Municipal bonds – how highs and lows add up to opportunity

September 30, 2023

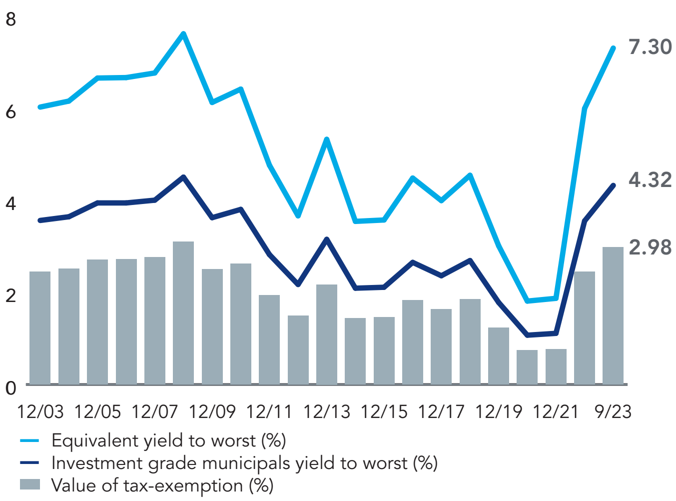
- Municipal bond yields are higher than they have been in 15 years
- The value of municipal tax exemption has increased as rates move higher
- Fundamentals are currently strong for this historically high quality bond sector
- Investors in lower tax brackets can benefit from higher municipal yields

Potential highs and lows appear positive for municipals	
High taxable equivalent yields	Lower taxes
High quality asset class	Low rating volatility/Low default rates
High revenues and reserves	Lower correlation

High taxable equivalent yields

Absolute municipal (muni) yields are near their highest levels in 15 years, and a higher rate environment makes the value of the tax-exemption worth more. At the end of September, 2023, the yield-to-worst (YTW) of the Bloomberg Municipal Investment Grade Index was 4.32% with a taxable equivalent yield of 7.30% making the value of the tax-exemption equal to an additional 2.98% in yield. For the Bloomberg Municipal High Yield Index, the YTW was 6.25% with a taxable equivalent yield of 10.56%, making the value of the tax-exemption equal to 4.31%.

Rising investment grade (IG) tax-equivalent yields



Assumes a top rate of 40.8% (37% top federal income tax rate plus 3.8% tax on net investment income).

Sources: Bloomberg, Federated Hermes as of 9/30/23

Past performance is no guarantee of future results. For illustrative purposes only. Not representative of any specific investment.

Relatively higher taxable equivalent yields

Recently, municipal bonds have offered greater income relative to multiple taxable fixed income asset classes with attractive taxable equivalent yield. Even in the case of muni HY where duration is long relative to other sectors, we believe the risk is more asymmetric with the Fed likely near the end of its hiking cycle.

Index	Yield to worst (%)	Effective duration
Bloomberg US Municipal Bond Index	4.32	6.37
IG Mun Tax Equivalent Yield	7.30	6.37
Bloomberg US Credit Index	6.27	6.69
US Aggregate	5.39	6.15
Bloomberg High Yield Municipal Bond Index	6.25	7.93
HY Mun Tax Equivalent Yield	10.56	7.93
Bloomberg US Corporate High Yield 2% Issuer Capped Index	9.23	3.57

Source: Bloomberg Indices as of 9/30/23

Lower taxes

Investors may be surprised by higher income tax bills resulting from higher taxable yields on taxable securities that have long produced very little income. When investors opt for municipal bonds, they can avoid paying ordinary income tax. Investors may be motivated to do this when the taxable equivalent yield is higher than comparable taxable options.

High credit quality

The municipal market has generally been a high-quality bond market with favorable default experience relative to comparably rated corporate bonds. High grade bonds (AAA and AA rated) have near-zero default rates historically. Additionally, the default rate for BBB municipal bonds is less than that for AAA rated Corporates.

Low defaults and low rating volatility

When compared to corporate bonds, rating drift – the average change in credit rating notches in a one year period – is lower for municipal bonds throughout the credit stack. Also, Municipals have low historical default rates over a long horizon, including during a recession. Municipal defaults are rare and idiosyncratic.

