



## 'True CTAs'

The promise of portfolio protection, delivered

*alternative investment solutions*

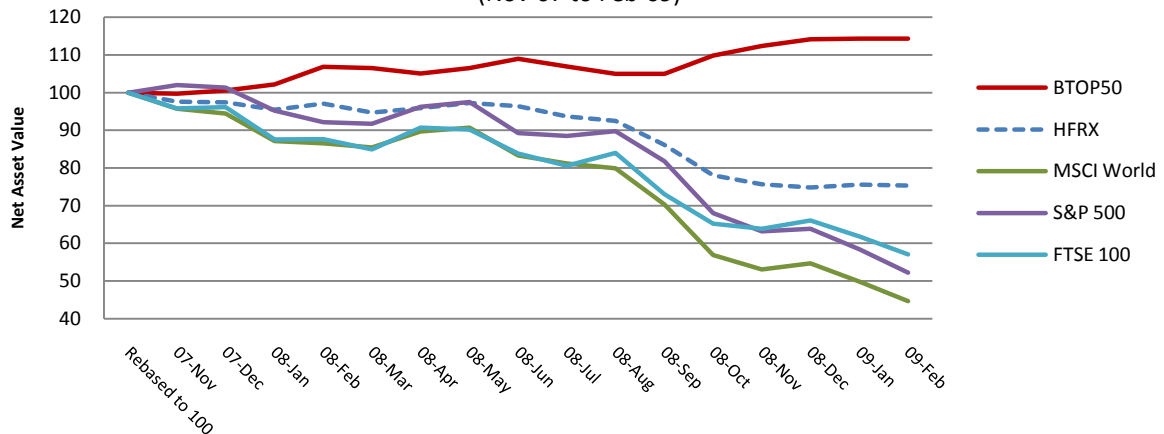
### Portfolios in Crisis

The recent financial crisis has raised questions about the promise of the hedge fund industry to deliver a risk-return profile that is uncorrelated with traditional markets. At the height of the crisis, hedge funds, taken as a group, broke through the boundaries implied by their historical correlations and suffered along with the rest of the financial industry. While some individual funds famously prospered, only a small number of sub-strategies within the hedge fund universe outperformed during this period. One of these groups of funds is those which engages in the CTA, or Managed Futures, strategy. The indexed performance of this hedge fund sub-strategy is represented in *Graph 1* below through the Barclays Top 50 (BTOP50) index. The BTOP50 represents the performance of a collection of the largest investable CTA funds, as measured by assets under management.

**Graph 1**

### Evolution of Major Indices

(Nov-07 to Feb-09)



There already exist many reasons and explanations for the poor collective performance of hedge funds during this period. The markets entered an extraordinary range of operation in which they ceased functioning by established mechanics and frameworks of understanding. In addition to breakdown of long-standing and finely crafted investment strategies, a crisis of liquidity compounded the effect by forcing fire-sales at discounted prices, the impact of which rippled geometrically throughout the industry. This resulted in hedge funds experiencing a significant increase in correlation to more traditional funds, largely forcing the industry to renege on its promise of absolute returns. Ultimately, the markets revealed how much more powerful the cycle of investor fear and greed is over that of fundamental economic forces. Uncertainty about the future shape of the financial markets persists and investors and managers alike are asking how they can protect themselves against similar occurrences in the future.

### Performance in the Mist

The CTA strategy is, generally speaking, designed to prosper in the high volatility market environments such as those experienced during a financial crisis. That CTAs offer the promise of portfolio protection in a financial downturn via outperformance relative to the rest of the industry has been repeatedly demonstrated in academic and commercial research. It was shown recently that the performance of a passive, simple managed

