

Why Adding Option Strategies to Risk Parity Matters

FQ Insight

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Strategies generically known as “risk parity” allocate assets according to risk rather than capital in order to achieve true diversification. Since most risk parity portfolios allocate across stocks, bonds and commodities, the sovereign bond holdings are typically levered in the futures markets so their risk can be on an equal level with commodities and stocks. Now with nominal bond yields at all-time lows there has been increased concern over the dangers of “levered bonds.”

At First Quadrant, we manage a “risk parity” strategy called Essential Beta. We approached risk balancing from a different perspective. Are there times in the market cycle that “risk parity” is more appropriate than others? The study led us to add equity option strategies to the portfolio so that there are now two forms of equity tail risk hedging: indirect tail-risk hedging from sovereign bonds and direct tail-risk hedging with options. We believe that combining these within the risk parity framework has lessened the dangers of a prolonged and significant backup in bond yields to the portfolio. To explain this effect we need to examine the function of bonds in the portfolio. Equities and commodities are there to participate in cyclical economic growth, but what of bonds?

Sovereign bonds have been used for three purposes in a multi-asset portfolio: (1) diversification, (2) deflation hedging, and (3) equity tail-risk hedging. Unlevered sovereign bonds are traditionally used in balanced portfolios for diversification because of their low correlation with equities. However, as we’ve frequently seen in the last few years, sovereign bonds also give an indirect form of tail-risk hedging for equities since there is usually a flight-to-quality from equities to high quality government bonds during an equity market panic. Also, it is well known that during periods of economic contraction when deflationary pressures build, sovereign bonds can be observed to have significant capital gains as interest rates fall. However, in a traditional balanced portfolio, with its intermediate government bond exposure, characteristics 2 and 3 are barely measurable since sovereign bonds have about one-third the volatility of equities. In a risk parity portfolio, where the risk of the bonds is put on the same footing as equities, these two properties become significant and have the potential of giving risk parity portfolios the desirable characteristic of giving equity-like returns at lower volatility and a low correlation to equities.

If we accept that the market cycle has two broad regimes, a high volatility/economic contraction regime and a low volatility/economic expansion regime, then an improvement to the strategy presents itself. During the high volatility regime, bonds tend to fulfill all three functions. From a diversification standpoint bonds frequently have a negative correlation to equities and leveraging them enhances their tail-risk hedging properties. Deflationary pressures also cause interest rates to fall making long-duration bonds (with the exception of any defaults) a source of capital gains, hedging against deflation and soaring liabilities for institutions like superannuation funds. In the low risk environment bonds can still give diversification and tail-risk hedging, but there is

Past performance is no guarantee of future results. Potential for profit is accompanied by possibility of loss. Commodities trading involves substantial risk of loss.



no deflation to hedge against. In fact, inflationary pressures are more likely which can cause a back-up in interest rates. So if bonds are held primarily for tail-risk hedging, there are cheaper hedging instruments than bonds in such an environment. We believe one such instrument would be equity options since implied volatilities and option prices are low.

At First Quadrant, we have added option-based tail-risk hedging techniques to Essential Beta, in conjunction with sovereign bonds. We weight bonds or options depending upon when they are the cheaper alternative to hedging equity tails. During the high volatility regime, bonds are the cheaper hedging vehicle so we use a full “risk parity” allocation which also includes a modest exposure to options. In the low volatility growth environment, we shift a large portion of the tail risk to options. While we still have bonds in the portfolio (for diversification) and allocate assets based upon risk contribution, we are no longer at “risk parity” and the capital as well as risk allocation to bonds is significantly lower. In the low volatility environment, risk parity is no longer the objective. Instead, risk targeting and risk reshaping through tail-risk hedging are the goals of the investment process.

Adding options resulted in a change in the capital allocation of the portfolio since the option strategy has a significant negative correlation with equities. To keep the risk of equities at target levels, we needed to increase the equity capital exposure. This increased exposure in most periods paid for the cost of the options in rising markets when the insurance does not pay off. But the capital allocation was still done according to risk budgeting and allowing leverage, which are the hallmarks of multi-asset risk parity portfolios. We believe that if bond yields stay low, the portfolio including options may still behave like a traditional risk parity fund.

The options also have the potential to offer tail-risk hedging under two scenarios when bonds are sure to fail. The first would be hyper-inflation when interest rates rise dramatically even as the economy contracts. The second would be a sovereign credit crisis. As we’ve seen, there is no “flight to quality” to low rated government bonds in emerging markets or more recently in developed markets like Greece and Spain.

Under these scenarios stocks, bonds and commodities have a tendency to all decline and options generally offer the only source of downside protection.

So keeping with the principles of risk allocation, but allowing allocations other than “parity”, allows the portfolio the possibility to keep the best attributes of a risk parity strategy while addressing the risk of leveraging bonds at record low nominal yields. The result, we believe, is a robust and diversified strategy for scenarios such as high inflation which are not normally part of a risk parity portfolio, in addition to the normal business cycle when risk parity strategies have generally been shown to do well.