

Can You Time Managed Futures?

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This white paper addresses some of the potential benefits, challenges and opportunity costs we see for investors seeking to time managed futures allocations.

US stocks continue to set all-time highs while market volatility remains extremely subdued. The CBOE VIX Volatility Index (VIX) hit a new intra-day low of 8.8 in late July 2017, compared to its long-term average of 19.5 since inception in 1990. Meanwhile, central banks are preparing to reduce liquidity injections in Europe and Japan, while the Federal Reserve is looking to tighten in the US by raising interest rates and gradually unwinding its balance sheet.

We expect volatility to increase from the current lows. Fully valued markets are likely to recalibrate due to less accommodating global monetary policy, geopolitical tension and more uncertainty for pro-growth policy like infrastructure and tax reform. A rising volatility environment with compressing valuations would be unfavorable for traditional investments such as stocks and bonds. During these periods, managed futures funds have historically experienced strong run-ups in performance, often while traditional assets struggle.

Can You Time Managed Futures?

One of the most challenging decisions for any investor is timing asset class allocations. This applies to traditional investments when rotating between stocks and bonds, as well as timing allocations to alternative investments. Successful investment timing lies in being right twice: first in determining when to add to an investment, and

- **Managed futures is an investment strategy that historically tends to perform best in a macroeconomic environment with rising volatility and sustained bullish or bearish price trends across multiple asset classes.**
- **We believe in today's environment investors and advisors should contemplate an allocation to managed futures to potentially help offset overall portfolio risk.**
- **A common question we hear from investors is about the timing of their managed futures allocation.**

secondly in deciding when to take away from that investment. Getting even one of these two decisions wrong can lead to underperformance relative to a static allocation. Given the difficulty of this task, many prudent investors choose to maintain a stable, long-term strategic asset allocation rather than attempt to make dynamic

tactical tilts. Nonetheless, there are some timing approaches that have statistical merit over long time horizons. For example, in the case of equities, it may make sense to underweight the asset class when valuations reach extreme highs, and overweight equity allocations when valuations are deeply discounted.

In this white paper we focus on whether it is possible to time an investment in managed futures. We find that historically, managed futures is a

cyclical alternative investment strategy with some regularity in its swings between periods of strong and weak performance. As with many investments, an investor's long-term return in the strategy would have been improved by buying on the dips.

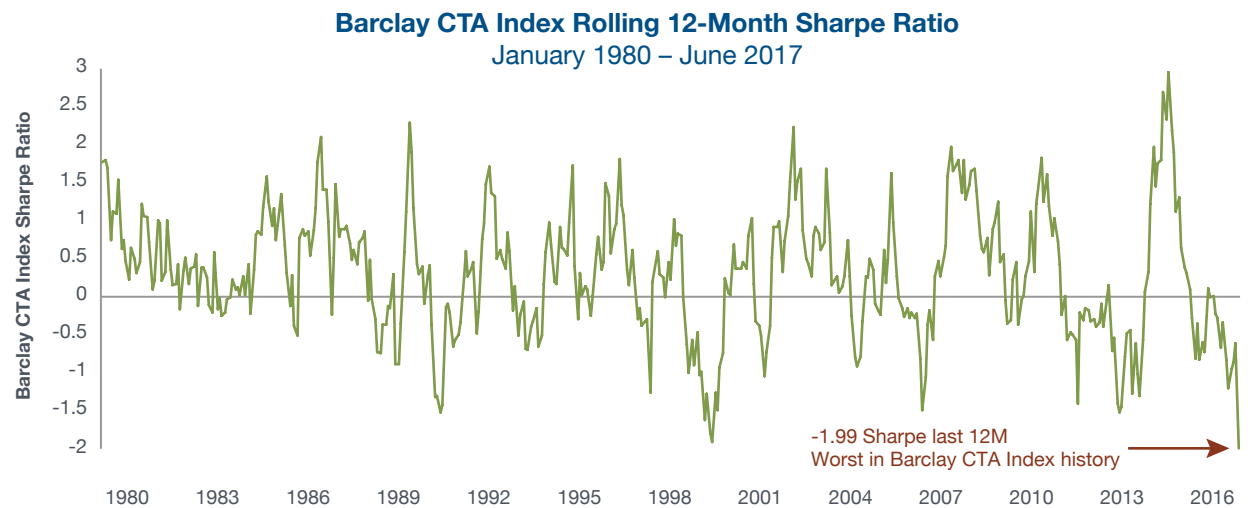
We then look at the opportunity cost of getting the timing wrong. We find that return-chasing investors who added to managed futures only after a positive run tended to miss out on a significant part of the long-term performance of the strategy.

