MANAGED FUTURES RESEARCH DIGEST

A COLLECTION OF RESEARCH ABSTRACTS FROM INDUSTRY AND ACADEMIC CONTRIBUTORS

CME Group

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The managed futures industry encompasses a variety of active trading strategies. These include trend following and non-trend following strategies, and systematic and discretionary methodologies. The managers in this space use primarily exchange-traded products that are liquid, deep, and transparent.

CME Group has gathered research papers from industry and academic sources to help investors understand the long-term role these strategies can play in portfolios. The papers are presented here in summary form.

Many of the papers summarized in this Research Digest are available on the CME Group Managed Futures Resource Center at cmegroup.com/managedfutures. If you would like to read any that are not on our site please contact the authors or firms directly.

GENERAL MANAGED FUTURES TOPICS

Understanding the Managed Futures Strategy and its Role in the Institutional Policy Portfolio

James Meisner; Kristofer Kwait, and John Delano, Commonfund Hedge Fund Strategies Group (2012)

Taken together, the different methods we have examined point to several useful properties of CTA strategy performance resulting from its systematic, data-driven investment approach. 1. Through stepwise regression in short windows, the variability of the CTA strategy's beta can be observed. The strategy often demonstrates favorable, directional beta exposure during rising and falling broad markets. 2. Fung and Hsieh's straddle model captures the convexity of the strategy; the straddle transformation illustrates the strategy's "long volatility" return properties, regardless of whether underlying managers are literally holding straddles. 3. The moving average method utilizes a trend-following technique to better capture the time-varying nature of CTA exposures.....CTA returns have demonstrated substantial long-term diversification properties in the context of a broad, multi-asset class policy portfolio. They also represent one of the few investment strategies that have the potential for outsized positive returns during extended periods of market stress.

Allocating to Managed Futures: Performance Considerations within a Risk Parity Framework

William Marr and Alexander Rudin, Ramius Trading Strategies LLC (2013)

A risk parity portfolio framework can be quite helpful when constructing portfolios of multiple differentiated investment opportunities. In this paper, we used this framework to combine managed futures with a portfolio dominated by stocks and bonds. Spreading risk equally among those three investment opportunities and rebalancing frequently- something made possible in practice recently by the emergence of managed futures mutual funds z- could lead to portfolio's return stream that is smoother and with shallower drawdowns as compared to a traditional 60/40 allocation scheme. When adopting this framework the "math" suggests an allocation to managed futures somewhere in the 15-25% range. The paper also discusses recent performance of managed futures. We believe there are a number of reasons for the disappointing performance within the managed futures industry over the past two years, including volatility that has contracted to below historically normal levels, correlations between markets that have been high, aggressive government and central bank intervention that has likely muted trends, and the commodity and currency asset classes that have been a consistent drag on performance. The question to ask is: Are all of these phenomena likely to continue over the coming years? If the answer is yes then trend followers will be challenged. We, however, think it is more likely that some of the phenomena negatively affecting managed futures performance will soon return to more normalized levels and the period of 2011- 2012 will eventually be remembered as a period of frustration for the strategy that still presents a valid and differentiated investment opportunity.

In Search of Crisis Alpha: A Short Guide to Investing in Managed Futures

Kathryn M. Kaminski, Deputy Managing Director of the Institute for Financial Research (SIFR); Affiliated Faculty at the Stockholm School of Economics, Department of Finance (2011)

Most investment strategies are susceptible to suffering devastating losses during equity market crisis. Given this, for almost any investor, the key to finding true diversification is in finding an investment which is able to deliver performance during these turbulent periods. The recent losses of the credit crisis have also reinforced to investors the importance of understanding why a particular investment strategy makes sense. For any new or current investor in managed futures, it is well known that these strategies tend to perform well when equity markets take losses making them an excellent candidate for diversifying a portfolio.

By taking a closer look into what really happens during equity market crisis events (often called tail risk events), this investment primer will take a new approach to explaining managed futures and explain why they can deliver "crisis alpha" opportunities for their investors. Crisis alpha opportunities are profits which are gained by exploiting the persistent trends that occur across markets during times of crisis. By gaining an understanding of why managed futures can deliver crisis alpha, the commonly cited benefits and characteristics which describe the strategy can be explained in simpler terms helping investors to more effectively use the investment strategy as part of a larger investment portfolio.

Lintner Revisited: A Quantitative Analysis of Managed Futures for Plan Sponsors, Endowments, and Foundations

Ranjan Bhaduri, Sigma Analysis and Management; Ryan Abrams, Wisconsin Alumni Research Foundation; Elizabeth Flores, CME Group (2008; To be updated Q3 2014)

Managed futures comprise a wide array of liquid, transparent alpha strategies which offer institutional investors a number of benefits. These include cash efficiency, intuitive risk management, and a proclivity toward strong performance in market environments that tend to be difficult for other investments. This paper revisits John Lintner's classic 1983 paper, "The Potential Role of Managed Commodity-Financial Futures Accounts (and/or Funds) in Portfolios of Stocks and Bonds," which explored the substantial diversification benefits that accrue when managed futures are added to institutional portfolios.

As Lintner did, this paper analyzes the portfolio benefits that managed futures offer through the mean-variance framework, but it draws on more complete techniques such as the analysis of omega functions to assess portfolio contribution. The paper also conducts a comparative qualitative and quantitative analysis of the risk-and-return opportunities of managed futures relative to other investments, and includes a discussion as to why managed futures strategies tend to perform well in conditions that are not conducive to other investment strategies. It provides an overview of the diversity of investment styles within managed futures, dispelling the commonly held notion that all CTAs employ trend-following strategies. Finally, it highlights the opportunities the space offers to pension plan sponsors, endowments and foundations seeking to create well-diversified, liquid, transparent, alpha generating portfolios.

