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Investment Perspectives

Municipal Bonds: Opportunity at the Long End of the Curve

The relative steepness of the municipal bond yield curve versus Treasuries may make longer-dated munis particularly attractive for investors.

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Treasury yield curve inversions are back in the news. The two-year/10-year U.S. Treasury curve recently inverted for the first time since 2019, prompting a deluge of opinions as to its meaning, relevancy, and recession prognostication abilities. Lost in the shuffle though, is the relative steepness of the municipal-bond yield curve, as shown in Figure 1.

This relative steepness may not seem newsworthy, as the municipal yield curve has consistently remained upward-sloping while its Treasury counterpart has inverted at times. As of mid-June, the two- to 30-year slope of the AAA Muni curve was 132 basis points (bps), compared to a flat slope for Treasuries.

The relative steepness (two-year/30-year) of the municipal curve has been persistent, averaging 34 bps more than the Treasury slope and maintaining a steeper slope in 83% of monthly observations over the last 20 years.

A reliably steeper curve

It is not immediately clear why the muni bond curve would be steeper relative to Treasuries, particularly in longer maturities. The phenomenon is sometimes called the "muni puzzle" in academic circles and its causes have been debated for decades. In this paper, we will cover some of those potential drivers—and strategies for investors to potentially monetize the excess return.

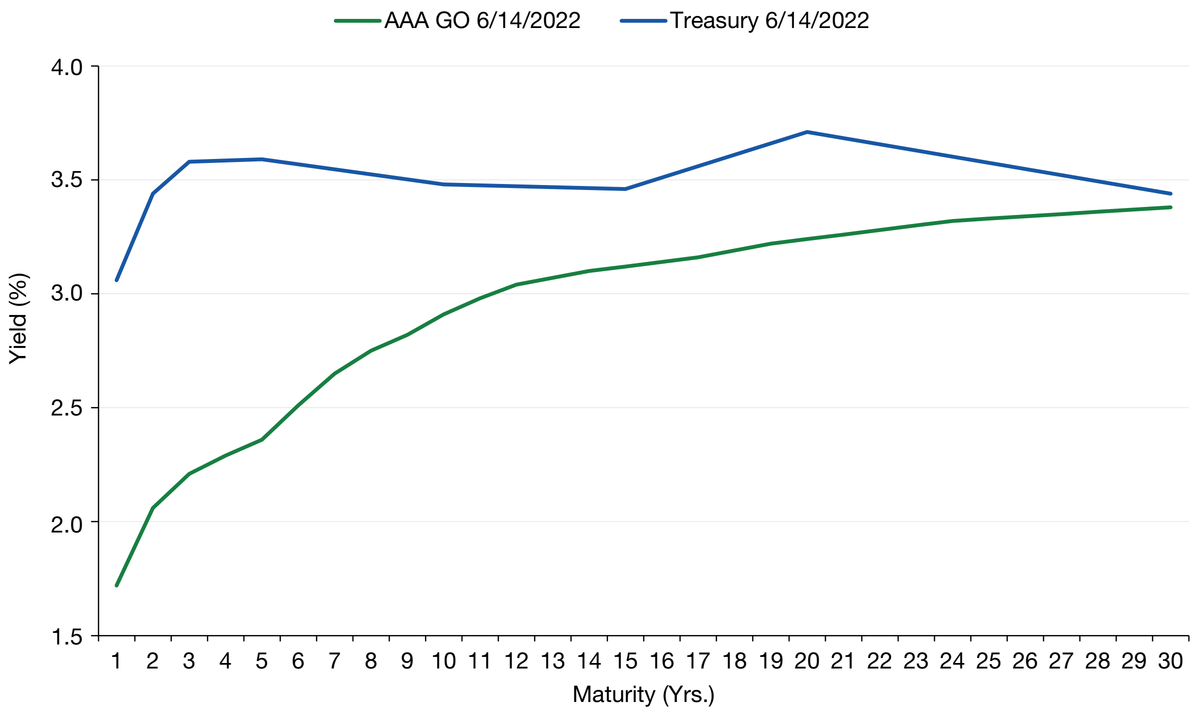
Driver No. 1: Credit Risk

One explanation for this steeper slope is more uncertainty in credit risk. Term structure is generally upward sloping for high-grade bonds because uncertainty is positively related to maturity. Put simply, the farther investors venture out the curve, the less sure one can be about the credit outlook.

