Risk Parity Portfolios: Investment Fad Or The Future Of Portfolio Construction?

Executive Summary

- The first "risk parity" portfolio wasn't created until 1996, and the term itself was coined in 2005. Nonetheless, the idea that a portfolio should hold multiple asset classes and take advantage of multiple risk premia to be effectively diversified and optimize the risk/return balance dates back to Harry Markowitz and the establishment of Modern Portfolio Theory nearly 60 years ago.

- The problem with portfolio construction as it's typically implemented is that an even split of *capital* amongst several asset classes does not result in an even division of *risk* (or exposure to risk premia) amongst those asset classes; for instance, a 60/40 stock/bond asset allocation looks more like a 90/10 risk allocation. The fundamental principle of risk parity portfolios is that the allocations to risk (and risk premia) should be equalized (in parity to one another), not just the allocations to capital, although there are some disagreements about exactly which risks/asset classes are unique (and therefore which should be included).

- Because not all asset classes offer the same risk premium (some are higher or lower return), diversifying risk evenly amongst them can result in a lower expected portfolio return than concentrating the portfolio towards a particular high risk/high return asset class (e.g., equities). To manage the fact that a well diversified risk parity portfolio may have a lower expected return (albeit with much lower risk), leverage is typically used to ensure the portfolio is capable of generating a desired return. While leverage may appear to be risky, advocates of risk parity investing note that a truly-well-diversified portfolio with leverage may still be less risky than a concentrated portfolio in a limited number of risky asset classes.

- Most risk parity investment strategies involve a very proactive monitoring process, both to ensure that risk exposures remain well diversified and in balance (including regular rebalancing), and to manage the leverage involved (especially if risk/volatility rises). Some risk parity portfolios actually target a specific level of volatility, and then monitor and manage total risk exposure to this volatility-constrained target.

- Historical performance for risk parity portfolios has been strong, especially over the past 10-15 years when traditional investment portfolios have underperformed expectations. Over the longer term (through backtesting), risk parity portfolios have held their own, although not with the kind of outperformance seen in recent years.

- There is still a great deal of debate about whether the risk parity outperformance of the past decade is sustainable or just a quirk of an unusual market environment, especially given that risk parity portfolios tend to have a much larger exposure to bonds, which have done especially well lately as rates have dropped but are likely to reverse at some point in the future (and notably, rising rates would also adversely impact the cost of leverage for risk parity strategies). On the other hand, risk parity advocates note that at least in backtests, risk parity portfolios performed well through the rising rates environment of the 1970s, as their extensive diversification ensured that other parts of the portfolio performed well in the face of rising rates and inflation, even if bonds did not. In addition, risk parity advocates would note that benchmarking a well diversified portfolio to an "equity-centric" traditional portfolio may not be an effective measure in the first place.

- In the end, it's not clear if risk parity investing will topple the traditional approach to portfolio construction, but its fundamental approach as a more effective and holistic way to diversify portfolios suggests it may be more than just a short-term fad.

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Introduction

Given the difficult ongoing investment environment, investors have increasingly been turning to various "alternatives" to support portfolio growth and manage risk, aided in no small part by a technological revolution that makes analytically complex strategies that would have been impossible 30 years ago, and difficult 15 years ago, easily implemented in the marketplace with today's computing power.

A recent example of this trend is risk parity investing. Notwithstanding its long conceptual roots dating back to Markowitz, and even the favorable 17-year track record of the longest standing risk parity fund Bridgewater All Weather, risk parity investing has only really begun to gain momentum in the past few years. The trend appears to be driven by several factors, including institutions struggling to generate their target (and often "required") rates of return, to an ongoing decline in equity-centric investment strategies given a 13-year secular bear market, to the simple fact that risk parity strategies have dramatically outperformed traditional portfolios for the better part of the past decade. With its rising popularity, risk parity strategies have quickly exploded to upwards of $100 billion of institutional funds (with Bridgewater alone estimated to capture more than 50% of that share), and numerous mutual funds that were launched in the last few years have already garnered in excess of $10 billion.

In this month's newsletter, we look at what risk parity investing really is (and what it's not), the opportunities, risks, and practical challenges in implementing such strategies, and whether risk parity investing ultimately represents a short-term investing fad, or an emerging shift in how portfolios are constructed.

Defining Risk Parity Investing

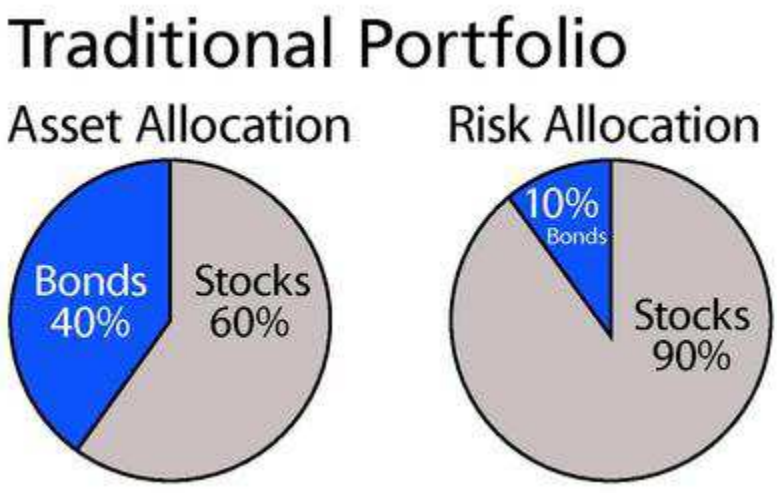
Risk parity investing can trace its roots back to Harry Markowitz, Modern Portfolio Theory, and the research that has stemmed from it in the decades since, although the first "risk parity fund" wasn't created until 1996, and the formal label of "risk parity" is believed to have originated in a white paper by Edward Qian of PanAgora Asset Management in 2005. *(Editor's Note: For a full version of Qian's paper, see http://bit.ly/QianOnRiskParity.)*

The basic concept of risk parity investing is that, for a portfolio to be effectively diversified, it should hold multiple asset classes, and have the opportunity to take advantage of the returns from multiple risk premia… thus the name "risk parity" meaning "parity in exposure to multiple risks (or risk premia)". While the concept of diversification is certainly not new to investing, the risk parity approach notes that the traditional "diversified" portfolio that is 60/40 in stocks and bonds is actually remarkably *undiversified* in terms of the risks that the portfolio is exposed to; while stocks may represent "just" 60% of the portfolio, they can often represent 85%-95% of the portfolio's exposure to risk, as shown in Figure 1 below. And unfortunately, in times of risk and stress, the overall portfolio volatility can become even more dominated by just the equity volatility alone.

Of course, today's modern portfolios will typically hold more asset classes than just "stocks" and "bonds" but the underlying point remains the same - if the goal is to truly diversify *risk*, the allocations in the portfolio should be made in such a manner that the pie slices are even based on the "risk" pie on the right, not just the "asset" (i.e., capital) pie on the left.

