MACKAY SHIELDS
A NEW YORK LIFE INVESTMENTS COMPANY

INSIGHTS & PERSPECTIVES
from MacKay Municipal Managers™

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2022 Municipal Bond Market Insights: Mid-year Update – "Embrace Change"

Change characterized the first half of 2022. First, the Fed dramatically shifted its policy in response to rising inflation, pulling forward planned tightening measures and sparking a large upward move in U.S. government bond yields. Next, geopolitical issues took center stage as the largest armed conflict in over 25 years unfolded in Europe. In light of these shifting dynamics, today we believe the municipal bond market offers relatively attractive prices and yields, and credit health remains solid.

Top Five MacKay Municipal Managers' Market Midyear Insights for 2022

Theme	Rationale	Portfolio in Action	Midyear Status
1 TRANSITORY OR NOT: VIEW MUNICIPAL INVESTMENTS AS AN INFLATION HEDGE	We believe credit-sensitive municipal bonds provide a larger cushion against inflation relative to other fixed income investments of similar quality because municipal bond credit tends to improve with inflation. Many taxes supporting municipal credits increase as asset prices rise. For example, general obligation issuers collect higher ad valorem taxes as real estate values grow. Dedicated tax bonds increase coverage ratios as the prices of taxed items rise. An array of municipal credits, including toll road financings and tobacco bonds, incorporate annual inflation adjustments in their covenants that increase revenues available to debt service. Adjusting fixed income exposures in favor of municipal bonds can help mitigate potential higher inflation.	Inflation rose to a four-decade high. Meanwhile, municipal credit health continues to improve. This is due in part to concurrent increases in revenue streams (see our Mid-Year Status in this section). We maintain our preference for issuers capable of growing their revenue streams by passing rising costs onto users without cutting into demand for services. This is represented in our portfolios via exposure to sectors such as transportation and electric utilities.	**Pending:** - Through 1Q22, state total tax collections are 16% above 2021 collections, led by a 19.6% increase in personal income tax receipts and 17% increase sales tax receipts. (Source: National Association of State Budget Officers (NASBO), as of June 2022) - 49 states reported that fiscal year 2022 general fund revenue collections are exceeding budget forecasts compared to just nine states in fiscal year 2020. (Source: NASBO, as of June 2022) - In fiscal year 2021, state rainy day fund balances reached a record high of \$124.5 billion. Fiscal year 2022 rainy day fund balances are projected to close the year at a new high of \$132.2 billion. (Source: NASBO, as of June 2022) - Issuers exhibited positive rating momentum, with upgrades of 60 vs downgrades of 18. 89.4% of the Fitch Public Finance sector has a stable outlook. (Source: Fitch, as of June 2022) - Despite positive developments, sizeable municipal fund outflows temporarily overwhelmed fundamentals. The municipal bond market generated negative performance, in-line with the broader U.S. fixed income market. - YTD through June 30th, the Bloomberg Municipal Bond Index returned -8.98% and outperformed the Bloomberg U.S. Aggregate Bond Index , which returned -10.35%, by +1.37%. Municipals also outperformed U.S. investment grade corporate bonds, which were down -14.39% over the same time period, as measured by the Bloomberg U.S. Corporate Bond Index. (Source: Bloomberg, as of 6/30/2022)

2 ELEVATED TACTICAL TRADING DRIVES RETURNS

Active management should differentiate performance outcomes in an expected lackluster 2022 municipal market. We believe one- to ten-year ladder strategies and/or SMAs will lag actively managed strategies, which may be counterintuitive to many municipal investors. We expect heightened levels of portfolio activity centered on tactical allocations among bond structures and credit qualities to produce meaningful alpha in portfolios. In addition, strategic cash allocations can balance portfolio duration and fund the purchases of securities in the event of volatility. In 2022, investors should be mindful of active strategy claims from managers whose trading is primarily tied to reinvestment. In our view, traditional passive municipal investors shifting to tactical active management in 2022 may improve outcomes.

The sharp market dislocation drove municipal yields significantly higher than where they began at the beginning of the year.

Valuations turned from historically rich to very cheap as indicated by the 10-year AAA municipal-to-treasury yield ratio, which surpassed 100% by mid-May.

However, this opportunity was fleeting, and over the course of a handful of trading sessions, that ratio fell to the low 80% range.

While many were forced to sell or not well-positioned to buy, we traded with greater frequency while also opportunistically deploying capital as prices became attractive.

