

Fewer Forecasts; More Diversification

Today's historically low real yields make many investors wonder: are we due for a period of rising real yields? If they rise, how fast will they rise and how significantly? How will this impact our portfolios? Should this be a concern and if so, what can we do to protect ourselves?

In this article, we will briefly address these questions, provide evidence on the effects of rising real yields on investment returns, and suggest approaches to portfolio construction that we believe will better prepare investor portfolios for a number of scenarios, including rising real yields.

These portfolio construction techniques rely less on making macroeconomic forecasts and more on significant diversification. Our preferred methods to increase diversification are risk parity to better capture market returns and the addition of uncorrelated return streams in the form of diversified long/short style premia.

Why would we suggest these for those concerned about rising real yields – haven't we heard the oft repeated statement that risk parity will underperform in a rising yield environment? Yes we have. However, risk parity is, in fact, not so easily predictable. As it turns out, risk parity may do well – or poorly – in a rising-yield environment, just as more traditional portfolios may thrive or suffer. The difference, however, is that risk parity does not depend on what one asset class does, precisely because it is balanced.

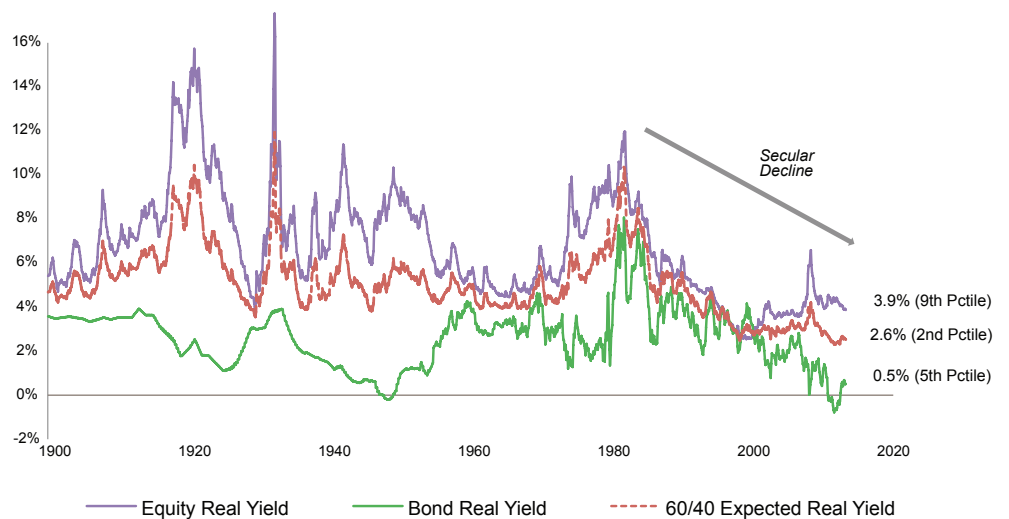
Imagine a four-cylinder engine where each cylinder represents a different asset class. How the engine performs depends on how all four cylinders are firing, in contrast to more traditional portfolios, which really are more analogous to one-cylinder engines given their concentrated risk posture (they are either working or not, driven by the equity markets).

Moreover, why should investors limit their portfolios to be driven by long-only market exposure? There are other return sources, which we call "styles," that are long/short tilts to specific factors that may offer positive expected returns and significant diversification. These style premia can be added in varying proportion to a traditional or risk parity portfolio with significant impact: the greater the allocation, the less exposed a portfolio is to the potential market-induced drawdowns that may come with a period of significantly rising yields – or other adverse market environments.

Rather than try to pick which assets might do well as yields rise from today's extraordinary lows, we believe it is wiser to target many different return sources, weigh them in a balanced fashion, and harvest them efficiently. Fewer forecasts, more diversification.

Putting the current environment into a historical perspective, our studies of prospective real returns of major asset classes indicate that we are in a low-

Exhibit 1: Expected Real Returns on U.S. Stocks and Bonds, 1900–2014



Sources: AQR, Robert Shiller's website, Kozicki-Tinsley (2006), Federal Reserve Bank of Philadelphia, Blue Chip Economic Indicators, Consensus Economics. See footnote 1 for explanations. Past performance is not a guarantee of future performance.

expected-return world. Exhibit 1 shows that both U.S. stocks and bonds are within the 10th percentile richest level since 1900; that is, their expected real returns are lower today than in more than 90% of their history since 1900¹. And because both asset classes are exceptionally rich at the same time, their 60/40 composite (60% stocks and 40% bonds) is even richer, clocking in at the 2nd percentile.

Given today's historically low real yields, investors who have reaped unusually high returns over the last three decades² can be forgiven for wondering whether they face payback time. With stocks and bonds almost equally expensive today from the perspective of the last century, a sharp broad-based mean-reversion increase in real asset yields could trigger widespread capital losses and wreak havoc with most long-only portfolios.

