Shock absorbers?

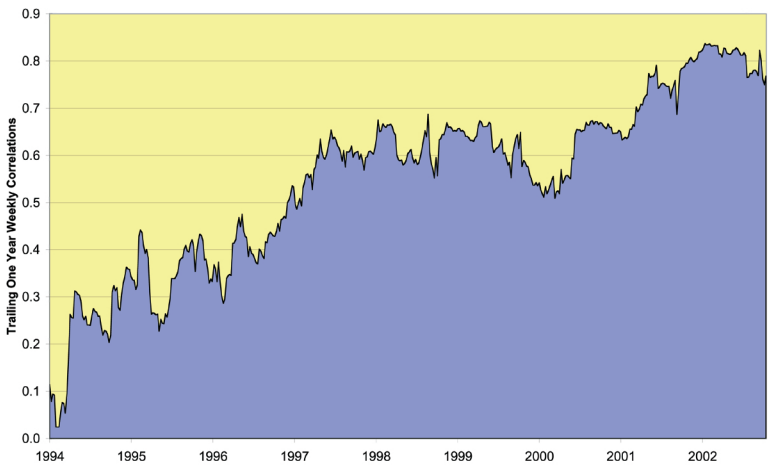
KENMAR GLOBAL INVESTMENT MANAGEMENT EXPLAINS HOW TO DEAL WITH THE RISK OF LOSS AND LOWER RETURNS

GLOBAL FINANCIAL ENVIRONMENT

The average pension fund has 70% of its assets, and a significantly greater percent of its risk and return, in equities [1]. In today's market environment, with high market volatility and low expected returns, the risk-reward outlook for equities is poor. Furthermore, it has become more difficult than ever to achieve portfolio diversification, as global equity markets have become increasingly correlated [chart 1].

The vast majority of a pension fund's assets not invested in equities are generally in bonds and cash equivalents. Fixed income investments are barely keeping pace with inflation and, while they are uncorrelated with equities, today's low interest rates are not nearly high enough to satisfy a pension's longer-term return requirements. Against this backdrop, pension funds are looking for investments that will provide diversification from their core equity investments and generate good returns in this most difficult financial environment.

CHART 1 - CORRELATION BETWEEN US AND NON-US EQUITY MARKETS



Source: Kenmar

THE CONCEPT

This article explores an investment that offers the potential for significant benefits when included in the portfolio of the typical pension plan, particularly when this investment is structured as an overlay programme requiring minimal funding.

Before addressing the specifics of this investment, a more general discussion of its unique characteristics is valuable. As investors have become painfully aware events that statistically should occur only infrequently have become a way of life in recent years. And in the concurrent downward force of global markets during these crisis periods, a pension fund is likely to suffer serious damage when its undercarriage scrapes the road. It needs 'shock absorbers'. A pension fund needs an investment that can absorb the shock of a financial crisis, when everything else in the portfolio is suffering losses.

What is this investment? A managed futures investment programme that is notionally funded and structured as an overlay to the plan's investment portfolio. Many readers will no doubt stop reading this article at this point, dismissing the concept before learning more about it. But it is worth remembering that many portfolio managers once had that same attitude toward investments in international markets. And mutual funds. And private equity. And hedge funds.

NEGATIVE CORRELATION DURING DOWNTURNS IN THE S&P

Over the past 20 years, managed futures [2] have been uncorrelated with both the S&P and hedge funds [3]. However, during periods of S&P decline, managed futures have been negatively correlated with both the S&P and the broad hedge fund indices [table 1]. There have been 17 periods of consecutive monthly declines in the S&P of greater than 6% (12% average decline). In 15 of these 17 periods of S&P decline, managed futures realised positive returns (5% average increase). Hedge funds (data available beginning January 1990) declined in all but one of these periods (3% average decline). Furthermore, there were 55 months since January 1980 in which the S&P was down more than 2%. The correlation of managed futures to the S&P was -0.36 during these months.

While managed futures have demonstrated positive returns when the S&P experienced severe declines, they have also enjoyed gains during periods of significant S&P run-ups. This is in sharp contrast to hedge fund short sellers, which similarly realised gains in periods of S&P decline, but, as one would expect, suffered losses in periods of S&P run-ups [table 2].

The value of the negative correlation of managed futures to equities in periods of market stress is an attribute of this investment that should be fully recognised and highly valued.

