Portfolio Building: Strategies to Manage Risk and Build an "All-Weather Portfolio"

Produced by: Walsh Asset Management

Introduction

This white paper is intended to provide a discussion of the fundamentals of portfolio building and the reasons why managed futures should be an integral part of your investment portfolio. Some of the topics we will cover include why investors need a diversified portfolio, how to evaluate the strength of a portfolio, why managed futures should be included in all portfolios, the different types of managed futures investments, and how to use this information to build an all-weather portfolio.

Perhaps this goes without saying but, the objective of any smart investor is to build a diversified portfolio of investments that generates stable and compoundable returns. Over any length of time, this is not only the best way to accumulate wealth through investing but the only realistic way. Naïve investors may be tempted to "time the market" by investing in equities, bonds, commodities, foreign exchange products or other asset classes based on subjective analysis, either their own or that of an investment advisor. This approach may occasionally be successful and can at times generate impressive returns; however, history has shown that few if any investors are ever able to consistently predict the behavior and timing of the market. "Market timing" makes your investments subject to the capricious behavior of the economy and should be thought of as analogous to trying to pick the winning horse at the racetrack. Perhaps an even larger danger to your portfolio than the unpredictability of the market is the natural tendency to make emotional decisions with your investments. When it comes to making investment decisions, you are often your own worst enemy. Behavioral economists have shown that most investors chase results, purchasing an asset when it is at the height of its performance and selling when it is underperforming [1]. Intuitively, this is not conducive to profiting from your investments and is exactly opposite of the maxim 'buy low, sell high.' Using a systematic approach to trading specifically tailored to your level of risk tolerance can help reduce the negative effects of the emotions fear and greed on your trading decisions. More generally, portfolios which are carefully devised broadly diversified, and use a systematic trading approach can help investors to avoid some of the common but serious pitfalls that investors fall into.

