

# Investing in a Rising Rate Environment

## *How Rising Interest Rates Affect Bond Portfolios*

By Baird's Private Wealth Management Research

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### Summary

With historically low interest rates and the unprecedented monetary and fiscal stimulus measures taken to combat the market downturn of 2008–2009, many believe that the Fed has no choice but to begin raising interest rates in the near future. That is a normal course of action and signals that the Fed believes the economy is on sounder footing. Yet, the prospect of rising interest rates provides much consternation for bond investors, who may be disserved by such action. In this paper, we seek to analyze recent periods of rising interest rates, evaluate how bonds performed and dispel myths that bonds make for a poor investment in these periods.

### Understanding Bond Performance

Many factors may influence the performance of a bond portfolio, but changes in interest rates and corresponding bond yields remain the principal drivers. All too often investors are overly concerned that when interest rates rise, the prices of their bonds will fall. In fact, this is a mathematical truth – the directional changes of interest rates and bond prices are inversely related. Despite the intuitive nature of a bond (collect periodic interest payments and reclaim par value at maturity), these instruments can be quite complex. By focusing solely on short-term price reductions, investors can miss the opportunity to reinvest proceeds in bonds that offer higher yields. Understanding the concept of total return is critical when investing in bonds: *total return measures both price movements and income received*. This paper will highlight why a total return perspective is needed, particularly in periods of rising interest rates.

## Identifying Rising Rate Environments

The Federal Funds Rate, a target set by the Federal Reserve (Fed), is a reliable proxy for interest rate movements over time. This is the rate at which banks can lend money to one another, essentially dictating how “expensive” money is. Within the last 20 years, there have been three

distinct periods when the Fed went on a campaign of raising the Fed Funds Rate target (areas shaded in Graph 1). The duration and magnitude vary based on economic conditions. For example, the 1994–1995 increases lasted 14 months with a 3.0% rise in rates, while the 2004–2006 campaign lasted 25 months with a rate increase of 4.25%.

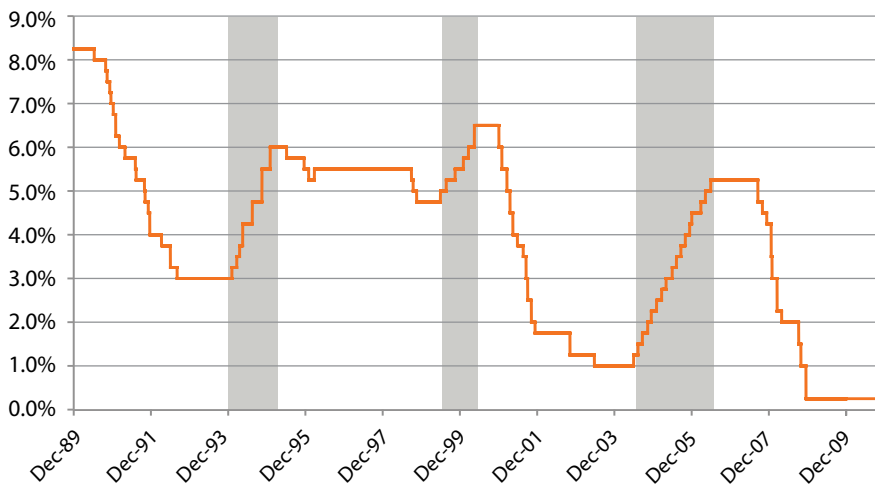
Adjusting this rate is among the most effective tools the Fed has to govern the economy. Nevertheless, this is a tool that affects both stock and bond investments. It is through analysis of these three time periods (a total of 51 months) that we can begin to gain a historical perspective of how bonds truly react to rising interest rates.

### Focus on Total Return

The relationship between positive income (or yield) effects and negative price effects ultimately determines how bonds perform in rising rate environments. Baird analyzed an index representing a broad mix of government and corporate bonds (the Barclays Capital Intermediate Government/Credit Index) to determine how price, yield and total returns changed during these three periods (Table 1). As expected, price return was negative in the majority of the 51 months – 68% to be exact. Conversely, income return was positive in each month. In isolation, both price return and income return provide an incomplete picture of how an investor’s portfolio may have performed – one measure is favorable, the other is not. Total return, the

GRAPH 1:

### Federal Funds Rate (1990–2010)



Source: Federal Reserve Board; Baird Analysis

TABLE 1:

### Decomposing Total Return in Rising Rate Environments

	% of Months With Positive Returns	% of Months With Negative Returns	Average Monthly Return
<b>Price Return</b>	32%	68%	-0.3%
<b>Income Return</b>	100%	0%	0.5%
<b>Total Return</b>	64%	36%	0.2%

Source: Barclays Capital; Baird Analysis

combination of price and income returns, is a more accurate measure of whether bond investments rose or fell. Our analysis shows that total return was positive in 64% of the observations, to the tune of a 0.2% average monthly return. To be sure, these are relatively muted returns, but not nearly as dire as what would be expected based upon a singular focus on price return.

