LPL RESEARCH

BOND MARKET PERSPECTIVES

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REASSESSING INTEREST RATE RISK

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KEY TAKEAWAYS

We do not expect the weakness witnessed in 2013, but a difficult February 2015 thus far warrants another look at assessing interest rate risk, especially given the likely start of Federal Reserve (Fed) interest rate hikes later this year.

Sector allocation, maturity exposure, time horizon, and whether interest income is reinvested or simply spent, all influence potential total returns during a potential bear market for bonds.

The last time rising interest rates inflicted notable pain into bond portfolios was 2013, which has faded into memory given good bond performance in 2014 and a strong January to start 2015. But a difficult February 2015 has begun to reacquaint bond investors with the concept of interest rate risk. Treasury prices are notably lower and yields are higher in February with the 10-year Treasury yield up by 0.45% for the month, nearly reversing the year-to-date decline. Despite above-average valuations and low yields, high-quality bond prices marched steadily higher last year and may have led some to forget the impact of rising interest rates.

We have long advocated a defensive stance against interest rate risk and maintained that the prospect of rising interest rates will continue to pose a risk to bond investors. However, the extent of this threat to an investor depends on multiple factors. Sector allocation, maturity exposure, time horizon, and whether interest income is reinvested or simply spent, all influence potential total returns during a potential bear market for bonds.

We expect bond prices to soften in 2015 and yields to rise modestly, as described in our *Outlook 2015: In Transit* publication, with high-quality bond returns roughly flat for the full year. We do not expect the extent of weakness witnessed in 2013, but another look at assessing interest rate risk is prudent given the likely start of Federal Reserve (Fed) interest rate hikes later this year.

> The move higher in the 10-year Treasury yield, a key market benchmark, varied from 0.5% to as much as 2.6% over the various bond market pullbacks.

PUTTING IT IN PERSPECTIVE

A look back at prior periods of rising interest rates helps illustrate what a bond bear market looks like [Figure 1] and what investors may expect. Figure 1 lists all the periods of rising interest rates over the past 20 years, the magnitude of the rise in interest rates as measured by the 10-year Treasury yield, and bond market and bond sector total returns during the rising rate period. The move higher in

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the 10-year Treasury yield, a key market benchmark, varied from 0.5% to as much as 2.6% over the various bond market pullbacks. Figure 1 provides (or yields) three main takeaways for bond investors:

- **First, Figure 1 illustrates bond sector exposure can help limit the impact of rising rates.** Not all bond sectors react the same in response to rising interest rates. High-yield bonds for example, have generated gains, on average, when interest rates rise. Even after excluding outsized 2009 performance, high-yield bonds still averaged a positive 3.4% return and produced a loss on only one occasion. On average, U.S. Treasuries have borne the brunt of weakness, and so diversifying to other sectors of the fixed income market can help to blunt the impact of rising rates.
- **Second, the single-digit declines, although serious, are not what many investors would consider calamitous and certainly far less than the average equity bear market.** The figure also shows peak-to-trough declines in total return for a particular period—meaning an investor would have bought when prices were at their highest and yields at their lowest, and similarly sold when prices were at their lowest

1 NOT ALL BOND SECTORS ARE ALIKE DURING PERIODS OF RISING RATES

Rising Rates Start Date	Rising Rates End Date	Length (Months)	10-Year Treasury Yield Change	Broad Bond Market Return (Barclays Agg)	Sector Performance				
					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%
Average		5	1.2%	-2.2%	-3.6%	-0.9%	-2.4%	4.7%	-1.6%

Source: LPL Research, Barclays Index data 02/23/15

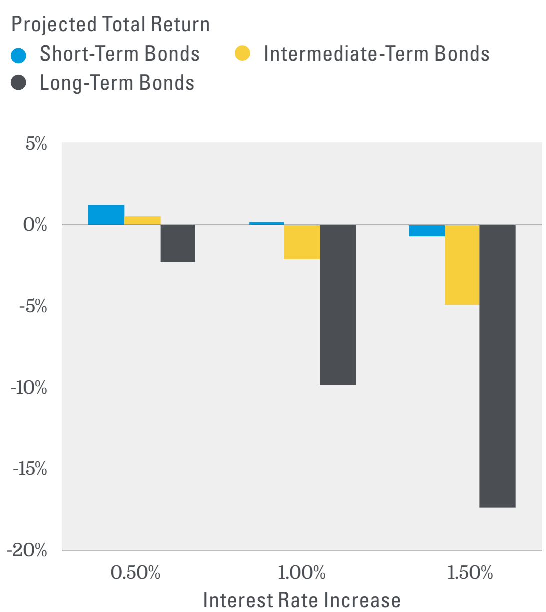
Shaded periods were either just prior, or coincided with, Federal Reserve interest rate increases.

All performance referenced is historical and is no guarantee of future results.

All indexes are unmanaged and cannot be invested into directly.

and yields at their highest, to achieve the total returns shown. Buys or sells not occurring on those exact dates would have resulted in higher returns than those shown, either due to better pricing (either on the buy or sell side) or to the passage of time, as interest income offsets price declines. As a historical note, the worst holding period on record for bond investors occurred from June 30, 1980, to September 30, 1981, when the Barclays Aggregate Bond Index declined by a total of 9.0%. The loss was erased, however, if an investor held until December 31, 1981, highlighting the importance of time horizon, which we discuss later.

