Municipal Market Insight

October 2018

Portfolio Advisory Group – U.S. Fixed Income Strategies

What's inside

Fed sneezes, markets catch cold

Bond markets have been under pressure since the Federal Reserve's widely expected rate hike in September and subsequent guidance from a number of officials that investors can expect to see more increases in the future. December likely provides the next opportunity, and forecasts suggest there could be three more in 2019. At the same time, however, policymakers have expressed little concern over the potential for a surge in inflation, which in our view suggests the Fed could be well on its way to engineering the ever-elusive "soft landing" that could allow it to take its foot off the gas at some point; we think this is most likely to happen in 2019. We see indications that the U.S. economic expansion, now in its tenth year, has room to run and we see no signs of recession on the horizon. A 2019 pause by the Fed should limit the rise in rates, hence in our opinion the recent uptick in yields provides a good entry point for investors.

It's the time of year for a portfolio check-up; for municipal bond investors, year-end tax swaps are a great way to fine-tune portfolios. A combination of weak year-to-date muni market performance and positive returns in equities and high yield bonds provides an opportunity for investors to harvest losses in muni holdings in order to offset gains in other asset classes.

U.S. Treasury rate forecasts (% as of September 30, 2018)

	2018				2019			
	Q1	Q2	Q3	Q4E	Q1E	Q2E	Q3E	Q4E
FF	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50
2-yr	2.27	2.52	2.65	2.90	3.00	3.25	3.40	3.55
5-yr	2.56	2.73	2.95	3.10	3.25	3.45	3.55	3.65
10-yr	2.74	2.85	3.15	3.30	3.45	3.60	3.70	3.75
30-yr	2.97	2.98	3.35	3.50	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 (9/1/18)	2.74%	2.02%	2.86%	2.44%	3.02%	3.02%
Midmonth (9/15/18)	2.90%	2.12%	3.00%	2.55%	3.13%	3.16%
End of month (9/30/18)	2.95%	2.20%	3.06%	2.58%	3.21%	3.19%

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

Click here for authors' contact information.

RBC Wealth Management

Market investment strategy & market commentary

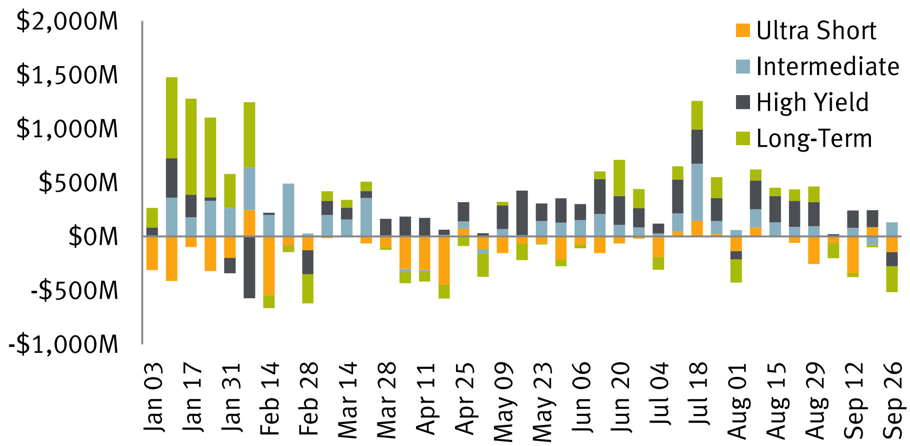
Market Performance – Weaker than expected

As investors opted to sit on the sidelines ahead of September's Federal Open Market Committee meeting, the municipal market experienced its third-worst performance this year. As expected by the markets and investors, the Committee raised the federal funds rate 0.25%, setting a target range of 2.00% to 2.25%. By mid-month, yields on the benchmark 10-year muni reached their highest levels in more than four years.

Despite a 26% m/m decline in issuance and a rising yield environment, investors remained steadfast, keeping their cash in reserve and remaining cautious on expectations short-term rate hikes would send longer term yields higher. Demand for muni mutual funds waned in September with muni mutual funds experiencing outflows for the first time since April. Investors withdrew $561M from muni funds in September, the largest monthly outflows this year, further contributing to the muni market's weaker monthly performance.

