White Paper

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Bonds at Risk?

How to Invest When Rates Are Rising

30-year secular interest rate decline ending?

Bonds' historical diversification benefit eroding?

Alternative investments may be valuable diversifiers.

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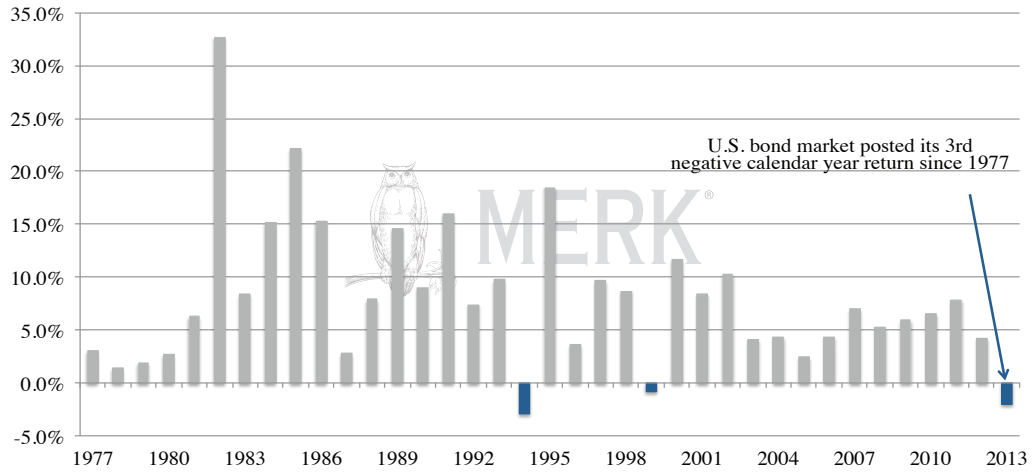
The concern over rising interest rates has become a primary issue with investors. While few assets are immune to rising rates the bond market may be particularly vulnerable. The headwinds may be exacerbated by changing fundamentals in the U.S. bond market, specifically growing concentration, extended duration and changing correlations posing a greater challenge for investors to manage their duration risk. More concerning to investors may be that that, as we will show, the benefits of bonds as portfolio diversifiers may have eroded. Is the bond market at a turning point? How should one invest in a rising rate environment? Our analysis suggests that in addition to active risk management within a fixed income allocation, building a more diversified portfolio with the inclusion of alternative assets may provide investors with an improved risk-return trade-off heading into a period of rising interest rates.

The end of the 30-year bond bull market?

As the year comes to an end, 2013 has left the U.S. fixed income market scarred. In contrast with the stock market's repeated new highs, the U.S. bond market as measured by the widely followed Barclays U.S. Aggregate Bond Index, has posted its first negative calendar year return[1] since 2000; only the third negative year in the index's 37-year history (Figure 1). Along with the lagging performance the U.S. bond market has experienced rising volatility and a shift in investor sentiment.

