Managed Futures and Volatility: Decoupling a "Convex" Relationship with Volatility Cycles

Kathryn M. Kaminski, PhD., CIO and Founder, Alpha K Capital LLC

INTRODUCTION

2011 was a period fraught with turbulence in financial markets. Managed Futures strategies, despite their common association with long volatility, did not fare as well as some might have expected amidst this turbulence. A closer look at volatility, what it means to be long or short volatility, and Managed Futures performance across different regimes in volatility can provide insights into the strategy's complex or "convex" relationship with volatility. A closer look at the cycles of volatility demonstrates that Managed Futures is able to capture "crisis alpha" for investors over negative volatility cycles, while in certain turbulent periods they also face some of the same "short volatility" risks that plague many hedge fund strategies.

DEFINING VOLATILITY, LINKS TO BEHAVIORAL FINANCE

Volatility is often used as a measure of the amount of uncertainty or level of risk in markets. In practice, volatility is estimated by using either the standard deviation of a sequence of returns or implied volatility in options contracts.[1] As volatility rises, uncertainty has entered the markets. When volatility goes down the level of uncertainty has gone down. Volatility is cyclic in nature just like the booms and busts of equity markets. The cyclical nature of volatility may be driven by different cycles of human behavior initiated by either positive or negative stimuli.[2] Positive volatility cycles are driven by overconfidence, greed, and exuberance similar to a lucky gambler in a casino. Negative volatility cycles are driven by fear, anxiety, and distress. Negative volatility cycles are much longer and more drastic than positive volatility cycles. Volatility cycles are consistent with theories on human behavior which have widely documented the stark asymmetric impact of losing as opposed to winning. The bottom line is that we all hate to lose money and we actually hate losing money even more than we enjoy making it.

In the following sections, negative and positive volatility cycles are explained. Figure 1 presents a negative volatility cycle and Figure 2 explains positive volatility cycles and their connection to negative volatility cycles. In both cases the base case is a "state of normalcy" where volatility is low and market participants feel generally safe in markets. When markets are in a state of relative normalcy, risks may be hidden and investors may have a calm and possibly superficial sense of safety. Examples of these types of hidden risks include credit and liquidity risks. These types of hidden risks are under the surface and they tend to pop up unexpectedly having sometimes disastrous consequences on market value.

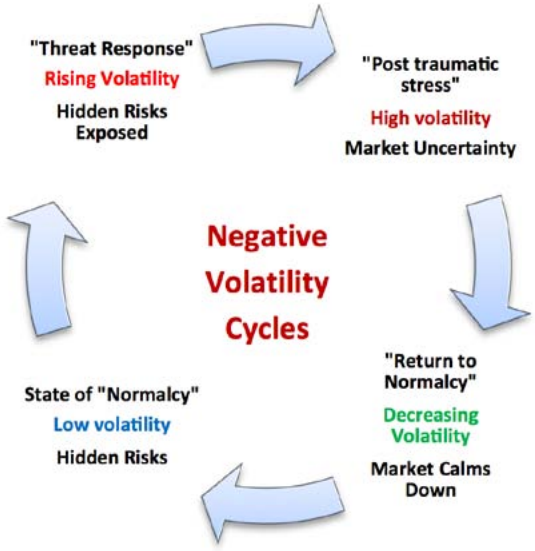


Figure 1: A Schematic of Negative Volatility Cycles

[1] Mathematically, volatility can be measured by proxy using standard deviation. Standard deviation allows you to see how much something deviates from the average.

[2] Research in empirical behavioral finance has demonstrated that different parts of the brain are involved in the coding of gains and losses. Differences in individuals' responses over losses and gains can be linked to actual financial decision making. See Knutson et al. 2011 and Knutson and Kuhnen 2005.

NEGATIVE VOLATILITY CYCLES

If something unexpected happens and it is bad, market participants perceive this as a threat and investors scramble to deal with the situation while volatility rises. After the scramble, investors are still shocked and stunned by their experiences leaving them in a state similar to post-traumatic stress where their appetite and preferences for risk differ greatly from prior to the "traumatic event". Just like individuals post trauma, market participants may perceive threats everywhere even if they may or may not exist. They may become overcome with fear and anxiety at much higher levels than usual. This period will be a period of high volatility and uncertainty in markets will be drastically different than during a state of normalcy. Human behavior post stress is consistent with this pattern in markets. As the fear slowly eases away over time volatility or uncertainty in markets will begin to decline again in a "return to normalcy."[3]