Demand for muni mutual funds waned in September with muni mutual funds experiencing outflows for the first time since April.

2018 municipal bond fund flows

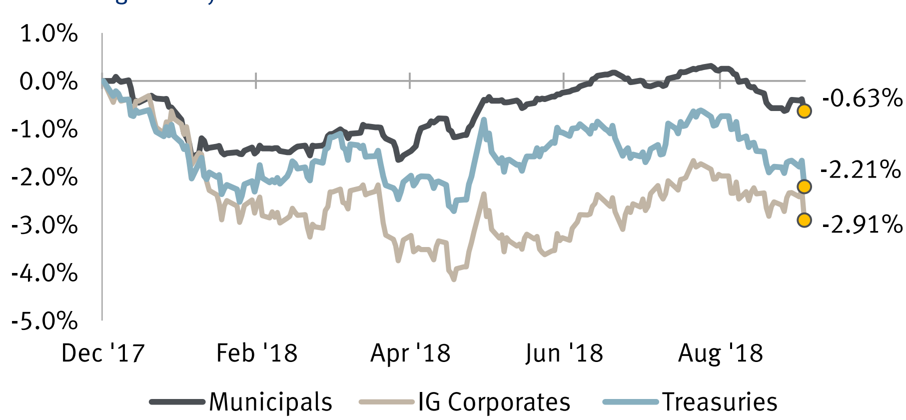


Source - Lipper U.S. Fund Flows, RBC Wealth Management; weekly data through 9/26/18

Despite September's poor performance, munis' -0.65% return outperformed Treasuries (-0.93%) but underperformed corporates (-0.36%). Year-to-date through the end of September, munis are returning -0.40% and are outperforming both Treasuries (-1.67%) and corporates (-2.33%). Munis could not fend off the selloff in Treasuries during the first week of October and sold off in sympathy. As a result, munis are returning -0.23% MTD.

Munis could not fend off the selloff in Treasuries during the first week of October and sold off in sympathy.

Bloomberg Barclays Indexes



Source - Bloomberg

Looking ahead: Can the muni market return to the black?

After beginning the month in the red, munis are positioned to return to the black, in our view, as investors are expected to receive $30.7B in maturities and early redemptions and an additional $10.2B in interest payments during the month while dealers are expected to offer $29B in new deals, leaving approximately $11.9B of investable cash. We believe a potential demand/supply imbalance could provide the fuel necessary to spark a rally in the muni market. We maintain our bias toward high-grade, longer-dated munis based on our belief that recent weakness in the investment grade space will be short-lived and that a selloff of high yield bonds is probable in a rising-rate environment.

It's that time of year again – Tax loss swap season

As the end of the year rapidly approaches, it is once again time to consider bond swaps to take advantage of losses generated in portfolios as a result of credit deterioration or price volatility. Investors often engage in bond swaps in order to realize the tax benefits of taking a loss on the sale of a depreciated bond and using that loss to offset capital gains on their tax returns, thus avoiding the tax. Investors should also consider bond swaps for taking profits and accomplishing other goals such as increasing yields, improving credit quality, or consolidating smaller positions. With markets likely to suffer from reduced liquidity as year's end approaches, investors should seize this opportunity as soon as possible.

Local annual appropriation debt: A troubling nascent trend

Within the past several years, several municipalities—including Lombard, Illinois; Vadnais Heights, Missouri; and Buena Vista, Virginia—have defaulted on their appropriation-backed debt despite having the financial means to honor their debt obligations.

Within the past several years, several municipalities have defaulted on their appropriation-backed debt despite having the financial means to honor their debt obligations.

The other common thread these defaulting municipalities share is that they lent their appropriation pledge to nonessential projects that were supposed to be self-supporting and reneged on their commitments when municipal resources were called upon.

