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INCOME INVESTING

Fixed income investing: the active advantage

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4Q18

Highlights

Active managers:

- Have produced stronger returns with less risk than passive strategies over the last five years
- Can expand the investment universe to include higher yielding sectors with potentially less interest rate sensitivity
- May reduce credit risk through fundamental and quantitative research; sector and security selection; and tactical trading
- Manage interest rate sensitivity through active duration and yield curve positioning

Active fixed income strategies may offer investors numerous advantages over passive index strategies, providing enhanced risk-adjusted performance potential.

As the U.S. Federal Reserve (Fed) continues to raise interest rates and unwind its balance sheet, investors are re-evaluating their fixed income investment allocations. They still seek returns in this relatively lower yield, low-inflation environment, yet many have made a move to passive investing. Billions of dollars have flowed into income index strategies in recent years.

We believe active management for fixed income can better help investors realize their goals. The advantages become all the more significant as we consider the flawed nature of issuance-based fixed income indexes and the long-standing segmentation of indexed markets.

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Active management can be used in any environment

We believe actively managed bond strategies can help manage portfolio risk while enhancing returns. This is especially true in today's environment of rising interest rates. Active sector rotation, bottom-up security selection and interest rate (duration) management can all create opportunities for investors to add value that are simply not available in passively managed strategies.

Investors may think they can achieve these objectives with passive investing, but they may be missing the mark. It might be logical to assume that index mutual funds or index exchange-traded funds (ETFs) would match the risk and return characteristics of their benchmarks, but on average these products have exhibited lower returns and higher volatility as shown in Exhibit 1. On the other hand, actively managed mutual funds have historically outperformed their benchmarks while maintaining a similar risk profile, on average.

The return profile of active versus passive is even more pronounced when considering only those mutual funds with fees in the bottom half of the universe—which are the lower-cost share classes many investors own today.

Why is it difficult for index funds to keep up?

Fixed income index strategies may often have difficulty matching their benchmarks' performance due to the complexities of bond indexes. The global fixed income market is nearly 50% larger than the global stock market.[1] The most common stock market index, the S&P 500® Index, contains approximately 500 liquid stocks. In contrast, the most widely quoted bond index, the Bloomberg Barclays U.S. Aggregate Index (Aggregate Index), contains a staggering 10,000+ securities.[2]

It is impossible to buy all of those bonds, so an index manager must use statistical analysis and sampling in an attempt to replicate the characteristics and performance of the benchmark using fewer securities. And the gross return must outperform the benchmark to cover the management fees.

Exhibit 1: Actively managed bond funds have offered better risk-adjusted returns
5 years ending 30 Jun 2018