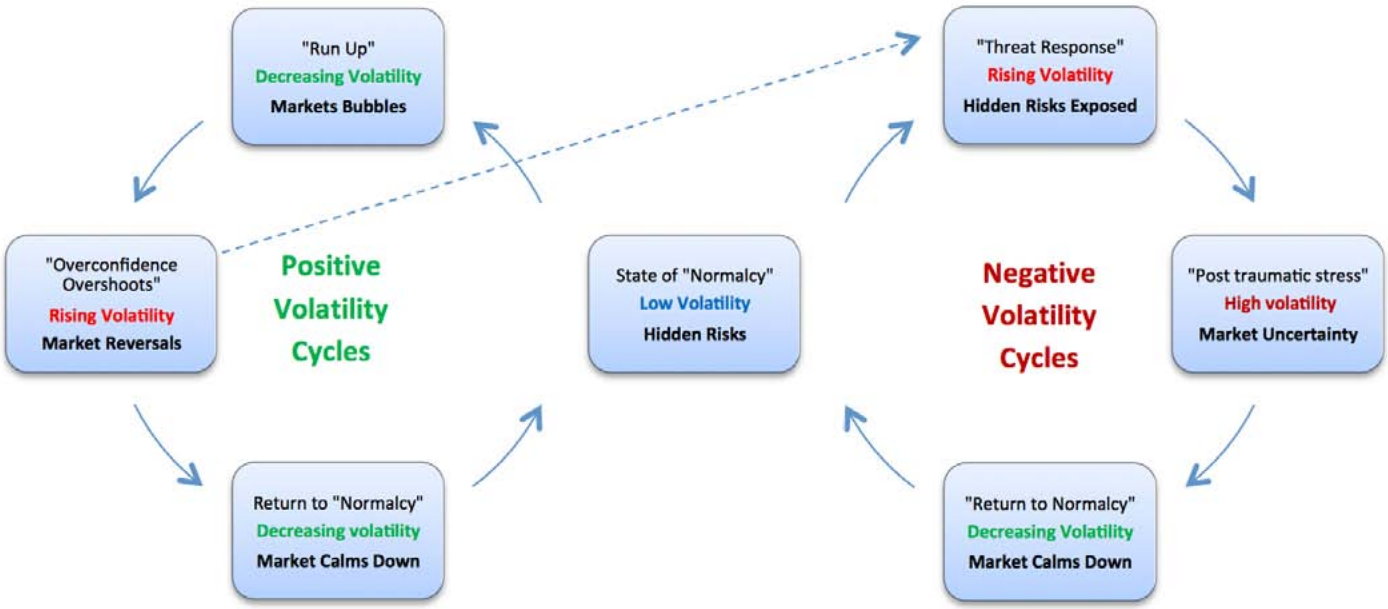


Figure 2: A Schematic for Positive and Negative Volatility Cycles and Connections Between Them

POSITIVE VOLATILITY CYCLES

If something unexpected happens and it is positive, investors may tend to feel surges of exuberance resulting in overconfidence. Biologists call this behavior the "winner's effect" where winning a perceived challenge results in increased levels of confidence (which may be due to surges in testosterone and testosterone cycles) which in turn leads to an increase in risk-taking behavior in futures challenges.[4] This change in investor behavior will cause a run-up in market values (similar to an asset bubble). The run-up is often followed by a successive reversal and corresponding surge in volatility due to large price changes and investors reaction to taking losses. In certain cases, but definitely not all, if the reversal is deep enough and the reversal can be perceived as a "threat", it may begin a new negative volatility cycle. Figure 2 demonstrates the path of a reversal (the dotted arrow) which breaks the positive cycle and jumps directly into a negative cycle. The run-up in equities up until the summer of 2011 and the subsequent reversal following is an example of a reversal which started a negative cycle in volatility because following that reversal, hidden risks related to solvency of US government debt and political risk came to the forefront.

[3] Coates, Gurnell, and Sarnyai (2010) and Coates and Herbert (2008) examine the role of steroid hormones and their role in financial risk taking using physiological data as well as performance data from real traders on a London trading floor. They show that testosterone is directly linked to return while cortisol (the stress hormone) is directly linked to uncertainty (as measured by implied volatility) and risk taking (variance in the P&L of market participants). Their research may help provide the link between economics and neuroscience. Cycles in hormone production have often been used by biologists to explain animal behavior in competitive settings.

[4] The winner's effect is a cycle demonstrated in animals (and humans) where at the onset of a confrontation, testosterone increases, a challenge occurs and if the challenge is won testosterone increases causing heightened confidence and increased risk taking. See (Coates, Gurnell and Sarnyai 2010) for further discussion of their tests of the "winner effect".

THE INVERSE EQUITY-VOLATILITY RELATIONSHIP

Consistent with the concept of positive and negative volatility cycles, empirical evidence has shown that equity markets exhibit a net "short volatility" position. Since 1990, the correlation of equities with changes in volatility is roughly -60% but in the past few years that correlation has been closer to over -80%. Put simply, this means that equity markets tend to lose money when volatility or uncertainty increases or volatility tends to be high when equity markets take losses. Given the explanation of volatility cycles, equities losses represent a "threat" for investors which increases volatility and alters risk preferences going forward. Recent research on the inverse relationship between equity and volatility has shown that, despite previous theories regarding this effect, traditional fundamental factors may not be to blame for this relationship. Instead, the equity markets relationship with volatility may be caused by the fact that our risk preferences are conditional on past experience consistent with the concept of volatility cycles.[5] In simple terms, following difficult periods in equity markets investors will alter their risk preferences since the memory of traumatic events like 2007-2008 are still vivid in their memories. The inverse equity-volatility relationship is apparent in the graph below. When equity markets take losses, volatility is up and vice versa.

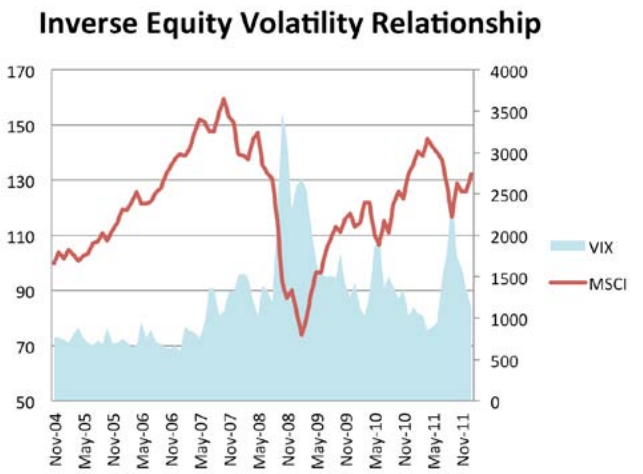


Figure 3: The Inverse Equity-Volatility Relationship – MSCI World Gross and the VIX, Source: Pertrac

WHAT DOES IT MEAN TO BE CLASSIFIED AS "LONG VOLATILITY" OR "SHORT VOLATILITY"?