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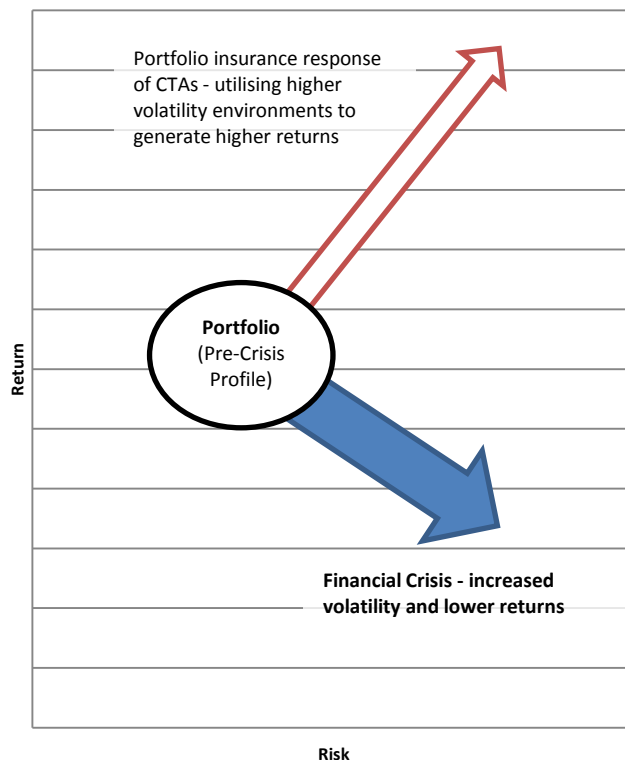
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futures strategy<sup>1</sup> would have returned 19.3% in the period March 2008 to February 2009. Typically high-liquid in nature by virtue of futures investing and free of directional biases, the CTA strategy can be considered immune to the very same effects that so negatively impacted the rest of the industry.

**Fig. 1 Portfolio Insurance Response**  
Evolution of Risk-Return Profile



However the question has not yet been asked about the relative performance within CTAs during cycles in the financial markets – are CTAs a strategy that, in a crisis, should not only outperform the industry but also their own ‘bull market’ performance? This study seeks to answer this question by examining the evolution of the risk-return profiles during the recent crisis relative to the bull years that preceded it. One would like, if not expect, to see an equal and opposite shift in return profile in counterpoint not only to the negative movements in the wider market but also to its own bull market performance as this hedge fund sub-strategy engages to fulfil the promise of portfolio protection, illustrated in *Figure 1*.

### Identifying the true CTA

What we find is that the portfolio insurance promise of CTAs does not hold true for all funds, leading us to make the distinction between *traditional* CTAs and *true* CTAs. By

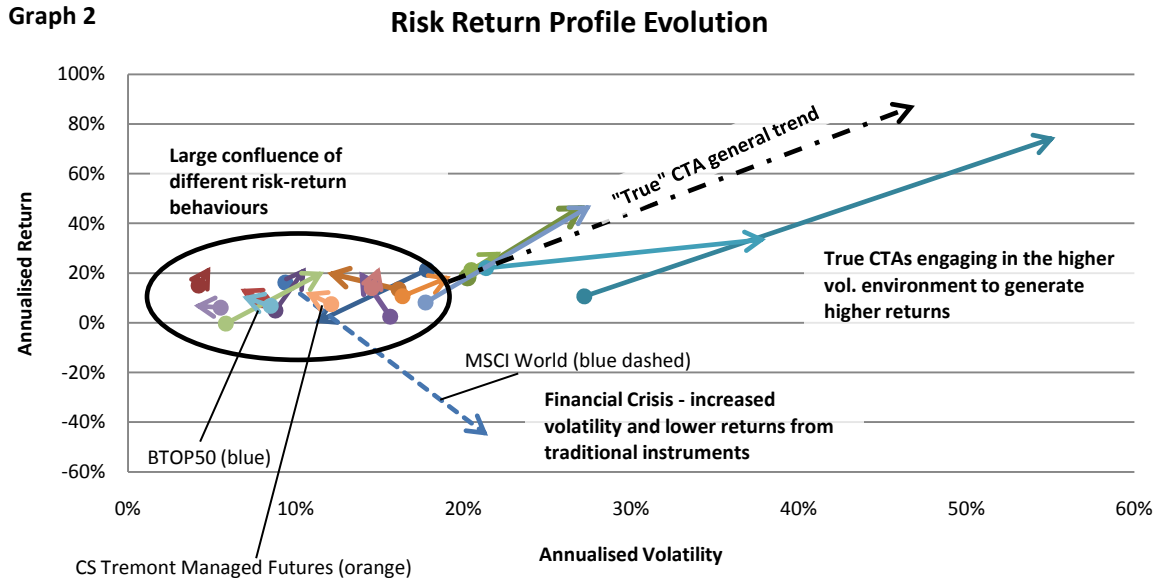
these definitions, the traditional CTA is one that is becoming increasingly correlated with traditional markets and, while still delivering outperformance during a downturn relative to traditional funds, does not see a significant improvement in its risk-return profile. In fact, some funds experience a deterioration in their profile when the strategy moves from the growth years of a value-adding market to the volatile years of a market in crisis. The true CTA, however, is one that experiences an improvement in its own risk-return profile that is commensurate with its promise to deliver portfolio protection when a financial crisis occurs.