Focused on tax-efficiency, MMM also harvested losses across portfolios. This helped to increase potential income as we reset book yields.

On Target:

- **Active management mattered during the first half of 2022. The average actively managed intermediate-term municipal bond fund returned -8.49% and outperformed its passive counterpart, which returned -8.75%, by +0.26% YTD through June 30th. (Source: Morningstar as of 6/30/2022)**
- **Across MMM's actively managed portfolios, total dollar trading volume increased by +266% when comparing the first half of 2022 vs. the first half of 2021. (Source: MMM as of June 23, 2022)**

3 MAINTAIN OVERWEIGHT IN HIGH YIELD THEN BEGIN TO TRADE UP IN QUALITY MID-YEAR

We believe an overweight position in high yield municipals could drive outperformance through at least the first half of 2022. Any potential gains then may provide a buffer against an anticipated sluggish second half. Select – certainly not all – high yield municipal issuers emerged from lockdowns in strong financial condition as the ratio of ratings upgrades to downgrades in 2021 hit its highest level since at least 2013. Therefore, investors can retain those high yield municipal credits with more confidence. In addition, those holdings stand to benefit from the market's positive technical outlook. We see Puerto Rico's emergence from bankruptcy producing a massive payout of cash that drives reinvestment demand in a market already short on supply. That demand tightens high yield spreads and contributes to strong relative returns compared to rate sensitive high grades in our view. Patient credit investors adjusting their strategy as the year progresses could be rewarded for their flexibility.

In March, the Puerto Rico GO and Public Building Authority (PBA) debt restructuring was completed. As anticipated, the transaction generated a large cash payout.

The cash acted as a shock absorber, helping some investors maintain liquidity and curb some forced selling during the midst of a sizeable mutual fund outflow cycle.

During the draw down, some of the highest rated, and thus most liquid names, were the most exposed to selling pressure. To capitalize on the temporary dislocation, we have shifted our asset allocation models toward higher quality.

For example, we shifted our asset allocation model from a moderate risk exposure of 70% investment grade and 30% high yield to 80% investment grade and 20% high yield as of July 2022.

This allocation represents our historic neutral weight to high yield municipals.

Pending:

- **Investment grade municipal yields and prices are relatively compelling in light of the ongoing dislocation. We believe investors will be compensated while simultaneously boosting credit quality by increasing exposure to investment grade.**
- **Balancing this view, we maintain a constructive overweight to high yield municipals, some of which is driven by the restructuring of select Puerto Rico bonds.**
- **The yield spread between high yield and investment grade municipal bonds only slightly widened in the first half of 2022, starting at 202 bps and ending at 209 as of June 30, 2022. Contrast this spread with High Yield Corporate Bond spread levels, which rose significantly from 278 bps to 569 bps. (Source: Bloomberg, as of 6/30/2022)**

