

# US Listed Equity Options: A Primer for Hedge Funds

## Contents

About the author .....	2
Section 1: The Options Landscape for Hedge Funds.....	4
Overview .....	4
Types of Options-Based Strategy.....	4
<b>Defensive</b> .....	4
<b>Covered Call Selling and Yield Enhancement</b> .....	5
<b>Volatility</b> .....	5
<b>Collar (Split Strike Conversion)</b> .....	6
<b>Arbitrage</b> .....	6
<b>Dispersion Trades</b> .....	6
<b>Tail Risk Funds</b> .....	6
The Big Picture .....	7
Section 2: Trading Volatility as an Asset Class .....	8
Volatility as an asset class .....	8
Using options to trade volatility.....	8
Favoured volatility-based strategies.....	10
<b>The straddle</b> .....	10
<b>The strangle</b> .....	10
<b>Selling volatility</b> .....	11
<b>Long call butterfly spread</b> .....	11
<b>Calendar spread</b> .....	12
Risk management.....	12
What investors think.....	13
Conclusion.....	14
Section 3: Managing Tail Risk with Options Products.....	15

Benefits of tail risk funds .....	16
Constructing tail risk strategies.....	18
Conclusion.....	20
Section 4: Innovative Tools to Stand Out in a Crowded Market.....	21
Replication of hedge fund portfolios .....	23
Outcome-based allocation.....	23
Increased regulation .....	24
Conclusion.....	26
Disclaimer.....	27
About The Options Industry Council (OIC).....	27
About OCC.....	27

## About the author

The Options Industry Council (OIC) commissioned Stuart Fieldhouse to write this guide. Stuart has been writing about asset management and trading for over 20 years. He started his career as an investment banking correspondent in Hong Kong and spent six years as a private banking correspondent at the FT group. He has also held international communications roles at Zurich and CMC Markets and has authored two books on derivatives trading. These articles are based on the views and opinions of the author.

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## Section 1: The Options Landscape for Hedge Funds

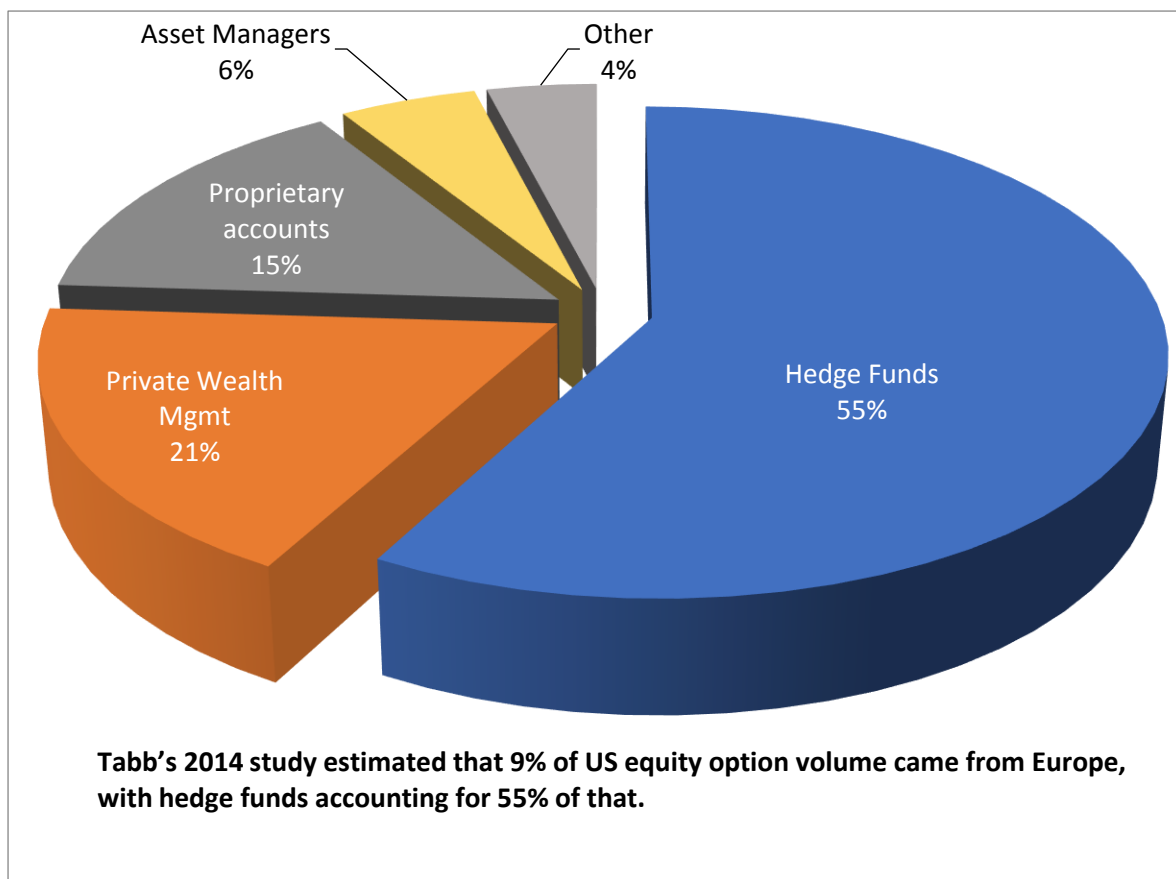
### Are hedge funds making the most out of options opportunities?

#### 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.

#### The Importance of Hedge Funds

Source Tabb Group



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 cheaply to 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 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 favored 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. The holder of an American-style call option can exercise that option at any stage 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. 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 favorable 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.

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.

#### 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 realized volatility.

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, thanks to the increased use of electronic trading for options transactions. 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-based options. In particular, advances in algorithmic trading have permitted fund managers to access superior pricing across multiple exchanges via smart order processes.

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.

## Section 2: Trading Volatility as an Asset Class

### The role of options in the rise of the hedge fund manager specializing in volatility trading

#### Volatility as an asset class

Volatility trading possesses a number of attractive qualities for both the fund manager and his ultimate investor. As an asset class, the cost of volatility increases when uncertainty increases, but also has a tendency to revert to a mean. It can be traded in a number of ways, including purely speculatively<sup>1</sup>, or arbitrated (e.g. index versus stock, or short term versus long term, or implied versus historical). But at the core of a successful volatility-based strategy lies the effective use of options.

