Municipal Quarterly Update

1st Quarter 2017

Municipal Securities Team

1st Quarter 2017 Municipal Market Performance and Highlights

- **Municipals outperform in Q1:** Municipal market returns were broadly positive in the first quarter of 2017 after recovering some of the sharp losses seen in the last quarter of 2016. The Barclays Municipal Bond Index returned 1.58% in the first quarter of 2017, outperforming the Barclays Treasury Bond Index by 90 basis points (bps).
- **Pace of Issuance Slows:** In the first quarter of 2017, primary market issuance decreased by 10% year-over-year (yoy). During the first quarter, new capital issuance increased 12% yoy while refunding activity declined by 24% over the same time frame.
- **Retail Demand Regains Footing:** The last two months of 2016 saw dramatic outflows from municipal mutual funds. The first quarter of 2017, in stark contrast to the turbulent end to 2016, was marked by persistent, yet volatile, inflows. Net inflows for the first quarter of 2017 totaled $4.5 billion.
- **Credit Remains Stable, Despite High-Profile Issues:** As a whole, municipal credit quality remained stable in the first quarter of 2017. Through the first quarter of 2017, first-time municipal defaulters totaled just eight borrowers with a total par value of $190 million, compared to the first quarter of 2016 where 10 borrowers defaulted on $1.85 billion. Despite the broad credit stability, high-profile issuers like Illinois, New Jersey and Chicago continue to pose headline risk while Puerto Rico has defaulted on a record amount of municipal debt.
- **Rates:** Treasury rates declined slightly during the first quarter. The 10-year Treasury rate declined from 2.45% to 2.40% as of March 31, 2017. The 30-year Treasury rate declined from 3.04% to 3.02%. Municipal rates movements were relatively benign as well, with the AAA 10-year MMD rate declining six basis points from 2.31% to 2.25% during the first quarter while the AAA 30-year MMD (Municipal Market Data) rate increased just one bp from 3.04% to 3.05% (see Figure 1).

Outlook and Strategy

- After raising the Fed Funds rate 25 basis points (bps) on March 15, 2017, we believe the Federal Reserve ("Fed") is likely to raise the Fed Funds rate two more times for a total of 75 bps in 2017. We also see the 10-year U.S. Treasury yield ending the year between 2.75% and 3.00%. As the Fed has stated, Fed rate actions will be data dependent, with a focus on supportive economic data including jobs and wages, fiscal stimulus measures and inflation expectations.
- Economic data consistently exceeded expectations post-election and the Citi Economic Surprise Index (CESI) surged. However, data beginning in March and extending through the end of April was decidedly below expectation and the CESI dropped to negative territory by the end of April. We think that, overall, the economic picture is solid but view it with a bit more caution. In line with Treasuries, we believe that 10-year AAA general obligation bonds will be yielding between 2.55% and 2.85% by year-end (compared with 2.25% on March 31, 2017).
- We expect uncertainty, both domestically and abroad, will continue:
  - Large changes to the U.S. healthcare system and tax code as well as significant infrastructure spending have been proposed though enacting the proposals has proved elusive thus far.
  - Instability abroad, and to some extent domestically, will continue and potentially intensify, in our opinion. A rising tide of isolationism and nationalistic politics has altered the global landscape and we believe its effects could intensify. However, we believe recent increased GDP growth in the Eurozone and parts of Asia could temper increased political risk.
- **Technical Factors Supportive:**
  - Despite our expectation in gradually higher rates, we believe that net inflows will be positive yet volatile. Fund flows should be inversely related to changing Treasury rates.
  - We expect issuance to decline to $350-$375 billion from $446 billion in 2016. We believe that refunding activity will decline to around $195 to $225 billion (from $272 billion in 2016) and that new issuance will remain in line with recent historic trends at around $150 billion.
- **Credit Trends Remain Positive:** In general, we expect municipal credit to remain healthy. We expect the amount of defaulters to continue to be low but the par value should spike from time to time as Puerto Rico-related entities default or a U.S. Virgin Islands-related credit first enters default.

