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CAN RISK PARITY WITHSTAND RISING RATES?

THE BENEFITS OF DIVERSIFICATION IN A CHANGING ENVIRONMENT

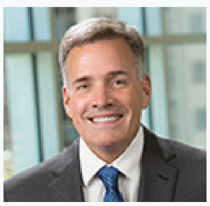
MARKETS | INVESTMENT ACTIONS | PORTFOLIO DESIGN | RISK MANAGEMENT | REGULATORY

Executive summary

With interest rates rising, some investors are concerned about the prospects for risk parity strategies, which use substantial allocations to bonds to seek improved diversification over traditional balanced portfolios. This view misses three important points.

- First, fixed income may still deliver positive returns in a rising rate environment.
- Second, bonds provide a vital strategic component of a diversified portfolio, and trying to time the market is very difficult.
- Third, risk parity is not dependent on falling bond yields.

Risk parity's diversified approach serves it well in rising rate environments, because the strategies allocate to growth and inflation—the principal factors that drive rates higher.



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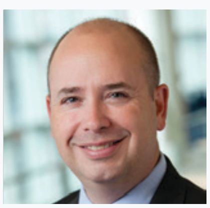

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Can risk parity withstand rising rates?

The benefits of diversification in a changing environment

It's been a difficult time for bond investors. After reaching historic lows last summer, yields on government debt in much of the world began to move higher. They've continued to rise as investors wrestle with the ramifications of shifting political and economic regimes around the globe. These changes have been most pronounced in the U.S., where expectations for reflationary fiscal policy from the new administration and for a series of rate increases from the Federal Reserve (Fed), have led some to suggest that we have seen the low in bond yields.

Investors are understandably concerned about what a substantial shift in interest rate expectations may mean for their portfolios. Those invested in risk parity strategies may find the question especially important, since these strategies use substantial allocations to bonds to seek improved diversification over traditional balanced portfolios. (See *How risk parity works* below.) In fact, we addressed this topic head-on after the market's "taper tantrum" in 2013, in a publication entitled *Will Rising Rates Sink Risk Parity?*

HOW RISK PARITY WORKS

Risk parity strategies vary in terms of implementation, but they have one basic commonality: building a portfolio by diversifying sources of risk across a variety of asset classes. The strategies invest across a range of assets—which can include equities, bonds, currencies and commodities—and use modest amounts of leverage in an attempt to reduce and diversify the equity risk that has historically dominated institutional portfolios, while still targeting equity-like returns.

The focus on risk is critical, because it is the risk allocation of an asset—not its capital allocation—that determines its impact on the variability of the portfolio's returns.

At the time, our conclusions were threefold:

1. Higher interest rates were expected by the market and were reflected in upward-sloping yield curves. As long as bond yields did not rise more than expected, fixed income could still contribute to overall portfolio return.

2. Diversification matters. Fixed income is a vital strategic component of a diversified portfolio, generating returns that may help cushion the portfolio in difficult market environments. Risk parity's diversified approach serves it well in rising rate environments, because the strategies allocate to the principal factors that drive rates up—growth and inflation.

3. The strong historical performance of risk parity portfolios was not dependent on falling bond yields.

As it happened, the rate rise anticipated by markets in 2013 failed to materialize. Since then, bonds (as measured by the Barclays Bloomberg Global Aggregate Index) have delivered positive returns and maintained a low correlation to equities, and diversified strategies have continued to thrive. Now, with rising rates again looking likely, we think it is an opportune time to revisit our analysis, and to explain why the conclusions of our earlier paper still hold true, despite some notable differences between today's environment and that of the period around the taper tantrum.

THEN AND NOW

Most important of these differences is that the move up in rates since the U.S. presidential election has been driven by rising growth and inflation expectations. Back in 2013, growth and inflation expectations were falling. In addition, during the taper tantrum correlations between stocks and bonds spiked, and both assets experienced negative performance. Following the election, equities and bonds moved in opposite directions.

