DIVING IN THE SHALLOW END: MUNICIPAL BOND ETF LIQUIDITY

MARCH 2025

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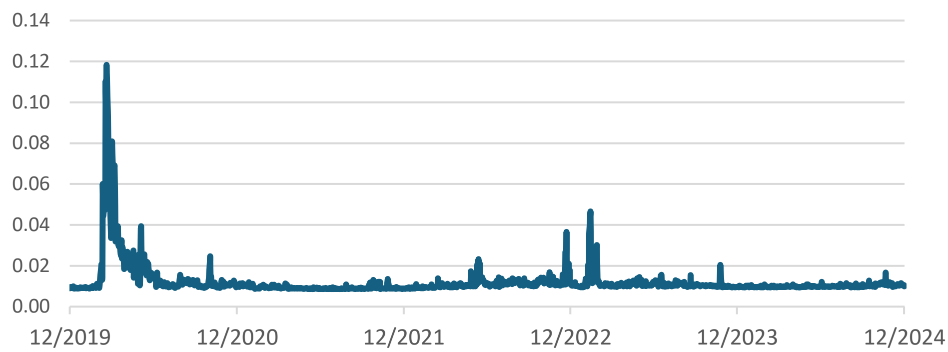
EXECUTIVE SUMMARY: MUNICIPAL BOND ETF CONSIDERATIONS

- We believe that ETF premiums and discounts are a more reliable indicator of liquidity than the bid/ask spread, especially during times of market stress.
- This premium or discount is highly correlated with the direction and magnitude of fund flows.
- ETF Authorized Participant buying patterns can create opportunities for SMA investors.

Exchange-Traded Funds, or ETFs, have arguably been one of the most important investment innovations in recent decades. They allow retail investors to combine the modest investment minimum and broad diversification benefits of mutual funds with the real time intra-day liquidity of stocks. Further, ETFs also offer tax efficiency, in part by not requiring a sale of securities (and the potential realization of capital gains) to meet other investors' withdrawals. Accordingly, **municipals have become an important subset of the ETF universe, with 112 such vehicles collectively totaling $141 billion in assets.**[1]

ETF Bid-Ask Spreads Are Typically Very Tight

iShares National Muni Bond ETF (MUB) in basis points



Source: Bloomberg, Appleton Partners, Inc.

Most municipal bond ETFs trade at relatively tight bid-ask spreads, often inside a basis point, despite municipal bonds often being somewhat less liquid than Investment Grade Corporates or US Treasuries. However, we don't think bid-ask spreads tell the whole story. Ultimately, these are liquid investment vehicles taking on exposure to an asset class less liquid than the vehicle itself. This can make a municipal bond ETF's liquidity at times something of an illusion, and the ways that ETFs behave under various market conditions is very significant for municipal investors to understand.

Fixed Income ETF Mechanics

Municipal bond ETFs strike a net asset value per share (NAV) at the end of each trading day much like mutual funds, but otherwise trade like stocks, with immediate liquidity during trading hours at a market clearing price (as opposed to once-daily mutual fund NAVs). To a degree, buy and sell orders can be netted by market makers, just like stocks, during times of equilibrium market demand. However, **to keep share price anchored to the underlying asset class when there is a mismatch between buyers and sellers for a particular fund, that fund's manager relies on an "Authorized Participant," or AP, to create or redeem shares.**

When there are more buyers than sellers, the AP will step in and purchase a fund-specified "basket" of the underlying municipal securities in which the fund invests and deliver them to the fund manager. In return, the AP receives an equivalent value of newly created fund shares they can then sell to incoming buyers. APs are profit-motivated; they purchase baskets when an ETF's market price per share rises sufficiently above NAV (the ETF is "trading at a premium") such that the new fund shares they create will be worth more than the cost of purchasing the underlying bonds they need to deliver. When redeeming shares, they do so when the market price has fallen enough below NAV ("trading at a discount") that the cost of the fund shares they need to deliver is sufficiently less than the intrinsic value of the bonds they will receive in return. If so, they can be confident they can sell these bonds at a profit. **This process keeps the market price in a range around NAV, as APs step in to arbitrage away any premium or discount to NAV as soon as it becomes large enough to be done profitably.**