Exceptions to the otherwise healthy trends, however, exist. We expect large, high profile borrowers like the State of Illinois, Chicago Public Schools and State of New Jersey will continue to be on precarious footing, with their pension-related issues unlikely to be solved in a short time frame as they have so far demonstrated no political will to make significant progress.

- Against this backdrop, we continue to structure our portfolios defensively, choosing strategies that benefit from yield curve positioning, bond structure, and positive credit fundamentals. More specifically we favor:

Yield Curve/Structure	Credit Overweight	Industry Weightings
• 8-12 year maturities • 13-20 year maturities priced to a 7-9 year call • 5% (and higher) coupon bonds versus 3% and 4% coupon bonds	• "A" rated bonds over "AAA" rated bonds • Select below investment grade and non-rated bonds	• Overweight revenue bonds of essential service providers—special tax, senior living, charter schools, and utilities • Underweight general obligation bonds

Relative Value

- **Risk-Adjusted Returns:**

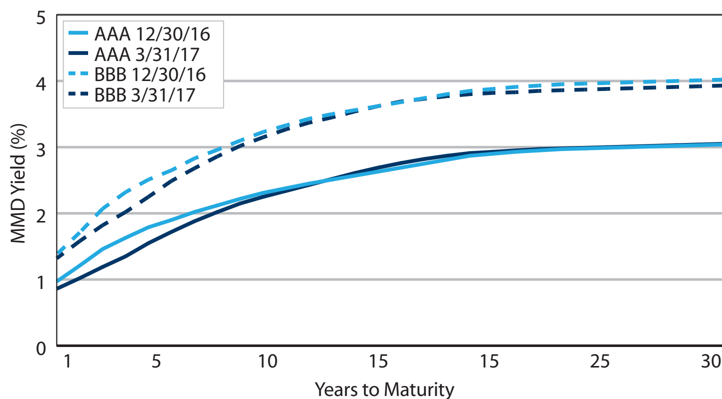
  - In four of the last six calendar years, investment-grade munis or high-yield munis have been the top performers on a taxable equivalent risk-adjusted basis. In fact, investment-grade munis and high-yield munis have been the best and second best performers, in some order, in three of the last six years. For the quarter ended March 31, 2017, the story is similar: high-yield munis were the top performer with investment-grade munis in second (see Figure 2).

  - Over the last 10 years, municipal bonds (both investment-grade and high-yield) offer superior returns per unit of risk (standard deviation) (see Figure 6).

3/31/2017	**10yr**	**30yr**
MMD	2.24%	3.03%
Treasury	2.42%	3.03%
Ratio	**92.69%**	**100.14%**
9/30/2016	**10yr**	**30yr**
MMD	1.51%	2.31%
Treasury	1.61%	2.34%
Ratio	**93.79%**	**98.72%**

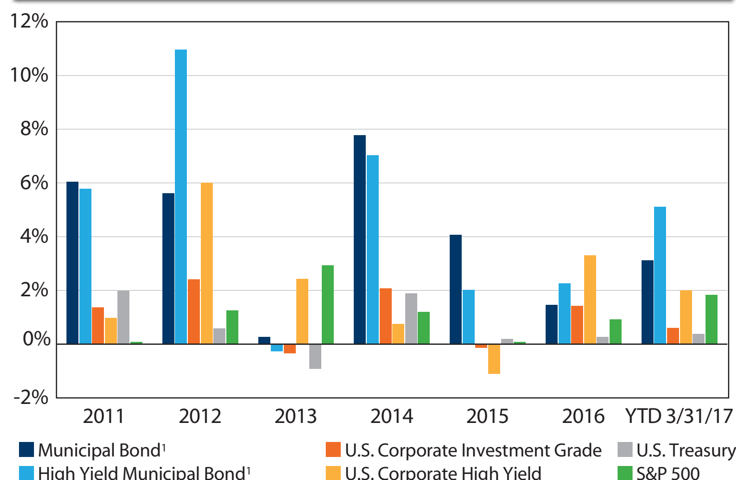
- **MMD/Treasury Ratios:** MMD/Treasury ratios across the curve are in line with their one-year averages. Despite the sharp increase in rates in the last six months, ratios have remained remarkably consistent. While a consistent ratio in an increasing rate environment might seem normal, it actually represents a significant outperformance for municipal bonds. The MMD curve assumes a 5% coupon and is priced to a 10-year call which means the municipal bonds represented by the MMD curve have much less duration (especially so in the 30-year tenor) than their comparable tenor on a spot (0% coupon, non-callable) Treasury curve. In rate moves like we have seen in the last six months, municipal bonds come out well ahead with consistent ratios.