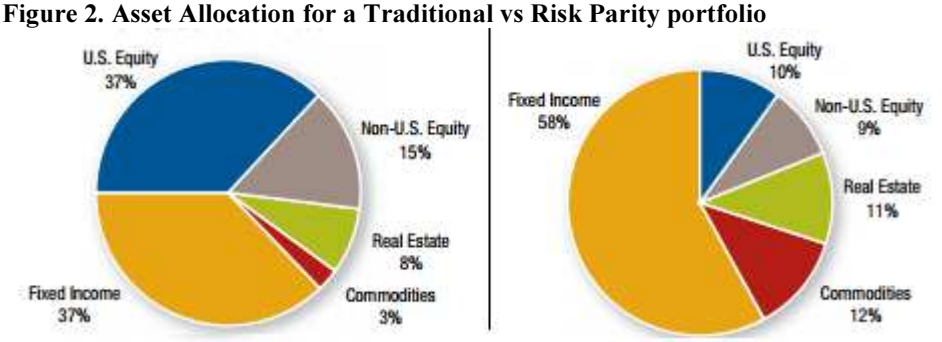
As a result, allocations for the portfolio should take into account how much riskier and more volatile some asset

Figure 1. Asset Allocation vs Risk Allocation for a Traditional Portfolio



Source: Wikipedia on Risk Parity

Figure 2. Asset Allocation for a Traditional vs Risk Parity portfolio



Source: "The Risk Parity Approach to Asset Allocation, Callan Investements Institute Research, Feb 2010

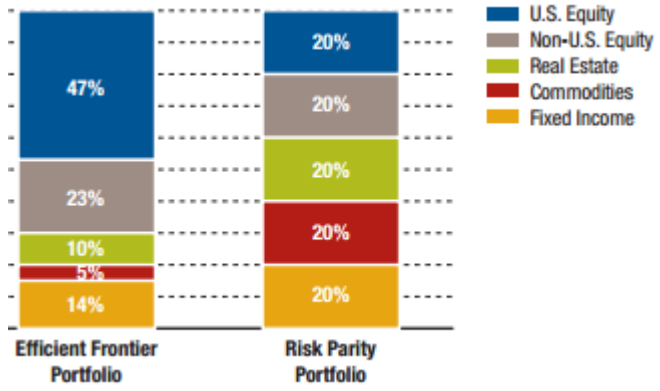
classes are, compared to others – even if that results in a dramatically different asset allocation. For instance, compare the two portfolios shown in Figure 2 (above) in a recent white paper on the risk parity approach by Callan Investments.

The version on the left is a fairly "classic" traditional efficient frontier 63%/37% "balanced" portfolio of 5 asset classes, with 37% US stocks, 15% international stocks, 8% real estate, 3% commodities, and 37% bonds. By contrast, the portfolio on the right is a risk parity portfolio; it appears to be very conservative, with only about 20% allocated to equities at all (domestic or foreign), another 20% to real estate and commodities, and nearly 60% to fixed income.

Yet when these portfolios are viewed from the perspective of *risk* a very different picture emerges; as Callan illustrates (see Figure 3 below), the "balanced" portfolio is actually very equity-centric in its risks, while the risk parity portfolio has actually created an even spread of risk amongst all the asset classes!

While the risk parity portfolio shown produces a more diversified exposure to asset class risks, a new problem quick emerges: because of the huge allocation to fixed income (necessary to bring the amount of exposure to bond risks up to the other more volatile asset classes), there simply isn't as much room in the portfolio to gain exposure to risky assets overall, and the risk premia they offer; as a result, while the risk parity portfolio may be the "better diversified" and lower risk one (Callan estimates the standard deviation is only 6.5% for the risk parity portfolio shown above, compared to 9.72% for the traditional portfolio), it is also a much lower return portfolio: the traditional efficient frontier portfolio has an expected long-term return of 8.25%, while the risk parity portfolio's expected return is only 6.68%.

Figure 3. Risk Allocations of a Traditional vs Risk Parity portfolio



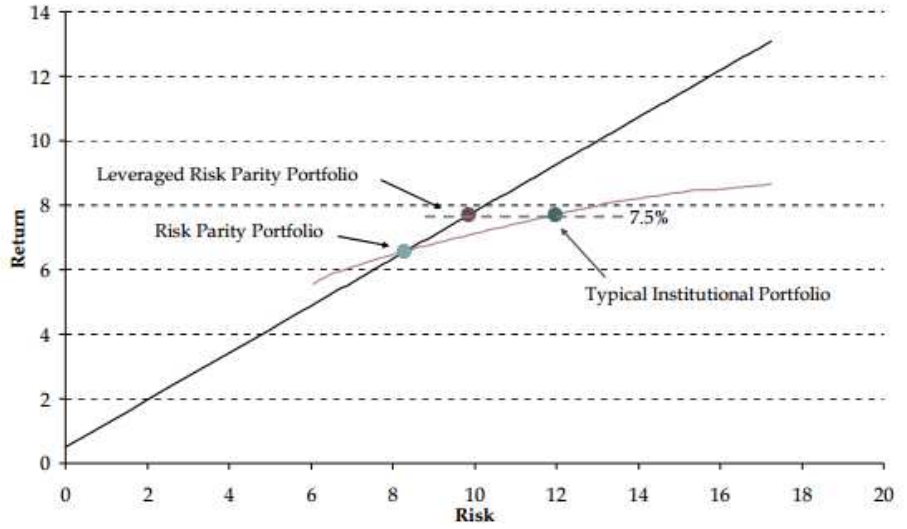
Source: "The Risk Parity Approach to Asset Allocation, Callan Investements Institute Research, Feb 2010

Dialing Up Risk Parity Returns: Leverage

While the more diversified and less volatile risk parity portfolio might be appealing for many investors - its superior returns *relative to* risk give risk parity strategies rather attractive Sharpe ratios - the lower expected return that results from fixed income crowding out other higher-return (albeit also higher risk) assets poses a problem for investors seeking a certain level of long-term returns to achieve their goals (especially in the case of institutional portfolios that are trying to reach the returns embedded in their actuarial assumptions!). Or stated more simply: it might be nice that the aforementioned risk parity portfolio has a 6.5% standard deviation (with a 6.68% expected return) and not a 9.72% standard deviation (with an 8.25% expected return), but if you need to get 7.5% returns to achieve your goals (whether that's funding your individual retirement or your pension obligations), a 6.68% expected return on a risk parity portfolio just isn't going to get it done.

So how is this dilemma solved? Leverage. In other words, rather than trying to achieve an 8% return by owning a "risky" stock-centric portfolio, the risk parity approach seeks to achieve a comparable 8% return by starting with

Figure 4. Leveraging the Risk Parity portfolio vs a typical (Institutional) portfolio



Source: Risk Parity, Meketa Investment Group

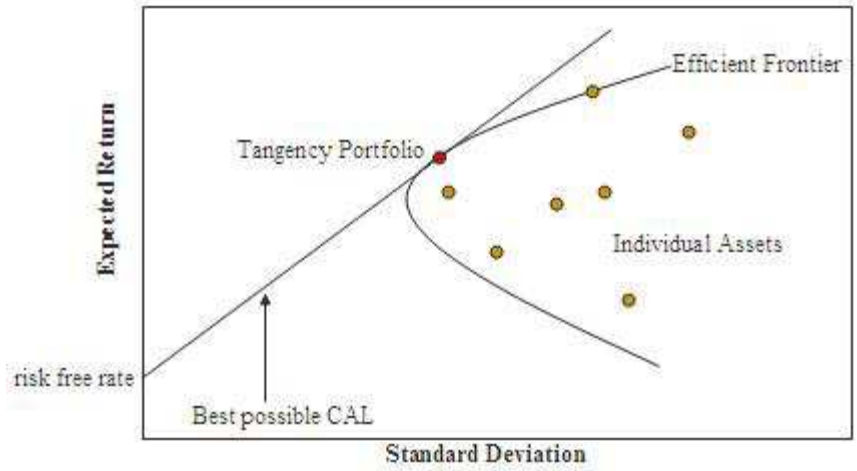
a more diversified and less risky portfolio, and then leveraging it. The end result is a portfolio with a greater return (thanks to the leverage) and greater risk (also thanks to the leverage), but theoretically still less risk than the less-diversified equity-centric portfolio, as Meketa Investment Group illustrates by contrasting a leveraged risk parity portfolio against the efficient frontier portfolios in Figure 4 (above).