4 SHIFT FOCUS TO STRUCTURE AS FISCAL POLICY [SPENDING] GIVES WAY TO MONETARY POLICY	While fundamental credit selection remains essential to generating favorable relative returns, we believe the main performance driver shifts from the federal spending support of municipal credit to the monetary policy impact on structure. For example, municipal investors must contend with the longer durations of lower coupon bonds. Since 2017, 2% and 3% coupons have risen from 16.1% to 29.8% of tax-exempt issuance as defensive coupon structures were refunded. We see patient, active investors generating alpha by trading around periods of rising volatility exacerbated by wider ownership of lower coupons and potentially rising rates. In addition, municipal expertise is essential to understanding the nuanced aspects of municipal structure. For example, holders of 2% and 3% coupons should be prepared for the Market Discount Rule (i.e. "de minimis") impact on total return. In our view, investors modifying their strategy to incorporate structure decisions could discover new modes of potentially generating excess returns.	We favored more defensive structures early in the year. Following the market dislocation, our focus shifted to lower coupon bonds, which often traded at temporarily discounted prices. Being selective about structure, including coupon and call, will likely continue to drive alpha during the second half of the year.	**On Target:** - Structure mattered. Lower coupon bonds accordingly underperformed the broad national investment grade benchmark index, YTD. 2% and 3% coupon bonds returned -17.84% and -16.44%, respectively, compared to -9.28% for the total index. Meanwhile, 5% coupon bonds outperformed, returning -6.96%. (Source: ICE Data as of 6/30/2022) - 2% and 3% coupon bonds are typically issued with longer terms to maturity, usually 15 years and out. During 2021, only 1% of these bonds traded below their de minimis threshold, on average. In contrast, that average gradually increased from 1% at the start of 2022 to 10% in May, and finally 12% as of June. (Source: MSRB as of June 2022)
5 TAXABLE MUNICIPALS OUTPERFORM … AGAIN	In 2022, we believe taxable municipal bonds will extend ten years of inflation-adjusted outperformance versus most of the investment grade U.S. market. We expect growing investor demand for high quality, monopoly-like municipals drives this outperformance. Issuers' ability to raise taxes and fees on their essential services maintains adequate debt service coverage, stabilizes credit ratings and reduces bond price sensitivity to rising rates and higher inflation. As a result, the price correlation between taxable municipal bonds and other taxable market segments can decline. The investment grade taxable market, as measured by the Bloomberg Aggregate Bond Index, is approximately 44% U.S. Treasury and Government related securities and investors traditionally tracking this benchmark are facing significant exposure to both interest rate and inflation risk. In 2022, expected higher taxable	Taxable municipal credit health was bolstered by the same general trends that aided their tax-exempt counterparts, such as increases in revenue collections and record-level rainy day fund balances. Taxable municipal yields increased during the first half of 2022, but we also observed that the yield differential between longer-term and shorter-term taxable municipal bonds narrowed. As a result, we were able to invest in shorter-term securities at compelling yield levels that were previously unobtainable without extending to longer maturities.	**Pending:** - The Bloomberg Taxable Municipal Index returned -14.0% YTD through June 30th, slightly outperforming the Bloomberg U.S. Corporate Bond Index, which returned -14.4%. Performance could further diverge in favor of taxable municipals as the U.S. economy slows. U.S corporate bonds are more sensitive to the economic cycle, driven in part by the fact that 50% of the U.S. Corporate Bond Index is rated BBB. In contrast, 73% of the Taxable Municipal Index is rated AA and higher. (Source: Bloomberg as of 6/30/2022)

municipal supply and trading volumes will likely attract new, non-traditional investors looking for low-correlation, high quality assets. As a result of these factors, we expect taxable municipals to reward investors who increase exposure to the asset class within their fixed income allocations.

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Active management is the use of a human element, such as a single manager, co-managers or a team of managers, to actively manage a fund's portfolio. Active management strategies typically have higher fees than passive management.

Alpha measures a fund's risk adjusted performance and is expressed as an annualized percentage.

The **de minimis rule** states that if a discount is less than 0.25% of the face value for each full year from the date of purchase to maturity, then it is too small (that is, de minimis) to be considered a market discount for tax purposes. Instead, the accretion should be treated as a capital gain.

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The following indices may be referred to in this document:

BLOOMBERG U.S. AGGREGATE BOND INDEX

The Bloomberg U.S. Aggregate Bond Index is a broad-based benchmark that measures the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, mortgage-backed securities (agency fixed-rate and hybrid adjustable-rate mortgage pass-throughs), asset-backed securities, and commercial mortgage-backed securities.

BLOOMBERG U.S. CORPORATE BOND INDEX

The Bloomberg U.S. Corporate Bond Index measures the performance of the long-dated, investment grade U.S. corporate bond market. Only bonds that have a maturity of more than ten years are included. Securities must be fixed rate, U.S. dollar denominated, taxable and rated investment grade as defined by the Index methodology.

BLOOMBERG MUNICIPAL BOND INDEX

A rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. To be included in the index, bonds must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. 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 date-date after December 31, 1990, and must be at least one year from their maturity date. Remarketed issues, taxable municipal bonds, bonds with floating rates, and derivatives, are excluded from the benchmark. The index has four main sectors: general obligation bonds, revenue bonds, insured bonds (including all insured bonds with a Aaa/AAA rating), and pre-refunded bonds. Most of the index has historical data to January 1980. In addition, sub-indices have been created based on maturity, state, sector, quality, and revenue source, with inception dates later than January 1980.

BLOOMBERG TAXABLE MUNICIPAL INDEX

The Bloomberg U.S. Taxable Municipal Bond Index is a rules-based, market-value-weighted index engineered for the long-term taxable bond market. To be included in the index, bonds must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies if all three rate the bond: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. 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 and must be at least one year from their maturity date. Remarketed issues (unless converted to fixed rate), bonds with floating rates, and derivatives, are excluded from the benchmark.