Figure 1 – MMD Yield Curves



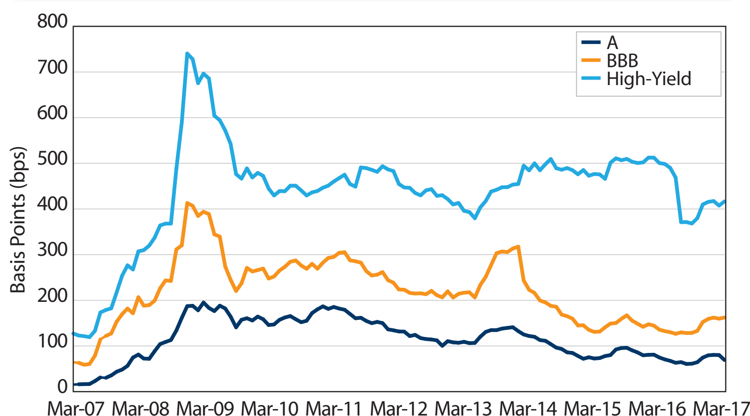
Source: Municipal Market Data (MMD) (Thompson).

Figure 2 – Risk-Adjusted Returns



Source: Bloomberg, Barclays. Risk-adjusted returns are calculated by dividing total return by volatility, or the degree of daily price swing variation, giving a measure of income per unit of risk. Past performance is no guarantee of future results.

Figure 3 – Municipal Credit Spreads Relative To AAA Municipals



Source: Bloomberg, Barclays 3/31/07 through 3/31/17. For illustrative purposes only. Past performance is no guarantee of future results. See last page for index definitions.

Figure 4 – Correlation of Municipal Bonds to Other Asset Classes

U.S. Equities	0.08
U.S. Treasury Bonds	0.32
U.S. Corporate High-Yield Bonds	0.33
Mortgage-Backed Securities (MBS)	0.41
Emerging Market Sovereign Bonds	0.41
U.S. Corporate Investment Grade Bonds	0.56

Source: Barclays 3/30/07 through 3/31/17. The historical correlation of the asset classes is for illustrative purposes only and not indicative of any actual investment. Diversification does not guarantee a profit or protect against loss. An index cannot be purchased directly by investors. See last page for index definitions.

Figure 5 – Moody's Average Cumulative Default Rates from 1970-2015, Corporate vs. Municipals

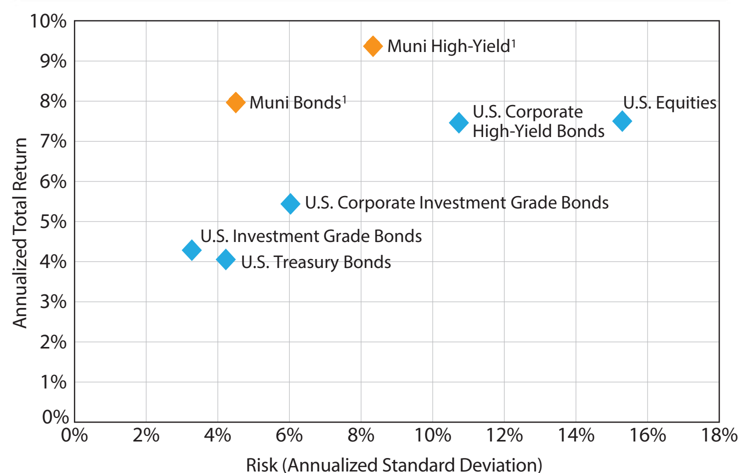
	5-Year			10-Year		
Rating	Corporate	Municipal	Difference	Corporate	Municipal	Difference
Aaa	**0.09%**	0.00%	0.09%	**0.40%**	0.00%	0.40%
Aa	0.30%	0.01%	0.30%	0.81%	0.02%	0.79%
A	0.79%	**0.03%**	0.76%	2.31%	**0.07%**	2.25%
Baa	1.67%	**0.15%**	1.52%	4.03%	**0.38%**	3.65%
Ba	8.44%	2.33%	6.11%	16.45%	4.24%	12.21%
B	22.06%	12.50%	9.56%	36.28%	17.88%	18.40%
Caa-C	35.76%	19.77%	15.98%	48.03%	26.03%	22.00%

