July 2015

The 5% Problem:

Generating Income and Managing Risks in a Rising Rate Environment

A conversation with Nathan Rowader, Senior Portfolio Manager

Investors have been conditioned to believe that traditional bonds are safe and can deliver 5% annualized yields over the long term. In the current climate, neither may be true.

Highlights

Investors have suffered with low yields, but profited from rising bond values during the 30-year bull market for bonds.

We believe the bond market is moving into a bearish phase, putting the value of existing bond holdings at risk.

A variety of income-producing options are available for those who want to diversify bond portfolios and seek better yields.

Historical analysis shows that a diversified portfolio would have outperformed traditional bonds during the last bear bond market and in periods of rising interest rates.

Exactly what is the 5% problem? And why should investors be concerned about it?

The 5% reference is to the historical average annual yield for traditional bonds—that is, U.S. government bonds, including Treasury notes and bonds—from the beginning of 1926 to the end of 2012.[1] The problem is that investors have grown accustomed to earning those kinds of yields, or better, from bond investments that carry little or no risk of default, such as U.S. Treasurys. But over the last couple of years, yields have been in the 0% to 2% range and the risks of bond investing have risen sharply.

So you could say it's a time of double jeopardy for bond investors. First, they need to worry about finding the kinds of income streams they need to keep their financial plans and retirement on track. But they also need to be aware that their portfolios may be exposed to a level of risk that is far out of proportion to the income that traditional bonds are generating. Many investors still think of traditional bonds as "safe" when that may not be the case at all.

What has changed? Why do you believe the bond market climate has become so much riskier?

We're now more than three decades into the bull market for bonds. That means bond prices have been rising while yields have been steadily dropping—those two factors always move in an inverse relationship, as most investors know. When the bull market started, back in 1981, the annual yield from a traditional bond index

With rising bond prices, total returns have been good, lulling investors into feeling they are on solid ground with traditional bonds.

was in the neighborhood of 14.8% *(Figure 1)*. Until recently, 10-year Treasurys have yielded less than 2% in annual income. *(Figure 2)*.

Because bond prices have been rising, total returns have been good, averaging 8.8% annually over about the last three decades, and 5.8% over the past 10 years. That performance has lulled investors into feeling they are on solid ground with traditional bond investments.

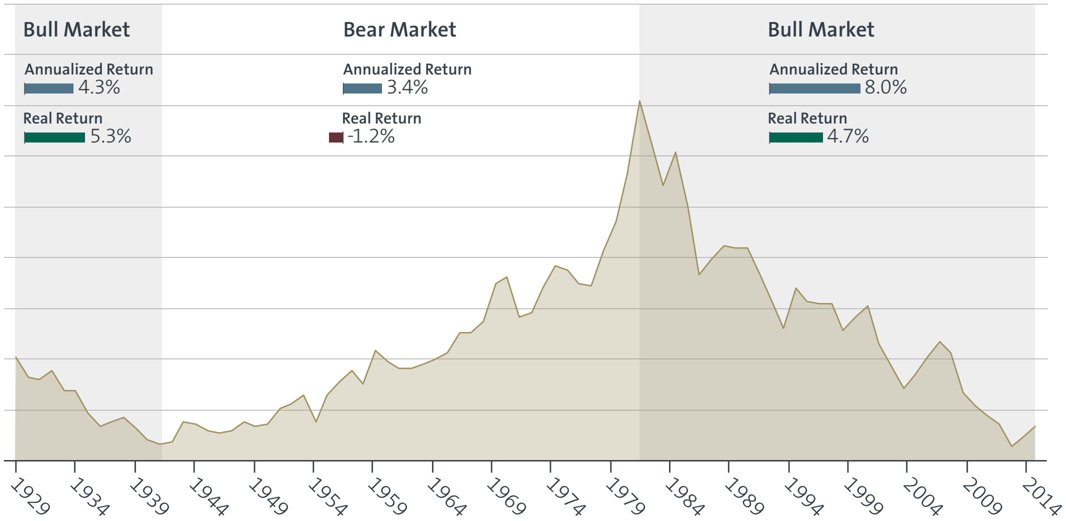
It is critical to recognize, however, that traditional bonds' ability to deliver positive real returns over the past 30 years has been due in part to the steady rise in bond values during the bull market. Based on the Ibbotson Associates SBBI U.S. Intermediate-Term Government Bond Index, appreciation accounts for over 20% of total traditional bond returns between October 1981 and March 2015—higher than the historical average since 1926 of 15%.[2]

If the climate shifts to a bear market for bonds, bond prices will drop—and that could mean major losses in portfolio value for investors with existing bond holdings. The impact could certainly be enough to derail investors' financial and retirement plans.

