

Is Risk Parity Right for Your Portfolio?

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Driven by volatile equity markets, falling interest rates, and heightened aversion to portfolio losses, interest in risk parity has skyrocketed over the last three years. Unfortunately, the risk parity investment thesis is not always understood by investment committees and trustees, which can contribute to sub-optimal portfolio decisions. In the following newsletter, we address the salient points of risk parity to help educate investors so they can determine if it is an appropriate allocation for their portfolios.

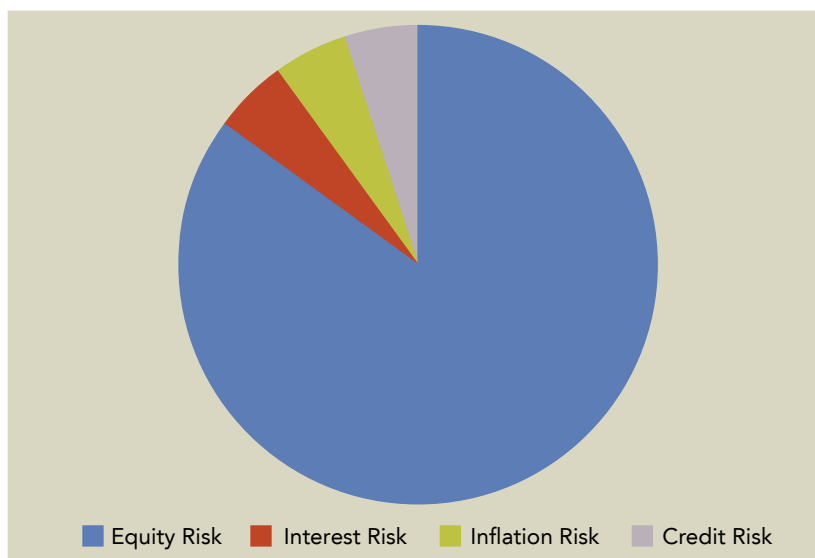
The Basics

At a high level, risk parity is an investment strategy that aims to produce portfolios in which each asset class contributes equally to overall risk.¹ In other words, there is parity amongst the underlying investments' contributions to risk. When analyzing portfolio risk, four fundamental sources² emerge as the most influential:

- Equity risk
- Interest risk
- Inflation risk
- Credit risk

If we consider the traditional 60/40 portfolio (60% equities, 40% bonds), equity risk dominates the risk allocation; as the stock market goes, so goes the portfolio. In bull markets, returns tend to be very strong. However, in times of market volatility and bear markets, performance is choppy at best and downright frightening at worst. The risk allocation for a traditional portfolio is illustrated above in Exhibit 1.

Exhibit 1: Risk Allocation for Traditional Portfolio



¹ In the context of this newsletter, we define risk as the variability of portfolio returns.

² The fluid correlations between these four sources are also an important driver of realized risk. Recognition and controlling for these changing correlations is critical for risk parity strategies.

Risk parity, on the other hand, seeks to establish equal contributions from each of these four risk sources, so that the risk allocation will look like Exhibit 2.

How Do They Do It?

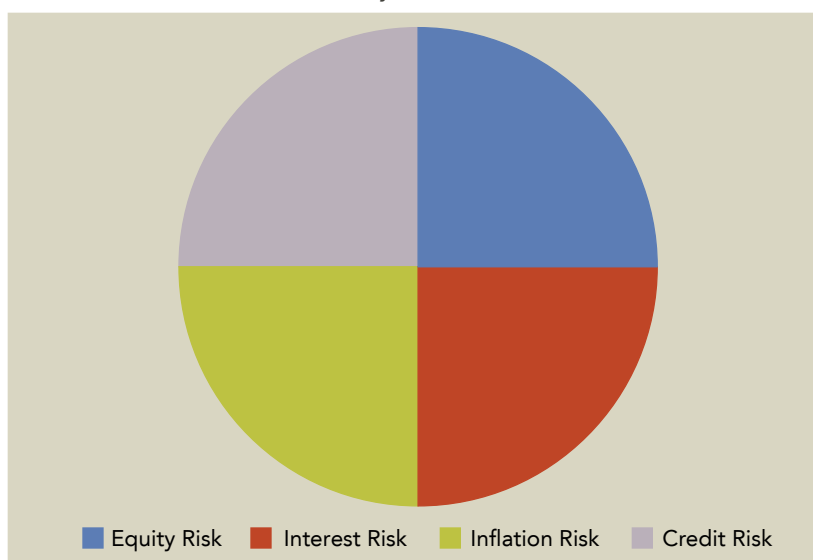
Naturally, something has to give: if equity risk is dramatically reduced in risk parity portfolios, then there must be a much smaller allocation to equities. If an investor is interested in reducing his risk while giving up return upside, then this is a perfectly acceptable tradeoff. But what about the investor who wants both – equal sources of risk, but wants to retain upside potential?

