



Introduction to Managed Futures

■ INTRODUCTION

Recent financial markets offered investors no shortage of ups and downs. The credit crisis of 2008 led to severe declines in the equity and fixed income markets, followed by a sharp recovery. Investors also had to weather the “flash crash” in early 2010 and subsequently the European debt crisis. All of this uncertainty has created a market environment rife with volatility. When uncertainty is on the rise or when there is constant change in the economic fundamentals underlying the financial markets, that uncertainty will be reflected in the performance of securities whose value is based on those fundamentals. While there are many nimble active managers able to take advantage of market disruptions in a variety of ways, the managed futures asset class is designed to find positive returns in this environment.

Managed futures, also known as the active management of futures contracts, have two unique values to their strategies. First and foremost, they provide value in diversification. Second, their historically strong performance during significant downturns in traditional markets suggests they aid portfolios during market dislocations. Managed futures managers have a long-standing track record of being able to offer downside protection to a comprehensive portfolio. By identifying trends and executing trades that are unavailable to traditional managers, this type of manager can potentially earn positive returns even when core components of the portfolio perform poorly.

Managed futures rely on completely different performance drivers than traditional asset classes like stocks and bonds. While traditional asset performance drivers are based on economic fundamentals, managed futures instead rely on factors like trendfollowing, price movement and volatility. Over the past 30+ years, this experience has contributed to a low and sometimes negative correlation between the managed futures and traditional markets. In addition, managed futures have historically earned an average annual return close to that of equities with less volatility. This lack of correlation, coupled with attractive risk-adjusted returns, offers favorable diversification benefits to a well-rounded portfolio.

It is important to note however, that managed futures will not perform well in all markets and can experience short-term drawdowns, or peak-to-trough declines. When traditional assets are performing well and managed futures do not, it can be especially disconcerting to investors. On the other hand, if held over the long term, adding a managed futures allocation to your portfolios can enhance risk-adjusted performance.¹

■ INTRODUCTION continued

With this in mind, and because of the highly volatile markets we are experiencing, we recommend the addition of managed futures to all client portfolios with two exceptions:

1. Any clients with an 'All Fixed Income' risk profile
2. Any clients invested in our 'Traditional Assets' portfolio models

The following is a comprehensive overview of the history, utility and character of the managed futures asset class. Since managed futures behave quite differently than the more familiar traditional asset classes of stocks and bonds, it is imperative for you to gain a greater understanding of this asset class before investing. In this paper you will broadly learn about managed futures and the industry of managers specializing in this unique asset class. In a second, supplemental report you will find a detailed summary of our preferred managers. If at any time you wish to receive more information or have any questions, please reach out to your client service team.

■ WHAT ARE MANAGED FUTURES?

The managed futures asset class aims to add value from actively buying and selling futures contracts. A futures contract is a standardized agreement to buy or sell an asset or financial instrument at a future date at a predetermined price. These contracts are available for purchase or sale on various regulated exchanges. Futures contracts are negotiated on a number of various assets including commodities, bonds and currencies but could also be based on interest rates or equity indices. These standardized contracts are both very liquid and highly transferrable. In addition, these contracts allow investors to take either a long or short position in an asset, rate or commodity.

- Long – Investors going long a futures contract are agreeing to buy a particular asset at a later date for a predetermined price.
- Short – Investors going short a futures contract are agreeing to sell a particular asset at a later date for a predetermined price.

Unlike in traditional stock and bond markets, the managed futures market requires both a long and a short investor in order to function. In the traditional market, an investor must borrow the asset they wish to short and sell it in the open market in

■ WHAT ARE MANAGED FUTURES? continued

the hopes that the price falls further and then repurchase the asset and return it to the lender. In the futures market, an investor taking a short position just enters into a contract stating that they will sell the counterparty some underlying asset at some future date. Since the nature of these contracts was founded upon future delivery of an asset, there is no requirement for the contract writer to possess the asset at contract initiation. On account of this versatility, investors often use futures to find return potential in all market environments.

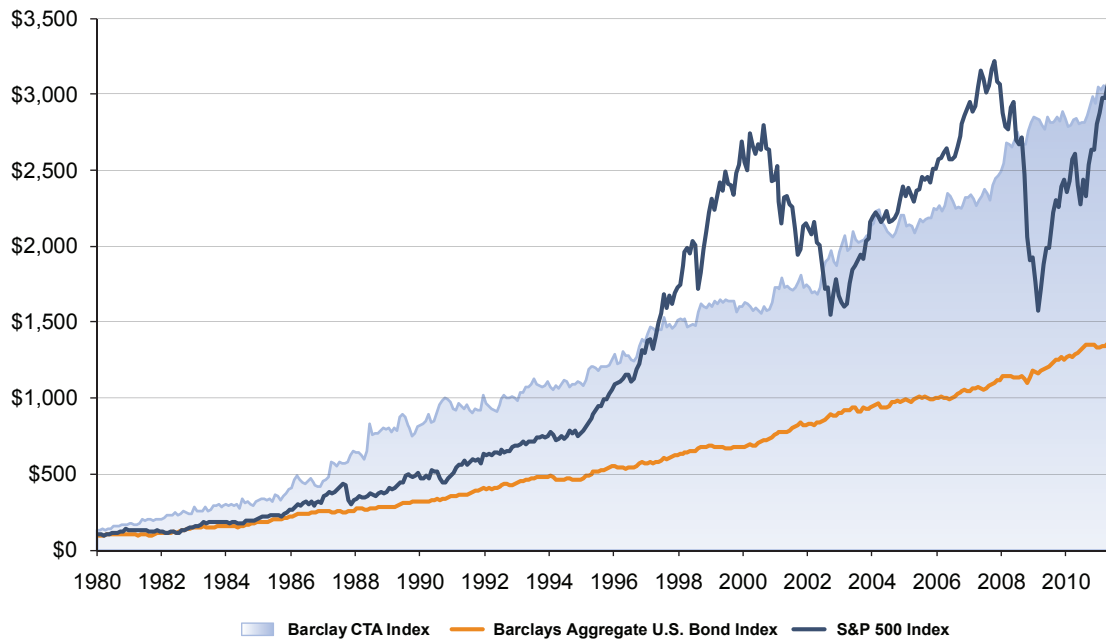
In order to buy or sell futures contracts, an investor must put down a small amount of collateral, referred to as margin.² These margin requirements change in size for the type of contract they are representing, but as a whole they represent just a fraction of the cost of the contract's underlying asset. Margin levels fluctuate in tandem with the value of the futures contract. Unlike equity markets, where the gain or loss on a stock is decided on the day that you sell your shares, futures contracts are repriced daily. This means that gains and losses on a futures contract are not only calculated daily, they are also credited or debited to both contract participants on a daily basis. The investor is required to settle any losses by posting additional cash to the margin account. For this reason, cash levels in the margin account holding futures contracts also need to be closely monitored.