Mean Reversion in Managed Futures Sharpe Ratios

In examining the historical long-term performance patterns of managed futures strategies, we use the benchmark index with the longest track record, the Barclay CTA Index, which represents the equally-weighted average net returns of a large set of managed futures programs, a majority of which are trend-following. The index began in 1980 with only 15 underlying trading programs and has grown to over 500 trading programs today.

It is important to convert the absolute returns of the Barclay CTA benchmark into Sharpe

ratios. Managed futures programs typically had significantly higher risk targets in the 1980s and 1990s than they do today, so this risk-adjustment is necessary for a fair comparison over time. Sharpe ratios also account for the different short-term Treasury bill rates at different points in time. This helps to distinguish between the active trading performance of managed futures programs and the passive cash yield earned on margin and excess collateral.



PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. DIVERSIFICATION DOES NOT ASSURE A PROFIT OR GUARANTEE AGAINST A LOSS. Calculated using month-end data. See Glossary for definitions.

CHART 1 Source: Bloomberg

The chart above (Chart 1) shows the rolling 12-month Sharpe ratio of the Barclay CTA Index from January 1980 to June 2017. What you can see is that the rolling 12-month Sharpe ratio fluctuated over time. It swung back and forth between a peak of +3 and a low of -2, with negative periods followed by positive periods and vice versa. The

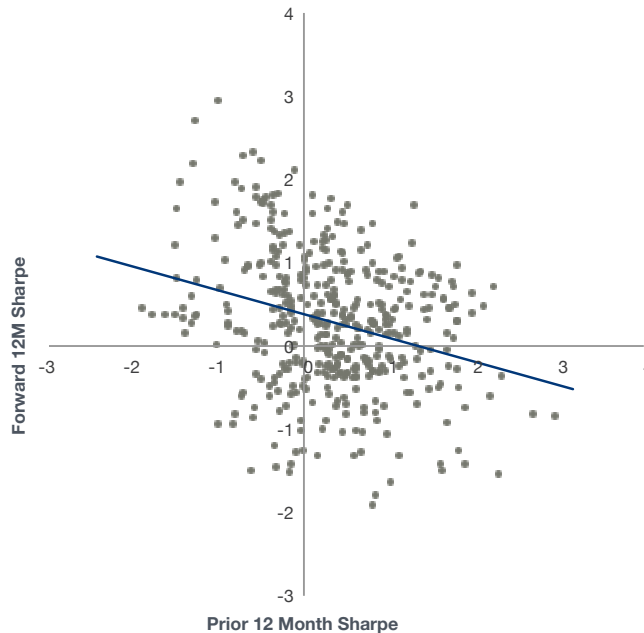
most recent performance of the index has been at the low end of that range, closer to -2.

To test whether there is a statistical pattern of mean reversion, we draw a scatter diagram in which each month is plotted as a dot showing the prior 12-month Sharpe ratio (along the horizontal axis) and

the next 12-month's Sharpe ratio (along the vertical axis). If there is negative serial correlation (an indicator of repeating patterns) or mean reversion in managed futures returns, the dots should form a downward sloping pattern from left to right. If there is positive serial correlation or momentum, the dots should show an upward pattern from left to right; and if there is no relationship, then the dots should not show any pattern. Looking at the next chart (Chart 2), we can see that there is

a clear downward slope to the scatter plot. This shows empirical evidence of mean reversion. Poor periods (left side of the horizontal axis) tend to be followed by better periods over the next 12 months (top half of the vertical axis). If we focus on the worst periods specifically, then we see that since 1980, there were 23 occasions when the Barclay CTA Index had a Sharpe lower than -1.0. On 22 of the 23 occasions, the next 12 months saw a positive Sharpe ratio.

Barclay CTA Index Trailing vs. Subsequent 12-Month Sharpe Ratio
January 1980 – June 2017



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CHART 2 Source: Bloomberg

In order to verify the robustness of this result, we broke down the data into each of 4 decades: the 1980s (Chart 3), 1990s (Chart 4), 2000s (Chart 5) and 2010s (Chart 6). The charts follow on the next page. What we find is that this negative

correlation between prior and subsequent Sharpe ratios was true within each decade. Worse periods of performance tended to be followed by better periods and vice versa.