FIGURE 1

The Bond Bull Market Has Run More Than Three Decades

Yield of the Ibbotson Associates SBBI U.S. Intermediate-Term Government Bond Index
October 1, 1926 – December 31, 2014



Source: Ibbotson Associates
Past performance does not guarantee future results.

How we measured bond performance

Throughout this paper we rely primarily on two metrics for historical U.S. bond performance:

10-year U.S. Treasury note (referred to as "Treasurys") is the benchmark we use when discussing relatively recent government bond performance (that is, over the past 20 or 25 years).

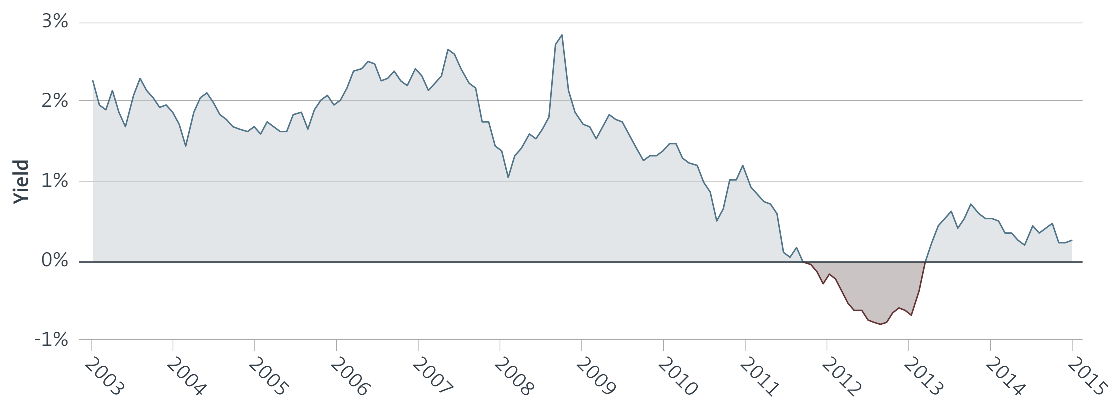
Ibbotson Associates SBBI U.S. Intermediate-Term Government Bond Index, a broad-based index of 5-year U.S. bonds, provides a longer time series of bond returns. Thus, we used this measure when discussing longer-term historical trends.

We use the term "traditional bonds" to refer to U.S. government bonds, including Treasurys, that carry little or no risk of default, in contrast to higher-yielding corporate or municipal bonds.

FIGURE 2

Real Treasury Yields Have Dipped Below Zero

10-Year Treasury Yield, Inflation-Adjusted, February 28, 2003 – December 31, 2014



Source: Ibbotson Associates

Past performance does not guarantee future results.

Are you saying that the bull market for bonds is over?

I believe so, and I am by no means alone in that belief. Some analysts say we shifted to a bear market for bonds back in July 2012, when 10-year Treasury yields hit a long-term low of 1.4%. Whether you agree with that or not, it's clear that interest rates must eventually rise—they really have almost nowhere else to go.