DAILY RETURNS SUPPORT THE ROBUSTNESS OF THE RELATIONSHIP

We wanted to further substantiate the uncorrelated behaviour of managed futures and the equity market. Daily returns provide a rich sampling of current data. We analysed five years of daily return data for 45 commodity trading advisors (CTAs). For the five-year period, the average daily correlation of CTAs to the S&P was -0.21. During the market run-up, through March 2000, the returns of the CTAs were uncorrelated to the S&P (-0.08). Since the market peak in March 2000, the returns of the CTAs were negatively correlated to the S&P (-0.35). This substantiates our original conclusion, based on monthly data, that managed futures and the equity markets have been uncorrelated generally, but 'structurally' negatively correlated in periods of equity market weakness.

MANAGED FUTURES PROVIDE RETURNS THAT ARE COMPETITIVE WITH EQUITIES

The returns of managed futures have approximated those of the S&P over the past two decades [table 3].

The volatility of managed futures, measured as the annualised standard deviation of the monthly CISDM index (which approximates that of a diversified portfolio of CTAs), has been significantly less than that of the S&P 500 since 1990. And, since 1995, the standard deviation of managed futures has been approximately half that of the S&P 500.

Consequently, the volatility-adjusted returns, measured by the Sharpe Ratio, of managed futures have consistently been equal to or greater than those of the S&P 500 [table 3].

Managed futures have the significant advantage of being uncorrelated with the equity market. Consequently, the volatility and correlation-adjusted returns of managed futures, measured by the BAVAR Ratio, have been consistently and significantly superior to those of the S&P 500 [table 3].

The BAVAR ratio was developed by Kenmar to provide a beta- and volatility-adjusted measure of return. It does this by adjusting the beta of a portfolio to 1 by adding or removing exposure to the benchmark and calculating the Sharpe ratio of this adjusted portfolio. Assuming the benchmark is the S&P 500, it is calibrated such that the BAVAR ratio of the S&P is exactly equal to the Sharpe ratio of the S&P.

NOTIONAL FUNDING MAKES SENSE

The exchanges on which futures contracts are traded require investors to put up only a small amount of capital, called 'margin', as a good faith deposit against the full value of the contracts. These deposits ensure that all market participants have the ability to make good on daily variations in their trading accounts. Margin requirements generally range between 5-15% of full contract value.

CTAs require a certain dollar level of commitment from each client account. That is, their clients must designate an investment level, or account size, when investments are made, which will determine the level of trading and risk that will be taken. Most clients fund their managed futures investments with assets totalling the full account size. However, full funding is not necessary. An institutional investor can fund the investment with 15-25% of the designated account size. 'Notional funds' represent the difference between the investment level designated by the investor and the assets actually deposited into the managed futures account.

Furthermore, futures investors do not incur financing or interest charges on the difference between the margin requirements and full contract value, as one does on margin accounts in equities. In fact, managed futures investors are credited interest income on their cash deposits as well as the interest earned on any deposited fixed income securities. This presents an opportunity for institutional investors to 'overlay' tradi-

TABLE 1 - PERIODS OF S&P DECLINE

		S&P 500	Managed futures*	Hedge funds**
1	**Sep-Nov 1987**	-30%	8.5%	
2	**Apr-Jul 2002**	**-20%**	**10.6%**	**-4.4%**
3	**Jun-Sep 2001**	-17%	1.9%	-3.8%
4	**Jul-Aug 1998**	-15%	5.8%	-9.4%
5	**Feb-Mar 2001**	-15%	4.0%	-3.8%
6	**Jun-Oct 1990**	-15%	19.4%	-1.9%
7	**Sep-Nov 2000**	-13%	2.7%	-6.4%
8	**Aug-Sep 1981**	-10%	0.1%	
9	**Feb-Mar 1980**	-10%	10.3%	
10	**Dec '81-Mar '82**	-10%	7.9%	
11	**Sep 1986**	-8%	-4.2%	
12	**Dec '80-Jan '81**	-7%	9.5%	
13	**Feb-Mar 1994**	-7%	0.3%	-2.1%
14	**Jan-Feb 2000**	-7%	0.9%	6.8%
15	**Jan 1990**	-7%	3.2%	-2.1%
16	**May-Jul 1982**	-7%	1.4%	
17	**Jul-Sep 1999**	-6%	-0.5%	0.7%

*CISDM Trading Advisor Qualified Universe Index
**HFR Fund Weighted Composite Index

TABLE 2 - RESPONSE OF ALTERNATIVE INVESTMENTS TO EXTREME MARKET BEHAVIOUR*

	% of these periods with gains for: Managed futures	Short sellers**
Periods of S&P losses >6%	90%	90%
Periods of S&P gains >10%	89%	0%

*Consecutive monthly losses or gains in the S&P 500 between Jan 1990 to July 2002 (period for which both indices existed)
**HFR Short Selling Index

tional portfolios with the return, volatility, and correlation enhancements afforded by managed futures, but without the necessity to liquidate existing investments. This largely eliminates the opportunity cost associated with the reallocation of portfolio investments.