Systematic Global Macro: Performance, Risk and Correlation Characteristics

Pablo Calderini. Graham Capital Management (2013)

Hedge funds have experienced significant growth over the last few decades. Assets under management have grown from an estimated $100 billion in 1995 to more than $1.7 trillion as of 4th Quarter 2012. As a rapidly maturing investment alternative, hedge funds can offer investors increased opportunities to receive positive returns, enhance diversification, lower volatility and improve overall risk-adjusted returns. This paper discusses one particular hedge fund style known as "systematic global macro;· first reviewing this style's risk and performance characteristics, and then discussing why it should continue to be a successful and essential component of a diversified portfolio that invests across a variety of hedge fund strategies.

Tales for the Downside: Risk Reduction Strategies

HewittEnnisKnupp, An Aon Company (2012)

Key points of the paper are: High market volatility has driven the development of investment strategies advertised to deliver reduced risk without reduced return; The "low-volatility" equity anomaly (low-risk stocks may have similar or greater returns than high-risk stocks) is best exploited by investors as part of the toolkit of a broader active strategy; "Tail risk" strategies can provide protection in extreme market events, but their persistent negative; carry (ongoing cost) make them unappealing to most investors; Managed futures and global macro hedge fund strategies have desirable downside risk protection characteristics combined with positive returns and alpha for skilled investors; Clients can increase their downside protection by allocating part of their hedge fund or opportunistic asset category to managed futures and global macro strategies.

CTAs: Shedding Light on the Black Box

Larry Kissko and Tommaso Sanzin, Hermes BPK Partners (2012)

This paper explores a number of features considered to be important when assessing Commodity Trading Advisors (CTAs) from the perspective of an investor in the asset class as well as issues of a more technical nature which we hope will inform further those considering making an allocation to the sector. Throughout the paper, topics are visited which are pertinent to this quest and, in so doing, we limit re-visiting themes which are already much discussed; instead we illustrate our assertions (where possible and appropriate) with technical data and examples of the techniques developed for finding, managing and monitoring managers in the space.

Moving into the Mainstream: Liquid CTA/Macro Strategies and Their Role in Providing Portfolio Diversification

Citi Prime Finance (2012)

From its original position atop the retail and high net worth investor's "risk pyramid'; the Liquid CTA/Macro industry has broadened out to become a core portfolio component for institutional investors of all flavors in recent years- from public and corporate pensions to endowments and foundations to family offices. Positive, uncorrelated performance during the 2008 Global Financial Crisis helped accelerate this expansion in the industry's investor base. Yet, the industry itself also changed to accommodate this new institutional base. To absorb the extensive asset flows originating from institutions, the industry sought means to extend its capacity and reduce portfolio volatility. We are now seeing managers list their funds on institutionally-focused capital raising platforms and developing their own hedge fund-like marketing teams to directly raise assets. All of these factors are working to move Liquid CTA/Macro managers into the mainstream.

Why Am I Diversifying, Again?

Jeff Malec, Attain Capital (2013)

Investors who have diversified their portfolios may sometimes find themselves gazing longingly at the returns they could have enjoyed if they had only stayed in stocks. Most of us know the responsible choice is to diversify and protect your portfolio from potentially catastrophic losses. But that expectation of future benefits doesn't make it any easier to ignore the feeling of missing out. And unfortunately for those who diversified since the financial crisis in 2008, the last few years have been tough to watch as stocks have soared to leave the diversifiers in the dust. But evaluating the diversified portfolio when stocks are climbing is akin the weighing the value of flood insurance in the midst of a drought. Things may look fine now, but how much longer would this rally need to last before gains in stocks outweigh the benefits of diversification during another crash? We take a look at the numbers.

Portfolio Construction Technique: Overlay/Underlay Alternatives Blend

Ranjan Bhaduri, Sigma Analysis and Management and Edgar Lobachevskiy (2011)

This paper illustrates the portfolio construction technique of blending managed futures with other types of hedge fund strategies. It furnishes evidence that the benefit of including managed futures with other types of hedge fund strategies makes for a superior risk adjusted return when compared to non-CTAs alone. Moreover, the sweeping technique is illustrated to help demonstrate how different calibrations from a risk- budgeting perspective correspond to different target objectives. The techniques in this paper could potentially be of particular importance to pensions and endowments that are facing challenges from an asset-liability perspective.

The Experience of Uncorrelated Assets

Ryan Duncan, Newedge (2011)

Much has been written about the low correlation between managed futures strategies and the S&P 500. However, over certain periods the correlation between the two can be quite high. In our research note Superstars versus Teamwork, we showed the distribution of estimated pairwise correlations is broad and symmetrical when the true correlation is low (i.e. large sampling error). Given a correlation of -0.16 between the Newedge CTA Index and S&P 500 since January 2000, one should expect to see periods of relatively high positive correlation. Even so, intervals of increased correlation still have real implications for a portfolio of diversified trading strategies. In this snapshot, we analyze returns of the S&P 500 and the Newedge CTA Index conditional on periods of relatively high correlation and find CTA returns appear to be independent of S&P 500 performance irrespective of correlation levels. Second, when correlations between the two indices are high, the S&P 500 exhibits significant positive performance.

Revisiting Kat's Managed Futures and Hedge Funds: A Match Made in Heaven

Thomas Rollinger, Red Rock Capital (published while with Sunrise Capital Partners, 2012)

In November 2002, Cass Business School Professor Harry M.Kat, Ph.D.began to circulate a Working Paper entitled Managed Futures and Hedge Funds: A Match Made in Heaven. The Journal of Investment Management subsequently published the paper in the First Quarter of 2004. In this paper, we revisit and update Kat's original work. Using similar data for the period June 2001-December 2011, we find that his observations continue to hold true more than 10 years later. During the subsequent 10 years, a highly volatile period that included separate stock market drawdowns of 36% and 56%, managed futures have continued to provide more effective and more valuable diversification for portfolios of stocks and bonds than have hedge funds.

Decoding the Myths of Managed Futures

Mark Shore, Shore Capital Management; DePaul University 's Kellstadt Graduate School of Business; Board Member, DePaul University Arditti Center for Risk Management (2011)

This paper examines five very popular myths and misconceptions held by both retail and institutional investors regarding managed futures. These myths have persisted for several years. As investors are becoming more aware of the potential use of managed futures for asset allocation and portfolio diversification, knowing if the myths are true or false, is critical for an investor's understanding and appreciation of managed futures.