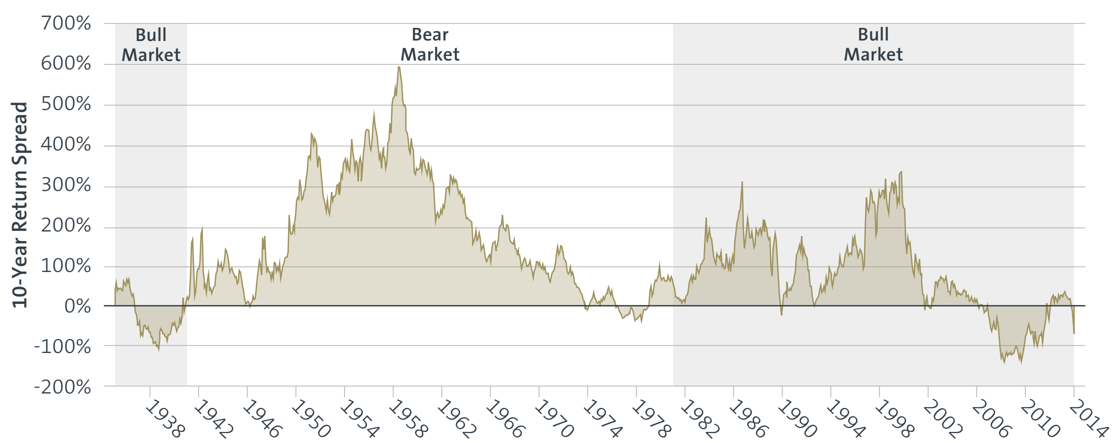
Of course, no one can say what the Federal Reserve (Fed) will do, or when. But if the economy improves and job creation picks up, I believe we're likely to see somewhat higher rates of inflation, which could spur the Fed to begin raising interest rates sooner rather than later.

My view has also been influenced by the changing relationship between the 10-year traditional bond index and stock market returns *(Figure 3)*. The

FIGURE 3

Diminished Return Spreads Point to a Bond Market Shift

Relative 10-year Return of Stocks vs. Bonds, Period Ending December 31, 2014



Source: Ibbotson Associates

Note: Bonds represented by Ibbotson Associates SBBI U.S. Intermediate-Term Government Bond Index (1925-1973) and Barclays Long Government/Credit Index (1974-2014); Stocks represented by S&P 500 (TR) Index.

Past performance does not guarantee future results.

The risk of losses in bond value due to a rise in interest rates could potentially exceed the annual after-tax income from bond investments.

spread between the two has more or less disappeared in recent months. That is significant because under most conditions, stocks outperform bonds over a 10-year period—and when that's not the case, the trend usually corrects itself fairly quickly, as we saw in the 1940s, '70s and '80s. In fact, the current pattern is almost identical to the one we saw back at the start of the last bear bond market in 1941.

When you talk about risks, is it mainly those connected with rising interest rates?

That is certainly the biggest and most immediate cause for concern. Our analysis shows that the risk of losses in bond value resulting from a rise in interest rates could potentially exceed the annual after-tax income from those investments *(Figure 4)*. Think about what that means: if you bought a Treasury bond today and interest rates then rose just 10 basis points, the resulting loss of bond value would wipe out an entire year's worth of returns.

But let's not forget about inflation. That's a more insidious risk, because rather than suddenly erasing a chunk of portfolio value, it chips away at it by degrees. Then, years down the road, you realize that you've lost a lot of the purchasing power you thought you had. This risk hasn't been very prominent in investors' minds because we've been in a low-inflation environment for the last 30 years. Since 1981, the Consumer Price Index has risen just about 3% a year, on average[3]—which is as you would expect in a bull bond market, since low yields and low inflation tend to go hand in hand.

The thing is, Treasury yields are already lagging inflation now. If consumer prices start ratcheting up, we could see an even greater negative real return on Treasurys.

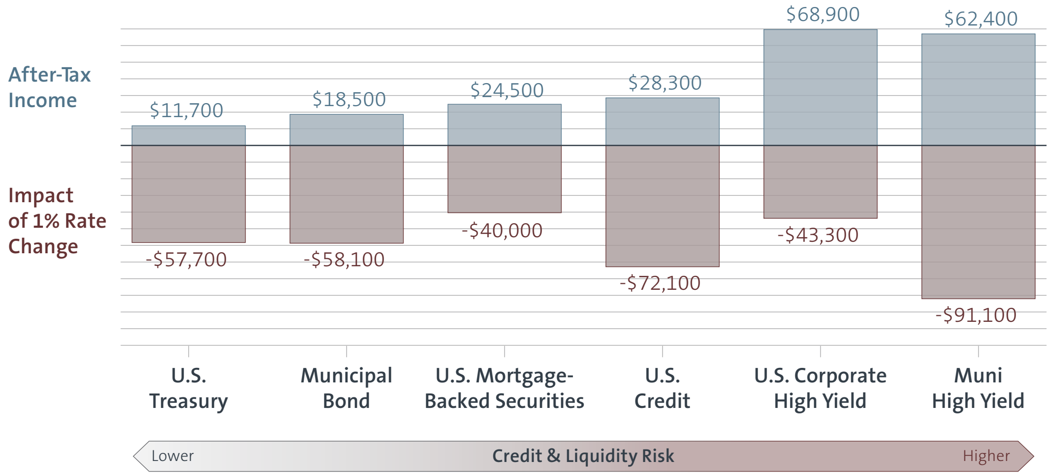
When you boil it all down, what does the shifting bond market mean to investors? What is your overall message?

