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An Overview of Managed Futures

An Introduction to the Asset Class and
The iSTOXX® Efficient Capital® Managed Futures 20 Index

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Introduction

Managed Futures strategies encompass a variety of active investment approaches expressed through liquid and transparent exchange traded futures and foreign exchange markets. Options on these contracts may also be utilized. The $300+ billion dollar Managed Futures industry is comprised of professional investment managers, commonly referred to as Commodity Trading Advisors ("CTAs"), who actively manage positions across a wide variety of global markets and sectors.

Managed Futures, as an investment class, offers investors a number of beneficial attributes. Dr. John Lintner first widely published several of these benefits in his seminal 1983 paper "The Potential Role of Managed Commodity-Financial Futures Accounts (and/or Funds) in Portfolios of Stocks and Bonds." In the paper he concluded that every well-diversified portfolio would benefit from exposure to Managed Futures. Since Lintner's study, considerable independent research has arrived at similar conclusions.

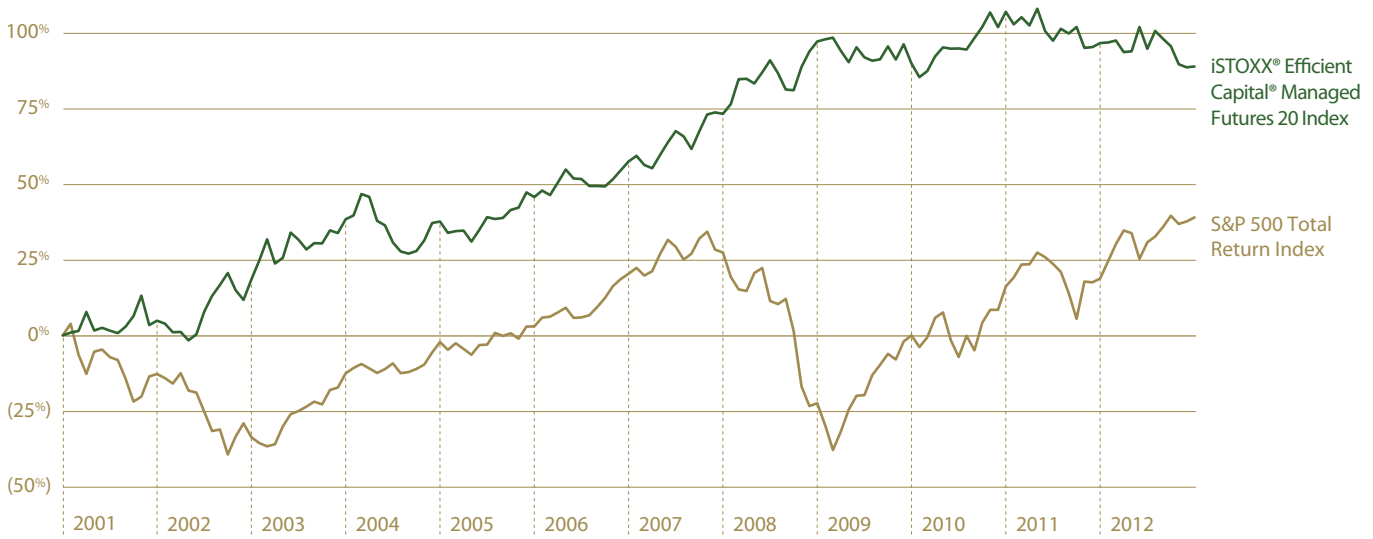
This paper will address the key characteristics of Managed Futures which benefit investors and highlight the potential advantages of including Managed Futures in a diversified portfolio.

Non-directionality	No directional bias; ability to profit from increasing or decreasing values/prices without restriction
Non-correlation	Historic returns exhibit low correlation to traditional and alternative asset classes
Diversification	Managed Futures investments can be diversified across a variety of active investment approaches, sectors traded and trade duration
Liquidity	Deep, active futures and foreign exchange markets
Transparency	Intraday market-based pricing via futures exchanges and foreign exchange markets
Cash efficiency	Ability to increase exposure without borrowing (financial leverage)

In addition to attractive historical absolute returns, the Managed Futures industry, as represented by the iSTOXX® Efficient Capital® Managed Futures 20 Index[1], has also exhibited a low overall correlation to traditional assets such as stocks and bonds through a range of market environments. Managed Futures has also exhibited a low overall correlation to other alternative asset classes including hedge fund strategies.

FIGURE 1

iSTOXX® Efficient Capital® Managed Futures 20 Index and S&P 500 Total Return Index • *January 2001 through December 2012*



Data Source: Efficient Capital Management, LLC | Bloomberg

1 The iSTOXX® Efficient Capital® Managed Futures 20 Index was designed to track the returns of the Managed Futures investment class. The index is provided by STOXX Limited with Efficient Capital Management, LLC serving as the index research partner. The index is comprised of the twenty largest investible Managed Futures managers by assets under management. The index is reconstituted annually and rebalanced monthly.