A hotel, a sports complex, an artificial sweetener plant, a mixed-use development project, and a golf course were all backed by their municipalities' annual appropriation pledges. However, when the projects underperformed, municipal officials decided not to appropriate the necessary governmental funds—a decision that was fully within the municipalities' rights and completely legal.

Weak legal protection

A municipal annual appropriation pledge has very weak legal standing, with virtually no bondholder recourse beyond usually retaking the (underperforming) asset. Given this weak legal standing, the municipal market and rating agencies typically place a risk premium on appropriation debt, but only notch the credit risk one to three levels below the municipality's General Obligation (GO) credit profile.

Municipal risk analysis factors in both financial ability and willingness to pay an obligation. The municipality's financial ability to pay its obligations is reflected in its GO credit rating. Historically, municipalities consistently showed a willingness to pay their appropriation debt obligations if they had the financial wherewithal. Since municipalities always paid if they had the resources, it made logical sense to simply notch off the GO credit rating.

Furthermore, if a municipality did not honor its annual appropriation pledge, the rating agencies exacted a heavy ratings penalty and, more importantly, the tight-knit municipal market blacklisted the municipality for a period of a decade or more.

Unfortunately, the taboo of defaulting on annual appropriation debt has gradually eroded, and investors' thirst for higher yields has allowed transgressing municipalities much quicker re-entry into the capital markets. As an example, the city of Lombard, Illinois defaulted on its annual appropriation pledge in 2012 despite ample financial reserves and an AA rating. Yet despite having defaulted on its debt, this affluent municipality recently sold a nonrated offering to yield-starved investors.

In our view, it is more egregious for a municipality with the financial means to forgo appropriating for its debt (even if such an action is within its legal rights) than for a municipality with limited fiscal means to renege. For a struggling municipality, the decision not to appropriate is understandable. But investors are always blindsided by a municipality that possesses the financial means and has clearly benefited from the appropriation-pledge convention (access to capital and much lower interest rates) yet decides to renege on a deal that does not work out as expected.

Thankfully, rating agencies still exact a heavy ratings penalty for defaulting, but a municipality's cost savings from repudiating its appropriation debt usually outweigh the additional yield penalty created by super-downgrades in the current yield environment. We believe the ability of wayward municipalities to re-enter the municipal market much more quickly than in the past is sending a troubling message to other municipalities that may be contemplating similar actions.

The biggest continuing deterrent bondholders have to influence municipal behavior is their enduring unwillingness to lend to any defaulted municipality.

But all is not lost. The biggest continuing deterrent bondholders have to influence municipal behavior is their enduring unwillingness to lend to any defaulted municipality. We believe individual investors must be the change they wish to see by not purchasing the debt of any tainted municipality even if other investors do not comply. The goal of maximizing investment returns must be subordinated to this bankruptcy conviction for the greater health of the municipal market, in our view, regardless of other investors' behavior. If the cost and time to re-access the capital markets outweighs the benefits of reneging on debt, municipalities will find another path of lesser resistance.

States are different

As a best practice, we believe it is always better to own debt obligations that finance essential service projects, especially if the financed asset may be retaken in the event of default. However, we believe this requirement may be relaxed for state appropriation debt because state officials and their financial advisors have a much higher level of financial sophistication than their counterparts at the municipal level and understand a properly functioning state government requires frequent access to the capital markets. Naturally, the key term is "properly functioning," and in extreme circumstances (i.e. Puerto Rico) nothing is sacrosanct, but we do not believe any U.S. state is in a precarious position nor do we anticipate such events in the immediate future. That said, we believe there should be a yield premium for nonessential projects to accept the tail risk of non-appropriation by a state entity.

Conclusion

While we believe the taboo of municipal bankruptcy continues to erode, we also believe municipal defaults will continue to be relatively rare among the roughly 30,000 municipal issuers. Thus, on an absolute basis, the risk of municipal bankruptcy will continue to be extremely low compared to risks in other asset classes.