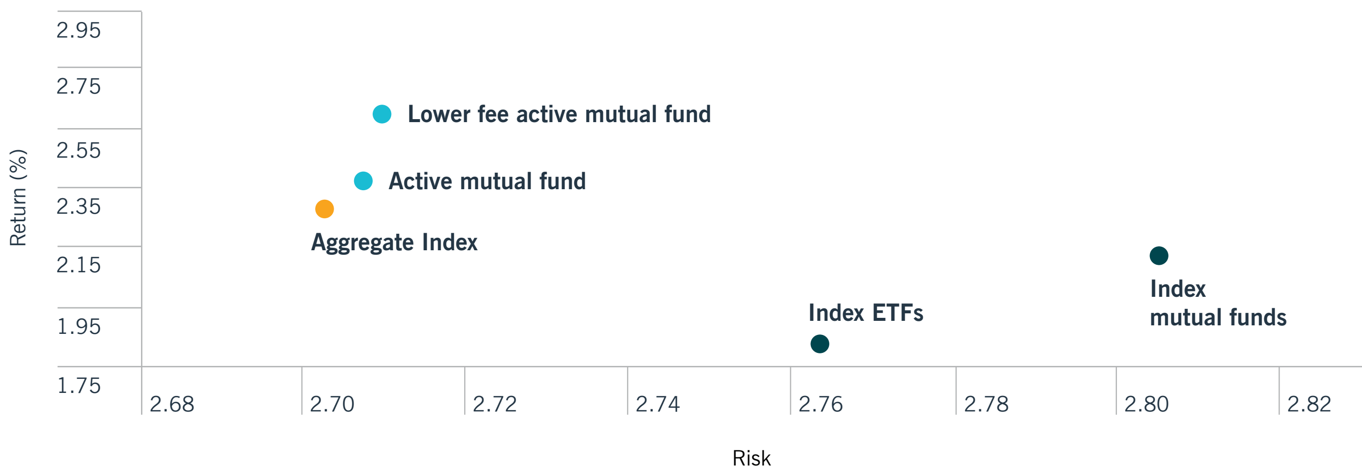


Chart does not represent the past performance of any Nuveen Fund. For fund performance visit nuveen.com.

Data source: Morningstar Direct, 30 June 2018. **Past performance is no guarantee of future results.** Risk is measured by 5-year standard deviation and return by 5-year total return. The **Aggregate Index** is represented by the Bloomberg Barclays U.S. Aggregate Index. **Active mutual funds** include all share classes of non-index open-end funds in the Morningstar Intermediate Term Bond Fund category with a primary prospectus benchmark of the Bloomberg Barclays U.S. Aggregate Index. **Lower Fee Active Mutual Funds** include the funds in the Active Mutual Fund category with fees lower than the average fund. **Index mutual funds** are open-end funds benchmarked to the Bloomberg Barclays U.S. Aggregate Index. **Index ETFs** are index ETFs benchmarked to the Bloomberg Barclays U.S. Aggregate Index.

How can active managers add value?

The most commonly used benchmark, the Aggregate Index, suffers from many drawbacks that provide active managers with more opportunities to generate excess returns and manage risk. These shortfalls include limited sector exposure, increasing credit risk due to market value weighting and duration that fluctuates with issuance. Active managers may add value to fixed income portfolios by taking advantage of these limitations. Let's look at each in turn:

Expanding the investment universe

By their very nature, bond indexes are exclusionary, meaning they limit themselves in terms of the opportunity set. For example, the Aggregate Index contains thousands of holdings with a market value of more than $20 trillion.[1] But, as shown in Exhibit 2, it essentially excludes non-dollar denominated bonds (non-USD), emerging markets debt, global high yield corporate bonds and senior loans.

> The Aggregate Index has drawbacks that allow active managers to potentially generate excess returns and manage risk.

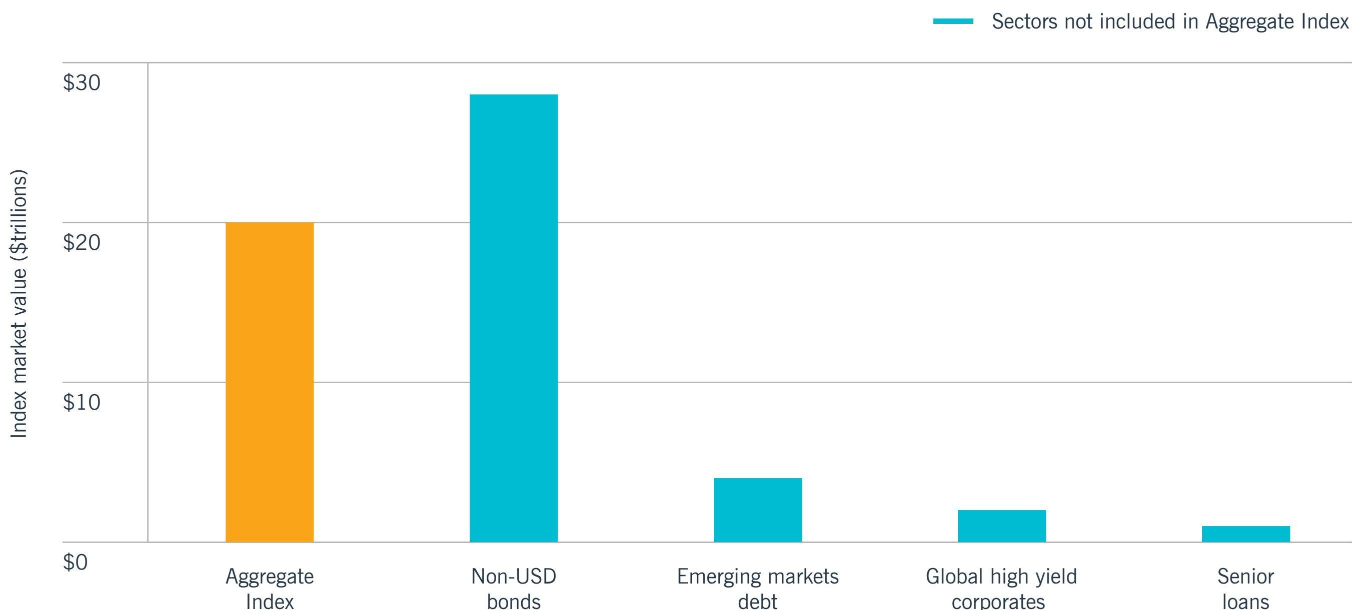
The index also has minimal exposure to select securitized sectors, such as asset-backed and commercial mortgage-backed securities and non-agency residential mortgages.