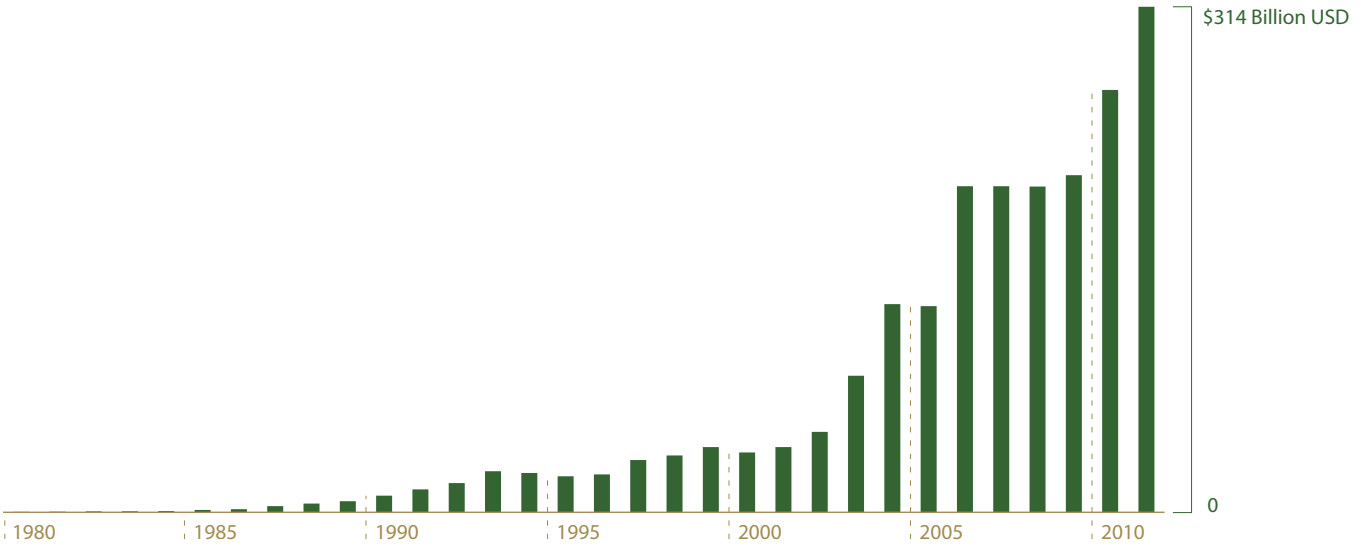
Managed Futures Growth

The Managed Futures industry has grown considerably over the last 30 years and has been one of the fastest growing alternative strategies over the last 3 years. The significant increase in open interest in futures markets, continuous improvement in information technology, and increased interest from institutional investors have contributed to an uptick in the rate of growth over the last decade.

While there are a large number of professional Managed Futures managers, the vast majority of capital is concentrated in a core group of firms. As illustrated in Figure 3, the top 20 Managed Futures managers ranked by assets under management account for over 50% of the total assets under management of the top 500 Managed Futures managers.

FIGURE 2

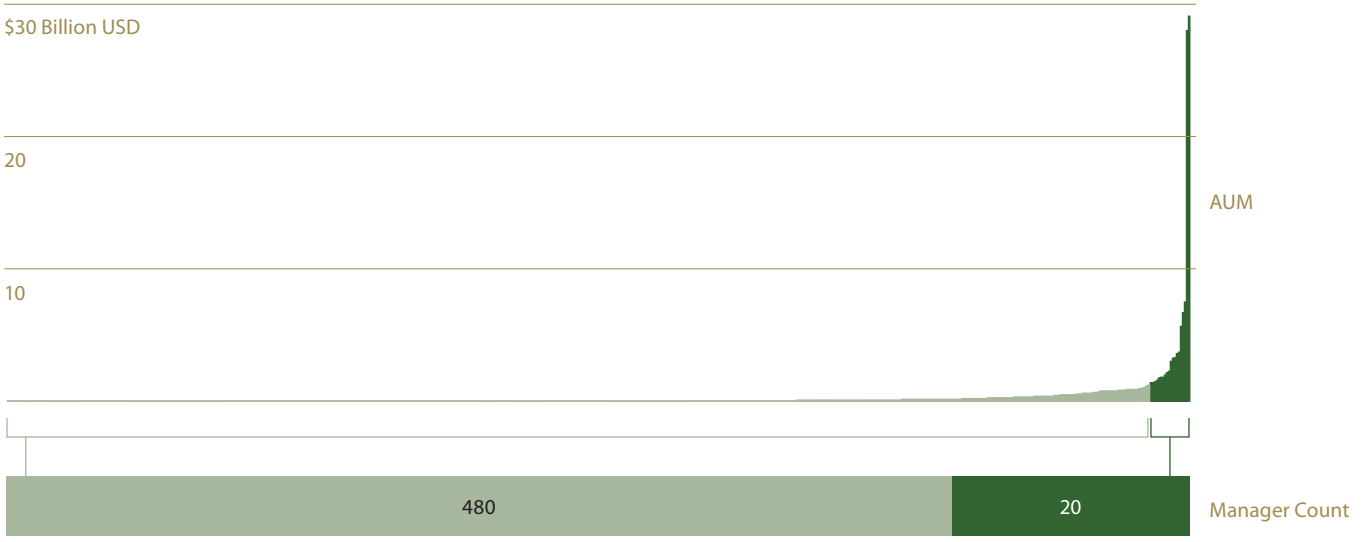
Managed Futures Industry Assets Under Management • *January 1980 through December 2011*