Figure 1. U.S. Bond Market Annual Return*

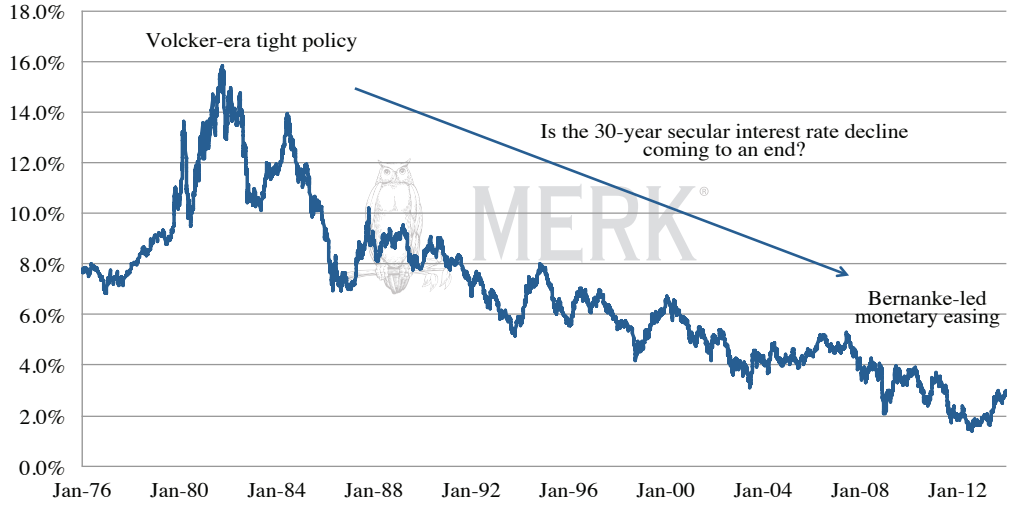


Source: Merk Investments, Bloomberg, Barclays Capital
* Measured by Barclays U.S. Aggregate Bond Index
Period: Jan. 1, 1977 - Dec. 31, 2013

Speculation of the Fed winding down its quantitative easing (QE) program and fear of rising short-term interest rates has dominated the bond market in 2013. More profoundly, it seems investors are increasingly moving to the consensus that the U.S. fixed income market may be approaching a key turning point: the end of a 30-year secular interest rate decline which started at the height of the Volcker-era tight-money policy and which was fueled by recent extraordinary monetary easing (Figure 2).

1 *The Barclays U.S Aggregate Bond Index declined 2.02% during the period from January 1, 2013 to December 31, 2013*

Figure 2. Generic 10-Year Treasury Yield



Source: Merk Investments, U.S. Treasury, Bloomberg
Period: Jan. 1, 1976 - Dec. 31, 2013

Down the road, pervasive market expectations of higher interest rates could put continuous pressure on bond prices. Adding to the risk, current bonds yields are near historical lows and seemingly have nowhere to go but up. The total return on bonds is the combination of income and price movement. In previous periods when interest rates rose relatively high coupon payments often provided an effective buffer to the total return on bonds. Now, however, with yields near record lows, the income bonds generate may not be sufficient to offset the loss from price decline due to rising interest rates, resulting in a loss in total returns.

In addition to the rising rates expectation, adding to the bond market risk is the Fed's lack of effective communication on policy path, uncertainty surrounding the U.S. fiscal impasse and rapidly growing U.S. long-term debt. Moreover, inflation risk may materialize sooner than the market expects but has not yet been priced in.

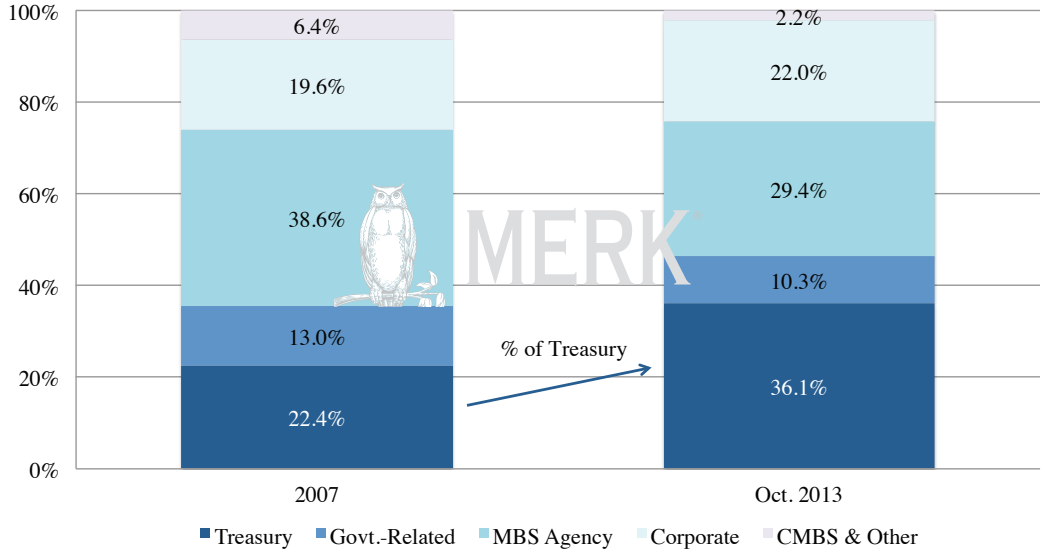
How "safe" is your bond portfolio?