Despite the simple interpretation of volatility as a measurement of uncertainty, the classification of "long volatility" or "short volatility" is often relatively complex and loosely used to describe many different strategies. Strategy types can be divided into two groups: pure-play volatility strategies and convex (or concave) volatility strategies. Pure play strategies are rather straightforward yet convex (concave) volatility strategies, which often depend on extreme event performance, tend to have complex relationships with volatility that may be hard to predict.

- **A pure-play in "long volatility"** is a simple long position in volatility. One of the easiest ways to take a pure-play long position in volatility is by taking long positions in volatility futures or in volatility or variance swaps. Similar to a long position in a stock, a long position in volatility makes money when volatility is rising and loses money when volatility falls. When volatility is high or low, but not moving up or down, a long position in volatility (similar to a long position in a stock with a high value) remains volatile, neither going up or down in value. The key point being that a pure-play position in volatility, like a position in a stock, changes most dramatically only during rises and falls in volatility. A pure-play "long volatility" strategy will have very high positive correlation with changes in volatility.

- **A pure-play in "short volatility"** is a simple short position in volatility. The easiest way to achieve this is a short position in volatility futures contracts or selling volatility or variance swaps. A pure-play short position in volatility is highly negatively correlated with changes in volatility. In contrast with a "long volatility", this strategy will perform well during a period of declining volatility or return to normalcy of volatility cycles.

- **A convex strategy with "long volatility" exposure** – is any strategy which tends to have U-shaped performance where both large positive and negative extreme events in markets result in positive performance. A simple example of convex long volatility strategy is a straddle or strangle position which combines both long puts (which make money on the downside similar to insurance) and long calls (which make money on the upside). Strategies which behave "loosely" similar to a straddle position are often also classified as "long volatility" for their possibility to achieve positive performance during positive and negative extreme events. Since investment returns tend to be more likely to have large negative events, it is mostly the negative events that are of interest for convex investment strategies. Managed Futures is an example of a strategy which may be considered a convex long volatility strategy.

- **A concave "short volatility" exposure** is any strategy which tends to have an upside down U-shaped performance where both negative and positive extreme events result in negative performance. The purest form of "short volatility" strategies of this type would be to sell a straddle which involves selling insurance and selling upside. This type of strategy has positive performance in the absence of these extreme positive or negative events. Hedge fund strategies which experience poor performance during these times are often said to hold beta expansion risk.[6] Most hedge fund strategies tend to fall into this class.

[5] In a recent working paper by Hasanhodzic and Lo (2010), they demonstrate that the "short" volatility relationship of equities cannot be shown to be due to leverage. Traditionally, the inverse relationship between equity markets and volatility was often attributed to Black's Leverage effect. This argument suggested that the de-levering of positions and the de-levering of company balance sheets was to blame for the increased volatility in markets. The basic idea of this concept is that as value goes down across markets the risk of financial distress increases because companies will have the same debt, but less equity. This, in turn, would cause more uncertainty and risk of solvency making companies riskier to invest in. In fact, in Hasanhodzic and Lo's conclusion, they point towards alternative theories to explain this relationship based on conditional risk taking behavior.

[6] Beta expansion risk is the risk that a portfolio will suffer during down markets. This risk is seen in hedge fund strategies which may find their strategies experience problems when markets are in crisis due to difficulty in maintaining collateral and uncertainty in their trades.

Given the rather broad definition of concave "short volatility" exposure and that fact that it impacts most hedge fund strategies, it is important to discuss **"short volatility bias."** Hedge fund strategies often use carefully calculated investment strategies. Many trade actively in their portfolios, employ leverage, take offsetting positions to hedge risks, and invest aggressively. Given this, when markets are stressed and there are extreme movements in prices their carefully chosen positions tend to be stressed as well. This stress results in margin calls from their brokers to cover positions and in some cases redemptions from investors, which may cause them to have trouble with collateral, or difficulty getting collateral from their prime brokers. Positions may have to be closed or adjusted at the wrong moment. The main point is that carefully constructed and implemented strategies with hedging and leverage may unravel in times of stress. This unraveling caused by spikes in volatility and short term turbulence in market prices will cause losses for these strategies. This bias to volatility is called a "short volatility bias" and strategies with this bias will tend to be concave "short volatility" strategies.

In practice, the VIX Index is the most commonly cited source for measuring volatility since it represents volatility **implied** in moderately short term options contracts on the S&P 500. Implied volatility is forward looking while historical volatility is backward looking. Implied volatility is the level of volatility that is implied in the prices for option contracts (contracts which are essentially prices for payoffs in extreme events) based on market participants' views **today** looking toward the future. Historical volatility is a snapshot of the past events, not what markets expect for the future.

Given the wide array of derivatives contracts, there are many ways to get a direct exposure to volatility. Commonly used contracts include volatility futures, volatility options, exotic options based on volatility, options, volatility swaps, variance swaps, etc. These contracts are often termed as giving you access to positive **vega**. Vega is a measure of the sensitivity of a contract to changes in volatility. Vega is a simple way of estimating how much your position will change if there is an increase in volatility. Given this terminology, equity positions have negative vega i.e. they will lose money than gain "on average" when volatility increases.

One of the biggest problems with the term volatility is that it doesn't tell you the whole story. Depending on the market scenario, rising volatility can come from two sources: "post run-up" reversals of positive volatility cycles or "threats" during negative volatility cycles. In the following sections, it is necessary to decouple volatility by the type of volatility cycle to get a better picture of Managed Futures' relationship with volatility. First, we will review Managed Futures as a strategy and detail where the long volatility and convex classification comes from.