First Time MMA Municipal Default Trends

	2017		2016		2015	
	Number	$ Billion	Number	$ Billion	Number	$ Billion
YTD	8	0.19	10	1.85	18	1.2
Total	8	0.19	65	27.51	60	3.93

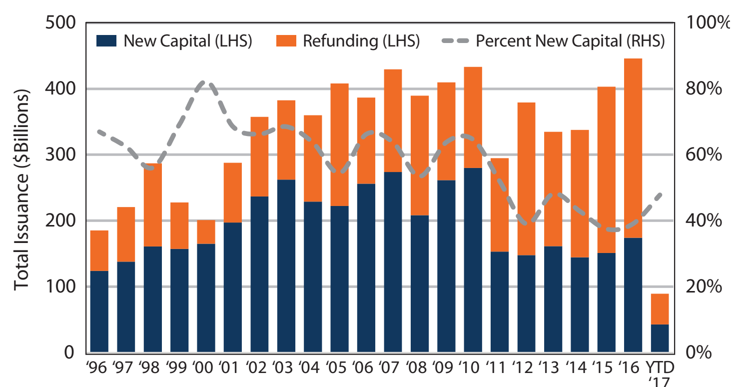
Source: Moody's Investors Service, Special Comment: U.S. Municipal Bond Defaults and Recoveries, 1970-2015; Municipal Market Advisors as of 3/31/17.

Figure 6 – Tax-Equivalent[1] Returns and Volatility of Municipal Bonds vs. Other Asset Classes



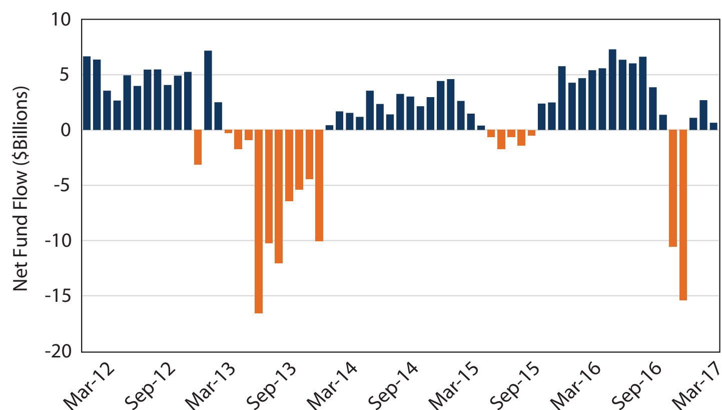
Source: Barclays 3/30/07 through 3/31/17. This chart is for illustrative purposes only and is not indicative of any actual investment. The illustration excludes the effects of expenses incurred when investing. Past performance is no guarantee of future results. See last page for index definitions.

Figure 7 – Municpal Bond Issuance



Source: Barclays, SIFMA, through 3/31/17.