With this backdrop investors may want to take a close, hard look at the risks associated with the fixed income component of their portfolios. Bonds are traditionally considered a "safe" haven compared to riskier stocks in their long-term asset allocation. But the term "safe" is misleading; fixed income investments are subject to interest rate risk, credit risk, liquidity risk and prepayment risk among others. Given the current market circumstances investors may agree that interest rate risk poses the primary threat to most fixed income portfolios. What is less acknowledged are some specific changes to underlying fundamentals in the U.S. fixed income market:

1) Growing concentration in Treasuries:

Using the Barclays U.S. Aggregate Bond Index as a proxy the U.S. fixed income market has undergone a significant change in its composition since the onset of the financial crisis. Most notably the share of Treasury securities has risen sharply from 22.4% to 36.1% (Figure 3). It was driven by increased issuance of U.S. Treasuries (a record high in 2010) and the decline in the supply of mortgage-backed securities (MBS) following the financial crisis.

Figure 3. Composition of Barclays U.S. Aggregate Bond Index



Source: Merk Investments, Barclays Capital

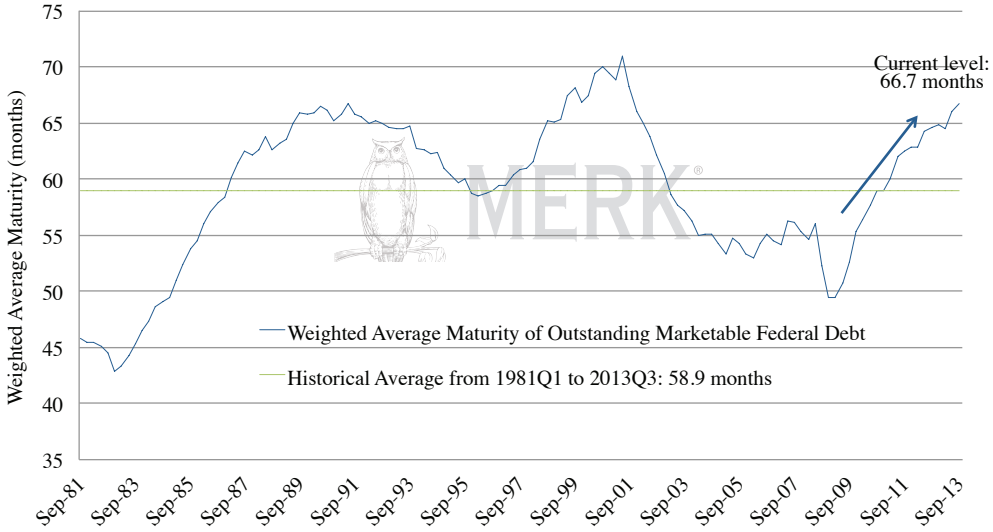
For investors whose bond portfolios track closely the Barclays U.S. Aggregate Bond Index, this changing composition marks an undesirable growing concentration in Treasuries (interest rate sensitive) and a shrinking representation of "spread sectors" (credit spreads generally tighten in periods of rising interest rates, partly offsetting the upward move in the yield curve). It also poses increased challenges for investors that seek to build a diversified fixed income portfolio. Even investors who are "underweight" Treasuries relative to today's benchmark may still have a higher concentration than they did five years ago making the overall portfolio more vulnerable to rising interest rates.

