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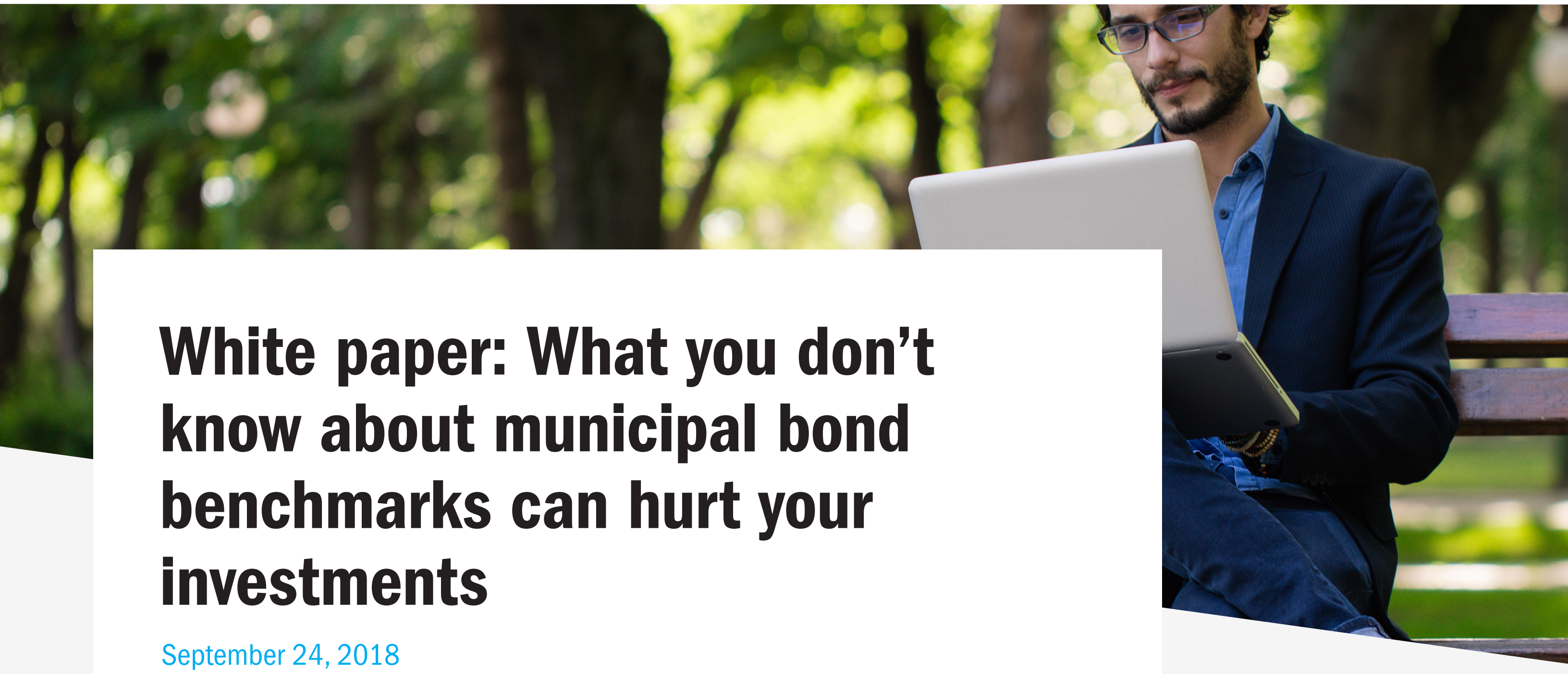

White paper: What you don't know about municipal bond benchmarks can hurt your investments

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The municipal bond market is difficult to define and track broadly — and passive investors could be missing out.

Catherine Stienstra
Head of Municipal Investments

Passively managed vehicles continue to grow in popularity. But when it comes to the municipal bond market, there are multiple challenges with traditional benchmarks. We believe investors should consider a more strategic approach to the intricacies of the muni bond market.

Indices exist in large part to measure the value of a given market. While stock market indices offer widely accepted benchmarks, the municipal bond market is difficult to define and track broadly.

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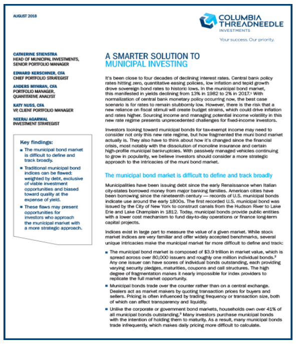

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Your success. Our priority.

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Key findings:
- The municipal bond market is difficult to define and track broadly.
- Traditional municipal bond indices can be flawed: weighted by debt, exclusive of viable investment opportunities and biased toward quality at the expense of yield.
- These flaws may present opportunities for investors who approach the municipal market with a more strategic approach.

A SMARTER SOLUTION TO MUNICIPAL INVESTING

It's been close to four decades of declining interest rates. Central bank policy rates hitting zero, quantitative easing policies, low inflation and tepid growth drove sovereign bond rates to historic lows. In the municipal bond market, this manifested in yields declining from 13% in 1982 to 2% in 2017.[1] With normalization of central bank monetary policy occurring now, the best case scenario is for rates to remain stubbornly low. However, there is the risk that a new reliance on fiscal stimuli will create budget strains, which could drive inflation and rates higher. Sourcing income and managing potential income volatility in this new rate regime presents unprecedented challenges for fixed-income investors.