While this plays a part in the relative steepness of the municipal curve, we believe that default risk does not fully explain this dynamic. As seen in Figure 2, which summarizes the average cumulative 10-year default rates for municipal bonds over rolling 10-year periods from 1970-2020, high-grade municipal bonds have almost negligible default rates. The default rate on 'AAA'-rated municipals was 0.00% over this period. While we are focused on comparing the 'AAA'-rated municipal curve to the Treasury curve, note that even when moving down to single-A rated municipals, average default rates were a mere 0.10% *cumulative* over 10 years.

Figure 1. Muni Yield Curve Remains Steeper than U.S. Treasury Curve

Yield curves as of June 14, 2022



Source: Municipal Market Data. For illustrative purposes only and does not represent any specific portfolio managed by Lord Abbett or any particular investment.

Figure 2. Municipal Bonds Have Had Historically Lower Default Rates than Corporate Bonds

Average 10-year cumulative default rates, 1970–2020

Credit Quality	10-Year Cumulative Default Rates	
Moody's Rating	Municipals	Corporates
Aaa	0.00%	0.35%
Aa	0.02%	0.77%
A	0.10%	2.04%
Baa	1.09%	3.61%
Investment Grade	0.10%	2.24%
Non-Investment Grade	7.11%	29.66%
All Rated*	0.16%	10.55%

Source: Moody's, "Moody's US Municipal Bond Defaults and Recoveries, 1970–2020," July 2021. Data show the average 10-year cumulative default rates of Moody's rated corporate and municipal bonds for a study covering the period 1970-2020. *Rating outlooks are not assigned to all rated entities. While municipal bonds are backed by municipalities, U.S. government securities, such as U.S. Treasury bills, are considered less risky since they are backed by the U.S. government. High-yielding, non-investment-grade bonds (junk bonds) involve higher risk than investment-grade bonds. Adverse conditions may affect the issuer's ability to pay interest and principal on these securities. For illustrative purposes only and does not represent any specific portfolio managed by Lord Abbett or any particular investment.

Additionally, when comparing these default rates to those of corporate bonds of a similar credit rating, the default risk in municipal credit is extremely low compared to other fixed income securities with credit risk.

Moving down the credit spectrum to 'BBB'-rated and non-investment grade bonds can allow for spread pick up and attractive risk-adjusted returns. While default rates are relatively low compared to corporates here, we believe an active approach, informed by deep research expertise, and focused on relative value, can mitigate default risk even further and is necessary to navigate this part of the market.

Driver No. 2: Liquidity

Another factor often cited as a driver of muni curve steepness is the liquidity in municipals relative to Treasuries, one of the most liquid markets in the world, as many municipal bonds do not trade on any given day and a large proportion of the market is held by "buy-and-hold" investors. While there is evidence that liquidity premiums are positively correlated with maturity, muni liquidity is also related to factors such as deal size, trade size, frequency of trades, holder concentration within a particular issue, reputation of the issuer, and more broad circumstances like a credit event.