Notably, this result is remarkably similar to the portfolio design approach under the Capital Asset Pricing Model itself, which similarly notes that a portfolio can be invested one of two ways: either by investing amongst various risky assets in a portfolio, or by investing a portion of risky assets and the remainder either invested in cash at the risk-free or borrowed at the risk-free rate. This results in the Capital Allocation Line (CAL), as shown in Figure 5 (below), where the point of tangency is the market portfolio, and leverage can be employed (the extension of the CAL to the right) to create portfolios that have greater returns and greater risk, albeit with still less risk than a comparable return portfolio on the efficient frontier. The fundamental point: a moderate amount of risk, leveraged, can still be less risk than being fully invested for the same return (the points on the CAL line are "northwest" of the efficient frontier line).

From a technical perspective, the leverage line for the risk parity portfolio is slightly less favorable than the capital allocation line due to borrowing costs (if graphed together, the risk parity's leverage line is slightly lower and further to the right). On the other hand, thanks to its allocations to risk-assets (and not just the risk-free rate) and the risk premia and higher expected returns they entail, it necessarily require all that much leverage to reach a target return.

Of course, if the investor doesn't *need* a higher return portfolio, the risk parity strategy can be implemented without leverage, too. It's simply that as the target return rises, so too must the leverage. On the other hand, this isn't very different from the fact that with a traditional portfolio construction approach, investors that seek higher target returns must increasingly expose the portfolio to the greater risk and volatility of equities (and/or other higher return and more volatile asset classes as well). The goal of risk parity is just to increase the risk exposure to a more diversified group of risk premia, and hope that at least *some* of them produce the anticipated and desired returns,

Figure 5. Capital Asset Pricing Model (CAPM) & the Capital Allocation Line (CAL)



Source: Wikipedia on Capital Asset Pricing Model

rather than increasing risk exposure to equities alone and relying on them to do all (or at least most of) the work.

Formulating The Risk Parity Portfolio

So how is the risk parity portfolio constructed? The basic theory would suggest that the portfolio be diversified across all the major asset classes, to take advantage of - and gain exposure to - the risks and opportunities of each.

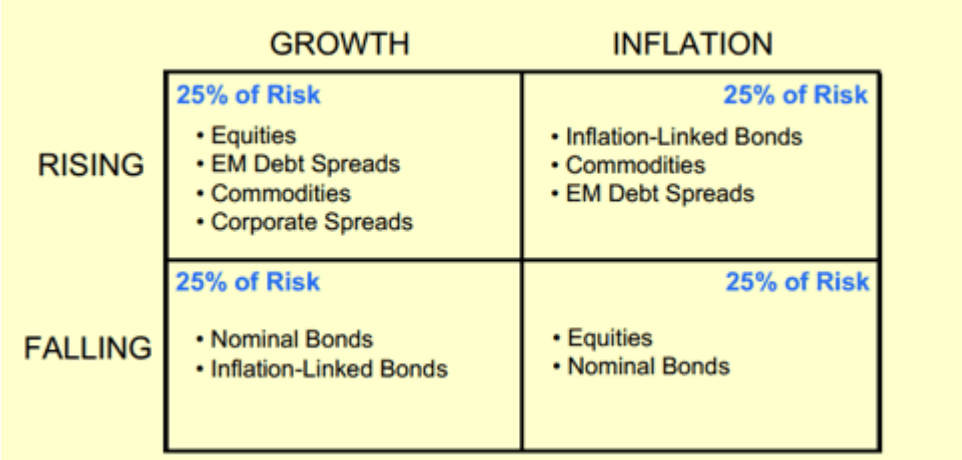
The problem, however, is that there is not a clear and uniform consensus amongst the investment community about which asset classes are truly unique and which have truly unique risk premia to be exposed to and managed in the first place. Accordingly, the list of potential "asset classes" used by various risk parity funds includes cash, Treasuries, TIPS (or other inflation-linked bonds), corporate bonds, emerging market debt, commodities, gold, domestic equities, and international equities, and sometimes even more. Most risk parity funds do not literally use *every* one of those asset classes on the list; however, a subset of some or most of them are included in most of the major risk parity offerings.

In addition, it's notable that some risk parity funds and managers prefer to determine their allocations based on the risks they are exposed to, not necessarily the risk premia they are trying to capture. For instance, Bridgewater (see Figure 6, below) allocates the portfolio not based on the risk of asset classes, per se, but various combinations of the rising or falling economic growth and rising or falling inflation. Asset classes are then evaluated based on their exposure to these fundamental risks, and allocated accordingly. For instance, equities do best with economic growth and when there is stable or lightly declining inflation, but do poorly with economic contraction and either severe inflation or deflation (at least in the short term); commodities perform well in growth scenarios, but also in high inflation environments; corporate bonds (and spreads) perform well in economic growth environments, but not necessarily in any other environment; government (nominal) bonds that are more interest sensitive perform poorly with economic growth, but well with economic contractions (as interest rates get cut) and can be a deflation hedge. The list goes on, but the fundamental point is that "just" allocating evenly amongst available asset classes may still not be as well diversified as trying to allocate amongst these various macroeconomic risks, as a disproportionate number of asset classes (e.g., equities, commodities, corporate bonds) still hinge primarily on the "economic growth" risk exposure.

In any event, once the desired risk exposures or risk premia are selected, an initial portfolio can be constructed that allocates capital evenly amongst these risks. Notably, at this stage of the process, the portfolio design does not necessarily take any views about which asset classes will perform better or worse than others, and there is no forecasting involved; instead, the whole point is to allocate evenly across multiple risk premia, and simply maintain a diversified exposure for the opportunity to benefit from any/all of them over time. As with traditional asset allocations, the asset class exposures can theoretically be implemented with passive funds and indices - essentially just trying to capture the betas of the asset classes - or with an active manager, seeking to capture alpha in the asset classes as well. *(Editor's Note: There are also versions of risk parity strategies that actually seek to invest primarily for alpha, and diversify across alpha managers and their associated risks; however, "beta-centric" strategies appear to be far more common.)*

In addition, rebalancing is still equally important

Figure 6. Sample of Bridgewater Asset Classifications Based On Risk Exposure



Source: Bridgewater All Weather Allocation presentation, October 7, 2010, for PSERS

and relevant for risk parity portfolios – just as with traditional portfolios, it's important not to let certain asset classes or risks drift to become unusually large or small relative to their target exposures, and there may be some alpha opportunities by using systematic rebalancing to trigger sales of asset classes that are up and purchases of asset classes that are down.

The caveat to all of this, however, is that (as noted earlier) merely allocating amongst the desired asset classes or risk premia may diversify risk, but it does not necessarily achieve a desired return. Achieving a higher target return requires some leverage, and leverage in turn requires some forecasting - after all, the investor can't know *how much* leverage to take on, and how to equalize the post-leverage risks, until there is some forecast made about expected risk and expected returns (by contrast, unleveraged risk parity does not necessarily make any forecasts at all; it simply seeks to own equal exposure and be well diversified to all available risk premia, and allow risk to be rewarded over time).