The below chart contrasts the percentage change in the U.S. 10-year Treasury yield ("nominal yield") during the taper tantrum period and the months immediately following the U.S. presidential election. In both periods yields increased, but for very different reasons. During the taper tantrum, investors were concerned that a potential end to quantitative easing would lead to rising interest rates, which would in turn inhibit future growth and inflation, given the fragile state of the economy. These concerns are reflected in the blue portion of the taper tantrum bar, which shows that breakeven inflation (represented by the spread between U.S. 10-year Treasuries and U.S. 10-year Treasury Inflation-Protected Securities (TIPS)) decreased. In other words, while Treasuries performed badly during the tantrum, they outperformed TIPS.

The post-election story is very different. The recent rise in yields was demand driven, based on stronger corporate earnings and expectations for accelerating economic growth. Overall, the magnitude of the move in nominal yield was similar to the move in 2013, but breakeven inflation increased, meaning that TIPS outperformed Treasuries. Given that TIPS help investors hedge rising inflation, this illustrates that the recent move up in rates has been driven by expectations for rising growth and inflation, which we view to be signs of a healthier global economy.

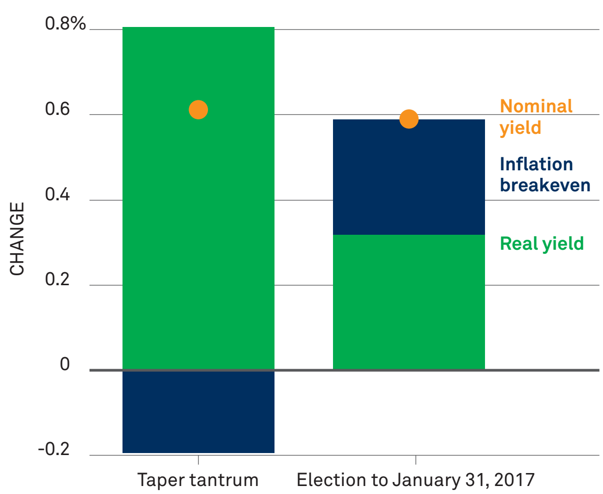
PERCEPTION IS NOT ALWAYS REALITY

In a rising rate environment, it would be easy to assume that portfolios with meaningful allocations to fixed income are at a disadvantage. However, the reality is that bond investors do not necessarily suffer in the face of rising rates. The critical factor is whether or not rates rise in line with expectations. Bond prices reflect consensus expectations about the future path of interest rates, and these expectations are reflected in implied futures curves. As seen in the chart below, the curves for the U.S., the UK and Europe are all upward sloping, meaning that current bond prices are factoring in higher rates in the future.

What does this mean for bond investors? That they can still earn a reasonable return if rates rise in line with, or less than, current expectations. For example, based on yield curves as of January 2017, over the next year rates could rise by up to 28 basis points in the U.S., and bondholders may still earn positive returns.

NOT THE SAME OLD SONG

U.S. Treasury 10-year bond yield change breakdown, 2013 vs. 2017

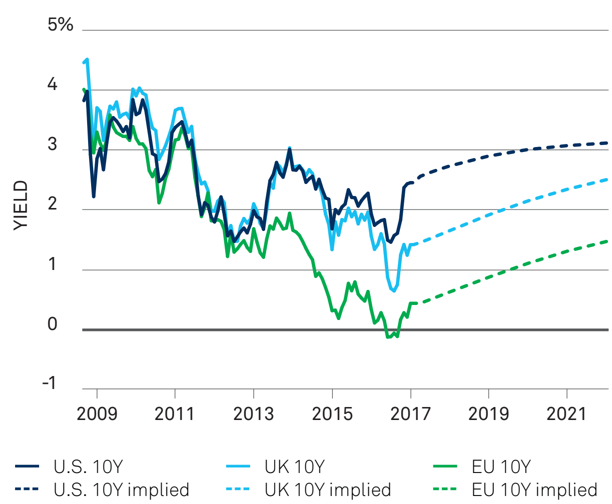


Sources: BlackRock Investment Institute and Bloomberg, January 2017.

Notes: The chart compares yield moves during the 2013 taper tantrum (May 21st 2015 - July 15th 2015) and since the U.S. election (November 8th 2016 - January 31st 2017). Nominal yield change is based on U.S. 10-year Treasury, real yield change based on U.S. 10-year Inflation-Linked Treasury, inflation breakeven based on difference between nominal and real yield.