Figure 8 – Net Municipal Fund Flows

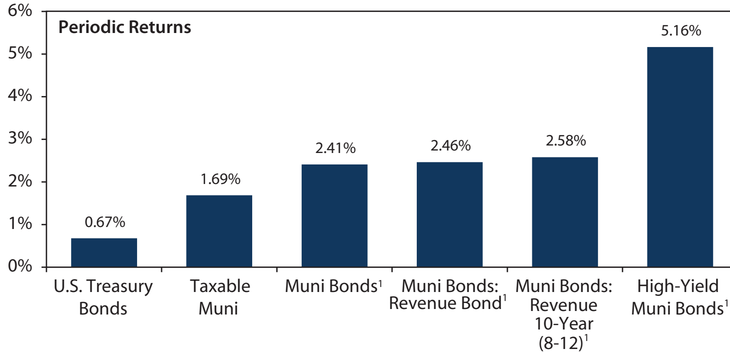


Source: ICI, through March 22, 2017.

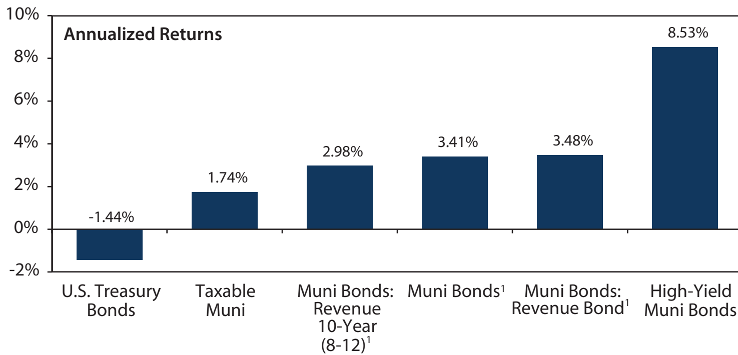
First Quarter Review

The first quarter was marked by relative calm, at least in comparison to the previous quarter. Retail investors returned to the municipal market, new issuance was down overall, but new capital issuance surged and several attempts at large legislative changes, which would have had far reaching impacts on the muni market, failed. The result amongst the various municipal bond sectors was consistently positive returns. The picture is much the same for the trailing twelve months ended March 31, 2017.

Total Return Q1 2017



Total Return Trailing Twelve Months Ended March 31, 2017



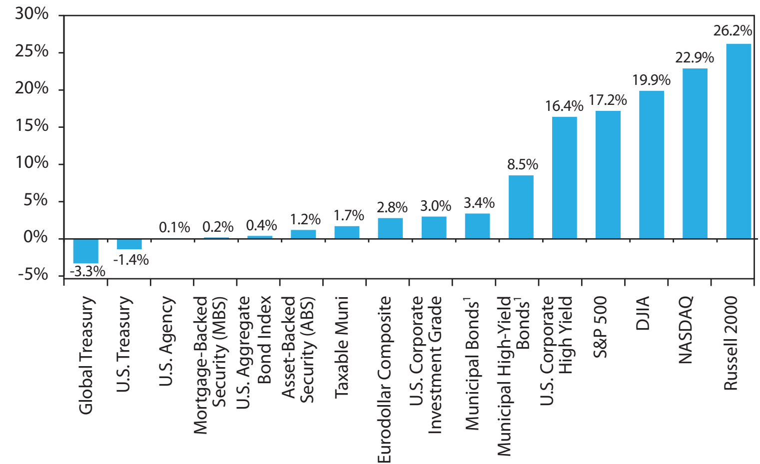
Source for above three charts: Barclays. For illustrative purposes only and not indicative of any actual investment. The illustrations exclude the effects of expenses incurred when investing. Past performance is no guarantee of future results. See last page for index definitions.

Amongst a broad set of asset classes, the strongest returns over the last twelve months were centered on equities. High-yield fixed income, both muni and corporate varieties (which both tend to be more correlated with equities than their respective investment-grade indexes), led the pack outside of equity.

New issuance of municipal bonds was down 10% compared to the first quarter of 2016. The breakdown of new capital vs. refunding issuance tells a more nuanced story. New capital issuance increased 12% where refunding activity declined 24% (see Figure 7).