Whether you have existing bond holdings or are looking for new income streams, the same message applies: I believe investors need to broaden their search for income beyond traditional bonds. Those with existing bond

FIGURE 4

Risks From Higher Interest Rates May Exceed Reward Potential

Annual After-Tax Bond Income vs. Risk of Loss in Bond Value From a 1% Rise in Interest Rates, based on an investment of $1 million, as of December 31, 2014



Sources: Asset classes in the chart above are represented by the following indices: U.S. Treasury—Barclays U.S. Treasury Index; Municipal Bond—Barclays Municipal Bond Index; U.S. Mortgage-Backed Securities—Barclays U.S. Mortgage-Backed Securities Index; U.S. Credit—Barclays U.S. Credit Index; U.S. Corporate High Yield—Barclays U.S Corporate High-Yield Index; Muni High Yield—Barclays High-Yield Municipal Bond Index.

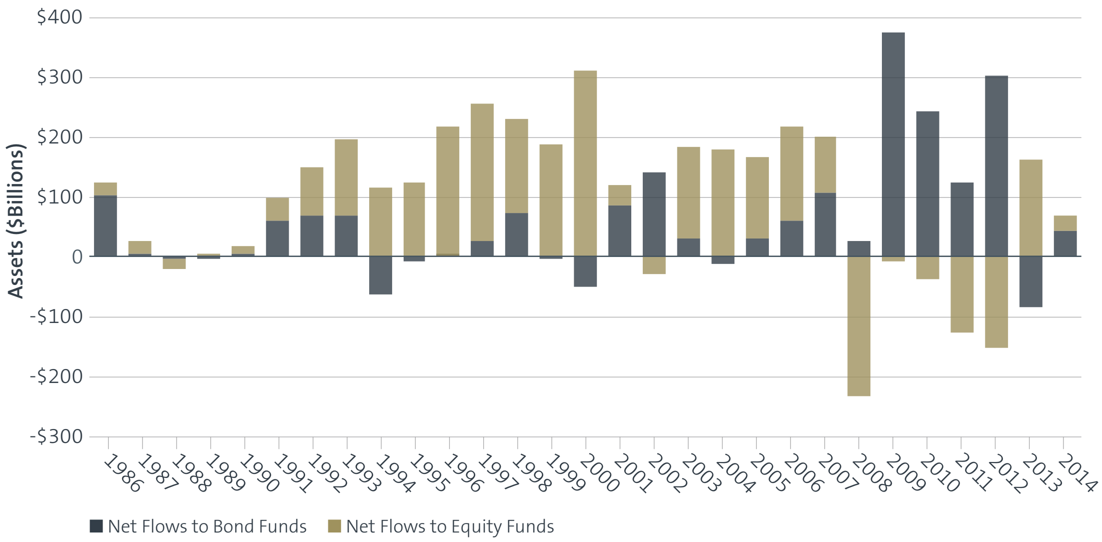
Note: Assumes 39.6% Federal and 3.8% Affordable Care Act tax rate; does not include state/local taxes.

Past performance does not guarantee future results.

FIGURE 5

Investors Have Gravitated to Bonds Despite Falling Yields

Annual Net Asset Flows Into Bond Mutual Funds vs. Equity Mutual Funds, 1986 – 2014



Source: Investment Company Institute

Past performance does not guarantee future results.

Inflation chips away at portfolio value by degrees…and if it ratchets up, we could see an even greater negative real return on Treasurys.

portfolios also need to be aware of the risks associated with those holdings, and think about alternative income solutions that might help them make greater progress toward their financial goals. Today's investors have access to a greater variety of income-generating alternatives than investors did 20 or 30 years ago.

Do you think most investors are fully aware of the bond market risks they are facing?

