Lake Hill

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A Primer on Drawdown Mitigation Strategies

Many investors want the benefits of equity market exposure but are concerned with significant drawdowns. The Long Gamma approach uses options to help protect equity portfolios while maintaining upside market participation.

How can one mitigate drawdowns?

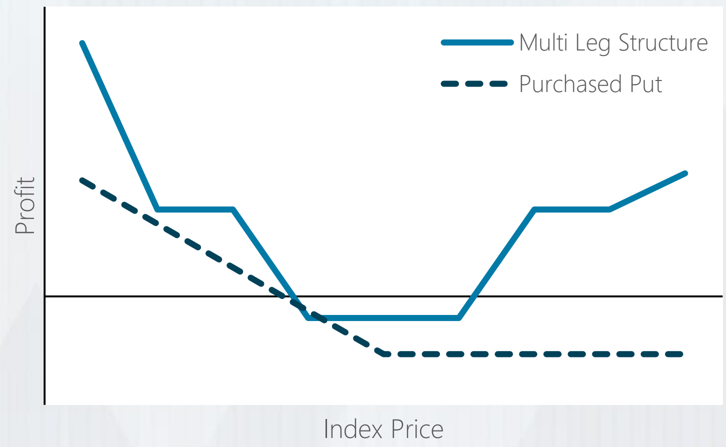
- Reducing Equity Exposure: The simple choice is to reduce equity exposure; this results in a linear reduction in drawdowns. However, many investors are required to stay invested in equities to meet return objectives which would not be possible without equity upside participation.
- CTAs, Trend-Following, Alternatives, and Active Management: These strategies can help diversify portfolios but may not directly hedge or protect for market shocks or drawdowns.
- Low Volatility Equities*:* Also known as low beta stocks, these stocks typically do not fully participate in market rallies or market drawdowns. Due to their rising popularity, these stocks are becoming crowded, potentially overvalued, and don't protect for bear markets.
- VIX derivatives: have increased in volumes but their direct application for institutional portfolios are limited, we wrote more on that here.
- Buying Puts: Buying puts typically demonstrates poor long-term performance. We expand on this method in the sections below.
- Lake Hill Long Gamma: Designed to reduce equity drawdowns by 50% while maintaining equity upside participation. Aims to outperform industry benchmarks.

Which options should be purchased?

Exchange listed options can provide transparent and liquid protection, with the S&P 500 options being the largest and broadest market.

We can see from the payout diagram that puts can provide a known payout. It is less clear if this will help the portfolio. Is there a process to sell the puts when they become valuable? If the exit is too early, gains will be truncated. If markets rebound, all gains could be lost. If delta hedging, what frequency is the right one? We find that a multi leg structure tends to be most efficient in protecting the portfolio.

Illustrative Option Portfolio Payout Diagram



Drawdown mitigation is a useful tool, but the implementation is not straightforward

Many institutional investors want to protect their portfolio from large drawdowns. Unfortunately, in the long run, most forms of protection will cost more than their long-term payout (we wrote more on this here). Insurance companies make a profit because premiums are typically higher than what they are worth. Options, like insurance, also typically trade at a premium, this is known as the Volatility Risk Premium (VRP). We can minimize the VRP by holding a diversified portfolio of options. However, there are over 10,000 option strikes and maturities available on the S&P 500. We find that about 100 different contracts is enough to adequately diversify a portfolio. Other variables to consider is how long to hold each option for, when to take profits and hedge, and when to roll exposures. There is an optimal process to constructing and monetizing the portfolio.

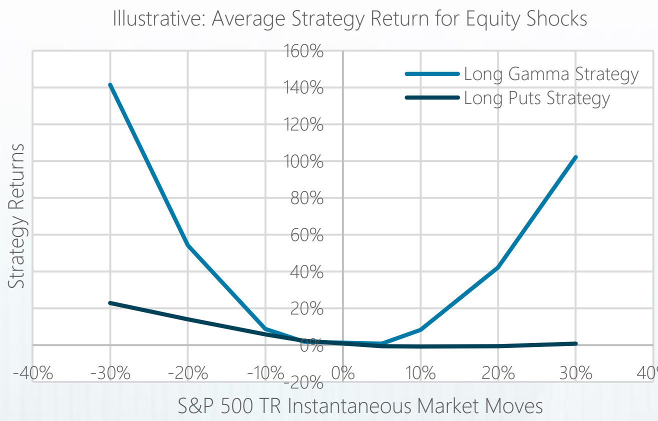
The Process: continually ensuring the portfolio is efficient by leveraging technology

Supply and demand dynamics in the options market causes options to diverge from theoretical values, creating an opportunity to buy inexpensive options and sell expensive options. It is important to accurately determine the odds of option payoffs (we elaborate here). As markets, volatility levels, transaction costs and premiums change, the book will generate new PnL, and new optimal positions. The diversified portfolio of options, across differing maturities needs to be adjusted each day. We want to avoid pitfalls (we elaborate here). Many moving parts need to be coordinated in real time, requiring automated technology.

Customizing for the desired outcome

We cannot predict the future, but we can forecast how the portfolio will react to potential market movements. This allows us to customize a portfolio around constraints to meet desired outcomes, while solving for minimal cost.

We can see in the figure to the right, we reprice all options within the portfolio given a market shock. The strategy return can be tailored to have certain expectations. In this case, returns are higher for larger equity market movements in comparison to a more simplistic put buying strategy. In fact, due to the "Long Gamma" construction, the strategy return has an exponential relationship with market returns.



Comparisons to the buy and hold strategies

The Lake Hill Long Gamma Strategy trades a combination of options and futures that is re-optimized and traded daily. Unlike a simple implementation where positions are known in advance, this strategy has an evolving set of calls and puts that are dependent on the opportunity. Lake Hill also developed a Customized Strategy that balances protection with increased upside participation. In comparison, the CBOE published buy and hold option indices that provide some drawdown protection but with poor long-term performance.

Summary

Investing in equities can provide great returns. The key is to have a process in place to stay invested during the next downturn. Many will find it difficult to do so when the inevitable bear market occurs. Implementing an appropriate options strategy with a disciplined process to stay invested can be a useful tool to achieve superior long-term returns .

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Futures, options and derivatives products inherently involve substantial leverage and also greatly increase the risk of loss. There is no additional portfolio leverage applied to generate the returns.