

The Options Landscape for Hedge Funds

Are hedge funds making the most out of options opportunities?

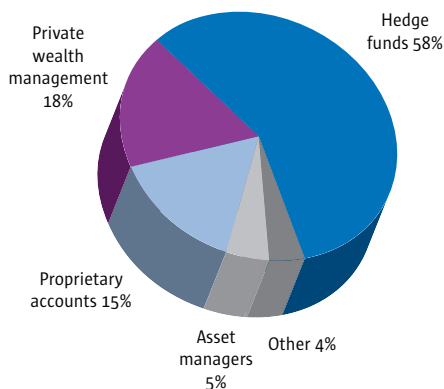
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Overview

Hedge funds remain one of the most active users of both exchange-traded and OTC options, particularly in the US, but some managers may still be missing the opportunity that these instruments can offer them. Equity-based investment strategies dominate hedge funds, which account for a large slice of the equity options market. Many funds focus on the liquid US equity markets and use single stock options, ETF and index options to hedge risk. This article takes a brief tour of some of the ways in which options are being employed in hedge fund portfolios, as well as looking at some of the broader themes affecting their use. Future articles will look in more detail at some of the most widely used options strategies.

Fig.1 Importance of hedge funds Source: Tabb Group

Tabb's 2011 study estimated that 10% of US equity option volume came from Europe, with hedge funds accounting for 58% of that



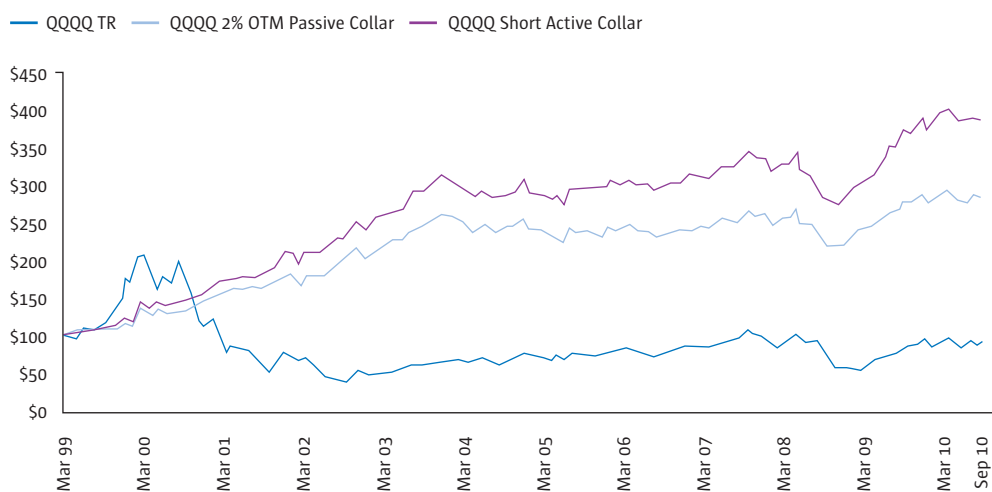
TYPES OF OPTIONS-BASED STRATEGY

Defensive

Covered put or call options have long been a fixture for the long/short equity manager, particularly in markets where there is a wide availability of single name contracts. In Asia, where the choice of single name options remains very limited, managers are still reliant on OTC contracts or simple volatility strategies. The equity hedge fund can use index-based puts and calls to cheaply hedge upside or downside exposure. Managers have been able to simultaneously profit from both long and short positions using options. However, it is difficult to achieve consistent returns on the short side during an upward-trending market as call selling is not a 'set and forget' strategy.

There are more sophisticated defensive strategies that make regular use of options, like hedging tail risk. Hedge fund managers are highly cautious, as

Fig.2 Growth of \$100 (QQQQ, Passive and Active Collar) Mar 1999 - Sep 2010 Source: OIC



a result of bad experiences in 2007-08. They need to reassure investors that the fund is braced for the next black – or grey – swan event.