Leverage Strategies And Issues

The required leverage to bring a risk parity portfolio up to a typical target return is generally not extreme at all - given that the goal might be to "only" lift the expected return from 6% to 8%, for instance, the required leverage may be little more than 30% to 60% of the portfolio. In other words, a $1 million portfolio might borrow $300,000 to $600,000 to invest a total of $1.3M - $1.6M in risk parity assets to achieve the desired return. By contrast, a 1.3-1.6 leverage ratio for risk parity investing is far less than the 2x or 3x leverage in many ETFs, the 5x – 20x leverage used by commodities traders, and the 50x-100x+ leverage used in currency trading.

Notably, the amount of leverage required for a risk parity portfolio depends on the expected return of the investments in the first place; if the portfolio's initial risk parity allocation is estimated to generate a 6.5% return instead of only 6%, less leverage is needed. The caveat, of course, is that this also introduces a "forecasting risk" that the portfolio's asset classes actually generate higher or lower returns than predicted, and that as a result the portfolio may turn out to have been over- or under-leveraged, at least after the fact.

Obviously, involving leverage in the portfolio also introduces another serious concern: managing the borrowing required to maintain the leverage itself. Given a typically-upward-sloping yield curve, the leveraged risk parity investor faces a choice. On the one hand, the portfolio can borrow long-term, and lock interest rates for an extended period of time, but at a higher cost, which in turn either erodes returns or necessitates even more leverage to bring up the targeted total return. The alternative is to take lower-cost short-term debt, but continuously roll it over, which increases the potential for rising interest rates to drive up borrowing costs unexpectedly (or worse, that the investor loses access to the credit line at an unfortunate time, as occurred to many leveraged investors during the 2008 credit crisis). Although most of these interest rate and borrowing concerns can be managed via a proactive ongoing monitoring process, it nonetheless represents a concern and potential downside of risk parity strategies that try to lift up returns to a target level through leverage.

Notably, though, there is an alternative way to manage the "leverage" goal in a risk parity portfolio, without doing any actual borrowing: to create the desired exposures to various asset classes and risk premia synthetically using derivatives instead. Accordingly, some risk parity investors might create exposure to interest rates not by buying government bonds, but interest rate futures; exposure to the corporate credit risk premium can be obtained through buying a diversified portfolio of credit default swaps (CDSs) rather than a series of corporate bonds; exposure to various commodities can be established on the commodity futures markets. Given the nature of how these derivatives are priced and trade, risk parity investors can create the desired level of "leverage" by simply buying the more volatile form of

derivatives in sufficient amounts and allocations to create the desired target return and balanced risk exposure. And because it takes fewer dollars invested to capture the desired amount of volatility - and hopefully, its underlying risk premium - it makes more dollars available to invest in other higher return/higher risk asset classes, lifting the overall expected return of the portfolio.

Again, though, this does require an element of forecasting, to determine the amount of money that should be invested in various asset class or risk factor derivatives, to gain the desired level of exposure, the targeted level of risk, and an appropriate balance amongst the risk of the various asset classes selected. On the other hand, this kind of forecasting is not unlike the process traditional investors go through in determining the expected risk/return of stocks, bonds, and other asset classes, to design a portfolio capable of achieving an investor's desired target return.

Monitoring And Managing The Risk Parity Portfolio

Risk parity investors vary greatly in the extent and complexity of the ongoing monitoring process. In the simplest scenarios, funds are simply allocated evenly across a series of asset classes, and rebalanced on a periodic basis back to the original allocation. A simple risk-parity-like example of this would be the late Harry Browne's "Permanent Portfolio", which has been around since the 1970s and simply maintains a static target allocation of 25% each to stocks, bonds, gold, and cash, regularly rebalanced back to those target weightings. Notably, some would argue this isn't a true risk parity portfolio, as the risk and volatility of the 25% in stocks is still far greater than the 25% in cash, but it nonetheless represents the fundamental principle of even diversification across (i.e., "parity" amongst) multiple asset classes.

More commonly, however, the risk parity investor works more proactively to ensure that risk weightings (not just asset weightings) remain in balance - which in turn necessitates an ongoing process to monitor volatility (and adjust asset class weightings accordingly). For instance, the investor might monitor the volatility of the various asset classes over recent years or months (or even weeks or days), dialing down exposure to investments with rising volatility and bringing up exposure to investments with declining volatility. In this manner, the relative risk diversification of the portfolio remains consistent, without allowing an asset class with rising volatility to suddenly dominate in total volatility of the portfolio.

On the other hand, the ongoing monitoring process results in another decision for investors (or managers): exactly which aspects of volatility to focus on. The general consensus is that merely relying on long-term averages of volatility is clearly insufficient; however, whether volatility should be managed by looking at recent days, or weeks, or months, or a few years, and in what manner it should be weighted, is a process that varies from one risk parity investor to another.

Volatility-Constrained Risk Parity

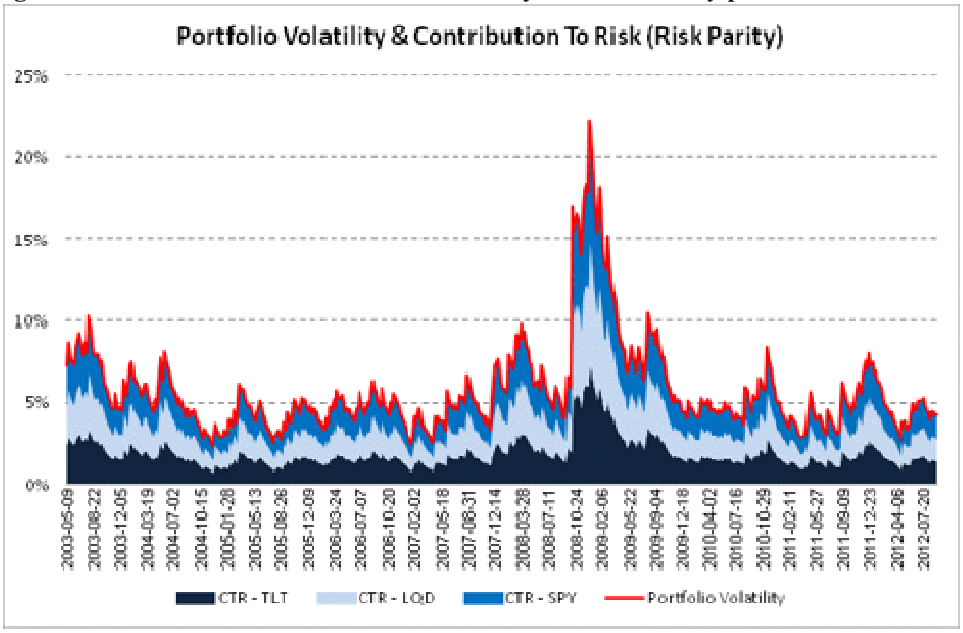
While the monitoring process for risk parity investing seeks to ensure a comparable contribution of risk and volatility from each of the underlying asset classes or risk factors, the reality is that overall there are still times when markets in the aggregate are more volatile, and times they are less volatile; for instance, virtually *all* asset classes were substantively more volatile in late 2008 than most of the preceding 5 years (see Figure 7, next page, as an example). As a result, while risk parity portfolios may maintain diversification *across* risks, they may not necessarily result in very stable amounts of *total* risk (although, to be fair, neither do traditional portfolios).

To address this, many risk parity investors also target a specified volatility for the overall portfolio, primarily by dynamically altering the amount of leverage used in the portfolio to ensure that while target returns are sought out, target volatility levels are not exceeded.