Data Source: BarclayHedge

FIGURE 3

Top 500 Managed Futures Managers' Assets Under Management 2011 • *Top 20 CTAs (dark green) vs Remaining 480 CTAs by AUM (light green)*



Data Source: Efficient Capital Management, LLC | Barclay Hedge

Overview of Managed Futures Strategies

The Managed Futures industry can be described as an investment class in which alpha targeting firms utilize a variety of information and active investment techniques to extract returns from the market using futures and foreign exchange instruments. Alpha, in this sense, can be understood as the active return independent of the underlying positions held.

Although there are a wide variety of approaches, many Managed Futures strategies profit from sustained capital flows in financial markets. These flows occur as a particular market moves from a state of imbalance toward a new equilibrium. Capital flows can take the form of rising markets as well as falling markets. Market inefficiencies form the basis for the alpha Managed Futures investment strategies aim to capture. These opportunities arise from market participants' behavior such as commercial entities seeking to hedge market exposure.

Today a wide variety of systematic computer driven models and discretionary approaches are being implemented based on both technical price-based inputs and fundamental information. Initial methods of extracting alpha by Managed Futures firms involved purchasing or selling a specific market instrument once a particular market high or low was reached. The initial approaches were based on the observation that markets often move with momentum that can continue in a particular direction. Over time, original breakout strategies developed into more sophisticated approaches. Trend following strategies based on breakout and momentum concepts continued to evolve with the introduction of volatility filtering, risk-budgeting and more dynamic time frame selection. In addition, some managers began to develop non long term trend concepts and employed more than just technical data in their systems.

Often opportunities for Managed Futures traders have historically come in periods that have proved difficult for conventional asset classes and other alternative investments. This is due to Managed Futures ability to generate gains in expanding volatility environments through non-directional momentum and breakout trading.

Managed Futures Characteristics

Managed Futures investments offer a number of beneficial characteristics for investors. These benefits stem from both the investment strategies employed and the attributes of the underlying futures and foreign exchange instruments held.