WHAT IS MANAGED FUTURES?

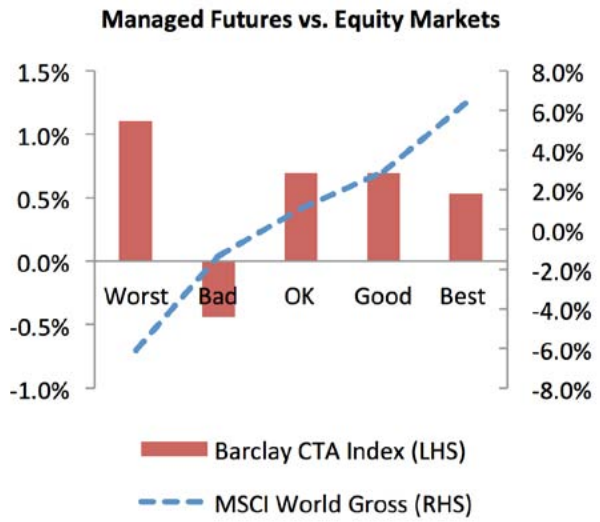
Managed Futures strategies are futures based, highly liquid, regulated, low counterparty risk strategies. The Managed Futures (CTA Space) has generally been dominated by trend following strategies. They follow trends across the entire scope of futures investments including equities, fixed income, commodities, and currencies. Trend following is a technique of using past prices and data to determine positions based on a perceived trend in financial price data. A trend following approach will be most successful when there are trends in financial markets. Since equity is often the main focal point for trending markets, it is no surprise that bigger moves for equities are better times for trend followers. Given that Managed Futures strategies trade in highly efficient markets, they earn their stripes in times when markets are least efficient. Crisis periods represent the moments when these strategies have a competitive advantage based on their liquid, adaptable, and opportunistic approach. Given this description, Managed Futures is one of the few strategies capable of accessing the ever coveted "crisis alpha" opportunities which occur during equity market crisis.[7]

WHERE DOES THE "LONG VOLATILITY" OR "CONVEX" CLASSIFICATION COME FROM?

In 2001, Fung and Hsieh wrote a seminal paper on trend following where they demonstrated the convex or "straddle" like relationship between Managed Futures and equity markets. This straddle-like relationship showed that Managed Futures is similar, **but not equal** to a position in volatility. Fung and Hsieh also demonstrated how you could (in theory) attempt to replicate a trend following strategy with lookback straddles (a more complicated type of option contract which is not exchange traded). The fact that this type of replication is not used in practice can be a testament to the fact that trend following is not the same as a strategy of options despite having option-like characteristics.

The most important characteristic that Fung and Hsieh brought to attention was the "convex" option-like relationship between trend following and equity markets. To demonstrate this simply, equity market returns can be divided into 5 bins. These bins range from the worst equity months (or bottom 20% of returns for equity) to the best equity months (top 20% of returns for equity). When equity market returns are divided up and compared with the performance of Managed Futures it results in a convex function (A convex function is a curve that holds water – a bowl like shape). Figure 4 plots the conditional performance of Managed Futures versus equities under 5 subgroups and a scatter plot. The bar graph on the left of Figure 4 shows positive performance for the worst months in equities and good performance during good periods in equity markets, suggesting a convex relationship. It is important to remember that a convex relationship implies that the strategy has good performance in both tails of equity markets – both positive and negative extreme events. Given equities inverse relationship with long volatility, a natural extension which is often made is that Managed Futures is "long volatility".

[7] Crisis alpha opportunities are defined as profits which are earned from the persistent trends which occur during times of equity market crisis. See Kaminski, 2011, "In Search of Crisis Alpha: A Short Guide to Investing in Managed Futures," CME Education Group, April 2011.



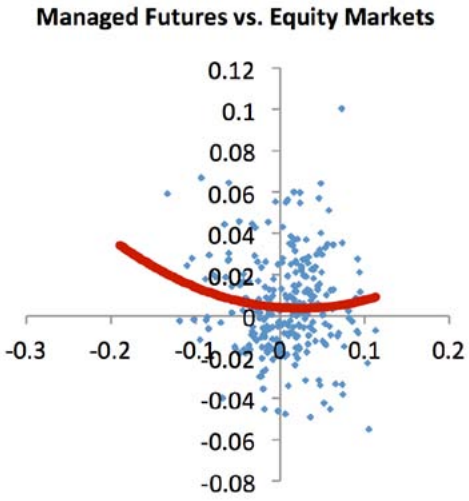
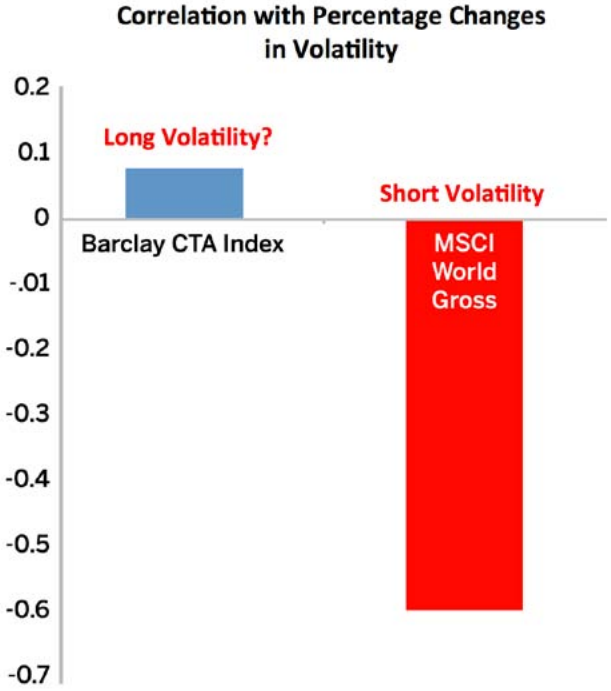


