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TIAA-CREF Asset Management

Positioning bond portfolios for rising interest rates

William Martin
Managing Director
Head of Fixed-Income
Portfolio Management
TIAA-CREF Asset Management

Stephen MacDonald, CFA
Managing Director
Client Portfolio Management
TIAA-CREF Asset Management

Peter Moore
Director
Client Portfolio Management
TIAA-CREF Asset Management

Executive summary

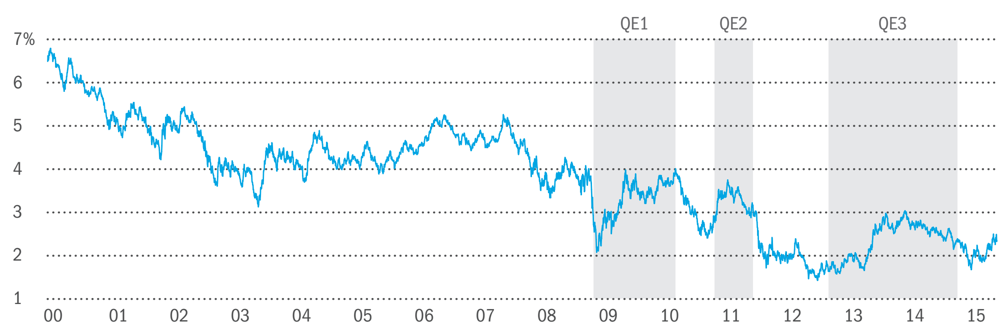
- With the prospect of higher interest rates on the horizon, we do not foresee extreme shifts that could lead to steep bond-market losses.
- History shows that fixed-income performance has tended to be resilient following rate increases.
- Strategies that offer diversified, actively managed exposure to a range of fixed-income securities may be best positioned to withstand the potential impact of rising rates.
- Fixed-income can continue to play an important and useful role in our clients' portfolios, if managed effectively.

Monetary policy, economic factors and market dynamics have kept Treasury yields low

Over the past seven years, Federal Reserve policy—including three rounds of quantitative easing (QE)—has heavily influenced medium- and long-term U.S. interest rates, notably the bellwether 10-year Treasury yield (Exhibit A). In January 2014, the Fed began tapering its monthly QE purchases of Treasuries and other fixed-income assets, a process that continued until the program concluded in October 2014.

Exhibit A: Post-QE and pre-Fed "liftoff," the 10-year yield is poised to rise

10-year Treasury yield (%), daily closing values, 2000–2015*



Quantitative easing (QE) kept rates low: Between October 31, 2008 and October 31, 2014—a span encompassing three waves of QE asset purchases by the Federal Reserve—the bellwether 10-year Treasury yield fell 166 basis points, from 4.01% to 2.35%, with a record-low close of 1.43% on July 25, 2012. While the 10-year yield climbed in 2013, closing just above 3% at the end of the year, it resumed its decline in 2014 and into the first few months of 2015. Given the end of QE, the U.S. economy's continued moderate strengthening, and indications that the Fed is nearing a decision to hike short-term interest rates for the first time since 2006, the 10-year yield is poised to rise.

* Through June 30, 2015. Source: U.S. Treasury Department.

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The gradual tapering and eventual end of QE was expected to result in higher market rates on these securities, as demand for them would no longer be distorted by the Fed's unprecedented stimulus. Instead, a number of factors conspired to push the 10-year Treasury yield lower in the second half of 2014 and early 2015. Among these was a nearly 60% collapse in oil prices, from $108 per barrel in mid-June 2014 to $43 in mid-March 2015, which drove fears of broader deflationary pressures and weakening global demand. During this period, the 10-year Treasury yield fell 70 basis points (0.70%), from 2.64% to 1.94%.

Also keeping a lid on inflation expectations and Treasury rates was a strengthening U.S. dollar, which lowered prices of imported consumer goods, and an unexpected weather-related contraction in the U.S. economy in the first quarter of 2015. Additionally, global appetite for Treasuries increased, because even at suppressed levels, U.S. yields were attractive amid aggressive monetary easing by central banks in Europe and Japan. Lastly, the Greek debt crisis and China's economic slowdown fueled bouts of volatility in financial markets, prompting investor flights to quality that benefited Treasuries and other safe-haven assets.