2) Extended duration on aggregate:

In addition to an increased concentration in Treasury securities the U.S. fixed income market on aggregate also has a longer duration. The effective duration of the Barclays U.S. Aggregate Bond Index has extended to 5.41 years as of September 2013 from 4.47 years in 2006. To an extent, this should not be surprising. The Fed's extraordinary monetary policies have resulted in extremely low yields at the short end of the yield curve prompting the Treasury and large corporations to issue longer dated bonds. From the perspective of the issuer longer duration reduces interest rate risk as financing can be maintained at relatively low rates for a longer period of time in the event that rates start to rise relative to issuing shorter dated debt that would need to be refinanced at new higher rates.

The weighted average maturity of marketable Federal debt outstanding has increased by 19 months: from 3 years, 11 months in October 2009 to 5 years, 6 months in September 2013 (Figure 4).

Figure 4. Weighted Average Maturity of Marketable Federal Debt

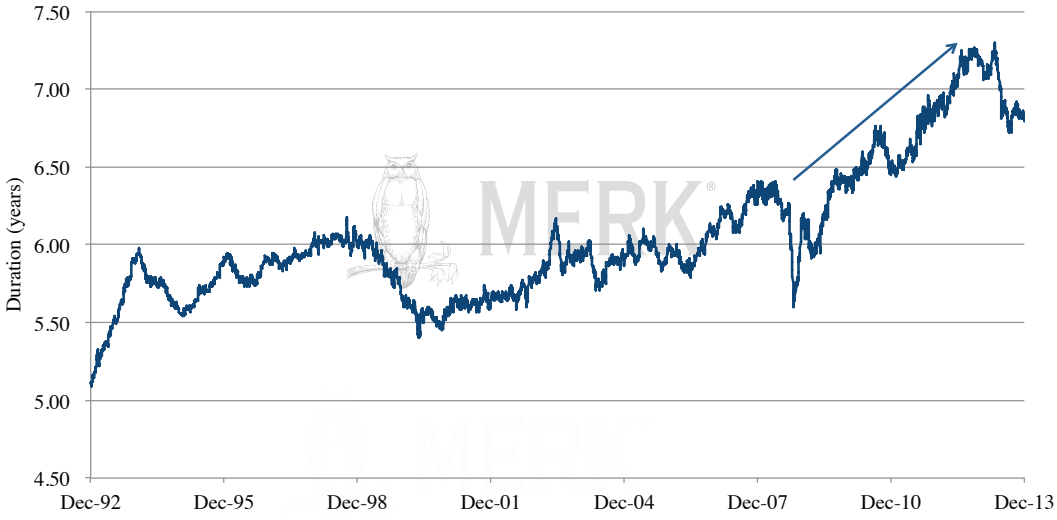


Source: Merk Investments, U.S. Treasury, Bloomberg
Period: 1981 Q2 - 2013 Q3; quarterly data

3) Longer duration, increased risk:

Similar dynamics are also evident in the corporate fixed income sector. In just five years the modified duration of U.S. corporate fixed income is almost 1 year longer; breaking a record high in 2013 (Figure 5). From a corporation's perspective this trend is a rational response to the Fed's monetary policies; with long-term interest rate at historical lows it makes sense that corporations would issue longer maturity debt to lock in ever-cheaper sources of funding.

