

# managed futures

by Steven Koomar

# can save your tail

Some investors who are unfamiliar with managed futures are nervous about the volatility of the asset class. Unbeknownst to them, they may be missing an opportunity to reduce the overall risk of loss in their investment portfolios.

Historically, diversified investment portfolios perform better *and* are less volatile when they include managed futures investments. Considering that returns from managed futures tend to be highly volatile, these assertions are counterintuitive. A clearer understanding of how this happens is obtained by studying the nature of managed futures' returns and their correlation to stocks and bonds, especially during times of stress for financial markets.

## Background

In 1983, Professor John Lintner of Harvard University examined the role of managed futures in an investment portfolio<sup>1</sup>. In his paper, Lintner found that the returns of managed futures showed a low (and sometimes negative) correlation to the returns of stock & bond portfolios. Lintner concluded that investment portfolios which incorporate an allocation to managed futures have historically offered a superior distribution of returns when compared to portfolios composed exclusively of stocks & bonds. Inspired by Lintner, subsequent—and more extensive—research has concluded that managed futures investments do indeed provide unique diversification benefits.

## Managed Futures – Healthy Volatility

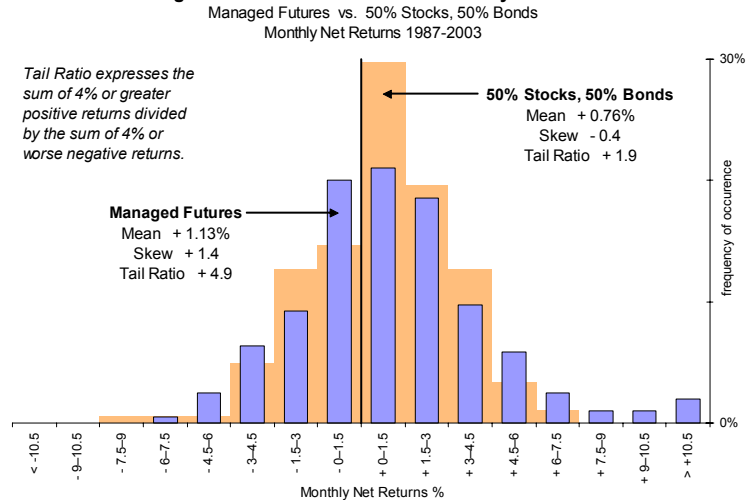
Managed futures investments show significant volatility... much of which is good volatility. In *Figure 1*, data from the MAR Index<sup>2</sup> show that the distribution of monthly returns exhibits fatter “tails” (technically, “leptokurtosis”) and a more positive skew than the classic normal distribution. In other words, managed futures tend to produce a larger-than expected number of extreme returns, and the extreme returns are more likely to be positive than negative.

With regard to this asymmetry in the tail returns, managed futures exhibit more than 2.5 times the positive bias of a traditional portfolio. Using a real-world “tail ratio” (the sum of all +4% or greater returns divided by the sum of all -4% or worse returns), managed futures score +4.9. The equivalent “tail ratio” for a traditional stock/bond portfolio—a mix of 50% stocks, 50% bonds<sup>3</sup>—is only +1.9. Computing the more conventional Skew measure for the return distribution also confirms this attractive positive tendency in the tails.

With so much “good” volatility in managed futures, the simple volatility statistic—a widely used measure—clearly overstates risk of loss.

**So why do managed futures investments feature this “good volatility?”** The answer probably lies in the nature of the trading programs used by the majority of CTAs. Most managed futures programs use disciplined, trend-following trading strategies which are designed to capture a majority of the price movement in long and intermediate-term trends while systematically using stop-loss orders to try to exit bad trades before the losses pile up. Consequently, these trading programs tend to produce more “big winners” than “big losers.”