Margin deposits can be satisfied with an appropriate amount of treasury bills (which are an approved form of collateral) from the institution's fixed income portfolio and from excess cash reserves (on which interest will be paid). In short, a pension fund can use its under-utilised bond portfolio as collateral to support its managed futures overlay. The funds will be working twice, first to generate the relatively small but diversifying returns of bonds and simultaneously to support the managed futures overlay.

A managed futures overlay affords the opportunity to generate incremental returns while reducing the volatility of the overall portfolio because of the 'shock absorber' behaviour of managed futures.

Investors are of course responsible for losses from managed futures investments, and could be required to post additional margin due to poor investment performance in their managed futures accounts. Managed futures may not be suitable for everyone.

TABLE 4 - PERFORMANCE OF INDIVIDUAL CTAS

	Lowest	Highest
Compound Annual Return	-50%	61%
Annualised Standard Deviation	1.4%	71%
Sharpe Ratio	3.54%	3.41
Beta to S&P 500	-1.08	1.46

THE VALUE OF MANAGER SELECTION

We analysed the performance of 255 CTAs with a full five-year history. We calculated the compound annual return, annualised standard deviation, Sharpe ratio and the beta to the S&P 500 for each of the CTAs. The ranges of these statistics among the CTAs were very broad [table 4].

We wanted to determine whether across this universe of CTAs any relationship between return, volatility, and correlation to equities existed. We first performed a regression between return and standard deviation. Theory would suggest that if the performance of CTAs were 'efficient', returns would increase as volatility increases. In fact, there is no relationship between volatility and returns across these 255 CTAs [chart 2].

We then performed a regression between the Sharpe ratio (the return adjusted for volatility) and the beta to the market. One should demand a higher return when an investment is more highly correlated to the market. In fact, there is no relationship between the risk-adjusted returns and correlation to the market among the 255 CTAs.

The broad conclusion from this analysis is that there is significant variation in the performance across CTAs, and the differences cannot be explained by accepted theoretical relationships between volatility, correlation to the market, and returns. In other words, CTA returns are not 'efficient'.

PROFESSIONAL, ACTIVE MANAGEMENT MAKES SENSE

How do you select the CTAs for your managed futures overlay programme? The inefficiency in the returns of the CTAs suggests that active management, rather than an index or benchmark can deliver a high level of value.

What is active management? If one were to simply invest in a highly diversified portfolio of CTAs, an investor would anticipate returns that approximate that of the CISDM Index. Active management is the process of constructing and managing a portfolio of CTAs that will outperform that passive index. The performance across the universe of CTAs varies dramatically, not only on an absolute basis, which one might expect given the significant differences in volatility and correlation to the equity market, but also on a risk-adjusted basis. These differences afford the active manager an opportunity to add significant value in constructing a risk-efficient portfolio.

THE BENEFITS OF ALTERNATIVE INVESTMENTS WITHOUT MANY OF THE RISKS

Managed futures afford the benefits of other alternative investments without many of the inherent risks. Presumably, the primary benefit of alternative investments are absolute returns that are uncorrelated to those of the equity markets. Despite this claim, the average correlation of hedge funds to the equity markets has been +.51. Conversely, the average correlation of CTAs to the equity markets has been -0.07. Managed futures have historically been truly uncorrelated to the equity markets. They deliver the diversification that many hedge funds claim, but which many are unable to deliver (this does not mean that select hedge funds and carefully constructed fund of funds are not market neutral).

Furthermore, managed futures are largely immune to some of the risks associated with hedge fund investing:

* Liquidity risk. A managed futures investment can generally be liquidated within 24 hours of receiving the instruction to do so. Real estate and private equity require long lock-ups because the underlying investments are illiquid. Some hedge funds have lock-up periods of 1-3 years, after which most allow redemptions no less frequently than quarterly, often requiring 30-90 days notice. The most liquid hedge funds allow monthly redemptions.

