PNC Fixed Income

Municipal Market Quarterly Review

Fourth Quarter 2023

Municipal Market Review

The S&P Main Municipal Bond Index (Municipal Index) climbed during the fourth quarter, generating a total return of 7.18% and bringing the index's 2023 total return to 6.03% (Figure 1). Strong performance in the final quarter of 2023 was driven by a broad shift lower in fixed income yields amid the Federal Reserve's (Fed's) pause in policy rate hikes.

As the U.S. Treasury (UST) yield curve steepened in conjunction with the Fed taking a more cautious approach toward monetary policy, municipal yields decreased across the curve, with long-term yields falling less than short- and intermediate-term yields (Figure 2, page 2). This shift resulted in an increased risk premium for interest rates (Figure 3, page 2). Longer-dated bonds outperformed shorter-dated bonds due to higher interest rate sensitivity, or duration. Among quality cohorts, AAA-rated yields declined the least, while A-rated yields declined the most.

Relative to taxable fixed income sectors, the Municipal Index outperformed the Bloomberg U.S. Treasury Index by 152 basis points (bps) in the fourth quarter, as municipal yields declined more than Treasuries with similar maturities. Municipals also outperformed the Bloomberg U.S. Aggregate Index by 36 bps, but underperformed Bloomberg U.S. Corporate Index by 132 bps, driven by differences in index-level duration and credit performance.

Figure 1. Fixed Income Returns and Statistics
As of 12/31/2023

S&P Municipal Bond Indices	Q4 2023 Return	2023 Return	Yield to Worst	Duration
Main	7.18%	6.03%	3.42%	5.4
Intermediate	6.63%	5.26%	3.03%	4.5
Short-Intermediate	4.43%	3.92%	2.89%	3.0
Short	2.81%	3.34%	2.95%	1.7
General Obligation	7.30%	5.53%	3.11%	5.0
Revenue	7.42%	6.49%	3.70%	6.0
Taxable	7.09%	7.99%	4.91%	8.2
Bloomberg Indices				
U.S. Treasury	5.66%	4.05%	4.08%	6.1
U.S. Aggregate	6.82%	5.53%	4.53%	6.2
U.S. Corporate	8.50%	8.52%	5.06%	7.1

Sources: S&P Dow Jones Indices LLC, Bloomberg L.P., PNC

KEY THEMES

- The Municipal Index returned 7.18% in the fourth quarter, resulting in a 6.03% total return for 2023.
- Yields fell across the municipal curve, with short and intermediate-term yields falling more than long-term yields, resulting in a steeper yield curve.
- Municipal valuations richened versus UST with similar maturities, reflected in broadly lower Municipal-to-Treasury (MT) ratios.
- We believe current credit pricing properly reflects solid fundamental conditions, while absolute yield levels still offer a compelling option for tax-sensitive investors.

Figure 2. Quarter-over-Quarter Yield Curve Change (bps) (9/30/2023 – 12/31/2023)

Maturity	AAA	AA	A	BBB	UST
1 Year	-103	-105	-108	-106	-70
2 Year	-114	-116	-119	-117	-79
3 Year	-115	-117	-120	-118	-78
5 Year	-113	-116	-118	-116	-76
7 Year	-115	-119	-121	-118	-73
10 Year	-117	-122	-124	-124	-69
15 Year	-117	-126	-128	-125	-69
20 Year	-107	-119	-120	-116	-70
30 Year	-92	-105	-106	-101	-66