In turn, this requires a new level of ongoing monitoring for the portfolio, not only by tracking volatility for each asset class, but also the correlations *amongst* the asset classes as they shift, to ensure that *total* portfolio volatility remains in line. After all, portfolio volatility can rise either because the underlying investments become more volatile, or because the correlations amongst the investments rise (or both, as occurred in late 2008). In fact, with portfolios where the leverage for the individual asset classes dynamically adjusts up and down to maintain relative risk contributions, shifting correlations can become the primary driver of how volatile the overall portfolio is.

The goal of a proactive monitoring process - both with respect to volatility of individual investments, and the correlations amongst them - is to identify trend changes as they are emerging and getting underway, so that

Figure 7. Asset Class Contributions to Volatility For Risk Parity portfolio



Source: Risk Parity: A Bullet-Proof Investment Strategy? By Paul Allen on Seeking Alpha

overall portfolio volatility - and potential losses – do not rise too high, especially given the fact that at least some leverage is typically involved with risk parity.

In the end, the fundamental goal of a volatility-constrained risk parity portfolio is to ensure that all the volatility and risk desired is actually taken - hopefully capturing the risk premium that goes along with it - but not necessarily any *more* risk than that (nor less, either), at any point along the way.

How Has Risk Parity Performed?

So given all of this information about how risk parity portfolios are structured and their prospective advantage as a more risk-managed way to invest, how has the investment strategy performed?

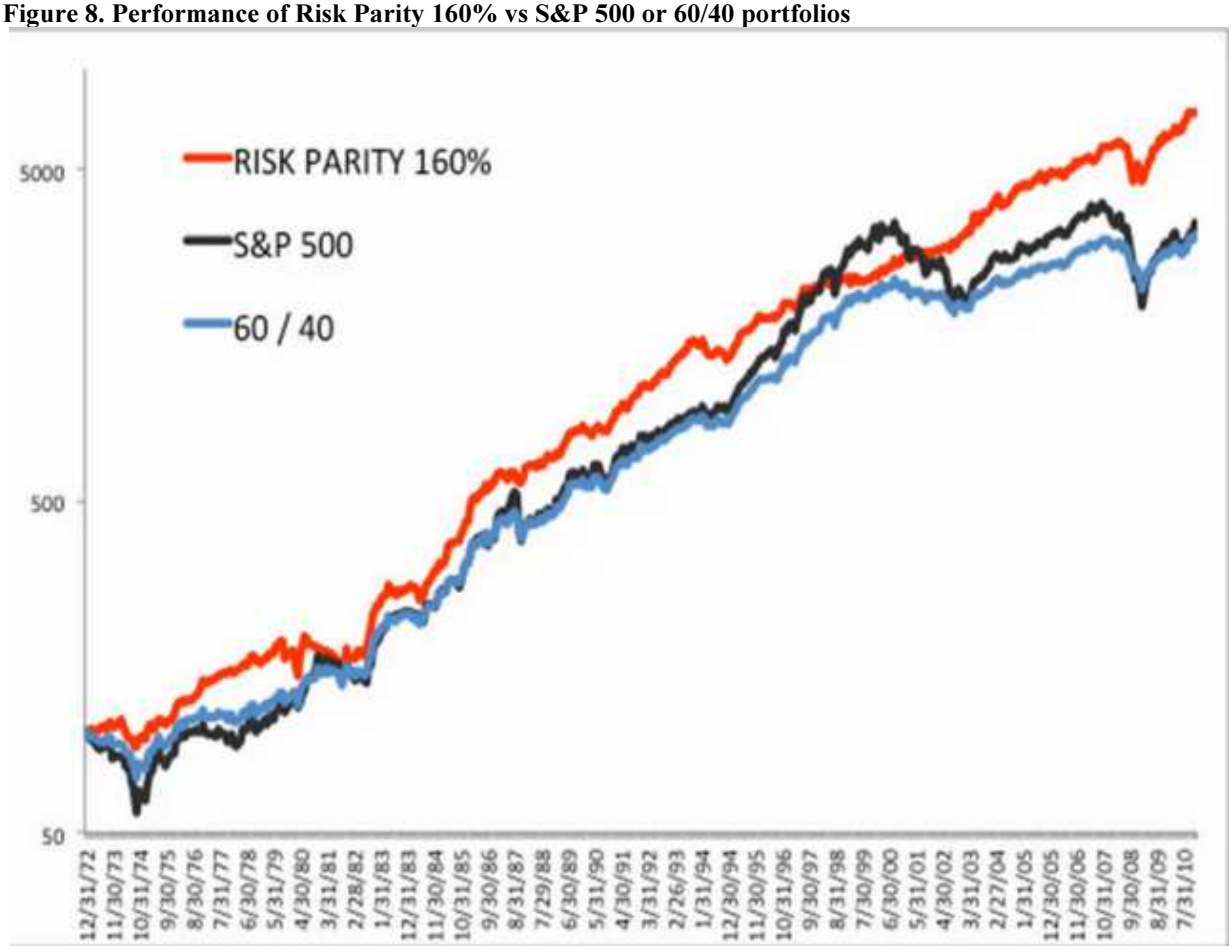
The longest running "risk parity" portfolio (although it was not labeled as such when established) is the All Weather fund from Bridgewater Associates, which in recent years has grown in size to an estimated $60 billion. However, the fund is generally only available for institutions (or ultra high net worth individuals), and there is limited public data on its performance.

A broader benchmark for the risk parity strategy is the Salient Risk Parity Index (for more information, see http://www.theriskparityindex.com), which follows a standardized approach for constructing a risk parity portfolio, with performance reconstructed going back to the start of 1990. Although the results are solely the result of backtesting and not live ongoing management with real dollars, its results are reasonably rigorous (i.e., less likely to be purely data-mined due to the relatively straightforward and objective approach used: funds are allocated evenly between commodities, equities, credit, and interest rates (25% each), and those categories in turn are further diversified into even groups (for instance, the "interest rates" category is invested evenly into the 10-year futures contracts for the sovereign debt of Australia, Japan, Canada, the US, German Bunds, and British Gilts).

Since the Salient Index's starting date in 1990 through October of 2012, the index - which targets a 10% volatility level - has generated an average annual compound growth rate of approximately 11.7%, compared to only about a 9.1% annualized total return for the S&P 500 (with dividends reinvested) over the same time period. Over the past 6 years (going back to the start of the year leading up to the financial crisis), the Salient index has a return of approximately 6.7%, compared to about 5.2% for the dividend-reinvested S&P 500. And the Salient index accomplished both results with far less volatility along the way (and therefore far superior Sharpe ratios).

Notwithstanding these results, though, the risk parity index can still go through extended periods of relative under- and out-performance, compared to the S&P 500 or a traditional balanced portfolio. Figure 8 (top of next page), created by Meb Faber (www.mebanefaber.com) shows a hypothetical reconstruction of a 160%-leveraged Risk Parity portfolio (which by his numbers would approximate the volatility of a 60/40 portfolio in the long run) compared to a 60/40 portfolio itself and the S&P 500, going back to the end of 1972 and before

Figure 8. Performance of Risk Parity 160% vs S&P 500 or 60/40 portfolios



Source: Dynamic Risk Parity, Mebane Faber, Winter 2012

the 1973-74 bear market, up through the end of last year. However, risk parity performance in 2013 has been rather weak, with the Salient Index up only 3.24% through the first 10 months of the year, driven heavily by significant declines during the summer as interest rates rose, and mediocre commodities performance through much of the year.