**Figure 1: Distributions of Net Monthly Returns**



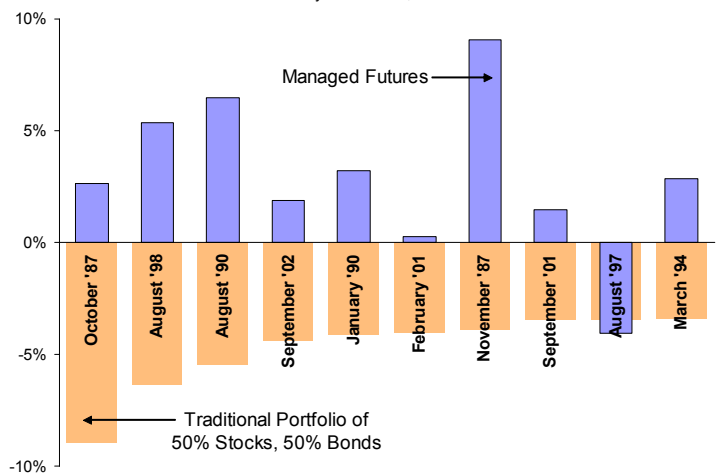
## Managed Futures – Attractive Correlations

For our traditional stock/bond portfolio, *Figure 2* ranks the worst 10 months from 1987 to 2003. Introducing MAR index performance for those times, the chart reveals that managed futures produced positive returns in 9 of the 10 periods. Extending this idea to the worst 30 months, the two sets of returns show a correlation of -0.4, as compared to having no correlation (ie. +0.0) over the full 17 year period.

This, perhaps, is the most attractive feature of the asset class: managed futures have historically provided the *best kind of diversifying investments at investors' greatest time of need*.

**Figure 2: Correlation of Monthly Returns During “Tail Events”**

Managed Futures vs. 10 Worst Months for Traditional Portfolio (50% Stocks, 50% Bonds)  
Monthly Net Returns, 1987-2003



1. “The Potential Role of Managed Commodity-Financial Futures Accounts (and/or Funds) in Portfolios of Stocks and Bonds” John V. Lintner, Harvard University, 1983.
2. CISDM Trading Advisor Qualified Universe Index (formerly known as the MAR Index) is an established index tracking the managed futures industry. More information at <http://cisdm.com.umass.edu>
3. Portfolio performance from 1987-2003 synthesized using data from the S&P 500 Total Return Index and the Merrill Lynch US Government/Corporate Master Bond Index.

**So is this offsetting behavior a lucky coincidence, or is there an explanation for it?** A number of factors explain this unique return behavior. Because managed futures programs can hold both long and short exposure in many different financial and commodity markets around the world, they can exploit opportunities not available to traditional portfolios. Managed futures programs also maintain very attractive liquidity characteristics, so they can quickly reverse direction when and if appropriate. This kind of flexibility—not shared by traditional stock and bond fund investments—is particularly important during financial crises, when “cash is king.” During a crisis, investors typically seek and store liquidity, withdrawing from risky asset markets. This causes market volatility to rise and price trends to become exaggerated.

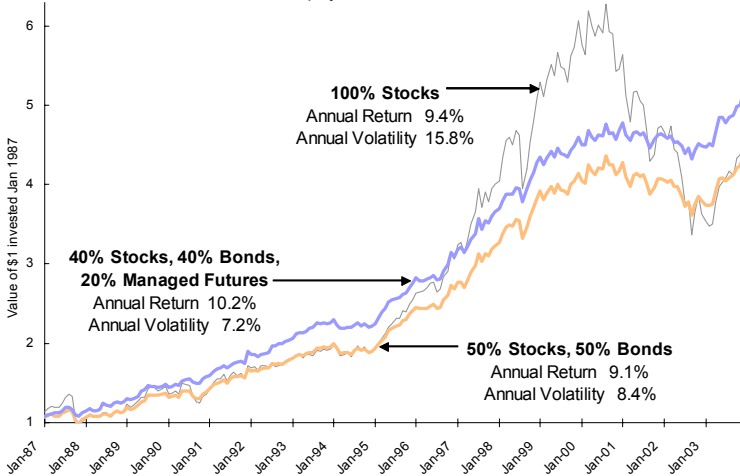
Trend-following programs that systematically “cut losses early and let profits run” tend to have unusually good returns and a negative correlation to traditional investments during times of stress.