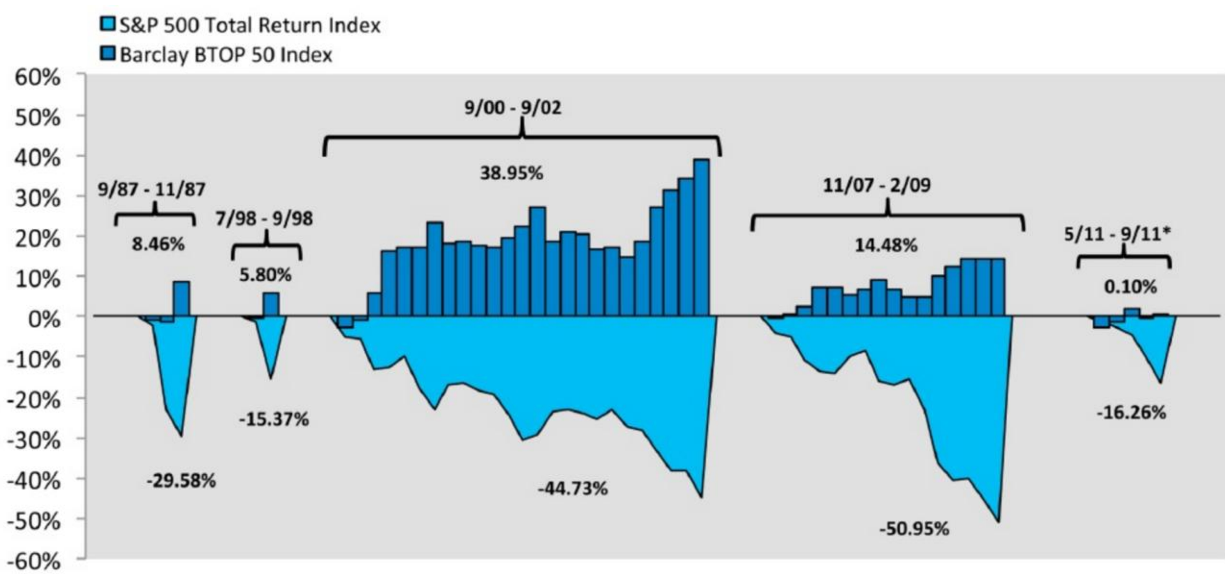
Achieving True Diversification

One of the most attractive features of managed futures to investors is that historically they have proven to be uncorrelated to the stock market. When putting together a portfolio with managed futures, you should look for a correlation between 0.05 to (-0.05) to the S&P index, essentially zero correlation. An investment in managed futures is not intended to provide a strong negative correlation to the stock market (as bonds are); it should instead provide diversification through zero long term correlation. The chart below shows the long term correlation of the BTOP 50 (the Barclay's managed futures index) to traditional asset classes and other alternative asset classes spanning a period of approximately twenty years. Note that over this period the correlation between the BTOP 50 and the S&P 500, representative of the managed futures and equities markets respectively, showed a correlation of -0.05, meaning that effectively they showed zero correlation to each other.

	BTOP 50 Index	S&P 500 Index	MSCI World	Barclays Capital Bond Composite US Index	Barclays Capital Bond Composite Global Index	GSCI TR	DJ AIG Commodity Index	HFRI Fund Weighted Index	HFRI Equity Hedge Index	LPX Buyout Index	S&P/Citigroup World REIT TR Index	AlternativeEdge Short-Term Traders Index Proforma
BTOP 50 Index	1.00											
S&P 500 Index	-0.05	1.00										
MSCI World	-0.10	0.86	1.00									
Barclays Capital Bond Composite US Index	0.22	-0.15	-0.15	1.00								
Barclays Capital Bond Composite Global Index	0.22	0.19	0.20	0.89	1.00							
GSCI TR	0.11	0.09	0.12	-0.02	0.00	1.00						
DJ AIG Commodity Index	0.15	0.19	0.31	0.02	0.08	0.90	1.00					
HFRI Fund Weighted Index	-0.05	0.73	0.75	-0.09	0.04	0.24	0.37	1.00				
HFRI Equity Hedge Index	-0.05	0.70	0.70	-0.08	0.04	0.29	0.36	0.94	1.00			
LPX Buyout Index	-0.28	0.64	0.65	-0.16	-0.29	0.25	0.27	0.64	0.62	1.00		
S&P/Citigroup World REIT TR Index	-0.03	0.52	0.54	0.18	0.23	0.14	0.28	0.47	0.43	0.61	1.00	
AlternativeEdge STTI Proforma	0.35	-0.31	-0.26	0.17	0.28	0.10	0.04	-0.20	-0.22	-0.39	-0.23	1.0

While managed futures and the stock market are uncorrelated to each other over the long term, they have uniquely been strongly negatively correlated to the stock market during equity market meltdowns. In fact as the chart below shows, managed futures have performed extremely well during equity market crisis and had excellent returns during both the 'tech' and 'housing market bubble. 'One reason that the managed futures industry has seen tremendous growth in AUM since the most recent stock market drop in 2008 is that investors, particularly large institutional investors, have recognized this consistent historic trend and the hedge that managed futures can provide for their assets. Managed futures strength during economic crises has been much touted in financial literature in the past few years and the asset class has earned epithet "crisis alpha."

BTOP 50 vs. S&P 500 During S&P 500's Worst Five Draw-downs Since 1987



Trading futures and options involves substantial risk of loss no matter who is managing your money. Such an investment is not suitable for all investors. Past performance is not necessarily indicative of future results. Please note that the BTOP 50 Index may not be representative of any individual CTAs performance.

