MAY 2016

Behavioral Biases and Fixed-Income Investing

Introduction

Exploring the relationship between behavioral biases and fixed-income investing may help investors make smarter decisions. The growing evidence within the behavioral finance field of science helps explain why people sometimes make poor investment decisions and how opportunities for value fixed-income investors may be created.

While the majority of research presented on behavioral biases focuses on equity investing, these biases are also highly applicable to fixed-income investing.

Today, four themes characterize the bond-market environment:

1. implications of the Federal Reserve's rate hike and potential future increases
2. scarce market liquidity
3. heightened volatility amid rising risk aversion
4. the search for yield

The probability of interest rates rising further and the inherent difficulty in forecasting those rates create a higher risk environment for investors. While U.S. corporate bonds have historically performed well in rising interest-rate environments, they also pose risks in terms of liquidity and narrowing spreads. Given the uncertainty, we believe bond investors today need to re-evaluate key questions about risk and potential rewards, as well as goals for their fixed-income investments. *Are investors seeking safety, liquidity and/or growth?*

"More than 90% of the behavioral finance research I see relates to equities or asset classes other than fixed income," said Brian Bruce, Editor of *The Journal of Behavioral Finance* and member of the Brandes Institute Advisory Board. "But the same principles often apply to fixed income investing," he added.

Key Behavioral Finance Concepts

In his book *Thinking Fast and Slow*, Daniel Kahneman, psychologist and winner of the 2002 Nobel Memorial Prize in Economic Sciences, defined two "systems" the human brain uses to explain why people sometimes make poor decisions. He defines System 1 as the quick-thinking part of the brain that uses mental shortcuts—also known as heuristics—to make decisions. System 1 operates quickly and automatically and relies on assumptions and little thought. The more developed mode of thinking, System 2, is what we use to make more thoughtful decisions and engage in effortful, mental activity. System 2 involves making choices by carefully evaluating accessible information. Kahneman's research helps explain how reactive investment decisions based on emotion—which may stem from using System 1—can be detrimental.

Benjamin Graham, known as the father of value investing, explored similar concepts in the 1930s, devoting a significant portion of his seminal book, *Security Analysis*, to what he called "fixed-value investments." While Graham's work is commonly understood in terms of equity valuations, he also contributed significant insight into bond valuations. Graham believed the key to investment success—in both equity and bond markets—is having the temperament to keep emotions in check and remain focused on long-term results. "For indeed, the investor's chief problem—and even his worst enemy—is likely to be himself," Graham wrote in his book *The Intelligent Investor*.[1]

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[1]Graham, Benjamin. *The Intelligent Investor: A Book of Practical Counsel,* 4th rev. ed., New York: Harper & Row, 1973, p. xv.

Perceptions and Opportunities in Today's Bond-Market Environment

The financial press seems laden with warnings about liquidity woes and falling credit inventories among bond dealers. Amid the dire headlines, our natural tendency may be to react emotionally, using the System 1 part of our brain. While awareness of the market environment is important for any fixed-income analysis and decision making, System 1 tends to steer us clear of potential risks. System 2 is more likely to carefully consider circumstances and evaluate potential opportunities where others may see only risk.

To be fair, since the financial crisis of 2008, inventories of corporate bonds on primary dealer balance sheets have declined dramatically, while bond issuance has risen. During the credit crisis, banks held insufficient equity capital. The Dodd-Frank bill passed in 2010 required banks to raise their percentage of equity capital. To comply with the regulations, banks could sell more equity—and face shareholder reaction—and/or reduce the size of their balance sheets by decreasing the number of bonds they held. Dodd-Frank regulations also imposed a capital charge on bonds held below certain ratings and put limits on proprietary trading. These rules contributed to banks reducing their bond holdings and declining trading volume. And while trading volume has been flat, rising credit issuance means turnover also has declined sharply.

While this scenario may be troublesome, liquidity problems by nature could be avoided if investors continued to hold their bonds for the long term. However, if bond investors begin to sell, particularly if they are spurred by emotion, we believe there could be issues in the marketplace.