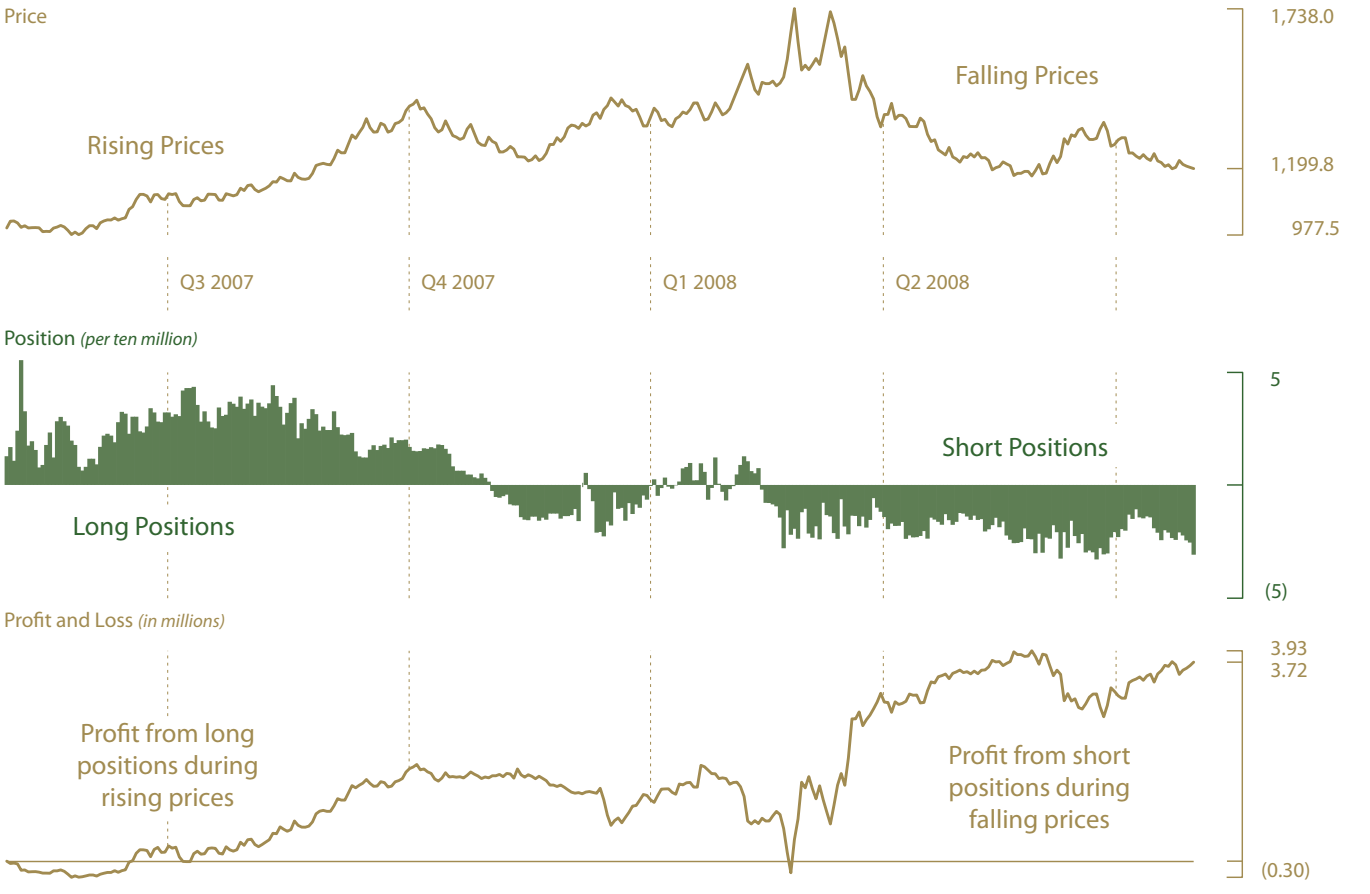
Non-directionality

The ability to generate investment gains in rising or falling market environments is referred to as non-directionality. Futures markets were created to allow market participants to enter long or short positions based on their hedging or speculative needs with equal ease. As a result, managers can profit with equal opportunity from the increase or the decrease in the price of an asset. Unlike the securities world, a Managed Futures program is free from the dual burden of up-tick rules and the need to borrow the underlying when shorting. Also unlike equities, the margin required for a short position is the same as the margin required for a long position. The ability to profit equally from long or short positions, without the restrictions or additional costs, is one of the key attributes of Managed Futures.

The following illustration (Figure 4) is provided to demonstrate how a Managed Futures strategy may be able to profit from long or short positions in a market.

FIGURE 4

Hypothetical Wheat Position, Price and Resultant P&L • *Q2 2007-Q3 2008*



Data Source: Efficient Capital Management, LLC

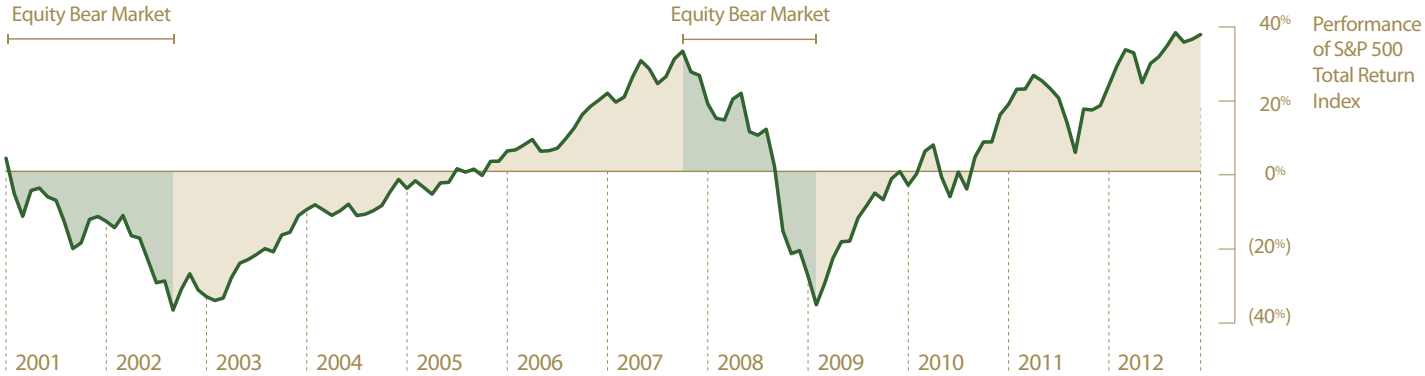
NON-CORRELATION

Managed Futures historically has exhibited low correlation to traditional investments and other alternative asset classes. This low correlation is created by Managed Futures managers' ability to dynamically enter long or short positions across equity index, fixed income, commodity, and foreign exchange markets without taking on any systematic exposure to an asset class (or beta). Further, they can go long or short without any funding or exposure constraints. Relative to equities, Managed Futures have exhibited a measurable negative correlation in equity bear markets, and a positive correlation or non-correlation in equity bull markets[2]. Overall, there has been non-correlation to equities as the net average correlation is near zero.