Thus, the Aggregate Index overlooks trillions of dollars' worth of bond issues.

In contrast, active managers have the ability to strategically allocate away from potentially lower yielding government bonds. They can often supplement index-eligible bonds with off-benchmark investments that may offer higher yield, greater diversification and less sensitivity to rate increases, as shown in Exhibit 3.

Active managers may also have flexibility to add non-USD bonds to improve return potential and

Exhibit 2: The Aggregate Index misses out on many sectors



Data sources: Bloomberg, L.P., JPMorgan, Credit Suisse, 30 Jun 2018. **Past performance is no guarantee of future results.** Chart shows market value of various market indexes only and does not include the entire universe of outstanding securities. Certain securities may be represented in more than one index. **Representative indexes: Aggregate Index:** Bloomberg Barclays U.S. Aggregate Index; **Non-USD bonds:** Bloomberg Barclays Global Aggregate ex USD Index; **Emerging markets debt:** JPMorgan Emerging Markets Bond Index Global, JPMorgan Corporate Emerging Markets Bond Index and JPMorgan Government Bond Index Emerging Markets; **Global high yield corporates:** Bloomberg Barclays Global High Yield Index; **Senior loans:** Credit Suisse Leveraged Loan Index. Indexes are unmanaged and unavailable for direct investment.

Exhibit 3: Off-benchmark sectors have offered potential for higher yield, greater diversification and less interest rate sensitivity

Data sources: Bloomberg, L.P., JPMorgan, Credit Suisse, 30 Sep 2018. **Past performance is no guarantee of future results. Representative indexes: Aggregate Index**: Bloomberg Barclays U.S. Aggregate Index; **Non-USD bonds:** Bloomberg Barclays Global Aggregate ex USD Index; **Emerging markets debt:** Bloomberg Barclays Emerging Markets USD Aggregate Index; **Global high yield corporates:** Bloomberg Barclays Global High Yield Index; **Senior loans:** Credit Suisse Leveraged Loan Index. Indexes are unmanaged and unavailable for direct investment.

increase diversification, as global interest rates follow different paths. These securities are subject to additional risks, including political risk and exchange rate volatility. Active managers carefully consider these risks when choosing how and if to make non-USD allocations.

Enhancing risk-adjusted returns

In fixed income indexes, securities are weighted by the market value of the outstanding debt, so the most indebted issuers make up more of the index. That means passive investors are, by the nature of the index, investing in issuers that have the most debt. To be sure, some of the world's most successful institutions (including the U.S. government) carry large debt loads. But passive investing may increase exposure to issuers with higher leverage, declining credit quality or, in the case of the U.S. government, substantial interest rate risk. Active managers, using rigorous credit research processes, can focus on the most compelling opportunities, rather than those companies or governments that issue the most debt.

Managing downside risk is critical. Portfolio returns can be hurt more by a bond not repaying its principal than they are helped by a bond repaying principal plus interest. Using in-depth research, active managers can screen issuers who they believe may not repay their debt, or may experience financial hardship that causes their bonds to decline in price before maturity.