The prospect of rising interest rates comes into focus

We think the 10-year Treasury yield will move modestly higher into year-end, settling in a range of 2.5% to 3%.

After bottoming earlier in the year, oil prices stabilized and the 10-year Treasury yield rose to a peak of 2.5% during the second quarter—although both moved lower following quarter end amid some volatile economic data. The longer-term trajectory of the U.S. recovery remains intact, however, along with increased inflation expectations. In particular, strengthening labor markets—including first-time unemployment claims near 15-year lows, as well as some initial signs of wage growth after a long period of stagnation—have provided a supportive backdrop for the economy and interest rates. In addition, rising levels of consumer and business sentiment may bode well for future spending, while the benefits of a steadily improving housing market should begin to filter through the broader economy.

The Fed has become more upbeat about inflation and employment trends, and thus more comfortable with the prospect of ending its zero-interest-rate policy after seven years. Although Fed Chair Janet Yellen has made it clear that the timing and scope of any rate hikes will remain data dependent, we anticipate at least one modest increase in the federal funds rate later this year. Given the prospect for Fed action in the third or fourth quarter, we think the 10-year Treasury yield will move modestly higher into year-end, settling in a range of 2.5% to 3%.

Because current market conditions differ from those in previous periods when interest rates rose, it is difficult to know what to expect in a rising rate environment by looking at past experience alone. Still, investors can better prepare for the eventuality of higher rates by understanding the various ways in which different types of fixed-income securities and investment vehicles may respond when rates rise, and by understanding the dynamics shaping the composition of today's fixed-income markets. Additionally, before making asset allocation decisions to protect against rising rates, investors should carefully evaluate alternatives to fixed-income investments—particularly with respect to the possible effects these substitute investments may have on a portfolio's risk-adjusted performance.

Four considerations for fixed-income investors

In the pages that follow, we identify four factors that we believe will be essential to a successful fixed-income strategy in the rising rate environment to come.

1. Diversification matters.

Different types of fixed-income securities respond differently to rising rates. Sensitivity to interest-rate movements can differ substantially based on duration, credit quality, and type of security. In general, corporate bonds (both investment-grade and high-yield), floating-rate notes, emerging-market debt, shorter-term issues, and certain types of structured securities may provide greater protection from losses during periods of rising rates. When Treasury rates rise, credit spreads can tighten as the market supports a shift to riskier asset classes. This is largely because improving economic conditions typically lead to lower expected default rates for credit sectors, making them a potentially better relative value with a more favorable risk/reward tradeoff than Treasuries.

Recent examples of significant rate movements and fixed-income performance bear this out. Between January 2009 and June 2015, there were six periods in which the 10-year Treasury yield rose by 60 basis points or more. During those periods, total returns for fixed-income markets varied widely, demonstrating the value of diversification. Performance based on the average of returns for all six periods is listed and ranked by category in Exhibit B.

Exhibit B: Which fixed-income sectors tend to outperform when interest rates rise?

Average of total returns over six periods of rising rates (ranked from highest to lowest within categories)

Asset class/sector		
1	High Yield	12.73%
2	Global EM	3.12%
3	Floating Rate Notes	2.02%
4	Corporate	0.77%
5	Securitized	0.02%
6	Municipal	-0.22%
7	Agencies	-1.06%
8	U.S. Aggregate	-1.15%
9	Treasuries	-3.45%
10	Treasuries 20+ Year	-13.33%

Quality		
1	Baa	2.47%
2	A	0.10%
3	Aa	-0.91%
4	Aaa	-1.59%
Maturity		
1	1–3 Years	0.75%
2	3–5 Years	0.21%
3	5–7 Years	-0.71%
4	7–10 Years	-2.19%
5	10+ Years	-7.44%
Securitized		
1	CMBS	4.91%
2	ABS	3.40%
3	MBS	-0.40%