…in each of the 10 calendar years since 1978 when 10-year Treasury yields rose at least 100 basis points, annual total returns for corporate and high-yield bonds *outperformed* the aggregate bond index.

Consider the December 2015 fall of Third Avenue Management's Focused Credit bond fund, which was heavily weighted in high-risk bonds of distressed companies. Worried investors demanded payouts that far exceeded the fund's liquid assets. Third Avenue was forced to freeze the fund, halting redemptions and creating a liquidity problem for its investors.

"We may have a case of a structural mismatch in several credit-intensive funds between the promise of daily liquidity for investors—and that liquidity being collateralized by securities that actually can take days or weeks to sell," said Timothy Doyle, CFA, Portfolio Manager with Brandes Investment Partners.

Rising interest rates tend to occur in conjunction with an improving economy and could actually be a positive factor for corporations and their outstanding debt.

To illustrate another example of System 1 and System 2 thinking, let's look at the performance of U.S. corporate bonds in rising interest-rate environments. Exhibit 1 (on next page) shows that in each of the 10 calendar years since 1978 when 10-year Treasury yields rose at least 100 basis points, annual total returns for corporate and high-yield bonds *outperformed* the Barclays U.S. Aggregate Bond Index.

So while System 1 may assume that rising interest rates will trigger losses, System 2 may recognize that rising interest rates tend to occur in conjunction with an improving economy and could actually be a positive factor for corporations and their outstanding debt.

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Exhibit 1: Rising Rates Were Not Necessarily Bad for U.S. Corporate Bonds

Since 1978, Investment Grade and High Yield Corporates Outperformed the Aggregate Index During the Calendar Years in Which the U.S. Treasury Yield Rose 100 Basis Points or More

		Annual Total Returns (%)		
Year	10 yr UST Yield Rise (%)	Barclays U.S. Aggregate Bond	Investment Grade Corporate Bonds	High Yield Corporate Bonds*
2013	+1.27	-2.02	-1.53	7.44
2009	+1.63	5.93	18.56	58.21
1999	+1.79	-0.82	0.16	2.39
1994	+2.03	-2.92	-2.66	-1.03
1987	+1.64	2.76	3.93	4.99
1983	+1.41	8.37	10.66	n/a
1981	+1.55	6.26	8.99	n/a
1980	+2.10	2.71	5.34	n/a
1979	+1.18	1.92	3.35	n/a
1978	+1.37	1.40	1.64	n/a

The Barclays U.S. Aggregate Bond Index was created in 1986 with index history backfilled to 1976. Investment Grade Corporate Bonds represented by Barclays U.S. Investment Grade Corporate Bond Index. High Yield Corporate Bonds represented by Barclays U.S. High Yield Index. *Inception date 7/1/1983. Source: Bloomberg; Barclays, as of 12/31/15. Annual total returns measure the 1-year total returns during the year referenced. Past performance is not a guarantee of future results. One cannot invest directly in an index.

Value Investing Applied to Bonds

Awareness of market trends, detailed company research and credit analysis combined with a disciplined, unemotional approach may make it possible to identify value-priced bonds. As shown in Exhibit 2, there is a broad disparity in terms of price and yield among the more than 3,000 issues that make up the Bank of America Merrill Lynch Corporate Master BBB Rated Index. The northwest quadrant reflects what may be a "sweet spot" for bottom-up value investors—bonds with above-average yields and below-average prices.

Exhibit 2: Bonds in the "Sweet Spot" May Offer Mispriced Opportunities for Value Bond Pickers

Source: Bank of America Merrill Lynch, as of 12/31/15. Past performance is not a guarantee of future results. One cannot invest directly in an index.

In addition to bonds in this sweet spot, there may be opportunities among what Mr. Doyle calls "crossover bonds." These issues are downgraded and cross over from the investment-grade into the non-investment-grade space.

"Opportunities among crossover bonds can be enhanced when institutions that are required to hold only investment-grade issues are forced to sell downgraded bonds," Mr. Doyle said. "Downgrades may stem from a short-term problem for the issuer. Amid the forced selling, we often see a lack of buyers—and that can create pricing disparities. Of course, these are ripe opportunities for bottom-up value investors."