Figure 5. Duration of U.S. Corporate Fixed Income*

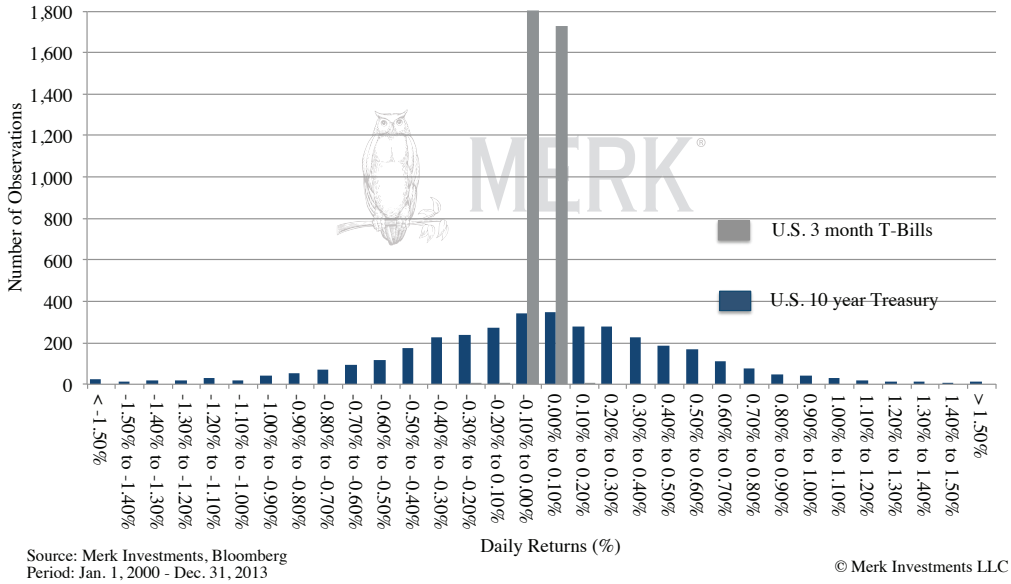


Source: Merk Investments, Bloomberg, Barclays Capital
* Barclays Capital Aggregate Corporate Statistics Modified Adjusted Duration
Period: Dec. 31, 1992 - Dec. 31, 2013

Longer duration naturally means more interest rate risk. For example, an investor in a 10 year US Treasury bond is agreeing to receive a fixed coupon for 10 years. If interest rates go up, new issuances will carry higher coupons; the penalty to the investor of the low coupon bonds is that they can only sell their bonds in the secondary market for a price that matches the yield of their bonds to the yield of the newly issued bonds. In other words, the coupon difference is reconciled in the price of the bond which will go down. The more time remaining to maturity the more the price has to fall to make up for the foregone higher coupon payments.

Longer duration securities exhibit much larger and more frequent price movements compared to short duration securities. Consider the historical daily return distribution of the 10-Year Treasuries versus short-term T-Bills (Figure 6). Similarly, an aggregate longer duration makes for a more volatile fixed income market.

Figure 6. Distribution of U.S. Government Security Daily Price Returns



Source: Merk Investments, Bloomberg
Period: Jan. 1, 2000 - Dec. 31, 2013

Moreover, in anticipation of widely higher interest rates down the road we expect to see yield curve steepening (which has already started to happen) before interest rates rise across the curve. In other words, long-term interest rates are likely to continue to rise, while short-term interest rates stay low.

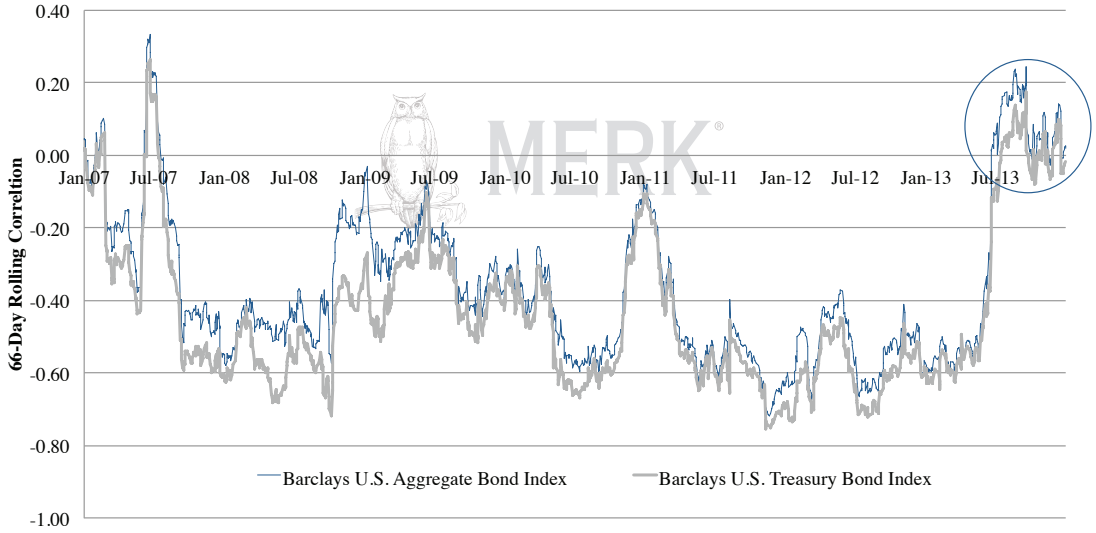
Market perception of the Fed's policy and U.S. economic outlook may continue to be the driver. In view of the Fed having started its first reduction, or "taper", of the QE program, we believe a meaningful move higher in long term rates may be in sight amid the backdrop of an improving U.S. economy and labor market.