I suspect that many do not, based on the recent trends in asset flows. Since the financial crisis, investors have funneled billions into bonds, even as yields have continued to drop and risks have increased *(Figure 5)*. In fact, the net flows into bond mutual funds from 2009 through 2012 added up to two-thirds of all net flows going back to 1926.[4]

Because equity funds saw a tide of outflows during this period, we can guess that the move into bonds was driven in part by investors' fears of another stock market meltdown in this climate of economic and political uncertainty. If so, it's highly ironic—because in their flight to perceived safety, traditional bond investors have put themselves at high risk of investment losses. Those who fled the stock market also missed a strong market rally.

If you think about it, anyone who didn't start investing before 1981 has had no experience other than rising bond prices and declining yields. So a whole generation of investors has had no personal exposure to a bearish bond climate and what it could do to portfolios.

Of course, it's human nature to believe that "things are different this time." But when you look at the historical patterns, it feels like maybe we've been here before. In terms of yields, inflation and public debt levels, which historically have moved in a tight inverse correlation with yields, I believe the present climate bears some striking similarities to 1941, when we last shifted into a bear bond market.

Are you suggesting that it would be prudent for investors to move out of bonds altogether?

No, not at all. There are good reasons why an investor might want to have an allocation to

Given the risks and currently low yields of traditional bonds, I believe investors would be wise to diversify a portfolio that's heavy in those holdings.

Treasurys or some other relatively safe, short-term bonds in any market climate, especially if capital preservation and income stability are top priorities.

My point is that, in my opinion, investors would be wise to diversify a portfolio that's heavy on traditional bond holdings. One way to do that is shift some assets from Treasurys to a flexible tactical bond strategy that invests across market sectors, such as tax-free municipal bonds, corporates and high yield bonds, and incorporates active risk management, including the ability to sell short. Those kinds of multisector strategies are designed to respond quickly to changing bond market conditions, including rising interest rates.

What are some of the other directions that income-focused investors might explore?

Dividend stocks, for one, which historically have been an important source of yield. Investors may not realize that stock dividends accounted for more than 40% of the S&P 500's total return between 1926 and 2014. As of the end of 2014, the earnings yield of the S&P 500 was 3.4% higher than the 10-year Treasury yield.[5]

Investors might also want to look at more global investment options, including both dividend stocks and bonds. After all, the world's fastest growing economies are now outside the U.S. Emerging markets have doubled their share of global gross domestic product (GDP) in the last 20 years; they now account for about 50.4% of the world's economy.[6] If you want to diversify your income-generating investments, why not consider harnessing that kind of growth?

Real estate is another potential income source. Owning shares of real estate investment trusts (REITs) lets individuals invest in major commercial properties like high-rise office buildings. By law, REITs must distribute 90% of their operating income to investors each year if they want to avoid paying corporate income taxes, and over the past 30 years they have provided fairly stable yields averaging about 8% annually.[7]

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Diversification and asset allocation do not assure profit or protect against risk.

There is no guarantee the companies in our portfolio will continue to pay dividends.

Today's investors have access to a greater variety of income-generating alternatives than investors did 20 or 30 years ago.

When you talk about rotating into stocks, it raises some concerns. If investors were afraid of the stock market before, won't they be even more so now that the market has had an extended rally?

Investors are right to be cautious. History tells us that periods of strong stock market rallies are usually punctuated by market corrections or pullbacks, and over the long term, the market has had one down year out of every four years, on average. On the other hand, the stock market has outperformed bonds for several decades, albeit with greater volatility.[8]

Based on the economic data we've been seeing lately, I'm also of the opinion that economic growth may be picking up somewhat, both in the U.S.and abroad, which would bode well for stocks. For example, median home prices in the U.S. have been slowly rising over the past year or so, giving household balance sheets a boost.[9] As of the end of March 2015, initial unemployment claims are down by more than 58% from their March 2009 peak.[10]

As for corporate and individual debt, those levels have declined since they peaked around October of 2009.[11] That is significant, since high debt levels across the board were one of the primary triggers of the 2008 financial crisis.

These factors won't eliminate the risk of stock market downdrafts, but they do speak to the market's balance of risk and reward over the longer term.

What about our stratospheric government debt levels? Isn't that a cause for concern?