Over the years the variety of available contracts has continued to grow, giving rise to a new set of investment managers who have expertise in trading portfolios of contracts for investors. These managers are called Commodities Trading Advisors (CTAs). Though the name implies that these managers invest only in commodities like oil, gold or cotton, most CTAs will trade in the full range of contracts mentioned above.

■ PERFORMANCE ATTRIBUTES

The managed futures asset class, as represented by the BarclayHedge CTA Index,³ has offered investor returns commensurate with equities but with substantially less volatility over the last 30 years. As evidenced in the chart on the following page, it is apparent that the return path and investor experience within managed futures is different than either of the two traditional asset classes represented by the S&P 500 Index⁴ and Barclays U.S. Aggregate Bond Index.⁵ Where large-cap equities have shown tremendous volatility and bonds have demonstrated a gradual climb over time, CTAs have historically shown a fairly smooth path somewhere in-between:

Compounded Returns Since 1980
(Growth of \$100 Investment from 1/1/1980 - 6/30/2011)



Source of Data: Barclays Capital, BarclayHedge, Standard and Poor's

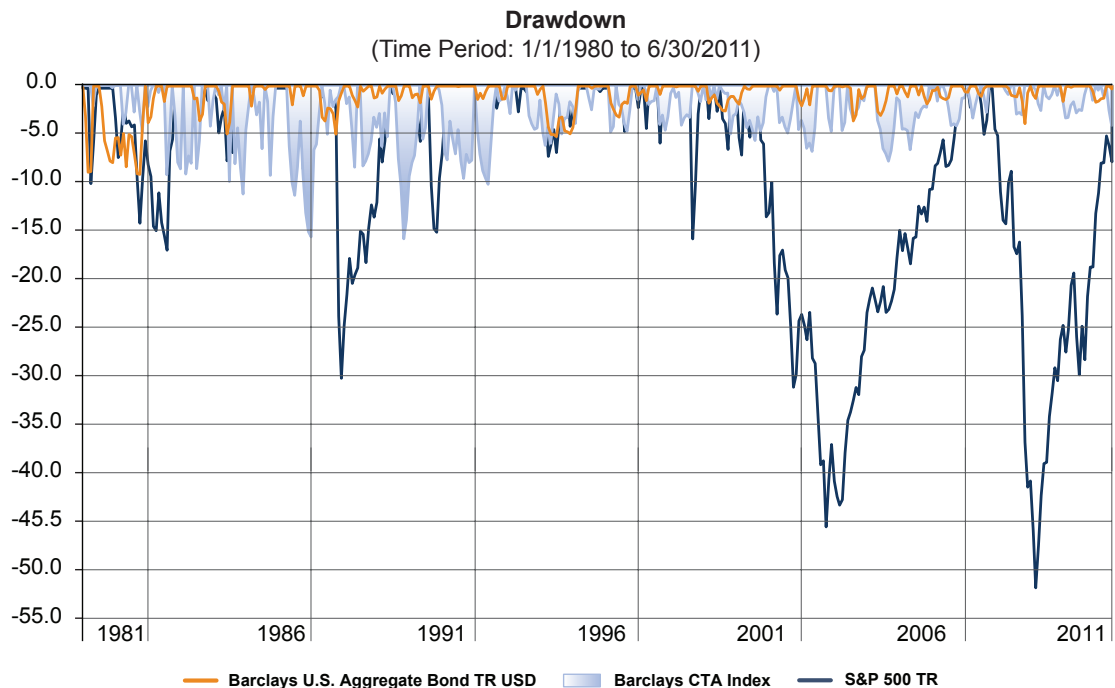
Since 1980, managed futures have virtually matched the risk (as measured by standard deviation⁶) and return of equities as can be seen in the table below. This may seem counter intuitive based on our conclusion from the previous chart; however, it is important to note that the downside risk (which calculates the standard deviation of negative returns only) is lower than large-cap equities by a margin of approximately 3.3%. This indicates that managed futures show less extreme negative results over time relative to equities and further supports the point outlined in the previous paragraph that most of the volatility within CTAs is experienced on the upside. The following table is a side by side comparison of the returns, standard deviations and downside risks of CTAs, bonds and equities:

Risk / Return Table
Time Period: 1/1/1980 - 6/30/2011

	Return	Standard Deviation	Downside Risk
Barclay CTA Index	11.38	15.17	8.45
Barclays U.S. Aggregate Bond Index	8.66	5.73	3.81
S&P 500 Index	11.37	15.52	11.69

■ PERFORMANCE ATTRIBUTES continued

Plotted in the chart below is the drawdown experience for the S&P 500 Index, Barclays U.S. Aggregate Bond Index and Barclay CTA Index, also since 1980. Drawdown, defined as the peak-to-trough decline of an investment during a specific period, allows us to visualize the persistence and degree of negative returns. As the chart shows, managed futures tend to have frequent, but smaller and shorter drawdowns than equities:



