



BRIDGEWATER

Risk Parity is about Balance.

In 1996, Bridgewater Associates established the All Weather principles for asset allocation and in 2004 they published a seminal piece called “Engineering Targeted Returns & Risks” which outlined that process. In recent years, several prominent money managers have adopted versions of the All Weather approach into their own product offerings, and recently, the debate on this topic has surged in the institutional investment community, taking on the “Risk Parity” banner. In the following article, Bob Prince, Co-Chief Investment Officer of Bridgewater, explains the concept of Balance that lies behind the Risk Parity approach.

Over the past fifteen years we have communicated and debated our “All Weather” (or “Risk Parity”) principles with our clients and with the investment community because we believe that investing in this manner is the best path to investment success and that the current approach presents unacceptably high risks. Risk Parity is much bigger than a new investment product for the “investment pie” — it is a central theme of successful asset management that applies to the entire portfolio.

What is the Risk Parity Approach to Asset Allocation?

Risk parity is about Balance. It is about balancing one’s risk exposures across multiple sources of return in order to achieve the most consistent performance possible across all future environments.

Balance cannot be achieved precisely, but it can be reasonably achieved. By that we mean that Risk Parity is not about being overly precise; in fact, there really is no such thing as precision in the investment world because investing necessarily deals with the future, and the future cannot be known in any precise way. Rather, the Risk Parity approach balances potential future risks to achieve one’s desired level of returns with as little risk as possible regardless of what scenario unfolds.

The Problem with the Traditional Approach to Asset Allocation

The traditional approach to asset allocation is to tolerate higher short term risk through a concentration of risk in equities in order to generate higher longer-term returns. A conventional portfolio has over half of its dollars and roughly 90% of its risk in equities. This approach has a serious flaw — if the source of short-term risk is a heavy concentration in a single type of asset, this approach brings with it a significant risk of poor long-term returns that threaten the ability to meet future obligations. This is because every asset is susceptible to poor performance that can last for a decade or more, caused by a sustained shift in

the economic environment in relation to what was discounted. These shifts occur with enough regularity that you are virtually certain to experience them in your lifetime if you hold a concentrated portfolio. As a result, the long-term risk of holding a portfolio that is concentrated in equities, or in any other asset for that matter, is too great for most investors. *Unfortunately, it is a form of risk that the world's pension fund industry has universally taken, leading to today's pervasive underfunded status.*

This form of long-term risk is unnecessary. While a balanced portfolio will have short term risk, it will be neutralized to sustained shifts in the economic environment. This means that short term risks will indeed wash out over time and allow an investor to focus on achieving the higher long-term returns that they desire.

Principles of Achieving Risk Parity

To achieve a quality Risk Parity portfolio, an investor must balance multiple sources of return to achieve consistent performance across future potential environments.

We accomplish this by employing two steps:

- First, we increase and decrease the risk levels of all asset classes so that they have similar expected returns and risks. This provides us with a menu of return streams that have similar expected returns and risk but have different relationships with future economic environments (i.e. are lowly correlated).
- Second, we select from the menu to balance assets against one another so that the portfolio doesn't have any bias to perform better or worse in any particular economic environment. We accomplish this environmental balance by holding similar exposures to assets that do well when (1) inflation rises, (2) inflation falls, (3) growth rises, and (4) growth falls.

Balancing a portfolio to shifts in economic growth and inflation captures nearly all of the potential diversification available to a strategic asset allocation mix, because these are the two conditions that are most significantly discounted in the pricing of asset classes, and are therefore the primary drivers of variations in asset returns.

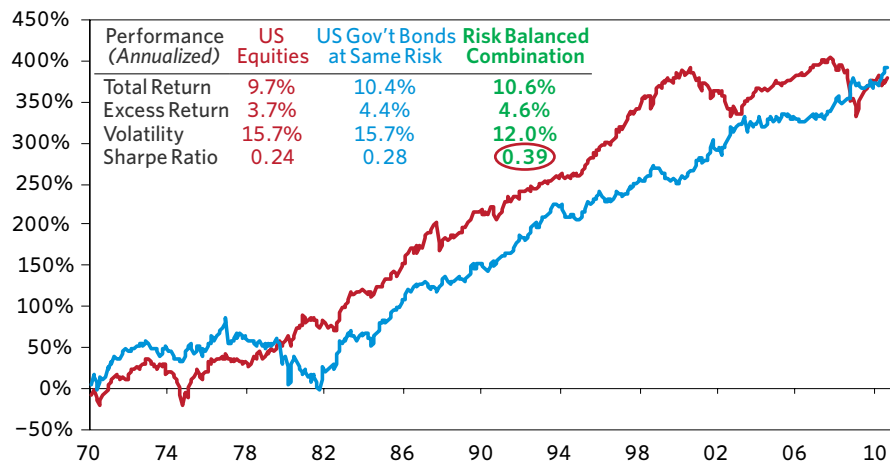
Implementing Risk Parity: Our Process in a Nutshell

