The effect of rising interest rates on bonds, stocks and real estate

April 11, 2017

TIAA Investment Outlook

What to expect over the balance of the year

We have raised our forecast for 2017 U.S. GDP growth to 2.6%, a faster pace than in Europe and Japan. In emerging markets, we expect further stimulus from China as it gradually transitions to a more consumer-led economy.

• The rise of political populism may bring a new era in which governments put greater emphasis on fiscal spending to stimulate growth.
  • Expectations for the incoming Trump administration and Republican Congress have already lifted equity markets, interest rates, and the U.S. dollar.
• International equities underperformed yet again on U.S. dollar strength and financial risk.
• Improving economic data and a rollout of more growth and business friendly public policies should help diversified investors in 2017.
How does one prepare?

What can you do:
1. Stay educated
   - Understand different types of investment vehicles
2. Manage Risk
   - Carefully evaluate alternatives

Agenda

How Interest Rates affect the following:

- Fixed Income Portfolio
- Real Estate Portfolio
- Equity Portfolio
- Risks, Conclusion, Summary
Background on Bonds

Bonds are debt instruments issued by corporations, municipalities and governments to raise money for projects. These entities pay investors interest over the term of the bond and return principal at maturity.

Bond Prices and Interest Rates move inversely, that is, in the opposite direction. Falling rates cause bond prices to rise and rising rates cause bond prices to fall.

Given a change in the general level of interest rates:

- longer-term bonds are more volatile than shorter-term bonds
- lower coupon bonds are more volatile than higher coupon bonds
- discounted bonds are more volatile than premium bonds
- lower quality (credit) bonds are more volatile than higher quality bonds
Currently in fixed-income market

Since the global financial crisis and recession of 2007–2009, Fed policy has expanded well beyond its traditional focus on influencing short-term interest rates via the target federal funds rate, which has been maintained at nearly 0% since December 2008. Through aggressive, open-market asset purchases (including three waves of QE), the Fed’s influence has extended to medium- and long-term interest rates as well, including the bellwether 10-year U.S. Treasury yield (Exhibit A). The manner in which the Fed ultimately unwinds its substantial QE3 positions in Treasuries and other fixed-income holdings will certainly have a bearing on the market interest rates on these securities, with the likely effect being a sustained increase in rates.

10-year yield found a bottom in mid-2016 and rose significantly thereafter

Source: Bloomberg.

What is in store for the first half of 2017?

•Renewed strength of the U.S. dollar
•Moderate improvement in the pace of global growth, led by the U.S.
•Interest rates will move gradually higher on the back of accelerating economic growth

*RSource: TIAA Global Asset Management.
Factors to consider

1. Diversification matters
2. Active management may offer advantages over indexing
3. Bond markets have shown resilience following rate increases

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

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)

<table>
<thead>
<tr>
<th>Asset class/sector</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High Yield</td>
<td>Global EM</td>
<td>Floating Rate Notes</td>
<td>Corporate</td>
<td>Securitized</td>
<td>Municipal</td>
<td>Agencies</td>
<td>U.S. Aggregate</td>
<td>Treasuries</td>
<td>Treasuries 20+ Year</td>
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<tr>
<td>Quality</td>
<td>1</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>C</td>
<td>BBB</td>
<td>BBB</td>
<td>BBB</td>
<td>BB</td>
</tr>
<tr>
<td>Maturity</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-3 Years</td>
<td>3-5 Years</td>
<td>5-7 Years</td>
<td>7-10 Years</td>
<td>10+ Years</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Securitized</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>CMBS</td>
<td>ABS</td>
<td>MBS</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Sources: Barclays, TIAA Global 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.
Diversification matters

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.

