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MANAGING INTEREST RATE RISK

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KEY TAKEAWAYS

Yield curve positioning and proper diversification remain prudent strategies to manage interest rate risk.

Small allocations to lower-quality fixed income can also be additive for suitable investors.

Long-term investing allows total return to potentially work in the investor's favor: focus less on short-term price volatility and more on long-term total return.

As 2017 ended, fixed income investors were searching for income, after several years of 10-year Treasuries yielding less than 2.5%. When 2018 began, this changed quickly as tax reform and signs of inflationary pressures pushed market interest rates higher. The 10-year Treasury yield rose 0.87%, from a starting yield of 2.04% on September 7, 2017 to 2.91% on February 15, 2018. Investors have grown concerned that improving economic data and rising inflationary pressures may cause the Federal Reserve (Fed) to raise interest rates in 2018 at a more aggressive pace than originally anticipated. Given this backdrop, investors are naturally reassessing their interest rate risk.

WHAT WORKS WELL WHEN RATES ARE RISING

As outlined in our [Outlook 2018: Return of the Business Cycle](#), we expect yields to grind gradually higher during the year, but not in a straight line. As such, we continue to recommend portfolio positioning with a duration (a measure of interest rate sensitivity) lower than the Bloomberg Barclays U.S. Aggregate Index, along with additional diversification across sectors, maturities, and credit ratings (for suitable investors), which may potentially help mitigate the impact of rising interest rates on investors' portfolios.

An efficient way to determine proper positioning is to examine prior periods of rising rates to identify what has worked well (and what has not). [Figure 1](#) reviews periods of rising interest rates over the past 25 years. As shown, the Bloomberg Barclays Aggregate, a proxy for the broad high-quality bond market, posted a negative total return in rising interest rate periods, confirming the principle that as rates move higher, high-quality bond prices move lower. The sectors can be compared with the broad bond market returns to determine relative outperformance or underperformance against the benchmark, in this case, the Bloomberg Barclays Aggregate. The performance review in [Figure 1](#) results in several takeaways for bond investors.

- **The difference between credit risk and interest rate risk is a meaningful one of which investors should be keenly aware.** Of the sectors shown, U.S. Treasuries have the least credit risk, as they are backed by the full faith and credit of the U.S. government. They carry elevated interest rate risk, however, as their price sensitivity to interest rate changes (duration) is higher than the broad Bloomberg Barclays Aggregate. This explains

Treasuries' underperformance in most of the rising rate periods in [Figure 1](#). High-yield bonds, conversely, possess higher credit risk and lower interest rate risk. Generally, interest rates

rise when economic growth and inflation pick up, a scenario that's usually a good backdrop for economically sensitive portions of fixed income, like high yield. The additional yield