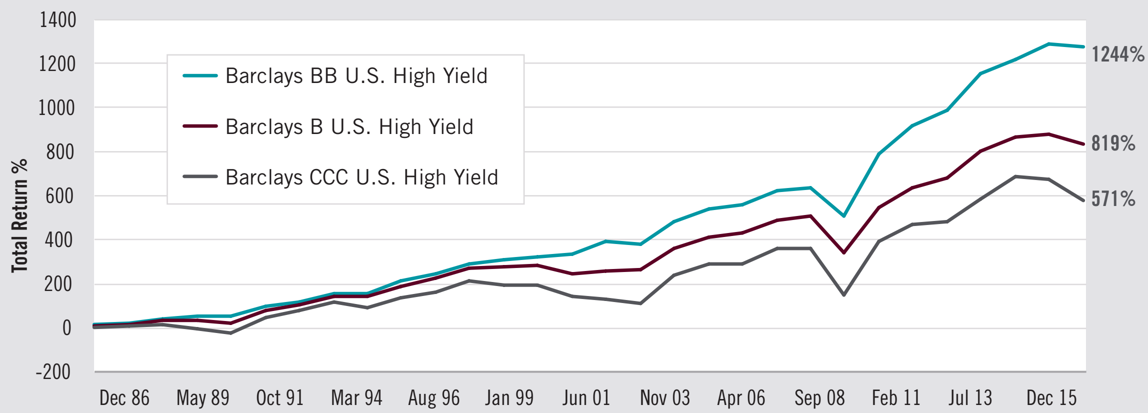
Common Misperceptions of Risk and Return

A common misperception of fixed-income investing is that more risk goes hand-in-hand with more return. While System 1 may accept this premise, it hasn't always been true. Lower-rated bonds tend to offer higher yields, but what about total rates of return? Exhibit 3 shows that over the last 30 years, BB and B-rated bonds have consistently outperformed *CCC*-rated bonds. While bankruptcy rates and the range of returns were likely higher for *CCC*-rated bonds, the actual returns reflected in the averages have not been higher.

Over the last 30 years, BB and B-rated bonds have consistently *outperformed* CCC-rated bonds.

Exhibit 3: Higher Risk Has Not Always Meant Higher Returns Among Corporate Bonds

BB- and B-Rated Bonds Outperformed CCC-Rated Bonds (12/31/85 to 12/31/15)



Source: Barclays U.S. Corporate High Yield Bond Index as of 12/31/15. Past performance is not a guarantee of future results. Please note that all indices are unmanaged and are not available for direct investment. Represents the cumulative total return of index constituents with the individual ratings shown. Ratings issued by Standard & Poor's or Fitch Ratings.

System 1 may assume a linear relationship between risk and return, but if this were always true, more "risky" investments wouldn't really be risky. Perhaps a more meaningful and accurate way to quantify the trade-off between risk and return is to think of higher levels of risk corresponding with higher *ranges* of potential return, as shown in Exhibit 4 (on next page).

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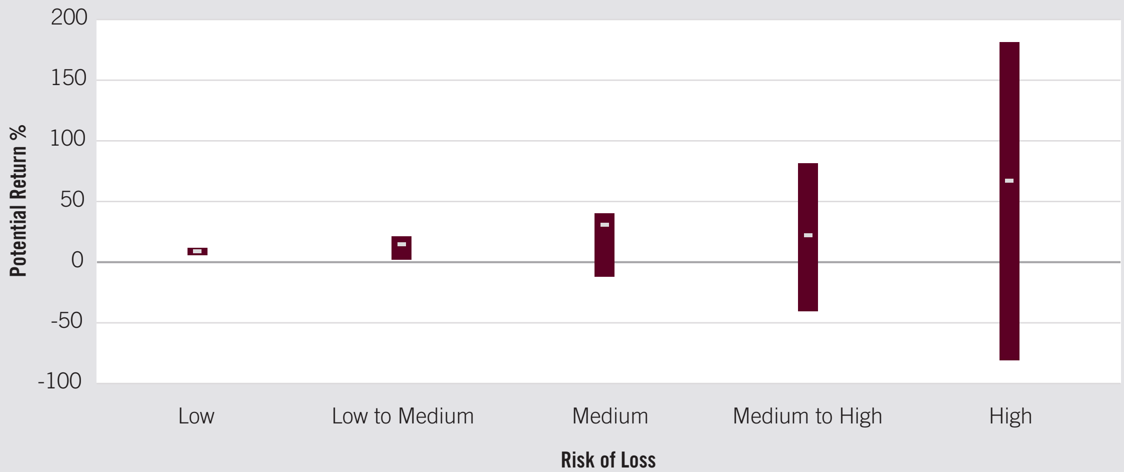
Exhibit 4: More Risk Doesn't Necessarily Mean More Return