Survival of Commodity Trading Advisors: Systematic vs. Discretionary CTAs

Julia Arnold, Imperial College London; Robert Kosowski, Imperial College Business School, University of Oxford, Oxford-Man Institute of Quantitative Finance; Paolo Zaffaroni, Imperial College Business School (2012)

This study investigates the differences in mortality between systematic and discretionary Commodity Trading Advisors, CTAs, over 1994-2009 period, the longest horizon than any encompassed in the literature. This study shows that liquidation is not the same as failure in the CTA industry. New filters are proposed that allow identifying real failures among funds in the graveyard database. By re-examining the attrition rate, this study finds that the real failure rate is in fact 11.1% in the CTA industry lower than the average yearly attrition rate of 17.3%. Secondly this study proposes a new way to classify CTAs, mainly into systematic and discretionary funds and provides detailed analysis of their survival. Systematic CTAs are found to have higher median survival than discretionary, 12 years vs.8 years. The effect of various covariates including several downside risk measures is investigated in predicting CTA failure. Controlling for performance, HWM, minimum investment, fund age, leverage and lockup, funds with higher downside risk measures have a higher hazard rate. Compared to the other downside risk measures, volatility of returns is less able to predict failure. Fund flows have significant and positive effect on the probability of survival, funds that receive larger inflows are able to survive longer than funds that do not. Finally larger systematic CTAs have the highest probability of survival.

An Overview of Managed Futures: Evolving Attitudes Towards Hedge Funds

Efficient Capital, Jeff Brown, Lorent Meski (2012)

This brief white paper provides a quick introduction to the Managed Futures industry. It addresses the key characteristics which benefit investors highlighting the potential advantages of including Managed Futures in a diversified portfolio. Characteristics described in the paper include the diversification benefits, non-correlation to equities and traditional asset classes, transparency, liquidity, non-directionality, and cash-efficiency. The paper also provides a general overview of the strategies represented within the Managed Futures asset class.

Momentum Strategies in Futures Markets and Trend-Following Funds

Akindynos-Nikolaos Baltas, UBS AG; Robert Kosowoski, Imperial College Business School (2013)

In this paper, we rigorously establish a relationship between time-series momentum strategies in futures markets and commodity trading advisors (CTAs) and examine the question of capacity constraints in trend-following investing. First, we construct a very comprehensive set of time-series momentum benchmark portfolios. Second, we provide evidence that CTAs follow time-series momentum strategies, by showing that such benchmark strategies have high explanatory power in the time-series of CTA index returns. Third, we do not find evidence of statistically significant capacity constraints based on two different methodologies and several robustness tests. Our results have important implications for hedge fund studies and investors.

A Comparison of CTA indexes

Thomas N. Rollinger & Scott T. Hoffman, Red Rock Capital (2013)

Investors and money managers interested in diversifying into Managed Futures are often attracted to the daily transparency and better liquidity that Managed Futures have over the typical hedge-fund structure. Professional money managers in the Managed Futures space are known by the regulatory designation of Commodity Trading Advisors (CTAs). However, with hundreds of CTA programs from which to choose, it can be daunting to know where to start one's analysis of this investment space. One place to begin is with CTA indexes, which compile and track the performance of different CTA programs. This paper summarizes and analyzes information on over ten CTA indexes, and while it attempts to encompass the most-oft used indexes, it is not a completely exhaustive list. Finally, since much of this information is not readily available, the purpose of this paper is to serve as an effective and efficient informational resource for the industry going forward. Upon delving into this material one quickly discovers there are differences between the various CTA indexes in terms of construction methodology, the number of CTA programs tracked, and minimum requirements with regard to track record length, financial auditing, and assets being managed.

The CTA VAI - Value-Added Index

Auspice Capital 2013

CTA returns have been lackluster in recent years. This has led some observers and investors to question the value and benefits of Managed Futures within a portfolio. The CTA VAITM (Valued Added Index) was developed to demonstrate that Managed Futures strategies consistently add value over the long term (not only in times of financial crisis). Additionally, this paper demonstrates how the CTA VAITM can be used to implement a simple market timing strategy that can further improve portfolio performance.

Performance and the Potential of Managed Futures in the Market Crisis Period

Kai-Hong Tee, Loughborough University Business School (2012)

The growth of the managed futures industry increased dramatically in the late 1970s following the introduction of the world's first financial futures contracts (foreign currency futures) by the Chicago Mercantile Exchange in 1972. The first academic research on the performance of managed futures was published in the 1980s. Researchers who adopted similar performance metrics to assess managed futures in a different time periods also reached similar conclusions as earlier studies about the benefits of managed futures. Some recent studies also address the issues of performance persistence and market timing ability of managed futures traders. Following the onset of the financial crisis of 2007-2008, researchers also reassessed the diversification benefits of managed futures and the low correlations of their returns with those of stocks and bonds. Evidence reaffirmed that the favorable characteristics of managed futures investments were useful for investors looking for "crisis alpha" for their portfolios in periods with high market volatility.

PERFORMANCE REVIEW

A Review of CTA Performance in 2012

James Skeggs and Lianyan Liu, Newedge (2013)

In this paper, we showed that 2012 saw some extreme periods of returns for the Newedge CTA Index which happened to translate to a relatively lean period for CTA returns. These returns however are well within the bounds of what we would expect for an absolute return strategy targeting a volatility of 10-15%. We also demonstrated that individual CTA managers significantly outperformed a generic trend following model on both an absolute, and volatility adjusted basis. We demonstrated that the return dispersion for the individual constituents of the Newedge CTA Index was one of the narrowest that we have seen since its start in 2000, and that an individual managers' assets under management or track record length did not appear to be determining factors for CTA returns in 2012. We used attribution data from the Newedge Trend Indicator to drill down further into trend following returns, and showed that whilst all sectors lost money, currency and commodity markets were the major contributor to the negative performance of this benchmark. We also showed that the degree of portfolio position concentration for the Trend Indicator has returned to average levels, and that 2012 saw the largest number of position changes in its 13 year history. Finally, we calculated a series of simple momentum models across a variety of look back parameters, and demonstrated that there was very little return opportunity, particularly in Commodities, Equity Indices, and Currencies which together represent the majority of trend following portfolios.