Actively managing interest rate risk

Not only is the typical bond index limited in its sector composition, but the sector weights may also change over time. This makes it important for investors to know what they own, as the risk factors (sector, duration, default and prepayment) are not constant, even for an index strategy.

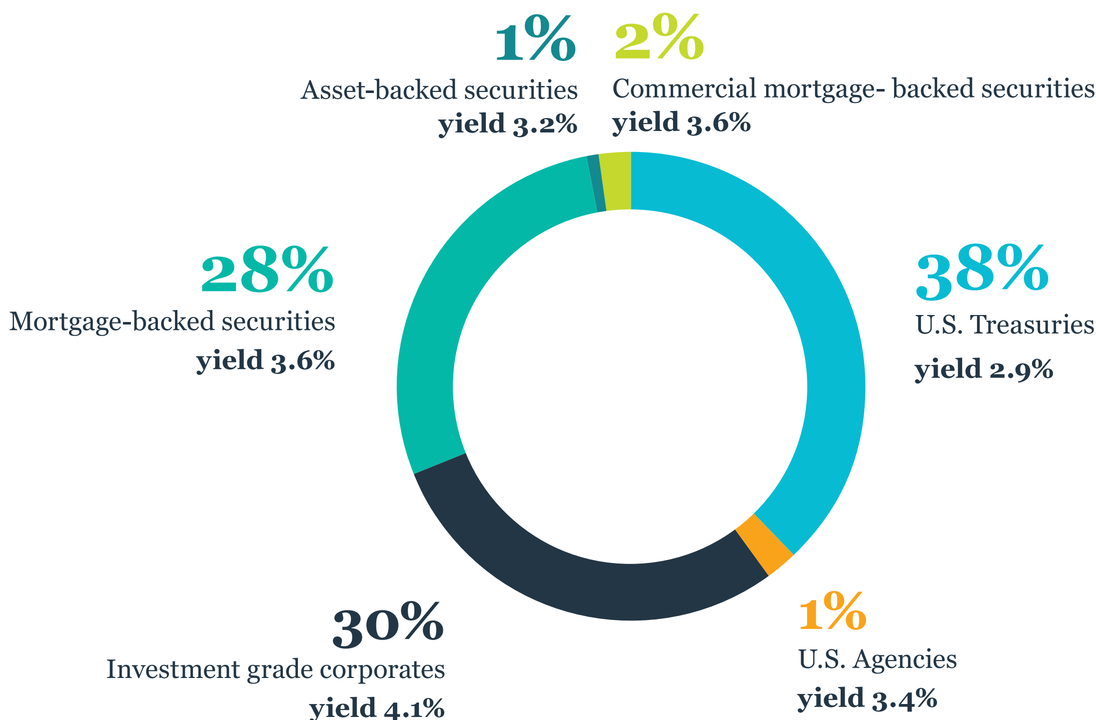
The U.S. Treasury issued more debt in part to finance growing deficits following the financial crisis, and as a result, Treasury exposure in the Aggregate Index increased massively from 25% to 38% from 31 Dec 2008 to 30 Jun 2018.[3] Exhibit 4 shows the current Aggregate Index breakdown.

> Investors should know what they own, as the risk factors are not constant, even for an index fund.

Major bond market participants can often have primary interests outside of maximizing income and return. Central banks focus on controlling growth and inflation, while financial institutions often manage against book yield or regulatory constraints. These entities make up more than half of the participants in the bond market.

The index's duration has also increased over time, as shown in Exhibit 5. This increase is due to the higher weighting of Treasuries, along with the increased issuance of long-term corporate debt. Longer duration means the bonds tend to be more sensitive to rising interest rates. And investors in passive fixed income strategies are, in essence, forced to accept these risks. This provides another opportunity for active managers to add value since they can reduce portfolio sensitivity to changing interest rates in two ways:

