

US MUNI PRIMER

Reviewing Characteristics of the US Municipal Bond Market

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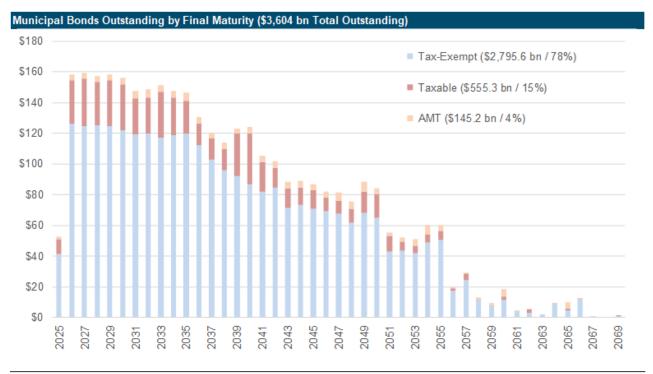
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Overview of the U.S. Municipal Bond Market

The U.S. municipal bond market is a large and diverse segment of the fixed income universe, with approximately \$4.2 trillion in bonds outstanding, with roughly one million CUSIPs from about 60,000 distinct issuers.

Public entities account for approximately 80% of the municipal market, with the other 20% made up of bonds issued for not-for-profit organizations (such as hospitals, private universities and museums) and Private Activity Bonds (or PABs). Public issuers include state and local governments, their political subdivisions (such as cities and counties), and various instrumentalities—school boards, water and sewer authorities, public colleges and universities, among others. Municipal bonds that benefit private business or provide private loan financing may be designated as Private Activity Bonds. PABs which meet certain requirements are qualified Private Activity Bonds. Interest earned on qualified PABs is exempt from federal income taxes, although interest from bonds that benefit private businesses (such as airport revenue bonds) or private individuals (such as student loan revenue bonds) may be subject to the Alternative Minimum Tax (AMT).



Par amounts in billions. Source: CreditSights, Bloomberg. Based on bonds outstanding as of August 13, 2025. Excludes bonds due longer than 2069, BQ, derivatives and defaulted bonds.

Tax Treatment

The income earned on most municipal bonds is generally exempt from federal income taxes. Most states also exempt income from in-state bonds from local taxation. For example, a New York City resident investing in New York City bonds would benefit from exemptions at the city, state, and federal levels. This local tax exemption incentivizes investors to accept lower yields on double- or triple-exempt bonds. In states without local income taxes, such as Texas and Florida, municipal bonds typically trade at higher yields, as investors in those states do not have an incentive to favor local bonds.

Approximately 15% of the municipal market consists of taxable bonds (discussed below).

Some municipal bonds are subject to the Alternative Minimum Tax (AMT). Yields on AMT municipal bonds are typically higher, yet the incremental spread often fails to compensate for the additional tax liability. For investors at risk of being subject to the AMT, these bonds are generally less attractive.

A further category of bonds, "bank-qualified" (BQ) munis, are issued by smaller entities and allows for special tax treatment for banks, resulting in lower yields. Individual investors, however, will usually find better value in non-BQ munis.

Only the interest income from municipal bonds is exempt from federal income taxation; capital gains realized on the sale of municipal bonds are taxable, while capital losses can be used to offset gains. Notably, capital gains from municipals receive distinct tax treatment depending on whether they fall within the "market discount" threshold, also known as the de minimis rule. Gains that fall within the market discount de minimis threshold are taxed at the preferential capital gains rate. However, once gains exceed this threshold, the entire capital gain is taxed at the investor's ordinary income tax rate.

The punitive treatment of municipal bond capital gains has led the market to coalesce around a standard 5% coupon for most new municipal issues. By pricing bonds at a premium with higher coupons, issuers help insulate investors from the risk of their bonds being subject to ordinary income tax rates on potential future capital gains. As a result, approximately two-thirds of the municipal bond market has been issued with a 5% coupon rate.

For individual investors holding premium coupon municipals—such as those with a 5% coupon—it is important to distinguish between interest income and the return of principal embedded in semiannual coupon payments.