## Building an All-Weather Portfolio

For a clearer picture of the benefits of using managed futures, consider the long-term, historical impact of allocating managed futures investments to typical investment portfolios.

The performance of our traditional stock/bond investment portfolio is shown in Figure 3, alongside a pure stock portfolio, represented here by the S&P500. With a modest allocation to managed futures, a third, “all-weather” portfolio (40% stocks, 40% bonds and 20% managed futures) produces a superior profile in terms of both risk and return. This “all-weather” portfolio mix generates higher yields, less downside volatility and a substantially higher Sharpe Ratio than our traditional stock/bond portfolio.

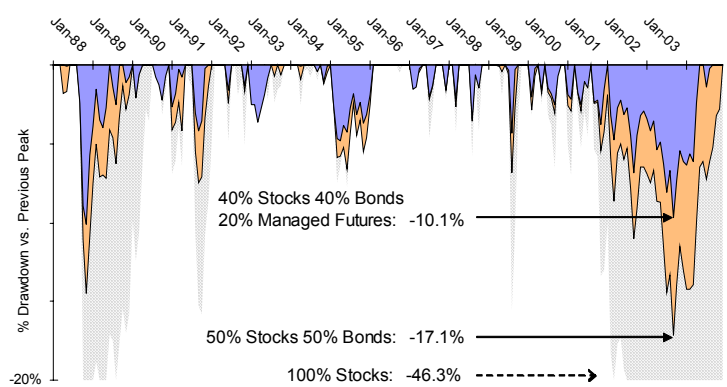
**Figure 3: Portfolio Performance**  
Equity Curves, 1987-2003



An even better understanding of the diversification benefits of managed futures can be gleaned from the drawdown analysis in Figure 4. (Drawdown is defined as the percentage loss in performance from a prior peak to the subsequent trough.) The drawdown analysis is derived from the return histories for each portfolio discussed above. From 1987 through 2003, the “all-weather” portfolio outperforms our traditional stock/bond portfolio in each major drawdown period.

Furthermore, the maximum drawdown associated with the “all-weather” portfolio was only -10.1%, which was 7% less than the maximum drawdown for our traditional stock/bond portfolio. Even a modest allocation to managed futures can significantly reduce risk of loss and calm your ride through the stormy seas of investing.

**Figure 4: Portfolio Drawdown Analysis**  
Drawdown Events, 1987-2003



These results are all the more remarkable when you consider that over this period, the historic volatility of managed futures was 2.7 times that of the Merrill Lynch bond index. It highlights the benefits of holding the “good volatility” of managed futures in a portfolio: Investors who have allocated a modest 20% to managed futures have enjoyed a dose of well-timed, diversifying volatility that has historically dampened risk of loss while increasing portfolio yield.

— As an interesting aside, note that even a so-called “conservative” portfolio of 40% stocks, 60% bonds fails to reduce risk as effectively as our “all-weather” portfolio during this time. In fact, while the “conservative” portfolio produces a marginally lower overall volatility of 7.1%, it suffers from larger drawdowns (-11.2% max) and weaker returns (8.9%).

## Assumptions and Limitations

These results, like many of the other studies that examine managed futures as an asset class, assume that an investor could obtain the returns indicated by the MAR index, and that the asset classes used in this study will remain consistent in their behavior going forward. In reality, the MAR index is not investable and suffers from the limitations inherent in such indices.

Investors who seek to replicate the return of a managed futures index may want to select a representative mix of managers with varying investment styles. Allocating to a well-chosen set of managed futures programs should fortify a portfolio for the inevitable “tail events” of the future.

– April 2004

## Sources & Further Reading

1. William Fung and David A. Hsieh, “A Primer on Hedge Funds,” <http://www.duke.edu/~dah7/index.htm>, August 1999.
2. Professor Harry M. Kat, “Managed Futures and Hedge Funds, A Match Made in Heaven,” Alternative Investment Research Center Working Paper Series, Working Paper #0014, November 1, 2002.
3. Professor Thomas Schneeweis and Georgi Georgiev, “The Benefits of Managed Futures,” CISDM, June 10, 2002.

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