Overall, while the Risk Parity strategy performs remarkably well across the entire time period, it's also notable that from 1972 until the market peak in 2000, cumulatively, the risk parity strategy was barely ahead of a balanced portfolio (and actually fell behind the S&P 500), and in fact the risk parity portfolio generally underperformed the balanced portfolio from the mid 1980s until the late 2000s. It has only been in the past decade that the risk parity portfolio has truly excelled, driven in no small part by its greater allocation to both bonds (that have performed exceedingly well this decade as interest rates have fallen) and commodities (which have performed far better this decade than the preceding two decades, especially relative to other asset classes). On the other hand, it's also notable that the risk parity portfolio held up exceptionally well in the 1970s, notwithstanding its much higher bond exposure than "traditional" portfolios, because the inflation of the time that harmed bonds benefitted some of the other asset classes (which, of course, is the whole purpose of effective diversification!).

Sustainability Of Risk Parity Success

Given that risk parity portfolios have, in general, outperformed far more over the past decade or so (since the tech crash in 2000) than the decades that preceded it (at least on a back-tested basis), there arises a fundamental question: are the results of risk parity investing going forward more likely to represent the latest decade, or the prior ones?

At the core of most criticisms about the sustainability of risk parity investing and its recent success are the significant holdings in bonds (at least as the strategy is usually implemented). After all, the past decade (not to mention much of the past three decades) has coincided with a broad-based decline in interest rates and a bull market tailwind for bond prices that has continued relatively unabated for 30 years. This means it's not entirely surprising that risk parity investing has held up well for so long - given that it has an "outsized" weighting to one of the best performing asset classes since the early 1980s!

Yet just as the bond bull market must at some point come to an end - not just because all bull markets eventually end, but also because interest rates themselves have rapidly approached the zero bound and there's just not much room left for a sustained bond bull market from here - some have suggested that risk parity portfolios are poised for an ugly future, as interest rates eventually revert and risk parity's heavy bond exposure becomes a huge headwind rather than a tailwind.

On the other hand, it's notable that much of this criticism of risk parity portfolios is potentially distorted by the baseline that's being used in the first place. As the risk parity investor would point out, comparing risk parity strategies to a traditional 60/40 portfolio, or the S&P 500, is a terrible benchmark in the first place, as both portfolios are absolutely dominated by the singular risks associated with equities! So it's no great surprise that risk parity portfolios didn't fare as well on a relative basis in the 1990s in particular – there was a raging equity bull market underway! Is it really so bad that risk parity lost to equities in the 1990s, then, given that the Salient Risk Parity Index did still rack up a healthy 11.8% average annual compound growth rate through the decade?

In other words, it's an odd process of evaluation when the performance of a lower-risk well-diversified portfolio – that still generated a remarkably healthy return - is measured relative to a risky equity-centric portfolio. In the ideal world, shouldn't it actually be the other way around, where the risky concentrated portfolio is measured relative to the more diversified one, and where outperformance of the equity-centric portfolio is acknowledged as a risky trade-off for taking on so much extra risk (and the potential for decades like the 2000s where results go the other way)?

Accordingly, many risk parity investors would counter that while it's possible bonds might face a headwind in the coming years, that doesn't necessarily mean it's a better strategy to gamble on a particular economic forecast, like the economic growth scenario that equities are reliant upon? Not to mention the fact that many people have said the same thing about the outlook for bonds and interest rates in 2009, 2010, 2011, and 2012 as well, only to be wrong in all of those years. Even in 2013, the interest rate uptick has been modest relative to the fears that bond bears (and risk parity bears) communicate.

Furthermore, the fundamental point remains that the risk parity portfolio simply maintains its even, well diversified exposure to all asset classes, and lets the risk premia come as they may. Compared to a portfolio that focuses all (or at least most) of its risk in a single investment asset class and economic scenario (i.e., economic growth supporting an equity bull market), it's no surprise that the risk parity portfolio will lag when that single risk investment is doing well (an equity bull market) and look better in the reverse scenario (a recession-fueled equity bear market). That doesn't mean it's wise to bet on the equities asset class and its attendant risks for the majority of the investor's return – although without leverage, many traditional portfolios have little alternative, as the client's desired/required returns simply can't be achieved without a significant concentration in equity and other risky assets.

Nonetheless, the fact remains that "balanced" portfolios - notwithstanding the equity-centricity of their risk exposure - remain the default investment choice for most long-term investors in today's environment. As a result, risk parity portfolios will continue to be challenged by the fact that they will lag when the equity asset class is dominating returns (which can continue for extended periods of years or even a decade or two!), even if the risk parity strategy may outperform in other environments and generate better risk-adjusted returns in the long run.

Caveats And Concerns

Notwithstanding the diversification appeal and rising popularity of risk parity strategies, there are several important caveats and concerns to note.

The first is simply that the strategy may be relatively difficult for a typical financial planner to implement for clients, at least in the manner that today's leading risk parity managers generally do it. While the basic

principle of investing evenly in a wide range of asset classes is certainly feasible - similar to Harry Browne's Permanent Portfolio, perhaps using index ETFs to gain exposure to the core asset classes - in practice the situation quickly becomes more difficult if the goal is still to achieve a target rate of return, because of the leverage that's required. After all, margin investing is difficult at best for many clients, has regulatory and compliance hassles and liability risks for the planner, and generally cannot be done with retirement accounts. The best alternative - implementing with derivatives like futures or credit default swaps - is often not feasible either, due to both another set of regulatory and compliance constraints and significant additional client disclosures, and because many planning firms simply are not well equipped (or equipped at all) to trade, monitor, track, and report on derivatives investments systematically across all their client portfolios.

Another common concern of implementing risk parity strategies is the leverage involved, and the risk of how the strategy may fare in rising rate environments - especially given the current fears that rising rates may occur sooner rather than later. At the very least, rising interest rates may erode returns in the risk parity portfolio not just due to bond losses but also as borrowing costs rise, potentially necessitating more leverage, and magnifying the risk even further. Of course, borrowing costs can be made more stable to manage this risk by using longer-term loans or financing terms, but with an upward-sloping yield curve, this increases borrowing costs and reduces current returns! On the other hand, it's notable that to the extent the strategy has at least been backtested through the 1970s, the significant rising interest rates in that environment were not fatal to the strategy; in fact, in the 1970s, the risk parity backtests actually perform quite well, due in part to the fact that rising interest rates did even more damage to equities than bonds, and that overall the risk parity portfolio was also diversified into asset classes that would benefit from the rising inflation in the 1970s (e.g., commodities).

Beyond the risk of rising interest rates, though, is the danger that funding for the leverage could vanish entirely. Although the risk is low, the 2008 credit crisis showed it's certainly possible for investment managers to suddenly lose access to their lines of credit, and the consequences can be severe as the risk parity fund is forced to deleverage at a potentially inopportune time. Some risk parity funds manage this risk by using derivatives instead, although eliminating the borrowing/refinancing risk by using derivatives can potentially introduce counterparty risk in some scenarios, depending on the particular types of derivatives being employed.

A further major concern of risk parity portfolios is the fact that - as with almost any portfolio – there remains some exposure to potential "black swan" scenarios, especially to the extent that the benefits of the strategy are tied heavily to improved Sharpe ratios (which are built upon normal distributions and standard deviation as a measure of volatility). While the risk parity investor would likely respond that the superior diversification helps to mitigate the risk and adverse consequences of black swans and may be *better* prepared to deal with black swans than an equity-centric portfolio, the risk parity critic notes that the intersection of black swans and leverage (even relatively "modest" leverage typically employed in risk parity portfolios) introduces a greater level of fragility to the portfolio.