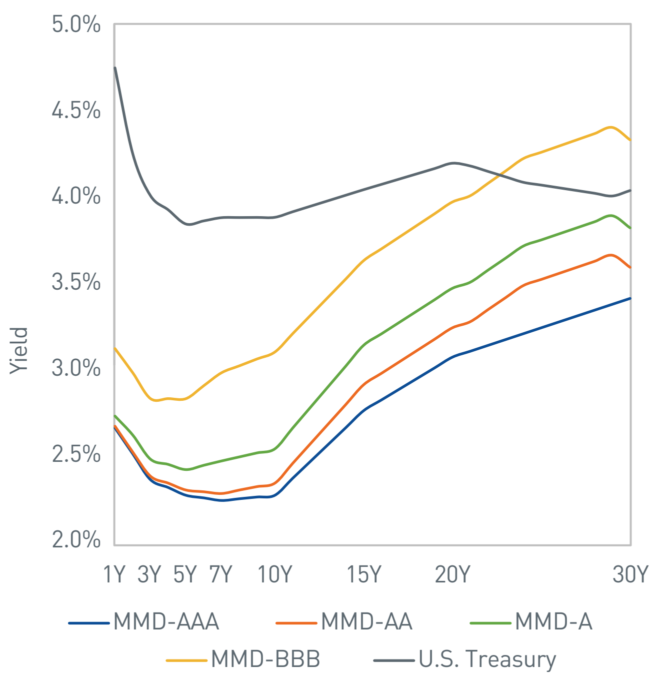
Sources: Refinitive, S&P Dow Jones Indices, Bloomberg L.P., PNC

From a technical perspective, investor demand for municipals faded for the third consecutive quarter, with net outflows of $16.6 billion. Nevertheless, net flows improved from 2022, which saw outflows of $42 billion in the fourth quarter. On the supply side, 2023 municipal bond issuance was down modestly, declining 2.8% from the prior year. We expect issuance to remain stable in the first quarter of 2024 despite the recent decline in interest rates, with potential return support from investor inflows in the first quarter.

Tax-Exempt Municipal Valuations

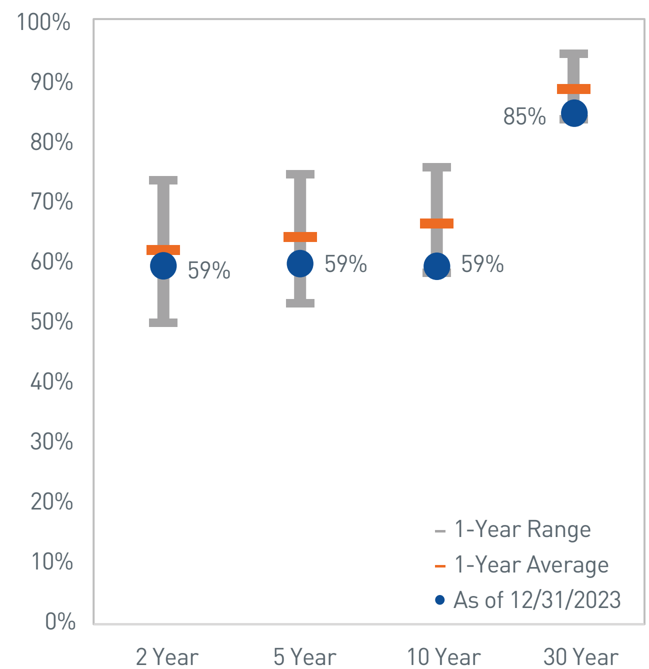
Across most of the yield curve, municipal yields declined at a faster pace than similar-maturity USTs during the fourth quarter, resulting in less attractive MT ratios for prospective tax-exempt investors. The middle portion of the curve shifted the most, as 5-year and 10-year MT ratios decreased to 59% from 74% and 75%, respectively. The 2-, 5-, 10- and 30-year MT ratios are now all below their respective one-year averages (Figure 4).

