

Designing a Tail Risk Strategy

One of the most important and timeless issues for asset managers is how to protect portfolios from severe weakness in equity markets – the so-called tail risk. Traditionally there have been a number of methods, with government bonds the most popular, supported by attractive yields, simplicity, familiarity and unconventional monetary policy, including a decade of quantitative easing*.

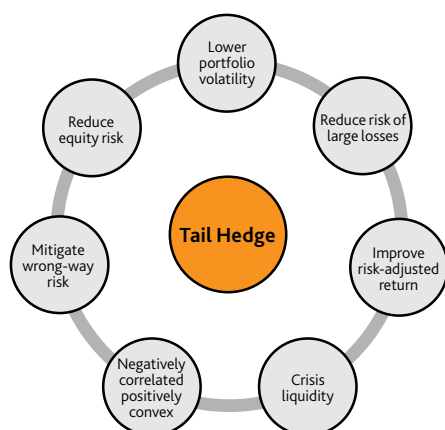
Bonds are still favoured but less reliable...

More recently, though, low nominal yields, negative real yields and an end to quantitative easing (QE) have made bonds a much less reliable portfolio diversifier, as was the case during the 2013 “taper tantrum” and sell-offs in February and October 2018. By and large, though, bonds have continued to provide effective protection and so remain the most favoured choice.

...and bonds can exacerbate equity losses

Past performance is no guide to the future, however, and all that can be reasonably certain is that returns generated from bonds in the last few decades cannot be repeated. Worse still, there is a real risk – and plenty of historical precedents - of bonds exacerbating equity losses, something especially likely if we enter an unexpected period of much higher inflation. This does not mean that bonds should be avoided, but only that it is sensible to explore other options for portfolio protection and to achieve the key objective of a tail risk strategy.

Tail Risk Strategy - Key Objectives



Fulcrum has an armoury of tail protection strategies

At Fulcrum, we have extensive experience hedging the equity risk embedded in our portfolios, and over the past 14 years have developed an armoury of actively-managed tail protection strategies. This has given us a deep understanding of the

Fulcrum Tail Risk Strategy Solution

- Many tail risk strategies suffer from negative returns, reliability issues or simply that investor patience runs out.
- Government bonds have been the most popular but can suffer from reliability issues and being long volatility is certainly reliable but expensive and payoffs infrequent.
- Our optimal solution involves the dynamic management of a broad range of defensive assets.
- Such a strategy can optimise the three-way trade off giving positive long-term returns, tail hedge reliability and improved frequency.
- We recommend funding such a strategy from bonds and making allocations large enough to have an impact.

inherent trade-offs involved, the most important of which is between reliability and expected return. And although it is true that the most dependable hedges tend to provide the worst expected returns, there are opportunities to create a much more interesting trade-off so long as expectations are set to what is realistically possible.

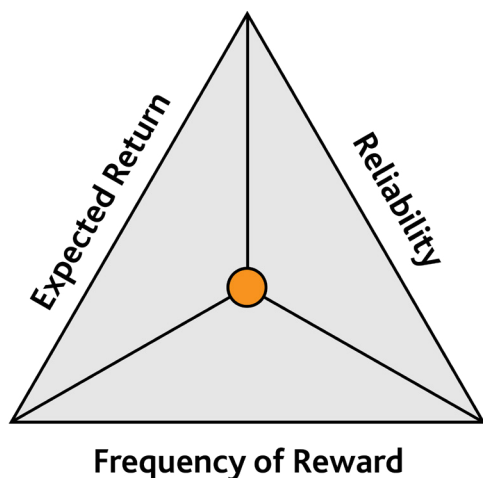
The three way trade off is dynamic

How often a strategy pays off can be heavily influenced by behavioural biases that we have seen at work and which we expect to persist in the future. Investors have a tendency to prefer regular, small pay-outs to larger but rarer dividends, even if the latter are just as profitable over the long run. Thus, the most successful tail risk strategies involve a three-way trade-off, not just between reliability and expected returns but also frequency of rewards. It is sensible to have a tail protection system that shows occasional gains every few years at a minimum, and ideally once or twice a year, rather than large wins once a decade, for example in 2008. While the latter strategies may be more cost-effective over the long term, it is challenging for clients to hold them over considerable periods

1 *Tail risk is the commonly used term whereby an asset or portfolio moves more than three standard deviations from its current price. Less strictly, tail risk is the risk of rare events or severe market shocks.

of negative returns as extreme events are very rare. In practice, this horizon shrinkage inevitably proves costly to investors.

The three-way trade-off in tail hedging: expected returns, reliability and frequency of reward



High reliability of hedges usually means negative long-term returns

As a rule, the most reliable hedges tend to have the lowest, and usually negative, long-term returns. For example, it is widely acknowledged that consistently buying put options on equity markets, or call options on equity volatility, is a loss-making endeavour. Conversely, opportunistic or idiosyncratic hedges characterised by positive expected returns tend to be less dependable. Because of this it can be challenging to hold on to a tail protection strategy that is designed with reliability at its core, as it will likely lose money over many years and so increase the risk that investors lose heart.

Skill, patience and sensible expectations necessary

In our experience, it is possible to generate sufficiently reliable protection with a modest positive expected return over the long term – but it takes skill, patience and sensible expectations. In the table below, we summarise the key characteristics of all the liquid hedges we have used over the years. Each of the hedging choices involves some implementation complexity and requires experienced and active management to navigate the potential pitfalls.