To visually illustrate the performance of bonds in a rising interest rate environment, Graph 2 shows the cumulative performance of the index over the three rising interest rate periods. As you can see, price return was negative, as expected, but income performance helped drive total returns higher during each of the three periods. The duration of the rising interest rate period should also be noted. Depending on the environment, the Fed may act swiftly or may be more methodical in its actions. For example, the most recent rising interest rate cycle (2003–2006) lasted

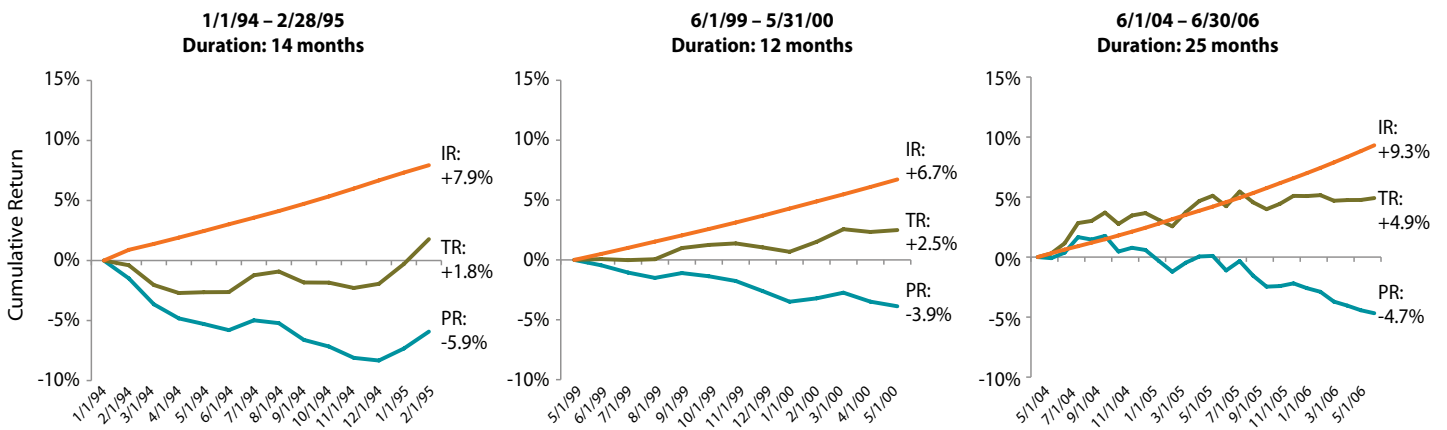
approximately 25 months, delivering a total return of 4.9% for the index over that time period. In contrast, the 1994–1995 cycle lasted only 14 months and delivered a total return for the index of 1.8%. The approach that the Fed uses has implications for bond investors, particularly when determining whether to have a preference for bonds or cash during the cycle. The more prolonged and methodical the Fed's actions are, the more compelling bonds are relative to cash.

### Diversification Works

The investable bond universe is very expansive, with more than one thousand issuers and tens of thousands of bonds available. Major issuers of bonds include governments, government agencies and corporations. Each bond is subject to different risks and rewards, and therefore performs differently in varying market environments. Diversifying your portfolio by bond type can often help limit the

GRAPH 2:

### Price Return (PR), Income Return (IR) and Total Return (TR) in Rising Rate Environments



Source: Barclays Capital; Baird Analysis

impacts of rising interest rates. Table 2 shows the performance of various types of bonds during periods of rising interest rates. For example, corporate bonds outperformed Treasury bonds in two

periods, but lagged in one. It is difficult to generalize what segment of the bond market performs best when rates are increasing; therefore, it is important to have exposure to many different bond types. Additionally, owning bonds with different maturity ranges provides a level of diversification. Generally, shorter/intermediate maturity bonds offer better principal protection than longer maturity bonds.

While focusing on how different bond types perform during these periods is a prudent exercise, it is also important to consider how bond types perform over time through rising and falling interest rate cycles. Strategic portfolio allocations to bonds should be based on longer-term objectives and market expectations. Graph 3 shows the 10-year annualized returns of various bond types. Investors that had broader exposure to different bond types generally would have outperformed cash by a wide margin over the last 10 years. It is extremely hard to predict when to tactically move from bonds to cash; therefore, a longer-term strategic allocation to bonds is typically the best approach.