As a hedge fund strategy, volatility trading has evolved significantly since the financial crisis, when many volatility specialist funds posted headline numbers. Since then investors have begun to see the volatility fund as more than just a hedge against volatile markets, but also as an investment in its own right. This has occurred as skilled fund managers have begun to demonstrate that they can go both long and short volatility.

Implied volatility is part and parcel of the way options are priced. The fair price of an option will reflect not only the implied volatility, but also the market dynamics and the forces of supply and demand. This leaves it open to arbitrage strategies where the fund manager will compare the forecast volatility in the underlying instrument (e.g. an index) with the existing implied volatility of an option. With the accurate pricing of options under the Black-Scholes formula, this will require a degree of reliance on the manager's forecast for volatility, and analysis that can reveal mispricing situations that a shrewd manager can capitalise on.<sup>2</sup> Funds can also hedge implicit volatility exposure – risk arbitrageurs, for example, might be hoping to take advantage of narrower spreads in the stocks of companies planning to merge.

#### Using options to trade volatility

Funds which specialize in volatility trading will often take advantage of unusually high implied volatility by selling both a slightly out of the money call option and an out of the money put option coupled with the purchase of both a call further out on the upside, and a put further out on the downside. This trade, commonly referred to as an Iron Condor, is one of the favored means of making money on implied volatility.

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<sup>1</sup> Speculation can be listed as a strategy in its own right

<sup>2</sup> In addition to Black-Scholes there is the binomial options pricing model of Cox Ross Rubinstein, which is considered more accurate, but slower, due to the use of a binomial lattice.



In the past, options contracts tended to be over-priced, partly because 99% of the market participants used to take a directional bias. Prior to today's technological trading enhancements, this created plentiful arbitrage opportunities as hedge funds took advantage of this available alpha. Some early volatility funds were simply long equity volatility trackers, a similar function to what a volatility index tracker might provide today.

Because listed options markets are highly liquid in broad market indices and US blue chips, volatility strategies can grow into multi-billion dollar portfolios. Successful funds in this area are those which can continue to evolve and capitalize on the changing nature of both underlying markets and the available opportunities in options markets.

Most hedge funds trading volatility remain focused on the equity or index volatility space, but volatility hedge funds are also able to effectively trade volatility over a number of different markets, including commodities and currencies. This expands their opportunity set and also cuts down on concentration risk. Volatility trading can be both a fundamental and a quantitative strategy although the more successful funds are increasingly adopting more of a rules-based approach to the asset class.

One of the attractions of volatility trading, say on an index, is that the hedge fund manager can profit on a given index whether it goes up or down, by use of options. Delta hedging allows the fund manager to hedge away the linear component of a call option to produce a security with a curved P&L. For the trader with a long position, this can make money if the realized volatility exceeds the implied volatility with sufficient magnitude.

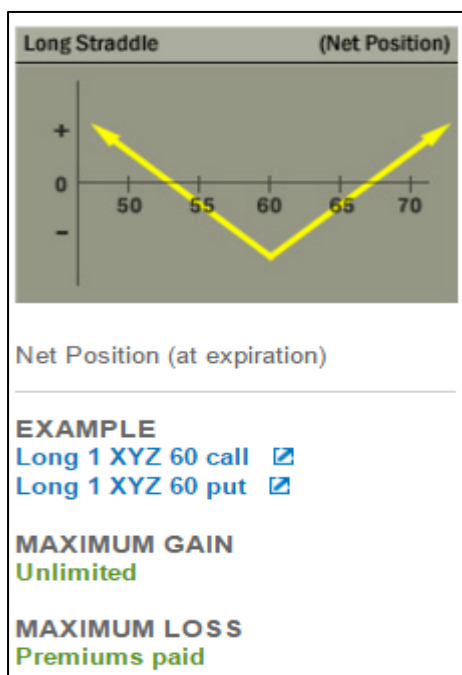
A delta-hedged option does not represent a pure, clean bet on volatility, as it tends to assume smooth stock movements, zero transaction costs, and relies upon known historical volatility. In reality, markets do not conform to a purist application of options pricing, particularly as the manager cannot hedge continuously and must also hedge discretely. Imperfections of this nature can undermine the gains which the fund could make in theory. Hedging continuously, for example, will introduce additional transaction costs which will impact the manager's expected return.

Black-Scholes requires that an index must have some expected level of future volatility to make an options price a fair one, but if the model were to be right, then all options would need to have the same implied volatility, which simply isn't the case. This makes hedging harder when trading volatility. Since 1987, volatility skews have been observed as persistent, linear and inconsistent with Black-Scholes. The so-called 'volatility smile' (variation in implied volatility with strike and expiration price of options) has been observable across a range of markets, including currencies.

## Favoured volatility-based strategies

### The straddle

A long straddle is constructed by buying both a call option and a put at the same strike price and expiration date. Because the positions are at-the-money, they provide the best time value and the greatest absolute volatility exposure. This is a short term trade with the expectation of an immediate increase in volatility. They effectively double the exposure to volatility when compared with a single option purchase, but have significant time decay.

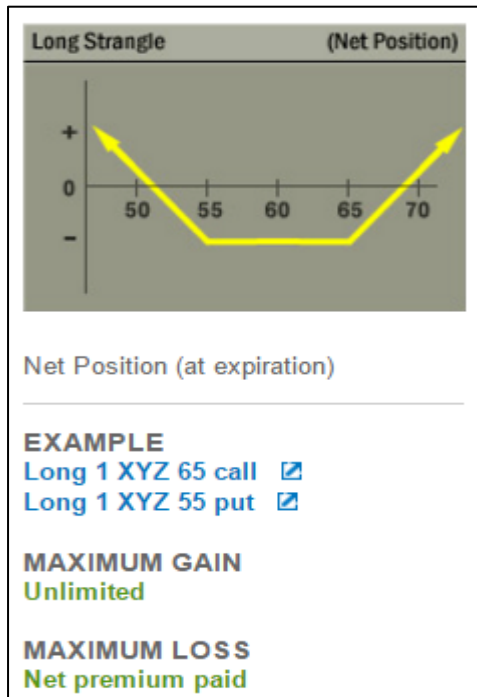


Source: OIC

### The strangle

Less costly than the straddle, the strangle trade uses the same maturity for the two contracts, but different strike prices. The same offset benefits are achieved, generally using out-of-the-money options. This means a smaller premium compared to the straddle, with less time decay. Out-of-the-money options also experience the most impact in terms of percentage changes if there are sudden, drastic changes in implied volatility.