Nonetheless, investors should be aware of the limited legal recourse with regard to annual appropriation debt, and to minimize adverse outcomes, we believe investors should consider limiting their local appropriation debt exposure to highly rated municipalities that finance essential service projects.

Our opinion of state-level appropriation debt is more liberal given the higher level of financial sophistication and need to continually access the capital markets. Therefore, we believe the necessity of a given project is less critical to ensuring an annual appropriation—but investors should still demand a higher yield premium to accept the additional risk for nonessential projects.

And if a municipality does default, individual investors must discourage such behavior by refusing to purchase its debt in the future. Blacklisting a municipality is a potent means to influence future municipal behavior, and is virtually the only means in the case of annual appropriation debt.

Territorial update

Puerto Rico – Commonwealth reaches an agreement with the Feds

In a joint statement, U.S. Department of Housing and Urban Development (HUD) Secretary Ben Carson and Puerto Rico's Governor Ricardo Rosselló announced a $1.5B grant agreement to help the commonwealth recover from Hurricanes Irma and Maria. The commonwealth expects to invest $1B to restore housing on the island, $145M to help revitalize the economy, and another $100M for infrastructure project to match federal investments through FEMA.

PROMESA Board – Projects larger surpluses

The PROMESA board is preparing to raise its forecast for Puerto Rico's budget surplus over the next 40 years amid increased aid and rebuilding that is expected to resuscitate the island's economy.

The PROMESA board is preparing to raise its forecast for Puerto Rico's budget surplus over the next 40 years amid increased aid and rebuilding that is expected to resuscitate the island's economy. The boost to the economy is expected to increase the commonwealth's cumulative surplus before any debt payments to more than $20B through 2058, up from the $4B estimated in the fiscal recovery plan approved in June.

State news

Monthly rating changes and/or revisions

- **Mississippi:** Moody's affirmed the state's Aa3 rating on October 3 and revised the state's outlook to stable from negative, reflecting the state's stable revenues and financial controls that have led to healthy fund balances and renewed contributions to the rainy day fund.
- **New Mexico:** S&P affirmed the state's AA rating on September 12 and revised the state's outlook to stable from negative, reflecting the state's return to structural balance following a period of imbalance due to the downturn in the oil and gas industry.
- **Nevada:** S&P affirmed the state's AA rating on September 20 and revised the state's outlook to positive from stable, reflecting the state's proactive management and expectation the state will continue to build its reserves during economic expansion to mitigate future revenue volatility. Fitch Ratings affirmed the state's AA+ rating and stable outlook on September 21, reflecting Fitch's expectations the state will retain financial resilience through a moderate economic downturn.
- **Oklahoma:** Moody's affirmed the state's Aa2 rating on September 26 and revised the state's outlook to stable from negative on Moody's expectation the state will continue to experience modest economic growth despite its continued reliance on the oil and gas industry, as well as the stabilization of the state's finances driven by recent revenue growth.

California – August revenues surge

August revenue of $9.9B was 12.9% higher than projected with sales tax receipts jumping 28% and personal income taxes up 9%; partially offsetting the month's strong gains was a 44% drop in corporation taxes. Total revenue for the first two months of the fiscal year is 5.4% higher than expected.

Proposition 6, a November ballot measure that seeks to repeal a gas tax passed by the legislature last year, could limit the California's ability to raise revenue, according to Fitch Ratings.

California – November ballot measure

Proposition 6, a November ballot measure that seeks to repeal a gas tax passed by the legislature last year, could limit the state's ability to raise revenue, according to Fitch Ratings. Proposition 6 would also mandate voter approval for similar future increases in gas and vehicle taxes. Fitch said repeal "could erode the state's revenue framework and ultimately its ability to manage its budget in response to changes in the economy."

Colorado – Drilling applications surge

Applications for drilling permits more than doubled during the first nine months of 2018 compared with the same period last year. The surge in applications comes ahead of a November vote on Proposition 112, which would increase the required distance between drilling activities and occupied structures. If passed, the proposition could effectively block new drilling on more than half of the state's non-federal land.