Barclay CTA Index Trailing vs. Subsequent 12-Month Sharpe Ratio

CHART 3
JAN 1980 – DEC 1989
1980s

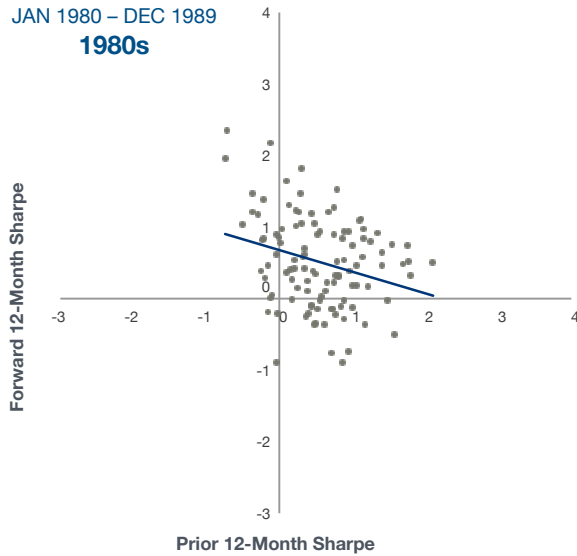


CHART 4
JAN 1990 – DEC 1999
1990s

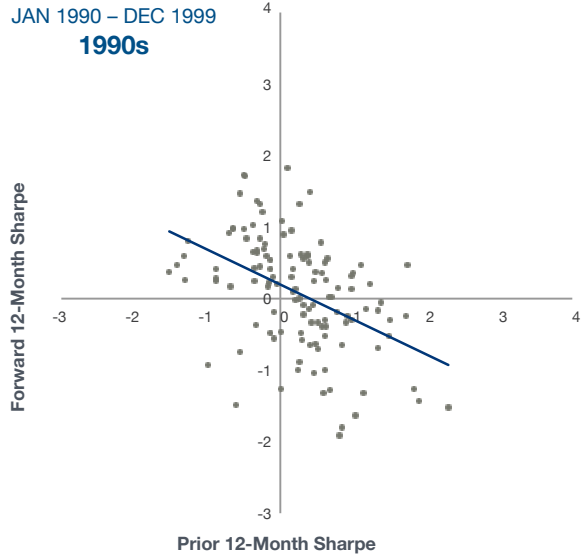


CHART 5
JAN 2000 – DEC 2009
2000s

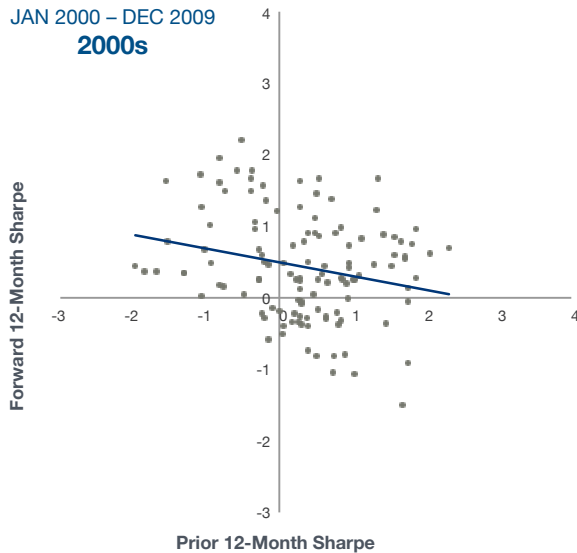
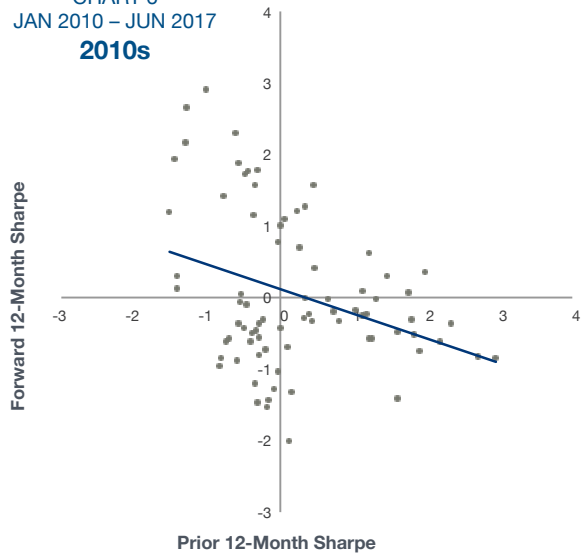


CHART 6
JAN 2010 – JUN 2017
2010s



PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. DIVERSIFICATION DOES NOT ASSURE A PROFIT OR GUARANTEE AGAINST A LOSS. Data is segmented into four decades or periods: the 1980s (Chart 3), 1990s (Chart 4), 2000s (Chart 5) and 2010s (Chart 6). For each month within the specified period, the charts plot the respective trailing 12-month Sharpe ratio against the forward 12-month Sharpe ratio for the Barclay CTA Index. Calculated using month-end data. See Glossary for definitions.