The two trades above are best used when the fund manager does not have an opinion on where the underlying market is going, but feels that volatility will increase over the short term, and certainly before time decay takes out the value of the position.



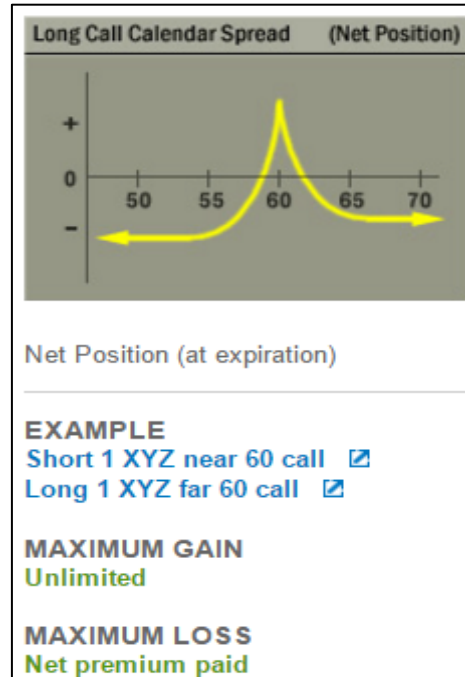
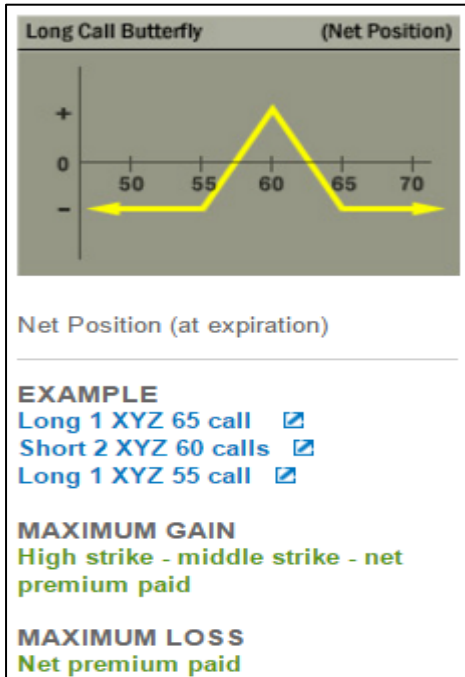
Source: OIC

### Selling volatility

If options are being over-valued, an astute manager can sell volatility. Much depends on whether he can establish an accurate estimate of future volatility and use those options strategies which will benefit from a fall in implied volatility. A short straddle trade is considered one of the purest approaches to this opportunity although a short strangle (sale of an out-of-the-money call and an out-of-the-money put) may also work. Selling volatility allows the fund manager to make money on both a decrease in volatility and time decay.

### Long call butterfly spread

This involves the sale of at-the-money options with the highest time value while buying both out-of and in-the- money options as disaster insurance. The low time value options are used to limit the loss risk on both the upside and downside of the trade. A net premium must be paid to establish the position. There are a number of different approaches to establishing a butterfly (e.g. a bull call spread coupled with a bear call spread). It is a short volatility trade, making money from decreasing volatility. It is often used by under-capitalized traders who wish to sell volatility but also protect against the potential unlimited loss in the straddle or strangle approach.



Source: OIC

### Calendar spread

One option is sold and another bought at the same time, with the only variation being the month of expiry. The goal is to have the underlying price stay close to the short strike price heading into the expiry of the contracts. The premium of the sold, or nearer term, option should decay faster than the bought, or further out option. The bought option has a higher sensitivity to implied volatility, allowing the manager to make money if the implied volatility of the options rises. Calendar trades can be speculative (strike price of the spread is further away from current price, requiring a larger movement in favor before profits are realized) income-based (decay of the option premium will go in the manager's favor).

### Risk management

Markets are frequently unpredictable. Managers trading volatility as an asset class must be aware that they own both term volatility and specific strike-based volatility. In addition, the models they use will vary depending upon the underlying market. Currencies, for example, will tend to have stochastic volatilities, while interest rate volatilities will revolve around rate levels. It can also be extremely hard to test strategies effectively.

When trading options to capitalize on volatility, managers must also be sensitive to time decay. This can make it expensive to keep a given position active, and has proved costly in some instances where volatility has remained persistently low, sometimes unexpectedly so. Discipline is required when using a spread-based strategy to capture volatility. The trade must be taken off as a spread rather than viewed as separate components.

If volatility has been bought at a low level with the expectation that it will be higher in a few days, then the manager must be resistant to underlying market jolts and the temptation to close one side of the spread. Sellers of volatility must also be aware that, as with a conventional short trade, there is significant loss potential. This is a particular risk for a fund that becomes a habitual seller of volatility.

Pre-2007 volatility specialists were heavy users of OTC options, but since the financial crisis many volatility hedge funds have cut down or eliminated their OTC exposure entirely. Most now focus on listed options and have done much to eliminate counterparty risk.

