

UNDERSTANDING BOND INDEXES

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from NUVEEN INVESTMENTS

HOW DO STOCK AND BOND INDEXES DIFFER?

Creating, computing and maintaining a bond index is significantly more difficult than constructing a stock index.

The universe of municipal issuers is significantly larger and more diverse than the universe of stocks. And, each issue contains varying maturities, coupons and other differentiating features.

- The bond universe constantly changes as issues mature and embedded call features are activated.
- Bond yields are more volatile because the time until a bond matures changes daily. This makes it difficult to estimate the duration and convexity of bonds outstanding.
- Bond pricing is inconsistent because, unlike the equity market, the bond market lacks a consolidated quotation system. Bonds are priced by a number of different agencies and prices may differ by agency. Additionally, as bonds trade, the prices are affected by the bond's block size as well as market conditions.

WHAT IS THE NUVEEN ASSET MANAGEMENT (NAM) INTERMEDIATE-TERM BENCHMARK?

NAM compares its intermediate-term style performance to the Barclays Capital 7-Year Municipal Bond Index.¹ This index has the following characteristics:

- It is composed of 4,000 to 5,000 municipal bonds.
- The average modified duration is approximately 5.41 years.
- The average maturity is approximately 7 years.
- It includes zero coupon bonds and bonds subject to the Alternative Minimum Tax.

Within the index, individual bonds must meet the following criteria:

- A maturity of 6 to 8 years.
- Issued after January 1, 1991.
- Minimum credit rating of Baa3/BBB-.
- Issued as part of a deal of at least \$75 million.
- Outstanding par value of at least \$7 million.

The bonds included are constantly changing. As issues move away from the 6-year minimum maturity, they are dropped from the index, and as a bond enters the 8-year maturity level it is added to the index.

WHAT SHOULD I CONSIDER WHEN COMPARING NAM TO THE BENCHMARK?

- An individual cannot replicate the benchmark. There are far too many issues in the index, each with varying degrees of liquidity/availability. The typical number of holdings in the NAM portfolio is 8-15.²
- The target duration of a NAM portfolio (approximately 5-6.5 years for the intermediate-term style) can be slightly longer or shorter than that of the index.

What is an Index?

An index is a group of securities - either stocks or bonds - used as a benchmark to measure financial or economic performance. While a benchmark is an excellent way to measure a portfolio manager's performance, it is important to understand the limitations of comparing and contrasting individual portfolios to indexes, as well as the differences between stock and bond indexes.

NAM's municipal fixed income accounts may significantly differ from a benchmark due to number of holdings and because they include selected securities whose inclusion and weightings are based on discretion. All indices are unmanaged and unavailable for direct investment. It is important to remember that there are risks inherent in any investment, including possible loss of principal, and there is no assurance that any asset class or index will provide positive performance over time. Additional disclosures are provided in the Endnotes.

- The NAM intermediate-term style portfolio typically holds bonds in the 1- to 15-year maturity range. That is much broader than the index's 6- to 8-year range. The portfolio's average maturity target is 7-10 years.
- A NAM client's portfolio may be state-preference or state-specific, while the benchmark is nationally diversified.³
- NAM's performance is affected by transaction fees and pricing inefficiencies occurring in the municipal market, as well as investment management fees. The benchmark performance does not consider these factors.
- A NAM portfolio may hold up to 2.5 percent in cash, while the benchmark is fully invested.

ENDNOTES

1 The Barclays Capital 7-Year Municipal Bond Index is produced by Barclays Capital Inc. to measure the returns of general obligation bonds, revenue bonds, insured bonds and pre-refunded bonds, all in the maturity range of 6 to 8 years; the inclusion of each security is determined by a rule-based system, incorporating factors such as maturity, liquidity and quality; the current quality criteria are that bonds must be rated investment-grade (Baa3/BB- or higher) by at least two of the three agencies of Moody's, S&P and Fitch; the weighting of each security is based on its relative market value.

2 Concentration in a small number of holdings may increase risk exposure. A \$250,000 account in this strategy typically holds 8-15 individual bonds under normal circumstances. The number of bonds may vary and may be greater or fewer based on factors such as account size, client transactions and market conditions. Accordingly, one or more individual bonds may each represent greater than 10% of the account. A decline in value of any one or more individual bonds may have a material impact on the account value.