Well, it's Much Better than it Looks

Galen Burghardt, Lianyan Liu, and James Skeggs, Newedge (2013)

Like an actor who has lost his youthful good looks and who must now focus more on the quality of his acting, the CTA industry now has an opportunity to turn the loss of interest income into a chance to focus on what it has really been doing all along delivering respectable, uncorrelated returns at a reasonable risk. The picture that emerges from Exhibit 3 is that of a return engine that seems to be doing more or less what it's always done. The current values of rolling returns are in the bottom halves of their respective distributions, but well above their extreme low values. From the data in that picture, it would be impossible to conclude that anything is wrong with the model. And from the drawdown histories we see in Exhibit 4, the current drawdown is bad by CTA standards, but a long way from being as bad as those the industry experienced in the 1990s and the mid 2000s.

CTA Performance Persistence: 1994-2010

Marat Molyboga, Efficient Capital Management; Seungho Baek, University of Chicago; John F. O. Billson, Illinois Institute of Technology; National Bureau of Economic Research (NBER) (2013)

This paper reports results of tests of the performance persistence hypothesis for Commodity Trading Advisors (CTAs). Using Fama-MacBeth regression and quintile analysis, we find that ranking CTAs using the t-statistic of alpha with respect to a CTA benchmark is predictive of future unleveraged returns. Sorting on the t-statistic of alpha yields around 4.6% annual spread of unleveraged returns between equally-weighted portfolios of the top and bottom quintiles. This finding is robust to the choice of CTA benchmark and model parameters. We examined the impact of incubation and backfill bias on the above results by repeating the analysis after excluding the first 12 and 24 months of data for each fund. We find that while on average there is no impact on the relationship between previous rankings and future unleveraged returns and on persistence of worst performing funds, the identified strong persistence of the best performing funds is potentially solely driven by the incubation and backfill biases. We use Chi-square and Fisher tests to confirm that the worst performing funds have a significantly higher probability of liquidation than those of the other quintiles, and the top performing funds have a higher conditional probability of staying top performers versus becoming worst performers than that of the worst performing funds.

Managed Futures & Pension Funds: A Post-Crisis Assessment

Galen Burghardt and Brian Walls, Newedge (2011)

The financial crisis of 2008 and 2009 may well have been the knock on the head that pension funds -and especially defined benefit plans- needed to take managed futures seriously. Their portfolios are tilted heavily toward equities because they need return, but the crisis delivered the second 50% equity drawdown in less than 10 years. Since 1990, equities have produced staggering quantities of risk but have delivered no return to make up for it. For these two decades, even with the bull market of the 1990s, global equities produced a Sharpe ratio of only 0.07. At the same time, the crisis provided an acid test of the claim that returns generated by CTAs are uncorrelated with stock and bond returns and therefore reduce the volatility of returns. The crisis also showed that CTAs can make money under the worst of market circumstances and revealed the fact that what you see is what you get. They were accurately valued and they were liquid, often with only a day's notice.

TREND-FOLLOWING

A Century of Evidence on Trend-Following Investing

Brian Hurst, Yao Hua Ooi, and Lasse H. Pedersen, AQR (2012)

We study the performance of trend-following investing across global markets since 1903, extending the existing evidence by more than 80 years. We find that trend-following has delivered strong positive returns and realized a low correlation to traditional asset classes each decade for more than a century. We analyze trend-following returns through various economic environments and highlight the diversification benefits the strategy has historically provided in equity bear markets. Finally, we evaluate the recent environment for the strategy in the context of these long-term results.

The Multi-Centennial View of Trend-following

Alex Greyserman, Ph.D. /SAM (2013)

In this paper we present a multi-centennial view (since the 1200's) of the distinct return and risk characteristics of trend-following. The nearly 800 years of data that we have collected supports the view formed over the last few decades that trend-following as an alternative asset class provides a desirable return profile with low correlation to traditional asset classes, positive skewness, and meaningful capability to robustly deliver positive returns during crisis periods.

The State of Trend-Following

Alex Greyserman, Ph.D. /SAM (2013)

This work reviews the current environment from the aspects of industry crowdedness, low interest rate, government interventions, and market correlation. The empirical and historical data does not support an alarming scenario for trend-following in the current environment. Still, it is found that correlations have increased recently and as a result the overall diversification has fallen. Even though there is little direct relationship between correlation and performance, it is true that increased correlation increases the tails at both ends of the performance spectrum. However, by adding less correlated new markets, especially at an AUM of a limited size, and reducing signal sensitivity we can tackle the potential challenges facing trend-following. This piece also establishes specific benchmarks for a trend-following system as a function of various parameter choices, and examined the nature of what has led to such disperse outcomes and identified a sequence of parameter choices that polarized returns.

When do trend followers make money?

Rasheed Sabar, Ellington Quantitative Strategies (2013)

Investors allocate to long-term trend followers in part because they performed admirably in 2008 (and steadily prior to 2008). Since then, however, performance has been mixed. Is this under-performance due to a tough environment or alpha decay? When will trend following make money again? The common perception is that trend followers are 'long volatility': they make money when asset markets are down significantly or up significantly, and lose money when markets go nowhere1. Recent performance, however, belies this notion. The strategy delivered uneven returns during periods of punctuated crisis (May 2010 flash crash) and during periods of extended down (summer of 2011) and up markets (Q3 & Q4 of 2012). This paper gives investors a new framework to conceptualize when trend following works. We show that trend followers are neither long nor short volatility, and neither long nor short correlation. Instead, one must consider correlation and volatility jointly to explain their performance. Table 1 summarizes our result: trend following works when volatility and correlation are both low or both high. Below, we explain why this makes sense. Along the way, we will discover interesting facts about how volatility and correlation among assets have evolved over time. We will also formulate a tactical and structural outlook for the space, having better understood its performance drivers. Please note: we are not trend followers.