Recent periods of rising interest rates

Dates	Number of days	Change in 10-year Treasury yield
Jan 1, 2009–Dec 31, 2009	365	+139 bps
Oct 8, 2010–Feb 8, 2011	123	+134 bps
Sep 22, 2011–Oct 27, 2011	35	+70 bps
Jul 25, 2012–Mar 11, 2013	229	+64 bps
May 1, 2013–Sep 5, 2013 ("taper tantrum")	127	+132 bps
Feb 2, 2015–Jun 10, 2015	128	+82 bps

Sources: Barclays, TIAA-CREF Asset Management. Total returns for all categories shown are based on the respective components of the Barclays U.S. Aggregate Bond index, except as follows: high yield (Barclays U.S. High Yield Index); global emerging markets (Barclays Global Emerging Markets Index); floating-rate notes (Barclays U.S. Floating Rate Notes Index); and municipal (Barclays U.S. Municipal Bond Index). It is not possible to invest in an index. Index performance does not reflect investment fees or transaction costs. Past performance is no guarantee of future results, and there is no assurance that bonds will perform similarly if interest rates rise sharply from current levels.

On average, longer-term, higher-rated bond sectors underperformed during periods when Treasury yields were rising, while shorter-term, lower-rated, and securitized assets outperformed. Among the 21 fixed-income categories we studied, the disparity in performance was dramatic, with a gap of 26.06% between the highest and lowest average returns.

High yield offers a particularly telling diversification example. Among the periods analyzed in Exhibit B is the 2013 "taper tantrum," in which many fixed-income asset classes sold off in response to then-Fed Chairman Ben Bernanke's announcement that the central bank would begin scaling back its monthly QE purchases. During this period, high-yield bond losses (-2.24%) were just half of the decline realized by Treasuries (-4.48%). High yield showed similar relative strength in weathering two "mini tantrums" in the first half of 2015, again highlighting the potential benefits of diversification. It's important to remember that in general, high-yield securities remain vulnerable to periods of risk aversion and spread widening.

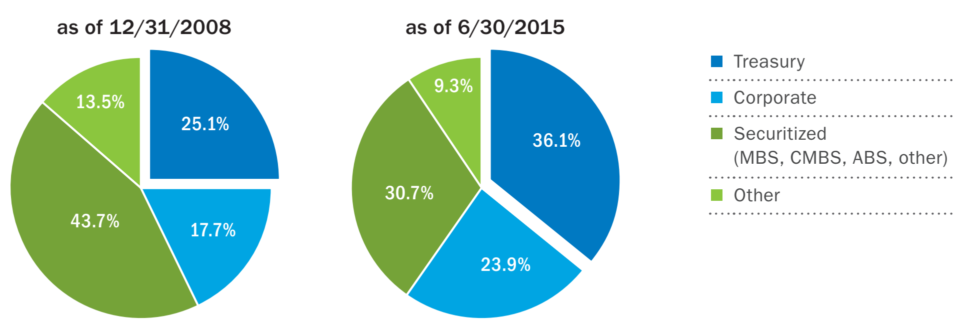
2. Active management may offer advantages over indexing.

Greater flexibility can help mitigate interest-rate sensitivity.
In the past several years, public debt has crowded out private debt. For bond indexing strategies, the result has been much greater representation of Treasury securities, longer duration, and heightened sensitivity to interest rates. As shown in Exhibit C, since the "Great Recession," the Treasury sector weighting in the Barclays U.S. Aggregate Bond Index has grown from 25.1% to 36.1%—largely due to increased issuance by the U.S. Treasury based on large fiscal deficits over that period. Corporate bonds have also grown as a share of the index (albeit to a lesser degree), with companies taking advantage of low rates to refinance debt, extend maturities and change their debt mix to reduce their cost of capital.

Meanwhile, securitized assets, including mortgage-backed securities (MBS), commercial mortgage-backed securities (CMBS), asset-backed securities (ABS), and other structured securities, decreased between 2008 and 2015. This decline reflects curtailment of "private label" (non-agency) MBS issuance because of credit quality concerns following the subprime mortgage crisis, along with diminished MBS supply due to more stringent underwriting standards from issuing agencies.

