

Managed Futures

A thoughtful approach to portfolio diversification

A properly diversified portfolio will include a variety of investments. This piece highlights one of those investment categories - Managed Futures - and how this alternative investment can benefit your overall portfolio.

Managed Futures

Managed Futures is an investment strategy involving the trading of futures contracts, forwards, and options across several different asset classes, including equities, fixed income, currencies, and commodities. It can also be both long and short any of these categories. This is a unique characteristic, as many investment solutions only offer a long or a short bias (based on the expectation for the trend to increase or decrease in value, respectively), whereas Managed Futures can do both simultaneously.

Managed Futures managers look for intermediate to long-term trends across equities, fixed income, currencies, and commodities. Once a trend is identified, a decision is made to go long or short that trend. These long and short decisions on trends are then combined into one portfolio that an investor can access in several different ways depending on liquidity needs, transparency, and fee sensitivity.

Investment Concepts

A few key concepts that make Managed Futures a unique and effective portfolio diversifying tool are the concepts of trend premium, convexity, positive skew, and crisis alpha.

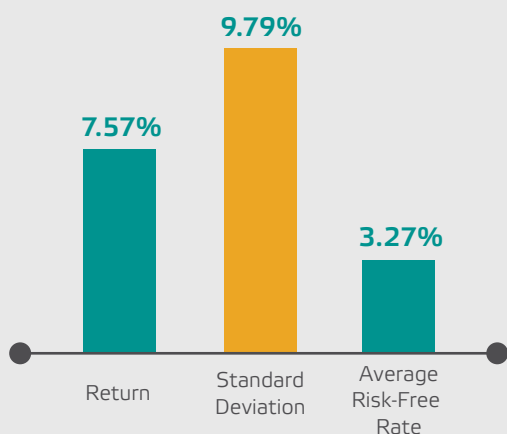
Trend Premium

The first table demonstrates the historical performance and risk characteristics of the BTOP50, a widely accepted index for Managed Futures. The Index aggregates performance from Commodity Trading Advisors (CTAs) that collectively make up 50% of all Managed Futures assets under management. The annualized return for the BTOP50 from 1987 to the present is 7.57%, with an annualized standard deviation of 9.79%. The average risk-free rate (average 90 day T-Bill rate) over the same time period is 3.27%. When the risk-free rate is subtracted from the annualized return of the BTOP50, the result is a “trend premium” of 4.30% (most CTAs in the BTOP50 are trend followers). So, what does that mean?

Positive Absolute/Excess Returns and Non-Correlation, 1987-Present

Managed Futures (BTOP50) Characteristics

Annualized since 1987



Managed Futures: BTOP50; Stocks: S&P 500; Bonds: Barclays Aggregate Bond Index; Commodities: S&P GSCI; Currencies: Inverse return of the Dollar Index; Data from 1987 to 2016. Source: Bloomberg

It means that over the long run, Managed Futures has produced 4.30% of premium over the risk-free rate.

The second table below shows that Managed Futures is almost entirely uncorrelated to traditional asset classes (i.e., equities and fixed income). In portfolio theory, a return stream uncorrelated to the other return streams in the portfolio results in entirely diversifiable risk (when used in moderation, of course). Any excess return above the risk-free rate is automatically alpha to the portfolio. So, while having 4.30% of return above the risk-free rate may not sound spectacular, having 4.30% of annualized pure alpha is actually quite impressive. And that's even before considering the other concepts.

Correlation of Managed Futures



Convexity

The appeal of Managed Futures as a portfolio diversifier is further strengthened by its positive "convexity" to traditional asset classes, meaning that its correlation and beta to traditional assets is higher in up-periods and lower in down-periods.

Managed Futures has substantially higher correlation and beta during up-periods and lower correlation and beta during down-periods for all four major asset classes. This characteristic improves diversification, because portfolio performance, on average, is strengthened during up-periods and tempered during down-periods. The overall volatility of the resulting portfolio may be the same with or without convexity, but if positive convexity exists then the resulting portfolio volatility will fall more to the upside and less to the downside. This becomes important when equities and other traditional asset classes experience periods of significant crisis (see the tech bubble, credit crisis, or Persian Gulf crisis as examples).