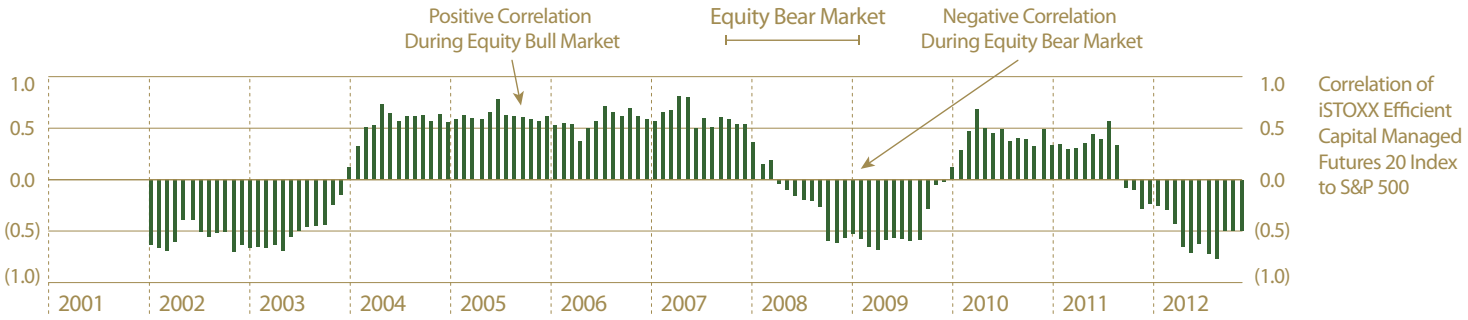
The often timely negative correlation of Managed Futures to equities is summarized in the illustration below. Some of the most difficult periods for equity markets have corresponded with positive performance realized by Managed Futures. Over extended periods of rising or falling equity markets,

FIGURE 5

S&P 500 Total Return with Bull and Bear Markets Highlighted • *January 2001 through December 2012*



Rolling 12 Month Correlation of iSTOXX® Efficient Capital® Managed Futures 20 Index to S&P 500, Negative Correlation in Bear Markets Highlighted • *January 2001 through December 2012*



Data Source: Efficient Capital Management, LLC | Bloomberg

2 See also: Martinelli, Lionel & Vaissie, Mathieu. Benchmarking the Performance of CTAs. from Gregoriou, Greg N., et al. Commodity Trading Advisors: Risk, Performance Analysis, and Selection. Hoboken: John Wiley & Sons, 2004.page 24.

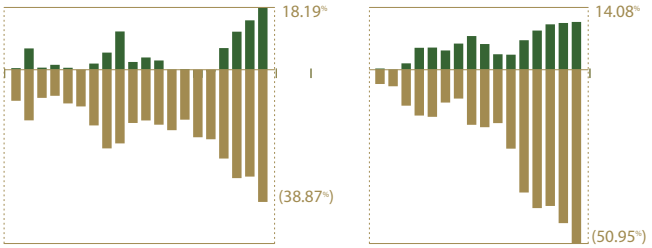
Managed Futures managers will often profit from the prevailing trend. Profiting from a trend in a falling equity market drives the timely negative correlation. While there is a conceptual basis for this non-correlation and historical precedence, challenging periods for Managed Futures theoretically can correspond with difficult equity markets.

Importantly, Managed Futures have also exhibited low correlation to other alternative asset classes including hedge fund strategies. As shown in Figure 7, this characteristic of non correlation has persisted over time through a range of market environments. Managed Futures has exhibited a meaningful positive correlation during equity bull markets such as 2006 and 2007 and meaningful negative correlation during the trying 2008 bear market for equities.

Figure 8 illustrates the benefit Managed Futures can provide to a portfolio as represented by the annual returns of various asset classes over the iSTOXX® Efficient Capital® Managed Futures 20 Index's 2001-2011 history.

FIGURE 6

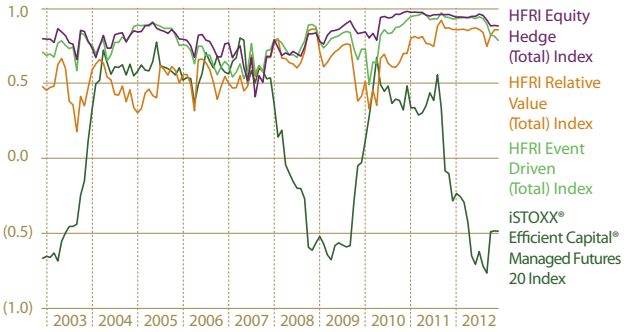
iSTOXX® Efficient Capital® Managed Futures 20 Index vs S&P 500 During Draw downs >15% • *2001-2011*