Premium bonds purchased above par distribute interest payments that include an implied portion of principal repayment. Investors seeking to preserve principal for future use should employ a straight-line amortization method to calculate and set aside the principal returned with each coupon payment, rather than inadvertently drawing on principal to meet cash flow needs. (For tax purposes, amortizing a premium cost basis is typically done using the level yield method.)

Taxable Municipal Bonds

Taxable municipal bonds represent approximately 15% of the municipal bond market, totaling about \$580 billion. The largest sectors by amount outstanding include general obligation bonds (GOs), higher education, and school districts.

Issuers with access to the tax-exempt market may opt to issue taxable bonds when financing projects that are not eligible for tax-exempt treatment. For example, while a religiously affiliated university can issue tax-exempt bonds to finance new dormitory construction, it must use taxable bonds to finance non-qualifying projects such as chapel renovations.

Structurally, taxable municipals may feature bullet maturities, but it is more common to see serial bonds and term maturities similar to tax-exempt municipals. Issuance often includes a make-whole call provision alongside an optional call feature, typically non-callable for ten years. Taxable municipals are subject to federal income tax but may be exempt from state income tax for in-state investors.

In the new issue market, taxable municipals are usually priced at par.

Corporate Bonds Issued by Municipal Entities

Some municipal bond issuers have also accessed the corporate bond market, with over \$190 billion outstanding. Hospitals and healthcare systems dominate this space, accounting for roughly \$100 billion (53%), while colleges and universities represent about \$50 billion (25%). Notable issuers include CommonSpirit Health, Kaiser Hospitals, Sutter Health, MIT, Harvard, Stanford, and USC.

These corporate bonds allow non-U.S. investors without a U.S. custody relationship to add municipal credit risk via globally traded securities. Many of these bonds are large enough to be included in investment grade (IG) corporate bond indices.

Investor Base for Taxable Munis

U.S. institutional investors subject to the federal corporate income tax rate (e.g., banks, insurance companies) and non-taxable investors (e.g., pensions, endowments, non-U.S. investors) are active participants in the markets for taxable municipal and corporate bonds from municipal issuers. Incorporating municipal credit can provide portfolio diversification, particularly within investment grade portfolios concentrated in corporate credit risk. However, demand in the new issue market often exceeds supply, presenting allocation challenges.

Creditworthiness

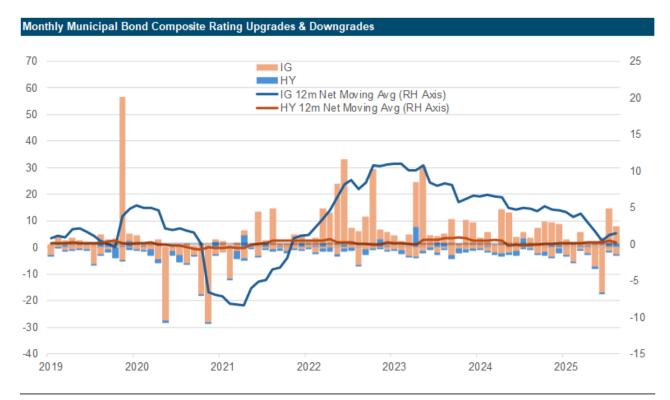
The municipal bond market is dominated by high grade issuers. 70% of the bonds in the ICE Municipal Bond Index are rated double- or triple-A, while only 9% of the bonds in the Corporate Index are in those rating buckets.

24% of the Muni Index is rated single-A and just 6% is rated BBB. In contrast, 46% of the bonds in the Corporate Index are rated single-A and 45% are triple-B rated.

The average rating for the Muni Index is AA3, compared to A3 for the Corporate Bond Index. The market cap of the Municipal High Yield Index is just 3% of the size of the Muni Index (which is all investment grade), while the HY Corporate Index is 16% of the size of the IG Corporate Index.

The high average credit quality makes munis a common choice for investors seeking to minimize credit risk in their portfolios.

As shown below, municipal ratings are not immune from changes in economic conditions. But general obligation bonds issued by local governments which are secured by property tax revenues, tend to be somewhat insulated from economic volatility, while bonds issued by state governments, which rely more on sales and income tax collections, can be more exposed to changes in the economy. Revenue bonds may be more or less sensitive to changing economic conditions, depending on the source of revenues pledged to the bonds. For example, water & sewer bonds are less sensitive while airport revenue bonds and hotel occupancy tax revenue bonds are more sensitive.