Correlation/Beta of Managed Futures in Up/Down Months for Traditionals

	Stocks	Bonds	Commodities	Currencies
Up-Correlation	0.11	0.19	0.21	0.39
Down-Correlation	-0.23	-0.05	0.03	-0.15
Up-Beta	0.12	0.69	0.15	0.84
Down-Beta	-0.20	-0.22	0.02	-0.22

Managed Futures: BTOP50; Stocks: S&P 500; Bonds: Barclays Aggregate Bond Index; Commodities: S&P GSCI; Currencies: Inverse return of the Dollar Index; Data from 1987 to 2016. Source: Bloomberg

Positive Skew

The next attribute to consider is positive skew. Think about skew in this way: stocks, for example, are historically more likely to have large outlier losses than large outlier gains. This tendency implies that stock returns are negatively skewed, and this negative skew can end up substantially hurting overall portfolio performance. However, the opposite is true for Managed Futures. In a crisis event, Managed Futures tend to outperform significantly because they are positively skewed.

In a normal market environment, Managed Futures tend to exhibit long periods of slightly positive to slightly negative performance, but every so often a Managed Futures trend following program can have a large positive outlier return. The graphic below shows a numerical calculation of skew for Managed Futures versus traditional asset classes since 1987.

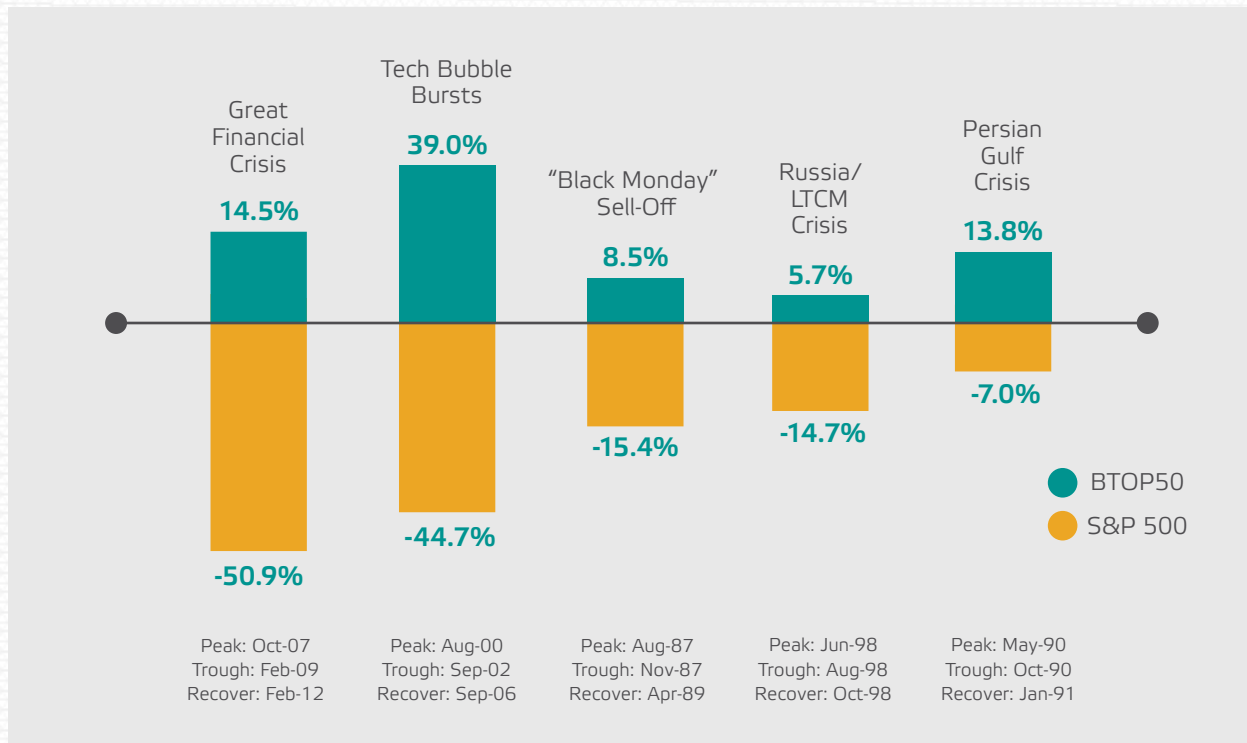
Outliers Generally Fall to the Upside

Managed Futures	Stocks	Bonds	Commodities	Currencies
1.05	-0.81	-0.15	-0.20	-0.35

What stands out is that the only asset class with a positive skew is Managed Futures – making it the ideal portfolio diversifier during periods of market stress. In fact, occasional outlier gains can represent a significant proportion of long-run returns for Managed Futures trend following programs. Combining the concepts of convexity (being more negatively correlated to equities when they are down) and positive skew (where Managed Futures tend to make gains in occasional large chunks) results in a concept the Managed Futures industry calls “crisis alpha.”