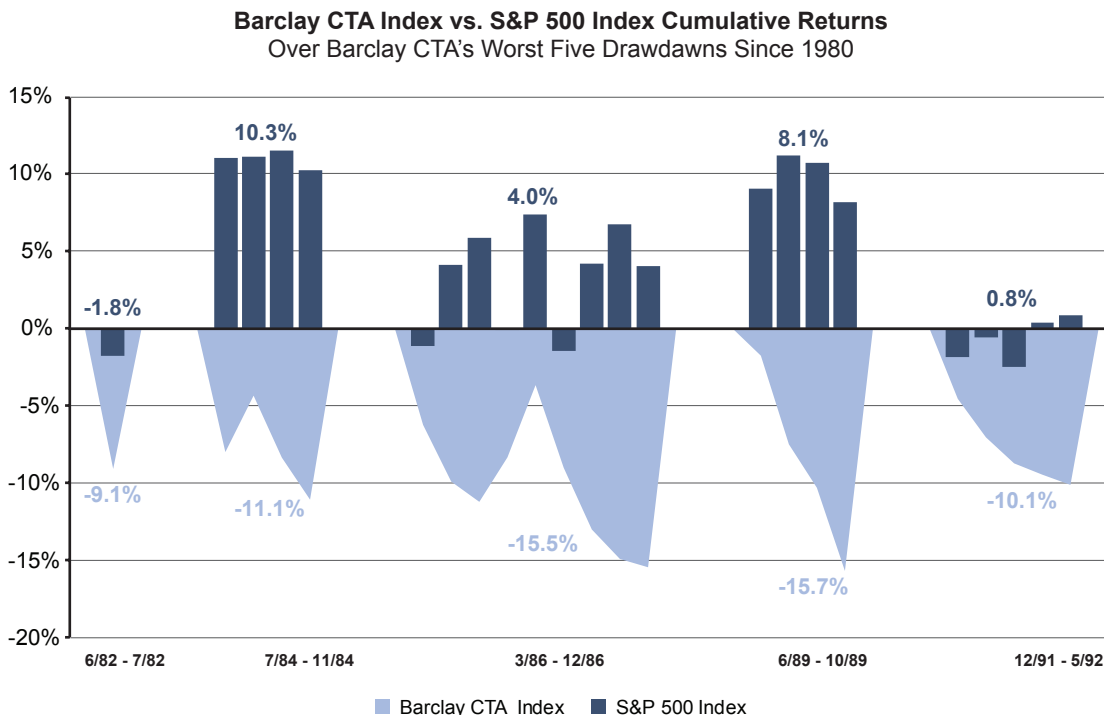
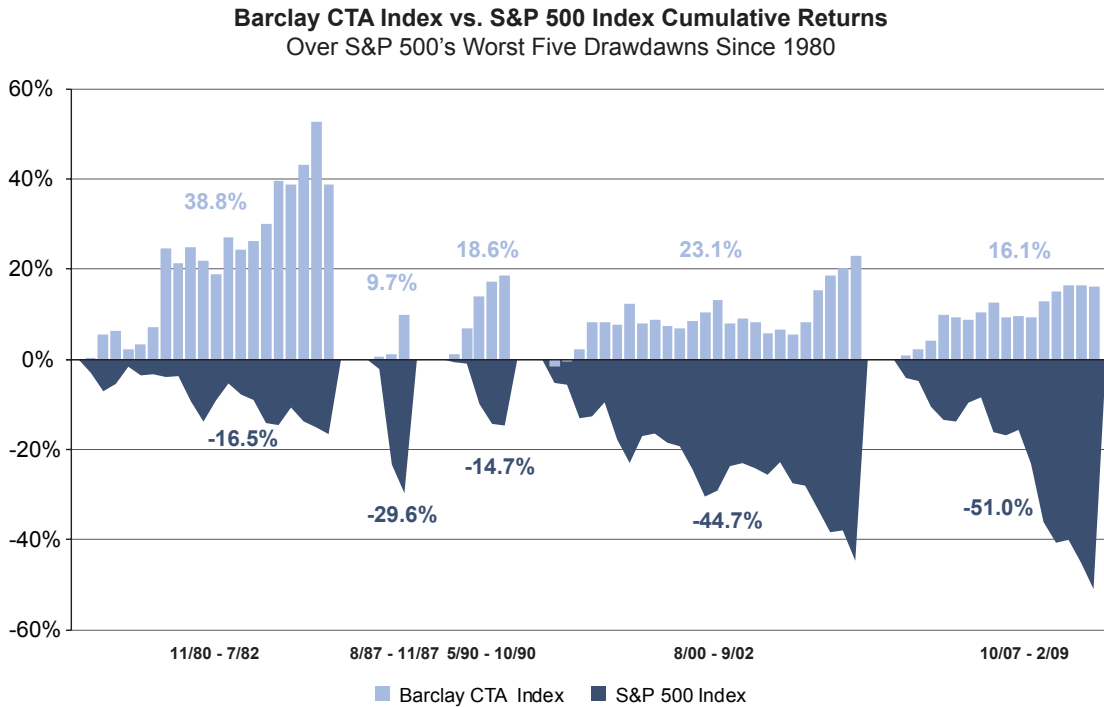
Source of Data: Barclays Capital, BarclayHedge, Standard and Poor's, Morningstar Direct

When further examining the chart, it is clear that the worst drawdown for the S&P 500 Index since 1980 occurred in the 16 month period from November of 2007 through February of 2009. In that time, the index fell approximately 51.0% and has not yet returned to its peak. During this period when large-cap equities struggled, CTAs did just the opposite; they thrived with a return of 16.1%. Even more, this positive performance has consistently occurred through the years as illustrated by the upper chart on the following page. Here we evaluate the five worst drawdown periods for the S&P 500 and the corresponding performance of the Barclay CTA Index. In each case, whenever the equity market has experienced dramatic or prolonged losses, the managed futures market has been able to take advantage of the market correction and post positive performance.

Although the relationship previously described is typical, the consistency of inverse performance breaks down when managed futures are in a drawdown. Apparent

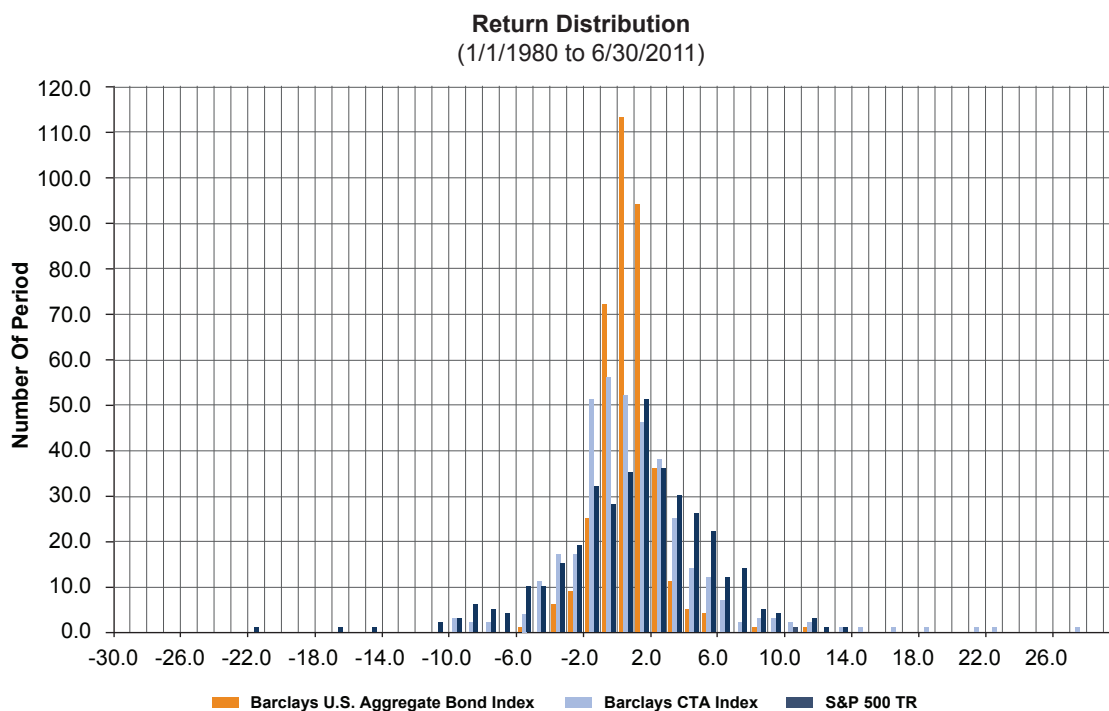
■ PERFORMANCE ATTRIBUTES continued

from the lower chart, when managed futures are in a drawdown, equities have experienced positive results only some of the time. Also notable, the five worst drawdowns for the Barclays CTA Index were significantly shorter and less severe than the worst equity drawdowns.