### What investors think

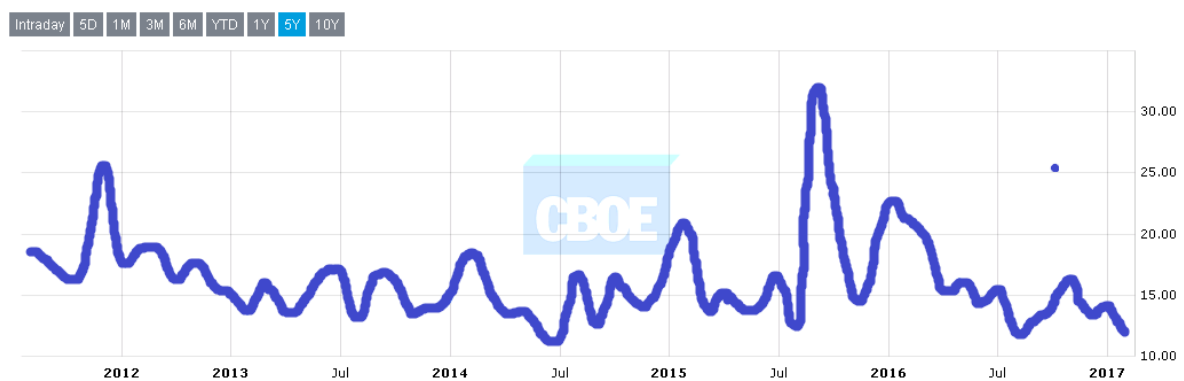
Volatility funds first attracted investors because volatility represented an uncorrelated play. It was obvious from an early stage that managers who could consistently trade volatility as an asset class would represent a good diversification benefit for a portfolio of hedge funds.

As market volatility picks up, investors will also then focus on volatility funds in the expectation that this strategy will yield superior returns. Investor knowledge about the diversity of available strategies remains limited with a tendency to bracket all volatility funds together under the same analytical umbrellas, although their sources of return can be quite diverse. There is increasing awareness of the need for volatility-based investments to be diversified across multiple markets and sectors.

The fact that volatility funds will tend to make more money during periods of higher volatility make these funds attractive as a portfolio hedge against losses in other strategies. The increased use of exchange-traded options contracts makes the funds more transparent and easier to price, another benefit from an investor perspective.

VIX (CBOE MARKET VOLATILITY)

11.71 <sup>-0.03</sup> <sub>-0.26%</sub>



## Conclusion

Traders of volatility as an asset class are not seeing volatility leaving the market entirely - indeed recent political events have brought new elements of fear into financial markets. In the last couple of years, we have seen periodic spikes in volatility index products. With the removal of many market certainties from the table, pure volatility is going to remain an interesting area for hedge funds to visit in the next couple of years.

## Section 3: Managing Tail Risk with Options Products

### Uncertainty fuels appetite

Tail risk is the unforeseen risk of a three standard deviation move, which has the magnitude to upset and reverse markets. Because of its infrequency, it is difficult to predict. Typical tail risk events like the 9/11 attacks or the Japanese earthquake and tsunami, are classic examples. Others, like the 1987 stock market crash or the Brexit vote, were slightly more predictable, but still had the capacity to inflict substantial losses on an investment portfolio. We are now entering a phase where an increasingly unstable political situation heralds the possibilities of more unforeseen events, refocusing investors on the need for some form of tail risk insurance.

Tail risk can be hard to insure against, particularly for passive investors who are already one step away from the market. While a hedge fund manager might already hear rumors that a major bank is in trouble, a pension fund with a portfolio of funds to oversee may not have immediate access to the same market-turning news. Nor, in many cases, do institutional investors have the requisite skills to implement a sophisticated hedging strategy. Consequently, there has arisen a need for funds that can sit in the same portfolio and act as de facto insurance policies, minimizing the damage that an unforeseen market event might cause.

Investors tend to turn to tail risk funds at times of uncertainty or increasing market volatility. Blue Lion Research, for example, recently carried out a study looking at investor appetite for tail risk funds. While appetite in 2015 for these funds was sluggish, it has picked up recently, particularly after the market problems in China in January 2016, and more recently the Brexit vote. It is highly likely the recent presidential election in the US will fuel further demand for volatility-based strategies.

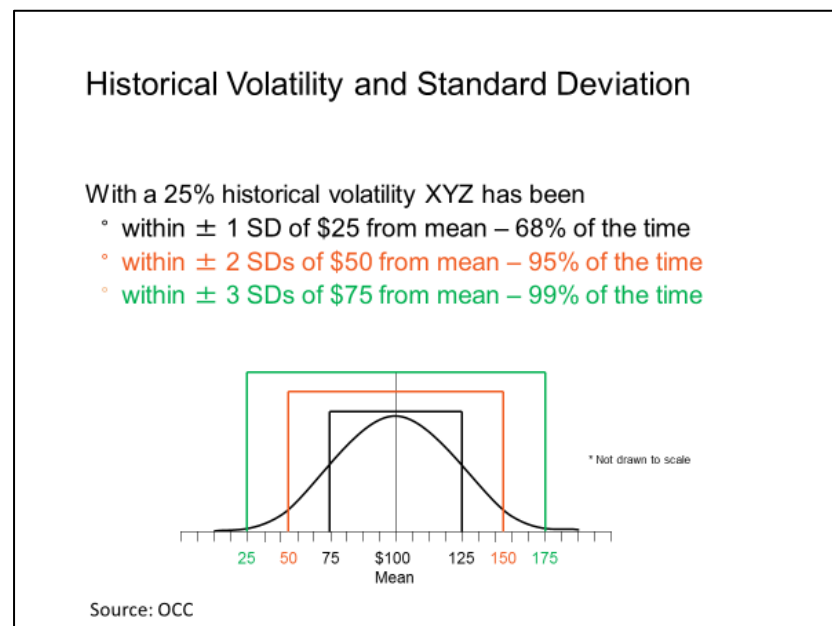
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Selling volatility funds to investors will also depend on whether that investor already has one in their portfolio. The research also indicates that tail risk managers may be more likely to be successful if they approach investors that do not yet have a specific volatility-based allocation. In any case, the data certainly illustrates that appetite for these funds has been returning in recent months.

It could be argued that all hedge funds, by definition, are meant to be able to minimize the impact of a sudden bear event. Historically, it was possible for fund managers like Paul Tudor Jones or John Paulson to capitalize from sudden downturns, but in their cases, there was already a degree of evidence that something was not quite 'right' in the market, and they took a contrarian view. Also, you had to be invested specifically in their funds to benefit. Diversification of assets, even via hedge fund allocation, has not always proven to be a diversification of risk.