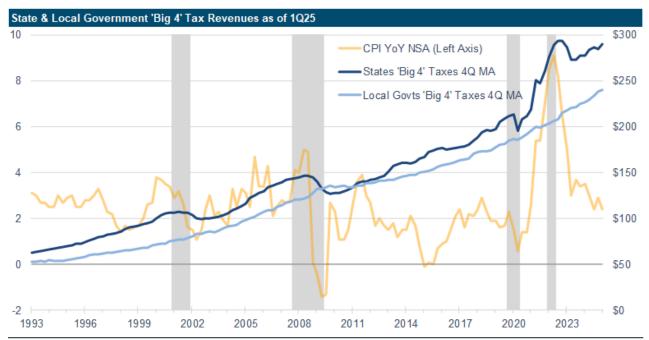
In billions of dollars, par amounts. Source: CreditSights, ICE Indices. Based on changes of the ICE composite ratings of bonds in the Municipal (U0A0) and Municipal High Yield (U0HY) Tax-Exempt Bond Indices. January 2019 through July 2025.

Percent of face value of index bonds that stayed in the same rating category for each period													
Rating	Calendar Years											5 Yr-	
Bucket		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	YTD	Avg
AAA	Muni	99%	99%	99%	100%	100%	100%	99%	100%	98%	100%	90%	97%
	Corp	100%	84%	100%	100%	100%	98%	100%	100%	100%	100%	85%	97%
AA	Muni	97%	99%	98%	95%	99%	97%	98%	99%	100%	98%	99%	99%
	Corp	97%	87%	83%	94%	95%	91%	97%	100%	98%	97%	99%	98%
Α	Muni	77%	98%	82%	94%	93%	98%	93%	91%	94%	95%	99%	95%
	Corp	92%	92%	97%	90%	97%	93%	95%	99%	98%	96%	99%	98%
BBB	Muni	94%	93%	94%	93%	96%	95%	98%	73%	76%	92%	95%	86%
	Corp	92%	91%	97%	97%	96%	92%	97%	98%	94%	96%	97%	96%

Source: CreditSights, ICE Indices. Based on the compositie ratings of bonds in the ICE BofAML Municipal Bond Index (U0A0) and High Yield Municipal Bond Index (U0HY). Updated August 26, 2025.

This table highlights the percentages of the bonds in the ICE Municipal Bond (U0A0) and Corporate Bond (C0A0) Indices that remained within the same ratings buckets each year. In some cases, movement from one rating bucket to another is a good thing if it is a result of upgrades.

For example, in 2022, while 73% of the BBB-rated munis did not move, 27% moved to the single-A rated bucket and 1% fell to double-B. Similarly, in 2023, 23% rose to single-A as 1% dropped to double-B and 1% fell to single-B. In 2024, 4% of the BBB-rated bonds moved into the single-A bucket and 1% into the double-A bucket while 2% dropped to double-B.



In billions of dollars. Sources: CreditSights, U.S. Census Bureau and NBER. The 'Big 4 Taxes' are Property, Individual and Corporate Income and General/Gross Receipts Sales Taxes. Motor fuels, tobacco, alcohol, severance and other taxes are excluded. The data for states and local governments are compiled by the Census Bureau using different methodologies. State data are based on a survey of all 50 states and local government data are estimated based on a sample of local governments and taxing authorities. For purposes of this survey, State Governments include agencies, commissions and public authorities that may operate autonomously from the state government. Gray bars through 2021 indicate recessionary periods as determined by NBER, which has not updated the business cycles since July 2021. The unofficial indication of recessionary conditions in 1Q22 and 2Q22 is based on the negative quarterly GDP reports. Updated August 28, 2025 based on quarterly data through March 31, 2025.

Over the last 25+ years, local government Big 4 tax revenues, which consist primarily of property tax revenues, have grown fairly consistently, but state government tax revenues, which are anchored by sales and personal income tax revenues, have been more volatile. For a more detailed look at the Big 4 revenues by state, please see State & Local Government Tax Revenues as of 1Q25.