Figure 3. Municipal Market and UST Yield Curves As of 12/31/2023



Sources: Refinitive, S&P Dow Jones Indices, Bloomberg L.P., PNC

Figure 4. Municipal-to Treasury (MT) Yield Ratios As of 12/31/2023



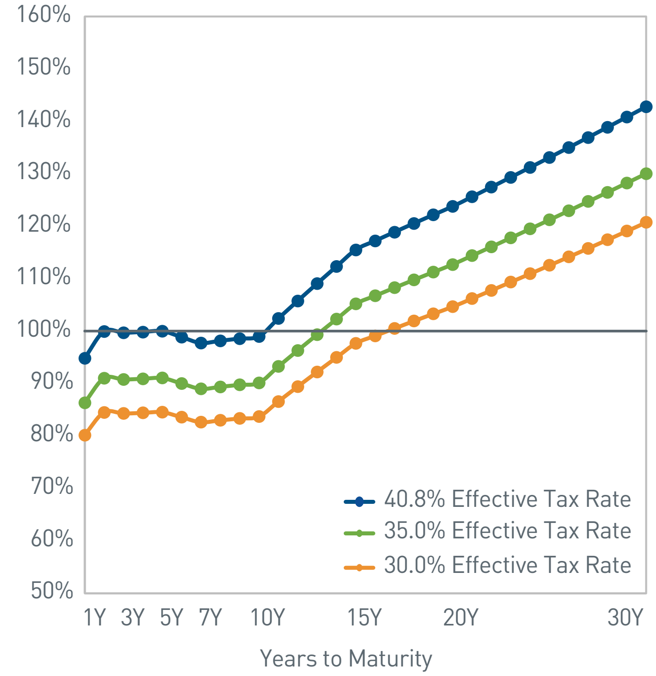
Sources: Refinitive, S&P Dow Jones Indices, Bloomberg L.P., PNC

Indices are unmanaged, not available for direct investment, and not subject to management fees, transaction costs or other types of expenses that an account may incur.

The shift has made tax-exempt municipal bonds less attractive on a tax-equivalent basis versus taxable alternatives. Assuming an estimated federal tax rate of 40.8% (37% maximum federal income tax level and 3.8% Medicare tax that may apply to some taxpayers), the tax-equivalent yield of a 10-year AAA-rated municipal bond now offers 99% of the 3.9% yield offered by the 10-year UST, down from 127% at the end of last quarter. For investors with an effective tax rate of 30%, tax-equivalent MT ratios are now below 100% for maturities under 17 years (Figure 5).

Municipal investors should note, we believe weakening U.S. government credit conditions have the potential to permanently impact relative valuation measures. In fact, we believe this weakening is already reflected in current market conditions through recent rating agency actions, movements in credit default swap (CDS) pricing and adjustments to CDS term structures, among other aspects. These forces all have the potential to place downward pressure on the equilibrium point of MT ratios, the traditional measure of cross-market relative value.

Figure 5. Tax Equivalent MT Yield Ratios
As of 12/31/2023



Sources: Refinitive, S&P Dow Jones Indices, Bloomberg L.P., PNC

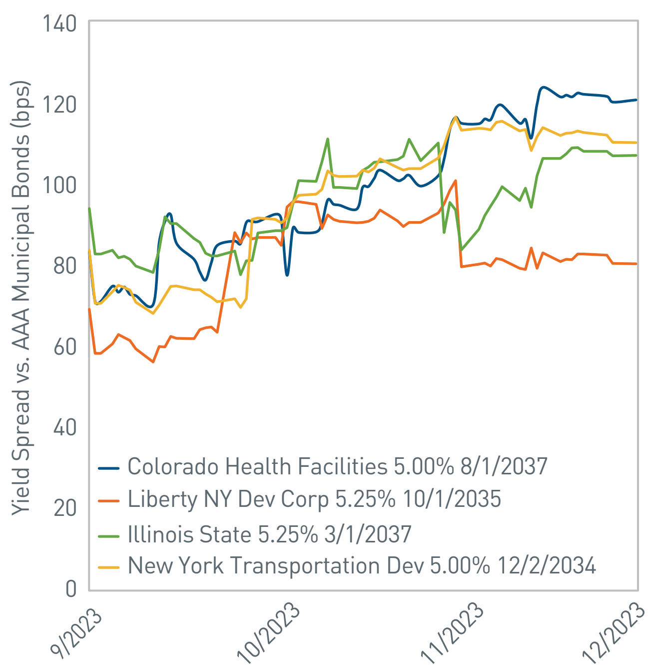
Taxable Municipals Outperform Tax-Exempt

The S&P Taxable Municipal Bond Index (Taxable Municipals) returned 7.80% in the fourth quarter, outperforming tax-exempt municipals. However, taxable municipals underperformed the Bloomberg U.S. Corporate Index (corporate bonds) due to less credit spread tightening. The higher relative decrease in A-rated corporate bond yields compared to A-rated taxable municipals has made taxable municipal bonds more attractive for maturities up to 10 years. Despite weaker quarterly performance, taxable municipals have underperformed corporate bonds year to date, albeit modestly, returning 4.91% compared to 5.06%. We believe supply-side technicals are supporting valuations given the 43% decrease in taxable municipal issuance year over year.