*S&P 500 Total Return Index had not completely recovered from its drawdown beginning in 11/07, due in part to its depth and severity; the drawdown beginning 5/11 is included because it would have qualified as one of the worst had the index recovered to its previous highs

Source: A Quantitative Analysis of Managed Futures in an Institutional Portfolio

If more than one CTA is traded, then the programs overall should not be correlated to each other. A correlation analysis is crucial to developing a properly balanced portfolio. Seemingly non-related approaches to the markets and seemingly non-related commodities may actually have a fairly high correlation to each other. Missing an underlying correlation between CTA programs can result in an inappropriate bet size. While it might seem like adding another CTA program would always provide greater diversification and thus less risk, the converse is true if the new CTA or any component of the new CTA is highly correlated to your portfolio overall or any of the constituent CTAs. Mr. Bill Reavis, Director of Asset Management with Walsh Trading INC, has always said that none of the programs traded should have a correlation of 0.3 to any other program in the portfolio based on his experience in portfolio building.

Prospective investors in managed futures should also look for diversification within the managed futures program. Diversification of commodities traded should be a major objective when choosing a CTA or a portfolio of managed futures investments. Diversification of commodities traded helps to stabilize the portfolio and, perhaps more importantly, increases the probability of entering a big move by enhancing the chance that you will be invested in a commodity that has ‘outlier’ performance. Many trend following programs generate most of their returns from the infrequent very large trends that develop in futures markets.

Assessing Portfolio Risk

Realizing that you need a diversified portfolio is an important first step but it still leaves many unanswered questions about what to look for in a portfolio. The main thing that prospective investors in a portfolio usually look at is ROI or return on investment. Of course, intuitively, it would seem that the higher the ROI the better. After all, who wouldn’t want to make 20%, 30%, or 100% a year on their initial investment? And there are, in fact, some portfolios that display performance at and in excess of these levels. However, if returns that size seem too good to be true, it’s because in general they not sustainable. No portfolio can generate these levels of returns without taking on huge risk in the form of volatility. Additionally, given the inherent ability to leverage in futures markets, it is possible to generate greater returns by taking on risk in the form of high leverage. For this reason, in addition to ROI it is vitally important to look at risk-adjusted return. When discussing stocks, generally all volatility is bad volatility. Futures on the other hand, with the ability to go long or short, may benefit from **positive volatility**. To assess the direction and magnitude of volatility in futures markets, a score called the Sortino Ratio is used. The Sortino Ratio is a metric which aims to measure the desirability of an investment strategy by dividing the average period return in excess of the risk-free rate by the downside volatility of the return generating process. The Sortino Ratio does not penalize positive volatility nor non-normalized positive returns, which are of course welcomed by investors, and thus gives a more accurate picture of actual riskiness of an investment than other measures[2]. A high Sortino Ratio suggests a high performing investment strategy with a low level of risk.

A related and more familiar measure used to evaluate performance is the standard deviation of returns, which essentially measures how large the monthly swings in returns are in absolute terms. For certain investor types such as IRAs, pension funds, and individual investors with low risk-tolerance this may be the most important measure to consider because it gives one of the best measures of the predictability of an investment strategy.

Another factor to consider is the maximum drawdown or the largest percentage loss that a program suffers from the initial capital investment. While factors such as higher standard deviation and volatility can make trading uncomfortable, large drawdowns are often the most difficult psychologically and financially for investors to endure. Large magnitude drawdowns, according to a study by the University of Florida, are the biggest predictor of whether an investor will discontinue trading a managed futures program. Most investors, irrespective of their initial investment strategy, are unwilling to tolerate losses of a considerable magnitude even over a very short timeframe. This factor often leads investors to abandon good programs at their nadir and to become net losers on their investments [3.]

Stock brokers often promulgate the idea that managed futures are unreasonably risky. The facts, however, don't support this claim. Over the past thirty years, the stock market has suffered far greater maximum drawdowns than the futures markets, losing tremendous amounts in a matter of weeks, days, and even hours in 1987, 1990, 2001, and 2008 [4]. In the past thirty years the worst drawdown for the managed futures index was 10.1% however the worst drawdown for the S&P Index was over 52% [4]. The S&P Index has also displayed far greater volatility and higher standard deviation of returns over this time period than the managed futures market. While one might assume that greater stability was achieved at the expense of positive return size, in fact, managed futures have also outperformed the stock market for the past 30 years.