Trend following - Riding the Kurtosis

Transtrend, Harold de Boer (2013)

How can the behavior of markets be viewed in the context of kurtosis? When kurtosis is the subject, most people acknowledge the major importance of fat tails, but not everyone really comprehends the underlying processes. The biggest mistake with respect to a high kurtosis is to concentrate completely on the fat tails and ignore the 'high peak'. These fat tails would not be there without the high peak. In fact, a high kurtosis is more often caused by processes that directly contribute to a high peak than by processes that directly contribute to fat tails. The article discusses this and the dangers in a hidden exchange of standard deviation for kurtosis. Higher risk can hide in the higher kurtosis despite what may be a lower standard deviation. Investors should be alert to the possibility of having a false sense of security.

Is Trend-following Dead?

Jeff Malec, Attain Capital (2012)

Trend-following is the most common strategy employed in the managed futures world, and plays a key role in the asset class' unique performance profile of gains during stock market downturns. But over the last few years, poor performance has plagued trend-following commodity trading advisors. Many of the trend followers we track are experiencing drawdowns of 15 to 20 months or more, and a select few have failed to make new equity highs following the boom times of 2008. Further struggles are evident in the dismal performance of trend-following sub-indices. It's allied to more than a couple people we've talked to recently uttering those words the contrarian in us loves to hear:" is trend-following dead"? But this obituary has been written before, and the nature of trend-following is to offer middling returns while waiting for opportunity to strike. So is this time different? We have reason to think that far from being laid to rest, trend-following is in fact poised for a breakout.

PERFORMANCE MEASUREMENT AND EVALUATION

Sortino: A "Sharper" Ratio

Thomas N. Rollinger and Scott Hoffman, Red Rock Capital (2013)

Many traders and investment managers have the desire to measure and compare CTA managers and/or trading systems. We believe risk-adjusted returns are one of the most important measures to consider since, given the inherent free leverage of the futures markets, more return can always be earned by taking more risk. The most popular measure of risk-adjusted performance is the Sharpe ratio. While the Sharpe ratio is definitely the most widely used, it is not without its issues and limitations. We believe the Sortino ratio improves on the Sharpe ratio in a few areas. The purpose of this article, however, is not necessarily to extol the virtues of the Sortino ratio, but rather to review its definition and present how to properly calculate it since we have often seen its calculation done incorrectly.

Emotional Investing and Performance Cycles

Jeff Malec, Attain Capital (2013)

As is the case in every asset class under the sun, managed futures investors love to chase performance. The sustainability of a strategy often comes second to the appeal of recent double or even triple digit returns. We do our best to discourage such decision making, because in our experience, this is uniquely damaging in managed futures allocations. The fact is that extended periods of losses are a fact of life for managed futures investors. There is no way to avoid them. But in our experience, performance tends to be cyclical for quality programs. They will have a run up, face a drawdown, experience a recovery period, and repeat the process all over again. An investor making allocations at the peak of a run up period usually sets themselves up for losses in the short-term-losses that typically don't sit well with an investor who was chasing returns in the first place. Here, we examine the reasons why investors chase performance, and the cycle they step into when they do.

It's the Autocorrelation, Stupid

Galen Burghardt and Lianyan Liu, Newedge (2012)

In this research note we: describe the data sets that we used to establish the presence and persistence of autocorrelation in CTAs' returns; present a drawdown puzzle involving the 67 CTAs who had ever appeared in the Newedge CTA Index that brought the importance of autocorrelated returns to our attention; show how autocorrelated returns provide the key to unlocking the puzzle and the effect autocorrelation has on the way we should translate single-period volatilities into multi-period volatilities; report on what we found when we examined other data sets of CTA returns; return to the global equity/CTA comparison; and conclude the note with an analysis of how autocorrelation affects risk and biases our measures of risk-adjusted returns in a potentially big way.

Trend-following: Empirical Evidence of the Stationarity of Trendiness

Alex Greyserman, Ph.D. /SAM (2012)

In this paper, we present empirical evidence showing the stationarity of market trendiness, even after the CTA industry has witnessed the extraordinary increase of scale and some dramatic change of the economic environment. Instead of using performance statistics of a specific trend-following program, here we introduce a strategy-independent market trendiness measure, the Market Divergence Index (MDI), and we demonstrate that the MDI is stationary along time via statistic tests and by Fourier transform analysis. The stationarity indicates that the market trendiness, even in the presence of the dramatic changes of the CTA industry and the economic environment, is still statistically consistent with what the markets exhibited in earlier years. In addition, we provide convincing empirical evidence that, even with the substantial increase of players and capital in the CTA industry, trend-following is still able to capture the opportunities presented by market trends.

Trend Following: Myth of the Sharpe Ratio

Alex Greyserman, Ph.D. /SAM (2012)

Due to the specific payoff characteristic of option selling, there exists a significant probability for an option selling strategy to achieve seemingly superior performance in a short period such as two years. In this paper, we show that a trend-following system with an option selling overlay is able to achieve a quite large Sharpe ratio in a short period at a much higher probability, even though the overall Sharpe ratio in an extended period is similar to what the trend-following system achieves. We thus demonstrate that high Sharpe ratios over short periods of time (even apparently as long as several years) can be misleading, and may be hiding essential risks as well.

Performance Measurement: Unraveling the Hidden Risks

Alex Greyserman, Ph.D. /SAM (2012)

Measuring performance based on returns on assets under management, e.g., by the Sharpe ratio or Omega ratio, is common and certainly provides a sensible way to judge managers. The Sharpe ratio is indeed based on risk-adjusted returns on assets, but this way of performance measurement hides a subtle but important factor, which is how much risk the manager takes to generate the returns. Note that the realized volatility of the returns in the Sharpe ratio is simply a single representation or outcome of the amount of risk a manager takes rather than the underlying risk itself. A few different approaches to taking risks into account in performance measurement are discussed in this paper. Using a representative trend- following system and an alternative system with dynamic leveraging, it is demonstrated that, while the risk-adjusted returns on assets may appear better, a more complete profile of risks committed to generate such performance may actually indicate otherwise.