Crisis Alpha

The following chart represents the five periods of the largest equity market drawdowns since 1990 (shown by the orange bars).



The term “crisis alpha” refers to how well Managed Futures did during these five crisis periods (shown by the green bars). The S&P 500 is shown in this example, but all risk assets tend to decrease in value in periods of crisis.

By combining the elements of positive convexity (high correlation in up markets and lower correlation in down markets) with positive skew (returns coming in the form of larger gains in periods of crisis); a Managed Futures allocation can lead to a more balanced overall portfolio return profile. The desired effect is to mitigate the loss potential of your overall portfolio in the event of a crisis.

Managed Futures in Action

With the benefits of Managed Futures identified, how does it fit within an investment portfolio? Take for example a traditional “60/40” moderate portfolio.

Moderate Portfolio Benchmark 60% equities / 40% bonds			
	0% Managed Futures	10% Managed Futures	20% Managed Futures
Annualized Return	7.28%	7.36%	7.41%
Annualized Volatility	8.38%	7.46%	6.69%
Sharpe (T-Bill)	0.72	0.82	0.93
Max Drawdown	-32.45%	-26.82%	-20.85%

Date range of analysis: December 31, 2002 to December 31, 2016

* Equities are represented by the Vanguard S&P 500 Index ETF (VOO), bonds are represented by the iShares Bloomberg Barclay Aggregate Bond Index ETF (AGG), and Managed Futures are represented by the Aspen Managed Futures Strategy Fund (MFBTX).

While past performance is not necessarily indicative of future results, since the early 2000s, portfolios with an allocation to Managed Futures have benefited from lower annualized volatility, significantly lower max drawdowns, and slightly better annualized returns. The end result, are thoughtfully constructed, well-diversified portfolios that have much more attractive risk-adjusted return profiles (i.e., higher Sharpe ratios).

Recent Performance and Outlook

Per the “crisis alpha” chart, Managed Futures was one of the few star performers during the financial crisis of 2007 - 2008, but has since lagged, relatively speaking. While there are many theories on this topic, one generally agreed upon constant is that government and central bank intervention has created an environment that prevents trends from developing and sustaining themselves. Global central banks’ extraordinary monetary accommodativeness since the end of the crisis has dampened overall market volatility. Since volatility helps in evaluating the strength of trends in the

markets, this level of intervention has created an environment that discourages strong performance in Managed Futures. However, there is light at the end of the tunnel, with signs that global central banks may finally be starting to unwind this historic accommodativeness. The Federal Reserve’s increase of the federal funds rate, for example, can be seen as a move back towards a more “normal” environment where markets act less constrained by central banks. This will likely allow for trends to develop across major asset class categories.

Considerations When Selecting a Managed Futures Fund

While there are several ways to access Managed Futures, there are also several important considerations when evaluating managers and platforms in this space:

- *Liquidity* - Having the liquidity of a mutual fund gives an investor the ability to access trend-following in a more efficient and expedient manner when compared to an LP or separately managed account structure.
- *Fees* - Then there are the fees or expense ratios. Many managers have a complex fee structure that also lacks transparency. Finding a cost-effective manager that has a clearly stated and easily explained expense ratio is important, especially when you're waiting for trend-following returns to pick up (like our current situation).
- *Transparency* - The idea of transparency also relates to the methodology of the portfolio. Having a clearly defined and easily explained trading methodology is helpful for manager evaluation.

Investors should be able to understand what a particular investment strategy is designed to do for your portfolio and how it works to achieve those objectives.

One example of a fund that demonstrates the above characteristics of being liquid as well as having a clearly defined and transparent fee structure and methodology is the Aspen Managed Futures Strategy Fund (Aspen).

It is important to understand the expectations of this type of fund. While there may be extended periods when the Fund lags the S&P 500 or other traditional asset class indices, Aspen can also provide downside protection against a significant permanent loss of capital from which an investor, like you, may never fully recover (see "Crisis Alpha").

It is also worth noting that several Managed Futures funds use excessive leverage that can cause large swings in the Net Asset Value (i.e., price). Mostly this is done to reach pre-determined volatility targets in the portfolio. Notably, Aspen does not employ a "volatility targeting" component found in other Managed Futures funds. Aspen allows trends alone to dictate trading levels, not a pre-determined volatility target.