Figure 4: Managed Futures (Barclay CTA Index) vs. Equity Markets (MSCI World Gross) Bar Chart and Scatterplot. Source: Pertrac and HFR

DESPITE BEING CLASSIFIED AS "LONG VOLATILITY": MANAGED FUTURES IS BOTH "LONG VOLATILITY" AND "SHORT VOLATILITY"

By taking a closer look at the relationship between volatility and Managed Futures, Managed Futures is only slightly positively correlated with changes in volatility at 7% when compared with the -60% correlation between equity and volatility (See Figure 5 below). If Managed Futures was truly "long volatility" the correlation should be much larger and positive. This simple statistic shows that the effects of different types of volatility cycles needs to be decoupled from the overall impact of volatility on Managed Futures to better pinpoint under what type of volatility scenario Managed Futures will perform.



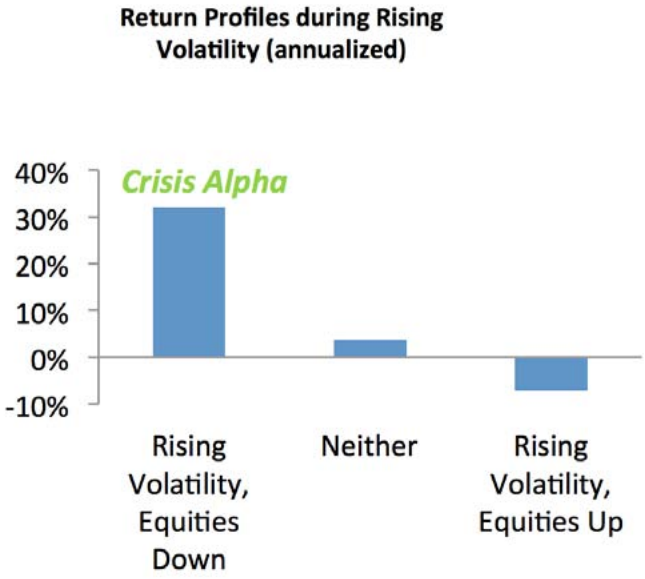


Figure 5: Correlations with Changes in Volatility: Managed Futures (Barclay CTA Index) and MSCI World Gross. Source: Pertrac and HFR

Figure 6: Return Profiles during Rising Volatility for Managed Futures Source: Pertrac and HFR

A closer look at times where a "breakout"[8] in volatility occurs can help clarify the origins of Managed Futures' performance during periods of rising volatility. These breakouts can be classified as being initiated by positive events (similar to a "run-up" of positive volatility cycles) or negative events (similar to a "threat" of negative volatility cycles). Given the period of January 1990 until January 2012, there are 265 months during this period and there are 51 months (or 19.2%) which qualify as a rising volatility breakout movement upward. 23 of these are precipitated by positive equity returns and 28 are by negative equity returns. In Figure 6, the annualized performance of Managed Futures during rising volatility following negative events is very large and positive, whereas Managed Futures performance during rising volatility following positive events is negative. Figure 7 plots the performance of both equities and Managed Futures during positive volatility cycles, negative volatility cycles and both combined. A closer look at Figure 7 suggests that Managed Futures may deliver "crisis alpha" during the "threat" or crisis phase of a negative volatility cycle while they seem to suffer during the reversals associated with positive volatility cycles (which sometimes may also be the beginning of a crisis event).[9] This simple decoupling of volatility demonstrates that Managed Futures is "long volatility" collecting "crisis alpha" over negative volatility cycles and "short volatility" during positive volatility cycles where quick reversals hurt the strategy. Since the overall relative size of "crisis alpha" for Managed Futures is substantial, the strategy "on average" is net "long volatility."

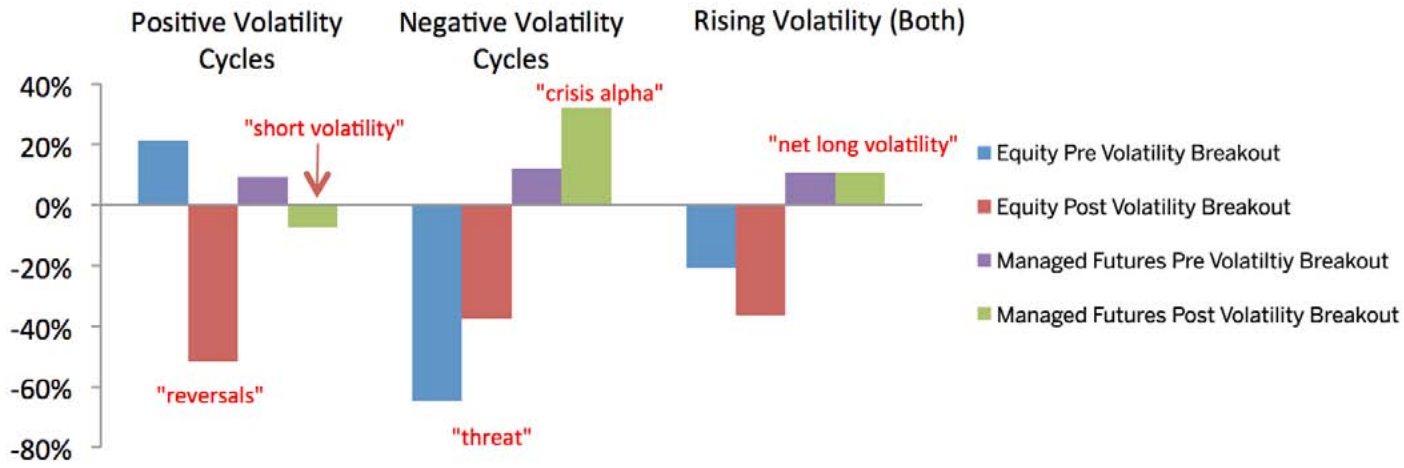


Figure 7: Conditional Performance pre and post Breakout for Equity (MSCI World Gross) and Managed Futures (Barlcay CTA Index) Source: Pertrac and HFR