The message for investors is that long-duration securities may continue to be under pressure. For investors who have accumulated a significant portion of Treasuries and who have moved out along the yield curve in recent years, it may be time to scrutinize the concentration and duration risks of their portfolios.

Diversification benefits of bonds eroding?

Another changing dynamic is observed in the correlation between the U.S. bond and stock market. The historically negative correlation with stocks makes bonds an integral part of traditional asset allocation and diversification. In contrast, consider the recent change illustrated in Figure 7. Since May 2013, when the Fed first hinted that it might begin to scale back the QE program, the rolling correlation between bonds and stocks sharply spiked from negative to positive and remained at elevated levels thereafter.

Figure 7. 66-Day Rolling Correlation with S&P 500 Total Return Index



Source: Merk Investments, Bloomberg
Period: 1/1/2007 - 12/31/2013

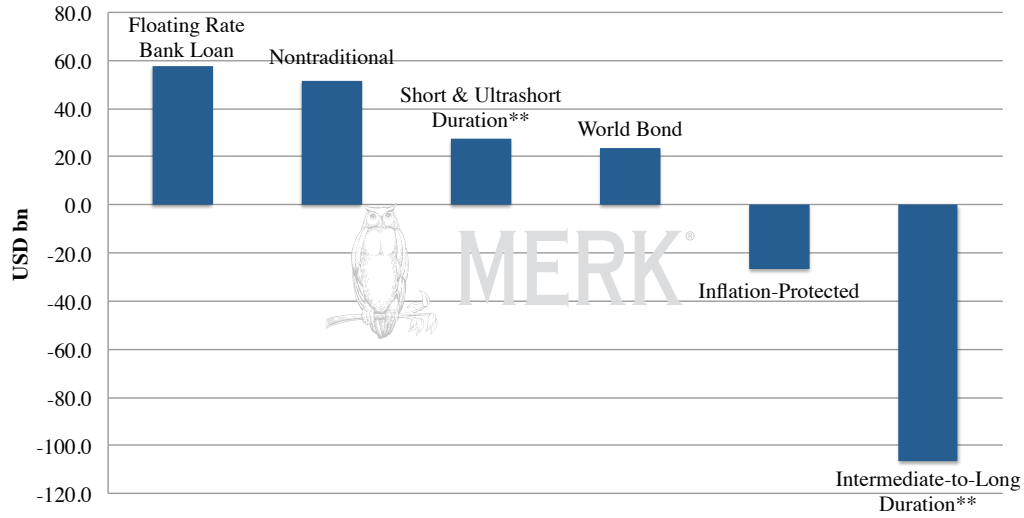
This changing and unstable correlation poses a threat to the bond market's long-term role in asset allocation and diversification. We are most concerned that in the case of a major price correction in the stock market, bonds may fail to provide investors downside protection.

How to invest when interest rates rise?

In anticipation of higher interest rates some investors have already begun to adjust their fixed income portfolios. Three popular strategies have been: 1) lowering effective duration by simply moving to short-term bonds and floating rate notes; 2) shifting to other sources of bond returns by taking additional credit risk (high yield) or currency risk (foreign bonds); and 3) pursuing a nontraditional, flexible strategy without being constrained by the traditional benchmark.