This eliminates taking on unnecessary risk by leveraging up the portfolio to increase volatility during a low volatility background. Conversely, a trend position is not limited by reducing exposure levels when the volatility background is high, which can enable Aspen's model to serve as a strong crisis hedge in the event that a high volatility environment spirals into a crisis. Aspen is focused on how Managed Futures works in your overall portfolio and not simply as a standalone "all-weather" investment and return source.

For all of the aforementioned reasons, Detalus believes that a thoughtful approach to portfolio diversification and construction should include Managed Futures. The ability to deliver these value-added benefits in a mutual fund provides access to all sizes and manner of investors. While there may be times of challenging performance in the asset class, having a long-term investment option that delivers the benefits of Managed Futures will likely prove to be beneficial to your overall portfolio. Please do not hesitate to reach out to your Detalus Advisor for more information about Managed Futures.

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Index Definitions:

The BTOP50 Index seeks to replicate the overall composition of the managed futures industry with regard to trading style and overall market exposure. The BTOP50 employs a top-down approach in selecting its constituents. The largest investable trading advisor programs, as measured by assets under management, are selected for inclusion in the BTOP50. In each calendar year the selected trading advisors represent, in aggregate, no less than 50% of the investable assets of the Barclay CTA Universe. To be included in the BTOP50, the following criteria must be met: The program must be open for investment, managers must be willing to provide us daily returns, programs must have at least two years of trading activity, program's advisor must have at least three years of operating history, and the BTOP50's portfolio will be equally weighted among the selected programs at the beginning of each calendar year and will be rebalanced annually. For 2017 there are 20 funds in the Barclay BTOP50 Index.

The Standard & Poor's 500 (S&P 500) is a market-cap weighted index composed of the common stocks of 500 leading companies in leading industries of the U.S. economy.

The Bloomberg Barclays US Aggregate Bond Index is a market capitalization-weighted index, meaning the securities in the index are weighted according to the market size of each bond type. Most U.S. traded investment grade bonds are represented. Municipal bonds, and Treasury Inflation-Protected Securities are excluded, due to tax treatment issues. The index includes Treasury securities, Government agency bonds, Mortgage-backed bonds, Corporate bonds, and a small amount of foreign bonds traded in U.S.

"Commodities" represents S&P GSCI (formerly the Goldman Sachs Commodity Index), a composite index of commodity sector returns which represents a broadly diversified, unleveraged, long-only position in commodity futures.

"Currencies" represents an inverse monthly US Dollar Index excess returns. US Dollar Index is a measure of the value of the U.S. dollar relative to majority of its most significant trading partners.

The Barclays Capital Aggregate Bond Index, Barclay BTOP50, S&P 500 Total Return Index, US Dollar Index, and S&P GSCI are unmanaged and do not represent the attempt of any manager to generate returns on an investment. These benchmark indices do not include transaction costs and other expenses.

Key Word Definitions

Alpha - A measure of performance on a risk-adjusted basis. Alpha, often considered the active return on an investment, gauges the performance of an investment against a market index used as a benchmark, since they are often considered to represent the market's movement as a whole. The excess returns of a fund relative to the return of a benchmark index is the fund's alpha.

Correlation - Correlation, in the finance and investment industries, is a statistic that measures the degree to which two securities move in relation to each other. Correlations are used in advanced portfolio management. Correlation is computed into what is known as the correlation coefficient, which has value that must fall between -1 and 1.

Sharpe Ratio - The Sharpe Ratio is a measure for calculating risk-adjusted return, and this ratio has become the industry standard for such calculations. It was developed by Nobel laureate William F. Sharpe. The Sharpe ratio is the average return earned in excess of the risk-free rate per unit of volatility or total risk. Subtracting the risk-free rate from the mean return, the performance associated with risk-taking activities can be isolated. One intuition of this calculation is that a portfolio engaging in "zero risk" investment, such as the purchase of U.S. Treasury bills (for which the expected return is the risk-free rate), has a Sharpe ratio of exactly zero. Generally, the greater the value of the Sharpe ratio, the more attractive the risk-adjusted return.

Skew(ness) - Skewness is a term in statistics used to describes asymmetry from the normal distribution in a set of statistical data. Skewness can come in the form of negative skewness or positive skewness, depending on whether data points are skewed to the left and negative, or to the right and positive of the data average. A dataset that shows this characteristic differs from a normal bell curve.