

Tyler Independent School District

Debt Service Savings Analysis and Current Market Overview

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RBC Capital Markets

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1. Preliminary Refunding Analysis
2. Current Market Overview

Preliminary Refunding Analysis

SECTION 1



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Preliminary Refunding Analysis

Bank Qualified (“BQ”) Refunding Analysis

Summary of Assumptions

Advance refunding of the District’s Unlimited Tax School Building Bonds, Series 2009 debt to create level debt service savings in years 2018 – 2034. The refunding is based on BQ rates and backed by the PSF guarantee. The refunding bonds have substantially the same structure, maturity, and debt service schedule as the refunded bonds with a delivery date of December 15, 2016.

Refunding Candidates

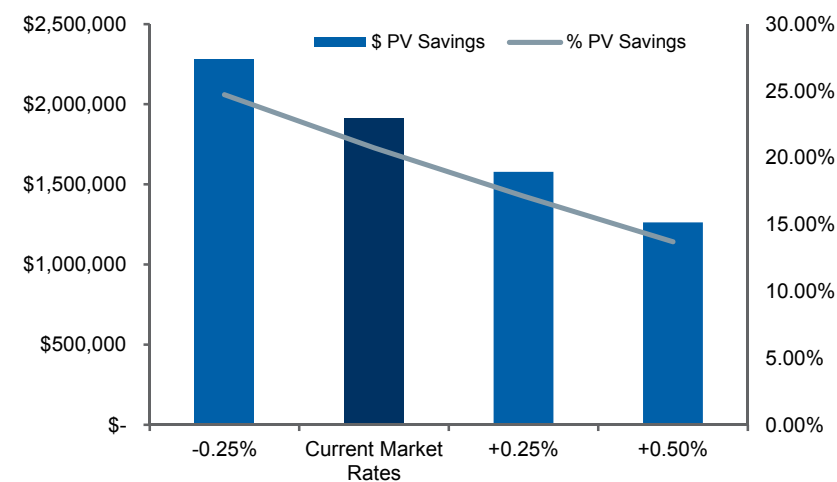
Series	Maturities to be Refunded	Refunded Par Amount	Coupon Range	Call Date	Call Price
U/L Tax Sch Bldg Bds Ser 2009	2033* - 2034*	\$ 9,220,000	5.000%	02/15/2018	100.00%
Total		\$ 9,220,000			

* Equal par split between maturities

Summary of Refunding Analysis Results

Refunded Par	\$	9,220,000
Average Coupon of Refunded Bonds		5.00%
All-In TIC		3.12%
Arbitrage Yield		2.39%
Escrow Yield		0.69%
Net Debt Service Savings	\$	2,452,100
Average Annual Debt Service Savings	\$	144,241
Net PV Savings	\$	1,912,059
PV Savings as % of Refunded Par		20.74%
Negative Arbitrage	\$	185,692
Negative Arbitrage as % of PV Savings		9.71%

Sensitivity to Interest Rates



Preliminary Refunding Analysis

Cash Flow Savings

Cash Flows				Present Value to 12/15/2016 2.385505%
Date (8/31)	Prior Debt Service	Refunding Debt Service	Savings	
2017	\$230,000	\$230,000	\$0	(\$1,592)
2018	461,000	345,000	116,000	112,170
2019	461,000	345,000	116,000	109,541
2020	461,000	345,000	116,000	106,974
2021	461,000	345,000	116,000	104,467
2022	461,000	345,000	116,000	102,019
2023	461,000	345,000	116,000	99,628
2024	461,000	345,000	116,000	97,293
2025	461,000	345,000	116,000	95,013
2026	461,000	345,000	116,000	92,787
2027	461,000	345,000	116,000	90,612
2028	461,000	345,000	116,000	88,489
2029	461,000	345,000	116,000	86,415
2030	461,000	345,000	116,000	84,390
2031	461,000	345,000	116,000	82,412
2032	461,000	345,000	116,000	80,481
2033	4,955,750	4,598,200	357,550	243,453
2034	4,725,250	4,370,700	354,550	235,983
Total	\$16,826,000	\$14,373,900	\$2,452,100	\$1,910,534