A recent Morningstar report provided information on flows in U.S. fixed income mutual funds by category in 2013 (Figure 8). On an absolute basis, floating rates and nontraditional bond funds have attracted the largest inflows followed by short & ultra-short duration and world bonds. High yield bond funds have also lured investors since July despite initial outflows in early 2013.

Figure 8. Fixed Income Mutual Fund Flows in 2013*



Source: Merk Investments, MorningStar
* Excluding fund of funds and closed-end mutual funds; period: 1/1/2013 - 11/30/2013
** Including government bond funds

These strategies are not without costs and/or risks. For short duration bonds the tradeoff between duration and income is apparent. By replacing long duration securities with short duration securities investors incur an ongoing opportunity cost of lost income especially as short-term interest rates are expected to stay near zero for the forseeable future. As evidence, ultra-short and short duration bond funds generated a return of less than 0.5% in 2013[2] despite strong investor interest.

The major downside of high yield bonds and floating rate bank loans is liquidity risk. In particular, these securities may become extremely illiquid during periods of market turbulence as evidenced by the 2008-09 financial crisis. Investors may find it very challenging to liquidate these holdings when everyone rushes to exit. We also believe investors should stay vigilant as regards their overall portfolio risk profile, e.g., they should not take excessive credit risk when seeking to mitigate interest rate risk.

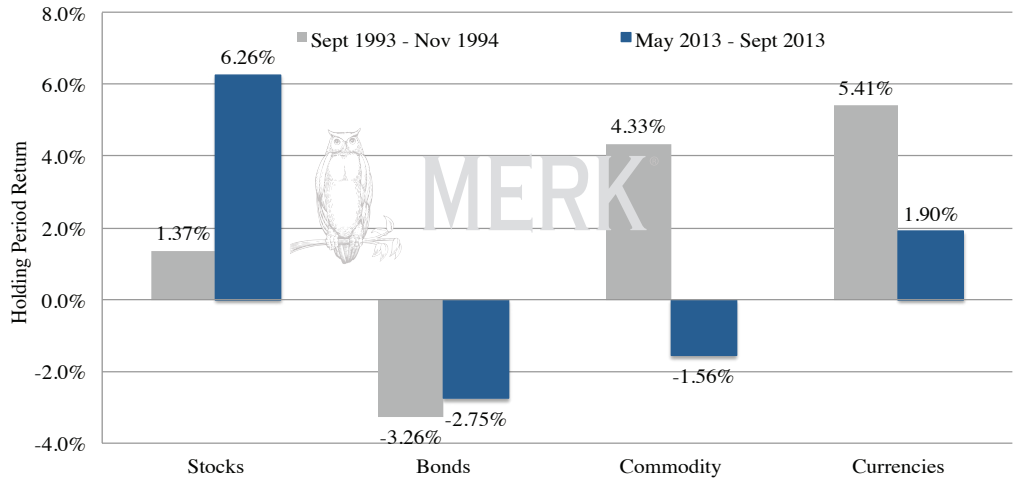
The so-called nontraditional bond strategies (or "unconstrained", "flexible"), though grouped in the same category vary widely from fund to fund. Investors may want to take a closer look at each individual strategy before making an investment decision. A common goal of these strategies is to seek to overcome the fundamental challenges facing the bond market (the end of secular interest rates decline and changing fundamentals of the fixed income market) by taking flexible approaches. While in general these strategies are different from the traditional benchmark-constrained approach, many of the sub-strategies are more or less traditional, e.g., short duration, high yield or international. Partly as a result, some nontraditional funds failed to generate an uncorrelated return with traditional core strategies. As a group, nontraditional bond funds had a lackluster performance of 0.27% in 2013.[3]

2 *Source: MorningStar. Data as of December 31, 2013*
3 *Source: MorningStar. Data as of December 31, 2013*

In our view, investors may want to go one step further - look beyond the fixed income landscape and reconstruct their portfolios in a more holistic manner. Compared to the traditional 60% stock / 40% bond portfolio, investors may want to consider building a more diversified portfolio with the inclusion of alternative asset classes including currencies and commodities.