Standard & Poor's bond default analysis

10-year cumulative average default rates

Credit Rating	Municipal* 1986 – 2022	Corporate** 1981 – 2022
AAA	0%	0.83%
AA	0.03%	0.96%
A	0.08%	1.65%
BBB	0.71%	3.93%
BB	3.63%	13.35%
B	10.29%	24.79%
CCC-C	36.89%	54.98%

*Source: STANDARD&POOR'S RatingsDirect®

2021 Annual U.S. Public Finance Default and Rating Transition Study, May 11, 2022.

**Source: STANDARD&POOR'S RatingsDirect®

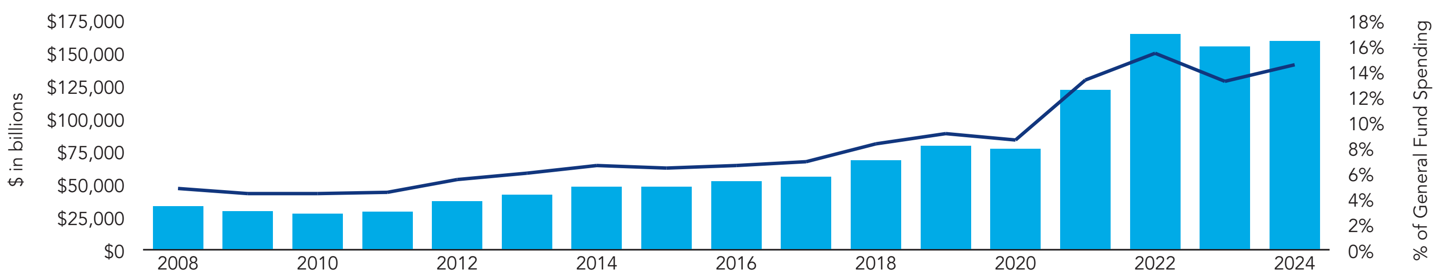
Default, Transition, and Recovery: 2021 Annual U.S. Corporate Default And Rating Transition Study, July 25, 2022.

Past performance is no guarantee of future results.

High revenue collections and reserves

Municipal credit fundamentals are currently strong due to unprecedented Federal support, record revenues and heathy reserves. Many state and local governments have enjoyed surging revenues from rising income, property, corporate and sales tax revenues as well as large federal transfers from the various Covid relief bills.

State rainy day balances



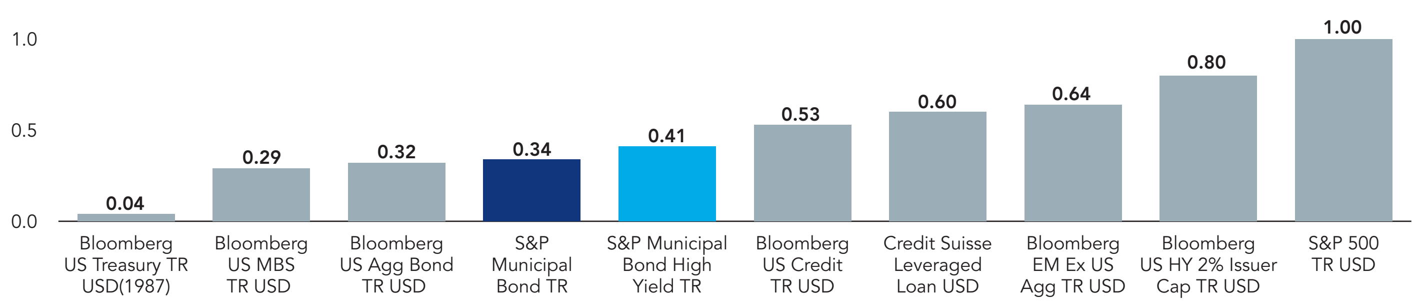
Source: National Association of State Budget Officers

State tax revenues dominated by income and sales taxes are procyclical with gross domestic product (GDP). Local tax revenues dominated by property taxes are less sensitive to GDP and linked to property valuation and the varying rules surrounding property reassessment around the country.

Lower correlation

Adding Municipals to an investment portfolio can improve diversification. Municipals have historically had lower return correlation to equity markets than other bond sectors.

10-year correlation to the S&P 500®



Sources: Bloomberg, Standard & Poor's, Credit Suisse, Federated Hermes as of 9/30/23.

The amount of public information available about municipal securities is generally less than that for corporate bonds. Special factors, such as legislative changes and local and business developments, may adversely affect the yield or value of municipal securities.

Credit ratings do not remove market risk.

Diversification does not guarantee a profit nor protect against loss.

Bond credit ratings measure the risk that a security will default. Credit ratings of A or better are considered to be high credit quality; credit ratings of BBB are good credit quality and the lowest category of investment grade; credit ratings of BB and below are lower-rated securities; and credit ratings of CCC or below have high default risk.

Views are as of September 30, 2023 and are subject to change based on market conditions and other factors.