Source of Data: BarclayHedge, Standard and Poor's

Another way to evaluate the performance history of the CTA Index is to review the distribution of returns. The histogram chart below measures kurtosis, the frequency with which the individual monthly returns fall at different intervals. As you can see, managed futures (represented by the Barclay CTA Index) show a high degree of returns concentrated around the mean or high level of kurtosis, commensurate to that of the equity and bond markets (represented by the S&P 500 and Barclays U.S. Aggregate Bond Indexes, respectively).⁷ High kurtosis also implies the possible existence of very positive and/or very negative outliers, a phenomenon often referred to as “fat tails.”



Source of Data: Barclays Capital, BarclayHedge, Standard and Poor’s, Morningstar Direct

Determining whether fat tails exist is only part of the equation. We must also determine where the outliers fall. To understand this, we need to look at another element of the return distribution, known as “skewness.” Skewness measures the degree of symmetry in a return distribution in relation to the mean.⁸ Positive skewness indicates a greater number of outliers above the mean.

This analysis of skewness and kurtosis is further supported by the statistics in the table on the following page, which represent the distribution metrics for the last 20 years. The level of kurtosis is fairly high for all three asset classes, indicating they all share a relatively peaked distribution of returns and a higher probability

■ PERFORMANCE ATTRIBUTES continued

for tail events. Where they differ, however, is in skewness. Only managed futures demonstrate positive skewness over this time period, indicating that performance outliers were experienced to the upside.

Analysis of Return Distribution
Time Period: 7/31/91 - 6/30/11

	Kurtosis	Skewness	Volatility
Barclay CTA Index	0.9	0.5	8.0
Barclays U.S. Aggregate Bond Index	0.8	-0.3	3.8
S&P 500 Index	1.3	-0.7	14.9

In summary, managed futures have historically offered compelling risk managed performance attributes. Managed futures have historically performed in line with equities, with similar volatility, but less downside risk. The draw downs are more frequent, although shorter and less severe, and the asset class tends to perform well when equities are in a drawdown. Returns tend to aggregate around the mean with potential for strong, positive outliers. Therefore, the performance managed futures has historically offered considerable downside protection to a comprehensive portfolio.

■ A GOOD DIVERSIFIER

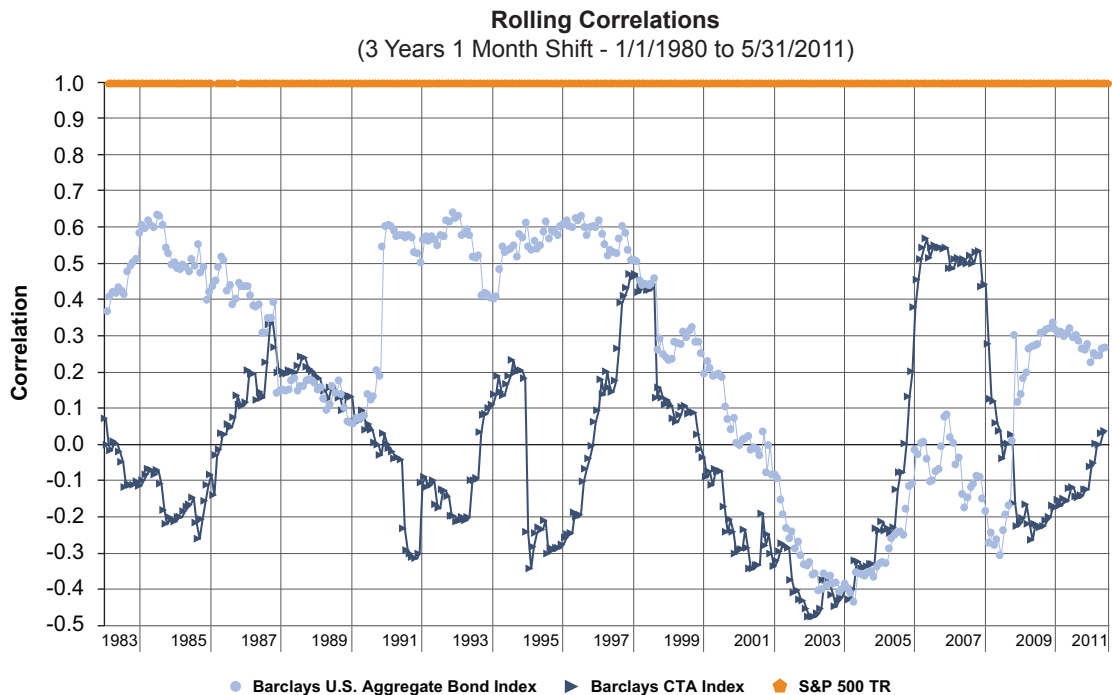
If we look at the correlation of CTAs relative to a variety of other asset classes we can see further evidence of how the return behavior of CTAs differs from that of traditional asset classes. As evidenced in the matrix below, over long periods of time managed futures show virtually no correlation to other traditional assets and could, in aggregate, provide portfolios a source of diversification:

Correlation Matrix
Time Period: 1/1/1980 - 6/30/2011

	1	2	3
1. Barclay CTA Index	1.00	0.01	0.02
2. Barclays U.S. Aggregate Bond Index	0.01	1.00	0.21
3. S&P 500 Index	0.02	0.21	1.00

However, looking at the rolling correlations of CTAs versus the equity and bond markets over time, we can deduce the degree to which CTAs track these asset classes in certain periods. What the chart below shows us is that although CTAs tend to experience a higher degree of correlation to the equity markets during an equity bull run, these correlations actually fall dramatically (even dropping into negative territory) during equity bear markets.

This downside protection was most notably evident in both the credit crisis of 2008 and the dot com bust from 2001-2003. In both cases, managed futures posted gains while equity markets suffered considerable losses. Although managed futures correlate positively to equities during market expansions, the performance of these two asset classes will not mirror one another. In fact, managed futures often trail equity performance over prolonged and/or severe market upswings.



Source of Data: Barclays Capital, BarclayHedge, Standard and Poor's, Morningstar Direct

Despite the attractive counter-performance of managed futures to other asset classes, managed futures should not be considered a portfolio hedge. In no way are the CTA managers looking to eliminate any of the investor's specific portfolio risk exposures. In addition, the historical return experience is not a guarantee that the managers will perform in the same way going forward. Nevertheless, CTAs have historically offered investors unique downside-risk control and low correlation to the traditional asset classes over longer periods of time.

■ CTA STYLES

In many ways CTAs could be defined as hedge funds. Both CTAs and hedge funds typically offer their products through unregulated private placements, within a limited partnership structure, and both incorporate largely unconstrained investment and hedging techniques in their strategies. One major difference; however, is that CTAs only invest in the futures market as opposed to the common hedge fund practice of investing through a variety of vehicles. There are a number of other significant differences as well, including the degree of liquidity and transparency, which we will address later in the section on risks.