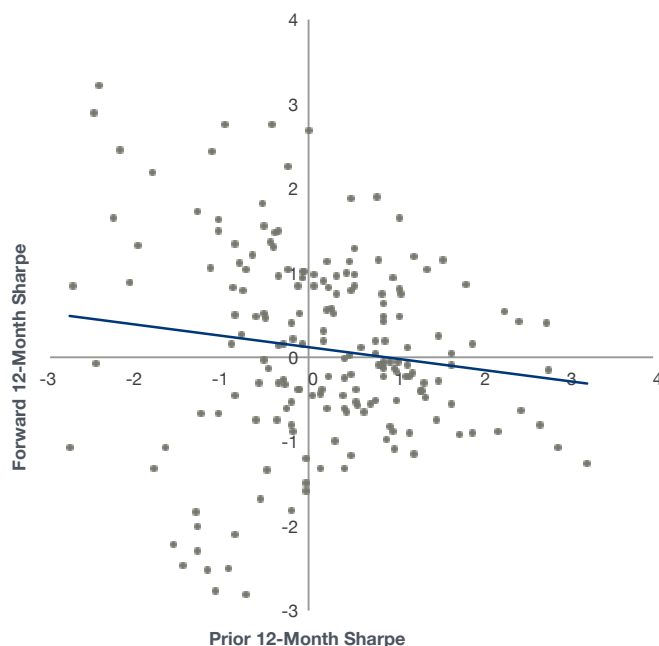
CHARTS 3–6 Source: Bloomberg

Please note, although we do not show the charts here, we also performed the same analysis with other managed futures benchmarks such as the Barclay Systematic Traders Index and the Société Générale CTA Index and found the same negative serial correlation result. We also looked at Steben's own managed futures funds, which date back to 1990, and found the same result.

We do not believe that survivorship bias (a positive performance bias that may occur when CTAs are removed from the Index, typically due to poor

performance) among the many programs in the Barclay CTA Index drives the result. We repeated the test using a different benchmark, the Société Générale Trend Indicator (SG Trend Indicator) that consists of a single trend-following replication strategy, which does not have the potential survivorship bias issues of a benchmark made up of many underlying live programs. The SG Trend Indicator exhibited a similar mean reversion pattern in performance shown in the following chart (Chart 7).

Société Générale Trend Indicator Trailing vs. Subsequent 12-Month Sharpe Ratio January 1980 – June 2017



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CHART 7 Source: Bloomberg

The consistent result across our tests is that there does appear to be historical mean reversion in managed futures Sharpe ratios, with weaker 12-month periods being followed by stronger 12-month periods, and vice versa. This result would justify a strategy of buying the dips in managed futures and moderating positions after a strong period of performance. Of course, we want to emphasize that this result is statistical in nature, and that it is certainly possible to experience two consecutive

negative (or positive) 12-month periods. Unlike the case of traditional equity investing using valuation signals, mean reversion in managed futures is a technical rather than fundamental signal. Nonetheless, the history of managed futures performance since 1980 would suggest that a period of poor performance improves an investor's odds for positive performance over the following 12 months.