1 PERFORMANCE OF ASSET CLASSES DURING PERIODS OF RISING INTEREST RATES

Rising Rates Start Date	Rising Rates End Date	Length (Months)	10-Year Treasury Yield Change	Broad Bond Market Return (Bloomberg Barclays Agg)	Sector				
					Treasury	MBS	Corporate	High Yield	Municipal
9/30/1993	11/30/1994	14	2.5%	-3.5%	-4.3%	-1.5%	-4.9%	2.0%	-5.9%
1/31/1996	8/30/1996	7	1.4%	-1.8%	-2.4%	0.0%	-2.9%	3.2%	-0.3%
11/29/1996	3/31/1997	4	0.9%	-1.5%	-1.9%	-0.4%	-2.4%	1.8%	-0.7%
10/5/1998	1/21/2000	16	2.6%	-2.3%	-4.5%	1.5%	-3.8%	3.7%	-2.6%
11/7/2001	4/1/2002	5	1.2%	-2.4%	-4.8%	-0.5%	-2.8%	4.7%	-1.5%
6/13/2003	9/3/2003	3	1.5%	-4.5%	-6.5%	-1.7%	-6.0%	1.1%	-4.5%
3/16/2004	6/14/2004	3	1.2%	-4.3%	-5.2%	-3.0%	-5.4%	-1.9%	-4.6%
6/1/2005	6/28/2006	13	1.4%	-1.3%	-2.2%	-0.1%	-2.7%	5.5%	1.0%
3/5/2007	6/12/2007	3	0.8%	-1.8%	-2.0%	-1.4%	-2.9%	1.6%	-1.8%
3/17/2008	6/16/2008	3	1.0%	-2.2%	-4.5%	-2.3%	-1.1%	6.2%	1.0%
12/30/2008	6/10/2009	5	1.9%	-0.5%	-7.0%	1.5%	4.7%	32.2%	6.2%
11/30/2009	4/5/2010	4	0.8%	-0.5%	-2.3%	-0.6%	0.8%	8.3%	1.6%
10/8/2010	2/8/2011	4	1.3%	-3.1%	-4.7%	-1.7%	-3.4%	5.0%	-5.5%
9/22/2011	10/27/2011	1	0.7%	-1.7%	-2.8%	-1.1%	-1.1%	3.7%	-1.2%
1/31/2012	3/19/2012	2	0.6%	-1.2%	-2.5%	-0.2%	-0.9%	2.3%	-1.0%
7/24/2012	9/14/2012	2	0.5%	-0.7%	-1.8%	0.2%	-0.5%	4.0%	-0.4%
12/6/2012	3/11/2013	3	0.5%	-1.0%	-1.5%	-0.3%	-1.2%	3.2%	-1.1%
5/2/2013	9/5/2013	4	1.4%	-4.9%	-4.5%	-4.0%	-6.4%	-2.4%	-6.8%
4/17/2015	6/26/2015	2	0.6%	-2.8%	-2.6%	-1.6%	-4.2%	-0.7%	-1.2%
7/8/2016	11/25/2016	5	1.0%	-3.6%	-4.7%	-1.8%	-3.9%	3.7%	-4.5%
9/7/2017	2/15/2018	5	0.9%	-2.6%	-3.4%	-2.3%	-1.9%	0.3%	-1.6%

Source: LPL Research, Bloomberg 02/16/18

All indexes are unmanaged and cannot be invested into directly. Unmanaged index returns do not reflect fees, expenses, or sales charges. Index performance is not indicative of the performance of any investment. Past performance is no guarantee of future results.

Green indicates outperformance relative to Aggregates, red underperformance, and yellow equal performance

Indexes: Treasuries - Bloomberg Barclays US Agg Govt; MBS - Bloomberg Barclays US Agg Securitized; Corporate - Bloomberg Barclays US Agg Corporate; High Yield - Bloomberg Barclays US High Yield; Municipals - Bloomberg Barclays Municipal

cushion is also a buffer against higher interest rates that could push prices lower. This explains why high yield has outperformed the broad Bloomberg Barclays Aggregate during rising rate periods over the last 25 years. Despite this outperformance, we still believe lower-quality fixed income should be used at the margins of higher quality, for suitable investors.

- **Sector diversification and yield curve positioning can help investors during rising rate periods.** Investment-grade corporate bonds possess greater interest rate sensitivity than the broad high-quality market, because of their longer maturities. We favor the intermediate portion of the yield curve, which boasts diversification benefits without the significant interest rate risk of long-term bonds. By either targeting intermediate-maturity corporate bonds directly, or using an active investment manager to position the portfolio opportunistically, investors can manage the headwinds of rising rates on investment-grade corporates.
- **High-quality mortgage-backed securities (MBS) have performed well in most rising interest rate environments.** This can be attributed mostly to the sector's shorter duration. Importantly, MBS are not without their own unique risks. If rates move significantly higher, fewer homeowners refinance their mortgages at the higher rates. As a result, investors can be left with investments that have a longer maturity than expected, essentially locking in lower interest rates.