Index Inclusion

Tax-exempt municipal bonds are generally excluded from broad fixed income aggregate indices, such as the ICE US Broad Market Index (USOO), whereas taxable municipals are included. As a subindex of USOO, the ICE Taxable Municipal Bond Index (DQTM) requires a minimum CUSIP size of \$250 million and therefore comprises fewer than 500 bonds. The Broad Taxable Muni Index (TXMB), which has lower minimum size requirements (and thus is not represented in USOO), includes more than 4,000 bonds.

The Indexed Muni Universe as of August 31, 2025										
		Par Amount		Market Value	Percent of Total Market Value					
Total Market*	\$	4,232,600	\$	4,045,810						
Indexed	\$	2,492,003	\$	2,451,350	61%					
Municipal Index (U0A0)	\$	1,043,882	\$	1,323,753	33%					
High Yield Index (U0HY)	\$	46,690	\$	44,476	1%					
Non-Rated Index (U0NR)	\$	124,089	\$	137,584	3%					
Taxable Muni+ IG (TXBL)	\$	387,302	\$	323,548	8%					
Broad Taxable Muni IG (TXMB)	\$	387,658	\$	329,510	8%					
Taxable Muni IG (DQTM)	\$	182,577	\$	155,129	4%					
Build America Bonds (BABS)	\$	108,574	\$	84,766	2%					
Non-Indexed	\$	1,740,597	\$	1,594,460	39%					

^{*}Total market as of 1Q25. Dollar amounts in '000's. Source: CreditSights, ICE Indices, Federal Reserve System. All the Indices shown include only fixed-rate bonds.

The ICE Municipal Bond Index (U0A0) includes approximately 23,000 CUSIPs, whereas the ICE Investment Grade Corporate Bond Index (C0A0), with a market cap of nearly \$9 trillion, contains about 11,000 CUSIPs.

Structural Features

General Obligation (GO) bonds represent 24% of the municipal index, and include unlimited tax GOs (sometimes referred to as UT GOs), which are secured by the full faith, credit and taxing power of the issuer, while limited tax (or LT GOs) are subject to a legal limit. The GO bonds in the Index have a composite rating of AA2.

Revenue bonds, which account for 76% of the index, are backed by specific revenue sources tied to projects or pledged receipts; these carry a composite Aa3 rating. Major revenue bond sectors within the index include:

- Tax Revenue Bonds: 14% of market cap, AA1 rating. Secured by specific taxes (e.g., sales tax), but without a pledge to raise rates if revenues fall short.
- Hospital Revenue Bonds: 10% of market cap, A1 rating. Offer higher yields and wider spreads, but involve more complex financial structures.
- Higher Education Bonds: 7% of market cap, AA2 rating.
- Airport Revenue Bonds: 5% of market cap, A1 rating.
- Toll Roads, Utilities, Water & Sewer Bonds: Each comprise 5–6% of market cap, generally rated between Aa1 and A1.

Essential service revenue bonds—such as water, sewer, and utility bonds—are considered particularly creditworthy due to the indispensable nature of their services and the regulatory oversight associated with these utilities.

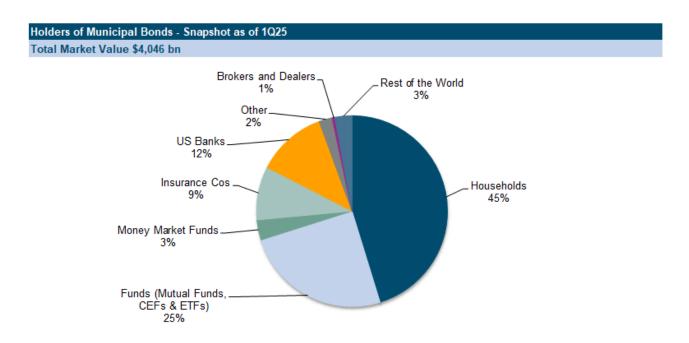
Municipal bonds differ from corporates in several key respects:

- Most municipal bond issues are structured with serial maturities and will often have one or
 more term maturities, enabling issuers to optimize their debt service and benefit from
 lower interest rates on shorter-duration debt. A typical 30-year municipal bond may have
 annual maturities for the first 15–20 years, with a final term maturity, which would be
 subject to a sinking fund beginning after the last serial bond matures.
- Municipals are typically issued with a 10-year non-call feature, after which issuers often
 have the discretion to call bonds at any time, either at par or a small premium. It has
 become more common for tax-exempt bonds to be issued with a make-whole call that
 could be exercised prior to the date on which the optional call can be exercised.