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	AAA
Mississippi	AA	Aa2	AA
Missouri	AAA	Aaa	AAA
Montana	AA+	Aa1	AA
Nebraska	-----	Aa1	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	-----	-----	AA+
District of Columbia	AA+	Aaa	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

Connecticut is projecting a $170M surplus—a $32M increase from last month—on cuts to Medicaid and home care spending.

Connecticut – Optimistic

The state is projecting a $170M surplus—a $32M increase from last month—on cuts to Medicaid and home care spending. The state projects income tax receipts will be $200M higher in FY2019 than in FY2018, and the increase in income tax revenues is expected to boost the state's budget reserve fund to $2B in FY2019.

New Jersey – Garners significant health-care savings

Governor Phil Murphy's recently negotiated deals with public-sector unions and health care providers are expected to save the state and its local governments approximately $496M over the next two years. The contract agreements are a positive step toward reining in benefit costs, which have placed considerable strain on the state's finances.

Pennsylvania – Denies city's request

The state denied the city of Wilkes-Barre's request to enter the state's distressed municipality program, according to the city's administrator. The city has faced chronic budget shortfalls over the past few years. The city's administrator said the city was caught by surprise by the state's decision.

Regional updates and other market news

Monthly rating changes and/or revisions

- **Alabama State University:** On September 18, citing narrowing operating surpluses, very thin reserves and enrollment declines, Moody's lowered the University's rating to Ba2 from Ba1 and lowered the University's lease-revenue-backed debt to Ba3 from Ba2. The rating action affects approximately $68M of debt.
- **Chilton Health Care Authority, AL:** On September 13, Fitch Ratings downgraded the Authority's debt eleven notches to B from AA- after an Alabama Supreme Court ruling questioned the legality of the 1% sales tax backing the bonds. The Supreme Court ruling overturned a lower court ruling in favor of the Authority. Fitch maintains a negative outlook on the debt and said the rating could be lowered further.
- **El Paso County Hospital District:** On September 18, Moody's downgraded the district's debt to Baa1 from A2 reflecting a weakening and already narrow liquidity position in FY2018 due to the district's inability to control expenditures, which has driven the district's poor operating performance. The outlook remains negative.
- **E-470 Public Highway Authority, CO:** Moody's upgraded the Denver area to A2 from A3 on September 19, citing growing traffic and revenue on the toll road. The highway opened in 1991 and the final segment completing the 47-mile loop around Denver opened in 2003. Moody's also cited the strong service area economy and their expectations of the positive effect it will have on traffic and revenue beyond 2018.
- **Fort Myers, FL:** On September 20, S&P upgraded the city's GO rating to AA from AA- with a stable outlook. S&P cited the city's sustained positive general fund operating results, strong management team, and stable growing economy. The city's capital improvement revenue bonds were also upgraded to AA from AA-.
- **Indianapolis Board of School Commissioners:** On September 10, S&P downgraded the school system's debt one notch to A from A+ citing the system's shrinking reserves and limited financial flexibility. S&P maintained a negative outlook on the system's debt, signaling "at least a one-in-three chance" the rating could be lowered further within the next year.