The Characteristics of Drawdown

Alex Greyserman, Ph.D. /SAM (2012)

In this paper, the expected maximum drawdown and expected longest drawdown length based on theoretic analysis and Monte Carlo simulation are discussed. These expected values can provide a baseline for an investor to gauge an observed drawdown. Using trend-following as an example, we examine the trade and signal statistics in the drawdown periods, and empirically confirm that a lower percent of winning markets, rather than the higher loss of losing markets, is often observed in larger drawdown periods. Finally it is demonstrated that trend-following typically possesses relatively strong recovery ability. Due to the negative correlation between the drawdowns of trend-following and the S&P 500 index, trend-following provides significant diversification benefits to a traditional institutional portfolio.

The Backfill Effect

Ryan Duncan and James Skeggs, Newedge (2011)

We think backfill bias is a natural result of the research process and arises when a manager is constructing an entirely new program or adding a new model to an existing program. In its simplest form, a manager begins by developing an investment thesis, then constructs the strategy using in sample data and tests on an out of sample data set. If the strategy performs as expected the manager will allocate a small amount of capital and commence live trading. It is at this point that backfill is created. The manager is still "testing" the strategy and will hope to attract outside capital if successful. Otherwise, if performance is negative or outside of reasonable expectations, the manager may discontinue trading and revert to additional development and testing. This behavior is completely aligned with what we should expect from all actively managed investment opportunities. So if backfill data are biased are they still useful? Perhaps, but we feel care should be taken and that it is constructive to know which part of the manager's track record is backfill when analyzing historical data. As the circumstances will obviously differ from manager to manager, having a framework for dealing with this type of bias may help set the appropriate performance expectations going forward.

LIQUIDITY AND VOLATILITY

Why Lower Volatility Strategies Equal Higher Risk

Scot Billington, Covenant Capital Management, Futures Magazine (2014)

When investors think of risk, they usually associate it with volatility. This probably stems from Nobel Prize winning economist Harry Markowitz's use of volatility in the 1950s and fellow Nobel Prize winner William Sharpe's use of volatility in creating his self-named method of risk adjusting returns. The lower the volatility of a given investment theoretically indicates that investment carries less risk. Risk, however, could be viewed from a different angle. The impact of a high volatility investment on a portfolio can be mitigated by the allocation size given to that product. By normalizing for volatility, theoretically, high and low volatility investments can have equal impact on a portfolio's total return. This leads us to a different way to view risk. Risk is the difference between the anticipated worst loss and the realized worst loss. When viewed through this lens, lower volatility equals higher risk. Seeking rather than avoiding volatility can lead to a lower cost, more liquid portfolio with a reduced level of risk and an increased potential of returns.

Improving Time-Series Momentum Strategies: The Role of Volatility Estimators and Trading Signals

Akindynos-Nikolaos Baltas, UBS AG; Imperial College Business School and Robert Kosowski, Imperial College Business School, University of Oxford, Oxford-Man Institute of Quantitative Finance (2013)

The aim of this paper is to examine the effect of risk-weighting and of the choice of trading signal on the performance of time series momentum strategies using a broad dataset of 75 futures contracts over the period 1974·2013.Time-series momentum strategies have received increased attention after they provided again, as in previous business cycle downturns, impressive diversification benefits during the recent financial crisis in 2008. Motivated by recent asset pricing literature that examines the effect of frictions on asset prices and the link between portfolio volatility and turnover, we highlight the effect of the choice of volatility estimator and trading signal on turnover and performance of time-series momentum strategies. We find that by increasing the efficiency of volatility estimation using estimators with desirable theoretical properties, such as range-based estimators, the net of transaction costs performance improves, but the effect on turnover is relatively small compared to that of the trading signal. Momentum trading signals generated by fitting a linear trend on the asset price path maximize the out-of- sample performance by reducing portfolio turnover by about two thirds, hence dominating other momentum trading signals commonly used in the literature.

Managed Futures and Volatility: Decoupling a "Convex" Relationship with Volatility Cycles

Kathryn M. Kaminski, Deputy Managing Director of the Institute for Financial Research (SIFR); Affiliated Faculty at the Stockholm School of Economics, Department of Finance (2011)

The year 2011 was a period fraught with turbulence in financial markets. Managed futures strategies, despite their common association with long volatility, did not fare as well as some might have expected amidst this turbulence. A closer look at volatility, what it means to be long or short volatility, and managed futures performance across different regimes in volatility can provide insights into the strategy's complex or "convex" relationship with volatility. A closer look at the cycles of volatility demonstrates that managed futures is able to capture "crisis alpha" for investors over negative volatility cycles, while in certain turbulent periods they also face some of the same "short volatility" risks that plague many hedge fund strategies.

The Value of Liquidity and Option Timing from a Simple Game

Ranjan Bhaduri, Sigma Analysis and Management; Niall Whelan (2009)

This quantitatively technical paper extends the work from the paper "The Value of Liquidity". The Balls in the Hat game is examined in the asymptotic case. It helps to further establish that, from a behavioral finance perspective, humans are wired in such a way that we tend to underestimate the value of liquidity. Quantitative techniques, including the Omega Robustness Coefficient, are invoked to contribute to the understanding of the mathematics of liquidity.

Liquidity Buckets, Liquidity Indices, Liquidity Duration and their Applications to Hedge Funds

Ranjan Bhaduri, Sigma Analysis and Management and Christopher Art (2008)

This paper illustrates that investors often mistake illiquidity for alpha, and that investors are often not giving proper value to liquidity. The concepts of liquidity buckets, liquidity indices, and liquidity duration are introduced. The application of liquidity buckets demonstrates that illiquid hedge funds did not perform better, in a pure statistical manner, than liquid hedge funds during the time period of June 2004 to June 2007 (note that this time period is prior to the financial crisis). This paper furnishes evidence that investors are often not being properly compensated for illiquidity.