However, beyond risk, a tail risk fund or strategy is designed to make considerable profits under such circumstances, as it is meant to be uncorrelated to a long only equity portfolio.

The tail risk fund is a newer hedge fund animal that on an ordinary day will likely be losing money. It is only when things go disastrously wrong that it tends to make a considerable return.



### Benefits of tail risk funds

A tail risk fund brings a number of benefits to the investment portfolio: firstly, it is designed to profit from a pronounced downturn in the market, say a 20% retracement or more. Secondly, it can – although this is not guaranteed – also provide the investor with a source of liquidity at a time when many other funds are locking money in. Is this likely to happen again, as it did when liquidity dried up for investors in 2008? It is hard to say, but many allocators don't want to make the same mistake twice. Tail risk funds are therefore often expected to offer superior liquidity terms in bear market scenarios.

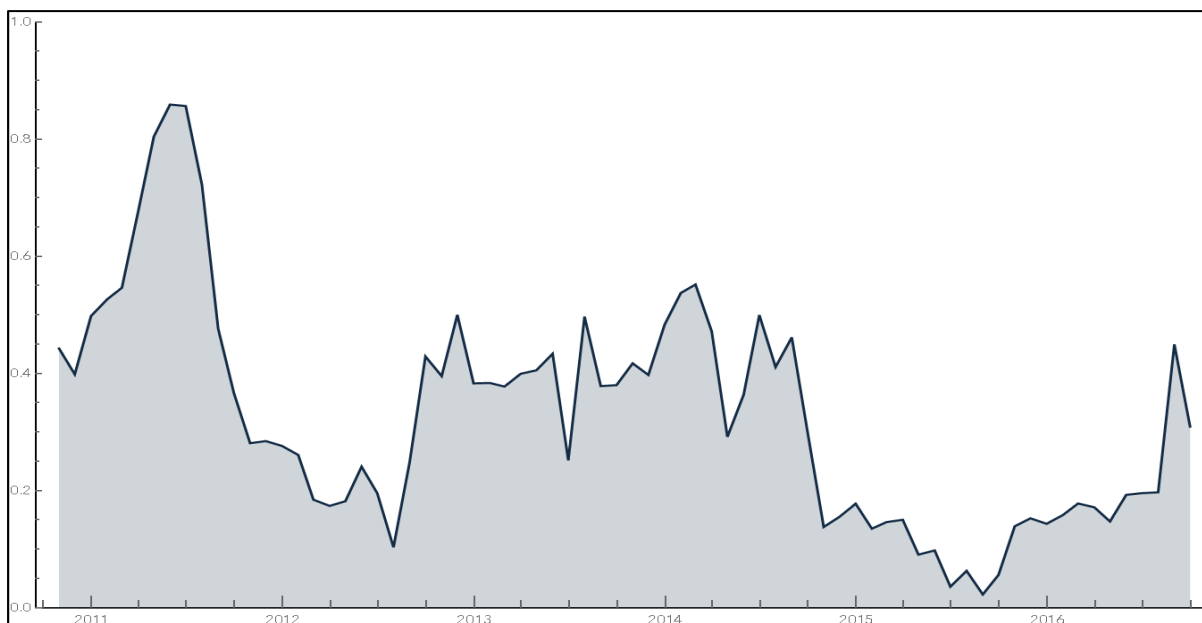


The favored strategy pursued by tail risk uses long term put options, usually with some form of macro overlay. This will typically include both active and systematic processes (usually informed by economic criteria fed into a proprietary model) that will suggest which options to use. The contracts can be dated out as far as five years or more. Long term put options are not as widely available as those with short term maturity, and they can become more expensive if market volatility increases.

Tail risk funds – and strategies – tend to be cheaper for investors (and a better investment) at the top of the market. Long term options tend to be at their cheapest near such a peak. The funds tend to be more expensive at the bottom of a market cycle, when most of the pain has already occurred.

There is a big difference between funds that offer tail risk opportunity or, alternatively, tail risk insurance. With funds offering tail risk opportunity the manager can make enough money from a macro bear event to cover all the losses the investor has sustained with the fund up to that point, and some profit as well. In funds offering tail risk insurance, an investor will still be making a loss on the fund over, say, a 10-year time horizon.

### Investor appetite for volatility based hedge fund strategies



The graph illustrates the likelihood of an options centric fund appealing to investors (where 1.0 is very appealing), based upon the average estimate of all options based funds Blue Lion Research has data for. Source: Blue Lion Research

Regulatory changes have impacted the market for long term options, because banks and other writers of long term puts are being forced to shed some of their risk. Other market participants, like pension funds, have become more active users of listed options in their quest for yield at a time when benchmark bond yields are in negative territory. The move has been towards listed options exchanges.

Where the uptake has had a measurable impact on hedge funds has been the overall dampening of volatility, partly driven by central bank activity, but also in the uptake of option-based structured notes, first in Asia, and now in Europe. The situation has now reached a point where hedge funds are beginning to go short optionality.

Despite this, successful tail risk funds have reported consistent and steady inflows from investors, particularly in the US, over the last 3-4 years, with some managers even having to close funds to new investment.

Liquidity will be a primary consideration; hence, many investors lean towards managed accounts as the preferred format for tail risk insurance in a portfolio. Allocators will expect daily or at least weekly liquidity, even during periods of crisis.

### Constructing tail risk strategies

Some specialist providers of tail risk investment strategies already exist, and many larger hedge funds already use a degree of tail risk hedging within their existing funds. However, investor demand is causing many more established fund managers to consider specific tail risk products.

Vineer Bhansali, an expert in the construction of tail risk portfolios, left PIMCO in December 2015 to set up his own firm, LongTail Alpha. After 16 years at PIMCO, where he served as head of quantitative investment portfolios, Bhansali felt that financial markets were facing another cycle of disruption, and that the time was right to establish his own tail risk fund.