Risk Perceptions and a Hypothetical Investment



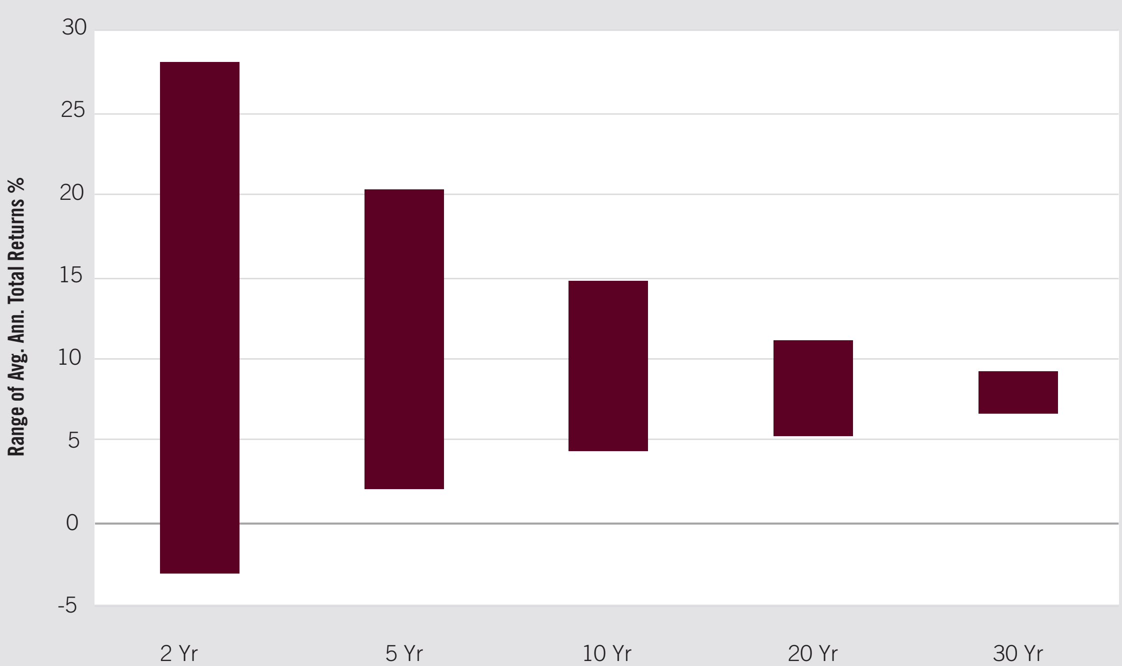
Source: Inspired by Marks, Howard. *The Most Important Thing: Uncommon Sense for the Thoughtful Investor.* New York: Columbia University Press. 2011. This hypothetical illustration is designed to aid in the discussion of concepts relating to the effects of investment risk on return potential. It does not represent or predict the performance of any specific investment. Actual results will vary. No investment strategy can assure a profit or protect against loss.

Adding time to the notion that higher risk levels equate to higher ranges of potential return shows that the longer you remain invested, the *less* risky an investment may become. Exhibit 5 shows the ranges of actual returns for the Barclays U.S. Aggregate Bond Index diminished over longer periods. We believe this reflects the payoff in terms of short-term speculation versus long-term investment.