### Six periods of rising interest rates, 2009–2015

<table>
<thead>
<tr>
<th>Dates</th>
<th>Number of days</th>
<th>Change in 10-year Treasury yield</th>
<th>Overall bond market return (%)&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 1, 2009-Dec 31, 2009</td>
<td>365</td>
<td>+139 bps</td>
<td>5.93</td>
</tr>
<tr>
<td>Oct 8, 2010-Feb 8, 2011</td>
<td>123</td>
<td>+134 bps</td>
<td>-3.09</td>
</tr>
<tr>
<td>Sep 22, 2011-Oct 27, 2011</td>
<td>35</td>
<td>+70 bps</td>
<td>-1.88</td>
</tr>
<tr>
<td>Jul 25, 2012-Mar 11, 2013</td>
<td>229</td>
<td>+64 bps</td>
<td>-0.44</td>
</tr>
<tr>
<td>May 1, 2013–Sep 5, 2013 (“taper tantrum”)</td>
<td>127</td>
<td>+132 bps</td>
<td>-4.85</td>
</tr>
<tr>
<td>Feb 2, 2015–Jun 10, 2015</td>
<td>126</td>
<td>+92 bps</td>
<td>-2.80</td>
</tr>
</tbody>
</table>

On average, longer-maturity, higher-rated bond sectors underperformed during periods when Treasury yields were rising, while shorter-term, lower-rated, and securitized assets outperformed.

- It’s important to remember that in general, high-yield securities remain vulnerable to periods of risk aversion and spread widening.

Sources: Bloomberg, TIAA Investments. Total returns for all categories shown are based on the respective components of the Bloomberg Barclays U.S. Aggregate Bond Index, except as follows: high yield (Bloomberg Barclays U.S. High Yield Index); global emerging markets (Bloomberg Barclays Global Emerging Markets Index); floating-rate notes (Bloomberg Barclays U.S. Floating Rate Notes Index); and municipal (Bloomberg 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.
**The importance of diversification (continued)**

Asset allocation is the case for broad portfolio diversification:
This table conveys why asset class and style diversification are important when building your investment portfolio. It also shows how difficult it is to predict an outperforming asset class or style for any given year. Sometimes the best performing asset class one year becomes the poorest performer the next year and vice versa—please see emerging market equity returns from 2007 to 2009.

The table also highlights the importance of risk management and portfolio rebalancing. The key to achieving your financial goals is to have a diversified investment strategy based on your risk tolerance and investment time horizon. An appropriate allocation and regular rebalancing may help reduce your portfolio’s risk and volatility.

**Notes:**
- **Standard & Poor’s 500** Index (S&P 500) is an unmanaged, market-cap-weighted index of 500 common stocks selected for their market size, liquidity and industry group representation within the U.S. equity market.
- Large-Cap Growth uses the Russell 3000® Growth Index, which measures the performance of Russell 3000® companies with higher price-to-book ratios and higher forecasted growth values.
- Large-Cap Value uses the Russell 3000® Value Index, which measures the performance of Russell 3000® companies with lower price-to-book ratios and lower forecasted growth values.
- Mid Cap uses the Russell Midcap Index, which consists of the smallest 800 companies in the Russell 3000® Index, as ranked by total market capitalization. This mid-cap index represents approximately 20% of the Russell 3000® total market capitalization.

**Sources:** Frank Russell Company, Zephyr Analytics, Wiesenberger, Morningstar, Inc. and Lipper Inc. Please note that equity returns have historically been higher than other asset classes, but carry considerable risk of principal. Fixed-income returns have historically been less than equity returns, are subject to interest-rate risk, but typically bring greater safety of principal. An investment cannot be made into an index. TIAA-CREF Individual Institutional Services, LLC, Teachers Personal Investors Services, Inc., and Nuveen Securities, LLC, Members FINRA and SIPC, distribute securities products. Advisory services provided by Advice & Planning Services, a division of TIAA-CREF Individual Institutional Services, LLC, a registered investment adviser. Diversification is a technique to help reduce risk. There is no guarantee that diversification will protect against loss. Rebalancing does not protect against losses or guarantee that an investor’s goal will be met.

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**Active management may offer advantages over indexing**

#2 Greater flexibility can help mitigate interest-rate sensitivity.

- 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.