It has also been observed that the value of put options – and not just equity puts – exploded during episodes of high volatility (e.g. the credit crisis and the flash crash), leading more fund managers to explore options as an alternative to defensive cash and Treasury bond holdings.

Covered call selling and yield enhancement

The sale of covered calls by hedge funds is favoured during periods when fund managers are relatively neutral on the market. This generates premium income, and mitigates the potential downside exposure of a long underlying position. It is vital that the fund's risk management team has a solid quantitative methodology allowing them to assess the probability of short calls being assigned, and the impact that this assignment might have on the fund's senior strategy.

One of the biggest risks with a yield-based strategy is that the holder of the option decides to exercise it to capture the dividend. While the maximum profit and break even are fairly clear from a risk management perspective, the likelihood of the option being exercised is also highly quantifiable, with a delta of .95 or above being a good benchmark. There also exists an early assignment risk for American-style options as the long holder of call options may exercise at any time prior to expiration, but most likely when the dividend is greater than the excess premium over intrinsic value.

Volatility

Volatility-based strategies arguably make the most use of options, with implied volatility regarded

as one of the most important components of options valuation. Many hedge funds use options to speculate on the direction of implied volatility, for example using CBOE® VIX® options or futures. Because implied volatility itself trades within a range that can be well defined via technical analysis, a fund can focus on the potential buying and selling points indicated via established price bands.

Using straddles (put and call options bought (or sold) at the same strike price with the same expiry) and strangles (out of the money put and call options), managers can also take advantage of the volatility strike map curve – i.e. trading the skew as opposed to the at-the-money implied volatility. Volatility trading is also popular with algorithmic hedge funds, which can focus on trading it in favourable ranges while retaining a hedging capability.

Collar (split strike conversion)

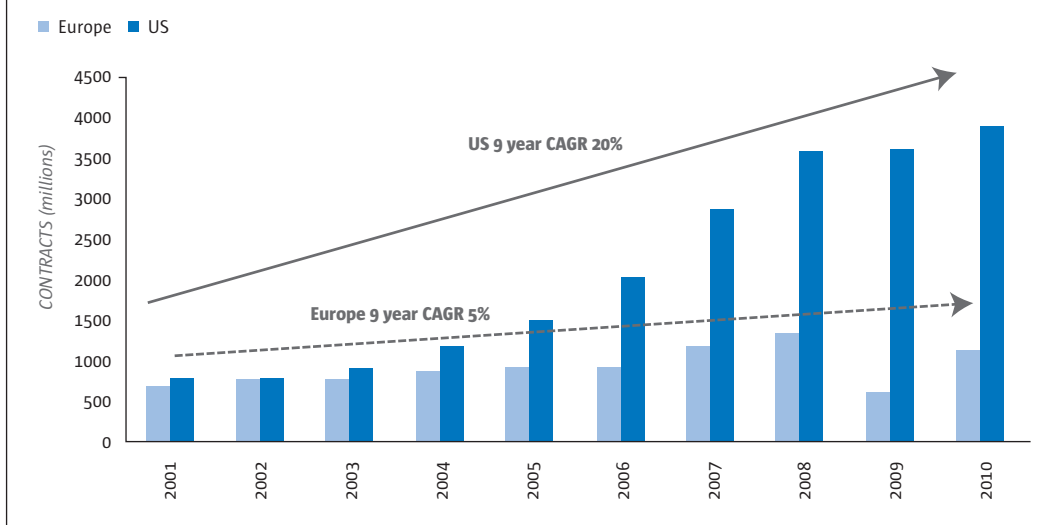
The collar's appeal is its scope to reduce portfolio volatility, protect against losses and provide consistent returns, the Holy Grail for many hedge fund investors (see Fig.2).

