SPEAKING OF MARKETS

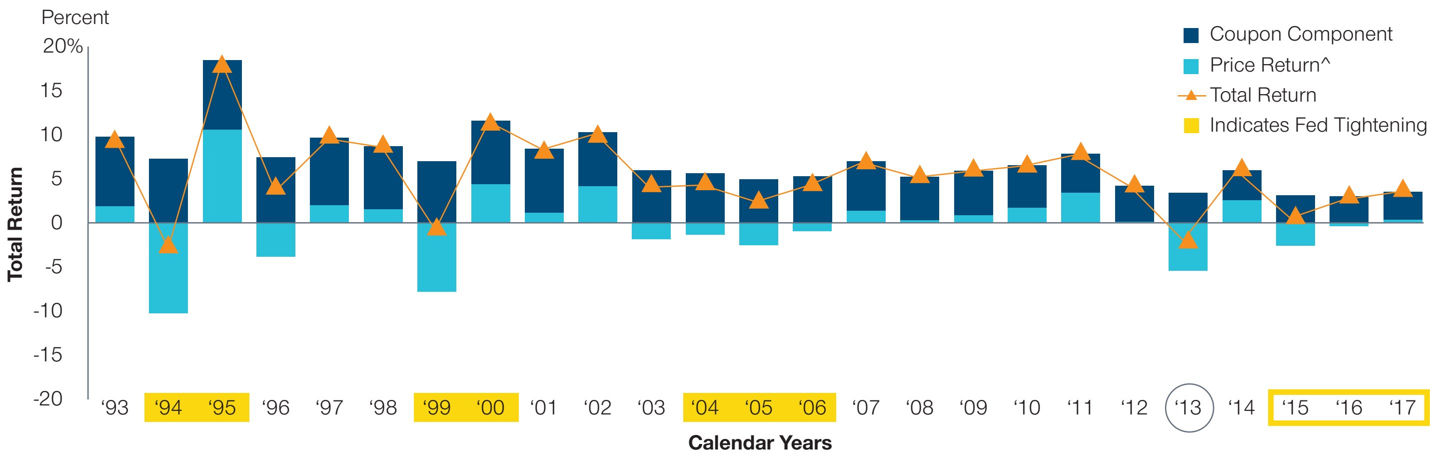
UNDERSTANDING BONDS IN A RISING INTEREST RATE ENVIRONMENT

Including bonds in your investment mix makes sense even when interest rates may be rising. Bonds' interest component, a key aspect of total return, can help cushion price declines resulting from increasing interest rates. Additionally, the prices of international bonds do not always move in concert with U.S. rates, a benefit of diversification.

Bonds play an important role in balancing portfolios

Bonds provide you with some valuable advantages. They can dampen the overall volatility of a stock-heavy portfolio because bond prices usually fluctuate less than stocks, and bonds may provide steady interest payments that help support their returns. A bond fund's total return is determined by both interest payments and the bond's price fluctuation. The graph below illustrates the components of bond returns since 1993.

UNDERSTANDING TOTAL RETURNS OF THE U.S. BOND MARKET



The highlighted years are periods of rising fed funds rates, representing the three most recent cycles in which the Federal Reserve increased interest rates over a complete cycle. The year 2013 is circled above for the so-called taper tantrum in which the 10-year U.S. Treasury yield increased by approximately 150 basis points after the Federal Reserve mentioned the possibility of gradually reducing the quantitative easing purchase program. As we move into 2018, we are still in the midst of a "Fed tightening cycle." One of the key differentiators of this tightening cycle (outlined in yellow) compared with previous cycles (highlighted in yellow) is the slow and deliberate communication from the Fed about its rationale and intentions to raise interest rates and reduce quantitative easing (QE). The Fed appears determined to not surprise the markets or cause significant volatility. We expect this rate tightening cycle to continue at a gradual pace as the U.S. economy and labor markets continue to improve and inflation potentially picks up.

Source: Bloomberg Barclays. The U.S. fixed income market is represented by the Bloomberg Barclays U.S. Aggregate Bond Index. ^Includes prepayment factor on securitized products.