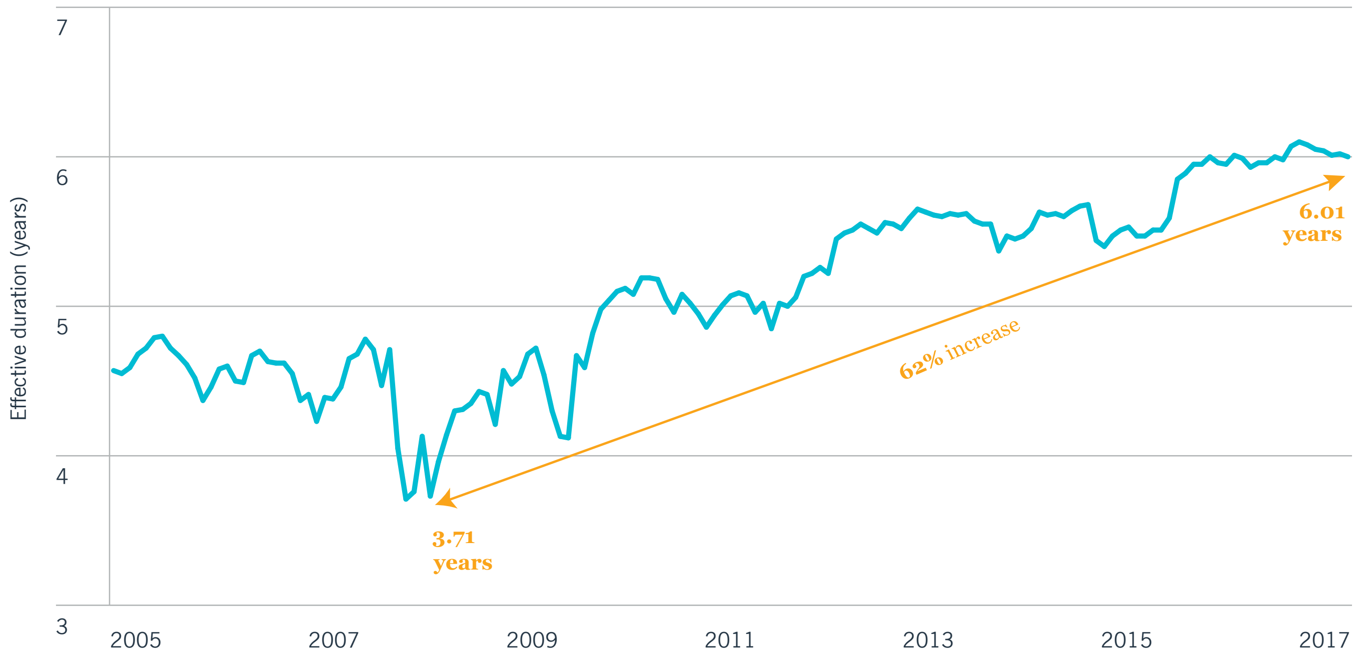
Exhibit 4: The Aggregate Index has a high concentration of lower-yielding bonds
Sector composition of the Aggregate Index



Data source: Bloomberg, L.P., 30 Sep 2018. Yield represents yield-to-worst.

Exhibit 5: The Aggregate Index presents increasing downside risk

Aggregate Index duration



Data source: Barclays Live, Bloomberg, L.P., 29 Jun 2018. **Duration** is expressed in years and measures the sensitivity of the price (value of the principal) of a fixed income investment to a change in interest rates.

1) Manage overall portfolio duration. As rates rise, a portfolio with a shorter duration will generally experience a smaller price decline than one with a longer duration. Portfolio managers can actively lengthen or shorten duration as rates rise and fall throughout the cycle. By their nature, passive strategies can't do this, and it would be extremely difficult for an individual investor to attempt this by purchasing single bonds.

2) Position portfolios along the yield curve. Interest rates do not typically rise uniformly along the yield curve. For example, if long-term rates rise more, the yield curve steepens. In this environment, an active manager has the flexibility to emphasize intermediate-term securities. This flexible approach avoids or de-emphasizes the long end of the curve where interest rates can have a greater impact on bond prices.

We believe actively managed fixed income strategies will continue to add value.

Active fixed income management offers opportunity

While indexing and ETF investing has increased in popularity over the past few years, we believe actively managed fixed income strategies will continue to add value. Actively managed portfolios have provided better returns with less risk than passive portfolios. Active managers can adjust their sector allocation, benefit from bottom- up security selection and position portfolios to minimize the impact from rising rates. Together, these levers make active fixed income an attractive management strategy.