Fund flows, after turning sharply negative post-election, again turned supportive in the first quarter of 2017. In the last two months of 2016, $26 billion flowed from muni funds; in the first quarter of 2017 net inflows were $4.5 billion (see Figure 8).

Trailing Twelve Months Total Return as of March 31, 2017



Outlook for 2017

As we look ahead to 2017, we see a year of change, volatility and opportunity. In 2017 we anticipate:

Legislative Changes. Potential legislation could have significant effects on the municipal market:

- Tax Reform: Over the past 30 years, changes to tax rates have not had any measurable effect on municipal demand. However, tax reform could still end up being a negative for municipals depending on the magnitude of corporate and individual tax rate cuts. The various tax proposals offered by the House of Representatives and the President generally reduce tax rates on personal income and pass through entities by varying amounts in an effort to induce economic growth.

Similar actions were taken in 2012 by the state of Kansas with much the same goal – though the cuts made were smaller in Kansas than the proposals of both the House and the President. Since then, Kansas has trailed the U.S. and its neighbors in employment and GDP growth while large budget surpluses turned to a deficit twice as large and a healthy general fund was completely depleted. If such action is followed at a national level, the resulting revenue decreases will filter to state and local authorities and have widespread negative affect on municipal credits.

- Healthcare: Attempts to repeal the Affordable Healthcare Act (ACA) have been unsuccessful thus far. The various iterations of healthcare bills would have a clear negative effect on the hospital sector as patients without the ability to pay would likely increase significantly. After the U.S. House of Representatives passed its version of ACA repeal and replace legislation, the U.S. Senate stated that it would likely start from scratch and write its own bill. Thus, the legislative future of the ACA remains murky. Meanwhile, healthcare providers such as Aetna continue to pull back from participation in ACA state markets.

- Infrastructure: The infrastructure proposal offered during the campaign by the Trump administration is based on offering tax breaks to public-private partnerships, which municipal bonds would be used to partially

fund. We expect that the Republican controlled legislature will be hesitant to authorize additional spending and the plan does not really address many of the nation's most pressing infrastructure needs so its likelihood of passing is, in our opinion, doubtful. However, if consensus around an infrastructure bill can be reached between Congress and the President, it would represent an opportunity for municipal investors to capitalize on positive infrastructure trends.

Rising Rates. After raising the Fed Funds rate 25 basis points (bps) in March, we believe the Fed will increase the Fed Funds rate two additional times by 25 bps each for a total of 75 bps in 2017. We also see the 10-year U.S. Treasury yield ending the year between 2.75% and 3.00%. We expect municipal yields to move generally in line with Treasuries with 10-year AAA general obligation bonds yielding between 2.55% and 2.85% by year-end (compared with 2.25% on March 31, 2017).

Decrease in new issue supply. We expect new issue supply in 2017 to be down dramatically from the $446 billion issued in 2016. We see new issue supply ending the year somewhere between $350 billion and $375 billion. A number of refundings were accelerated before the November 2016 election so the potential refunding pool is diminished. However, we note that issuance in 2007 and 2008 was relatively robust and issued at yields much higher than today's rates so we believe the economics for refundings still exist. We expect refundings to total between $195 and $220 billion with new issuance in line with the $155 billion per year average of the prior six years for a total range of $350-$375 billion.

Volatile, but positive fund flows. With our expectation for higher rates, we believe flows into municipal bond funds are likely to be volatile in 2017. Given that nominal yields are low relative to historical levels and provide less income cushion to shield investors against rising interest rates, we believe any persistent increase in yields (decline in bond prices) could cause a substantial reduction in retail demand for municipals. Given the relative attractiveness of risk-adjusted municipal yields versus other asset classes, we believe any sustained outflows which lead to higher yields will be ultimately viewed by investors as an attractive buying opportunity.