Before answering this question, let's discuss the typical investments included in a risk parity strategy. Though on some levels risk parity appears to be a complex investment hypothesis, the underlying investments are relatively straightforward. Most risk parity portfolios rely almost exclusively on exposures to the following:

- Equities (developed and emerging)
- Government Bonds (nominal and inflation linked)
- Credit
- Commodities
- Currencies

Exposures to these investments are accessed with futures and swaps, which is beneficial for several reasons. First, these instruments are extremely liquid so risk parity strategies are significantly less likely to face liquidity challenges like many other alternative investment products do in times of market stress. In 2008, for example, futures markets functioned as expected and risk parity products were not forced to limit access to their investors' funds. Second, notional exposure is gained with only a small percentage actually used to cover market position. This percentage is usually less than 20%, and the remaining funds are held in

Exhibit 2: Risk Allocation for Risk Parity Portfolio



money market or short term bond funds, therefore further boosting the liquidity behind risk parity. Last, because the derivative markets utilized by risk parity are so liquid, moving in and out of positions to pursue opportunity or control for risk is close to frictionless.

The underlying allocations to each of the investments listed above will vary by the manager, but in order to establish equal risk contributions from each, the resulting asset allocation features an overweight to bonds and other non-equity investments.³ A typical risk parity manager will establish a target level of volatility and then build an asset allocation that hits the target by accessing equal contributions from each investment category. This is done by equating the Sharpe ratios of each asset class featured in the risk parity strategy.

However, getting back to the question posed earlier in this section, an overweight to bonds is often incompatible with the return targets sought by pension funds and endowments.

Therefore, a bridge is needed to connect the attractive theoretical arguments for risk parity with the practical goals of investors. For risk parity, leverage serves as this bridge. Admittedly, the word leverage can make investors run for the door, but its use for risk parity is done in a way that places a premium on liquidity⁴ and keeps the use of leverage at the product – not the fund – level. A typical risk parity product will feature 1.5 to 2 times leverage.

Let's develop a quick example to show how the target risk level, asset allocation, and leverage come together for risk parity. To begin with, volatility targets are developed for each asset class as well as the total portfolio.⁵ Our sample risk parity product will feature stocks, bonds, and inflation assets (such as TIPS and commodities), with an overall volatility target of 10% (a common vol target for risk parity). Based on the assumed volatilities and correlations amongst the assets, the following asset allocation is determined:

- 37% equities
- 108% bonds (including credit)
- 62% inflation assets (TIPS, commodities)

³ Relative to the bond allocation in a traditional 60/40 portfolio.

⁴ Recall that the majority of risk parity assets sit in money market funds, which are extremely liquid.

⁵ Though the math is beyond the scope of this newsletter article, the volatility targets for each asset class are based on correlation forecasts and constraints to minimize tail risk.

Therefore the position size as a percent of the strategy is 207%, essentially 2:1 leverage. Note the disproportionate allocations to bonds and inflation assets and the underweight to equities.