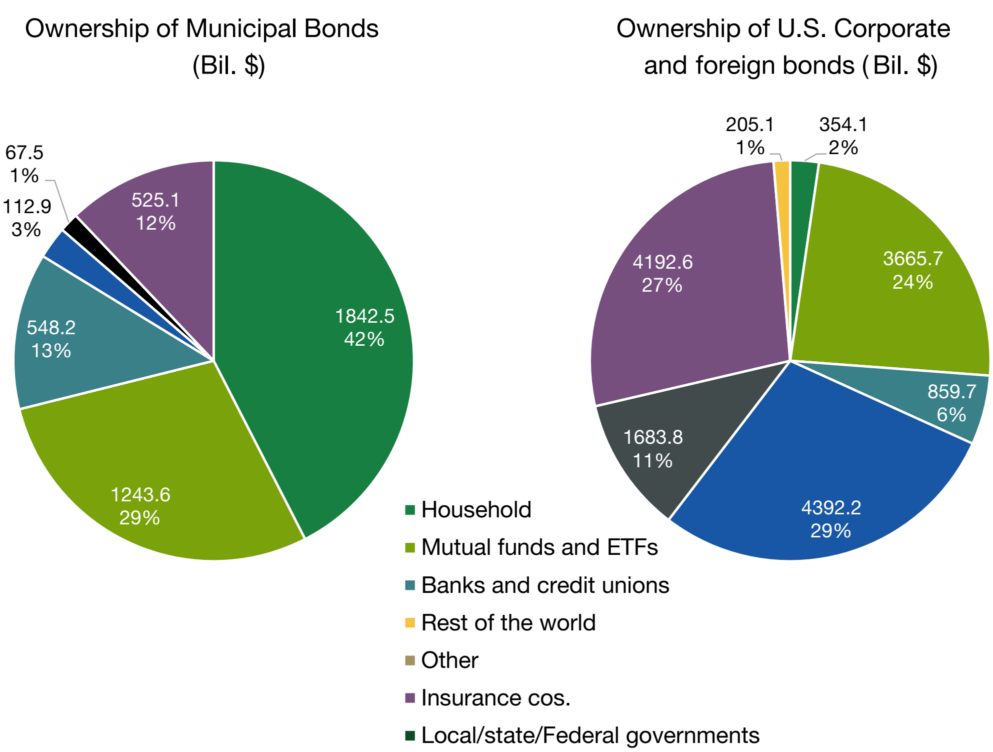
Balancing these multiple drivers of liquidity risk is a primary task of an active manager. By maintaining relationships with a robust dealer network and understanding flows during particular market regimes and the various issuers within the market, an active manager can help mitigate liquidity risk while balancing near-term liquidity needs for clients.

Driver No. 3: Investor Preference

Beyond credit and liquidity risk premia, we believe certain behavioral biases can also help explain the persistent steepness of the muni curve. These biases create a mismatch between buyers and issuers at various maturities in the municipal market, giving rise to excess return potential and commensurate opportunity for active managers.

To better understand the mismatch between buyers and issuers in the municipal market, we will take a step back and look at who makes up the buyers of tax-exempt bonds (see Figure 3).

Figure 3. Retail Investors Are the Main Buyers of Municipal Bonds
Data as of September 30, 2021 (latest available based on annual survey)



Source: U.S. Federal Reserve via Invesco. For illustrative purposes only and does not represent any specific portfolio managed by Lord Abbett or any particular investment.

Overwhelmingly, it is individuals, or retail investors, who invest in municipal bonds, holding around two-thirds of all municipal bonds outstanding, either by way of direct holdings or through professionally managed products such as municipal bond funds and separate accounts. By comparison, in the broader corporate and non-U.S.bond market, direct retail ownership only accounts for approximately 2% of the amount outstanding, while bond funds come in at roughly 24%.

Due to the progressive tax system, municipal bonds are more attractive to wealthy individual investors in higher tax brackets. These high-income buyers are mainly individuals in their prime earning years or retired. According to a study by Bergstresser & Cohen, households that hold municipal bonds skew older than their counterparts that do not hold municipal securities. Furthermore, considering municipal ownership by wealth cohort, a significant portion of the market is held by the top 0.5% of households.[1]

Many of these wealthier, and sometimes older, investors may prefer shorter-dated municipal bonds for various reasons. Along with tax-free income, capital preservation is a primary objective of the typical muni investor. These more conservative buyers may forgo the higher tax-free income characteristic to the longer end of the curve in order to avoid the potential price volatility inherent in longer bonds. Wealthy individuals, who presumably would invest a larger initial sum, can still achieve an attractive level of tax-free income without being exposed to long-dated munis. Additionally, investors may shy away from purchasing longer-maturity municipal bonds as the later coupons of these longer-dated bonds may be paid when the investor has moved to a lower tax bracket in their older years.

Using Morningstar data on mutual fund flows as a proxy for this thesis, we see that approximately 75% of assets under management (AUM) for National Muni Funds lies within the intermediate and short duration categories and almost 80% of flows over the last five years have been directed towards these segments. The data shown in Figure 4 does not capture direct holdings by individuals but does give an indication of investor preference.

On the supply side, the longer part of the curve is more favored by issuers. Approximately two-thirds of the market is made up of revenue bonds, some of which fund long-term projects that may be structured to pay tax-free interest—but not principal—back to bondholders for years, or even decades.