Active management required

We employ a number of methods and tactics to maximise the chances of long-term profitability. Chiefly we do this by varying the amount of hedging in place, opportunistically monetising hedges during equity corrections, and actively choosing between hedges at each point in time. As with any timing strategy, such an approach can reduce reliability as hedges may be insufficient at times to provide full protection. In addition, this strategy involves assuming “basis risk”, whereby the anticipated correlation between two investments could break down and result in hedges not working as expected. However, basis risk is a feature of all hedging strategies and we believe it is a worthwhile price to pay for positive expected returns, especially since investors are already making this trade-off by holding low-yielding government bonds as defensive assets in their portfolios.

Success via implementation skill rather than rules based

A winning tail risk strategy might use a variety of instruments, including futures, swaps, vanilla options, exotic options such as digitals and contingents, as well as variance swaps, equities,

Hedging Choice	Reliability	Expected Return	Instruments	Implementation
Government Bonds	Moderate	Positive	Swaps and futures	Delta 1 & Options
Trend-Following	Moderate	Positive	Swaps and futures	Delta 1
Global Macro	Moderate	Positive	Swaps and futures	Delta 1 & Options
Equity & Fixed Income Volatility	Strong	Negative	Options	Options
FX & Commodity Volatility	Moderate	Negative	Options	Options
Equity Dispersion	Moderate	Positive	Options and swaps	Options
Gold/Gold Stocks/Gold Royalty	Moderate	Positive	Swaps	Delta 1
Safe-haven Currencies	Moderate	Neutral	Forwards	Delta 1 & Options

fixed income and credit. Generating convexity, whereby hedges become increasingly effective as their value increases, is necessary, but successful tail hedging depends more on implementation skill than devising a formula. It entails real-time assessment of market positioning and detailed evaluation of market complacency or readiness for tail events. In turn, this requires an investment team with years of experience, a deep understanding of the macro-economic environment and a solid grasp of human psychology.

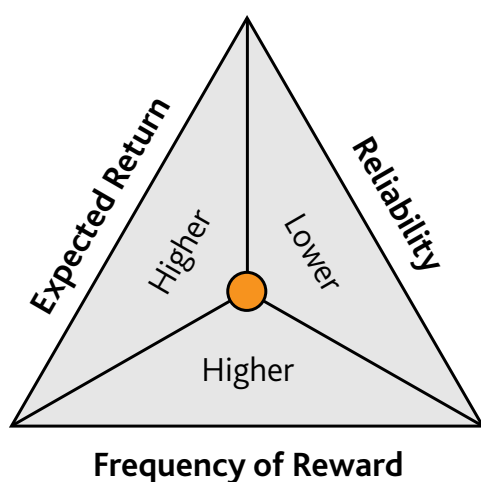
Multi-asset, multiple time frame

At Fulcrum, we have a variety of tools at our disposal that have helped us make regular hedging decisions. We have extensive, detailed knowledge of the current positioning of quantitative traders, such as trend following, risk parity and short volatility strategies. We routinely scan for volatility opportunities across all the major liquid asset classes, which tends to be far more fruitful than focusing solely on equities. On a more strategic basis, we also assess medium-term expected returns on all the major asset classes, which is one of the primary reasons why we are sceptical about the ability of bonds to provide reliable protection in the future.

Bulk of returns from periods of crisis, but with controlled losses and more frequent gains

We recommend a tail risk strategy that offers modestly positive excess returns over the very long term, with a negative correlation to equity markets. As with traditional tail risk strategies, those used by Fulcrum see the bulk of long-term returns coming from periods of crisis.

Our three-way trade-off: higher expected returns, higher frequency of reward and giving up an acceptable degree of reliability



The key difference in our approach, however, is to more effectively control losses in normal times and generate more frequent, smaller gains.

Fund this strategy from government bonds meaning little is lost in terms of return

For those who believe it is sensible to diversify their defence and consider tail risk strategies, any potential allocation should ideally be funded from government bonds, where expected returns are currently very low if not negative. Because of this, the strategy need only generate an expected return approximately equal to bonds, something we believe is achievable with an acceptable reduction in reliability. Funding from a much more volatile asset class, such as equities, will simply reduce expected returns and risk, and likely result in dissatisfaction (unless equities crash within a short time frame).

Allocations can therefore be large enough to make a difference

The size of any allocation must be large enough that its compensation is meaningful but not so great as to take too large a slice of an investor's capital. In practice, tail risk strategies need to be run at elevated levels of volatility so that they are efficient from a capital utilisation perspective. We believe it is sensible to expect a 5-10% annual loss in capital during calm periods, for this to be partly offset by a 5-15% annual gain once every three years, and a 30-50% profit every seven to ten years – culminating in a long-term annual return that is slightly ahead of cash. That would represent a successful investment, since no strategy can combine both positive expected returns every year and very high and reliable returns in periods of crisis.

In conclusion, it is possible to protect portfolios from weakness and severe shocks in the equity market while also offering attractive long-term rewards to investors. However, success requires skill from the asset manager and patience and faith from the investors. An actively-managed strategy can provide a modestly positive long-term expected return, using time-varying and opportunistic hedging to provide tail protection. In the current environment such a tail risk strategy can be viewed as a sensible complement to government bonds. Although no manager can ever provide certainty in protecting their client's assets, they can offer the next best thing – a high degree of confidence based on professional, rigorous analysis of the markets. For investors willing to accept controlled costs of the strategy, the long-term payoffs make it worthwhile.



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