LongTail Alpha uses a proprietary framework based on academically rigorous research and tested over two decades of implementation. Bhansali believes that managers need to be very open-minded in their approach to portfolio construction, as timing relates back to valuation. At some point the market will inevitably overshoot, and the good tail risk manager has to be asking himself about valuations, trade signals and the models that need to be built.

“There is a fairly broad variety of asset strategy types to choose from,” explains Bhansali. “Because of the flexibility and liquidity of derivatives markets, each one comes with

different strikes and different maturities, so in all there is a pretty rich selection of hedging instruments.”

Options markets based on macro prices, like the S&P 500, currencies, and interest rates, have tended to maintain their depth during periods of crisis, making them most valuable when tail risk managers need them to be.

Christopher Cole, CIO at Artemis Capital Management, feels that most hedge funds are analogous to a short put on the S&P 500. “The average hedge fund is implicitly short volatility,” he says.

Cole’s fund buys and sells volatility with a long volatility bias. It is a heavy user of options, buying and selling based on the term structure and the skew of the option. “You can’t be simply long volatility,” he says. “You also need to minimize the theta bleed, the cost of carry.”

Cole uses computer algorithms constantly to assess structure and skew. In his view, the widespread habit of put selling has done well so long as central banks have been prepared to suppress volatility. It is an act of desperation as investors search for returns in a negative yield environment. “In the last four years the short options strategy has been profitable, but if you adjust for beta, it is not nearly as attractive.” Artemis, he says, is long volatility, because it needs to be positively exposed to change.

In many respects, tail risk should be considered more as a form of risk management than a stand-alone strategy. While a hedge fund might be sold as a tail risk fund, it is really only there as a hedge against the next time a market faces a major crisis on the scale of Lehman Brothers. Exposure to a tail risk fund, and the losses and costs that this entails, should be regarded in the same light as paying a premium on portfolio insurance.

“We view a tail risk hedge, particularly in the current environment of monetary distortion and overvaluation, as more than protection but as a means for enhancing an investor’s long term equity returns,” says Mark Spitznagel, CIO of Universa, established in 2007 as a specialist in convex and tail hedging. Universa portfolios are positively-skewed, robust to extreme risk assumptions and non-linear to common risk factors (e.g. beta). Universa’s edge is derived from its ability to provide tail hedging and investing in a manner that they contend is more efficient than that offered through ‘naïve’ options strategies. A significant edge is also derived from acting as a liquidity provider, as well as from systematic options supply and demand imbalances, structural and behavioral biases and access to order flows.

Tail risk managers will make use of a wide variety of put options; some have a bias towards OTC contracts because they want to isolate very specific investment opportunities. Others, due to liquidity issues, will lean towards exchange-traded instruments. There is a general

consensus among tail risk managers we spoke to for this article that the balance has shifted considerably towards exchange-traded options, although some managers still remain heavy users of OTC options because of strategy peculiarities.

Some large hedge funds are building a tail risk component within their existing fund ranges, as they become more aware of the potential benefits and opportunities of this approach. However, for large investors like major pension funds and insurance companies, there is more of a requirement for a tailored strategy that will suit their own investment requirements more than a generic hedge fund shared with other investors. For example, some investors will seek to hedge exposure in emerging markets or in specific commodities markets against tail risks. Such highly tailored solutions can still be achieved via exchange-traded instruments, for example via puts on ETFs.

“We got out to 20 years on our long-dated options, with a weighted average expiry of between three and seven years,” says Anthony Limbrick, a principal and portfolio manager with 36 South. “We will run a rolling short-dated strategy in place of a long-dated strategy, but we much prefer to be long-dated.”

36 South prefers to be well out of the money in terms of strike prices. It is an active user of proxies, particularly during risk aversion periods where correlation is more obvious.

## Conclusion

Tail risk funds have been increasing in popularity with investors, as fear in the market has continued since 2008. Political uncertainties in the wake of the Brexit vote and the US election have created more appetite on the part of investors for these strategies. Markets have been increasingly dominated by political news in recent months, so it is no surprise that investors of all types are revisiting options funds.

Tail risk funds are currently well-placed to approach investors. Many of those allocators without tail risk exposure will be more likely to be open to a discussion at this point, as daily headlines will be ramping up concerns about what lies in store for markets. With the expansion and increasing sophistication of listed options markets, tail risk funds have the scope to grow to larger dimensions as that appetite starts to manifest itself.

## Section 4: Innovative Tools to Stand Out in a Crowded Market

### How options are helping hedge funds make a difference

The use of options by hedge funds has expanded considerably in the last three years. In addition, managers have turned to the listed options space as regulatory constraints, and fears surrounding counterparty risk, have focused minds.