Investing at least a portion of your portfolio in managed futures should be an easy decision for any high net worth individual, investment professional or institutional investor. However, what is more difficult is figuring out the right time to invest in managed futures. When you start trading a managed futures program is one of the most important factors in determining whether you will be successful. The public almost always enters a program when it is over performing its equity curve and stops trading when it is underperforming. Intuitively this is not a good way to try to make money. A program with low standard deviation has the benefit of lessening the risk of this happening. Another important factor involves average margin to equity ratio. This figure gives you an idea of how large a bet the manager is placing to achieve the returns that are being posted. The margin-to-equity ratio indicates what percentage of a CTA managed account is posted as margin, on average.[6] Essentially, it tells us how much money is tied up in margin at any given point in time relative to the nominal investment amount. Margin-to-equity ratios can be an excellent way to predict future drawdowns. Empirical data shows us that higher margin usage leads to higher average and maximum drawdowns. In general, "lower margin-to-equity ratios, correlate to superior risk adjusted performance" [2]. The risk of program failure goes up dramatically when the average margin to equity exceeds 32%. At a ratio of under 16% there is a substantially lower rate of failure.

Choosing the Right Managed Futures Strategy for You

In addition to factors such as portfolio correlation and timing, one of the critical factors to consider in making an investment in managed futures is exactly what category of managed futures to invest in, of which there are several. One category to consider is medium to long-term trend followers. Historically, this category of managed futures has been a significant money maker and has also been the strategy that has most consistently and strongly shown a negative correlation to the S&P in critical market situations.[4] The chief difficulty for many investors with medium to long-term trend following managed futures programs is that they behave very differently than stocks and can be very disconcerting to some investors. Stocks tend to make a little bit of money every day until the market breaks. While it is somewhat comforting to watch small returns accrue day in and day out, ultimately these big negative breaks don't allow for compounding; they are "compounding killers." In other words, stocks have a similar equity curve to a Thanksgiving turkey. Your stock account, like the turkey gets bigger almost daily until it suffers a major collapse (the turkey loses its head); Which is what happened in 1974, 1987, 2001 and 2008. So, if you were compounding returns between these collapses—you're starting over again or worse. Managed futures on the other hand usually go through long periods of flat returns with very brief periods of exceptional returns. Combined with low drawdowns, historically, this has allowed for compounding. Medium to long-term trend followers when added to a stock portfolio tend to smooth out the equity curve for the entire portfolio, in a sense giving investors the best of both types of investments. Adding in short to medium-term trend followers can further smooth out a portfolio's overall equity curve generating the ideal consistent stable returns we look for. Not all trend following programs are systematic, however, the vast majority of trend following programs are systematic, almost by definition. In fact, nearly 80% of the top performing CTAs are systematic traders according to BarclayHedge [7]. As we mentioned earlier, a systematic approach takes the human emotions of fear and greed out of the decision making process.

Another category of managed futures that often displays impressive returns in spite of its exposure to the negative influences of human emotion are 'Discretionary Ag' Traders. Some of the features of 'Discretionary Ag' trading include low correlation to almost all other asset classes, holding positions in key world commodities, and tendency for large price moves. This category of managed futures traders is largely dominated by managers that are well connected to the industry that they are trading in (e.g. cattle, grains). While some discretionary traders do analyze charts or other technical data, they often base their trading strategy solely on their insights into supply and demand factors in the niche market in which they operate[5]. This category of managed futures should typically be limited to a maximum of 25-30% of the overall allocation, because this type of trading usually requires very specific and arcane knowledge and because it relies on subjective insights.