This should not be construed as a recommendation regarding tax information.

Consult your tax professional for more information.

There is no guarantee that any specific investment approach will be successful.

Income from municipal securities may be subject to the federal alternative minimum tax and state and local taxes.

Bond prices are sensitive to changes in interest rates and a rise in interest rates can cause a decline in their prices.

High-yield, lower-rated securities generally entail greater market, credit/default and liquidity risks, and may be more volatile than investment grade securities.

Yield to Worst (YTW): On a corporate bond, the yield to worst is the lowest yield that a buyer can expect among the reasonable alternatives, such as yield to maturity, yield to call, and yield to refunding.

Bloomberg US Aggregate Bond Index: Is an unmanaged index composed of securities from the Bloomberg Government/Corporate Bond Index, Mortgage-Backed Securities Index and the Asset-Backed Securities Index. Total return comprises price appreciation/depreciation and income as a percentage of the original investment. Indices are rebalanced monthly by market capitalization.

Bloomberg US Municipal Bond Index is composed of USD denominated long-term tax exempt bonds.

Bloomberg High Yield Municipal Bond Index: Is an unmanaged index made up of bonds that are non-investment grade, unrated or rated below Ba1 by Moody's Investors Service with a remaining maturity of at least one year.

Bloomberg US Treasury Bond Index: Is part of Bloomberg global family of government bonds indices. The index measures the performance of the U.S. Treasury bond market, using market capitalization weighting and a standard rule based inclusion methodology.

Bloomberg US Mortgage-Backed Securities Index: Tracks agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARM) guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA) and Freddie Mac (FHLM).

S&P Municipal Bond Index: Is a broad, comprehensive, market value-weighted index that are exempt from U.S. federal income taxes or subject to the alternative minimum tax (AMT). Eligibility criteria for inclusion include, but are not limited to: the bond issuer must be a state or local government or a state or local government entity where interest on the bond is exempt from U.S. federal income taxes or subject to the AMT; the bond must be held by a mutual fund for which Standard & Poor's Securities Evaluations, Inc. provides prices; it must be denominated in U.S. dollars and have a minimum par amount of $2 million; and the bond must have a minimum term to maturity and/or call date greater than or equal to one calendar month. It is rebalanced monthly.

The S&P Municipal Bond High-Yield Index consists of bonds in the S&P Municipal Bond Index that are not rated or are rated below investment grade.

Bloomberg US Credit Index: Is composed of all publicly issued, fixed-rate, nonconvertible, investment-grade corporate debt. Issues are rated at least Baa by Moody's Investors Service or BBB by Standard & Poor's, if unrated by Moody's. Collateralized Mortgage Obligations (CMOs) are not included. Total return comprises price appreciation/depreciation and income as a percentage of the original investment.

Credit Suisse Leveraged Loan Index: Is designed to mirror the investable universe of the U.S. dollar-denominated leveraged loan market. Average values are computed over the Index for coupon, current yield, initial spread and price. The average coupon, current yield and initial spread are weighted by market value (amount outstanding multiplied by the price) at the end of the measurement period for each loan currently paying interest in the Index. Total return is computed for each loan, which is the percent change in the value of each loan during the measurement period. Total return is the sum of three components: principal, interest and reinvestment return.

Bloomberg Emerging Markets USD Aggregate Index: Tracks total returns for external-currency-denominated debt instruments of the emerging markets: Brady bonds, loans, Eurobonds, and U.S. dollar-denominated local market instruments. Countries covered are Argentina, Brazil, Bulgaria, Ecuador, Mexico, Morocco, Nigeria, Panama, Peru, the Philippines, Poland, Russia and Venezuela.

Bloomberg US Corporate High Yield 2% Issuer Capped Index: Is an issuer-constrained version of the flagship US Corporate High Yield Index, which measures the USD-denominated, high yield, fixed-rate corporate bond market. The index follows the same rules as the uncapped version, but limits the exposure of each issuer to 2% of the total market value and redistributes any excess market value index wide on a pro-rata basis. The index was created in 2002, with history backfilled to January 1, 1993.

S&P 500® Index: Is an unmanaged capitalization-weighted index of 500 stocks designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

Indexes are unmanaged and investors cannot invest directly in an index at the end.

Correlation measures the similarity between two return series on a scale of -1.0 to +1.0. Assets with a correlation of 1.0 are perfectly correlated, -1.0 demonstrates negative correlation and 0.0 indicates the absence of correlation.

Past performance is no guarantee of future results.

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Federated Securities Corp.