In our study, we analyse the risk-return evolution and behaviour of a choice set of CTA funds and fund indices both pre-crisis (November 2002 to October 2007) and during the crisis (November 2007 to February 2009). By approaching this study from the point of view of portfolio protection, we position ourselves to ask the right questions about CTA performance and probe their promise downside protection. The funds for this study were chosen to be a representative sample such they would collectively span the managed futures industry in the terms of length of time trading, AUM and nuances of style and strategy. Risk-return analyses can be notoriously changeable depending on where the lines are drawn. With this in mind, the funds of the sample set were required to display relative consistency in their profiles in response to small changes in the time period of analysis.

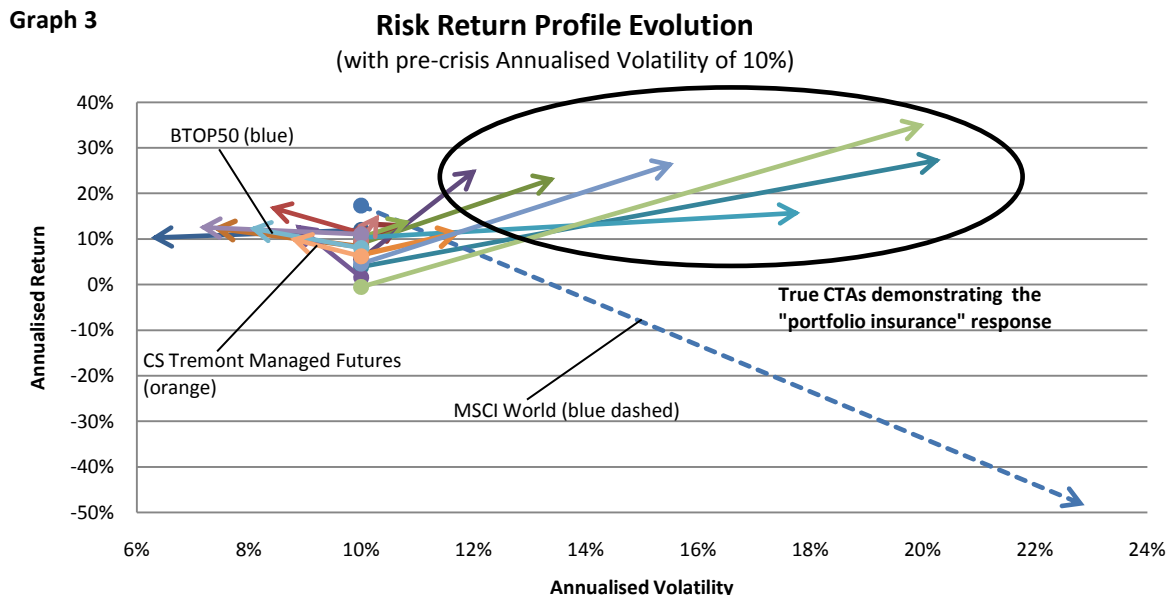
<sup>1</sup> AQR, *Understanding Manager Futures*, Winter 2010

## The Risk-Return Evolution

The results for the sample set of CTA funds are illustrated below in *Graph 2*. Each fund is represented by an arrow beginning at the point describing its risk-return profile for the pre-crisis time period and ending at the point describing its behaviour during the crisis.