Savings Summary	
Average Annual Savings (2018 - 2034)	\$144,241
PV of Savings from Cash Flow	\$1,910,534
Additional Proceeds	\$1,525
Net PV of Savings	\$1,912,059

Current Market Overview

SECTION 2



RBC Capital Markets

Current Market Overview

- **Municipal Supply in 2015:** \$398 billion
- **RBC Municipal Supply Forecast for 2016:** \$350 billion (\$338 billion YTD)
- **Economic Overview:**
 - Treasury yields rose across the curve on suggestions the ECB may taper its bond-buying program.
 - Saudi Arabia and Russia’s decision to limit oil production is also putting upward pressure on rates.
 - ISM gauges of both the manufacturing and service sectors indicated an uptick in growth for September.
 - Non-farm payrolls rose a weaker-than-forecasted \$156 thousand in September, the unemployment rate rose to 5.0%.
 - Despite the weaker headline non-farm payroll number, average hourly earnings improved from August.
 - Fed-funds futures are pricing in 68% chance of a December hike; November’s odds remain low at 19%.
 - Municipal supply totaled \$13 billion last week and is expected to total \$9 billion this week.
 - Above-average supply, investor caution, and pressure on Treasuries have driven credit spreads wider.
 - New-issue transactions last week re-priced at higher yields/wider credit spreads, and the trend is expected to continue.
- **US Treasuries:**
 - 10 year: 1.70% forecasted for end of 2016 (1.73% as of October 7, 2016)
 - 30 year: 2.55% forecasted for end of 2016 (2.46% as of October 7, 2016)

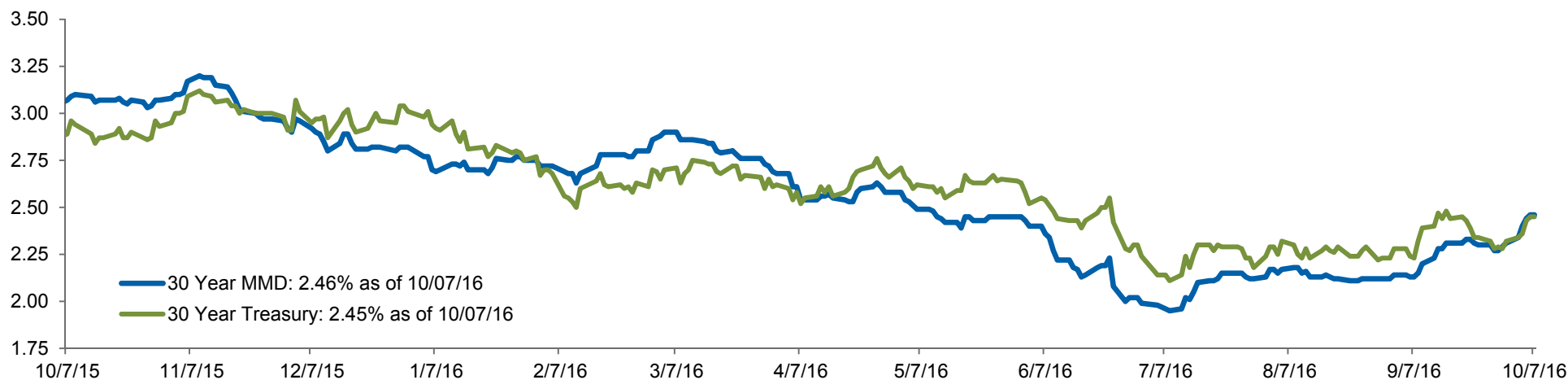
RBC Economic Outlook and Interest Rate Forecasts⁽¹⁾

	Q3'16	Q4'16	Q1'17	Q2'17	Q3'17	Q4'17
Real GDP (QoQ)	2.80	2.80	2.90	2.60	2.60	2.60
Core Inflation (YoY)	2.30	2.10	2.00	1.80	2.00	2.10
Unemployment	4.90	4.90	4.80	4.60	4.50	4.40
IOER ⁽²⁾	0.50	0.50	0.50	0.75	0.75	1.00
2-Year Notes	0.77	0.78	0.88	1.00	1.15	1.25
5-Year Notes	1.14	1.20	1.30	1.40	1.55	1.65
10-Year Notes	1.60	1.70	1.80	1.90	2.00	2.10
30-Year Bonds	2.32	2.55	2.65	2.75	2.85	2.90

(1) RBC Rate and Economic Forecast as of October 7, 2016.