Investors looking toward municipal bonds for tax-exempt income may need to consider not only this new rate regime, but how fragmented the muni bond market actually is. They also have to think about how it's changed since the financial crisis, most notably with the dissolution of monoline insurance and certain high-profile municipal bankruptcies. With passively managed vehicles continuing to grow in popularity, we believe investors should consider a more strategic approach to the intricacies of the muni bond market.

The municipal bond market is difficult to define and track broadly

Municipalities have been issuing debt since the early Renaissance when Italian city-states borrowed money from major banking families. American cities have been borrowing since the nineteenth century — records of U.S. municipal bonds indicate use around the early 1800s. The first recorded U.S. municipal bond was issued by the City of New York to construct canals from the Hudson River to Lake Erie and Lake Champlain in 1812. Today, municipal bonds provide public entities with a lower cost mechanism to fund day-to-day operations or finance long-term capital projects.

Indices exist in large part to measure the value of a given market. While stock market indices are very familiar and offer widely accepted benchmarks, several unique intricacies make the municipal market far more difficult to define and track:

- The municipal bond market is composed of $3.9 trillion in market value, which is spread across over 80,000 issuers and roughly one million individual bonds.[2] Any one issuer can have scores of individual bonds outstanding, each providing varying security pledges, maturities, coupons and call structures. The high degree of fragmentation makes it nearly impossible for index providers to replicate the full market opportunity.
- Municipal bonds trade over the counter rather than on a central exchange. Dealers act as market makers by quoting transaction prices for buyers and sellers. Pricing is often influenced by trading frequency or transaction size, both of which can affect transparency and liquidity.
- Unlike the corporate or government bond markets, households own over 41% of all municipal bonds outstanding.[3] Many investors purchase municipal bonds with the intention of holding them to maturity. As a result, many municipal bonds trade infrequently, which makes daily pricing more difficult to calculate.

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- Any one issuer can have scores of individual bonds outstanding, each providing varying security pledges, maturities, coupons and call structures.
- The high degree of fragmentation makes it nearly impossible for index providers to replicate the full market opportunity. In fact, popularly tracked municipal indices represent 20% or less of the total investable universe.[2]

Problem: Traditional indices are debt-weighted

Like their equity counterparts, most municipal bond indices are market-capitalization-weighted. From an equity perspective, this approach makes logical sense — size born from historical success can arguably be associated with value. However, the same does not apply to fixed-income, where the largest index exposures simply represent the most prevalent issuers — not the most profitable investment opportunities. The largest entities have the greatest representation in traditional municipal market indices regardless of their investment merits, which ultimately reduces income and total return potential.

Opportunity: Returns come from multiple sources

The municipal market's best sources of income and return are not necessarily driven by those entities with the highest propensity to issue debt. Instead, tax-exempt income and total return can be extracted from two primary risk factors: duration and credit — uncorrelated and capable of performing well in different stages of economic cycle.

By allocating across the maturity and quality spectrums, investors may broaden their opportunity set and introduce more chances for positive outcomes. On one hand, a basket of shorter duration, high-quality municipal securities can serve as a ballast during periods of heightened volatility. On the other, longer and lower quality bonds may offer a significant yield advantage that bolsters total return potential. Blending these exposures with a core allocation to bonds of intermediate maturity and quality may smooth the ride for investors as each component behaves differently across market environments.

Bottom line

Rather than simply accepting an imperfect benchmark portfolio, municipal bond investors should consider a strategic approach — informed by insights — to manage the complexities of the market.

[1] Source: Wall Street Journal, "Muni Bonds May Not Be the Reliable Bet They Once Were", January 7, 2018.

[2] Based on the market value of the following indices: Bloomberg Barclays Municipal Managed Money Index, Bloomberg Barclays AMT-Free Intermediate Continuous Municipal Index, S&P National AMT-Free Municipal Bond Index and the ICE BofAML. National Long-Term Core Plus Municipal Securities Index. Source: Bloomberg, as of 05/08/18. It is not possible to invest in an index.

Bloomberg Barclays Municipal Managed Money Index is an unmanaged index that is rules-based, market-value-weighted engineered for the tax-exempt bond market. All bonds in the National Municipal Bond Index must be rated Aa3/AA- or higher by at least two of the following statistical ratings agencies: Moody's, S&P and Fitch. **Bloomberg Barclays AMT-Free Intermediate Continuous Municipal Index** is intended to track the overall performance of the U.S. dollar-denominated intermediate-term tax-exempt bond market. **S&P National AMT-Free Municipal Bond Index** is a broad, comprehensive, market-value-weighted index designed to measure the performance of the investment-grade tax-exempt US municipal bond market. Bonds issued by US territories, including Puerto Rico, are excluded from this index. **The ICE BofAML National Long-Term Core Plus Municipal Securities Index** is composed of US dollar-denominated, investment-grade, tax-exempt debt publicly issued by US states and territories, or their political subdivisions, in the US domestic market with a term of at least 15 years remaining to final maturity. Indices shown are unmanaged and do not reflect the impact of fees. **It is not possible to invest directly in an index.**

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