- **Jackson, MI:** On September 10, Moody's downgraded the city's GO rating to Baa3 from Baa2 after the city extended a loan to its water and sewer enterprise to prevent it from defaulting. The outlook remains negative, reflecting Moody's expectations the city remains financially exposed to the enterprise.
- **Jacksonville Electric Authority (JEA), FL:** On September 25, S&P placed JEA on Negative Credit Watch citing the utility's attempt to void its Power Purchase Agreement (PPA) with Municipal Electric Authority of Georgia (MEAG) associated with the long-delayed Vogtle nuclear power plant. JEA is arguing that its board members acted without authority when they approved the PPA in 2008 (and subsequently amended it) because the utility board failed to secure city council approval in both cases.
- **Los Angeles USD (LAUSD):** Fitch Ratings downgraded the district's rating to A from A+ on September 12 and revised the rating outlook to negative from stable. The downgrade reflects Fitch's assessment that the district will continue to experience rising expenditures compared with mismatches in revenue, which are expected to put more pressure on the district's finances.
- **Municipal Electric Authority of Georgia (MEAG):** On September 18, Fitch Ratings maintained the Rating Watch Negative on MEAG as a result of credit concerns related to the announcement that construction costs at the long-delayed Vogtle nuclear power plant had increased $2.2B. Subsequently, on September 28, S&P downgraded MEAG's senior and subordinate-lien debt to A and A- from A+ and A, respectively, citing concerns over continued cost overruns at the Vogtle nuclear power plant.
- **New Britain, CT:** On September 17, Moody's revised the city's outlook to stable from negative citing recent action taken by the city to provide near-term budgetary relief. Moody's said the city's structural operating imbalance remains a concern.
- **New Orleans Aviation Board, LA:** On September 17, Moody's revised the Board's outlook to positive from stable citing the airport's strong market position, strong liquidity, and debt service coverage.
- **Orange County Transportation Authority, CA:** On September 13, Fitch Ratings upgraded the Authority's rating one notch to A+ from A reflecting the continuation of strong traffic and revenue growth following the recent opening of connecting lanes operated by Riverside County Transportation.

Fitch Ratings downgraded PG&E's rating to BBB from BBB+ reflecting the utility's financial exposure to large, destructive wildfires that crossed large portions of California.

- **Pacific Gas & Electric (PG&E), CA:** On September 13, Fitch Ratings downgraded the utility's rating to BBB from BBB+ reflecting the utility's financial exposure to large, destructive wildfires that crossed large portions of California. The rating outlook remains negative.
- **Suffolk County, NY:** On September 20, Moody's downgraded the county's GO rating to Baa1 from A3 citing the county's deteriorated financial position resulting from recurring operating deficits, deferment of pension contributions, and reliance on cash flow borrowings.
- **University of Illinois:** On September 20, Moody's revised the University's outlook to stable from negative in light of its strengthened liquidity position and timely state appropriations for both 2017 and 2018.
- **Verity Health System, CA:** On September 17, S&P downgraded Verity Health System (formerly known as Daughters of Charity Health System) to CC from CCC following the system's announcement it filed for Chapter 11 bankruptcy. The outlook is negative.

Adding further uncertainty to the future of the city, Chicago CFO Carole Brown said she plans to leave her job in May when Mayor Rahm Emanuel's second term ends.

California school districts – Facing potential obstacles

After benefiting from increased state aid following a funding formula change in 2013, California's school districts could face financial pressure over the next five years due to enrollment declines, falling state aid, and higher pension costs, according to a recent report issued by Moody's. The state is projecting enrollment will fall 3% over the next decade, while state aid is expected to only track cost of living compared with average growth of 13.8% over the past five years. Moody's is not expecting an immediate impact, but said districts with weak reserves, enrollment declines, and charter school competition are expected to face the most stress. Contributions to the teachers' pension fund are expected to jump to 19.1% of payroll in FY2021 compared with 2014's 8.3% contribution.

Chicago – CFO announces her departure

Adding further uncertainty to the future of the city, Chicago CFO Carole Brown said she plans to leave her job in May when Mayor Rahm Emanuel's second term ends. While the city's finances have stabilized, the departure of Emanuel and Brown could raise concerns about the future direction of the city, which still faces a $28B shortfall to its pension system.

RBC Wealth Management retail trading (9/1/18 – 9/30/18)

Top 10 CUSIPs selling volume to retail customers

CUSIP	Description	Maturity	Coupon	Volume
2322655T1	CUYAHOGA CO HOSP	02/15/2052	5.00	2,597
249002FZ4	DENTON ISD-BLDG	08/15/2048	5.00	1,177
13063C8P8	CALIFORNIA ST-REF	08/01/2026	5.00	1,009
400653GR6	GUAM PWR AUTH-A-AGM	10/01/2034	5.00	780
13033LY43	CA HLTH FACS-A	07/01/2029	5.00	424
70869PLP0	PA ECON DEV AUTH-UPMC	03/15/2033	4.00	411
167486DS5	CHICAGO-C	01/01/2034	5.00	297
20772JSF0	CONNECTICUT ST-A	03/01/2026	5.00	276
59333MT21	MIAMI-DADE CO SCH BD	02/01/2022	5.00	186
42215TAH2	HEALDSBURG SCH FACS	07/15/2024	5.00	177