Look Before You Leap

It is important to note that this process also makes it unlikely that the market price will ever perfectly align with the NAV. In the creation/redemption process outlined above, APs are exposed to market risk both while delivering and, especially, receiving bonds. In a thinly traded and supply-driven market like municipals where a specific bond may not have a pre-existing bid, finding a buyer may take time, increasing the risk borne by the AP. Effectively, the AP needs the market price to deviate enough above or below NAV to cover both transaction costs and assumption of market risk, before they have an incentive to step in and arbitrage away the

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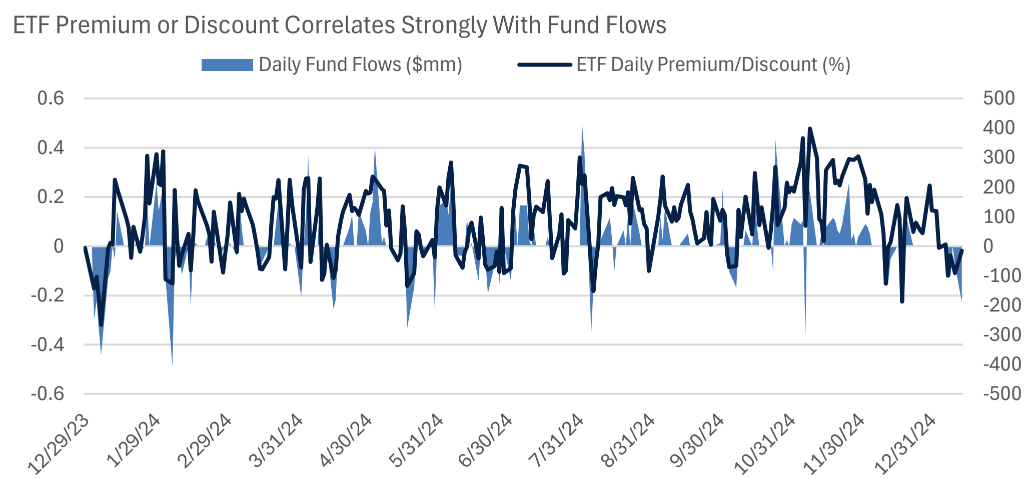
premium or discount to NAV. **Therefore, when looking at ETF liquidity, especially for less liquid asset classes such as municipals, it makes sense to also consider how a particular fund's premium or discount to NAV behaves over time,** rather than simply looking at that fund's bid-ask spread.

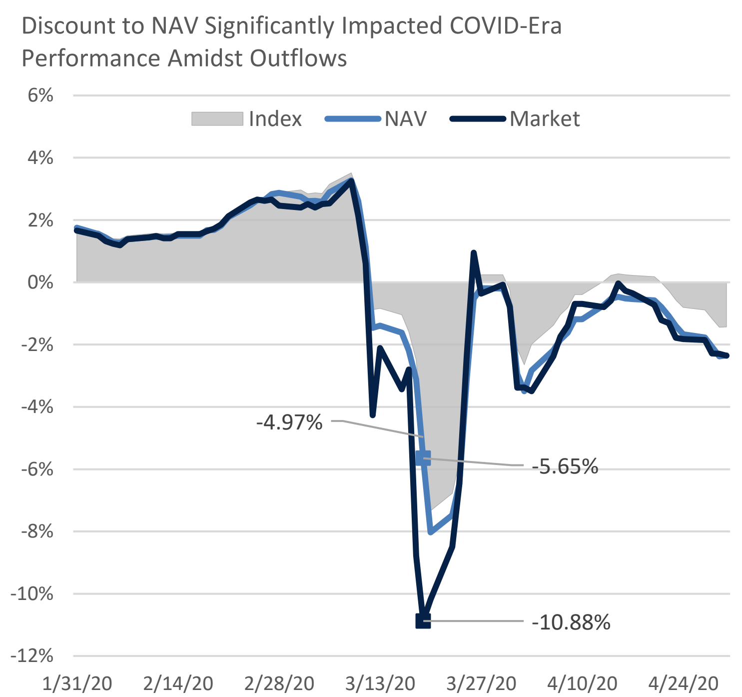
Thinking about the order of operations from the perspective of an AP, one might expect a strong relationship between the direction of flows into a particular fund and that fund's premium or discount. Most municipal ETFs have generally enjoyed persistent inflows as this vehicle has steadily gained market share from mutual funds, and sure enough, municipal ETF shares have usually traded at a premium to their NAV. During periods where a particular fund experiences large outflows, however, this premium has often flipped to a discount, sometimes quite aggressively, as a means of offering APs sufficient economic incentive to take bonds in-kind that they will then have to sell.