2 INTEREST RATE RISK IS CONCENTRATED IN LONG-TERM BONDS



Source: LPL Research, Barclays Index data 02/23/15

Returns assume one-year holding period, parallel shift of the yield curve, no reinvestment of interest, and no change in yield spreads; forecast based on average coupon rate and maturity.

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- **Third, the longest periods (12 months or more) of rising rates all had one common factor: Fed interest rate hikes.** An extended bond bear market will therefore likely have to be accompanied by Fed interest rate increases. The Fed has indicated it may raise interest rates as soon as June 2015, but we expect a late 2015 start, and possibly early 2016, which suggests a more sustained bear market is unlikely in 2015. Still, the arrival of Fed interest rate hikes creates headwinds for bond investors.

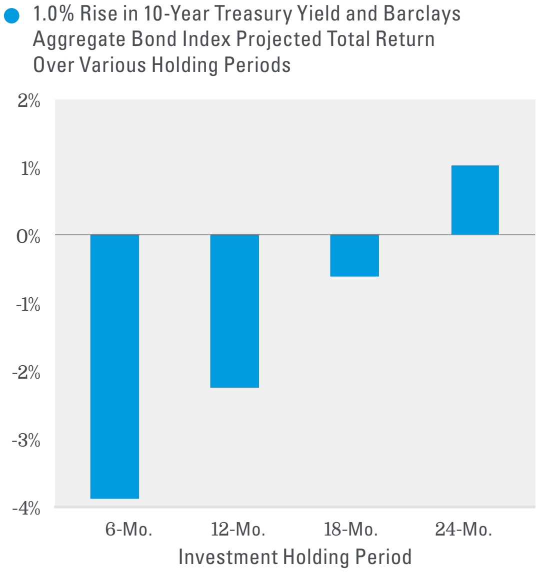
MATURITY EXPOSURE

Maturity exposure, rather than sector exposure, may present a greater risk to bond investors. Historically, short-term bonds are more insulated against rising interest rates, but investors may not be aware of the significantly different interest rate sensitivity between intermediate- and long-term bonds. Figure 2 illustrates the projected total return of short-, intermediate-, and long-term bonds for varying increases in interest rates (from 0.5% to 1.5%) over a one-year holding period. Note the significantly greater losses of long-term bonds relative to both short- and intermediate-term bonds as represented by various bond indexes. We do not dismiss the losses on short- and intermediate-term bonds during a more significant 1.5% rise in interest rates; however, the popular media often fails to differentiate maturity and simply refers to "bonds" when describing interest rate risks [Figure 2].

TIME IS OF THE ESSENCE

Time horizon, or investment holding period, is a key determinant of potential bond total returns but hardly ever discussed when the subject of bond bear markets is raised. Forecasts of bond losses are often cited as, "bonds will decline by x% if interest rates go up by y%," but fail to cite a specific holding period. Most forecasts unfortunately assume an instantaneous shift in

3 **INVESTMENT HORIZON IS IMPORTANT WHEN CONSIDERING INTEREST RATE IMPACTS**



Source: LPL Research, Barclays Index data 02/23/15

Returns assume parallel shift of the yield curve, no reinvestment of interest, and no change in yield spreads; forecast based on average coupon rate and maturity.

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interest rates, but interest rates do not jump by 0.5% or 1.0% in a single day. The holding period is very important since interest income, the primary driver of long-term bond returns, offsets price declines associated with rising interest rates. Short, quick jumps in interest rates can be damaging (as Figure 1 illustrates), but if the rise in interest rates occurs over a longer period of time [Figure 3], then interest income helps soften the blow on total returns. Note how bond total returns in the hypothetical example above are positive, despite a rise in interest rates, if the 1.0% rise in interest rates takes two years to come to fruition.

So what can bond investors expect over the coming years? Interest income is a primary driver of long-term bond returns and provides a guide for what returns may look like. Figure 4 shifts the 10-year Treasury yield forward by 10 years and illustrates the close relationship of yield and future bond returns. The yield of the 10-year Treasury suggests that bond investors could potentially expect a 2% average annualized rate of return over the coming

4 **YIELD IS A GOOD PREDICTOR OF LONGER-TERM RETURNS: LOW-RETURN ENVIRONMENT MAY POTENTIALLY PERSIST**

Source: LPL Research, Bloomberg, Barclays Index data 02/23/15

Returns assume parallel shift of the yield curve, no reinvestment of interest, and no change in yield spreads; forecast based on average coupon rate and maturity.

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10-year horizon. Some bumps and periods of losses will likely occur along the way, but the relationship suggests a very low-return environment persisting for some time. If inflation reverts to its 10-year average of 2.3%, then bond returns will be negative after taking into account the impact of inflation.

We do not intend to dismiss the impact of potential losses from rising interest rates, especially from an investment, such as bonds, that many investors view as safe. However, interest rate risk is just one of several primary risks, along with liquidity risk and credit risk, which are always prevalent in the bond market. Credit risk, price declines associated with deteriorating credit quality or with a rise in default risk, is also of concern currently, given above-average valuations and low yields across the bond market.

WAITING FOR JANET

As this publication goes to press, Fed Chair Janet Yellen's congressional testimony on the outlook for the economy and monetary policy may further shape investors' expectations around the timing and pace of Fed interest rate hikes. We expect a late 2015 start to interest rate hikes and a modest rise in bond yields this year, which may keep high-quality bond returns flat to very low. We do not expect a bond bear market, but February has so far served as a reminder that investors need to be aware of interest rate risk after it was virtually nonexistent in 2014. ■

INDEX DESCRIPTIONS

The 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).

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