Data Source: Efficient Capital Management, LLC | Bloomberg

FIGURE 7

Rolling 12 Month Correlation to S&P 500 • *December 2002 through December 2012*



Data Source: Efficient Capital Management, LLC | HFR

FIGURE 8

Annual Returns of Asset Classes • *2001 – 2012*

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
HFRX GL 8.67%	S&P GSCI TR 32.07%	S&P 500 TR 28.68%	DJ US Real Estate 24.20%	S&P GSCI TR 25.55%	DJ US Real Estate 29.74%	S&P GSCI TR 32.67%	iSTOXX ECMFI 13.24%	S&P 500 TR 26.46%	DJ US Real Estate 21.50%	JPM GGBI 7.22%	S&P 500 Total Return 16.00%
iSTOXX ECMFI 4.51%	JPM GGBI 19.37%	DJ US Real Estate 28.36%	S&P GSCI TR 17.28%	iSTOXX ECMFI 5.58%	S&P 500 TR 15.79%	JPM GGBI 10.81%	JPM GGBI 12.00%	DJ US Real Estate 22.66%	S&P 500 TR 15.06%	S&P 500 TR 2.11%	DJ US Real Estate 14.11%
DJ US Real Estate 4.43%	iSTOXX ECMFI 12.17%	S&P GSCI TR 20.72%	S&P 500 TR 10.88%	S&P 500 TR 4.91%	HFRX GL 9.26%	iSTOXX ECMFI 9.54%	HFRX GL (23.25%)	S&P GSCI TR 13.49%	S&P GSCI TR 9.02%	DJ US Real Estate 1.55%	HFRX GL 3.51%
JPM GGBI (0.79%)	HFRX GL 4.72%	iSTOXX ECMFI 15.82%	JPM GGBI 10.10%	DJ US Real Estate 4.11%	iSTOXX ECMFI 7.70%	S&P 500 TR 5.49%	S&P 500 TR (37.00%)	HFRX GL 13.39%	iSTOXX ECMFI 8.68%	S&P GSCI TR (1.18%)	JPM GGBI 3.42%
S&P 500 TR (11.89%)	DJ US Real Estate (2.96%)	JPM GGBI 14.51%	HFRX GL 2.69%	HFRX GL 2.72%	JPM GGBI 5.94%	HFRX GL 4.23%	DJ US Real Estate (43.43%)	JPM GGBI 1.90%	JPM GGBI 6.42%	iSTOXX ECMFI (4.82%)	SP GSCI TR 0.08%
S&P GSCI TR (31.93%)	S&P 500 TR (22.10%)	HFRX GL 13.39%	iSTOXX ECMFI (0.53%)	JPM GGBI (6.53%)	S&P GSCI TR (15.04%)	DJ US Real Estate (21.68%)	S&P GSCI TR (46.49%)	iSTOXX ECMFI (3.57%)	HFRX GL 5.19%	HFRX GL (8.88%)	iSTOXX ECMFI (3.79%)

iSTOXX ECMFI: iSTOXX® Efficient Capital® Managed Futures 20 Index
HFRX GL: Hedge Fund Research Global Hedge Funds
DJ US Real Estate: Dow Jones US Real Estate
JPM GGBI: JP Morgan Global Government Bond Index
S&P 500 TR: S&P 500 Total Return
S&P GSCI TR: S&P Goldman

Data Source: Efficient Capital Management, LLC | Bloomberg

DIVERSIFICATION

Managed Futures investments can provide investors a diversification benefit at a number of levels. Managed Futures investments can be diversified across a variety of active investment approaches, sectors traded and trade duration.

A single manager investment may not allow for optimal exposure to Managed Futures. A multi-manager approach has the ability to utilize a variety of managers to provide investors with diversified access to Managed Futures and an overall return representative of the Managed Futures investment class.

Further diversification can be achieved by investing in managers employing a variety of differentiated systematic and discretionary strategies including mean-reversion/relative value and value/macro-fundamental approaches. These strategies can be based on technical and/or fundamental inputs. A significant portion of all Managed Futures firms employ various mixes of such strategies.

The below chart (Figure 9) illustrates the pair-wise correlations of the 20 manager sample comprising the iSTOXX® Efficient Capital® Managed Futures 20 Index.

Market and sector concentration differences between strategies can be a meaningful source of diversification as well when investing in Managed Futures. While many alternative investments, including a large number of hedge fund strategies, trade primarily stocks and bonds, a diversified Managed Futures portfolio holds positions across a wide variety of sectors. Figure 10 is an example of a Managed Futures portfolio diversified across equity indices, fixed income, foreign exchange, energies, metals, and agricultural instruments.

Finally, the average holding period (the period of time in which an average position is held by a manager) can vary significantly between Managed Futures investment managers. Combining managers with differing trade durations can also be a meaningful source of diversification.