Looking at the Bloomberg Municipal Bond Index (see Figure 5), we see that almost half of the index is made up of longer-term bonds.

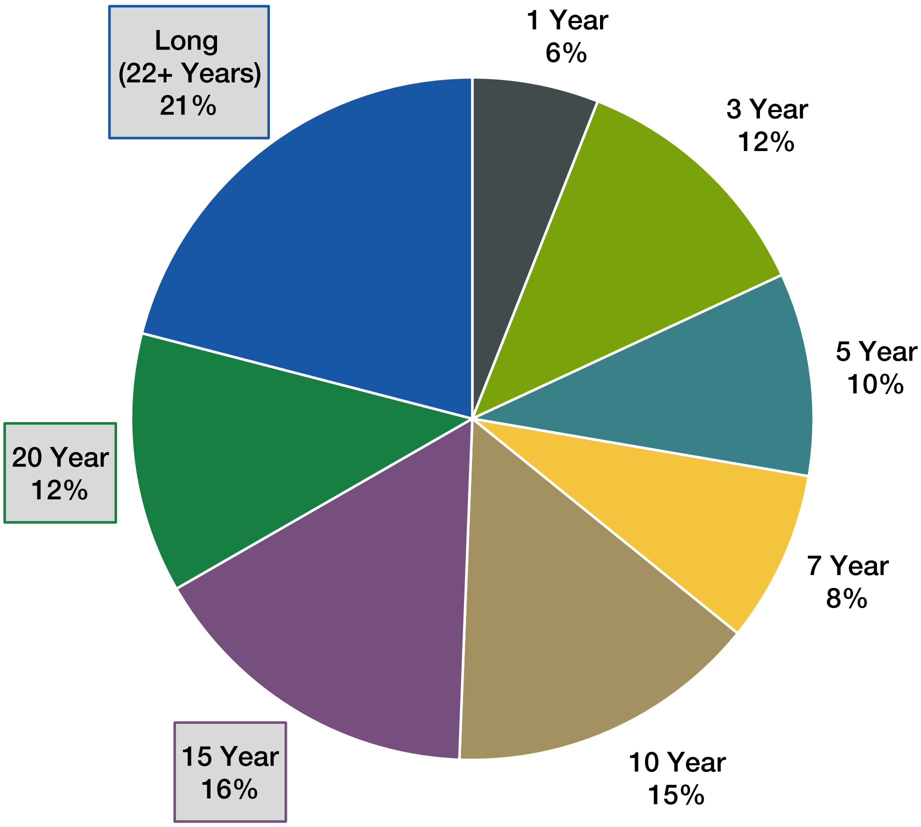
Figure 4. Investors Continue to Favor Short- and Intermediate-Term Muni Bond Funds

Data as of March 31, 2022

AS OF 3/31/22	Assets		Net Flows ($M)			
Morningstar Category	AUM ($M)	% Share	YTD	1 Yr	3 Yr	5 Yr
Muni National Interm	275,576	46.65%	(5,812)	17,872	66,443	100,203
Muni National Short	172,149	29.14%	(5,552)	3,883	40,508	47,465
Muni National Long	142,971	24.20%	3,905	15,475	37,842	41,221
Grand Total	590,696	100%	(7,460)	37,230	144,793	188,888

Source: Morningstar. For illustrative purposes only and does not represent any specific portfolio managed by Lord Abbett or any particular investment

Figure 5. While Fund Buyers Favor Shorter Maturities, Longer-Dated Bonds Make Up Nearly Half of the Muni Market
Par value breakdown by maturity of the Bloomberg Municipal Bond Index as of May 31, 2022



Source: Bloomberg. For illustrative purposes only and does not represent any specific portfolio managed by Lord Abbett or any particular investment. Indexes are unmanaged, do not reflect the deduction of fees or expenses, and are not available for direct investment.

With the crowding effect of muni buyers at the short and intermediate sections of the curve while supply is more concentrated at the longer end, this culminates in a classic mismatch of buyers and issuers of tax-exempt credits, contributing to the relative cheapness of longer-dated municipal bonds.

