00	3,495	646140CU5	NJ TPK AUTH-A-PREREF	01/01/2043	5.00	1,407
574193QH4	MARYLAND-A	03/15/2033	3.13	3,274	13063A4Y7	CA ST	04/01/2038	6.00	1,040
5742184J9	MARYLAND ST HLTH & HG	07/01/2048	4.00	2,924	59259YR43	MET TRANSPRTN-A-1	11/15/2044	5.00	936
04184RBT6	ARLINGTON-SPL TAX-A	02/15/2048	5.00	2,564	709224TW9	PA TPK COMM-B2-UNREF	12/01/2034	6.00	876

Source - RBC Wealth Management

RBC Capital Markets institutional trading (4/1/18 – 4/30/18)

CUSIP	Description	Maturity	Coupon	Volume	CUSIP	Description	Maturity	Coupon	Volume
13057EBC7	CA PUB FIN AUTH-A-REF	08/01/2047	4.00	6,386	56035DAK8	MAIN STREET NATURAL G	04/01/2048	4.00	43,393
296371UD7	ESCONDIDO SD-B	08/01/2047	4.00	6,236	20774Y3D7	CT HLTH & EDU-C-2	07/01/2057	5.00	41,608
717883VG4	PHILADELPHIA SD-B	09/01/2043	4.00	5,663	392274X76	GTR ORLANDO AVIATION	10/01/2047	4.00	30,985
3582323J3	FRESNO USD-A-REF	08/01/2041	4.00	5,200	180848XJ7	CLARK CO-A	05/01/2048	5.00	26,823
53833PAX4	LIVERMORE VLY CA WTR	07/01/2043	4.00	5,200	414191AT3	HARRIS IDC SLD WST	02/01/2023	5.00	26,269
452650KM5	IMPERIAL IRR DIST-REF	11/01/2041	4.00	5,193	265138KF3	DUNCANVILLE ISD-BLDG	02/15/2045	5.00	25,446
870462TK4	SWEETWATER UN HSD-C	08/01/2047	4.00	5,186	180848XH1	CLARK CO-A	06/01/2043	5.00	25,363
79689RAW2	SAN BRUNO FING-WST	07/01/2047	4.00	5,184	64971XAT5	NEW YORK CITY NY-A-2	08/01/2038	5.00	23,915
845389JB2	S WSTRN CMNTY CLG-A	08/01/2042	4.00	5,181	59334DGU2	MIAMI ETC W/S SYS	10/01/2034	5.00	19,054
556452GL8	MADERA USD	08/01/2046	4.00	5,179	249002DY9	DENTON ISD-A	08/15/2040	5.00	18,104

Source - RBC Capital Markets

Bond Buyer indexes

Weekly	Current 4/26/18	Previous 4/19/18	2018 high	Date	2018 low	Date
Bond Buyer Revenue Bond Index	4.46%	4.35%	4.38%	(4/26)	3.92%	(1/04)
Bond Buyer 20-Bond Index	3.97%	3.87%	3.90%	(4/26)	3.44%	(1/04)
Bond Buyer 11-Bond Index	3.45%	3.37%	3.40%	(4/26)	2.94%	(1/04)

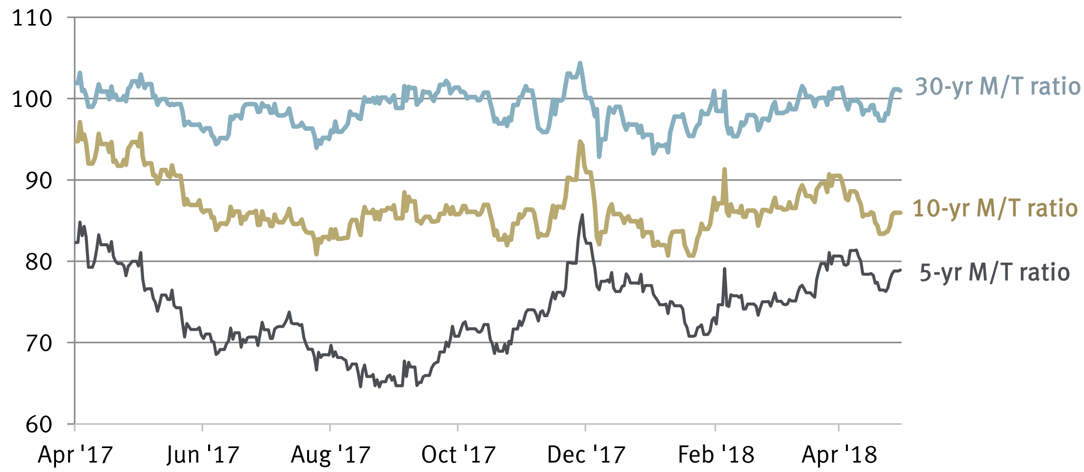
Source - *The Bond Buyer*

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	-0.36%	-0.38%	-0.22%	-0.24%	-0.43%	-0.42%	-0.37%	-0.33%	-0.23%
Year-to-date total return	-1.46%	-0.95%	-1.83%	-1.76%	-1.94%	-1.61%	-1.48%	-1.41%	-1.23%

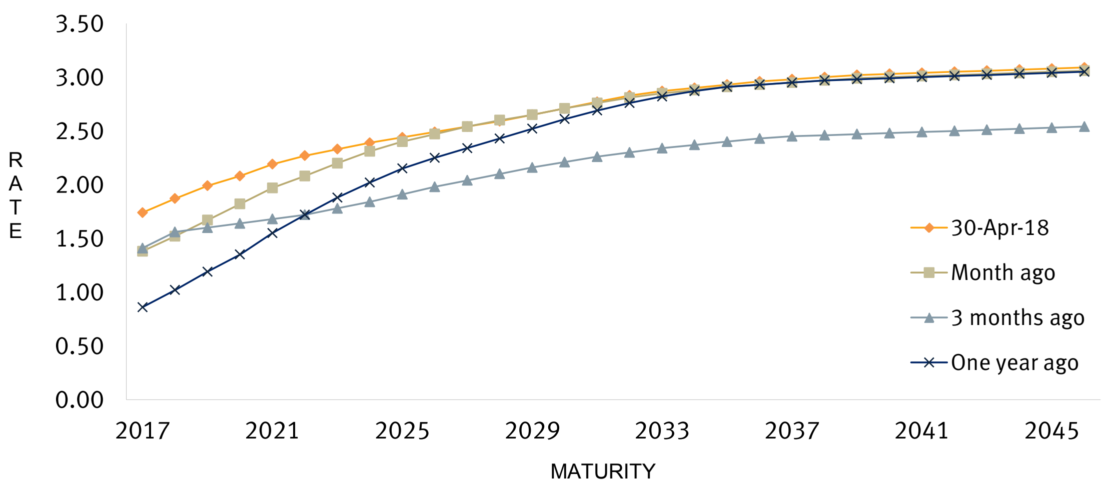
Source - Barclays, data as of 4/30/18

Muni/Treasury ratio comparison



Source - RBC Wealth Management, Bloomberg; data through 4/30/18

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 (stable outlook)	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 4/30/18

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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).

Disclaimer