Exhibit C: Benchmark composition has changed

Sector weightings in Barclays U.S. Aggregate Bond Index show growth in Treasuries



Source: Barclays

These market dynamics have resulted in steadily growing demand for a shrinking supply of "spread sector" products (higher-yielding, non-Treasury debt instruments), as fixed-income investors seek securities that represent compelling relative value, generate sustainable income, and are likely to be more resilient under a range of economic circumstances.

Identifying such opportunities requires a careful, discriminating approach to security selection—which tends to favor active managers. Compared with indexed portfolios, actively managed portfolios have greater flexibility to avoid the increased exposure to interest-rate risk currently reflected in broader market indexes. Accordingly, fixed-income investors may be better served by choosing active portfolios with a proven record of diversified sector allocation and effective security selection across all phases of an economic cycle.

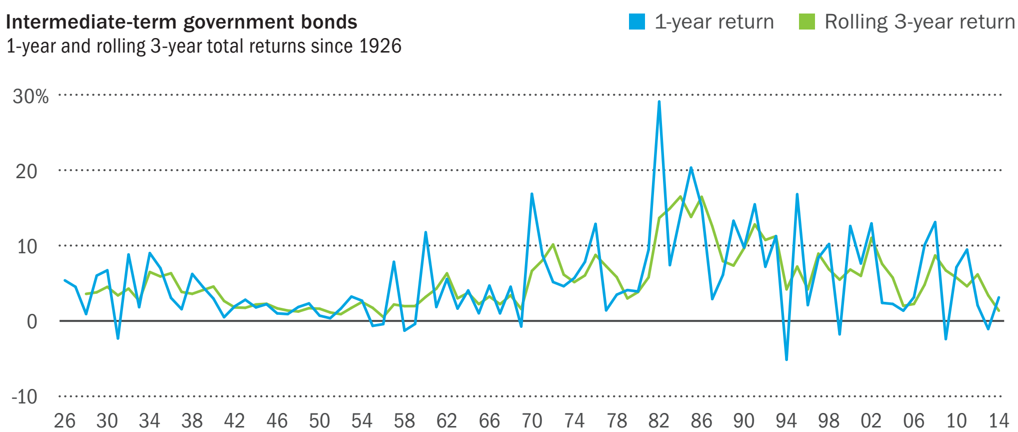
3. Bond markets have tended to be resilient when rates rise.

History offers some perspective on interest rates and market performance.
While fixed-income losses due to rising interest rates present a risk, corresponding market fears may be disproportionate to the severity and lasting impact of the losses actually incurred. Such fears are based partly on exaggerated expectations for the scope of future rate increases.

Assuming at least a mild to moderate rate increase is on the horizon, it's natural to try to anticipate its likely impact. We can look to history to see how fixed-income markets have performed when rates were rising, recognizing that the past may provide useful context but is not a predictor of future outcomes, as economic and market cycle conditions are never identical.

Exhibit D: Bond markets have shown resilience following rate increases

Intermediate-term government bonds
1-year and rolling 3-year total returns since 1926



What happens when rates rise sharply from low levels? Since 1926, there have been five years—1931, 1956, 1958, 2009, and 2013—in which long-term interest rates started below 3.5% and jumped by at least 50 basis points (0.50%) over the course of the year. In those years, intermediate-term government bonds returned -2.32%, -0.42%, -1.29%, -2.40% and -1.07%, respectively. However, those one-year losses reversed relatively quickly. Three-year returns (encompassing the current year and the subsequent two years) for 1931, 1956, 1958, 2009 were 2.67%, 1.96%, 3.19%, and 4.60%, respectively. (A rolling three-year return beginning with 2013 is not yet available.) In fact, as shown in this graph, despite 10 instances of negative one-year returns since 1926, average annualized returns for intermediate-term U.S. government bonds have been positive over all rolling 3-year periods. Of course, past performance is no guarantee of future results, and there is no assurance that bonds will perform similarly if interest rates rise sharply from current levels.