The longer you remain invested, the *less* risky an investment may become.

Exhibit 5: Risk Tended to Diminish Over Time…

Range of Average Annual Total Returns for Barclays U.S. Aggregate Bond Index Over Various Rolling Periods (1/1/76–12/31/15)



Source: Barclays US Aggregate Bond Total Return USD. Past performance is not a guarantee of future results. One cannot invest directly in an index. No investment strategy can assure a profit or protect against loss. Rolling periods represent a series of overlapping, smaller time periods within a single, longer-term time period. For example, over a 20-year period, there is one 20-year rolling period, eleven 10-year rolling periods, sixteen 5-year rolling periods, and so forth.

Opportunities in Fixed Income Today

Many investors today are taking higher levels of risk in their pursuit of higher yield, yet, are they inadvertently taking on more risk for *less* reward? Total returns, for example, for high-yield corporate bonds were negative during 2015. Yield spreads have been low in most bond-market sectors. For this reason, we believe many bond prices currently are overvalued. While there may be select opportunities within U.S. credit markets, we believe investors may wish to focus on specific securities and hold some cash to be poised to take advantage of opportunities as they present themselves.

Bottom-up, value fixed-income investing demands that investors continually monitor developments and actively look for new opportunities, keeping in mind that bonds in the "sweet spot," as we explored in Exhibit 2, tend to change over time. "While value bonds are commonly thought of as being found in the manufacturing or utility sectors, there may be opportunities in sectors of the market typically not considered to be value investments, such as technology and energy," said Mr. Doyle.

Conclusion

To think and act rationally in what are often emotion-driven markets requires patience and perspective.

For fixed-income investors, awareness of behavioral biases may lead to better decision making and to better identification of investment opportunities with higher-than-average yields and below-average prices. With $8.3 trillion in U.S. corporate bonds and more than 3,200 issuers (representing nearly 40% of the global corporate bond issuance)[2], there are many opportunities in this sector. Analyzing hundreds of securities may help an investor find a handful of suitable value investments. When evaluating these fixed-income investments and others, we believe it's important to be aware of System 1 and 2 responses with the goal of taking advantage of (rather than succumbing to) various marketplace biases. To think and act rationally in what are often emotion-driven markets requires patience and perspective. Fixed-income markets have frequently mispriced bonds, which allow fundamental analysis to identify securities that can be purchased at a potential discount to their estimated intrinsic value.

The Barclays U.S. Aggregate Bond Index is a broad-based benchmark that measures the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market. This index is a total return index which reflects the price changes and interest of each bond in the index.

The Barclays U.S. Corporate Investment Grade Bond Index is an unmanaged index consisting of publicly issued U.S. Corporate and specified foreign debentures and secured notes that are rated investment grade by at least two ratings agencies, have at least one year to final maturity, and have at least $250 million par amount outstanding. Securities must be rated investment grade (Baa3/BBB- or higher) by Moody's, S&P, and Fitch, respectively. When all three agencies rate an issue, a median or "two out of three" rating is used to determine Index eligibility by dropping the highest and lowest rating. When a rating from only two agencies is available, the lower ("most conservative") of the two is used. When a rating from only one agency is available, that rating is used to determine Index eligibility.

Barclays U.S. Corporate High-Yield Bond Index is an unmanaged index consisting of U.S. dollar-denominated, non-investment-grade, fixed-rate, taxable corporate bonds. The index is a total return index which reflects the price changes and interest of each bond in the index. The index was created in 1986 with data backfilled to July 1, 1983. Data prior to 1986 is the result of back-testing performed by the index provider. There are frequently material differences between back-tested and actual performance.

The Bank of America Merrill Lynch Corporate Master, BBB Rated Index is comprised of corporate issues that have a BBB rating based off an average from Moody's Investors Service, Standard & Poor's and/or Fitch Ratings.

MSWM MSMA160356
UBS UINST BBFI
OPCO OAM070616CM3
RJ

[2]Number of issuers based on FactSet data, as of 12/31/15. Size of corporate bond market based on data from SIMFA and Market Axess, as of 12/31/15.

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