For more information, please visit nuveen.com.

1 Bank of International Settlement.

2 Data source: Bloomberg, L.P. The Bloomberg Barclays U.S. Aggregate Index contained 9,959 securities with a market capitalization of $20.135 trillion as of 30 Jun 2018.

3 Barclays Live, Bloomberg, 29 Jun 2018.

Glossary

Bloomberg Barclays Emerging Markets USD Aggregate Index includes USD-denominated debt from emerging markets around the world.

Bloomberg Barclays Global Aggregate ex U.S. Index measures the performance of global bonds excluding the U.S. It includes government, securitized and corporate sectors.

Bloomberg Barclays U.S. Aggregate Index represents securities that are SEC registered, taxable and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities and asset-backed securities.

Bloomberg Barclays U.S. Commercial Mortgage-Backed Securities Index measures the performance of investment-grade commercial mortgage-backed securities, which are classes of securities that represent interests in pools of commercial mortgages.

Bloomberg Barclays U.S. High Yield 2% Issuer Capped Index tracks the performance of U.S. noninvestment-grade bonds and limits each issue to 2% of the index.

Bloomberg Barclays U.S. Treasury Index includes public obligations of the U.S. Treasury. Treasury bills are excluded by the maturity constraint but are part of a separate Short Treasury Index. In addition, certain special issues, such as state and local government series bonds (SLGs), as well as U.S. Treasury TIPS, are excluded. STRIPS are excluded from the index because their inclusion would result in double-counting.

Bloomberg Barclays U.S. Treasury Bellwether 10-Year Index is a universe of Treasury bonds, and used as a benchmark against the market for long-term maturity fixed-income securities. The index assumes reinvestment of all distributions and interest payments.

Bloomberg Barclays U.S. Corporate Investment Grade Index measures the market of USD-denominated, fixed-rate, investment grade taxable corporate bonds.

Bloomberg Barclays U.S. Mortgage-Backed Securities Index covers agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARM) issued by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

Credit Suisse Leveraged Loan Index is designed to mirror the investable universe of the U.S. dollar-denominated leveraged loan market. Loans are added to the index if they qualify according to the following criteria: The highest Moody's/S&P ratings are Ba1/BBB+, only funded term loans are included, and the tenor must be at least one year.

Duration measures how long it takes, in years, for an investor to be repaid a bond's price by total cash flows. Generally, for every 1% change in interest rates, a bond's price will change approximately 1% in the opposite direction for every year of duration.

JPMorgan Corporate Emerging Markets Bond Index measures the performance of corporate bonds issued in emerging markets.

JPMorgan Emerging Markets Bond Index Global tracks total returns for traded external debt instruments in the emerging markets

JPMorgan Government Bond Index Emerging Markets measures the performance of government bonds issued in emerging markets.

S&P 500 Index is a capitalization-weighted index of 500 stocks designed to measure the performance of the broad domestic economy.

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A word on risk

Investing involves risk; principal loss is possible. Debt or fixed income securities are subject to market risk, credit risk, interest rate risk, call risk, derivatives risk, dollar roll transaction risk and income risk. As interest rates rise, bond prices fall. Below investment grade or high yield debt securities are subject to liquidity risk and heightened credit risk. The guarantee provided by the U.S. government to treasury inflation protected securities (TIPS) relates only to the prompt payment of principal and interest and does not remove the market risks of investing in the fund shares. Preferred securities are subordinated to bonds and other debt instruments in a company's capital structure and therefore are subject to greater credit risk. Foreign investments involve additional risks, including currency fluctuation, political and economic instability, lack of liquidity and differing legal and accounting standards.

Asset-backed and mortgage-backed securities are subject to additional risks such as prepayment risk, liquidity risk, default risk and adverse economic developments. This information represents the opinion of Nuveen Asset Management, LLC and is not intended to be a forecast of future events and this is no guarantee of any future result. It is not intended to provide specific advice and should not be considered investment advice of any kind. Information was obtained from third party sources which we believe to be reliable but are not guaranteed as to their accuracy or completeness.

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