Notably though, for many years, the CTA industry was often a niche allocation found within low-volatility hedge fund of funds. However, the attractiveness of managed futures over the last decade has led many investors to approach the space through a dedicated allocation. While still a fraction of the size of the hedge fund industry, CTAs have continued a substantial growth trajectory over the last 20 years, going from \$20 billion to nearly \$300 billion.⁹

Today, there are roughly 3,000 managers that could be categorized as Commodity Trading Advisors. The market further categorizes CTAs into five distinct trading styles. A helpful way to understand these differing trading styles is to visualize each style as a differing radio frequency or wavelength.¹⁰ While some look to capture longer and more gradual ebbs and flows of the market, others generally execute on short-term market shifts. Similar to varying frequencies, these strategies often don't move together and have historically shown very low correlations to one another. Therefore, these various styles offer considerable diversification benefits even when combined with one another.

In most cases, strategies are systematic in nature, meaning that they employ quantitative computer algorithms to execute trades based on various market data inputs. In some cases, particularly in short-term trading strategies, the amount of data that must be assimilated and analyzed within a very short time frame would prove an impossible feat for the human brain. Instead, these managers incorporate the mathematical, financial and technological knowledge of many analysts into a trading algorithm. This way, CTAs can execute on that knowledge in a systematic, efficient and consistent manner. These trading systems prominently feature risk management measures in order to protect their positions from sudden and/or severe drawdowns.

■ CTA STYLES continued

The last few years have brought undue skepticism of quantitatively-based approaches and many CTAs are unfairly lumped in with what casual observers might call “black box” strategies. This categorization could not be further from the truth. Most CTAs offer their investors and potential investors an overwhelming and timely degree of transparency. In many cases they are completely comfortable offering investors the option of using a separately-managed account granting real-time transaction and position data. Stopping just short of offering their trading algorithms, CTA managers regularly disclose every element of their investment proposition. Since trading is executed by computer, there is an absence of human emotions. This allows CTA managers to give concise and objective responses as to why they did or did not trade a particular security at a given time – something that many fundamental managers are challenged to do. It is inaccurate to assert that a manager willing to disclose their process and philosophy, while also offering sufficient transparency for investors to verify adherence to the philosophy, is a “black box.”

■ LONG-TERM TRENDFOLLOWING

The most widely known and applied trading style is called long-term trendfollowing. This strategy looks to identify longer-term trends, defined as anywhere from six months to two years in price movements of various markets, by incorporating momentum and breakout indicators¹¹ in their models. However, when the market makes a swift correction, it will take the long-term trendfollower some time for their strategy to adjust. A good analogy for long-term trendfollowers is that they are like oil tankers. If a tanker wishes to change direction, it is a slower process to turn the ship than it would be for, say, a speedboat. However, a benefit of this gradual repositioning is that it permits them to ignore what can possibly amount to short-term noise and to instead focus on the overall direction of a market. All in all, trendfollowing strategies have dominated the CTA space and have demonstrated considerable persistence in performance over the 30-plus years since their inception.

■ SHORT-TERM TRENDFOLLOWING

Another trading style is called short-term trendfollowing, which is a strategy focused on short-term price corrections. CTAs in this discipline will hold a position anywhere from under a minute to a month or more. The trading systems of these managers tend to utilize statistical pattern recognition, behavioral finance trends or other sophisticated quantitative techniques to identify and exploit various biases that

■ SHORT-TERM TRENDFOLLOWING continued

persist in high-frequency data. These managers typically experience a very high volume of trades each day (upwards of 10,000 daily) with the intent of conjuring a number of small net-positive returns. As such, the trading algorithms and computer systems employed by these managers can and do react very quickly to market corrections. Using the same analogy above, these managers are more like the speedboat than the oil tanker and will make aggressive directional shifts should price signals warrant.

Returning to the radio wave lengths analogy used earlier, the time period for which a CTA will hold their positions dramatically impacts how correlated their returns will be to another CTA manager. Consider a long-term trendfollower that will hold positions for six months or longer. In a given year, that manager's portfolio will turn over twice. Now consider a short-term trendfollower that will hold positions for about an hour. The short-term manager's portfolio will turn almost 9,000 times in a given year. The fact that these two strategies are executing on differing trends and changing direction at vastly differing intervals decreases the overall likelihood of their returns correlating to one another. Even within the short-term trading realm, a strategy that trades 12 times per year will often go uncorrelated to a strategy that trades 12 times per day, creating significant diversification benefits within this class.

■ COUNTER-TREND, VALUE AND GLOBAL MACRO

The remaining strategies include counter-trend, value and global macro. Counter-trend strategies, as the name implies, look to capitalize on trend reversals over time. Value strategies look to exploit pricing inefficiencies throughout various markets by quantitatively evaluating relative price levels between securities and ultimately gaining from those price reversions. Global macro strategies are an interesting outlier in this field, as they are the one exception to CTAs being systematic in nature. In this discipline, both quantitative and discretionary managers compete well. While all global macro managers look for broad global trends using macroeconomic or supply and demand factors in their analysis, discretionary managers will employ fundamental analysis of market inputs to determine their trades. In either case, global macro CTA managers still trade exclusively in futures contracts, but will often experience dramatic shifts in allocation. They have been known to hold highly concentrated positions at a given time.

Again, the varying frequencies or wavelengths of these trading strategies offer significant diversification benefits even when combined with one another.

■ FUND OF FUND APPROACH

In line with our discussion thus far regarding correlations of CTA manager returns with each other over time, this universe is somewhat distinctive in that similarly styled managers can experience extremely different returns over a given period. There is also a wide dispersion between the periodic returns of a single manager over time. For example, it is common for a particular CTA to be a top tier performer in one year, only to fall to the bottom of the pack the following year. These dynamics lead us to recommend that any allocation to managed futures within our clients' portfolios should be approached through a dedicated CTA Fund of Funds (FOFs). A FOF approach permits the investor to invest in a number of managers and trading styles with a single allocation.

A dedicated CTA FOF offers investors the dedicated focus and expertise of a manager whose time is based solely on understanding this unique investment niche. FOF managers will often aggregate a series of separately managed accounts, each of which is sub-advised or traded by an underlying CTA manager. This offers the FOF full transparency, as well as control over the assets and margin allocated to each CTA manager. Gaining real-time data on the underlying accounts creates an opportunity for the FOF manager to employ sophisticated risk management systems designed to track exposures, performance, volatility and correlations each day.

Today, FOFs are available to investors through both limited partnership agreements and mutual funds. In order to gain access through a limited partnership, investors must meet the Qualified Eligible Participant standards as established by the Commodity Futures Trading Commission (CFTC) through Rule 4.7 of the Commodity and Exchange Act.¹² Many of the funds delineated as a limited partnership investment offer liquidity terms ranging from daily to quarterly, and all gains and losses generated by the fund are passed through to the investors and reported through a K-1. It is important to note that managed futures are not a tax efficient investment for two reasons: they engage in short-term trading, and futures contract profits are considered non-qualified income.¹³ However, the IRS grants CTAs special tax considerations such that roughly 50% of investor profits are taxed as ordinary income while the other 50% gets long-term capital gains treatment.¹⁴ Limited partnerships will often charge both a management fee and a performance-based fee, both at the underlying fund level and at the fund of fund level, thereby requiring the investor to pay two layers of fees. These fees can run anywhere from 1% -2% in management fees and 10% -20% of profits earned as a performance fee.