The Value of Liquidity

Ranjan Bhaduri, Sigma Analysis and Management; Niall Whelan (2008)

A game-theoretic example is presented that helps to illustrate the value of liquidity. These insights are applicable to hedge fund investors since hedge funds have different lock-up and redemption terms. This game also shows the danger of relying on intuition to determine the value of liquidity. It is also demonstrated that the value of liquidity is different for different types of investors; the value is less for investors with less ability. Liquidity has become an increasingly important issue in the alternative investments and derivatives space, and this paper provides some quantitative insights on the value of liquidity.

PERFORMANCE IN VARYING INTEREST RATE ENVIRONMENTS

Going up? Where to Find Returns if Rates Begin to Rise

Welton Investment Corporation (Welton Visual Insight Series) (2013)

With corporate bond and U.S. Treasury rates near 100-year lows after a 30-year steady decline, investors everywhere are pondering the consequences if interest rates begin to rise. Credit expansion helped fuel much of the economic growth of recent decades, and many investors recognize they have come to rely on investments linked to favorable rate conditions. But what if conditions change? We'll examine history for guidance, plus take a closer look at possible sources of return through the prism of multi-asset class trend following given its ability to objectively invest long and short across multiple asset classes.

Prospects for CTAs in a Rising Interest Rate Environment

Campbell & Co. Research Department (2013)

Since 1972, the S&P 500 Index, US Treasuries and traditional 60/40 portfolios have each underperformed (on average) in Rising Rate periods relative to Declining Rate periods (as defined by changes to the Fed Funds target rate). Performance of the CTA industry in relation to the direction of interest rates has exhibited a distinctly different pattern. A quantitative evaluation of CTA performance in relation to the direction of rates suggests that the strategy has not historically been rate regime-dependent. This is based on an analysis of the Barclay CTA Index (since inception in 1980) and a proprietary trend-following benchmark (since1972). Results were independent of trading time horizon. The multi-dimensional approach to portfolio diversification employed by many CTAs may lessen the effect, positive or negative, of any single risk factor (including the monetary policy environment) on performance. A decomposition of CTA performance into its underlying sources of return – the spot price change, the roll yield and the return on cash – can provide additional insight.

An Illustrative Comparison of Trend-Following in Different Interest Rate Regimes

Alex Greyserman. Ph.D. /SAM (2012)

Since the early 1980's, interest rates have been decreasing, and are currently at a record low. This study tries to provide several illustrative examples to alleviate investors' concerns on the possible impact of rising interest rates on trend-following. We look at two sectors: agriculture and fixed income. Several agriculture markets have futures data up to early 1960's covering two decades of rising interest environment. While most of the fixed income markets do not have futures data untied the 1980's, we derive the corresponding futures price from the yield data, which started as early as in 1960's. The tests for both sectors demonstrate that trend-following's performance is not degraded in a rising interest environment. The fact that the agriculture markets performed much better in the rising interest rate environment is supportive of including these less liquid markets in the portfolio at a forward looking base, even though in the past decade the agriculture markets appeared to worsen the portfolio performance.

Trend-following: The Impact of Interest Rates

Alex Greyserman, Ph.D. /SAM (2012)

The potential impact of interest rates on trend-following performance originates from two sources: the additive interest income of the fully funded investments, and the futures prices' inherent dependency on interest rates. In this paper, we demonstrate that the additive interest income from cash management can be quite significant in improving the performance, both Sharpe ratio and drawdown, even if the interest rate is only moderately increased. For the potential impact of interest rates on changes in futures price, we consider both the change in interest rates and the interest rate level, with the former focusing on bonds and the latter focusing on commodities. The overall empirical evidences appear to suggest that trend trading could benefit from an increase in the level of interest rates.

When Bonds Fall: How Risky Are Bonds if Interest Rates Rise?

Welton Investment Corporation (Welton Visual Insight Series) (2012)

Thirty-one years ago the yield on corporate Aaa bonds reached its 100-year peak of 15.5%. That date was in September, 1981, and rates for corporate bonds and U.S. Treasuries have fallen ever since, with both rates resting near 100-year lows today. This trend can't last forever of course, and today many bond investors are grappling with the notion of a rising interest rate environment. And because bondholders lose when rates rise, many are now wondering, how risky are bonds if interest rates rise? We'll examine rate and bond price behavior over the last 90 years to look for lessons from the past.

TAIL RISK

Tail Risk Literature Review

Altan Pazarbasi, CISDM, University of Massachusetts, Amherst - CAIA Alternative Investment Analyst Review Volume 1, Issue 4, pp. 18-23 (2013)

The Global Financial Crisis brought with it a resurgence of interest in tail risk, both within the financial services industry and the academic world. However, tail risk has been an important topic in financial literature since academic researchers realized that market returns often violate normality assumptions. In this article, we provide a brief literature review of the evolution of tail risk measures, as well as research on tail dependency. We also document a number of academic studies that assess tail risk and tail dependency of hedge fund returns. The literature related to tail risk and its measurement dates back to the early 1960's.

A Comparison of Tail Risk Protection Strategies in the U.S. Market

Robert Benson, Robert K. Shapiro, Dane Smith, Ric Thomas (all SSgA) - CAIA Alternative Investment Analyst Review - Volume 1, Issue 4, pp. 32-47 (2013)

The global financial crisis (GFC) of 2007-08 was remarkably severe not only in the magnitude of drawdowns suffered by individual asset classes, but also the drawdowns of portfolios thought to be well diversified. The risk of such an outcome has come to be labeled tail risk in reference to the extreme left tail of an asset's or portfolio's return distribution. Since the GFC, many investment organizations have launched tail risk protection strategies designed to address such periods of severe market distress. Likewise, flows into managed futures strategies (commonly thought to profit during periods of elevated volatility) increased dramatically. This paper measures the benefits and costs of several candidate tail risk protection strategies empirically using more than 20 years of monthly data from U.S. markets. We analyze four methods for controlling tail risk: (1) long volatility, (2) low volatility equity, (3) trend following, and (4) equity exposure management.