In previous periods of rising interest rates several alternative asset classes outperformed bonds. As illustrated in Figure 9, both commodities and currencies outperformed bonds during the 1994 Fed aggressive rate hike cycle and from May to September 2013 when 10-year Treasury yield rose sharply by almost 1%.

Figure 9. Asset Classes Performance In Periods of Rising Rates*



Source: Merk Investments, Bloomberg
* Holding period returns (not annualized); rising rates as measure by long-term Treasury yields
Stocks: S&P 500 Total Return Index. Bonds: Barclays U.S. Aggregate Bond Index
Commodities: Deutsche Bank Liquid Commodity Index. Currencies: Inverse Dollar Index

In addition, alternative assets' low or negative correlation with traditional asset classes may provide valuable diversification benefits. Consider the case of constructing a more diversified portfolio by adding 10% currencies to a traditional 60/40 portfolio by allocating 54% to stocks, 36% to bonds and 10% to currencies. During recent rising rate period (from May to September 2013) this diversified portfolio would have provided a Sharpe ratio a measure of risk-adjusted return) of 1.20 compared to a Sharpe ratio of 1.14 for a 60/40 traditional portfolio. Higher Sharpe ratio reflects a better risk-return profile for investors. The point being that adding an uncorrelated alternative to a traditional asset allocation may allow investors to achieve a higher return/risk tradeoff in their portfolios.

How to Invest When Rates Are Rising?	
Strategy Within Bonds	**Strategy With Alternatives**
Short Duration • Pros: Low duration risk • Cons: Opportunity cost	Building a diversified portfolio with the inclusion of alternative asset classes: Pros: • Historically outperformed bonds when rates rose • Low correlation may add diversification benefits • May enhance the overall portfolio's risk-adjusted return Cons: • Potentially unfamiliar risks associated with alternative asset classes, e.g. foreign exchange risk • Potentially higher volatility or liquidity risk
Floating rate • Pros: Low duration risk • Cons: Liquidity risk	

High yield
• Pros: Higher income
• Cons:
  ○ Substantial credit risk
  ○ Liquidity risk
  ○ Equity correlation	

Nontraditional
• Pros: Higher flexibility
• Cons:
  ○ Strategies vary widely
  ○ Often traditional sub-strategies
  ○ May not deliver uncorrelated returns	

While we are not challenging fixed income's long-term role in asset allocation, we do want to bring to investors' attention the significant interest rate risk facing the bond market, which is exacerbated by the overall bond market's growing concentration, extended duration, and historically low yields. Bonds' historical diversification benefit has also eroded by its changing and unstable correlation with the stock market.

We believe, in addition to pursuing more active risk management within the fixed income space, investors may want to build a truly diversified portfolio. Alternative assets may be a valuable addition to enhance a portfolio's overall risk-return profile in anticipation of rising interest rates. M

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Barclays U.S. Aggregate Bond Index: a broad measure of the performance of the U.S. investment grade bond market. The securities in the Index must have at least 1 year remaining to maturity and must be denominated in US dollars and must be fixed rate, nonconvertible and taxable.
S&P 500 Index: a broad-based measurement of changes in stock market conditions based on the average performance of 500 widely held common stocks. An investor cannot invest directly in an index.
Deutsche Bank Liquid Commodity Index: a liquid and diversified benchmark for the commodities' asset class.
Inverse U.S. Dollar (Inv. DXY) Index: a measure of the inverse value of the United States dollar relative to a basket of foreign currencies including EUR, JPY, GBP, CAD, CHF and SEK.
Effective duration: a calculation used to approximate the actual, modified duration of a callable bond. It takes into account that future interest rate changes will affect the expected cash flows for a callable bond.
Duration risk: a metric that measures how sensitive a bond's price is to changes in interest rates.
Correlation: a statistical measure of how two securities move in relation to each other.
Sharpe ratio: a measure of the excess return per unit of risk in an investment asset or a trading strategy.

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