■ FUND OF FUND APPROACH continued

As an alternative to limited partnership offerings, these strategies are increasingly offered through SEC-registered mutual funds. Mutual funds can be bought and sold daily on various exchanges and there are no net worth limitations on investors who can invest in a CTA mutual FOF, other than minimum purchase constraints applied by the fund's manager.¹⁶

Similar to limited partnerships, a CTA mutual FOF will have two layers of fees. The underlying CTAs will charge a 1-2% management fee and a 10-20% performance fee. The mutual fund manager is prohibited from charging a performance-based fee, but will often have a management fee ranging from 1.5-2% as well. Unlike limited partnerships; however, because the income is passed through a foreign corporation,¹⁷ it does not qualify for the special tax considerations offered to limited partnerships. As such, all proceeds from the CTA mutual FOF are then taxed as either short-term capital gains or ordinary income.

Certainly, there are benefits and detriments to both vehicles. The administrative burdens associated with limited partnerships that include filing subscription or redemption paperwork and dealing with K-1 tax reporting can be challenging. These managers have a tendency to gain better access to top CTAs and provide greater diversification across strategies and managers. Not only is the opportunity set wider for managers operating in the limited partnership arena, but they have the benefit of more favorable tax treatment as well. Both vehicles offer a method for achieving an allocation to managed futures through a well diversified, risk-managed approach. However, should a client meet the required Qualified Eligible Participant standards, our primary recommendation is to approach the managed futures allocation through the limited partnership structure.

■ MANAGER SELECTION

LNTyee incorporates a disciplined and rigorous process for selecting and monitoring all our investment managers.¹⁸ In addition to the qualifications outlined in our standard process, there are a number of specific criteria that CTA FOF managers must meet. The FOF manager must demonstrate a robust, structured approach to risk management. While this is integral to all our managers, it is of particular focus for CTA FOFs. We must fully understand the manager's philosophy on risk and how their process both monitors and manages risk within the portfolio. The manager must demonstrate considerable controls around risk management and prove that

■ MANAGER SELECTION continued

these controls are tested regularly. This is evidenced by the manager deploying considerable resources into the technology infrastructure used to track daily transactions and positions both within each underlying CTA account, as well as on a rolled-up basis at the portfolio level.

We feel that the practice of evaluating and choosing CTA managers requires specialized knowledge of the various trading styles, thus we like to see that the FOF manager has at least one, but preferably many, experienced traders on staff who have a deep background in and understanding of the space. However, we must also see that they are well supported by a capable, eager research staff. We evaluate the research projects tasked to these analysts to ensure that the manager is always looking for new opportunities to enhance returns or mitigate downside risks within their strategy. We also want to ensure that the research prepared on both approved and prospective managers is comprehensive and consistently applied.

■ RISK OF INVESTING IN MANAGED FUTURES

No investment strategy comes without a list of considerations and acknowledgements of specific risks. While many of the risks associated with hedge funds – lack of liquidity, lack of transparency, increased counterparty risk – are somewhat mitigated in the CTA environment, there are still a number of inherent risks to investing in managed futures.

One such risk is being susceptible to the intrinsic conflict of interest associated with performance-based compensation. For instance, if the fund's performance has fallen below the high-water mark¹⁹ and thereby impedes the manager from collecting performance fees, the manager may choose to take on additional risk in order to boost short-term performance. Another risk is that CTA managers employ leverage through the use of margin, which can inflate both positive and negative returns. In addition, CTA managers do not typically borrow assets in order to apply true leverage to their strategies. Instead, they use margin to transact in futures contracts, which inherently builds leverage into their portfolios. The mechanism of settling gains and losses within a margin account on a daily basis, coupled with a guarantee²⁰ offered by the futures exchange to settle all accounts, works to effectively eliminate the counter-party risk or the risk that the other party in the contract won't be able to settle accounts should their value decrease over time.

■ RISK OF INVESTING IN MANAGED FUTURES continued

Other risks include the significant intra-period drawdowns that are common in this asset class. When performance is evaluated on an aggregate monthly or yearly basis, much of that volatility experience is smoothed. But investors should be aware that the day-to-day performance in this asset class is still likely to be very volatile. The worst drawdown for CTAs, as represented by the Barclay CTA Index, began in July 1989. Over the next four months, the index fell 15.7% while the S&P 500 returned 8.4% during the same period. However, the CTA Index subsequently rallied to post a positive return of over 21% in 1990, versus a fall of 3.1% for the S&P 500 Index.

This highlights one of the most significant risks associated with this type of asset class; that managed futures returns do not behave like those of traditional asset classes. Investors not familiar with CTAs might have exited the asset class in the fall of 1989 and missed the subsequent snap back.

CTAs may periodically trail the equity markets for long investment periods especially when markets are in expansionary phases, which was particularly evident in the bull market years of 1997-2000 and 2003-2007. The experience of many traditional investors has created pre-conceived notions about how a market “should” behave. As a consequence, when an asset class offers an experience dramatically different from what investors expect, they become highly skeptical or nervous about its performance. To mitigate this outcome, investors should go against their natural inclination to evaluate the performance of their CTA allocation against that of equities and bonds. Instead, investors should evaluate the aggregate benefit of CTAs to their comprehensive portfolio over time. We discuss these implications below.

■ ASSET ALLOCATION

The CTA asset class offers considerable benefits to a well-diversified portfolio. As we have mentioned above, CTA managers have experienced very low correlations across the various CTA strategies and to other asset classes. Historically, they often outperform equities during severe market corrections. It is for this reason that when CTA managers are added to a comprehensive portfolio, the estimated return frontier shifts upward, offering incremental return for each level of risk.

By using the Barclay CTA Index in a way that is consistent with our strategic asset allocation process, we developed 10-year projections of risk, return and correlation

for the asset class.²¹ We then incorporated those estimates alongside our return assumptions for all other asset classes and ran a series of optimizations for each of our model portfolios corresponding to their individual risk targets. In each case, the risk-adjusted return, as evidenced by the Sharpe Ratio,²² is materially improved when an allocation to managed futures is added to the portfolio.

We investigated two separate techniques for funding our managed futures allocations. In the first, we pulled the allocation pro-rata from all other asset classes. The second technique funded the managed futures allocation by decreasing allocations to just the equity-based asset classes (U.S. Large-Cap, U.S. Small-Cap, Developed International, Emerging Markets and Global REITs where applicable) on a pro-rata basis. The portfolios, funded through a reduction to equity markets, offered the same return as those funded by all asset classes, but did so with a marked decrease in volatility and thereby improved the risk-adjusted return estimates for each model portfolio.