Opinions are split between short-term pessimists who emphasize the prospect of sharply rising real yields, especially on bonds, and long-term pessimists who argue that today's low real yields imply low prospective real returns for the next decade or so. While we do not advocate basing a portfolio allocation on one tactical forecast, we must admit that we find sharp real yield rises unlikely and discuss some at least equally plausible scenarios:

- Yields (real and nominal) could fall instead of rise. There is less scope for yield declines from historically low levels, but long-term bond yields outside Japan are still quite far from the zero bound and we now know that real yields can become negative. The scari-

est outcome is actually one where nominal yields are near the zero bound and real yields are positive due to deflation. Prominent commentators, such as Larry Summers, have stressed the real possibility of a secular stagnation given insufficient investment demand as well as the dangers of a deflationary trap where real economies are unable to find balance at full employment.

- Yields (real and nominal) could stay unchanged for a prolonged period. In an unchanged curve scenario, steep yield curves make long-dated Treasuries surprisingly strong performers due to the carry and rolldown. For example, as a 10-year Treasury ages into a 9-year bond, it rolls down the curve by some 15 bps, earning about 1.2% rolldown return (ca. 8-year duration * 0.15% = 1.2%). Thus, as of the end of April 2014, the expected nominal return (or "rolling yield") of a 10-year Treasury assuming an unchanged curve next year (with 10-year yield at 2.6% and cash near zero) is almost 4%.

- Yields (real and nominal) could rise gradually. This scenario would not necessarily cause net losses to bond-holders given that the steep yield curve implies that the market already discounts some yield increases. We believe investors should be bearish on bonds only if they expect sharper or faster yield rises than the market discounts. Gradual yield increases may be many policymakers' preferred outcome, because such normalization would likely cause the smallest number of casualties.

- Real yields could stay unchanged, or move mod-

estly even though inflation expectations and nominal yields rise sharply. We suspect that in most cases investors would price in upward inflation surprises pretty quickly and real yields on nominal bonds would incorporate an inflation premium. However, there is the possibility that investors may under-react; long-run inflation expectations still appear well anchored today because of central bank credibility, slack in major economies and demographic prospects, among other things.

But what if the short-term pessimists are right and real yields rise sharply? We seek to answer that by analyzing bond-bearish investors' tail-risk scenarios from a historical perspective. In a new publication for clients³, we drill down into various investments' performance during 10 episodes of sharp real-yield increases in the last 40 years.

By itself, this limited set of episodes doesn't amount to a foundation on which to construct portfolios, but it does provide some context for evaluating one particular potential tail risk that is currently weighing heavy on many investors' minds.

For each of the 10 episodes we considered, the macroeconomic backdrop might explain why real bond yields rose; some backdrops may be less benign than others (e.g., Volcker's Fed tightening "to kill inflation" in 1981 despite a deep recession clearly was not friendly for growth-oriented assets). The length of these rising real yield episodes varied between 8 and 18 months. Most episodes coincided with tighter Fed policy (policy stance is proxied by an average of real short rates and yield curve inversion), stronger growth (proxied by the change in the Chicago Fed National Activity Index), and rising inflation (proxied by the change in CPI YoY).

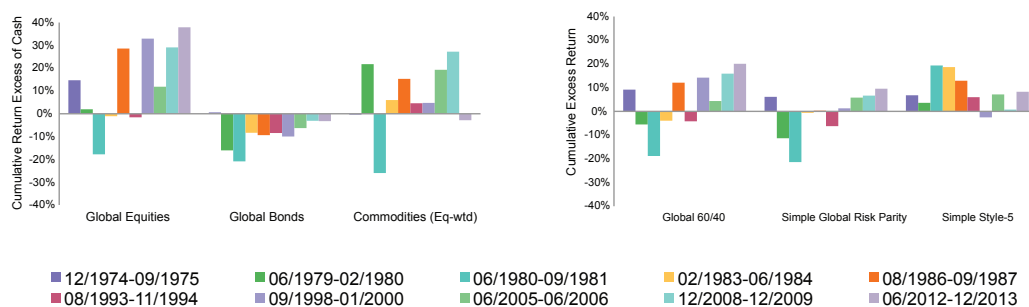
While they all shared traits like these, however, they had a disparate impact on different asset classes, as shown in Exhibit 2.

Bond excess-of-cash returns were negative in virtually all episodes. One exception is that global bonds mildly outpaced cash in the first episode (1975), which captures the aftermath of the first oil crisis when inflation was already falling fast and monetary policies were eased.

Equity excess-of-cash returns were typically positive (negative in only three episodes). Yet half of the episodes had clearly lower equity returns than others. These five episodes all coincided with Fed tightening, while the five other episodes with higher equity returns coincided with improving growth conditions (which presumably is more likely when the Fed is not tightening). Equities often show benign performance when real bond yields rise, but the current generation of investors may not recall that there have been prominent counterexamples where equities were vulnerable.