RISING RATE STRATEGIES

Although interest rate risk is present in almost all bonds, it can be managed by buying shorter maturity bonds with higher coupons. Generally, the longer the maturity and the higher the bond's duration, the more sensitive the bond's price is to changes in interest rates. For example, a bond with a duration of five years will decline in price by

5% if all Treasury yields rise by 1%, all else being equal. The higher the duration of the bond, the higher the yield should be, as investors need to be compensated for the time it takes to regain their principal investment. Historically, despite greater sensitivity to changes in short-term interest rates, short-term bonds perform relatively well in rising rate environments because they don't require investors to tie up their money for long, making reinvestment at higher rates possible.

Another factor is the bond coupon. For example, a Treasury bond paying a 2% coupon when interest rates increase to 3% will decline in price. If not, the bond will not compete with the higher-yielding bonds entering the market at the new prevailing interest rate. If the coupon was well above the 3% rate, then the bond is said to have coupon protection. This demonstrates that the higher the coupon is on the bond, the more defensive the bond is against rising rates. In other words, rates need to rise substantially before the market would require a significant discount in price to make the bond attractive.

KEEPING PERSPECTIVE

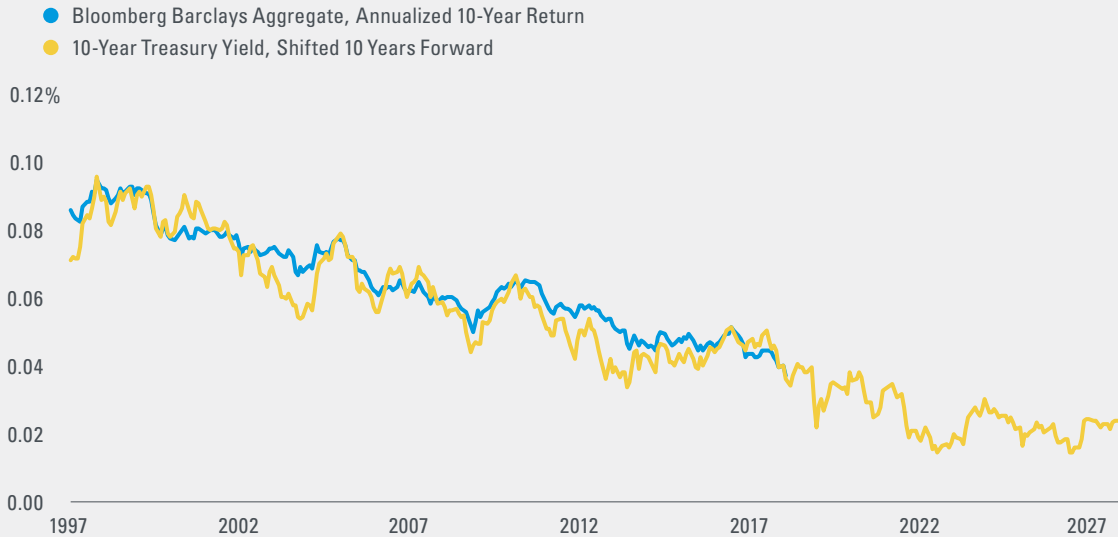
Even though bond prices fall as interest rates rise, and interest rates have risen notably since the beginning of the year, investors should remain focused on their long-term objectives. By focusing on total return rather than on short-term market price fluctuations, investors can avoid selling at inopportune moments due to emotion. Total return is the rate of return over time that is derived from interest income, plus gains or losses on the price of the bond. As interest rates rise, the cash flows of the bond will eventually be reinvested at higher prevailing interest rates. Over a longer horizon, the investor may chip away, or even overcome, price declines that occurred due to rising interest rates [Figure 2]. The takeaway is critical: it pays to remain patient.