TABLE 2:

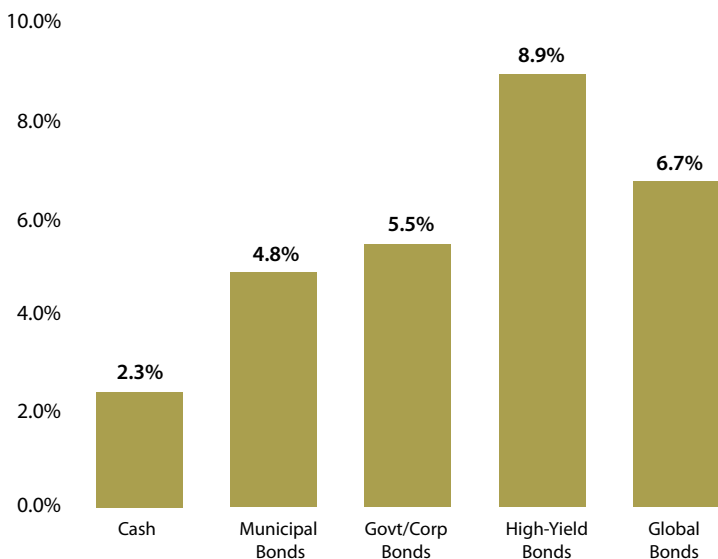
**Performance by Bond Type During Rising Rate Environments**

		<b>Cumulative Total Return (1/1/94–2/28/95)</b>	<b>Cumulative Total Return (6/1/99–5/31/00)</b>	<b>Cumulative Total Return (6/1/04–6/30/06)</b>
<b>BY BOND TYPE</b>	<b>Broad U.S. Taxable Bonds</b>	1.4%	2.1%	6.5%
	Treasury Bonds	0.5%	3.4%	5.7%
	Agency Bonds	0.8%	1.6%	6.2%
	Corporate Bonds	0.9%	0.0%	6.4%
	<b>Int'l Bond Market</b>	10.5%	-6.2%	9.2%
	<b>High-Yield Bonds</b>	3.8%	-3.2%	17.9%
<b>BY MATURITY</b>	<b>U.S. Municipal Bonds</b>	1.7%	0.7%	5.2%
	<b>Cash</b>	5.2%	5.2%	6.2%
	<b>Short Govt/Corp Bonds</b>	3.3%	4.0%	4.2%
	<b>Intermed Govt/Corp Bonds</b>	1.8%	2.5%	4.9%
	<b>Long Govt/Corp Bonds</b>	-1.9%	0.7%	10.2%

Source: Barclays Capital; Baird Analysis. See appendix for benchmark definitions.

GRAPH 3:

**Ten-Year Asset Class Returns (as of 12/31/10)**



Source: Barclays Capital. See appendix for benchmark definitions.

**Professional Bond Management**

Professional bond investors, either managing a mutual fund or separate account, often employ a total return philosophy using a variety of methods. They use their experience to evaluate the current marketplace and incorporate future expectations before constructing the most suitable portfolio. The need for active management of bond portfolios increases when the consequences of inaction rise. It is important to note that each of the Fed's monetary tightening campaigns was accompanied by a different economic backdrop.

What worked in one period is not guaranteed to work in the next. Outsourcing the management of your bond portfolio to experienced bond investors during these uncertain times is a suitable option to consider.

There are many tools that portfolio managers have at their disposal. Table 3 lists a few broad strategies that may prove effective in offsetting some of the negative effects of rising interest rates on bond prices.

TABLE 3:  
**Strategies Employed by Active Bond Managers**

Investment Strategy	Description
Duration Management	Reducing the duration of a portfolio can lessen its sensitivity to interest rate changes
Yield Curve Management	Rates may not increase in tandem along the maturity spectrum, making some areas more attractive than others
Bond Selection	Finding undervalued bonds can add the potential for price appreciation
Investing Globally	Not all countries will experience the same degree of monetary tightening as the United States
Sector Allocation	Selecting sectors that may have less of a price impact from rising rates (e.g., some non-government or corporate bond types)

Managers may attempt to limit the expected price impact (i.e., shorten the duration of the portfolio), diversify into bonds that are less susceptible to rate changes or find opportunities in mispriced bonds. Through prudent use of these strategies, managers may be able to increase potential performance relative to benchmarks or attempt to avoid those areas most impacted by rate increases.