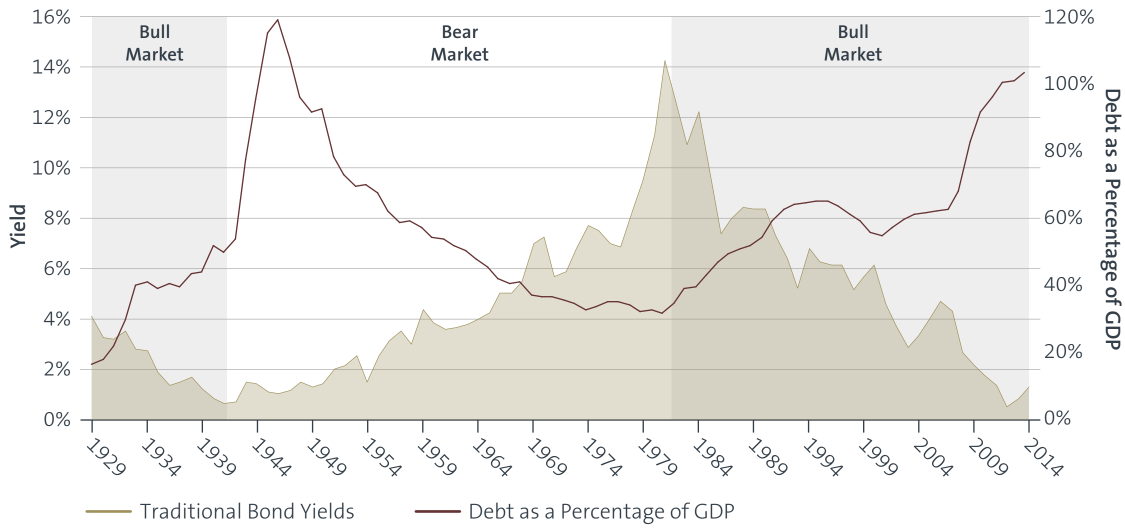
It's true that U.S. debt levels are high, but they've been higher in the past. U.S. government debt reached 103% of GDP in 2013; in 1955, the ratio was 120%.[12] Remember that 1941 was the start of the bear market for bonds and rising relative values for stocks. Back in the early '40s, the relationships between traditional bond yields and public debt were very similar to those today *(Figure 6)*.

This doesn't guarantee that the same pattern will be repeated going forward, of course, but the

FIGURE 6

Trends in Public Debt and Bond Yields Echo Those of 1941

U.S. Government Debt as a Percentage of GDP vs. Traditional Bond Yields
January 1, 1929 – December 31, 2014



Sources: U.S. Treasury, Ibbotson Associates
Note: Based on Ibbotson Associates SBBI U.S. Intermediate-Term Government Bond Index
Past performance does not guarantee future results.

Alternative income strategies historically have displayed higher volatility than traditional bonds, but have also delivered better risk-adjusted returns.

FIGURE 7

A Diversified Income Portfolio Did Well in Historical Testing

Historical Asset Class Performance During the Bond Bear Market
January 1, 1941—December 31, 1981

	Annualized Total Return	Annualized Income Yield	Standard Deviation	Maximum Drawdown	Sharpe Ratio
High-Yield Corporate Bonds (Based on Ibbotson Time Series)	5.9%	4.7%	8.3%	-25.2%	0.30
Dividend-Paying Stocks (Based on S&P 500 Index)	12.4%	4.6%	15.4%	-42.6%	0.59
Foreign Bonds (Based on Ibbotson Time Series for Japanese long-term government bonds)	9.3%	7.0%	9.8%	-36.3%	0.60
Totals for Diversified Income Portfolio (Adjusted for 4.7% inflation)	7.4%	5.4%	7.9%	-23.8%	0.51
Traditional Bonds (Ibbotson Associates SBBI U.S. Intermediate-Term Government Bond Index)	3.4%	4.6%	4.4%	-8.9%	0.00
Inflation	4.7%				

Source: Ibbotson Associates

Past performance does not guarantee future results.

historical view is consistent with the trends we're seeing now. To my mind, that suggests that the economy should be able to continue growing despite our level of public debt. We're also seeing moves to rein in government debt around the globe, and that is encouraging.

You've made a strong case that bond investors need to rethink their positioning. So what should income-focused investors think about doing now?

No one knows the future with certainty, but we can make an educated guess about what might happen by analyzing how a mix of income-generating investments would have performed during historical conditions resembling the ones we seem to be heading into now.

Based on my belief that we're shifting into a bear market for bonds, our first analysis looked at how a diversified income portfolio would have performed during the 1941-81 bear market.