You can see our process in action through a simple example. Imagine a world of two assets: stocks and bonds. As shown below, **stocks and bonds held at the same level of risk had virtually identical returns over the past forty years.** And yet, the paths of returns regularly diverged because stocks and bonds respond differently to changes in the economic environment.

Balancing Stocks Against Bonds

Cumulative Total Returns (ln)

- US Equities
- US Gov't Bonds at Same Risk



Note: Risk Balanced Combination consists of 50% US equities and 50% risk matched US Gov't bonds.



As a result of their environmental biases, when stocks performed poorly bonds generally performed well, and vice versa. Given that they generated similar returns but at different times, it makes a lot more sense to hold both of them rather than pick just one. Balancing the portfolio between stocks and bonds would have reduced the portfolio's risk by 25% and improved its Sharpe ratio by 50% in relation to concentrating risk in either asset.

The environmental biases of the returns of stocks and bonds derive from their structural pricing characteristics. Stocks give you a claim on earnings that is worth more when the earnings and the economy are stronger. Bonds give you a fixed stream of payments that are worth more when a central bank reduces short term interest rates or inflation falls in response to economic weakness. Because variations in the returns of stocks and bonds are structurally connected to the nature of the economic environment through their pricing structure, the nature of their diversification advantage can be understood and will be reliable over time.

The return of stocks and bonds differ most significantly when there is a shift in economic growth. The following table divides their returns over the past 40 years into two types of periods, those when growth was strong and those when growth was weak. You can see the offsetting structural biases of their returns. Stocks generated most of their positive performance when growth was strong and bonds generated most of their positive performance when growth was weak, and vice versa.

Stocks and Bonds Balance Each Other Because They Have Complementary Environmental Exposures

Excess Returns over Cash

	Stocks	Bonds
Rising Growth	5.5%	-1.4%
Falling Growth	1.1%	9.1%

A rising (falling) growth month is defined as a month in which the current rate of real GDP growth is greater (lower) than the 12-month moving average rate of real GDP growth. Excess returns represent the returns over a Bridgewater proxy for the US cash rate for the corresponding time period.

Balancing a portfolio between stocks and bonds is better than not balancing a portfolio. But stocks and bonds are both vulnerable to rising inflation. Therefore, in order to have a fully balanced portfolio you also need to include assets that do well when inflation rises, like commodities and inflation-linked bonds.

A balanced portfolio need not be a low returning portfolio. This is because a portfolio's return will equal the average of the returns of its component assets. And the return of each asset can be adjusted to any reasonable level by borrowing or lending at the risk free rate. For this reason, a balanced portfolio can match the expected return of a portfolio that is 100% invested in equities, but can do so at a much lower level of risk. The following chart shows the cumulative return of a fully balanced portfolio and the cumulative return of a portfolio that is 100% invested in global equities. The balanced portfolio achieved the same return with around one-third of the risk. The same returns were achieved with much smaller losing periods, and these losing periods passed relatively quickly rather than lasting for many years.

Since 1996, we have applied this Risk Parity/All Weather approach through significant bull and bear markets in equities, two recessions, a real estate bubble, two periods of Fed tightening and Fed easing, a global financial crisis and periods of calm in between. Through these varied environments the All Weather asset allocation mix has achieved a Sharpe Ratio in-line with the 0.6 Sharpe Ratio expectation that we established at the outset of the strategy and that was shown in our simulated back tests of the strategy back through the Great Depression and across a variety of other countries. At the normal 10% targeted risk it has outperformed stocks, bonds and the conventional asset allocation portfolio, with much less risk.

We think it is great that Risk Parity is catching on because we really do believe that it is the right way to do asset allocation. However, it is not safe to blindly assume that all Risk Parity approaches are the same or will perform reliably through all environments. We have seen some Risk Parity approaches that we think are overly engineered. Some are based on estimated future volatilities and correlations using recent data. Since these things change in unexpected ways, we judge this to be a problem. It is more reliable to estimate the risks and correlations of assets with a hand-held calculator and a basic understanding of asset pricing structure than by trailing quantitative measures. Bad, though less worrisome, other strategies include alpha bets without tailoring the amounts of alpha and beta for the quality of each return stream, which can also be problematic. To be clear, we do not believe that our All Weather approach is the only good approach to Risk Parity. But we believe it is the best approach and its long-term track record speaks to its quality.