FIGURE 9

Component Correlation Matrix

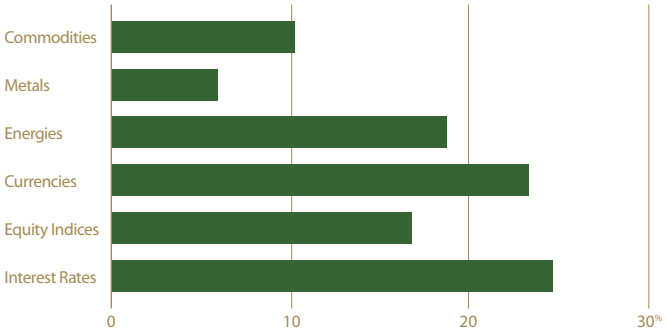
≥ 0.66
≤0.20

	Long Term Trend Follower	Long Term Trend Follower	Long Term Trend Follower	Long Term Trend Follower	Long Term Trend Follower	Long Term Trend Follower	Long Term Trend Follower	Long Term Trend Follower	Long Term Trend Follower	Long Term Trend Follower	Long Term Trend Follower	Short Term	Short Term	Currency	Short Term	Currency	Short Term	Short Term	Global Macro	Currency
Long Term Trend Follower	1.00																			
Long Term Trend Follower	0.80	1.00																		
Long Term Trend Follower	0.71	0.71	1.00																	
Long Term Trend Follower	0.85	0.85	0.78	1.00																
Long Term Trend Follower	0.73	0.65	0.78	0.73	1.00															
Long Term Trend Follower	0.80	0.76	0.85	0.84	0.78	1.00														
Long Term Trend Follower	0.80	0.65	0.73	0.81	0.75	0.79	1.00													
Long Term Trend Follower	0.82	0.80	0.78	0.92	0.66	0.78	0.81	1.00												
Long Term Trend Follower	0.71	0.73	0.71	0.75	0.70	0.78	0.74	0.76	1.00											
Long Term Trend Follower	0.69	0.67	0.78	0.75	0.73	0.79	0.84	0.72	0.73	1.00										
Long Term Trend Follower	0.38	0.46	0.57	0.49	0.57	0.50	0.47	0.51	0.42	0.54	1.00									
Short Term	0.46	0.70	0.44	0.43	0.36	0.46	0.26	0.36	0.35	0.48	0.11	1.00								
Short Term	0.44	0.61	0.25	0.42	0.39	0.42	0.29	0.31	0.41	0.40	0.02	0.69	1.00							
Currency	0.44	0.51	0.52	0.49	0.39	0.47	0.42	0.38	0.39	0.52	(0.06)	0.47	0.55	1.00						
Short Term	0.36	0.48	0.39	0.41	0.38	0.25	0.28	0.43	0.36	0.28	0.18	0.33	0.36	0.37	1.00					
Currency	0.40	0.45	0.36	0.55	0.44	0.44	0.55	0.47	0.37	0.43	0.23	0.19	0.26	0.41	0.36	1.00				
Short Term	0.50	0.50	0.32	0.46	0.42	0.43	0.34	0.46	0.58	0.34	0.10	0.31	0.42	0.24	0.37	0.15	1.00			
Short Term	0.21	0.24	0.06	0.18	0.13	0.13	0.17	0.09	0.07	0.25	0.18	0.36	0.12	(0.07)	0.04	0.03	0.03	1.00		
Global Macro	0.39	0.54	0.10	0.26	0.32	0.24	0.15	0.24	0.28	0.26	0.02	0.62	0.73	0.23	0.45	0.13	0.49	0.20	1.00	
Currency	0.47	0.35	0.22	0.31	0.43	0.19	0.38	0.25	0.28	0.50	0.20	0.38	0.38	0.22	0.24	0.19	0.31	0.32	0.53	1.00

Data Source: Efficient Capital Management, LLC

FIGURE 10

Hypothetical Managed Futures Portfolio Sector Exposure



Data Source: Efficient Capital Management, LLC

Liquidity

Managed Futures firms transact in the deepest, most liquid markets in the world. The growth in the number of contracts available to be traded and volume of contracts traded has made Managed Futures an efficient and reliable marketplace. Today there are over 150 different futures markets available to be traded and more than 80 exchanges worldwide. Capacity is extensive and growing. As the futures markets have enjoyed increased market participation and liquidity, bid/ask spreads have increasingly narrowed.

For the manager, liquidity means the ability to get in or out of any position quickly. For the investor, liquidity means freedom from lock-up provisions often imposed in some hedge fund strategies and other alternative investments. Because managers are able to liquidate positions on a daily basis, most Managed Futures funds offer daily or monthly liquidity. Because of this freedom, traders and investors are able to participate in a cycle in which they may easily move in and out of markets, which in turn improves the overall liquidity of those markets and creates the opportunity for unique product structures.

Transparency

Exchange-traded futures as well as interbank foreign exchange prices are continuously updated and made available to the public. Market depth and volume are tracked and published by the exchanges, and carried by data services such as Bloomberg. In this way, contract values can be tracked continuously. The Managed Futures industry also reports to regulators, making the industry itself transparent and accountable.

For the investor, the transparency of each position is dependent upon the way the investment is structured. The level of transparency in a fund is at the fund manager's discretion and often transparency is limited.

Managed accounts, on the other hand, offer complete transparency, giving the investor updated and full knowledge of account status and value. This transparency ultimately provides the investor with a significant amount of knowledge and control over the investment. The iSTOXX® Efficient Capital® Managed Futures 20 Index is comprised only of managers that are open to managed account investments.

Cash Efficiency

Futures contracts trade on margin. Margins generally are 5-15% of the overall value of the contract. For example, to secure a $100 cash equivalent position, the investor may need only $5 in cash. The investor then has $95 left in cash, $5 deposited in margin, and owns a $100 value futures contract. This is "cash efficiency."

It is worth noting that many investment strategies use leverage to enhance returns. However, many other hedge fund strategies and other investment strategies that seek to take advantage of leverage do not deal with such liquid instruments; may have to pay the costs of borrowing and are dependent on a bank for leverage; or may not have transparent instruments. The transparency and liquidity of Managed Futures provide the proper controls needed to benefit from cash efficiency without any borrowing of capital while utilizing prudent and patrolled risk management.