HIGHER RATES AHEAD

Actual and implied 10-year bond yields in the U.S., the UK and Europe



Source: Datastream, as of January 2017, based on forward government bond benchmark curves for each region.

Historical actual yields are the 10-year bond yields at each point in time for the U.S., UK, and Europe. Implied yields use the 10-year tenor on each point in time's forward curve as of December 2016 (e.g. the implied yield for 2021 uses the 10-year tenor of the 5-year forward benchmark curve).

It is only when rates rise notably faster or higher than expected (above the dashed lines in the chart) that bond returns may turn negative.

It is also important to recognize the differences in global policy and rates. While the Fed raised rates last December, the European Central Bank held rates steady in November and extended its stimulus program to the end of 2017 (albeit while reducing the pace of its bond purchases). Meanwhile, the gap in yields between U.S. and German 10-year bonds has widened considerably in recent months. We believe this limits the extent to which U.S. yields can rise in the near future.

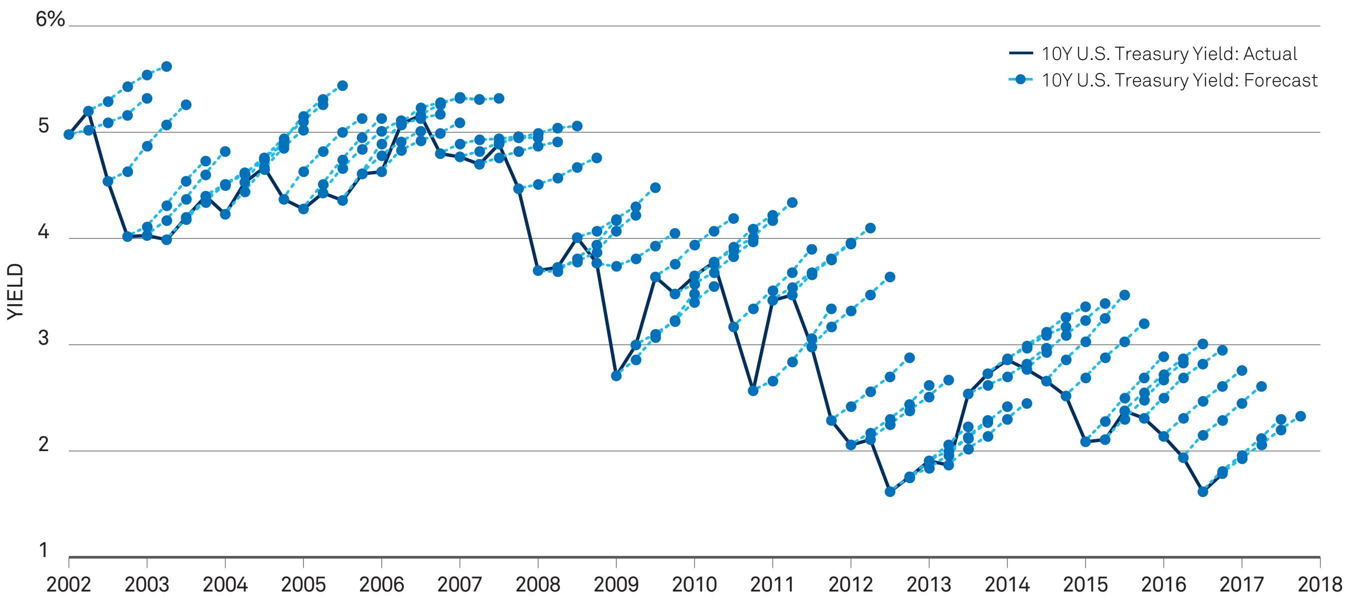
READING THE TEA LEAVES

The question that remains open, and unanswerable, is at what level and at what point in time rates will be "normalized?" Unfortunately, the successful forecasting of interest rate movements has continuously proved to be challenging. The difficulty of trying to time interest rate changes is highlighted in the chart below, which compares the interest rate outlooks of professional forecasters (the blue lines with bubbles) with the subsequent yield of the 10-year U.S. Treasury Note (the solid black line). Over the past 15 years, professionals have consistently predicted higher rates, while rates have generally followed a downward path.