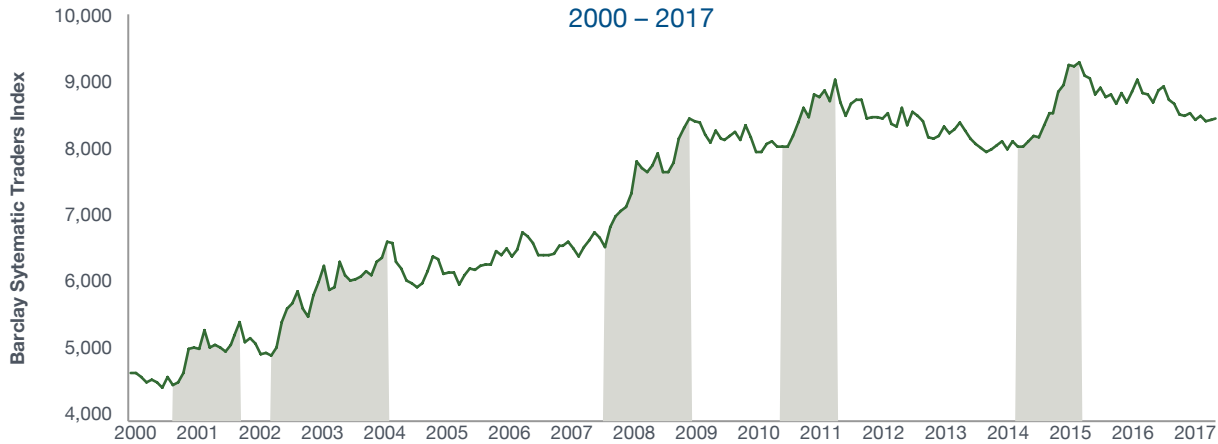
The Opportunity Cost of Being Late in Managed Futures

For many investors, it is psychologically difficult to invest in an asset class after a drawdown. Sentiment and news coverage tends to be negative, and the prevailing crowd is withdrawing capital rather than adding. In contrast, there is much less risk of criticism if one adds to an asset class that is already performing well. This “return chasing” bias among investors tends to lead to suboptimal

results in managed futures. The reason is that a very large portion of the total return in managed futures has been concentrated in a few relatively brief episodes. Returns in managed futures do not come smoothly over time. The following chart (Chart 8) shows 5 significant run-up episodes in the Barclay Systematic Traders Index that account for much of the total gain in the index since 2000.

Barclay Systematic Traders Index 5 Largest Run-Up Periods

2000 – 2017



PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. DIVERSIFICATION DOES NOT ASSURE A PROFIT OR GUARANTEE AGAINST A LOSS. Run-Up periods defined as the five largest percentage increases from Barclay Systematic Traders Index's lowest value (trough) to its highest value (peak) after the trough. Calculated using month-end data. See Glossary for definitions.

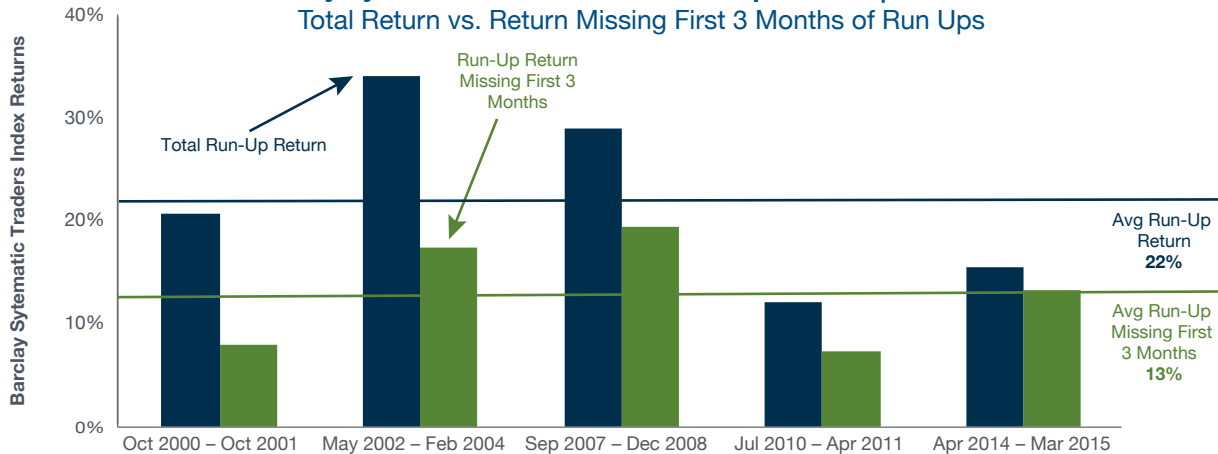
CHART 8 Source: Bloomberg

An investor who waits for a few consecutive months of positive returns before investing may end up missing out on a substantial portion of the total run-up. In the chart below (Chart 9), we show the total run-up in the index over the 5 episodes, which had a 22% average return. This is followed by the total return if you had missed the first 3 months of each run-up, which averaged only 13%. Waiting for a 3-month confirmation

of positive performance before investing led to missing out on the first 40% or so of the total return in the managed futures run-up. Furthermore, the early gains in a managed futures run-up that were missed may have coincided with the beginning of a burst in market volatility and period of difficult performance for traditional investments, such as the start of the tech bubble collapse and the 2008 financial crisis.