(2) Interest on Excess Reserves – RBC expects IOER, not the Fed Funds effective rate, to be the targeted policy rate in the initial stages of the tightening cycle.

Markets Have Experienced Significant Volatility Over the Last Year



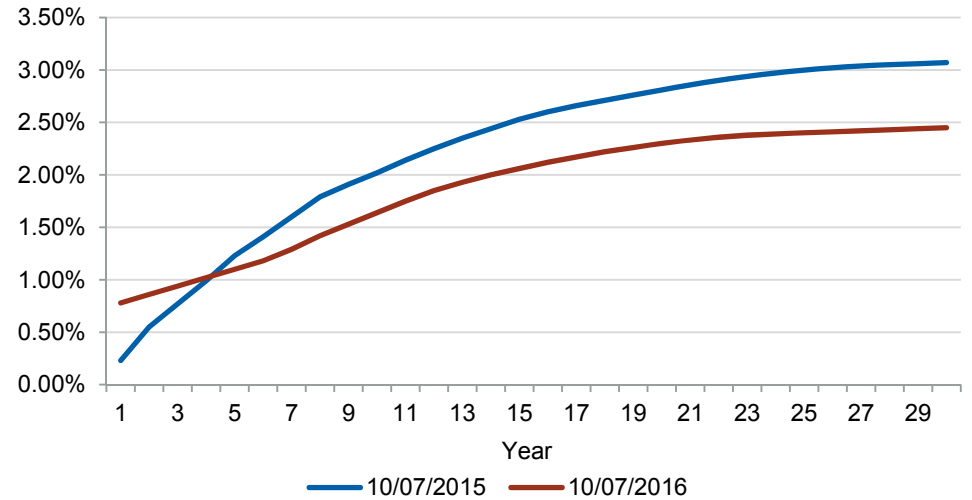
Long-Term Market

Market Overview (as of October 11, 2016)

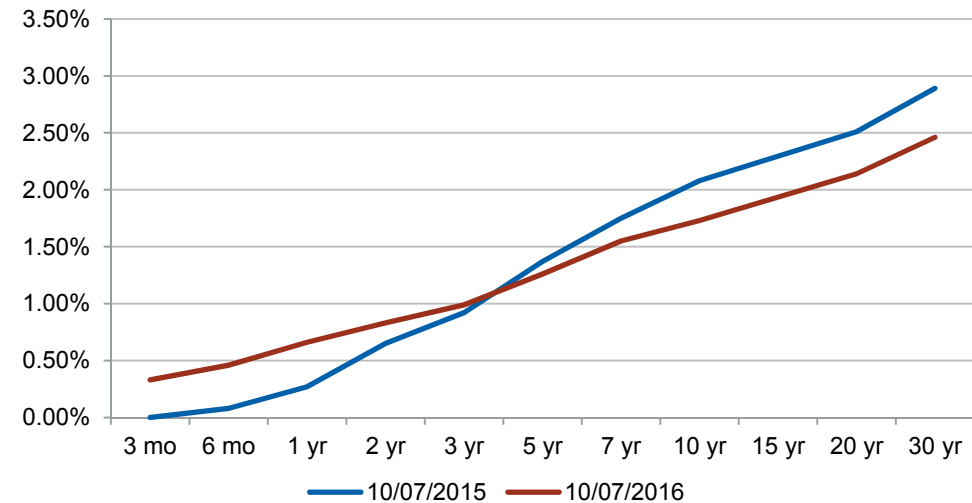
Municipals moved in tandem with treasuries, increasing up to 14bps at the long end of the curve. With above average supply of \$13 billion last week, new-issue transactions re-priced at higher yields and wider credit spreads; a trend that is likely to continue. Still, investors are hesitant to engage in the secondary market as supply looks heavy moving forward. The market looks to \$9 billion in new issue supply this week, above the 2016 YTD average weekly supply of \$8.5 billion. Municipal mutual funds posted \$325 million of inflows last week, the 53rd consecutive week of net inflows.