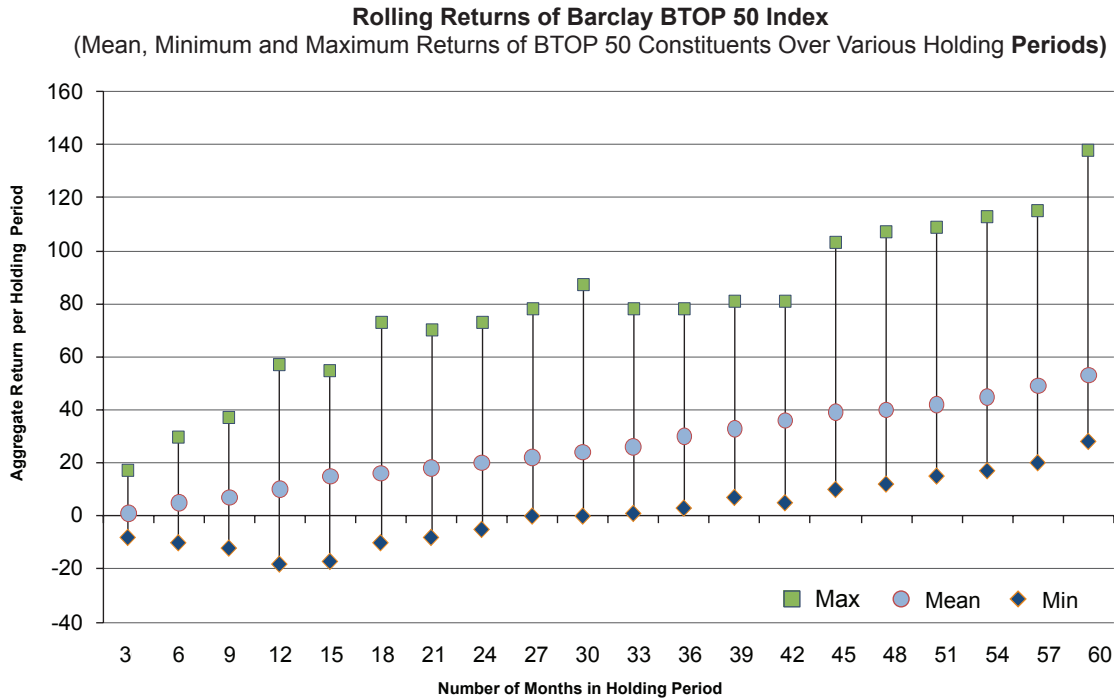
Next, we evaluated the appropriate size of the managed futures allocation. We ran multiple scenarios, adding managed futures in increments of 5, 10, 15 and 20% of the portfolio's overall allocation. Again, in each case, the greater the allocation to managed futures, the higher the risk adjusted return.

Although we have attempted to portray the relative attractiveness of this asset class, there are a number of reasons why we are recommending an initial allocation of no more than 10% to managed futures. As mentioned throughout, this is an asset class that can experience frequent (although often less dramatic) drawdowns. Managed futures generally follow a return pattern dissimilar to that of traditional markets and can trail these markets for prolonged periods of time. All too often, investors not accustomed to this behavior will grow nervous or impatient with their investment and will exit before the investment has had an opportunity to make money. While many of the risks involved with this asset class have been identified throughout this paper, the single greatest risk is that an investor will lose patience with the strategy at just the wrong time.

The chart on the following page depicts the minimum, maximum and mean returns of CTA managers comprising the BarclayHedge BTOP 50 Index²³ from January 1987 through December 2008. These returns, spread over a series of holding periods ranging from 3 to 60 months, suggest that in the worst-case scenario an investor might have to hold the allocation for at least 2.5 years before breaking even. While the best managers offered considerably better results and the average manager

ASSET ALLOCATION continued

for the index was accretive from the first quarter, it could take some time before the strategy adds value. Investors should be aware of the asset class and its behavior before making a sizable commitment.



Source of Data: BarclayHedge, Stan 1980-2008

CONCLUSION

In summary, managed futures present a strong case for inclusion as a component of our strategic asset allocation. The asset class has historically experienced attractive, uncorrelated performance results, which have been particularly accretive during periods of traditional market downturns. Although the volatility of managed futures is commensurate with equities, further evaluation determined that downside risk was substantially lower and that performance surprises have historically been to the upside. Managed futures experience more frequent drawdowns than the equity markets, but these drawdowns have historically been substantially less severe.

Although not a new strategy, managed futures are becoming an increasingly important component in well-diversified portfolios. The attractive performance history of the asset class, in particular the risk mitigation it offers to a portfolio of traditional assets, has led many investors to carve out a direct allocation to managed futures.

■ CONCLUSION continued

This movement has continued to benefit the CTA industry over the last few years and today there is a greater number of quality fund of funds managers that offer diversified and risk-managed options for high net worth investors.

It is for these reasons, as well as our anticipation of increasingly volatile traditional securities markets that we believe managed futures will be an important component of our strategic allocation recommendations going forward.

■ ABOUT LAIRD NORTON TYEE

Laird Norton Tyee is one of the Pacific Northwest's largest privately held wealth management firms, with nearly \$4 billion in assets under management. Our dedicated Investment Research group specializes in selecting and monitoring top investment managers and determining the appropriate asset allocation needed to help each client achieve their complex investment objectives. We serve goal oriented, high-net-worth individuals and families who want to make an intentional, positive impact with their wealth. Success is measured by clients' ability to achieve long-term financial results, reach personal and family goals, and leave lasting legacies. Offering expertise in personal strategic planning, trusts and estates and investment stewardship, Laird Norton Tyee's more than 40 years in the Pacific Northwest lends a unique multi-generational insight and approach to personal and family wealth.

■ DISCLOSURE

The information presented herein does not constitute and should not be construed as legal advice, as an endorsement of any party or any investment party or any investment product or service, or as an offer to buy or sell any investment product or service. The views and solutions described may not be suitable for all investors. All opinions expressed are those of Laird Norton Tyee and are current only as of the date appearing on this material. The information provided should not be construed as providing any assurance or guarantee as to returns that may be realized in the future from investments in any asset class described herein. All investments involve a level of risk, and past performance is not a guarantee of future investment results. The value of investments and the income derived from them can go down as well as up. Future returns are not guaranteed and a loss of principal may occur.

Certain information herein has been obtained from public third party data sources. Although we believe this information to be reliable, no representation or warranty, expressed or implied, is made, and no liability is accepted by Laird Norton Tyee or any of its officers, agents or affiliates as to the accuracy, completeness or correctness of the information contained herein. Indices are statistical composites and are shown for informational purposes only. Indices are unmanaged, not subject to management fees and cannot be invested in directly. LNTyee is comprised of two distinct entities that may offer similar services to clients. Laird Norton Tyee Asset Strategies, LLC is an Investment Advisor registered with the Securities and Exchange Commission. Laird Norton Tyee Trust Company is a State of Washington-chartered trust company.