We found that over that period, a hypothetical equally weighted portfolio of high yield bonds, dividend stocks and foreign bonds would have delivered a total return 4% higher than traditional U.S. government bonds, including 0.8% more annualized income. Most important, the hypothetical diversified portfolio produced a positive return after adjusting for inflation, which the traditional bonds did not *(Figure 7)*.

But don't these alternative income sources have higher risks than Treasurys?

That's absolutely true, and a very important point. The hypothetical diversified portfolio does display higher overall volatility than the traditional bonds, as reflected in its higher standard deviation measure. It also shows a higher maximum drawdown, meaning the largest single peak-to-valley drop in value during the period.

FIGURE 8

Treasurys Lagged Some Other Asset Classes as Interest Rates Rose

Comparison of Asset Class Performance During Periods of Rising Interest Rates
January 1, 1989 – December 31, 2014

	Annualized Total Return	Annualized Income Yield
Preferred Stocks (S&P U.S. Preferred Stock Index)	-0.71%	7.5%
U.S. Equity REITs (FTSE NAREIT All Equity REITs Index)	12.64%	7.3%
High Yield Bonds (Barclays U.S. Corporate High-Yield Bond Index)	9.56%	10.6%
Emerging Market Bonds (JPMorgan Emerging Markets Bond Index)	6.23%	8.1%
Global Dividend Paying Stocks (MSCI World High Dividend Yield Index)	10.14%	3.0%
Traditional Bonds (Ibbotson Associates SBBI U.S. Intermediate-Term Government Bond Index)	-6.93%	7.6%

Source: Ibbotson Associates

Note: Total portfolio returns and other performance characteristics are not shown, as return and yield data are reflective only of index performance during periods when interest rates rose 5% or more.

Past performance does not guarantee future results.

Our analysis found that a hypothetical diversified income portfolio would have outperformed traditional bonds during the 1941–81 bear bond market.

But investment professionals also look at an additional metric, namely, risk-adjusted return, which is usually measured by a portfolio's Sharpe ratio. If you believe that investors should be compensated with higher returns for the risks they are assuming, the Sharpe ratio is worth considering. The higher the Sharpe ratio, the better the risk-adjusted return. On that basis, our analysis shows that the hypothetical portfolio would have delivered rewards more than commensurate with the risks.

Did you do any other portfolio testing? What can investors draw from your findings?

Yes, we did. Given the risks associated with potential interest rate hikes, I wanted to see how a diversified portfolio would have performed during the periods of rising interest rates starting in the late 1970s, by which time there was better asset class performance data.

Just to be clear, the time span covered by the exhibit included periods of declining interest rates and others in which rates were rising. The performance shown is only for those periods when interest rates were rising. You might notice that I tested somewhat different asset classes than I did in the 1941 to 1981 analysis. By the '70s, investors were able to take advantage of emerging asset classes that hadn't existed before.

Once again, several income-producing asset classes matched or exceeded the yield from a broad-based index of U.S. bonds, and all the income alternatives generated higher total return *(Figure 8)*. They also experienced higher volatility. But if interest rates rise, in all likelihood investors would be earning more yield to help offset that risk—though investors should always take to heart the disclaimer that past performance doesn't guarantee future results.

To my mind, it's precisely because the world is so unpredictable that a diversified approach to investment income makes sense in any market climate.

This whole discussion has put the notion of "safe and solid" bonds in a whole new light. What do you recommend that investors do now?

In my view, anyone who is concerned about the risks we've been discussing would be well advised to talk with his or her financial advisor. I'd want to know exactly how my portfolio is positioned from the standpoint of bond market risks and future income-generating potential. Then you've got a good basis for discussing whether you want to shift your portfolio allocations and what alternative income sources you might want to consider.

Any final thoughts?

Just another cautionary note—which is to say that only time will tell if the bull market in bonds is truly over. But to my mind, it's precisely because the world is so unpredictable that a diversified approach to investment income makes sense in any market climate. I can't think of any possible future market trend that should discourage investors from casting a wider net for investment income.

Definition of Terms

Affordable Care Act is the federal statute signed into law in March 2010 as a part of the healthcare reform agenda of the Obama administration.

Basis point (bps) is a unit of measure that is equal to 1/100th of 1% and used to denote a change in the value or rate of a financial instrument.