While rates may indeed move higher from here, it is no sure thing, and even if they do head higher, it is very possible that they could normalize at a lower level than what is suggested by history. Any number of unexpected events—from slower growth to financial crises to political upheaval—could see a move down in yields. Rather than trying to predict where rates will be in the future, we believe in sticking with one of the core tenets of diversification: maintaining balanced exposure to the major risk factors that drive returns throughout different market environments.

NO CRYSTAL BALLS

Rolling four-quarter median forecasts of 10-year note yields in the Philadelphia Fed's quarterly survey of professional forecasters vs. actual 10-year note yields



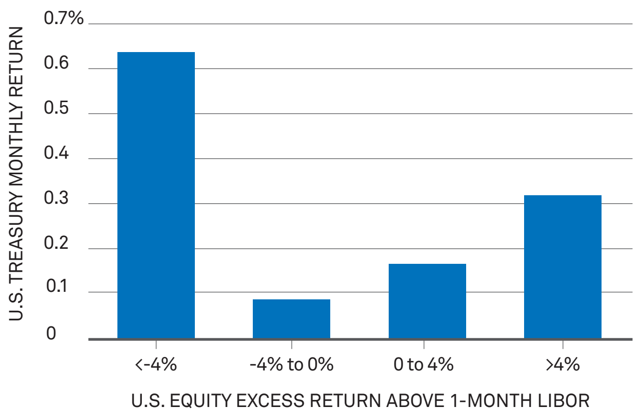
Sources: Datastream, Federal Reserve Bank of Philadelphia, as of October 2016. Forecast yields are based on median forecasts of all the respondents. Forecast horizon is four quarters ahead.

THE GREAT DIVERSIFIER

In addition to the difficulty of successfully timing the bond market, there is a more fundamental case for maintaining a meaningful long-term allocation to fixed income: bonds are an important diversifier that may help provide downside risk mitigation when equities are falling. As seen in the chart below, U.S. Treasuries have delivered their strongest average monthly returns during periods when U.S. equities have suffered their largest declines.

BALLAST IN THE STORM

Monthly returns of U.S. Treasuries sorted by U.S. equity returns



Source: Datastream, January 1985 to December 2016. Equities are measured by the S&P 500, Treasuries by the BofA Merrill Lynch U.S. Treasury Master Index, and LIBOR by one-month U.S. Dollar LIBOR.

While the chart to the left highlights the diversifying benefits of Treasuries, the fixed income component of a well-balanced multi-asset strategy will, of course, contain more than just an allocation to nominal government bonds. We believe that it is critical to diversify across different forms of interest rate exposure that can be rewarded in different investment regimes. For example, as illustrated in the table below, nominal bonds have outperformed both equities and real (inflation-linked) bonds during times of deflationary falling growth, while inflation-linked bonds have outperformed equities and nominal bonds during periods of inflationary falling growth. Equities, meanwhile, have been the best performer during times of increasing economic growth, but real bonds, with their ability to hedge against rising inflation, have also delivered strong returns during growth regimes.

These historical results speak to the importance of constructing portfolios that are adequately diversified in order to withstand a variety of economic regimes. Given that the current outlook for higher rates is a result of expectations for stronger economic growth and higher inflation, we believe that it is prudent to balance assets that may perform well in a growth environment with assets that can help provide downside mitigation in case of falling growth or market shocks. By seeking balanced exposure to the different factors that drive asset class returns, we seek to build strategies that are robust in a variety of scenarios, without over-relying on any one source of return.

DIVERSE REGIMES REQUIRE DIVERSIFYING ASSETS

Average returns by asset class for different economic environments

Global Asset Class	Growth	Deflationary falling growth	Inflationary falling growth
Nominal Bonds	0.3%	5.9%	1.0%
Real Bonds	4.9%	0.9%	3.5%
Equities	9.1%	4.4%	-4.7%

Source: Bloomberg, as of 11/30/2016. Nominal Bonds: Citigroup WGBI Currency Hedged 7-10yr USD 1/1972-11/2016; Equities: MSCI World USD Index 1/1972-11/2016. Analysis begins in 1972 to capture the subsequent period of high inflation. Real Bonds: Barclays World Inflation Linked Bonds TR Hedged USD 1/1997-11/2016. Real bonds did not begin trading until 1997. Growth rising/falling is defined by a 3-month increase/decrease in the U.S. ISM Manufacturing Index. Inflation rising/falling is defined by a 3-month increase/decrease in the 12-month percentage change of the U.S. PCE Index.