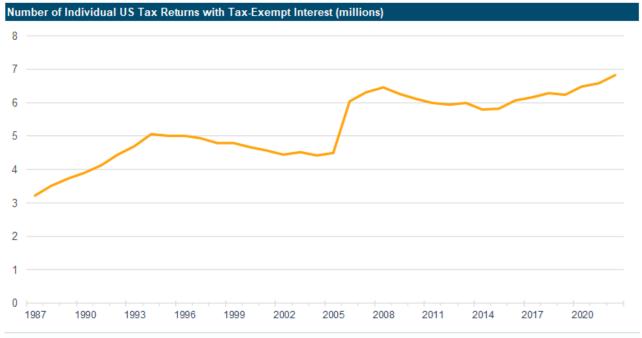
Who Owns Munis?

Individual investors are the largest category of owners, controlling 45% of the direct investment in the market, via self-directed brokerage accounts, advisory accounts and separately managed accounts. Individual investors also have significant indirect exposure via mutual funds, ETFs and closed-end funds.

For more details on ownership see Muni Ownership as of 1Q25.



Updated 6/12/25. Source: CreditSights, Federal Reserve System.



Sources: CreditSights, Internal Revenue Service. Data as of 2022, the most recent year for which data are available. 1987 was the first tax year for which IRS published muni data for individual returns. Updated June 26, 2025.

In 2022, the number of individual taxpayers who reported tax-exempt interest hit an all-time high of 6.8 mn. 85% of all interest paid was received by taxpayers with Adjusted Gross Income (AGI) of \$100,000 or more. Taxpayers with AGI:

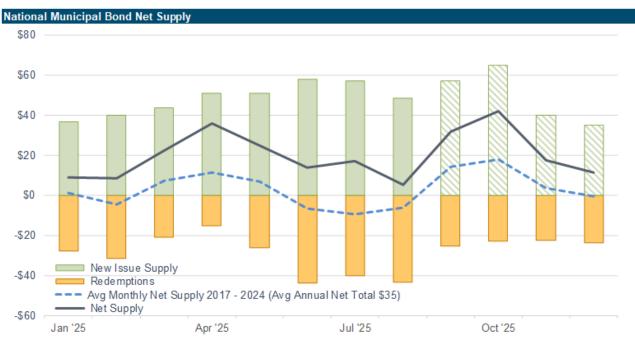
- >=\$100,000 and <\$200,000: 7% reported muni interest
- >=\$200,000 and <\$500,000: 16% reported muni interest
- >=\$500,000 and <\$1 mn: 30% reported muni interest
- >=\$1 mn: 45% reported muni interest

Seasonality in the U.S. Municipal Bond Market

There is a pronounced seasonality in the U.S. municipal bond market, driven in large part by the fiscal calendars of state and local issuers, as 46 states have a fiscal year ending on June 30th. Consequently, many issuers time their principal and interest payments—or the launch of new bond issues—to align with the start of the new fiscal year and the availability of updated audited financial statements.

It is important to note that financial disclosure practices in the municipal market differ from those in the corporate bond market. Most municipal issuers provide audited financials only on an annual basis, and they generally have about six months post-fiscal year-end to make these disclosures available. While the majority adhere to an annual reporting schedule, some large issuers—such as the Port Authority of New York and New Jersey or the Metropolitan Transportation Authority (MTA)—offer more frequent, updates (e.g., unaudited revenue updates, ridership or bridge crossings, etc.).