Bear market describes a market condition in which the prices of securities are falling, and widespread pessimism causes the negative sentiment to be self-sustaining.

Bull market describes a market condition in which the prices of securities are rising. Bull markets are characterized by optimism, investor confidence and expectations that strong results will continue.

Consumer Price Index (CPI) is an index number measuring the average price of consumer goods and services purchased by households. The percentage change in the CPI is a measure of inflation.

Correlation is a statistical measure of how two securities move in relation to each other.

Drawdown is the gradual decline in the price of a security or other investment between its high and low over a given time period.

Earnings yield is the earnings per share for the most recent 12-month period divided by the current market price per share.

Inflation is the rate at which the general level of prices for goods and services is rising, and, subsequently, purchasing power is falling.

Maximum drawdown is the percentage of loss that an asset incurs from its peak net asset value to its lowest value.

Risk-adjusted return is a concept that refines an investment's return by measuring how much risk is involved in producing that return, which is generally expressed as a number or rating.

Sharpe ratio is a ratio developed by Nobel laureate William F. Sharpe to measure how an asset performs relative to the risk it takes.

Short selling, or **shorting**, is the practice of selling a financial instrument that a seller does not own at the time of the sale with the intention of later purchasing the financial instrument at a lower price to make a profit.

Standard deviation measures the degree to which a fund's return varies from its previous returns or from the average of all similar funds.

Volatility is a statistical measure of the dispersion of returns for a given security or market index.

Definition of Indices

10-year U.S. Treasury is a debt obligation issued by the U.S. Treasury that has a term of more than one year but not more than 10 years.

Barclays High-Yield Municipal Bond Index tracks the performance of noninvestment-grade U.S. municipal bonds with a remaining maturity of one year or more.

Barclays Long Government/Credit Index measures the investment return of all medium and large public issues of U.S. Treasury, agency, investment-grade corporate and investment-grade international dollar-denominated bonds with maturities longer than 10 years.

Barclays Municipal Bond Index is a market-value-weighted index that tracks the performance of long-term, tax-exempt municipal bonds.

Barclays U.S. Corporate High-Yield Bond Index covers the USD-denominated, noninvestment-grade, fixed-rate, taxable corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below.

Barclays U.S. Credit Index is an unmanaged index considered representative of publicly issued, SEC-registered U.S. corporate and specified foreign debentures and secured notes.

Barclays U.S. Mortgage-Backed Securities Index tracks the mortgage-backed pass-through securities of Ginnie Mae (GNMA), Fannie Mae (FNMA) and Freddie Mac (FHLMC).

Barclays U.S. Treasury Index is an unmanaged index of public obligations of the U.S. Treasury with a remaining maturity of one year or more.

FTSE NAREIT All Equity REITs Index is a free-float-adjusted market capitalization weighted index that includes all tax qualified REITs listed in the New York Stock Exchange, American Stock Exchange and NASDAQ National Market.

Ibbotson Associates SBBI U.S. Intermediate-Term Government Bond Index is an unweighted index which measures the performance of 5-year maturity U.S. Treasury bonds.

JPMorgan Emerging Markets Bond Index tracks total returns for traded external debt instruments in the emerging markets.

MSCI World High Dividend Yield Index is designed to reflect the performance of the high dividend yield securities contained within the broader MSCI World Index.

S&P 500 Index is an unmanaged index of 500 common stocks chosen to reflect the industries in the U.S. economy.

S&P U.S. Preferred Stock Index measures the performance of the U.S. preferred stock market. Preferred stocks pay dividends at a specified rate and receive preference over common stocks in terms of dividend payments and liquidation of assets.

One cannot invest directly in an index.

1. Ibbotson Associates, 12/31/12
2. Ibbotson Associates, 12/31/14
3. Ibid.
4. Investment Company Institute, 12/31/12
5. Bloomberg, 12/31/12
6. International Monetary Fund, "World Economic Outlook: Recovery Strengthens, Remains Uneven," April 2014
7. Ibbotson Associates, 12/31/12
8. Ibid.
9. Bloomberg, 12/31/12
10. Bloomberg, 03/31/15
11. IHS Global Insight, 12/31/12
12. Federal Reserve Bank of St. Louis, "Federal Debt: Total Public Debt as Percent of Gross Domestic Product," July 30, 2015

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