Top 10 CUSIPs buying volume from retail customers

CUSIP	Description	Maturity	Coupon	Volume
64990AGV1	NEW YORK ST DORM AUTH	03/15/2047	4.00	3,586
64990ED79	NYS DORM AUTH-B-GRP C	02/15/2042	5.00	2,465
59261ATK3	MET TRANSPRTN AUTH NY	11/15/2046	4.00	2,233
119802AE6	BUFFALO RIDGE MET DT	12/01/2047	4.00	2,194
13032UNR5	CALIFORNIA HLTH FA	11/15/2033	5.00	2,143
17131HCN6	CHULA VISTA INDL-D	01/01/2034	5.88	2,068
664482GT7	N ESTRN SD	12/01/2055	4.00	1,784
64990FBP8	NY DORM AUTH-A	02/15/2039	5.00	1,696
64990E3Z8	NEW YORK DORM AUTH-A	02/15/2039	5.00	1,695
664845DA9	NTHRN CA PWR-SER A	07/01/2021	5.00	1,548

Source - RBC Wealth Management

RBC Capital Markets institutional trading (9/1/18 – 9/30/18)

Top 10 CUSIPs selling volume to institutional customers

CUSIP	Description	Maturity	Coupon	Volume
5742182R3	MD HLTH & HGR EDU-A	05/15/2047	4.00	4,498
366133MD5	GARLAND ELEC UTIL-REF	03/01/2048	5.00	4,176
938782DU0	WASHINGTON TRAN-A	07/01/2025	5.25	4,005
45470YCF6	IN FIN SISTERS ST FRA	11/01/2039	5.25	3,525
928109US4	VA ST-A	06/01/2024	4.00	3,508
46360TFX6	IRVINE SPL TAX	09/01/2051	5.00	2,955
574218MG5	MD ST HLTH & HGR EDU	07/01/2038	4.00	2,647
047061CF1	ATHENS ETC WTR/SWR	01/01/2038	5.50	2,584
771902HF3	ROCHESTER HLTH CARE	11/15/2048	4.00	2,270
452227CR0	IL ST-B-BUILD	06/15/2023	5.00	2,199

Top 10 CUSIPs buying volume from institutional customers

CUSIP	Description	Maturity	Coupon	Volume
41456PCX3	HARRIS ETC MUD#386	09/01/2035	5.00	3,275
59259Y3Q0	MTA-A1-TRANSPRTNRTN A	11/15/2045	5.00	2,140
68428TAS6	ORANGE CNTY SANT DIST	02/01/2032	4.00	1,896
5742182R3	MD HLTH & HGR EDU-A	05/15/2047	4.00	1,876
44420RBF6	HUDSON NY YARDS INFRA	02/15/2044	4.00	1,810
59259N8L0	MET TRANS AUTH-B1	11/15/2052	4.00	1,787
64990ED61	NYS DORM AUTH-B-GRP C	02/15/2041	5.00	1,494
59259Y5J4	MET TRAN AUTH-B	11/15/2055	5.25	1,440
79768HCG1	SAN FRANCISCO UTILS-B	10/01/2042	4.00	1,292
64971W7C8	NYC TRANS FIN-F1	05/01/2044	4.00	1,261

Source - RBC Capital Markets

Bond Buyer indexes

Weekly	Current 9/27/18	Previous 9/20/18	2018 high	Date	2018 low	Date
Bond Buyer Revenue Bond Index	4.69%	4.66%	4.69%	(9/27)	3.92%	(1/04)
Bond Buyer 20-Bond Index	4.18%	4.15%	4.18%	(9/27)	3.44%	(1/04)
Bond Buyer 11-Bond Index	3.65%	3.62%	3.65%	(9/27)	2.94%	(1/04)