Issuers in certain sectors, such as hospitals, may provide quarterly financial data, and others may release interim updates on various topics. All official statements and ongoing financial and material event disclosures are accessible via the Municipal Securities Rulemaking Board's Electronic Municipal Market Access (EMMA) website (emma.msrb.org). By entering a CUSIP number, users can access financial statements, continuing disclosure documents and more. EMMA also allows users to create watch lists of up to 1,000 CUSIPs and receive email notifications whenever new disclosures are posted.



In billions. New issue supply as of August 29, 2025 Prospective redemptions updated August 29, 2025. Source: CreditSights, Bloomberg. Net supply is the long-term supply minus the total principal amount of bonds redeemed in the month. June 2025 new issue supply consists of actual deals priced through June 20, plus new issues on the calendar that are expected to be priced by month-end. July through December are CreditSights estimates.

Implications of Seasonality

The combination of fiscal year-end timing and disclosure practices creates seasonal patterns in both supply and demand. Typically, new audited financial statements become available in late July, August, and September—early in the new fiscal year. This is a key reason why October is traditionally the most active month for new municipal bond issuance.

Importantly, a surge in new supply does not necessarily coincide with increased demand. It is not uncommon for the municipal market to underperform during October's supply spike, as investor demand may not keep pace.

In contrast, the summer months of June, July, and August are characterized by the largest volumes of bonds maturing or being called for early redemption. The resulting return of principal and interest to investors often fuels robust reinvestment demand, as market participants seek to redeploy returned capital. Anticipation of this summer redemption season frequently makes May one of the better-performing months for the municipal market.

For ongoing insights into issuance and reinvestment trends, we publish monthly reports on the municipal bond market's supply and demand dynamics.

Investment Policy Considerations

When drafting an investment policy statement for a municipal portfolio, it may be appropriate to establish minimum rating criteria. For a portfolio limited to investment grade credits, we think that these minimum ratings would be a reasonable starting point for policy:

- Essential service revenue (water & sewer, utilities, power revenue): A or better
- Airports: A or better.
- Higher education: A for public schools; A1 for private colleges.
- Hospital revenue bonds: a large and higher-yielding sector, requires diversified exposure
 due to the financial complexities; we would like to see A1 or better; credits rated A3 or A2
 should have a steady history of stable ratings. Capping exposure to non-governmental
 sectors such as hospitals and higher education is sensible.
- Triple-B bonds (from any sector) are likely to be less liquid than higher-rated bonds in the sector, so investors should be mindful of the risks and benefits of over weighting triple-Bs. (Triple-B rated bonds make up 6% of the market cap of the Municipal Bond Index.)

Portfolio allocation need not strictly mirror index weights.

GO bonds, especially state GOs, provide a solid credit foundation, though their spreads may not be attractive for incremental yield. A blend of state and local GOs can offer some incremental yield and diversification.

In our view, it is important for an investment policy to be explicit as to whether or not taxable bonds or AMT munis will be considered for inclusion in the portfolio.

High Yield Municipal Bond Exposure for Individual Investors

Direct high yield municipal bond exposure is challenging for individual investors to achieve prudently, due to the need for substantial diversification and minimum investment sizes. For example, allocating 10% of a portfolio to high yield municipals with adequate diversification would typically require at least ten distinct credits. Assuming a minimum block size of 100 bonds per credit, a \$1 million allocation to high yield municipals would imply a total portfolio size of at least \$10 million.

Given these constraints, individual investors seeking high yield exposure may be better served through professionally managed vehicles such as ETFs and open-end mutual funds, which provide broad diversification and active management.

ETFs as a Complement to a Portfolio of Individual Bonds

Exchange-traded funds (ETFs) can serve as an effective complement to portfolios of individual municipal bonds, offering a level of liquidity that can be difficult to achieve in the traditional cash market.

For investors subject to the Alternative Minimum Tax (AMT), careful ETF selection is important. Many actively managed municipal ETFs have the flexibility to include AMT bonds, and investors may only become aware of their AMT exposure upon receipt of annual tax documents. Notably, MUB (iShares National Muni Bond ETF), the largest and most heavily traded muni ETF does not invest in AMT munis. However, VTEB (Vanguard Tax-Exempt Bond ETF), the second largest muni ETF, which also trades actively, permits up to 20% of its portfolio to be in bonds that are subject to the AMT.