CONCLUSION

Fixed income performance thus far in 2018 has delivered a painful reminder of the impact of rising interest rates on bonds. Rate increases of this magnitude are relatively infrequent, and much of the pain may be over already. Nonetheless, it

is important for investors to remain diligent in their asset allocation choices. Well-diversified portfolios that maintain a shorter duration profile with allocations across various sectors and asset classes may help to manage the risk associated with additional interest rate volatility. ■

2 YIELD IS THE DOMINANT DRIVER OF HIGH-QUALITY BOND RETURNS OVER THE LONG TERM



Source: LPL Research, Bloomberg 02/16/18

The Bloomberg Barclays Aggregate Bond Index is an unmanaged index that cannot be invested into directly. Unmanaged index returns do not reflect fees, expenses, or sales charges. Index performance is not indicative of the performance of any investment. Past performance is no guarantee of future results.

Economic forecasts may not develop as predicted.

Please see our [Outlook 2018: Return of the Business Cycle](#) publication for additional descriptions and disclosures.

IMPORTANT DISCLOSURES

The opinions voiced in this material are for general information only and are not intended to provide specific advice or recommendations for any individual. To determine which investment(s) may be appropriate for you, consult your financial advisor prior to investing. All performance reference is historical and is no guarantee of future results. All indexes are unmanaged and cannot be invested into directly.

The economic forecasts set forth in the presentation may not develop as predicted and there can be no guarantee that strategies promoted will be successful.

Bonds are subject to market and interest rate risk if sold prior to maturity. Bond values and yields will decline as interest rates rise, and bonds are subject to availability and change in price.

Government bonds and Treasury bills are guaranteed by the U.S. government as to the timely payment of principal and interest and, if held to maturity, offer a fixed rate of return and fixed principal value. However, the value of fund shares is not guaranteed and will fluctuate.

Mortgage-backed securities are subject to credit, default risk, prepayment risk (that acts much like call risk when you get your principal back sooner than the stated maturity), extension risk, the opposite of prepayment risk, and interest rate risk.

Corporate bonds are considered higher risk than government bonds but normally offer a higher yield and are subject to market, interest rate, and credit risk as well as additional risks based on the quality of issuer coupon rate, price, yield, maturity, and redemption features.

High yield/junk bonds (grade BB or below) are not investment grade securities, and are subject to higher interest rate, credit, and liquidity risks than those graded BBB and above. They generally should be part of a diversified portfolio for sophisticated investors.

Active management may involve more frequent buying and selling of assets and will tend to generate higher transaction cost. Investors should consider the tax consequences of moving positions more frequently.

There is no guarantee that a diversified portfolio will enhance overall returns or outperform a nondiversified portfolio. Diversification does not protect against market risk.

DEFINITIONS

Yield curve is a line that plots the interest rates, at a set point in time, of bonds having equal credit quality, but differing maturity dates. The most frequently reported yield curve compares the 3-month, 2-year, 5-year and 30-year U.S. Treasury debt. This yield curve is used as a benchmark for other debt in the market, such as mortgage rates or bank lending rates. The curve is also used to predict changes in economic output and growth.

INDEX DESCRIPTIONS

The S&P 500 Index is a capitalization-weighted index of 500 stocks designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

The Bloomberg Barclays U.S. Aggregate Bond Index is a broad-based flagship benchmark that measures the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS, and CMBS (agency and non-agency).

The Bloomberg Barclays U.S. Treasury Index is an unmanaged index of public debt obligations of the U.S. Treasury with a remaining maturity of one year or more. The index does not include T-bills (due to the maturity constraint), zero coupon bonds (strips), or Treasury Inflation-Protected Securities (TIPS).

The Bloomberg Barclay's High Yield Municipal Bond Index tracks consists of below-investment grade municipal bonds.

The Bloomberg Barclays Municipal Bond Index is a market capitalization-weighted index of investment-grade municipal bonds with maturities of at least one year.

The Bloomberg Barclays U.S. Corporate Index is a broad-based benchmark that measures the investment-grade, U.S. dollar-denominated, fixed-rate, taxable corporate bond market.

The Bloomberg Barclays U.S. MBS Index measures the performance of investment-grade mortgage-backed securities of FNMA, GNMA, and FHLMC.

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