THE IMPACT OF FALLING RATES

While risk parity strategies now have nearly three decades of history to examine, most of that history happens to coincide with three decades of falling bond yields. Given that reality, some investors have dismissed the success of these strategies as little more than good fortune tied to a leveraged bet on bonds in an era of falling rates. Since that era may now be behind us, it is critical to examine this critique.

In order to do so, we can examine the returns to a hypothetical risk parity strategy[1] over the past 30 years, and then remove the portion of the performance that resulted from falling interest rates. We make the long-term assumption that investors expect yields to remain at current levels, and then we remove all of the windfall gains from unexpected falls in interest rates from our fixed income returns. We do this by subtracting the yield at the end of the period from the yield at the beginning of the period, multiplying the result by the average duration of the bond, and then removing this total capital gain equally across all months of the sample.

Even after removing all of the gains from falling interest rates, a hypothetical simple risk parity portfolio outperformed a hypothetical 60/40 portfolio[2] and a portfolio of developed market equities over the past three decades, on both an absolute and a risk-adjusted returns basis, as seen in the table below.

While falling rates certainly delivered a tailwind, these results demonstrate that risk parity strategies were not dependent on falling rates to deliver compelling absolute and risk-adjusted returns.

THE NEXT CHAPTER

In the current market environment investors are rightly concerned about the potential impact of rising interest rates on their portfolios. But market prognostication is a tricky proposition, to say the least. With the expectation of rising rates, it is easy to see why it might be tempting to reduce fixed income allocations. However, as we have shown, higher interest rates are already priced into the markets, timing interest rate changes is particularly difficult, and bonds provide an important source of diversification to risky assets.

We advocate diversified strategies that are not dependent on any single asset class or economic outcome (such as falling interest rates or strong economic growth) to generate returns. A well-designed investment strategy that is balanced across rewarded sources of risk and return can ably navigate an environment of rising interest rates. Because multi-asset portfolios like risk parity seek to provide improved diversification over traditional asset allocation, we believe they are well-suited to perform across a variety of investment regimes.

AFTER THE FALL

Return and Sharpe ratios of a hypothetical risk parity strategy, a hypothetical 60/40 portfolio and the MSCI World Index, before and after adjusting for falling yields, 1987-2016

	Annualized return		Sharpe ratio	
	Unadjusted	Adjusted to remove impact of falling rates	Unadjusted	Adjusted to remove impact of falling rates
Hypothetical risk parity strategy	9.07%	7.36%	0.68	0.48
Hypothetical 60/40 portfolio	7.12%	6.61%	0.43	0.37
MSCI World Index	7.20%	7.20%	0.25	0.25

Source: Datastream, as of December 2016. The hypothetical risk parity strategy is a 45/135 allocation to the MSCI World Local Currency Gross Return Index and the Citigroup WGBI 7-10 year Local Currency Total Return Index. It targets a risk level of 10% and equal risk allocation between the two components. The hypothetical 60/40 portfolio is a 60/40 allocation to the MSCI World Local Currency Gross Return Index and the Citigroup WGBI 7-10 yr Local Currency Total Return Index. **Past performance is no guarantee of future results.** Indexes are unmanaged and used for illustrative purposes only and are not intended to be indicative of any fund or strategy's performance. It is not possible to invest directly in an index.

1 The strategy is comprised of a 45/135 allocation to the MSCI World Local Currency Gross Return Index and the Citigroup WGBI 7-10 year Local Currency Total Return Index, targeting a risk level of 10% and equal risk allocation between the two components.

2 The 60/40 portfolio is a 60/40 allocation to the MSCI World Local Currency Gross Return Index and the Citigroup WGBI 7-10 yr Local Currency Total Return Index.

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