Other muni ETFs that avoid AMT bonds include:

- PZA Invesco National AMT-Free Municipal Bond ETF
- PZT Invesco New York AMT-Free Municipal Bond ETF
- ITM VanEck Intermediate Muni ETF
- SMB VanEck Short Muni ETF
- SCMB Schwab Municipal Bond ETF
- SHM SPDR Nuveen ICE Short Term Municipal Bond ETF

NOTE: Prior to investing, always check the most recent version of the prospectus, as portfolio strategies are subject to change.

ETF liquidity should not be measured solely by primary market net asset flows. Secondary market trading volume frequently exceeds asset flows by significant margins—ratios as high as 10:1 are not uncommon.

ETF trading often includes participation by dealers and investors who may not transact in individual municipal bonds, and vice versa. Consequently, the liquidity profile of a municipal ETF can differ substantially from that of its underlying securities.

While ETFs offer a more liquid and accessible entry point to the municipal sector, neither the ETF market nor the underlying bond market can be assumed to be uniformly orderly or liquid at all times. Investors should consider the depth and quality of liquidity in both markets when constructing portfolios.

To see our most recent muni ETF reports visit (and bookmark) the CreditSights ETF Home Page.

Relative Value

The M/T ratio, or municipal to Treasury yield ratio is a widely followed indicator that compares the movement of yields in the AAA rated municipal market relative to U.S. Treasury yields.

When the M/T ratio is rising, muni yields are getting cheaper, relative to Treasuries.



Sources: CreditSights, Bloomberg, US Treasury. Daily data from 1/4/2021 through 8/29/2025. Chart shows the Bloomberg BVAL Triple-A yield over the rate of the U.S. Treasury Constant Maturity Treasury. COTR is the minimum income tax rate at which the tax-exmept yield breaks even with the taxable ATY. Investors subject to an income tax rate higher than the COTR would earn a higher after-tax return by favoring munis.

While the movement of the ratios can be a helpful indicator of relative strength of demand in the two markets, we find the ratios to be less helpful as an indicator of relative value because in our view, there is a secular bias towards lower (richer) ratios for munis, due to the combination of the steady, ongoing retail (individual investor) demand for tax exempts and the growing size of the U.S. treasury market. In addition, the M/T ratio does not consider the investor's tax bracket, which is of paramount significance when deciding whether to consider the tax-exempt municipal bond market.

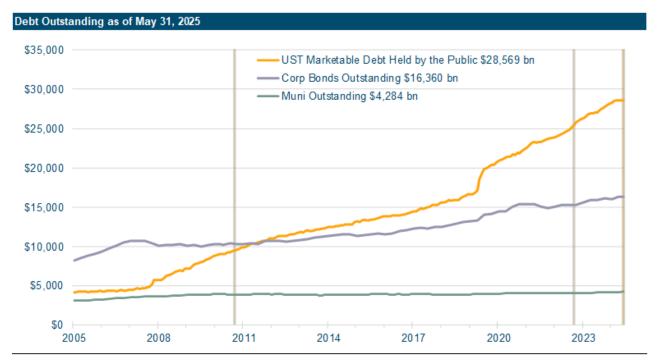
For investors trying to decide where to put money to work in the bond market, our preference is to compare municipal, taxable municipal, and corporate yields.

In the exhibit below, we compare gross (pretax) and after tax yields, calculated using a 21% income tax rate. The dashed lines are the after tax yields, the solid lines are the pretax yields. In the table below, we also calculate the COTR or the crossover tax rate, which fluctuates based on the relationship of the two yields. The COTR shows the minimum tax rate at which the tax-exempt yield hits parity with the after tax yield.

For example, in the 10-year maturity, an investor subject to a 27% income tax rate could earn the same net yield by buying the tax-exempt or the taxable muni, while the tax-exempt is at parity versus corporates for an investor paying a 28% income tax. Investors subject to higher tax rates should favor the tax-exempt.

Every week in our Muni Catch Up reports, we update this chart for single- and double-A yields. In Section 8A we use the 21% tax rate and in Section 8B we use the 37% tax rate.