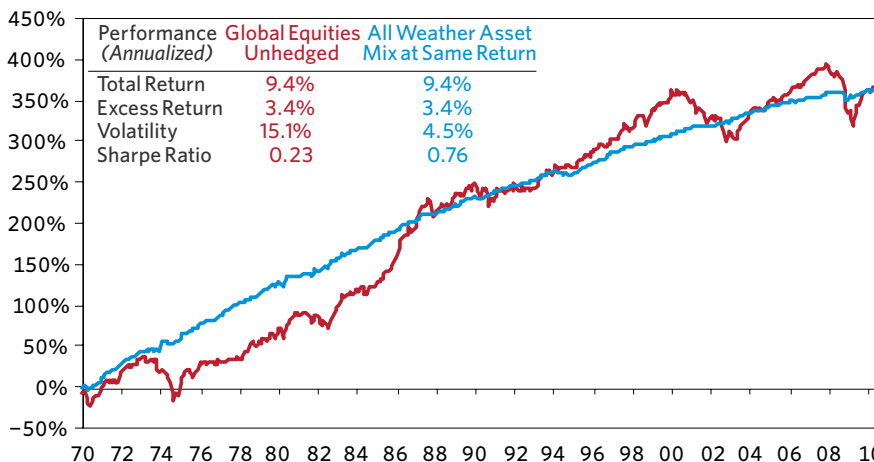
Most institutional portfolios are badly out of balance. The returns of most institutional portfolios are 90+% driven by the return of equities, exposing them to a single adverse event, a declining equity market. Given the current choices available, not balancing the portfolio is not only unnecessary, it is imprudent. ■

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A Balanced Portfolio Achieves the Same Return as Equities with 1/3 the Risk...

Cumulative Total Returns (In)

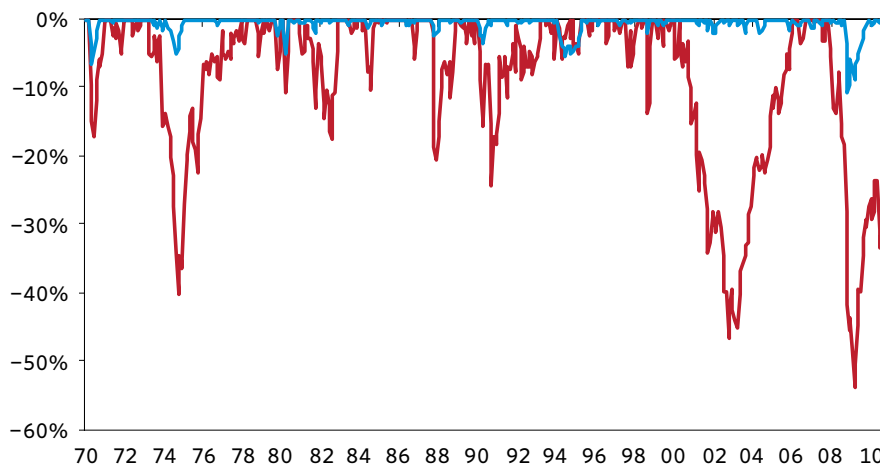
- Global Equities Unhedged
- All Weather Asset Mix at Same Return



...And With Less Frequent, Smaller and Shorter Losing Periods

Drawdowns

- Global Equities Unhedged
- All Weather Asset Mix at Same Return



Past results are not necessarily indicative of future results. WHERE SHOWN, HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN.

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The All Weather asset mix performance is simulated based on All Weather asset mix weights applied historically to market returns. The All Weather asset mix weights are determined based on proprietary calculations and include the use of historical returns and data available at the time the weights were constructed and may vary over time. The historical market returns are based on a combination of index returns and representative market returns based on Bridgewater estimates and may not reflect reinvestments of dividends, the deduction of fees, commissions or any other expenses that an investor would pay as it is not possible to invest directly in an index. Markets may or may not be currently traded and are subject to change without notice. No claim is being made of the All Weather asset mix's ability to perform in absolute terms or relative to any market return in the future, during market events not represented or during market events occurring in the future. Market conditions and events vary considerably, are unpredictable and can have unforeseen impacts resulting in materially adverse performance results.