3 State-specific and state-preference portfolios are offered in California, Florida, Michigan, New Jersey, New York, Ohio and Pennsylvania. State-specific portfolios hold only bonds from the client's state of residence or U.S. territories (Puerto Rico, U.S. Virgin Islands and Guam). State-preference portfolios hold bonds from the client's state of residence or U.S. territories, which together will account for a minimum of 50% of the portfolio. Out-of-state bonds may total up to 50% of the portfolio. NAM seeks to purchase out-of-state bonds at an after-state-tax yield that is equivalent to or greater than a comparable in-state bond. Prospective clients and their financial advisors should consider that a state-preference portfolio may provide a higher yield, better diversification and a shorter invest-up period than a state-specific portfolio. State-preference only portfolios are offered in Arizona, Connecticut, Colorado, Georgia, Maryland, Massachusetts, North Carolina, Tennessee and Virginia. Utah's reciprocity provision maintains that it will not tax income from bonds issued by states that do not tax income on Utah bonds. NAM can manage a portfolio for a Utah resident that considers this reciprocity provision, but it is not a state preference portfolio.

This report should not be relied upon as investment advice or recommendations. Index information has been provided through Barclays Capital Live. The statements contained herein are the opinions of Nuveen Asset Management and are subject to change without notice. All indices are unmanaged and unavailable for direct investment. It is important to remember that there are risks inherent in any investment and there is no assurance that any asset class or index will provide positive performance over time. An investment in any municipal portfolio should be made with an understanding of the risks involved in municipal bonds, such as interest rate risk, credit risk, and market risk, including the possible loss of principal. The value of the portfolio will fluctuate based on the value of the underlying securities. Clients should contact their tax advisors regarding the suitability of tax-exempt investments in their portfolios. If sold prior to maturity, municipal securities are subject to gain/losses based on the level of interest rates, market conditions and the credit quality of the issuer. Income may be subject to the alternative minimum tax (AMT) and/or state and local taxes, based on state of residence. This report should not be regarded by recipients as a substitute for the exercise of their own judgment. The analysis contained herein is based on numerous assumptions. Certain information was obtained from third party sources, which we believe to be reliable but not guaranteed. It is important when making an investment decision to utilize other information sources and the advice of an investment advisor. Since no one manager is suitable for all types of investors, it is important to review investment objectives, risk tolerance, tax liability, and liquidity needs before choosing a suitable investment style or manager. Nuveen Asset Management is a registered investment advisor and subsidiary of Nuveen Investments, Inc.

GLOSSARY (investopedia.com)

Alternative minimum tax (AMT) is a tax calculation that adds certain tax preference items back into adjusted gross income. If AMT is higher than the regular tax liability for the year, the regular tax and the amount by which the AMT exceeds the regular tax are paid.

A **basis point** is a unit for measuring a bond's yield that is equal to 1/100th of 1% of yield. 100 basis points = 1%.

A **call** provision allows the original bond issuer to repurchase and retire a bond within a certain time window at a specific price. Callable bonds will pay a higher yield than comparable non-callable bonds.

Convexity is a measure of the curvature in the relationship between bond prices and bond yields that demonstrates how the duration of a bond changes as the interest rate changes. Convexity is used as a risk-management tool, and helps to measure and manage the amount of market risk to which a portfolio of bonds is exposed.

Computed in years, **duration** is the measure of the price sensitivity of a fixed-income security to an interest rate change of 100 basis points. Calculation is based on the weighted average of the present values for all cash flows.

Modified duration follows the concept that interest rates and bond prices move in opposite directions. This formula is used to determine the effect that a 100-basis-point (1%) change in interest rates will have on the price of a bond.

Yield is the income return on an investment. This refers to the interest or dividends received from a security and is usually expressed annually as a percentage based on the investment's cost, its current market value or its face value.

Zero-coupon bond is a debt security that doesn't pay interest (a coupon) but is traded at a deep discount, rendering profit at maturity when the bond is redeemed for its full face value.