As one might expect of an inflation-haven asset class, a diversified portfolio of commodity futures typically earned positive excess returns in the episodes we studied, but it lost money in 1980–81 (a

Exhibit 2: Investment Performance in 10 Episodes of Sharply Rising Real Bond Yields



Sources: Global Equities is the MSCI World index net dividends. Global Bonds is a GDP-weighted composite of Australian, German, Canadian, Japanese, U.K. and U.S. 10-year government bonds. Commodities is an equal-dollar-weighted index of 24 commodity futures. Global 60/40 takes 60% Global Equities and 40% Global Bonds. Simple Global Risk Parity uses trailing 12-month volatility and long-term correlation assumptions to target equal risk contributions from a portfolio of Global Equities, Global Bonds and Commodities. Simple Style-5 is an equal-dollar-weighted composite of five long/short style premia (value, momentum, carry, defensive, trend) harvested in many asset classes. The analysis is based on hypothetical returns gross of trading costs and fees. Past performance is no guarantee of future performance.

terrible period for all investments) and in the latest episode. Energy-dominated commodity indices fared poorly also in 1975 and 1993–1994. Credits quite regularly outpaced duration-matched Treasuries.

Such equivocal results lead us to conclude that it is wiser in the current environment to avoid any concentrated bets and embrace diversification. Two such strategies in particular seem attractive to us: risk parity and uncorrelated long/short style premia. Risk parity involves building a portfolio that allocates assets based on their risk contribution to the portfolio rather than on some predetermined nominal share of an overall portfolio. A classic 60/40 portfolio (60% stocks and 40% bonds) may seem balanced, but because equities are so much more volatile than bonds, such portfolios have about 90% of their risk exposure in stocks. Thus, a 60/40 portfolio suffers more in equity market drawdowns, whereas a simple risk parity portfolio (equal-risk composite of stocks, bonds, commodities and credits) is somewhat more vulnerable in bond-related drawdowns. Importantly, the worst bond-related drawdowns tend to have a much less damaging impact on well-diversified portfolios than the worst equity-related drawdowns.

Looking beyond these short-lived extreme episodes, Asness, et al. showed⁵ that risk parity portfolios have a decisive diversification advantage over long horizons. Even during extended periods where certain asset classes failed to deliver significant risk-adjusted performance (bonds from 1947 to 1981, for example, or commodities from 1981 to 2013) Hurst et al. found⁶ that more diversified risk parity portfolios outperformed.

We find something similar with strategies that approach portfolio construction in a different way, going long and short assets based on five historically reliable styles: value, momentum, carry, defensive

and trend. Not only were all the style premia and their composite profitable in most episodes, they had a near-zero long-run correlation with real bond yield changes, consistent with the idea that their long/short nature makes them akin to zero-duration assets.

So, what can we learn from this? While we find sharp real yield increases unlikely, we find some comfort in seeing that even if they should occur, most of them have been historically tolerable outcomes for well-diversified portfolios.

We believe there is strong theoretical and empirical backing to suggest that more diversified portfolios can produce better risk-adjusted returns relative to concentrated portfolios. In short, as tempting as it is to try to time markets, we believe in the long run diversification wins.



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Footnotes:

1 Our expected real returns are based on real yields (and embed a growth assumption for equities) but assume no mean reversion in market valuations; for details, see "The 5% Solution" (2012) or Alternative Thinking, January 2014. Stocks are represented by the Standard & Poor's 500 Index since 1957 and before it other broad indices of large-cap U.S. stocks. The equity real yield is a 50/50 mix of two measures: Shiller's (10-year average, cyclically adjusted) earnings/price ratio * 1.075 and dividend/price + 1.5%. Scalars are used to account for long-term real earnings per share (EPS) growth. Bond real yield is the difference between the 10-year Treasury yield over survey forecasts of next-decade average inflation (based on several surveys, as in Ilmanen (2011)). Stock market data and Treasury yields are from Robert Shiller's website, inflation expectations data are from Kozicki-

Tinsley (2006), Federal Reserve Bank of Philadelphia, Blue Chip Economic Indicators and Consensus Economics.

2 Alternative Thinking, May 2014.

3 Alternative Thinking, May 2014.

4 The 10 periods are December 1974 to September 1975, June 1979 to February 1980, June 1980 to September 1981, February 1983 to June 1984, August 1986 to September 1987, August 1993 to November 1994, September 1998 to January 2000, June 2005 to June 2006, December 2008 to December 2009, and June 2012 to December 2013.

5 "Leverage Aversion and Risk Parity," Asness, Frazzini and Pedersen (2012)

6 "Can Risk Parity Outperform If Yields Rise?" Hurst, Mendelson and Ooi (2013)