In effect, if the hedge fund can buy sufficient shares to replicate an index (a 100% replication is not required), ideally leaning towards stocks with a higher dividend payout, then it can sell call options at a strike price above the current index price, limiting its gains, but at the same time generating cash. The fund uses the premium cash from its sale of calls to buy puts based on the index it is tracking, thereby both reducing the total cost of the strategy and potentially dramatically reducing the risk. Note that there will be basis risk if the underlying is not 100% replicated.



Fig.3 Equity Options Volumes (Single Stock, Index, ETFs) 2001 - 2010

Source: Tabb Group, WFE, OCC



Arbitrage

Options can be used by the activist fund to exploit a number of different arbitrage situations. Volatility arbitrage has evolved from a hedging technique to a strategy in its own right. There are a sizeable number of hedge funds trading volatility as a pure asset class, with systematic volatility strategies seeking to exploit the difference between implied and realised volatility.

Recently, there has been on average a 4% spread for one-month S&P 500 implied volatility versus one-month realised, although this can vary significantly. Funds can profit from this by using options while hedging out other risks, such as interest rates.

Fundamentally, hedge fund options desks can arbitrage options prices themselves, rather than simply using them to arbitrage other asset classes, using multiple options listed on the same asset to take advantage of relative mispricing.

Dispersion trades

The dispersion trade has become increasingly popular with hedge funds that want to bet on an end to the high level of correlation between the large stocks that constitute index components. A fund manager would typically sell options on the index and buy options on the individual stocks composing the index. If maximum dispersion occurs, the options on the individual stocks make money, while the short index option loses only a small amount of money. The dispersion trade is effectively going short on correlation and going long on volatility. The investment manager needs to have a clear view on when such an environment is likely to kick in and investors begin to concentrate on data from individual stocks rather than taking a vanilla ‘risk on, risk off’ approach to equities.

Tail risk funds

The tail risk fund – a fund designed to provide liquidity in the event of certain risks occurring (e.g. stock markets falling more than 20%) has become a sought-after portfolio constituent for investors still needing to meet liabilities in the event of market liquidity drying up. This is really an insurance policy, with the investor exchanging an underperforming strategy for the expectation of liquidity.

Tail risk funds often take contrarian macro positions by using long-term put options. The debate over whether it is really possible for a fund to anticipate tail risks – by definition hard to predict – must be offset against the expectations of the investor. The investor is looking for a bear fund to minimise portfolio damage. The cause of that downturn may be unpredictable, but the reaction of the market can be predictable. The real question is the size of the market decline.

With the advent of tail-protected ETFs for investors and given recent trading patterns, it is clear that products that can provide this level of hedging will continue to be popular with investors.

The big picture

Options are the third most widely used asset class for algorithmic funds after equities and foreign exchange. This is thanks to the increased use of electronic trading for options transactions, trades that were previously reliant on manual options writing and voice broking. Now, touch of the button (‘low touch’) execution is pushing up volumes and attracting more hedge fund program traders into the options market.

One of the key selling points for hedge funds has been the liquidity and operational efficiencies associated with exchange-traded options. In

particular, advances in algorithmic trading have permitted fund managers to access superior pricing across multiple exchanges via smart order processes.

Outside North America, locally traded equity options have not been enjoying the high growth experienced by US equity options. In Asia, single stock options are hampered by lack of opportunity and demand, while in Europe structural features such as country and currency fragmentation, and a preponderance of smaller company issues are retarding growth (see Fig.3).

Increasingly, hedge funds are embracing weekly options to more sensitively control positions, enabling successful positions to be harvested more quickly. They can also deliver competitively priced downside protection. Time decay is attractive to sellers, while buyers appreciate the gamma play – the ability to harness an upward move in the options delta, in response to a proportionally smaller rise in the price of the underlying.

As the options industry continues to develop, further opportunities will likely emerge for hedge fund managers. This will stem not only from the broadening of the product set available, but also from the enhanced operational efficiencies and transparency offered by exchange-traded and cleared products. Regulatory demands for a more robust marketplace will play no small part in this too. **THFJ**

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