* Valuation Risk. There is a significant amount of judgement in the valuation of many alternative investments. Both private equity and real estate are valued either at historic cost or on subjective assessments. Many securities traded by hedge funds are valued based on monthly dealer quotes. Price discovery for many of these securities is limited (such as mortgage derivatives, asset backed securities, distressed debt) and dealer quotes can vary by 20% or more, leaving significant discretion in their ultimate valuation. In contrast, futures contracts, options on futures, and foreign exchange are priced by the trading exchanges or banks on a daily basis. The valuation of futures contract are not subject to discretion.

* Transparency Risk. Risk transparency is a major issue for hedge fund investors. Most hedge fund managers currently provide little information about the risks of their funds, and, when information is made available, it is not calculated consistently across managers. In contrast, most CTAs have provided position level information on a real time basis for almost two decades.

TABLE 3 - MANAGED FUTURES PERFORMANCE HISTORY

		Jan 1980-July 2002	Jan 1990-July 2002	Jan 1995-July 2002
Compound Annual Return	**Managed Futures**	13.9%	11.3%	9.4%
	S&P 500	13.4%	10.3%	11.3%
Annualised Standard Deviation	**Managed Futures**	16.7%	10.2%	8.8%
	S&P 500	15.5%	16.6%	16.2%
Sharpe Ratio	**Managed Futures**	.54	.62	.50
	S&P 500	.54	.32	.39
BAVAR Ratio	**Managed Futures**	.77	.61	.60
	S&P 500	.54	.32	.39

SUMMARY OF CONCLUSIONS

The article reaches five major conclusions:

1. As financial markets globalise, correlations among markets have significantly increased and diversification opportunities have become more scarce and, consequently, more valuable.
2. Managed futures have historically been uncorrelated to the S&P in normal markets and negatively correlated during downturns of the S&P. This valuable diversification would justify a lower return compared with equities. In fact, managed futures have delivered competitive returns with diversification and lower volatility.
3. Notional funding, using under-deployed fixed income investments and cash reserves as collateral for a managed futures overlay, can generate incremental alpha while potentially reducing portfolio volatility.
4. Dramatic variations in performance across CTAs exist, and cannot be explained by differences in risk profile. Consequently, an active manager that analyses CTAs, constructs portfolios of CTAs and actively manages the return and risk of those portfolios can add significant value.
5. Managed futures afford the benefits of other alternative investments – diversification from equity markets and absolute returns - without the risks of illiquidity, valuation errors, and lack of transparency.

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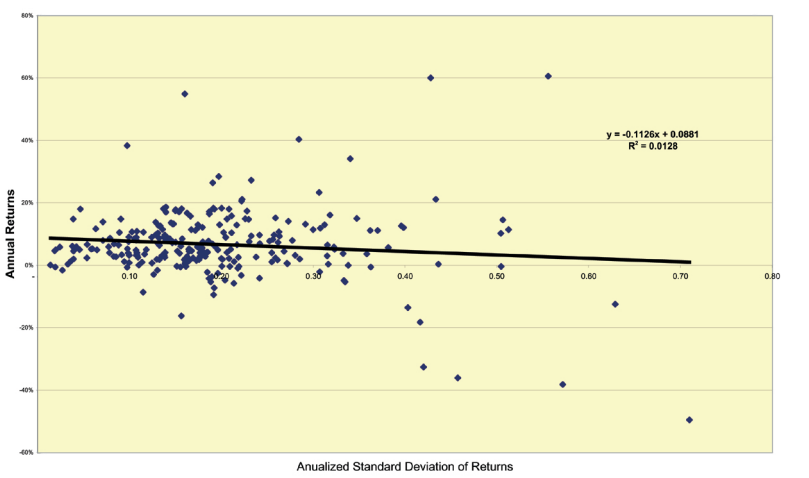
(1) Board of Governors of the Federal Reserve System, Flow of Funds Accounts of the United States, 7 March, 2002
(2) As represented by the CISDM Trading Advisor Qualified Universe Index, an equal weighted index of Commodity Trading Advisors in the CISDM database, formerly MAR/Zurich and beginning in 1980.
(3) As represented by the HFR Fund Weighted Composite Index, an equal weighted index of all hedge funds in the HFR universe.

CHART 2 - RELATIONSHIP BETWEEN VOLATILITY AND RETURNS



Source: Kenmar