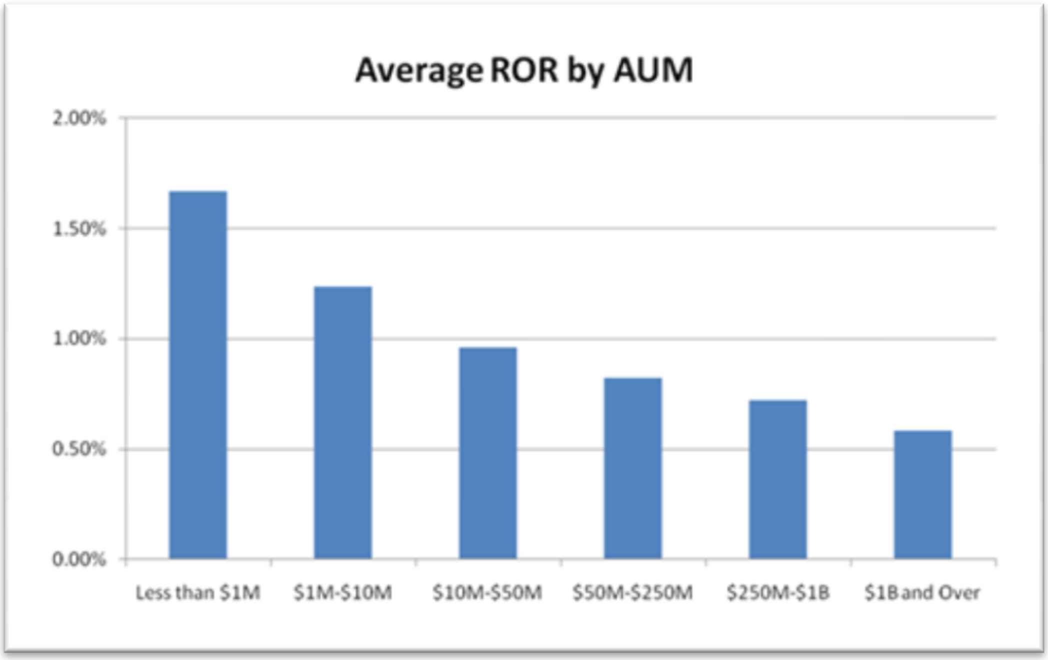
Options sellers have been one of the most successful categories of managed futures traders in the past few years. Options selling is a valuable addition to a portfolio during times when the stock and futures markets are in a contraction phase as they are in now and have been since 2008. They have been large consistent money makers while stocks have climbed the wall of worry. However, options sellers are subject to tremendous drawdowns and their typical equity curve often builds up over long periods of time only to fall precipitously. Therefore due to the riskiness of options selling, this category should comprise no more than 15% of any portfolio of managed futures. In order to attempt to limit risk it is a good idea to choose options sellers that are spreaders as these types of options sellers have a defined and thus capped risk in most cases. Another drawback of an options selling strategy is that options sellers often have a strong positive correlation to the stock market during periods of crises. To reiterate, trend following managed futures strategies conversely have been strongly negatively correlated to the stock market during most periods of crises, making them much more effective than options sellers in preventing major portfolio drawdowns. To evaluate the efficacy of options selling strategies, it is very important to look at their long term performance to see how they have handled periods of high volatility (in other words, losing periods). If you looked at all classes of managed futures over the last five years, options sellers and 'Discretionary Ag' would appear to have had the best performance, and it would be tempting to allocate your managed futures portfolio heavily towards these classes. However, looking at the longer term data it would be clear that this would be a very risky strategy.

Further, keep in mind that option sellers are most effective during flat markets which is often a market with contracting daily ranges and volatility. This type of market may last a long period of time. As the markets continue to contract the option seller is forced to sell greater and great amounts of options, closer and closer to strike prices to maintain the same level of returns. With all option sellers forced into this small boat, even a small spike in volatility and range expansion can wreak havoc with option sellers as everyone scrambles for safety at the same time. For this reason one should reevaluate and look to reset their allocation to options selling programs about twice a year.