Stable municipal credit quality. We expect municipal credit quality to remain broadly stable, but weaker states and territories such as Illinois, New Jersey and the Virgin Islands could continue to see credit spreads widen and will need to be monitored closely. For example, the State of Illinois' GO debt already trades at a credit spread commensurate with a "BB" rated bond even though the state is still "BBB" rated. With the U.S. economy continuing to grow, we expect credit metrics will improve, albeit at a more moderate pace for state and local municipalities. We also expect the number of defaults in 2017 to be similar to that in 2016, but the par value to remain high due to continuing defaults related to Puerto Rico and its corporate affiliates. We have positive sector outlooks for senior living, toll roads, airports and special tax districts. Until we see how the repeal of the Affordable Care Act impacts hospital profitability, we remain cautious on hospitals, especially those located in states that adopted Obamacare and possess high exposure to Medicaid coupled with weak operating cash flow and debt service coverage.

Strategy and Recommendations

In spite of our expectation for gradually higher interest rates for the remainder of 2017, we believe there are attractive opportunities in municipal bonds relative to other fixed income asset classes and that municipal performance will be positive. Applying our total return analysis to our exchange-traded fund (ETF) and Separate Managed Account (SMA) strategies and assuming interest rates increase 30 basis points symmetrically along the yield curve during the course of the year, we would expect our SMA and ETF strategies to produce positive total returns of between 2.50% and 2.75% for 2017. In the event we are wrong and municipal rates stay unchanged, the total return analysis for our ETF and SMA strategies would produce positive total returns of between 3.50% and 4.00%. This analysis assumes no change in credit spreads or trading activity that could potentially add or detract from performance. Because of active portfolio management and the flexibility we have to tactically adjust duration, credit quality, industry/sector allocation, and yield curve positioning as market conditions change, we believe our portfolios could outperform these estimates.

Given the low correlation of municipal bonds to other major asset classes such as U.S. equities (10-year correlation of 0.08) (see Figure 4), as well as, their attractive taxable-equivalent yields and favorable risk-adjusted returns (see Figure 2), we view municipal bonds as a foundational component of a diversified portfolio. Given our expectation of higher rates, we believe total return oriented investors should consider positioning their municipal portfolios more defensively by underweighting longer duration and leveraged strategies, and moving to the intermediate portion of the municipal yield curve. Bonds in this area of the curve are typically less interest-rate sensitive, benefit from the steeper yield curve slope, and are less sensitive to Fed rate hikes than shorter dated bonds. On the credit side, we continue to overweight "A" rated bonds, and select below investment grade and non-rated securities given current stable municipal credit fundamentals. We also favor essential service revenue bond sectors such as special tax, senior living, charter schools, and utilities which, in our view, have additional default-risk insulation because of the borrowers' essentiality in their local communities.

All opinions constitute judgements as of the date of release and are subject to change without notice. There can be no assurance that any forecasts will be achieved. Data is taken from sources we believe to be accurate and reliable but we do not guarantee its accuracy or completeness.

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Index Definitions

Municipal Bonds are represented by the Barclays Municipal Bond Index which is a rules-based, investment-grade, market-value-weighted index engineered for the long-term tax-exempt bond market.

Municipal Bonds: Revenue Bond – The revenue bond portion of the Barclays Municipal Bond Index.

Municipal Bonds: Revenue 10-Year (8-12) – Revenue bonds that have a final maturity between 8 and 12 years that are part of the Barclays Municipal Bond Index.

High-Yield Municipal Bonds are represented by the Barclays Municipal High Yield Index which is composed of publicly traded municipal bonds that cover the U.S. dollar-denominated high-yield short-term tax-exempt bond market. To be included in the Index, a bond must have a nominal maturity of 1 to 10 years.

U.S. Treasury Bonds are represented by the Barclays U.S. Treasury Bond Index which includes public obligations of the U.S. Treasury with a remaining maturity of one year or more. This index is the U.S. Treasury component of the Barclays U.S. Government Index.

U.S. Corporate Investment Grade Bonds are represented by the Barclays U.S. Credit Index which measures the performance of investment-grade corporate debt and agency bonds that are dollar denominated and have a remaining maturity of greater than one year.

U.S. Corporate High-Yield Bonds are represented by the Barclays U.S. Corporate High Yield Index which is composed of fixed-rate, publicly issued, non-investment grade debt.