**Benchmark composition has changed**

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

<table>
<thead>
<tr>
<th>Sector</th>
<th>2008</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treasury</td>
<td>13.5</td>
<td>38.1</td>
</tr>
<tr>
<td>Corporate</td>
<td>25.1</td>
<td>30.3</td>
</tr>
<tr>
<td>Securitized (MBS, CMBS, ABS, other)</td>
<td>43.7</td>
<td>38.1</td>
</tr>
<tr>
<td>Other</td>
<td>17.7</td>
<td>26.8</td>
</tr>
</tbody>
</table>

Source: Bloomberg.
Bond markets have tended to be resilient when rates rise

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.

![Intermediate-term government bonds: 1-year and rolling 3-year total returns since 1926](image)


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.

#3

What happens when rates rise sharply from low levels?

Since 1926, there have been three years—1931, 1958 and 2009—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 same years, **intermediate-term government bonds** performed as such:

<table>
<thead>
<tr>
<th>Year</th>
<th>1 year return</th>
<th>3 year return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931</td>
<td>-2.32%</td>
<td>2.67%</td>
</tr>
<tr>
<td>1958</td>
<td>-1.29%</td>
<td>3.19%</td>
</tr>
<tr>
<td>2009</td>
<td>-2.40%</td>
<td>4.60%</td>
</tr>
<tr>
<td>2013</td>
<td>-3.68%</td>
<td>3.17%</td>
</tr>
</tbody>
</table>

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.
Real Estate Portfolio

Real Estate vs. REITS

REITs vs Real Estate
Real Estate vs. REITs

What is Direct Equity Real Estate?
Direct equity real estate represents ownership of physical properties such as office, retail, apartment and industrial buildings.

Direct real estate portfolio management:
1. Acquires and manages properties.
2. Invests funds for capital improvements, tenant improvements and leasing commissions.
3. Generates returns through the collection of rent and capital appreciation of property values.

What is a Real Estate Investment Trust (REIT)?
REITs are public companies that are required by the U.S. tax code to:
1. Hold most (75%) of their assets in commercial property
2. Generate most (75%) of the revenue from property rents
3. Return most (90%) of that income to investors in dividends

Rising Rates and Real Estate

Real estate investors fear that rising interest rates will cause property values to fall and total returns to weaken.

Why one should not worry:
1. Real estate should remain a solid, attractive investment
2. The outlook, based on current economic conditions, are favorable
3. Real estate provides diversification

Historical data show that higher interest rates have not necessarily derailed real estate total return performance. In fact, property performance has often remained resilient in the face of rising rates.
Rising Rates and Real Estate

Examining the overlay of periods of rising 10-year Treasury yields shows that property performance has often remained resilient in the face of rising interest rates.

NPI (NCREIF Property Index) quarterly total returns and periods of rising interest rates

Source: TIAA Global Asset Management.

Equity Portfolio
Rising Rates and Equities

Impact on stocks is likely to be modest overall, except for rate-sensitive sectors
Given few lasting patterns in stock returns and the widely variable nature of each cycle, investors should consider any tactical changes carefully.

A maturing cycle typically comes with rising interest rates but also rising equity prices.
Why one should not worry:
1. Impact on equities is hard to predict
2. History shows a small but positive correlation to rising rates
3. Equity bear market unlikely to take hold absent a U.S. recession
Risks to our outlook

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

Conclusion

• Fixed-income strategies can differ substantially in the degree of protection they may offer in a rising rate environment
• Risk-adjusted returns on real estate investments should remain relatively attractive in 2017 despite the expected rise in interest rates
• Impact on stocks is likely to be modest overall, except for rate-sensitive sectors

Diversification and Active Management may position better against rising rates

Market timing is not the answer
Summary – Next Steps

• Revisit your asset allocation
• Understand Active vs Passive investing
• Leave emotions at the door
• Speak to your Financial Advisor!

Thank you
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Diversification is a technique to help reduce risk. There is no guarantee that diversification will protect against a loss of income.

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