Special Considerations for Institutional Investors and Family Offices

Thus far this paper has discussed concepts generally applied to investing in managed futures for all types of investors; however, there are some special considerations for institutions and family offices that are different from those of high net worth individuals. For both institutions and family offices, total assets under management (AUM) of a CTA are an important consideration. Both institutions and family offices require CTAs that are scalable to handle large investments and that have a proven track record managing large amounts of money over a reasonable length of time. The same manager that has excellent results at fewer than 5 million in AUM may have no experience at trading large sums and his trading approach may not lend itself to trading large sums. That being said, it is not necessarily desirable for a CTA to have a very large AUM figure. The larger the CTA in terms of AUM, the less likely it is to have exceptional ROI. The deleterious effect on performance with increase in AUM can be attributed to a number of problems associated with managing very large sums of money in a single CTA. First, a very large AUM reduces the number of commodities that can be traded. Second, it is difficult to move large numbers of contracts in overnight markets. Third, large AUM causes increases in slippage. And finally, scaling in and out of trades becomes necessary with very large AUM which is less efficient than for example stops at 1% risk. Very large CTAs in terms of AUM also often require very substantial margin requirements reducing the ability to leverage (although they can usually be traded notionally but at substantially increased expense.)

We would recommend that family offices and institutional investors investigate making allocations to many CTAs with lower AUMs which would offer the ability to create more efficient risk control as well as broaden the base of commodities that can be traded which increases the likelihood of capturing outlier returns. While this methodology may not be as easy to track, the difference in performance may be very substantial. We need look no further than the CTA performance of 2011 and 2012 for a revealing example. Many CTAs with medium AUM levels showed returns of 10% to 25% or higher[7]. The CTA Index, with its first back to back losing years, showed returns of -3% to -4%[7]. But, managed futures funds, which are composed entirely of mega AUM CTAs showed a miserable -7% to -9% return[7].



Source: BarclayHedge Database

Overall, managed futures are an excellent addition to an institutional portfolio or the investment portfolio of a family office. With larger allocations to the MF asset class, managers can create a very stable portfolio, with very low standard deviation and drawdowns. Low margin to equity requirements with low correlations, low standard deviation and low largest draw down may allow managers to leverage their allocation to this class, sometimes as much as 7 or 8 to one.

Ongoing Concerns for Investors in Managed Futures

Two final points to consider are the importance of monitoring and rebalancing your portfolio. It is vitally important to consistently monitor your managed futures investment to ensure that the methodology employed remains consistent with what attracted you to invest in that managed futures strategy in the first place. Some managers may decide to change their trading approach or frequency overtime and it is important to be vigilant about this in order to insure that the strategy you chose to invest in is being executed. One way to increase the likelihood that your managed futures strategy remains consistent with your expectations is to use the same money management that created the track record to execute the trading strategy

[5]. The other important consideration is rebalancing. The simple suggestion here is to rebalance your portfolio yearly to ensure that you are not falling into the trap of chasing performance, that is to say, that the CTAs that have been the most successful will now have more of your money to work with and will be trading larger. While the strategic addition of carefully selected managed futures products to your portfolio will lower risk and thereby make the overall portfolio less volatile and more likely to be compounded, the increase in trading in any single component, especially after a large increase in value, may have the opposite effect.

How to Learn More about Investing in Managed Futures

Walsh Asset Management hopes that this paper has been a helpful introduction to the use of managed futures in creating an effective all-weather portfolio for all investor types. To learn more about how Walsh Asset Management can help you implement managed futures in your individual or institutional portfolio please visit our website at www.walshtrading.com or call 312-957-5731.

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The addition of managed futures to a portfolio does not mean that a portfolio will automatically be profitable, that it will not experience substantial losses or volatility and that the results of studies conducted in the past may not be indicative of current time periods or of the performance of any individual CTA.

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