For the investment manager, cash efficiency allows portfolio managers to target exposures with predictable volatility and a targeted level of returns. As an extension of this principal, cash efficiency allows for the ability to increase exposure, per the investor's desired risk preference, without any cost of borrowing typical in other alternative investments.

Managed Futures in a Portfolio

Managed Futures are non-correlated, non-directional, diversified, liquid, transparent, and cash efficient. While only pure non-directionality is unique to Managed Futures, the other characteristics exist in quite different forms in other investment classes. But it is only in Managed Futures that all of them can be found at work at the same time. The inclusion of Managed Futures in a portfolio has led to both increased returns and reduced volatility.

The following table (Figure 11) summarizes the statistical profile of Managed Futures relative to traditional and alternative asset class benchmarks. In addition, the analysis illustrates the improvement in the statistical profile of a hypothetical portfolio of traditional investments and hedge funds when combined with an investment in Managed Futures.

In this analysis, Managed Futures is shown to diversify and improve the performance of multiple portfolios. The Sharpe Ratio, a key variable to measure the improvement in the risk adjusted return profile of an investment, shows the increase in return relative to a unit risk found when including Managed

FIGURE 11

Hypothetical Portfolio Analysis • *January 2001 through December 2012*

January 2001 through December 2012	Sharpe Ratio	Sortino Ratio	Calmar	Omega Ratio	Skew	Excess Kurtosis
iSTOXX Efficient Capital Management Managed Futures Index	0.58	0.61	0.40	1.57	(0.12)	0.36
S&P 500 TR Index	0.16	0.14	0.05	1.20	(0.59)	0.93
JPM GGBI	0.97	1.07	0.84	2.09	0.05	0.54
HFRI Equity Hedge (Total) Index	0.52	0.45	0.14	1.51	(0.89)	1.93

The following hypothetical portfolio illustrates Managed Futures diversification benefit to a portfolio of stocks, bonds and hedge funds.

January 2001 through December 2012	Sharpe Ratio	Sortino Ratio	Calmar	Omega Ratio	Skew	Excess Kurtosis
50% Stocks 30% Bonds 20% Hedge Funds	0.47	0.41	0.14	1.47	(0.66)	1.36
20% Managed Futures 40% Stocks 24% Bonds 16% Hedge Funds	0.62	0.59	0.19	1.61	(0.46)	0.70

Risk Free Rate=0%

Data Source: Efficient Capital Management, LLC | Bloomberg | HFR

Futures in a portfolio. Additionally, the Sortino ratio highlights that the inclusion of Managed Futures also reduces the downside volatility of the portfolio. This suggests that Managed Futures has historically benefited a portfolio during periods of market stress.

Finally, Managed Futures industry returns, as represented by the iSTOXX® Efficient Capital® Managed Futures 20 Index, are summarized in the below table (Figure 12). The table illustrates the relative stability of the Managed Futures industry return profile, particularly over multiple year investment cycles.

Within the framework of modern portfolio theory, Managed Futures exposure not only contributes absolute return but it also adds valuable diversification to a traditional portfolio of stocks and bonds as well as a portfolio of stocks, bonds, and hedge funds[3]. Based on the characteristics outlined in this paper, Managed Futures can play an important role in balanced portfolios of traditional and alternative assets.

FIGURE 12

Hypothetical Compound Annualized Rate of Return of iSTOXX® Efficient Capital® Managed Futures 20 Index • *Jan 2001-Dec 2012*

		From the start of											
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
To the end of	2012	*5.2%	5.2%	4.5%	3.4%	3.9%	3.6%	2.9%	1.7%	(1.0%)	(0.2%)	(4.3%)	(3.8%)
	2011	6.0%	6.2%	5.5%	4.3%	5.0%	4.9%	4.4%	3.1%	(0.1%)	1.7%	(4.8%)	
	2010	7.2%	7.5%	6.9%	5.7%	6.7%	7.0%	6.8%	5.9%	2.4%	8.7%		
	2009	7.0%	7.3%	6.6%	5.2%	6.3%	6.5%	6.2%	4.5%	(3.6%)			
	2008	8.4%	9.0%	8.4%	7.0%	9.0%	10.1%	11.4%	13.2%				
	2007	7.7%	8.3%	7.5%	5.5%	7.6%	8.6%	9.5%					
	2006	7.4%	8.0%	7.0%	4.2%	6.6%	7.7%						
	2005	7.4%	8.1%	6.7%	2.5%	5.6%							
	2004	7.8%	8.9%	7.3%	(0.5%)								
	2003	10.7%	14.0%	15.8%									
	2002	8.3%	12.2%										
	2001	4.5%											

**5.2% compound annualized rate of return from the start of Jan 2001 to the end of Dec 2012.*

Data Source: Efficient Capital Management, LLC

3 Kat, Harry M. Managed Futures and Hedge Funds: A Match Made in Heaven. From Gregoriou, Greg N. et al. Commodity Trading Advisors: Risk, Performance Analysis, and Selection. Hoboken: John Wiley & Sons, 2004. page 17. Kat's essay provides considerable detail with regard to both skewness and kurtosis in the application of hedge funds and Managed Futures, together and separately.

Additional Resources

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