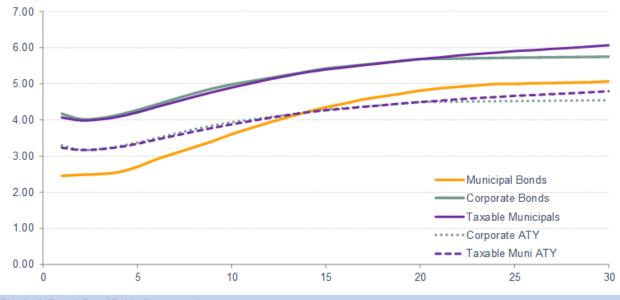
These charts are especially useful to investors who have the flexibility to consider tax-exempt or taxable munis or corporate bonds.



Outstanding face amounts. UST data from U.S. Treasury as of May 31, 2025. Corporate and muni data through the end of 1025 from Federal Reserve, subsequent amounts are estimated by CreditSights. Vertical bars show the dates on which US Government debt was downgraded by S&P (8/5/11), Fitch (8/1/23) and Moody's (5/16/25).

Since the end of 2005, the total par amount of municipal debt outstanding has grown by 38% (from \$3,106 bn to \$4,284 bn) as the corporate bond market has expanded by 98% (from \$8,277 bn to \$16,360 bn). The amount of publicly held UST debt has grown by almost 600%, from \$4,166 bn to \$28,569 bn.

Municipal, Taxable Municipal & Corporate Bond A-Rated Yield Curves for Corporations as of August 29, 2025



Single-A Rated Spot Yields (in percent)														
Yrs to Mty	Muni	UST	Corp / Spr to UST		Txbl Muni / Spr to UST		Muni	UST ATY	Corp ATY	Txbl Muni ATY	Muni / Corp	Muni / Corp COTR	Muni / Txbl Muni	M/TM COTR
5	2.69	3.68	4.26	+58	4.21	+53	2.69	2.91	3.37	3.33	63%	37%	64%	36%
10	3.59	4.23	4.97	+74	4.89	+66	3.59	3.34	3.93	3.87	72%	28%	73%	27%
20	4.81	4.86	5.68	+82	5.68	+82	4.81	3.84	4.48	4.49	85%	15%	85%	15%
30	5.06	4.92	5.74	+82	6.06	+114	5.06	3.89	4.54	4.79	88%	12%	84%	16%

Sources: CreditSights, Bloomberg. COTR is the Cross Over Tax Rate. Investors subject to an income tax rate higher than the COTR would earn a higher after-tax return by investing at the tax exempt municipal yield. As of 8/29/25. UST is the U.S. Treasury Constant Maturity Rate which may be different than the market on the current nearby actively traded Treasury and is provided only for informational purposes as individual bonds and new issues are generally spread to specific U.S. Treasury securities. Yield curves are the Bloomberg BVAL tax exempt and taxable municipal revenue bond and senior unsecured corporate bond yield curves. ATY (After Tax Yield) calculated for 21.0% federal corporate income tax rate.

When we report on relative value for a particular issuer, we will try to find an option-free (non-callable) bond as close to the 10-year maturity as possible, and we will compare spreads relative to the relevant benchmark yield curve. By preferring the 10-year (or shorter) maturities, we are seeking to reduce the distortion in pricing caused by a bond's optionality.

When comparing indices, we rely on the effective (option adjusted) yields and durations as the basis of comparison.

Performance

Yield changes in the municipal bond market are generally correlated with movements in the US. Treasury market, but because supply and demand dynamics in the muni market can be very different in the broader rates market, munis may under or outperform the treasury market.

For taxable municipals, OAS is a helpful relative value measure, but for tax-exempts, we will generally use the triple-A index or triple-A yield curve as the benchmarks for comparison.

In addition, because such a large percentage of the tax-exempt municipal bond market is priced above par, the effective duration is very often much shorter than duration to maturity. As a result, in a rising rate environment, municipals that have been priced to a call can be subject to extension risk when the market price falls to a discount and the effective duration is then based on the final maturity rather than the call date.

Conclusion

This report is intended to provide an introductory overview of some of the distinct characteristics of the US municipal bond market.

To see our latest reports on the market, please visit (and bookmark) the Muni Home Page.

We welcome your questions.