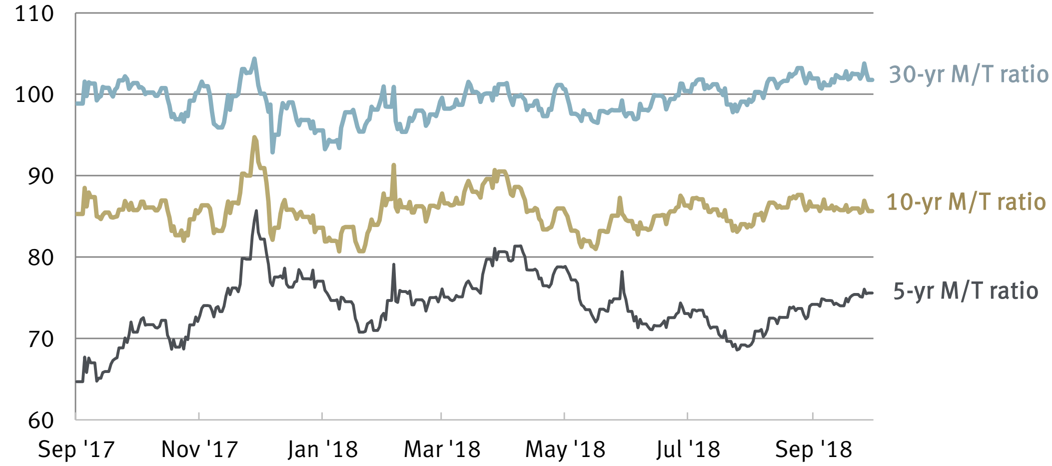
Source - *The Bond Buyer*

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	-0.65%	-0.55%	-0.62%	-0.73%	-0.91%	-0.65%	-0.65%	-0.64%	-0.66%
Year-to-date total return	-0.40%	0.10%	-0.66%	-0.62%	-1.13%	-0.77%	-0.51%	-0.26%	0.61%

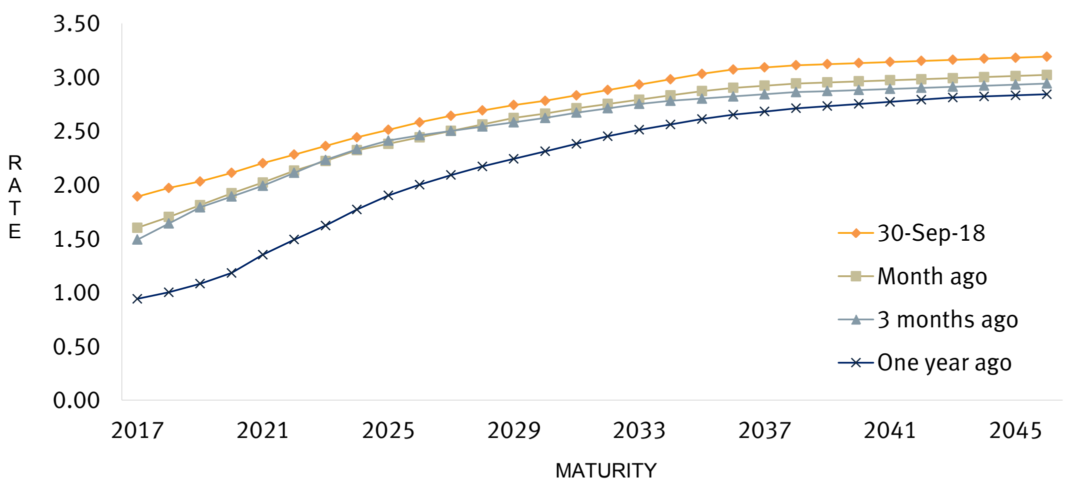
Source - Barclays; data as of 9/30/18

Muni/Treasury ratio comparison



Source - RBC Wealth Management, Bloomberg; data through 9/30/18

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 9/30/18

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).

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.