Capitalizing on the opportunity in longer-dated munis

With the steeper municipal curve brings higher yields at the long end, and over the long term, a greater potential total return. Even with the underperformance of longer-dated bonds in the last quarter, they have still outperformed over three-, five-, 10-, 15-, 20-, and 30-year horizons. Although there have been volatile periods in the past, similar to what was experienced last quarter, and there will be future cycles when long-dated munis fall out of favor, for investors with a long-term horizon, the advantage inherent farther out the curve is clear.

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Figure 6. Longer-Maturity Muni Bonds Have Outperformed Over the Years

Returns for Bloomberg Municipal Bond Index and maturity-specific subsets of the index

Annualized Returns as of 3/31	3-Year	5-Year	10-Year	15-Year	20-Year	30-Year
Bloomberg Municipal Bond Index	1.53%	2.52%	2.88%	3.72%	4.16%	5.00%
Muni - 5 Year	0.85%	1.51%	1.78%	3.06%	3.32%	4.13%
Muni - 7 Year	1.12%	2.04%	2.38%	3.66%	3.96%	4.71%
Muni - 10 Year	1.45%	2.58%	2.96%	4.06%	4.39%	5.20%
Muni - 22+ Year	2.06%	3.33%	3.92%	4.23%	4.99%	5.74%

Source: Bloomberg. For illustrative purposes only and does not represent any specific portfolio managed by Lord Abbett or any particular investment. Indexes are unmanaged, do not reflect the deduction of fees or expenses, and are not available for direct investment.

The current environment makes for an attractive entry point with 30-year muni yields rising almost 190 bps year to date to mid-June. Additionally, at the close of 2021, there were virtually no bonds in the 22+ year segment of the Bloomberg Municipal Bond Index trading at a discount to their par value. At the time of publication, roughly half of longer-dated bonds were trading below par, according to data compiled by Lord Abbett.

Finally, the steepness alone creates opportunity for active management. One approach that professional managers use to capitalize on this dynamic is a strategy known as yield curve roll down, which is accomplished through buying bonds on the steepest parts of the curve and selling prior to maturity. As the bonds roll down the (relatively steep) curve, they have the potential to be valued at successively lower yields and higher prices. If sold prior to maturity, the investor may experience a notable capital appreciation along with the tax-free income received. This strategy is only as simple as it sounds if the yield curve remains unchanged, but the relative steepness frequently fluctuates. While many retail investors utilize a ‘buy-and-hold’ approach, professional municipal managers, like Lord Abbett, rarely hold bonds to maturity and regularly monitor the overall shape of the yield curve, seeking to identify the steepest portions to optimize roll down potential.

In closing, the combination of credit risk, liquidity, and investor preferences (among other factors) can meaningfully impact the shape of the muni curve relative to that of the Treasury curve, particularly during periods of rate volatility. The resulting relative steepness provides longer-term focused managers with opportunities for future outperformance. It’s also important to remember that the short-term price impact of interest rate moves is immediate, but the earnings potential these moves establish can lead to attractive long-term performance. With rates rising all along the yield curve over the last few months and the continued relative steepness in munis, we believe there are attractive opportunities for active managers in the current environment.

[1]Daniel Bergstresser and Randolph Cohen, “Changing Patterns in Household Ownership of Municipal Debt: Evidence from the 1989-2013 Surveys of Consumer Finances,” Brookings Institution, July 2016.

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No investing strategy can overcome all market volatility or guarantee future results.

The value of investments and any income from them is not guaranteed and may fall as well as rise, and an investor may not get back the amount originally invested. Investment decisions should always be made based on an investor's specific financial needs, objectives, goals, time horizon, and risk tolerance.

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Equity Investing Risks

The value of investments in equity securities will fluctuate in response to general economic conditions and to changes in the prospects of particular companies and/or sectors in the economy. While growth stocks are subject to the daily ups and downs of the stock market, their long-term potential as well as their volatility can be substantial. Value investing involves the risk that the market may not recognize that securities are undervalued, and they may not appreciate as anticipated. Smaller companies tend to be more volatile and less liquid than larger companies. Small cap companies may also have more limited product lines, markets, or financial resources and typically experience a higher risk of failure than large cap companies.