[8] In this case, a simple breakout in volatility is defined as a move in the VIX which was more than one standard deviation away from the past 9 months of volatility. If this move is precipitated by a negative month, this breakout is deemed to be following a down equity scenario and if the move is precipitated by a positive month the breakout is deemed to be following an up equity scenario. Breakouts which are precipitated by a positive (negative) month model positive (negative) volatility cycles.

[9] Crisis alpha opportunities are defined as profits which are earned from the persistent trends which occur during times of equity market crisis. See Kaminski, K., "In Search of Crisis Alpha: A Short Guide to Investing in Managed Futures," CME Education Group, April 2011.

EQUITY MARKET CRISIS, NEGATIVE VOLATILITY CYCLES, AND MANAGED FUTURES

Given that investment community as a whole is holding equity, equity market crisis or smaller equity market crisis events (similar to the flash crash) represent a threat to investors. In a recent analysis of crises and hedge funds, it has been shown that most hedge fund strategies are holding latent common idiosyncratic risks in liquidity, credit and volatility.[10] These risks stem from the fact that our investment universe is more interconnected and coordinated than it may seem (in times of normalcy) and the use of leverage in investment strategies may accelerate these effects. This means that when these hidden risks come out, most investors (including hedge funds) are holding some or all of these risks. Most investors experience losses which is both perceived as a "threat", as well as it causes a violation in risk control protocols and flocks of investors correspondingly attempt to dump many of these risks by decreasing credit exposures and taking leverage down. As a result, times of market crisis, for both behavioral and institutional reasons, represent times when market participants become synchronized in their actions creating trends in markets causing surges in volatility. Only a few select market players, those holding less of these hidden risks and adaptable enough to take advantage of these trends, are able to profit from "crisis alpha" opportunities.[11]

Market crisis is then followed by periods of uncertainty (or high volatility). The hidden risks have come out. There are no new serious risks plaguing investors but investors change their risk appetite based on their previous negative experiences. A Managed Futures strategy will have difficulty finding real trends in an uncertain market environment. The selective advantage the strategy has during crisis will no longer be valid since other investors will also be less exposed to credit and liquidity. In fact, when equity markets surge back, Managed Futures strategies may or may not be able to catch trends since the positive trends tend to revert much quicker (similar to the shorter positive volatility cycles).

A CLOSER LOOK AT MANAGED FUTURES PERFORMANCE AND VOLATILITY POST CREDIT CRISIS

The credit crisis was a major crisis event in the history of financial markets. The event shocked and traumatized investors who scrambled desperately to make sense of the event and its implications on their portfolios. Since the event originated in the banking sector, the hidden issues relating to credit solvency, counterparty issues, and liquidity plagued almost all investors world-wide. When these risks came to the forefront, losses were immense and fear and uncertainty soared across financial markets. Lost in this scramble, there were "crisis alpha" opportunities to be made. Managed Futures strategies, being one of the few that were resilient enough to take advantage of some of these opportunities, earned exemplary returns in 2007 and 2008. Post trauma, investors were still un-nerved by the past and volatility remained high as investors found more and more issues to be concerned and worried about. Risk appetite was drastically altered and investors, including hedge funds, had difficulty making money in uncertain markets. Managed Futures also struggled to make money in uncertain markets. In fact, the Flash Crash and the turbulent Summer/Fall of 2011 proved to be difficult times for Managed Futures to provide crisis alpha despite the losses in equity markets and increases in volatility. This performance is shown in Figure 7 below.

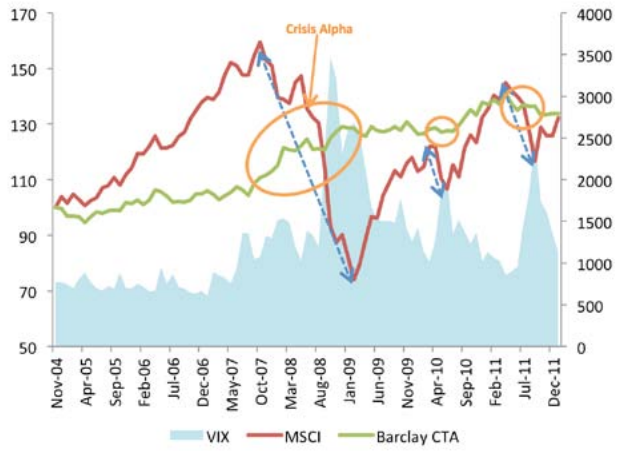


Figure 7: Past Performance of Managed Futures (Barclay CTA Index), MSCI World Gross, and the VIX Source: Pertrac and HFR

The inability of the strategy to deliver crisis alpha during these times could be attributed to the following points. First, risk preferences may still residually reflect 2007-2008. Second, most investors are not holding as many hidden risks as they might have prior to 2007-2008 decreasing the strategy's competitive advantage. Third, the subsequent drawdowns in equity markets in 2010 and 2011 pale in comparison to the drawdowns experienced during 2007-2008, limiting the quantity of crisis alpha to be captured. These events, in the long run, pale in comparison to the bear markets of 2007-2008. Fourth, each of the two subsequent drawdown periods where initiated by a positive volatility cycle with quick reversals which are, on average, difficult for Managed Futures strategies which may hold a "short volatility" bias based on their use of leverage. The role of hidden risks, common in hedge fund strategies, can also help explain why Managed Futures had such an advantage in 2007-2008 as opposed to Spring 2010 and Summer/Fall 2011. These risks in Managed Futures strategies, as well as their prevalence during the past three crisis periods, are detailed below in Table 1.