Municipal Credit Review

During the quarter, municipal credit valuations retraced their gains from the prior 3-month period and underperformed relative to corporate bonds. Representative lower-rated municipal bond spreads widened approximately 30 bps, suggesting the prior quarter's spread narrowing was overly ambitious (Figure 6). Notably, municipal credit performance diverged markedly from corporate credit. Corporate

Figure 6. Select Tax-Exempt BBB-Rated Municipal Credit Spreads
As of 12/31/2023



Sources: Bloomberg L.P., PNC

Indices are unmanaged, not available for direct investment, and not subject to management fees, transaction costs or other types of expenses that an account may incur.

credit spreads narrowed approximately 20 bps, led by lower-grade debt and Financials.

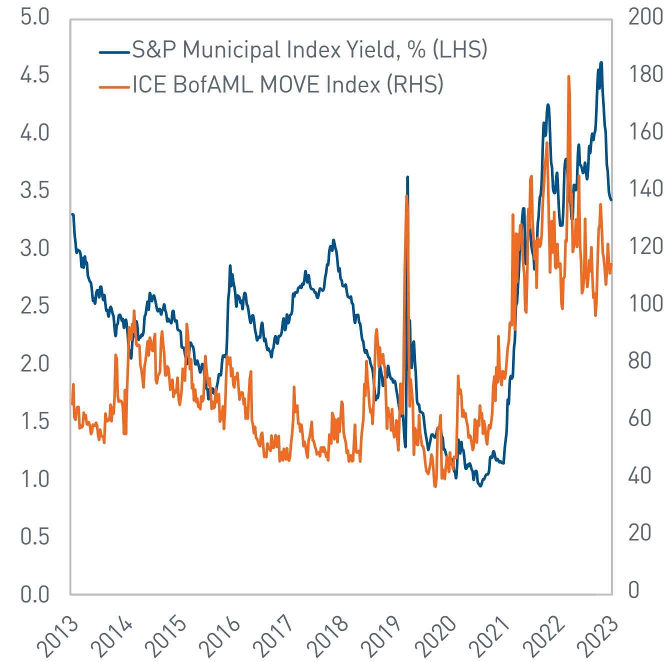
Continuing the negative rating momentum for USTs, Moody's Investors Service lowered its "AAA" sovereign rating to a "negative outlook." Moody's cited concerns about debt affordability due to higher interest rates and continued outsized fiscal deficits. A Moody's downgrade of the U.S. government would complete the downgrade trifecta and add incremental pressure on municipal structures that rely on the credit quality of USTs.

Looking Ahead

Heading into 2024, we believe current municipal credit pricing properly reflects fundamental conditions given slightly tighter spreads versus a year ago. However, we also acknowledge the risk of some credit deterioration as tighter financial conditions weigh on economic growth. Given our outlook, we favor neutral duration and a neutral-to-overweight credit position.

Strong fourth quarter performance, both on an absolute basis and relative to USTs, has resulted in lower municipal market yields compared to the highs of 2023. This has made tax-exempt municipal bonds less attractive versus USTs, as measured by MT ratios. However, the S&P Municipal Bond Index yield remains in the 88th percentile of weekly observations over the last 10 years (Figure 7). As such, long-term return expectations for the asset class remain much improved, in our view.

Figure 7. S&P Municipal Bond Index Yield & Rate Volatility
As of 12/31/2023



Sources: Bloomberg L.P., PNC

Investment Management Team

Adam Mackey
Managing Director

Ken Weinstein
Senior Credit Analyst

William Bonawitz, CFA
Director of Credit Research

William Davis
Senior Quantitative Analyst

Robert Howells
Senior Portfolio Manager

Matthew Feda
Client Portfolio Manager

Daniel Salahub, CFA
Portfolio Manager

Jamie Horn
Client Portfolio Manager

Cesar Avila
Senior Credit Analyst

Walid Baki, CFA
Client Portfolio Associate

Lisa Kreiling, Ph.D., CFA
Senior Credit Analyst

Elvi Sopiqoti
Trader

Jonathan Mann, CFA
Senior Credit Analyst

If you have questions regarding this commentary, please contact one of our Municipal Specialists at MIG@pnc.com