Looking at the largest municipal bond ETF, iShares National Muni Bond (MUB)[2], during 2024, the size and direction of daily fund flows correlated quite strongly (0.6963) with the size of that day's premium or discount. This yields an R-squared, or "coefficient of determination," of 49%. Put another way, nearly half of the daily variation in the ETF premium or discount can be explained by whether investors were net buyers or sellers on a given day. **This suggests that the liquidity pool for a municipal ETF may be far less deep than the bid-ask spread alone implies.**



Source: Bloomberg, Appleton Partners, Inc.

This can be an important factor to consider during times of market stress. **When underlying market liquidity declines, municipal ETF bid-ask spreads may remain tight, yet the discount to NAV can move significantly as the pool of interested buyers dries up.** March 2020, a time in which COVID-19 was ravaging the fixed income markets, offers a vivid example. During that period, MUB's bid-ask spread widened only modestly, from typical levels of roughly 1bp to just under 12bps. However, MUB's price discount to NAV (which itself was stressed by market events) blew out during this period from a five-year average premium of about 13.5bps to a discount of a whopping 576bps at its deepest point on March 18th. By March 19th, the date of the lowest closing market price for MUB, the discount had moderated a bit but still stood at 547bps. The NAV had underperformed the ETF's index year-to-date by close to 70bps (-5.65% vs. -4.97%), yet the market price, the one investors could transact on, fell much further, dropping -10.88%, more than twice the index's loss and close to double the NAV decline. **While March of 2020 represents a volatility outlier, it also provides a vivid example of how a very liquid vehicle offering exposure to a more thinly traded asset class can, during times of market turmoil, react to the underlying liquidity of its asset class in ways that may have a significant price impact on the fund.**



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Implications For Municipal Investors

None of this is to say that ETFs are fatally flawed or don't have a valuable place in an investor's toolkit. Their many positive attributes have enabled ETFs to gain prominence in the investment landscape, and we would be remiss not to note it was easier to sell a municipal ETF in March 2020 than it would have been to liquidate a portfolio of individual bonds. However, looking at ETF premiums and discounts in the context of transaction costs raises some useful considerations relative to municipal investments.

First, we believe that a separately managed account (SMA) can offer better execution under most market conditions for investors who have the means to own their own bonds. While it's a slower process, our experience has been that during portfolio construction an experienced trading desk may be able to deliver price improvement over the market, and that primary market offerings – which have relatively long order periods compared to a bid wanted offering, and would therefore expose an AP to market risk for much longer than the secondary market when creating ETF shares – in our experience often offer better value than secondary market bid wanted offerings. In fact, **the combination of persistent ETF inflows and APs having to primarily purchase secondary market offerings when creating shares is a plausible explanation for the primary market offerings' persistent cheapness to the secondary,** which we believes creates opportunity in the primary market for SMA managers.

When selling, a typical prevailing ETF premium is an achievable bogey to exceed. ETFs allow for faster investment, and their intraday liquidity is a great asset for more tactical investment strategies, although momentum strategies aligned with the direction of supply and demand should consider premium or discounts in vehicle selection.

For long-term investors, if a separately managed account is not an option, then trying to invest and rebalance ETFs counter-cyclically is a sensible approach. Buying during periods when a fund is experiencing net outflows and selling during periods when it is experiencing net inflows may allow investors to capture additional alpha from the creation and redemption process. Should the bottom fall out of the market, the immediate liquidity available through ETFs can be a double-edged sword. One has an ability to transact immediately, but it may come at a price that reflects a significant discount to the underlying value of the fund assets. Even during stable markets with normal inflows, the share creation mechanism requires investors to be comfortable paying a premium to the intrinsic value of the exposure in which they're looking to invest due to the AP's profit motivation. **Convenience can come at a cost, and understanding the ways an ETF's share creation and redemption process can allow market pricing to deviate from NAV may help avoid surprises when jumping into the ETF pool.**

1. UBS, 2/11/25
2. $40.5 billion AUM as of 1/29/25

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