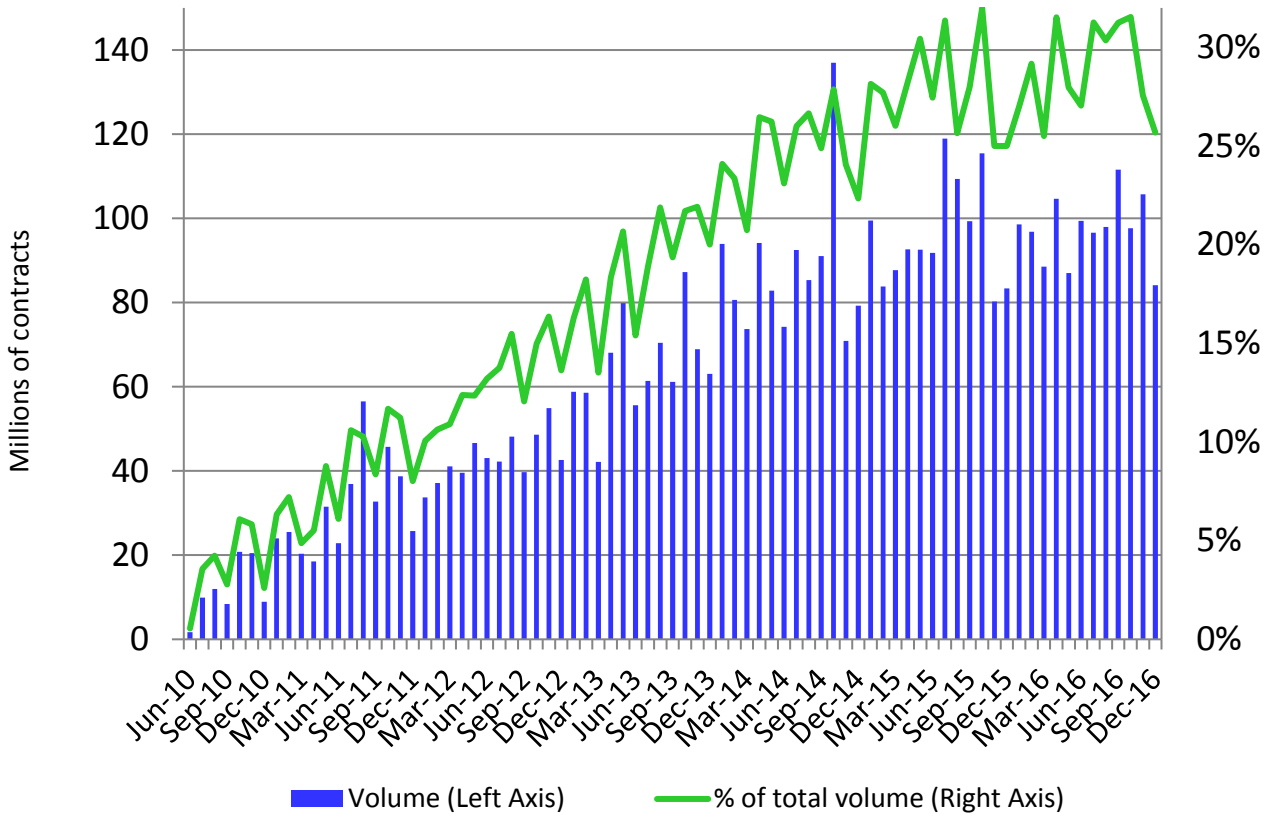
Those funds which have been able to grow consistently in this new environment have often been those which deliver to investors exactly what they want, beyond simply superior or consistent performance (although these remain the most critical factors). Meeting investors' expectations can often be challenging unless the fund's manager is prepared to make use of additional overlays or strategies to smooth returns, manage risk and/or provide additional liquidity to the portfolio.

"Just like any financial instrument, when used appropriately, options can provide a hedge fund with the means to be successful," says Andy Nybo, global head of research and consulting at TABB Group. "There is a role for options within certain types of strategy – the challenge is how [hedge funds] are able to use options within their portfolio and whether they provide a useful mechanism for executing their strategy."

Since 2008 there has been an increased focus by investors on portfolio liquidity. Lessons were learned the hard way during the financial crisis and active hedge fund investors now want to be able to see how a single fund can impact their overall portfolio liquidity picture. Options markets in the US remain particularly deep and liquid especially for indices and the most actively single stocks. A hedge fund running a strategy concentrated around large or mid-cap equities can use options as a powerful way to take directional views to manage risk exposures and hedge strategies effectively and economically.

Additionally, increasing volume in weekly options has enabled hedge funds to become more active in options markets, allowing them to take a directional view around corporate events (e.g. an earnings announcement, pending approval of a new pharmaceutical or legal action on motor vehicle emissions) that can move the price of a stock. The availability of weekly options allows active trading hedge funds efficiently to express directional views on specific companies.

Weekly Options Volumes



Source: OCC, Hanweck, TABB Group

Adds TABB’s Nybo: “One of the types of fund we’ve seen emerging in recent years has been the volatility fund that can provide uncorrelated returns for investors seeking to diversify or get exposure to a particular segment of the marketplace. You’re seeing greater demands from institutional investors for funds that can trade a portfolio of volatility providing investors with any investment vehicle that may allow them uncorrelated returns of exposure to a different type of asset.”

A good example of such a strategy is that adopted by the team at Artemis Capital Management. It takes a long view on volatility, focusing on crisis alpha, with a hedge fund-like return profile. This requires active use of options in order to minimize the cost of carry which can afflict many volatility-based funds, coupled with the use of algorithms to help the managers understand term structures and skew. The fund focuses mainly on the S&P 500 for its underlying, but occasionally ventures into Eurostoxx options.

Such funds go beyond simply going long or short the a volatility index – after all volatility-based ETFs can suffer from mispricing, allowing volatility funds to arbitrage differences of perceptions of volatility. There are significant components of volatility embedded in an option, hence why they are favored by volatility funds. It is the liquid and non-correlated nature of these strategies which make them such a good fit with institutional portfolios and why successful funds within this bracket have been able to raise considerable sums on both sides of the Atlantic.

### Replication of hedge fund portfolios

Options contracts are also being used to aid in the replication of hedge fund portfolios by banks and investors. Options provide the alternative investor with some considerable advantages over allocating to funds of hedge funds, including a relatively small investment and less time and money spent on carrying out due diligence. As discussed above, there are also the obvious liquidity advantages to consider.

The aim of a hedge fund replication strategy is for an investor to mirror the returns of a multi-strategy hedge fund portfolio with a higher level of transparency and lower fees. Such strategies have managed to attract considerable investment from US institutional allocators.

From the investor's perspective exchange-traded options offer high levels of transparency, including a higher level of confidence that risks can be quantified. Finally, options contracts are more liquid than hedge fund investments.

Replication of hedge fund strategies can include a combination of both options and futures. For example, a convertible arbitrage strategy might use a combination of equity options with fixed income and equity index futures. Generally speaking, contracts based on major indices will be used by the replicator.

### Outcome-based allocation

There has been a sea-change in the way pension funds and other institutional investors approach their overall strategies, taking a more risk-based approach which has progressed a long way from the traditional shift in the balance between equities and bonds. Now consultants and investors are learning to wean themselves off sovereign debt and corporate bonds as they seek to make assets work harder for stakeholders.

Consultants advising institutional investors now say that their clients are much more focused on outcome-based investments, for example products that might help investors to manage volatility and tail risk, as well as delivering low correlations to market beta.