The other fundamental challenge of risk parity investing is simply defining risk in the first place, which typically is “volatility” (measured by standard deviation or some other means). Yet as financial planners are often quick to recognize, the true risk for many clients is that the future dollars needed to fund long-term goals might not be there when needed, and that this is more important than short-term volatility. On the other hand, investors are still prone to emotional decisions in the short term, and a strategy that is too volatile in the short term doesn’t remain a strategy long enough to be utilized in the long run. In addition, as a great deal of safe withdrawal rate research has shown, when ongoing cash flows are coming out of a portfolio (e.g., for a retiree), actually managing short-term volatility effectively can have a material impact on improving retirement income sustainability, even if returns are not increased at all.

Of all the caveats and concerns for risk parity portfolios, though, the most pervasive one is likely to be the simple fact that clients will tend to evaluate the results of risk parity portfolios relative to equities (or at least, equity-centric balanced portfolios), leading to an ongoing "risk" for the advisor that a raging bull market will make risk parity investing appear far less appealing (even if it’s still producing favorable absolute returns). After all, the unfortunate reality is that in bull markets, clients simply

perceive equities as less risky, and consequently tend to invest in them more aggressively, and eschew the principles of diversification; just as clients were less interested in holding bonds in the late 1990s, so too might they be less interested in holding a risk parity portfolio during a strong bull market. Conversely, it's almost certainly no coincidence that the rising popularity of risk parity investing has been occurring during an extended period of poor total returns for equities. Nonetheless, even if the risk parity strategy does appear to produce stronger, or at least more stable, returns over time, the fact remains that any advisor implementing the strategy must be prepared to contend with extended periods of relative under- or out-performance, relative to the returns of equities alone.

Implementing Risk Parity Investing For Advisors And Their Clients

Given the aforementioned concerns and challenges, is it still feasible for advisors to implement a risk parity approach to investing for clients?

For more conservative clients, it may be appealing to implement a risk parity portfolio without the leverage, simply accepting the somewhat lower return associated with the portfolio (which may be quite acceptable for a conservative client). In practice, the portfolio may actually have returns quite similar to a "traditional" conservative portfolio that has 60%-70% invested in fixed income, anyway; the primary difference would simply be the amount invested in equities versus a broader range of asset classes. On the other hand, in today's low interest rate environment with low returns, rising fears of rising rates, and/or concerns about an outright bond bubble, many advisors and clients object to such bond-centric portfolios, whether built from a traditional conservative bond-heavy approach, or a risk parity portfolio that results in a similar bond-heavy allocation.

An even simpler alternative (from the implementation perspective) is to invest using a mutual fund that can implement risk parity investing on behalf of the client. Several funds have been released in recent years, including AQR Risk Parity (AQRNX), Putnam Dynamic Risk Allocation (PDREX), Diversified Risk Parity (DRPAX), Invesco Balanced-Risk Allocation Fund (ABRZX), and more. Not surprisingly, a significant amount of due diligence should be performed when considering these funds, which may have relatively high expense ratios (at least compared to traditional index funds), may include extensive use of derivatives with potential counter-party risk (since borrowing for leverage is generally not permissible in mutual funds), and may have different interpretations of what "risk parity" even means and how it should be invested in the first place (e.g., amount of leverage used, whether volatility is targeted and how much, asset classes used, risk factors included for diversification, etc.).

An alternative to using mutual funds for implementing risk parity is to use a separate account manager that can invest the client's assets directly. Availability for risk parity managers will vary depending on the advisor's custodian or platform, and notably many risk parity managers have $1M+ minimums (given that risk parity has been primarily an institutional investment strategy, some of the minimums are even higher). Nonetheless, for ultra high net worth clients, such channels may be an option for risk parity investing.

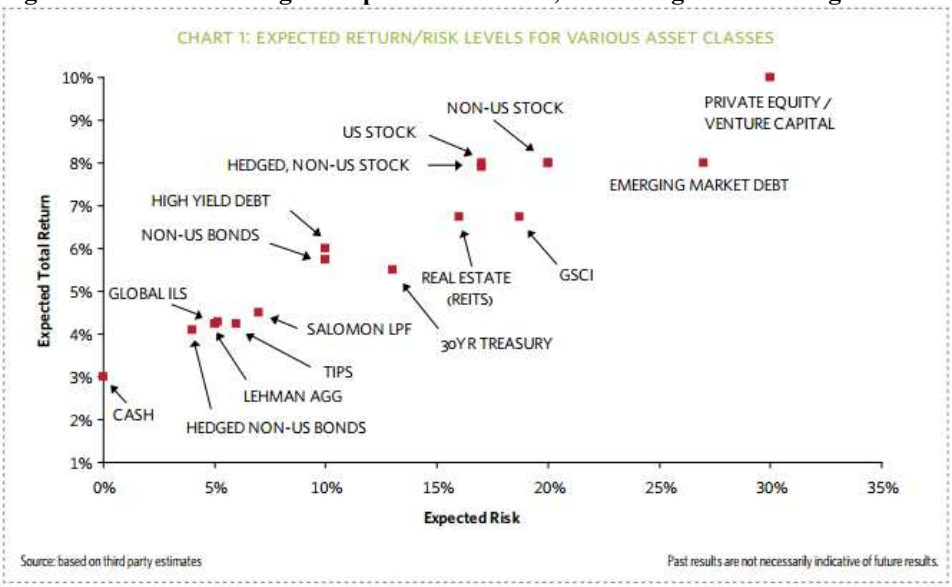
One notable additional challenge in using mutual funds or separate account managers to implement risk parity for a client's portfolio is determining *how much* of the portfolio should be invested in risk parity strategies. From the perspective of risk parity investing itself, the implied answer would be "everything" - after all, the whole point is a superior level of diversification, so splitting client assets where a risk parity investment is *part* of the client's broader traditional (and likely still equity-centric) allocation nullifies much of the diversification value. Nonetheless, clients (and their advisors) may not feel as comfortable investing *everything* into a risk parity strategy at this point.

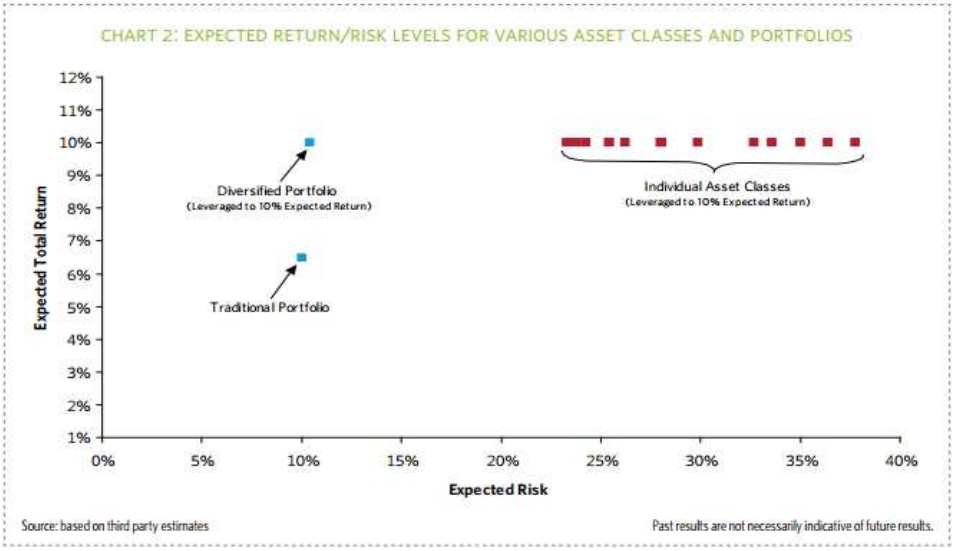
To the extent just a portion of the portfolio is invested, though, it is arguably advisable to carve the risk parity *from the equity slice* of the portfolio, given that most risk parity funds are levered up to produce at least roughly equity-like returns. Thus, the ultimate goal would be that a combination of equities plus risk parity can produce comparable returns to equities albeit, with somewhat less risk. Of course, this assumes that the risk parity fund is in fact leveraged sufficiently, and/or allows sufficient volatility, to generate "equity-like" target returns.