Evaluating bond performance

The orange line on the graph above represents the total return of the U.S. bond market for recent calendar years. As you can see, while the price return fluctuates from year to year, the coupon component stays relatively stable, helping to support total returns.

When interest rates rise

When the U.S. Federal Reserve raises short-term interest rates, it's referred to as "Fed tightening." Technically, the Fed is targeting short-term overnight interest rates. Longer-term interest rates, such as home mortgage rates or 10-year U.S. Treasury yields, are less affected by the Fed's actions on short-term interest rates. Longer-term rates are usually driven by investors' expectations for economic growth and inflation. The highlighted years on the graph indicate the years when short-term interest rates were increased. While there were periods of price declines and negative total return, these periods were very short in duration and were followed by positive returns. Past performance cannot guarantee future results.

THE IMPORTANCE OF DIVERSIFICATION

Diversification is as important for your bond portfolio as it is for your stock holdings. Bonds may be diversified in many ways, including sector, duration, country of origin, credit quality, or issuer type. As shown in the chart below, historical performance has varied widely across different international bond markets; an investor holding a portfolio diversified beyond just the U.S. could benefit from the positive returns of one or more bonds while another or others are declining. Diversification, however, cannot assure a profit or protect against loss in a declining market.

PERFORMANCE IN PERIODS OF RISING RATES

As of December 31, 2017

Periods of Rising Rates[1]	U.S. Bond Market	Global High Yield	Emerging Markets	Global Bond Ex-U.S.
February 1994–February 1995	0.01%	1.08%	-24.26%	8.81%
June 1999–May 2000	2.11%	-2.77%	14.67%	-6.24%
June 2004–June 2006	3.09%	8.12%	11.84%	4.31%
July 2012–December 2013	-0.17%	10.50%	2.56%	0.07%
December 2015–December 2017	2.81%	11.01%	9.03%	6.28%

[1] Periods of rising rates in the U.S. have historically produced different responses internationally. The U.S. bond market is represented by the Bloomberg Barclays U.S. Aggregate Bond Index and includes (but is not limited to) a broad representation of investment-grade U.S. bonds, including corporate bonds, U.S. Treasury securities, government agency bonds, and mortgage-backed bonds. Global high yield, represented here by the J.P. Morgan Global High Yield Index, is composed of domestic and international issues of high yield corporate debt. Emerging markets is based on the J.P. Morgan EMBI Global Diversified Index, which tracks total returns on debt instruments issued in emerging markets. Global bond ex-U.S. is represented by the Bloomberg Barclays Global Aggregate ex USD Bond Index, which is a broad-based measure of global investment-grade fixed income, government, corporate, and securitized issues outside the U.S. It is not possible to invest directly in an index.

Why do bond prices decline when interest rates rise?

When you buy a bond, you are making a loan to an organization such as a corporation or government entity. A bond is basically an IOU given by a borrower (the issuer) to a lender (the investor).

If you buy a bond and hold it to maturity, the issuer pays you interest, also known as a coupon, periodically and returns your principal on the maturity date. Let's assume the coupon rate of a bond is 5%. When interest rates rise, new bonds will be issued with a higher coupon rate, which means the investor will receive higher interest payments. That means the old bond with the 5% coupon rate isn't as desirable. In order for that bond to be attractive to investors, it must be priced at a discount to the new higher-rate bonds.

Bond mutual funds are subject to the same fluctuations.

Rising rates can have a silver lining for bond investors

When the Fed raises short-term interest rates in a measured way (Fed tightening), this can be good news for long-term investors exposed to bonds.

- Bonds remain a critical component of a diversified portfolio as they help dampen the volatility of stock exposure.
- During periods of rising interest rates, regular coupon payments and reinvestment in new higher-yielding bonds help cushion the impact of declining prices for existing bonds and can boost total return over time.
- During past periods of Fed tightening, total returns for bonds (as measured by the Bloomberg Barclays U.S. Aggregate Bond Index) were fairly benign, and any loss was limited to one year.

> *"If history is a guide, there may be a hiccup in the bond market over the short term during a rising rate environment, but longer term, it means higher coupon payments bolstering total returns over time."*
>
> —Judith Ward, CFP®

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