U.S. Investment Grade Bonds are represented by the Barclays Capital U.S. Aggregate Bond Index which covers the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass throughs), ABS, and CMBS.

Mortgage-Backed Securities are represented by the Barclays U.S. MBS Index which measures the performance of investment grade fixed-rate mortgage-backed pass-through securities of GNMA, FNMA, and FHLMC.

International Bonds are represented by the Barclays Global Aggregate ex US Index which is an unmanaged index that provides a broad-based measure of the global investment grade fixed-income markets excluding the US dollar denominated debt market.

Emerging Market Sovereign Bonds are represented by the Barclays Capital EM USD Aggregate Index which includes U.S. dollar-denominated bonds that have maturities longer than one year and that were issued by emerging market governments and government related issuers.

U.S. Equities are represented by the S&P 500 Index which is an unmanaged index of 500 stocks used to measure large-cap U.S. stock market performance.

The **Barclays Global Treasury Index** tracks fixed-rate, local currency government debt investment grade countries, including both developed and emerging markets.

The **Barclays Municipal Bond AAA Index** is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. The Index tracks general obligation bonds, revenue bonds, insured bonds and prerefunded bonds rated Aaa by at least two of the ratings agencies: Moody's, S&P, Fitch.

The **Barclays Municipal Bond A Index** is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. The Index tracks general obligation bonds, revenue bonds, insured bonds and prerefunded bonds rated A by at least two of the ratings agencies: Moody's, S&P, Fitch.

The **Barclays Municipal Bond BAA Index** is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. The Index tracks general obligation bonds, revenue bonds, insured bonds and prerefunded bonds rated Baa by at least two of the ratings agencies: Moody's, S&P, Fitch.

The **Barclays Municipal Bond High-Yield Index** is the municipal high-yield component of the Barclays Municipal Bond Index which is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market.

The **Barclays Municipal Bond High-Yield 2% Issuer Cap Index** is the Barclays Municipal High-Yield Index, the municipal high-yield component of the Barclays Municipal Bond Index, in which no market value weighted exposure to any single issuer exceeds 2% of the index.

The **Russell 2000 Index** is a small-cap stock market index of the bottom 2,000 stocks in the Russell 3000 Index.

The **NASDAQ Composite** is a stock market index of the common stocks and similar securities listed on the NASDAQ stock market.

U.S. High Yield is represented by the Barclays U.S. Corporate High Yield Index which covers the universe of fixed-rate, non-investment-grade debt

ABS is represented by the Barclays Asset-Backed Securities Index which includes assets back by credit and charge cards, autos and utilities.

U.S. Agency is represented by the Barclays U.S. Agency Index which is comprised of debt issued by U.S. Government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. Government.

The **Dow Jones Industrial Average (DJIA)** is an index that shows how 30 large publicly owned companies based in the United States have traded during a standard trading session in the stock market

Aggregate is represented by the Barclays Aggregate Bond Index which is a broad-based index that includes Treasury securities, Government agency bonds, Mortgage-backed bonds, Corporate bonds, and a small amount of foreign bonds traded in U.S.

U.S. Treasury is represented by the Barclays U.S. Treasuries Index which tracks Treasury performance

Eurodollar is represented by the Barclays Eurodollar Index which consists of fixed-rate investment grade U.S. dollar-denominated securities that are registered outside of the U.S.

Taxable Muni is represented by the Barclays Taxable Municipal Bond Index which is a rules-based, market-value-weighted index engineered for the long-term taxable bond market.

[1] Taxable-equivalent measures illustrate approximately what an investor would have to earn on taxable investments to equal the tax-exempt annualized return using the highest federal tax bracket (39.6%) and another 3.8% for the Medicare Tax for 2017. State and local taxes have not been considered. This information is based on present law as of the date of publication and does not account for any proposed changes in tax rates. This information does not account for limitations on deductions, the alternative minimum tax or taxes other than Federal personal income tax. It is important to note that there are differences between the investment objectives and risks of municipal bonds versus the asset classes shown.