We are interested in the funds that increase their risk and their return because they successfully utilise the high volatility environment to generate higher returns and in the process fulfil their promise of portfolio protection. It's still not completely clear, from *Graph 2*, which funds are responding in a manner we like, so let's make them easier to identify and standardise the results at a particular level of volatility.



Graph 3 illustrates the differing responses more cleanly and two distinct fund behaviours quickly become apparent.

1. We can readily identify the “true” CTAs as those funds that deliver the portfolio protection response as they engage in the high volatility environment to generate higher returns.
2. The “traditional” CTAs are those we identify as largely remaining flat or deliver marginally improved returns at lower volatility. In comparison to the true CTA set, many of them appear to retreat to a safer investment thesis and fail to exploit the volatile environment in which they should prosper.

There are several reasons to explain this behaviour in the traditional CTAs. As the crisis took hold, many found that their own portfolio level risk was reaching critical levels. To adjust for the increased volatility at portfolio level, they found it necessary to scale back on their positions – limiting the degree to which they could take advantage of the market conditions. Many of the larger funds also tend to have similar portfolio compositions leading to an increase in correlation between these funds when the crisis forced a deleveraging – deleveraging at precisely the moment when they were the best positioned to generate significant outperformance.

### The Butterfly Effect

While the behaviour of the traditional CTAs is not negative for a portfolio, it is important to emphasise that the portfolio protection promise of CTAs is to deliver high returns in a high volatility environment. With this mind, the traditional CTAs avoid doing damage to a portfolio but also fail to deliver on this promise. That the true CTAs also exhibit higher volatility themselves diminishes as a concern when we reflect on the central tenants of Modern Portfolio Theory (MPT).

To start with, let’s take a hypothetical portfolio with an allocation of X to Equity, Y to Bonds and the small remainder to CTAs – each with the different return generating power of E, B and CTA respectively in a value-adding market (this power represented by the size of the letters in Fig.1 and Fig. 2 below) and creating the portfolio level return P.

Fig. 2

$$XE + YB + (1-x-y)CTA = P$$

For decades, MPT has been telling us that, by virtue of being uncorrelated, a CTA allocation to traditional portfolio of stocks and bonds can yield a lower volatility, higher performing portfolio. The same can be said for fund of funds allocations as CTAs have proven themselves not only uncorrelated to traditional market instruments but also to other hedge fund sub-strategies. Therefore, if the volatility is largely netted away, the focus then becomes the magnitudes of the returns – or, more precisely, the return generation potential per unit volatility.

Let’s say now that our hypothetical portfolio is exposed to a financial crisis. The ideal response, and one we have demonstrated that the true CTA is capable of, is where the CTA generates returns to impact portfolio level returns out of all proportion to the size of its allocation - helping to maintain a healthy P.

Fig. 3

$$XE + YB + (1-x-y)CTA = P$$

## Conclusions

In the aftermath of the recent financial crisis, CTAs have proven themselves as a sub-strategy that can not only outperform the traditional markets but also the wider hedge fund industry. It is this ability of CTAs to preserve capital in the good years and to provide a portfolio protection response in the bad that makes them of interest to investors and portfolio managers alike. However, not all CTAs behave the same and the funds within this strategy can be sub-divided into those who have been shown to deliver on the promise of portfolio protection and those who didn't – what we have defined as true CTAs and traditional CTAs. Where the traditional CTAs have been shown to reduce their market exposure in favour of steadier returns, the true CTAs are those strategies that utilise the higher volatility environments of a crisis to generate significant outperformance. The effect of this in a portfolio of even a small allocation to a true CTA can be very significant.

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