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The value of investments in fixed-income securities will change as interest rates fluctuate and in response to market movements. Generally, when interest rates rise, the prices of debt securities fall, and when interest rates fall, prices generally rise. High yield securities, sometimes called junk bonds, carry increased risks of price volatility, illiquidity, and the possibility of default in the timely payment of interest and principal. Bonds may also be subject to other types of risk, such as call, credit, liquidity, and general market risks. Longer-term debt securities are usually more sensitive to interest-rate changes; the longer the maturity of a security, the greater the effect a change in interest rates is likely to have on its price.

The credit quality of fixed-income securities in a portfolio is assigned by a nationally recognized statistical rating organization (NRSRO), such as Standard & Poor's, Moody's, or Fitch, as an indication of an issuer's creditworthiness. Ratings range from 'AAA' (highest) to 'D' (lowest). Bonds rated 'BBB' or above are considered investment grade. Credit ratings 'BB' and below are lower-rated securities (junk bonds). High-yielding, non-investment-grade bonds (junk bonds) involve higher risks than investment-grade bonds. Adverse conditions may affect the issuer's ability to pay interest and principal on these securities.

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Glossary & Index Definitions

Treasuries are debt securities issued by the U.S. government and secured by its full faith and credit. Income from Treasury securities is exempt from state and local taxes.

The **carry** of an asset is the return obtained from holding it versus the return of an equal position in cash.

The **U.S. Federal Reserve (Fed)** is the central bank of the United States.

The **federal funds (fed funds) rate** is the target interest rate set by the Fed at which commercial banks borrow and lend their excess reserves to each other overnight.

Yield is the income returned on an investment, such as the interest received from holding a security. The yield is usually expressed as an annual percentage rate based on the investment's cost, current market value, or face value. The tax-equivalent yield is the pretax yield that a taxable bond needs to possess for its yield to be equal to that of the tax-exempt yield on a municipal bond. This calculation can be used to fairly compare the yield of a tax-free bond to that of a taxable bond to see which bond has a higher applicable yield.

Morningstar Categories:
Muni National Long portfolios invest in bonds issued by various state and local governments to fund public projects. The income from these bonds is generally free from federal taxes. To lower risk, these portfolios spread their assets across many states and sectors. These portfolios have durations of more than 7.0 years (or, if duration is unavailable, average maturities of more than 12 years).

Muni National Intermediate portfolios invest in bonds issued by various state and local governments to fund public projects. The income from these bonds is generally free from federal taxes. To lower risk, these portfolios spread their assets across many states and sectors. These portfolios have durations of 4.5 to 7.0 years (or, if duration is unavailable, average maturities of five to 12 years).

Muni National Short portfolios invest in bonds issued by state and local governments to fund public projects. The income from these bonds is generally free from federal taxes and/or from state taxes in the issuing state. To lower risk, some of these portfolios spread their assets across many states and sectors. Other portfolios buy bonds from only one state in order to get the state-tax benefit. These portfolios have durations of less than 4.5 years (or, if duration is unavailable, average maturities of less than five years).

The **Bloomberg Municipal Bond Index** is a rules-based, market-value-weighted index engineered for the long-term, tax-exempt bond market. Bonds must be rated investment grade (Baa3/BBB- or higher) by at least two ratings agencies. They must have an outstanding par value of at least $7 million and be issued as part of a transaction of at least $75 million. The bonds must be fixed rate, have a dated date after December 31, 1990, and must be at least one year from their maturity date. The Bloomberg 5-Year, 7-Year, 10-Year, and Long (22+ Years) Municipal Indexes are maturity-specific subsets of the Bloomberg Municipal Bond Index.

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The **Refinitiv Municipal Market Data (MMD) AAA Curve** is a proprietary yield curve that provides the offer-side of "AAA" rated state general obligation bonds, as determined by the MMD analyst team. The “AAA” scale (MMD Scale), is published by Municipal Market Data every day at 3:00 p.m. Eastern standard time, with earlier indications of market movement provided throughout the trading day. The MMD AAA curve represents the MMD analyst team’s opinion of AAA valuation, based on institutional block size ($2 million+) market activity in both the primary and secondary municipal bond market. In the interest of transparency, MMD publishes extensive yield-curve assumptions relating to various structural criteria, which are used in filtering market information for the purpose of benchmark yield-curve creation.

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