Implications For Traditional Investment Theory

While risk parity investing is viewed as an investment framework unto itself, it's notable that many of the

Figure 9. Portfolios Using Multiple Asset Classes, Unleveraged vs Leveraged





Source: "Engineering Targeted Returns & Risks" Bridgewater Associates

underlying tenets have parallels to traditional portfolio construction as well. After all, even Bridgewater's founder Ray Dalio describes the process as akin to "Post-Modern" Portfolio Theory - an extension of Markowitz's original Modern Portfolio Theory, but better engineered using the analytical tools and investment vehicles available today. While the principles of diversification and the opportunity to construct an efficient portfolio remain, risk parity investing does so by acknowledging that risk premia can be captured from any investment - just leverage it as necessary to create a comparable level of risk and (hopefully) return, and *then* diversify accordingly, as illustrated from the Bridgewater graphics shown above in Figure 9.

Viewed from this perspective, risk parity investing does make a compelling point that today's traditional portfolios are arguably far more equity-centric than they should be, and that the most common objection to reducing equity centricity - that it would result in a more conservative portfolio with a return too low to achieve client goals - is a challenge that can be managed through better portfolio design itself.

While many planners may feel a great deal of concern around the term "leverage" and all that it implies (especially given the difficulties of the financial crisis), risk parity investing also makes the point that prudent leverage may still be *less* risky than having a portfolio so exposed to just the volatile equities asset class alone (or a subset of asset classes all highly correlated to the same economic growth outlook). Especially since the reality is that stocks themselves are still rather internally leveraged - Salient estimates that for the past 15 years, the average assets/equity ratio for stocks in the S&P 500 is 552% (while the typical risk parity portfolio has less than half that amount of leverage), and even as companies have deleveraged recently they still maintain significant debt/equity ratios. Similarly, the reality is that the majority of "higher risk higher return" assets are actually significantly internally leveraged already, from equities to real estate; it's just that the leverage is typically employed *within* the security (e.g., debt financing of corporations or real estate investment projects), rather than via the ownership of it. Nonetheless, the implication is that the investor's

wariness of leverage in risk parity portfolios may be less about the leverage itself, and more about the fact that it just happens to be more visible (even if it's actually *less* leverage in total).

Another notable lesson from risk parity investing, at least as it's commonly implemented, is that volatility is something that can and should be managed on an ongoing basis, both with respect to the individual investments in the portfolio and their volatility, and that as correlations shift over time the overall portfolio volatility may change as well (and it, too, should be managed). This is a notable departure from the traditional buy-and-hold implementation of typical equity-centric portfolios, yet is in reality entirely consistent with modern portfolio theory - it just means that the inputs of expected return, volatility, and correlation should be proactively monitored and updated. In the end, both frameworks still ultimately must make some kind of estimate of future returns, volatility, and correlations; the difference is that traditional portfolios often arrive at this conclusion by assuming a historical 75-100 year average is representative of the future, while most risk parity investors use a far shorter time horizon (for instance, the Salient Risk Parity Index assumes the best measure of the coming months' volatility and correlations is whatever they were for just the past two years). The idea that the nearer term past is a better estimate of the future is arguably justified, too, given the growing base of research showing that many/most investments have momentum, which leads to serieal correlations in volatility (rather than mere unknown randomness).

Bringing It All Together

In the end, the risk parity framework presents a substantially different and new way to look at investing and implementing client portfolios. The fundamental principle is simply one of diversification, to both seek return and manage risk by gaining (and equalizing) exposure to multiple risk premia - a notable difference relative to the traditional portfolio, which is often characterized as being well diversified by assets but appears remarkably equity-centric when viewed from the perspective of risk.

Of course, the biggest caveat to being truly well diversified amongst multiple asset classes to take advantage of their risk premia is that not all investments have quite the same risk nor the same expected return. Risk parity investing solves this challenge by employing leverage, either for the overall portfolio, or one asset class at a time, bringing all the investments in the portfolio up to a comparable - and well diversified - level of expected risk and return.

And thus far, results for risk parity investing appear to hold up well with the theory, as the portfolios have outperformed with real dollars for the past 5-15 years cumulatively, and backtests to earlier time periods suggest that risk parity strategies could at least have held their own then, too, and generally still with less overall volatility (and therefore superior Sharpe ratios).

Nonetheless, risk parity portfolios still appear likely in theory and in practice to lag equity-centric portfolios in the midst of a bull market. While the risk parity investor would suggest that the equity-centric portfolio is only outperforming because of the greater and more focused risk that is being taken, investors nonetheless may tend to look to equity performance first and become less interested in sticking with a risk parity strategy at that time. It's likely no coincidence that risk parity investing has become drastically more popular in the midst of an extended period of equity weakness since 2000.

Although some planners might be interested in implementing risk parity portfolios as a primary strategy for clients, most will likely consider the approach for only a segment of the portfolio at the most. And given the challenging constraints of using leverage or derivatives in typical client portfolios, most advisors will likely prefer some version of outsourced risk parity strategies to doing it themselves from the ground up on behalf of clients. For more affluent clients, this might be implemented through separately managed accounts; for other clients, choosing from amongst the number of mutual funds that utilize risk parity strategies would likely be preferable. Due to the lack of any standardization in the details of how risk parity portfolios are implemented, though, substantial due diligence on any such managers or mutual funds should be conducted.

To the extent that risk parity investing is implemented as a part of the portfolio, the most effective approach would appear to be substituting a risk parity fund for a portion of the *equities* in the portfolio, as most risk parity strategies are managed to generate more equity-like returns. On the other hand, it's still important to properly match the risk parity fund or manager to the segment of the portfolio, as some may be run in a more or less volatile manner than this.

For advisors who don't wish to implement risk parity investing at all, the approach still brings some lessons to

traditional investing as well. At a minimum, it clearly emphasizes the equity-centric nature of traditional portfolio construction, and the fact that many portfolios may not ultimately be nearly as diversified as are believed (as many advisors and clients witnessed in 2008-2009). Similarly, the proactive way that individual investment volatility is monitored and managed, along with overall portfolio volatility (vis-a-vis the monitoring and management of the portfolio in the face of shifting correlations), are lessons that may be relevant for traditional portfolios as well.

Conclusion

In the end, it's likely still too early to tell if risk parity portfolios are just a fad, or if they will become the new baseline for investing, but the investment foundation upon which they are built is solid enough that it is likely more than just a short-term fad. Perhaps the most driving challenge for risk parity portfolios in the long run will be convincing investors that their current equity-centric portfolios are actually riskier than previously realized, and that measuring a diversified strategy relative to a concentrated risky one is a poor process for evaluating investments.

Nonetheless, as it stands now, risk parity investing is the newcomer strategy to the table, and change takes time. But some of the underlying principles of risk parity can be applied, now, to begin crafting better portfolios, even using a traditional approach. And perhaps some planners and clients will take the next step, too, and begin to integrate some risk parity strategies as a part of the overall portfolio. But be certain to engage in a thorough due diligence process, as right now there is little consistency in what exactly defines "risk parity" strategies, from the asset classes to the leverage or derivatives that are used… not to mention the non-trivial costs of having a manager implement them.

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