Source: Ibbotson Associates. Performance reflects the Ibbotson Associates Stocks, Bonds, Bills, and Inflation (SBBI) US Intermediate-Term Government Total Return USD index. It is not possible to invest in an index. Index performance does not reflect investment fees or transaction costs.

With that caveat, our analysis shows that bond markets have tended to be resilient, bouncing back after initially incurring losses during rising rate environments. For example, based on previous periods when interest rates were low (less than 3.5%) but increasing, intermediate-term government bonds realized losses of 1%–3% over one-year time frames. As illustrated in Exhibit D, however, those short-term losses reversed over medium-term time frames. In fact, average annualized returns for intermediate-term U.S. government bonds have been positive for all rolling three-year periods since 1926.

Investors who maintain a longer-term focus and resist the impulse to react to short-term volatility are more likely to benefit from the positive returns of fixed-income assets over time.

There is no guarantee that fixed-income markets will repeat this pattern of short-term reversals in the next interest-rate cycle. Nonetheless, in the long run, the risk of being underexposed to fixed income due to market timing may outweigh the risk of exposure to rising interest rates. Investors who maintain a longer-term focus and resist the impulse to react to short-term volatility are more likely to benefit from the positive returns of fixed-income assets over time. For this reason, investors are often better served by maintaining consistent, strategic exposure to fixed income.

4. Extenuating factors in the current market may temper a rise in rates.

Varying U.S. and global macro influences remain in place.
Beyond the lessons of history, a number of mitigating factors unique to the current market environment may also point to a relatively modest rise in interest rates over the next 6 to 12 months. These factors include:

- **Continued central bank support, despite the end of QE in the U.S.** Although its QE asset purchases concluded in October 2014, the Fed continues to reinvest the proceeds from its agency debt and MBS portfolio, thus providing liquidity and helping to keep market rates in check. In addition, amid a slowing global growth environment, both the European Central Bank and the Bank of Japan have embarked on large-scale QE programs of their own, which should serve to keep global rates low.
- **Robust global appetite for Treasuries.** While many governments around the world are racing to depreciate their currencies in an effort to spur economic growth, U.S. monetary policy is moving in the opposite direction. As a result, demand for the relatively higher yields available on dollar-based assets remains strong, boosting their prices and limiting the scope of rate increases.
- **Benign inflation outlook.** Five-year "breakeven" levels—the difference in yields on nominal and inflation-protected Treasury securities, and a measure of inflation expectations—are at the lower end of their post-financial-crisis range. This suggests that markets are not anticipating significant inflationary pressures that would spur higher U.S. rates.

It is worth noting that there are risks to the outlook for moderate interest-rate increases. Rates could rise more quickly if:

- Wage growth or other economic indicators materially surprise to the upside, leading to higher inflation expectations
- Oil or other commodity prices rise more than current base case scenarios would suggest
- The Fed terminates the reinvestment of its QE proceeds earlier than expected, effectively withdrawing liquidity from fixed-income markets

Conclusions

Higher interest rates are on the horizon, although the likelihood of extreme shifts leading to steep bond-market losses may be tempered by a variety of factors. Against this backdrop, fixed-income strategies can differ substantially in the degree of protection they may offer in a rising rate environment.

- Investors who maintain diversified, actively managed exposure to a range of fixed-income securities may be better positioned to withstand the potential impact of rising interest rates than investors with index-like or more concentrated exposures.
- Investors are often better served by maintaining consistent, strategic exposure to fixed income over time rather than opportunistically trying to time rotations among equity, fixed income and other asset classes.

Despite the vulnerability of bond valuations to rising interest rates, we believe fixed-income exposure can continue to play a useful role in our clients' portfolios, if managed effectively. A fixed-income strategy that considers the issues and perspectives explored in this paper may provide the basis for navigating ever-changing markets.

Visit us at **www.tiaa-cref.org/assetmanagement** for additional information about TIAA-CREF's fixed-income capabilities.

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