Institutional portfolios are still heavily weighted towards non-inflationary growth periods with as much as 80% of portfolio risk concentrated in these periods. Thinking that was shaped during the long equity bull market of the 1990s has now been re-shaped and

replaced by a quest for yield in a zero interest rate environment. While diversification into other assets such as commodities used to provide a temporary solution, institutional investors are now seriously looking at investment strategies that make use of exchange-based futures and options to provide more balanced growth across a range of market scenarios.

Hedge fund firms that are able to tailor products that can satisfy these requirements have found it easier to raise money in the institutional space. It requires a different approach to product development, whereby the manager uses option contracts to achieve a more reliable return profile.

### Increased regulation

Since the G20 meeting in Pittsburgh in 2009 there has been a coordinated thrust to bring OTC derivatives as far as possible onto an exchange-traded or centrally cleared system. This has implications for hedge funds that make regular use of derivatives contracts. Regulations intended to reduce systemic risk in the industry, while not impacting options markets directly, are changing the way in which options are bought or sold.

Says TABB's Nybo, "Given the introduction of MiFID and Dodd-Frank, you are seeing an increase in the use of listed options, simply because the cost for dealers to remain active in the OTC marketplace is increasing. Their capital charges are going up and they have to rationalize their provision of capital to their clients. Any type of OTC agreement needs to be examined from the dealer's point of view. There is a natural tendency now for dealers to promote the use of listed options given the regulatory restrictions around the use of capital."

There is also a natural reticence on the part of dealers to write OTC options which require the use of capital reserves. As risk exposure and credit concerns become a bigger part of the landscape, options brokers are becoming much more diligent in the screening of those hedge funds which they will take on as clients.

Smaller funds with limited trading activity that do not represent a significant volume of trades can find themselves being culled from the client list. Ultimately the fund in question will have no choice but to move to listed instruments as an alternative.

Within Dodd-Frank there is also a limit on the ability of broker dealers to use proprietary capital. Broker dealers have been forced to spin off proprietary trading desks which once contributed significant volumes to the options market. This has led to the creation of new venues with many professionals leaving the dealers to act as small independent options shops. Fund managers now have a wide choice when seeking an independent options broker.



In Europe the complex regulatory landscape for hedge funds has generated some important considerations for options-heavy strategies if managers are seeking to harness the UCITS directive for these strategies. In particular there is incompatibility between the UCITS directive and the EMIR regulations covering OTC derivatives. The UCITS directive has counterparty risk requirements that would apply to OTC options but there has been some discussion of how exchange-traded options should be treated.

Managers considering a UCITS fund launch will need to ensure that the options they hold meet the risk framework criteria laid down by the UCITS directive. Limits are in place governing leverage, counterparty risk and position exposure.

ESMA (the European Securities and Markets Authority) has recently issued an opinion that the UCITS directive should not distinguish in future between OTC and exchange-traded derivatives but on whether the contracts are being centrally cleared. The emphasis has shifted to the characteristics of the contract – focusing on counterparty risk.

“ESMA has said that just because an option is exchange-cleared, it should not be automatically considered as clear of counterparty risk,” says Veronica Buffoni, a director with Carne in Switzerland. “Managers of options funds looking at European distribution should carefully examine how risk is being treated under the current directives before going too far down the road with product development. Some of the focus, for example, will be on the segregation arrangements of clearing members.”

Investors have been turning to options in the quest for yield. With bonds at zero to negative yields, and with central banks actively suppressing volatility, the shorting of options has come to be seen as a very profitable alternative. However, adjusted for beta, the returns have looked less impressive. Pension funds and retail investors have been crowding the market: the growth in structured products based on options in Asia, for example, has been phenomenal.

Hedge funds themselves have continued to migrate steadily into listed options since 2013: unlike OTC contracts, they are highly transparent, and it is also easier for managers to illustrate sources of alpha to their clients as a result. Issues over pricing and valuation are also less of a concern. The fact that the most frequently-traded contracts, based on the S&P 500, bring with them high levels of liquidity, means that the growth of big, volatility-based funds can easily be accommodated.

One just has to look at how many of the leading volatility funds have scaled up in the last few years to see how investors are turning to these strategies as a source of yield and protection. Some volatility funds are even closing to new investment.

Maya Rodriguez, CEO at AZR Capital, sees different patterns in investor behavior between the US and Europe: “US investors account for about 70% of the assets under management in this sector,” she says. “With Europeans, you sometimes find them thinking they can do this in-house, for example hiring their own internal teams to sell calls and buy puts. In particular, you see this in the Nordics.”

### Conclusion

Hedge fund managers who wish to succeed in a marketplace where the barriers to entry are ever higher and where a successful fund must be larger in terms of AUM and more institutional in its operational protocols, may wish to look more closely at exchange-traded equity options. Investors are less averse to them than OTC contracts and they can perform a useful role in many portfolios, in helping funds to function within the constraints of the new regulatory environment. Superior transparency and more efficient pricing are hard to argue with, especially when the instruments in question are being to reduce portfolio risk.

### About The Options Industry Council (OIC)

OIC is an industry resource provided by OCC, the world's largest equity derivatives clearing organization. Its mission is to provide free and unbiased education to retail investors, financial advisors and institutions about the benefits and risks of exchange-listed options. OIC offers education which includes webinars, online classes, podcasts, videos, investing tools, and live help. OIC's Roundtable is OIC's advisory group and is comprised of representatives from the exchanges, member brokerage firms and OCC. For more information on the educational services OIC provides for investors, visit [www.OptionsEducation.org](http://www.OptionsEducation.org).

### About OCC

OCC is the world's largest equity derivatives clearing organization and the foundation for secure markets. Founded in 1973, OCC operates under the jurisdiction of both the U.S. Securities and Exchange Commission (SEC) and the U.S. Commodity Futures Trading Commission (CFTC) as a Derivatives Clearing Organization. Named 2016 Clearinghouse of the Year - The Americas by FOW Magazine and 2016 Clearinghouse of the Year by Global Investor/ISF Magazine, OCC now provides central counterparty (CCP) clearing and settlement services to 20 exchanges and trading platforms for options, financial futures, security futures, and securities lending transactions. More information about OCC is available at [www.theocc.com](http://www.theocc.com).