The U.S. treasury curve steepened last week on news that the ECB was considering tapering down its QE purchase program and softer than expected U.S. employment data. Fed-funds futures are pricing in a 68% chance of a December rate hike where November's odds remain low at 19%. Equities declined with the S&P decreasing 0.67%, the DJIA down 0.37% and the NASDAQ off 0.37%.

Municipal GO "AAA" MMD Yield Curve Changes



U.S. Treasury Yield Curve Changes



Source: Bloomberg and Thomson Municipal Market Data

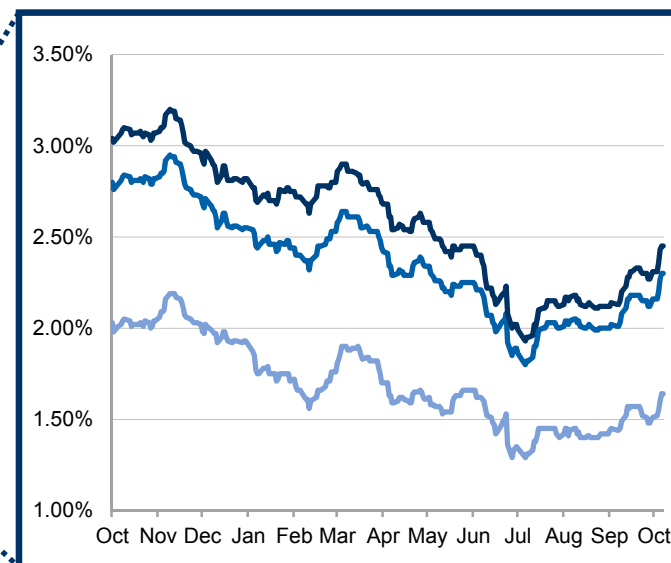
Current Market Overview

After closing at 2.31% the previous week, the 30-year “AAA” MMD increased by 14 basis points from September 30 – October 7, closing at the current rate of 2.45%

“AAA” MMD January 1, 2007 to Present



Shift in “AAA” MMD Since October 2015



January 1, 2007 to Present

	10-Year	20-Year	30-Year
Maximum	4.860%	5.740%	5.940%
Minimum	1.290%	1.800%	1.930%
Current	1.640%	2.300%	2.450%

Shift in 30-year “AAA” MMD

2009	2010	2011	2012	2013	2014	2015
-0.900%	0.520%	-1.130%	-0.740%	1.330%	-1.340%	-0.010%

October 1, 2015 to Present

	10 Yr	20 Yr	30 Yr
Maximum	2.190%	2.950%	3.200%
Minimum	1.290%	1.800%	1.930%
Average	1.695%	2.363%	2.575%

Source: TM3, Thomson Reuters
10, 20, and 30 year “AAA” MMD shown to represent different average lives of municipal transactions
Rates as of October 7, 2016

Current Market Overview












Bond Buyer Index – 55 Year Historical Perspective

Bond Buyer 20 GO Index since January 1961



% of Time in Each Range Since 1961

Yield Range

Less than 3.50%	10.07%	
3.50% - 4.00%	8.11%	
4.01% - 4.50%	11.03%	
4.51% - 5.00%	10.38%	
5.01% - 5.50%	14.47%	
5.51% - 6.00%	10.07%	
6.01% - 6.50%	7.80%	
6.51% - 7.00%	7.11%	
7.01% - 7.50%	6.43%	
7.51% - 8.00%	3.78%	
Greater than 8.00%	10.76%	
Total	100.00%	

Source: Bloomberg as of October 6, 2016

Weekly yields and indexes released by the Bond Buyer. Updated every Thursday at approximately 6:00pm EST. 20 Bond General Obligation Yield with 20 year maturity, rated Aa2 by Moody's Arithmetic Average of 20 bonds' yield to maturity.

Today's 3.20% level is lower than 95.70% of historical rates since January 1961

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