PRE-2008 FINANCIAL CRISIS

Managed Futures and Asset Allocation

Peng Chen, Christopher O'Neill, and Kevin Zhu, Ibbotson Associates (2005)

We study the role of managed futures in long-term asset allocation portfolios. We begin by determining whether managed futures returns can be replicated through investing in broadly diversified stock and bond indices. Next, we investigate whether adding managed futures funds improves the risk-return tradeoff for long-term asset allocation portfolios. The results suggest that managed futures funds offer distinct risk and return characteristics to investors that are not easily replicated through investing in traditional stocks and bonds. Including managed futures also improves the risk-return tradeoff of the long-term asset allocation portfolios we consider, thus benefiting long-term investors. Our scenario analysis on interest rate environments indicates that managed futures exhibit superior performance during periods in which most traditional asset classes underperform. Overall, the results suggest that the managed futures funds benefit long-term investors, particularly in rising interest rate environments.

Managed Futures and Long Volatility

Anders Kulp, Daniel Djupsjobacka, Martin Estlander, Capital Management Research (2005)

The buyer of an option straddle pays the implied volatility to get exposure to realized volatility during the lifetime of the option straddle. Fung and Hsieh (1997) found that the return of trend-following strategies shows option like characteristics because the returns tend to be large and positive during the best and worst performing months of the world equity markets. If it is possible to show that Commodity Trading Advisors (CTAs) and trend followers have a long exposure to volatility, then by analyzing a CTA portfolio in option terms and deriving the option greeks one opens a new dimension on which to base portfolio optimization decisions. It would also offer possibilities to use the options markets to reduce or increase exposure. The purpose of this article is to show that CTAs have a long volatility exposure and to show that, compared to a long option portfolio, CTAs add value. We also want to give insights into and increase the understanding of the relationship between managed futures and volatility.

Risk Management - Taming the Tail

Ranjan Bhaduri, Sigma Analysis and Management; Bryon Kaneshige, University of Hawaii Department of Mathematics (2005)

This paper explains how the Omega function may be used to help "tame the tail". One should not penalize for upside volatility, and one should take into consideration the higher statistical moments. The Omega function lends itself particularly well to pensions and endowments, since the Omega threshold allows these groups to view the measurements in perspective with their asset-liability situation. Some qualitative due diligence and risk management insights are also shared.

Skewing Your Diversification

Mark Shore, Shore Capital Management; DePaul University's Kellstadt Graduate School of Business; Board Member, DePaul University Arditti Center for Risk Management (2005)

This paper reviews the performance metrics and use of alternative asset allocations within a traditional asset portfolio. We show most asset classes are not Gaussian (bell-shaped) normal curves as modern portfolio theory assumes returns to be. Instead, the returns are asymmetrical to the right or left causing the employment of higher statistical moments such as skewness and kurtosis to determine risk-adjusted returns. Therefore, the first and second statistical moments (mean and variance) are not sufficient to determine risk-adjusted returns of a portfolio. Utilizing higher moments in conjunction with volatility parsed between upside and downside returns, we demonstrate how managed futures and hedge funds perform individually and simultaneously as diversifiers in a traditional portfolio.

Hedge Fund of Fund Allocation Using a Convergent and Divergent Strategy Approach

Sam Y. Chung, Mark Rosenberg, and James F. Tomeo, SSARIS Advisors LLC (2004)

Hedge fund asset allocation can be a challenging endeavor given the dearth of tools available to deal with the unique statistical characteristics of long and short strategies. From a top-down perspective, the hedge fund industry is classified into several sub-style categories including long/short equity, market neutral equity, convertible bond arbitrage, merger arbitrage, event driven, global macro, and managed futures. However, due to the non-correlated nature of rates of return in each style group, the problem of asset allocation appears overly simplistic. This article takes a different view of the hedge fund universe, classifying strategies as "convergent" or "divergent" in their orientation and thereby adding new meaning to the process of asset allocation. Convergent strategies tend to view the asset world as being mostly efficient, seeking to profit from small asset mispricing. Divergent strategies are based on the premise that, from time to time, the market is inefficient, providing opportunities that can be exploited by using price series analysis and autocorrelations when pricing certain portfolio assets. Since convergent strategies tend to be "short volatility" and divergent strategies "long volatility;· using a top-down asset allocation policy that recognizes this asset dynamic can lead to a more efficiently allocated hedge fund portfolio. The results of this study show the time-varying validity of divergent strategies and their potential benefits as portfolio components. Since the divergent strategy experiences significantly higher performance during the periods of increasing market uncertainty, when it is combined with the convergent strategy, the portfolio experiences increased return and reduced risk with more favorable return distributions relative to the individual convergent strategies.

Managed Futures and Hedge Funds: A Match Made in Heaven

Harry M. Kat, Cass Business School (2002)

In this paper we study the possible role of managed futures in portfolios of stocks, bonds and hedge funds. We find that allocating to managed futures allow investors to achieve a very substantial degree of overall risk reduction at limited costs. Apart from their lower expected return, managed futures appear to be more effective diversifiers than hedge funds. Adding managed futures to a portfolio of stocks and bonds will reduce that portfolio's standard deviation more and quicker than hedge funds will, and without the undesirable side-effects on skewness and kurtosis. Overall portfolio standard deviation can be reduced further by combining both hedge funds and managed futures with stocks and bonds. As long as at least 45-50% of the alternatives allocation is allocated to managed futures, this again will not have any negative side-effects on skewness and kurtosis.

Market Vision and Investment Styles: Convergent vs. Divergent Trading

Mark S. Rzepczynski, (2000)

The development of a simple taxonomy for trading style based on a worldview can serve as an important differentiator across money managers. It can provide insight into how managers expect to generate returns. For instance, taxonomy for active management can divide trading behavior into two broad types: convergent and divergent. The convergent-divergent dichotomy effectively encompasses the behavior of a broad universe of money managers and can be applied across a wide variety of asset types. This trading dichotomy can describe the philosophical differences between hedge funds and managed futures funds as well as similarities across asset types.

ADDITIONAL READING

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Melin, Mark H. High-Performance Managed Futures: The New Way to Diversify Your Portfolio. John Wiley & Sons, Hoboken, NJ. 2011

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