[10] See Billio, Getmansky, and Pelizzon (2010) for a more detailed analysis of these risks and their connections with systemic risk in hedge funds during crises.

[11] This explanation is derived using a theoretical framework proposed by Andrew Lo (2004, 2005, and 2006) entitled the Adaptive Markets Hypothesis (AMH). This framework explains how markets evolve how market players succeed or fail based on the principles of evolutionary biology. For a more in depth understanding of this theory, please consult Lo (2004 and 2006).

	Liquidity Risk	Credit/ Counterparty Risk	Volatility Risk	Performance
Managed Futures	**Limited** futures markets are some of the most liquid markets	**Limited** clearinghouse mechanisms limit counterparty risk (credit sensitive instruments will make big moves)	**Moderate** Leverage increases exposures, higher chance of call on collateral due to marking to market, large potential drawdowns when trends change quickly	The strategy has an advantage over other illiquid strategies by not carrying liquidity and credit risks. Given the use of leverage, the strategy does carry short term "short volatility" risk
Recent Crisis Events				
Credit Crisis/Lehman Bros.	Extreme, Inability for brokers to give lines of credit, collateral called, toxic assets	Extreme, credit spreads widened significantly, serious counterparty issues	Extreme, highest levels of volatility in history	Hedge funds bad, Managed Futures good
Flash Crash	Marginal	Moderate, sovereign credit issues	Moderate, Big price swings, run up and quick unwind and reversal	Hedge funds bad, Managed Futures ok
Turbulent Summer/Fall 2011	Marginal	Moderate, Renewed sovereign credit issues	Extreme, Large intraday price swings, tremendous volatility	Hedge funds bad, Managed Futures ok

Table 1: Examining Hidden Risks in Managed Futures Strategies and their Prevalence in Past Crisis Events

CONCLUSIONS

Managed Futures is often said to have a convex relationship with equity markets. Managed Futures is also labeled as a "long volatility" strategy. Although these two descriptions are partially correct, they are statistical in nature. Instead if we think about markets as going through cycles in volatility where risk appetite depends on the past experiences of market participants, the performance of Managed Futures can be explained in the context volatility cycles. Managed Futures strategies earn their stripes by being one of the few strategies which are able to catch "crisis alpha" during negative volatility cycles, yet the same characteristics which allow the strategy a chance to perform during crisis do not help during quick reversals similar to positive volatility cycles.

Investors who may have labeled Managed Futures as long volatility may have been disappointed in Spring of 2010 and Summer/ Fall 2011. Managed Futures is a strategy which makes money during breakdowns in market efficiency, these breakdowns usually are the most pronounced during financial crisis or periods of "threat". As a result, Managed Futures ability to capture these inefficiencies will be directly related to the level of inefficiency which occurs during crisis and the negative volatility cycle that follows crisis. A Managed Futures strategy is reliant on the calm before the storm or on markets going back to a state of normalcy where investors become comfortable in risk taking again. This allows investors to forget about past losses and pile on new hidden risks unknowingly leaving them unprepared for the next financial storm that may lay ahead.

BIOGRAPHY

Kathryn M. Kaminski, PhD, is the CIO and Founder of Alpha K Capital LLC, a thematic fund of hedge funds focused on "pro-active strategies" for tail risk management. Prior to starting Alpha K Capital, Kathryn worked in investment management as a Senior Investment Analyst at RPM, a fund of hedge funds in Managed Futures. While at RPM, she coined the phrase "crisis alpha" to describe Managed Futures strategies with her work in Futures Magazine and for the CME Education Group as a market commentator. She also has quant experience in both emerging fixed income and credit markets. Kathryn earned her PhD at the MIT Sloan School of Management where she did research on financial heuristics in collaboration with Professor Andrew W. Lo as part of the MIT Laboratory for Financial Engineering. Her research interests are in the area of portfolio management, asset allocation, financial heuristics, behavioral finance, and alternative investments. She holds and has held academic lecturing positions in the areas of derivatives, hedge funds, and financial management at the Stockholm School of Economics, the Swedish Royal Institute of Technology (KTH), and the MIT Sloan School of Management.

For more articles from Kathryn Kaminski, compliments of CME Group, please visit www.cmegroup.com/kkaminski