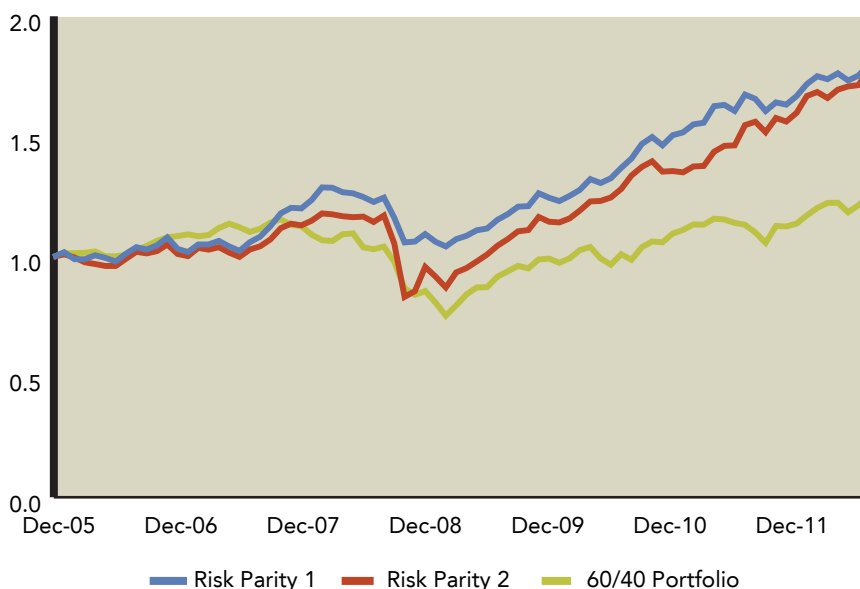
It is worth noting that the initial asset allocation may change over time. Some risk parity managers are relatively static and do not vary their allocations significantly, and only do so to control for tail risk. Other risk parity managers will feature a more dynamic asset allocation that not only controls for tail risk in the portfolio but also moves in and out of positions opportunistically.

Performance

While the discussion to this point has centered more on theory, an investment thesis must prove to be effective to truly gain traction. In the chart to the right, we compare two risk parity strategies – one more tactical (red line) and one more static (blue line) - to a traditional 60/40 portfolio.⁶

Since 2005, the cumulative returns of the two risk parity strategies have been 180% and 178%, respectively, while the traditional portfolio has returned 125%.⁷ Clearly, risk parity strategies have delivered attractive returns with a more balanced risk allocation, and these outsized return numbers are a primary reason for the escalating interest across the institutional landscape.

Exhibit 3: Risk Parity vs. 60/40 Portfolio



When considering how risk parity portfolios are built, though, it is no real surprise that risk parity has outperformed given the prevailing market environment over the last six years. We have seen unprecedented equity market volatility marked by the crash of 2008 and the subsequent bull market from March 2009 to today. Moreso, the bull market for bonds has been tremendously profitable for bond investors and for anyone overweight to bonds, returns have been exceptional. Considering that risk parity portfolios are overweight bonds with the use of leverage, it would be disappointing if risk parity had not outperformed traditional portfolios since 2005.

Risks

Just like any investment strategy, risk parity has its share of risks. To begin with, the inherent use of leverage can make some investors uncomfortable, even if the leverage is employed at the product level. In addition, it is worth noting that the underweight to equities has benefitted risk parity in the recent past, but during prolonged equity bull markets, risk parity will likely underperform traditional portfolios; it is hard to imagine risk parity holding up well during the stock market of the 1990s. We would also remind potential investors that the cost of leverage is directly tied to interest rate levels. Rates are projected to remain low until at least mid-2015, which should be accretive for risk parity. But when rates do ultimately rise, the cost of leverage will also increase, therefore acting as a drag on net returns for risk parity investors. Last, despite the transparency of underlying investments, the math and assumptions to determine portfolio weightings in a risk parity product are fairly complex and subject to assumptions about volatility and critically, correlations between asset classes. Though back tests have held up relatively well and volatility demonstrates greater reversion to the mean than returns, the technical aspects of building a risk parity portfolio are not only complex but to a certain degree subject to qualitative analysis.

⁶ For the 60/40 split, we use the S&P 500 and the BarCap Aggregate indices.

⁷ Returns through June 30, 2012.

Recommendation

Risk parity products offer an alluring combination of risk reduction and opportunistic investing. Their recent performance has only enhanced their attractiveness to investors and largely explains the boom in assets under management and growing interest amongst investors. However, we would caution potential investors that such outperformance versus a traditional portfolio is not likely to persist, especially when rates do in fact rise from their currently record low levels. Ultimately, if potential investors are comfortable with the use of leverage, we feel that risk parity can be a beneficial addition to portfolios, though we encourage committees and trustees to truly understand the inherent risks before making an allocation.

If an allocation is made, we recommend that risk parity be considered as part of the alternatives bucket in the portfolio asset allocation, and we do not advocate that risk parity be used to entirely replace existing allocations to stocks and bonds. Given the lack of a prevailing market benchmark, we believe the return profile of a 60/40 portfolio is an appropriate target for risk parity products. As is the case with any new allocation, it is of paramount importance that proper due diligence be performed on not only the asset class itself but any asset manager who is chosen to run a risk parity strategy. ■

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