■ END NOTES

1. Risk-adjusted performance is a measurement of return per unit of risk. Throughout this paper, risk-adjusted performance is measured by the Sharpe Ratio. The Sharpe ratio measures the excess return per degree of volatility, or standard deviation, of an investment.
2. Margin associated with the futures market is defined as the minimum collateral required by the various exchanges in order for the investor to initiate a contract. This collateral is required by the exchange in order to guarantee each party's obligation to the contract. It is intended to be a sufficient amount to cover the losses of a particular day.
3. The BarclayHedge CTA Index is an unweighted index, created in 1980, which tracks the performance of 565 unique strategies within the CTA universe and is rebalanced annually.
4. The S&P 500 Index tracks the performance of the 500 largest companies by market capitalization that trade on the U.S. stock exchanges.
5. The Barclays Capital U.S. Aggregate Bond Index tracks the performance of U.S. dollar-denominated, investment-grade, fixed-rate, taxable bond market of SEC-registered securities. The index includes bonds from the U.S. Treasury, Government-Related, Corporate, MBS, ABS and CMBS sectors.
6. Standard deviation is a statistical computation used to measure the variation or dispersion of outcomes or returns around the average.
7. Kurtosis is a statistical measure of the peakedness of a probability distribution, as well as the degree to which infrequent extreme deviations are present.
8. Skewness is a statistical measure of the asymmetry of a probability distribution.
9. Source: BarclayHedge Indices, through 2nd Quarter 2011.
10. Abrams, Bhaduri, Flores, "Lintner Revisited: A Quantitative Analysis of Managed Futures in an Institutional Portfolio", 2009.
11. Momentum indicators track the rate-of-change of price movements in order to predict future price movements. Breakout indicators are used to detect when the current momentum or movement has undergone a significant change in pattern.
12. Rule 4.7 of the Commodity and Exchange Act places limits on who can invest in private investment funds, such as managed futures fund, to those meeting Qualified Eligible Participant limitations. Among the criteria tested are thresholds for investable assets and established accounts with futures commission merchants.

13. Non-qualified income is any income derived from sources other than those outlined in Section 851(b)(2) of the IRS Code, as qualifying gross income for a Registered Investment Company (RIC). Qualifying income should be derived from dividends; interest; payments with respect to securities loans; gains from sale or disposition of stock, securities, or foreign currencies; net income derived from investing in qualified publicly traded partnerships; or other income as defined in the Code.
14. IRS Section 1092 allows investors to offset gains and losses in positions of opposing trades. It states that losses on one position when realized is only reportable to the extent that they exceed the “unrealized gain” of the offsetting position; and also allows the liquidated positions identified as “straddles” to be used to increase the cost basis of the identified offsetting position.
15. The CTA mutual fund industry is currently under SEC regulation, however the SEC and CFTC are currently negotiating jurisdiction of CTA mutual funds.
16. It is important to note that there are unique characteristics associated with managed futures mutual funds. Futures contracts generate non-qualified income and the IRS imposes a 10 percent limit on the degree of non-qualified income permissible within a mutual fund, per Section 851(b)(2) of the IRS Code. As a result, these mutual funds will often invest in one or more underlying CTA funds through an offshore corporation in order to classify any gains to the mutual fund as qualified income of a corporate investment. Additionally, Section 851(b)(3) of the IRS Code requires that mutual funds cannot invest more than 25% of the fund’s assets in a subsidiary entity. Therefore, the manager will invest 25% of the fund’s assets in the various CTA strategies and through the use of margin, will lever those CTA strategies as if 100% of the fund’s assets were invested. Any excess cash is often invested in fixed income securities in order to further enhance returns.
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the fund's assets in the various CTA strategies and through the use of margin, will lever those CTA strategies as if 100% of the fund's assets were invested. Any excess cash is often invested in fixed income securities in order to further enhance returns.

18. Please see our white paper entitled, "LNTyee Investment Process: Manager Selection and Monitoring" for a comprehensive review.
19. The high water mark is the highest value that must be achieved before an incentive fee is paid. This mark protects an investor from paying performance fees on a gain that only makes up for a previous loss.
20. In the futures market, various clearing houses exist to insert themselves into each trade and guarantee the settlement of each trade regardless of which way the market moves. By guaranteeing the daily settlement of trades, the clearing houses transfer the counterparty risk from the investors to itself, so an investor instead has only to assume the risk of the clearing house defaulting. Each clearing house requires the posting of margin in order to cover the expected daily change in value of each contract, so that they can reasonably cover settlement of daily trades.
21. Please see our white paper entitled, "LNTyee Investment Process: Strategic and Tactical Asset Allocation" for a comprehensive review.
22. The Sharpe ratio measures the excess return per degree of volatility, or standard deviation, of an investment.
23. The BarclayHedge BTOP 50 Index attempts to replicate the CTA industry in terms of trading style and market exposure. This investable index employs a top-down methodology in selecting the largest CTA programs across a number of trading styles. Managers are equally weighted and rebalanced annually. Currently there are 28 strategies represented in the index.

■ OTHER RESOURCES

- Managed Futures for Institutional Investors: Analysis and Portfolio Construction, Galen Burghardt and Brian Walls, Bloomberg Press, 2011.
- Inside the Black Box: The Simple Truth About Quantitative Trading, Rishi Narang, John Wiley & Sons, Inc. Press, 2009.
- “The Potential Role of Managed Commodity-Financial Futures Accounts (and/or Funds) in Portfolios of Stocks and Bonds”, Dr. John Lintner, Harvard University, 1983.
- “Lintner Revisited: A Quantitative Analysis of Managed Futures in an Institutional Portfolio”, Ryan Abrams, Ranjan Bhaduri, PhD, CFA, CAIA, Elizabeth Flores, CAIA, The CME Group, 2009.
- “Lintner Revisited: The Benefits of Managed Futures 25 Years Later”, Ryan Abrams, Ranjan Bhaduri, PhD, CFA, CAIA, Elizabeth Flores, CAIA, The CME Group, 2009.
- “Managed Futures and Asset Allocation”, Peng Chen, PhD, CFA, Kevin Zhu, PhD, Chris Armstrong, CFA, Ibbotson, 2006.
- “Current Issues in Registered Alternative Funds”, Joshua Deringer, David Matteson, Drinker Biddle & Reath LLP, Aspen Publishers, 2011.
- “Reasons to Invest in CTAs”, Daniel Axmer, Asset Alliance, 2006.
- “Systematic Global Macro: Performance, Risk and Correlation Characteristics”, Peter Park, Oguz Tanrikulu, PhD, Guodong Wang, PhD, Graham Capital Management LP, 2009.
- “The Benefits of Hedge Funds and Managed Futures”, Frontier Investment Management, 2009.
- “De-mystifying managed futures – why first class research and innovation are key to stay ahead of the game”, Thomas Della Casa, Mark Rechsteiner, Ayako Lehmann, Man Investments – a member of the Man Group, 2007.
- “Managed Futures Can Save Your Tail”, Steven Koomar, KV1 Asset Management LLC, 2004.
- “Managed Futures Funds: LPs vs. Mutual Funds”, Ken Steben, Steben & Company, Inc., 2011.
- “In Defense of Managed-Futures Funds”, Ken Steben, Investment News, 2010.
- “Managed Futures: A Potential Inflation Defense”, Lighthouse Investment Partners LLC, 2010.