## Where Are We Now?

The Treasury yield curve represents the additional yield that investors require when buying longer maturity bonds. The shape and steepness of the yield curve is useful when determining whether to position a portfolio in short-, intermediate-, or long-term bonds. Currently the spread, or the difference in yield, between 2-yr and 10-yr maturities is 2.7 percentage points, well above the historical average of 0.9% to 1.2%, indicating a very steep yield curve. It is expected that if the U.S. economy strengthens, the Fed will first reduce some of the monetary stimulus and then at some point increase the Federal Funds Rate target, causing an increase in short-term rates. All else being equal, this will push the short end of the yield curve higher, reducing the steepness of the yield curve. In similar historical periods, yields on the intermediate and long end of the curve rose to some extent, but did not rise as much as the short end.

It is a common practice for investors to avoid longer-maturity bonds in rising rate periods, but given the steepness of the yield curve, an increase in short-term rates is likely to have a lower-than-typical impact on the intermediate and long end of the curve as spreads begin to normalize. We stress that while greater total return opportunities may be presented further along the yield curve, these bonds come with additional risks (namely heightened sensitivity to rate movements). Therefore, it is important to speak with your Financial Advisor about your risk tolerance in relation to your bond investments.

## Conclusion

It is virtually impossible to forecast when the Fed will increase rates, how swift or protracted its actions will be, and what the exact impact will be on bond returns. We do know that bonds play an important role in a client's portfolio – be it through capital preservation, providing income, diversification, or some combination thereof. Our analysis of prior periods of rising interest rates suggests that increases in yield more than offset decreases in price. To be sure, there will be periods of negative price movements and total returns may be somewhat muted; however, these concerns do not trump the importance of a strategic allocation to bonds in a portfolio. It is our opinion that a diversified bond portfolio with exposure to various sectors and managed by a skilled portfolio management team is a prudent action in these uncertain times.

**If you have questions or need more information, please contact your Financial Advisor.**

Indices are unmanaged and are used to measure and report performance of various sectors of the market. Past performance is not a guarantee of future results and diversification does not ensure against loss. Direct investment in indices is not available.

Foreign investments involve additional risks such as currency rate fluctuations, the potential for political and economic instability and different and sometimes less strict financial reporting standards and regulation. While investments in non-investment-grade debt securities (commonly referred to as high-yield or junk bonds) typically offer higher yields than investment-grade securities, they also include greater risks, including increased credit risk and the increased risk of default or bankruptcy. Additionally, mortgage- and asset-backed securities include interest rate and prepayment risks that are more pronounced than those of other fixed income securities.

### Benchmark Definitions

**Barclays Capital Intermediate Government/Credit Bond Index (Govt/Corp Bonds):** Composed of approximately 3,500 publicly issued corporate and U.S. government debt issues rated Baa or better, with at least one year to maturity and at least \$1 million par outstanding. The index is weighted by the market value of the issues included in the index. The index has duration of a little more than three years and a maturity equal to slightly more than four years.

**Barclays Capital Global Aggregate Bond Index (Global Bonds):** The Barclays Capital Global Aggregate Index provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the U.S. Aggregate, the Pan-European Aggregate and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian Issues and USD investment-grade 144A securities.

**Barclays Capital Global Aggregate Bond Index ex US (Int'l Bonds):** A subset of the Barclays Capital Global Aggregate Bond Index that excludes U.S. Bonds.

**Barclays Capital High Yield U.S. Corporate (High-Yield Bonds):** The Barclays Capital High Yield Index covers the universe of fixed-rate, non-investment-grade debt. Pay-in-kind (PIK) bonds, Eurobonds and debt issues from countries designated as emerging markets (e.g., Argentina, Mexico, Venezuela, etc.) are excluded, but Yankee and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes and step-up coupon structures are also included.

**Barclays Capital Municipal Bond Index (Municipal Bonds):** A broad market performance benchmark for the tax-exempt bond market. For inclusion, bonds must have a minimum credit rating of at least Baa, an outstanding par value of at least \$5 million and be issued as part of a transaction of at least \$50 million. Bonds must have been issued after 12/31/90 and have a remaining maturity of at least one year.

**Citigroup Treasury Bill 3 Month (Cash):** The Citigroup 3-Month T-Bill Index is an unmanaged index of three-month Treasury bills. Unless otherwise noted, index returns reflect the reinvestment of dividends and capital gains, if any, but do not reflect fees, brokerage commissions or other expenses of investing. It is not possible to invest directly in an unmanaged index.