Contact information: kkaminski@alphakcapital.com

Selected References

- Billio, M., Getmansky, M., and L. Pelizzon, 2010, "Crises and Hedge Fund Risk," Working paper Isenberg School of Management at University of Massachusetts and the Department of Economics at the University of Venice.
- Chan, N., Getmansky, M., Haas, S., and A. Lo, 2006, "Systemic Risk and Hedge Funds," The Risk of Financial Institutions (NBER Book Chapter).
- Coates, J. M., and J., Herbert, 2008, "Endogenous steroids and financial risk taking on a London trading floor," Proceedings of the National Academy of Sciences, USA 105, 6167-6172.
- Coates, J.M., Gurnell, M., and A., Rustichini, 2009, "Second-to-fourth digit ratio predicts success among high frequency traders," Proceedings of the National Academy of Sciences, USA 106, 623-628.
- Coates, J.M., Gurnell, M., and Z. Sarnyai, 2010, "From molecule to market: steroid hormones and financial risk taking," The Philosophical Transactions for the Royal Society of Biological Sciences, 365, 331-343.
- Fung, W., and D. Hsieh, 1997, "Empirical Characteristics of Dynamic Trading Strategies: The Case for Hedge Funds," Review of Financial Studies 10, 275-302.
- Fung, W., and Hsieh, D., 2001. "The Risk in Hedge Fund Strategies: Theory and Evidence from Trend Followers," The Review of Financial Studies, 2, 313-341.
- Hasanhodzic, J., and A., Lo, 2011,"Black's Leverage Effect is not due to Leverage," Working Paper, MIT Sloan, February, 2011.
- Kaminski, K, "Diversifying Risk with Crisis Alpha," Futures Magazine, February 2011.
- Kaminski, K., 2011, "Offensive or Defensive," IPE Magazine, July 2011.
- Kaminski, K., 2011, "In Search of Crisis Alpha: A Short Guide to Investing Managed Futures," CME Education Group, April 2011.
- Kaminski, K., 2011, "Regulatory Impact on the Performance of Trend Following," Stocks Futures and Options Magazine (SFO), June 2011.
- Kaminski, K., and A. Mende, 2011, "Crisis Alpha and Risk in Alternative Investments," CME Education Group, April 2011.
- Knutson, B., C. Kuhnen, and G. Samanez-Larkin, 2011, "Gain and loss learning differentially contribute to life financial outcomes", PLoS ONE, 6 (9), September 2011.
- Knutson, B., and C. Kuhnen, 2005, "The Neural Basis of Financial Risk Taking", Neuron, 47:763-770, September 2005.
- Lo, A., 2006, "Survival of the Richest," Harvard Business Review, March 2006.
- Lo, A., 2005, "Reconciling Efficient Markets with Behavioral Finance: The Adaptive Markets Hypothesis", Journal of Investment Consulting 7, 21–44.

IMPORTANT DISCLOSURE

The views contained within this report are those of the author and are reprinted with permission. No part of this document contains an opinion or analysis of the Altegris companies or any Altegris investment product. PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. There is no guarantee that any investment product will achieve its objective, generate profits or avoid losses.

This article is being provided for informational purposes only and should not be construed as investment advice of any kind and does not contain a recommendation to buy or sell any specific securities. The comments and analysis herein are based on market conditions at the time of writing and future prospects may not be realized. Market conditions are subject to change without notice and different economic periods will produce different results. The reader should not assume that all securities identified and discussed were or will be profitable and the report should not be regarded by recipients as a substitute for the exercise of their own judgment.

It is important to review investment objectives, risk tolerance, tax liability, and liquidity needs before choosing an investment style or manager. Equity investing involves market risk or the risk that stocks will decline in response to adverse company news, industry developments or a general economic decline. There are substantial risks and conflicts of interests associated with managed futures and commodities accounts, and one should only invest risk capital. The success of an investment is dependent upon the ability of a commodity trading advisor (CTA) to identify profitable investment opportunities and successfully trade. The identification of attractive trading opportunities is difficult, requires skill, and involves a significant degree of uncertainty. CTAs have total trading authority, and the use of a single CTA could mean a lack of diversification and higher risk. The high degree of leverage often obtainable in commodity trading can work against you as well as for you, and can lead to large losses as well as gains. Returns generated from a CTA's trading, if any, may not adequately compensate for the business and financial risks assumed. CTAs may trade highly illiquid markets, or on foreign markets, and may not be able to close or offset positions immediately upon request. Investors may have market exposure even after the CTA has a request for closure or liquidation. This brief statement cannot disclose all the risks and other significant aspects of the commodity markets, and investor should carefully study disclosure documents before they trade, including the description of the principal risk factors of an investment.

Altegris and its affiliates are subsidiaries of Genworth Financial, Inc. and are affiliated with Genworth Financial Wealth Management, Inc., and include: (1)Altegris Advisors, LLC, an SEC registered investment adviser; (2) Altegris Investments, Inc., an SEC-registered broker-dealer and FINRA member; (3)Altegris Portfolio Management, Inc. (dba Altegris Funds), a CFTC-registered commodity pool operator, NFA member and California registered investment adviser; and (4) Altegris Clearing Solutions, LLC, a CFTC-registered futures introducing broker and commodity trading advisor and NFA member. The Altegris Companies and their affiliates have a financial interest in the products they sponsor, advise and/or recommend, as applicable. Depending on the investment, the Altegris Companies and their affiliates and employees may receive sales commissions, a portion of management or incentive fees, investment advisory fees, 12b-1 fees or similar payment for distribution, a portion of commodity futures trading commissions, margin interest and other futures-related charges, fee revenue, and/or advisory consulting fees.

Genworth Financial, Inc. (NYSE: GNW) is a leading Fortune 500® insurance holding company dedicated to helping people secure their financial lives, families, and futures. Genworth has leadership positions in offerings that assist consumers in protecting themselves, investing for the future, and planning for retirement – including life insurance, long term care insurance, financial protection coverages, and independent advisor-based wealth management – and mortgage insurance that helps consumers achieve home ownership while assisting lenders in managing their risk and capital.

Genworth has approximately 6,400 employees. Our products and services are offered through financial intermediaries, advisors, independent distributors, and sales specialists. Genworth Financial, Inc., which traces its roots back to 1871, became a public company in 2004 and is headquartered in Richmond, Virginia. For more information, visit genworth.com