Barclay Systematic Traders Index Run-Up Periods | 2000 – 2017

Total Return vs. Return Missing First 3 Months of Run Ups



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CHART 9 Source: Bloomberg

Key Take-Away

Timing asset allocations is difficult. This applies to both traditional and alternative investments. Stable strategic allocations may be the prudent approach for investors who want to reduce the risk of poorly timed tactical adjustments.

There do exist statistical regularities that can aid in dynamic asset allocation. In the case of managed futures, there was a persistent pattern of mean reversion in 12-month Sharpe ratios in all the major managed futures benchmarks we looked at since 1980. This suggests that adding to managed futures allocations on a dip in performance and trimming allocations after a run-up may improve results over the long run compared to a static allocation. Of course, there is no guarantee that these statistical patterns will persist.

Recent risk-adjusted performance in managed futures has been at the low end of the historical range. If the mean reversion pattern continues, this

technical indicator could bode well for managed futures over the coming 12 months. Furthermore, market volatility is currently hovering near historical lows in multiple asset classes, and we believe it is more likely to rise over the next year, rather than fall further. Managed futures has historically performed well during periods of rising market volatility, so any changes in the volatility environment may well work in the strategy's favor. As a result, investors who are currently under-allocated to managed futures may wish to consider adding to the investment class.

Conversely, historical evidence suggests that it may not be beneficial to cut managed futures allocations after a drawdown and wait for a period of positive performance before re-engaging. Since the bulk of returns in managed futures were concentrated in relatively short windows of time, a return-chasing approach such as this can miss the early returns in a run-up and may incur a large opportunity cost.

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Additionally, alternative investments often entail futures, forwards contracts and swaps trading, which involves substantial risk of loss and may be volatile. Other risks inherent in an investment in alternatives include short sales, options, derivatives, junk bonds, emerging markets and limited regulatory oversight.

There may not be a secondary market for an investor's interest in alternative investments, and none may develop. There may be restrictions on transferring interests in some types of alternative investments.

Glossary

This glossary is intended as a reference for commonly used investment terms but does not contain all relevant terms nor all possible definitions of any individual term. You may wish to contact your investment professional for additional information. The information set forth was obtained from sources believed to be reliable, but we do not guarantee its accuracy or completeness.

Barclay CTA Database: Provides data on more than 1,000 commodity trading advisors (CTAs) including holdings, performance returns, assets and fees. Monthly returns are updated daily.

Barclay CTA Index: Reflects the equal weighted performance of Commodity Trading Advisors (CTAs) reporting to the BarclayHedge database. Self-reporting CTAs are evaluated for inclusion in the CTA index on an annual basis. In order to be included in index, a CTA must have at least four years of prior performance history. CTAs have three months to report their performance to the BarclayHedge database before the monthly performance is finalized. Until the monthly performance is finalized, the performance is estimated based on the funds that have reported. The index goes back historically to January 1980. It is not possible to invest directly in an index.

Barclay Systematic Traders Index (BSTI): An equal weighted composite of managed futures programs whose approach is at least 95% systematic. In 2017 there are 409 systematic programs included in the index. The performance of the index is net of management and incentive fees from the individual trading managers. It is not possible to invest directly in an index.

Correlation: A measure of the degree to which two variables relate to each other.

Leverage: The use of various financial instruments or borrowed capital, such as margin, to increase the potential return of an investment.

Long: A position that will profit from an increase in a security's price.

Mean Reversion: A theory suggesting that prices and returns eventually move back towards the historical average.

Sharpe Ratio: A calculation meant to illustrate the amount of return one is achieving per unit of risk. It is derived by dividing the average annual return by the standard deviation of an investment. A higher number tends to signify a better return/risk relationship, whereas a lower number may be seen as unfavorable.

Short: A position that will profit from a decrease in a security's price.

Société Générale (SG) Trend Indicator: A market based performance indicator designed to have a high and stable correlation to the returns of trend following CTA strategies.

Standard Deviation: Measures the dispersal or uncertainty in a random variable (in this case, investment returns). It measures the degree of variation of returns around the mean (average) return. The higher the volatility of the investment returns, the higher the standard deviation will be.

VIX® (CBOE Volatility Index®): The VIX index measures investor expectations for the volatility of the S&P 500 over the next 30 days, as implied by current S&P 500 options prices.

Volatility: The relative rate at which the price of a security moves up and down.

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alternative investments, please visit
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