THE DIVERSIFICATION BENEFITS OF MANAGED FUTURES

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July 2015
Is it possible to achieve better portfolio diversification?

Constructing a diversified portfolio, in which the correlation between constituent asset classes and investment strategies is meaningfully low, can be challenging.

Combining equities and bonds is a staple approach to asset allocation, and these two asset classes form the core of most investment portfolios. Often, the combination can provide the foundation of an effective portfolio strategy.

But how well do such conventional, long-only approaches work over the long term, across market cycles encompassing stock market sell-offs? In this paper we consider this question using historical performance data from the period 1 January 2000 to 30 June 2015. Our analysis shows how portfolio diversification and risk adjusted returns may be significantly improved through an allocation to managed futures.

What are managed futures?

There are different types of managed futures strategies but systematic trend following is the one most commonly employed. These and other types of managed futures strategies are also known as CTA (commodity trading advisor) strategies, because they originally traded in the commodity markets. Today that is not universally the case, but the name remains in use.

Trend following CTAs use futures, options and forward contracts to be long or short of an index or individual market, including stock indices, government bonds, foreign exchange rates and commodities, with the aim of identifying and exploiting price trends. Sophisticated computer software that executes quantitative, rules based trading systems, enable systematic trend following strategies to do this in numerous markets at the same time. The point at which a trade is initiated or exited, and how much exposure is taken, depends entirely upon price data and a systematic trend following CTA’s own proprietary system for analysing and interpreting this information. These systems are developed and tested rigorously before being employed by the fund manager. Human emotion and guesswork are then, in general, entirely removed from the trading process. For the rest of this paper, we assume that managed futures are systematic trend followers and that both equities and bonds represent long only investments.

Our starting point

We have chosen equities and bonds against which to assess the correlation characteristics of managed futures, because these asset classes typically form most investors’ core holdings. We have used the MSCI World Total Return USD, Barclays Capital Bond Composite Global and Newedge CTA Indices, respectively, as indicators of equity, bond and managed futures performance. The period for the analysis is from 1 January 2000 (the start date of the Newedge CTA Index) to 30 June 2015, and monthly return data (Source: Bloomberg) is used.

If we look at the rolling 12 month correlation between managed futures and each of these traditional asset classes, we can see that the correlations overall are very low (Table 1), and only peak at or above +0.6 or trough at or below -0.6 on a few occasions (Graph 1). It is apparent that the correlation between managed futures and equities is more often than not low and, more importantly, negative during periods of stock market turmoil.
The correlation between equities and managed futures plunges sharply on three occasions, each representing a period of financial turmoil; after the dot-com bubble bursts (2000-2002), during the global financial crisis (2007-2009), and during the eurozone sovereign debt crisis (2010-2012). There is also one sustained period of negative correlation against bonds leading into the global financial crisis (2007-2009). 

![Graph 1 - Rolling 12 Month Correlation Against Managed Futures](image_url)

**Table 1 – Overall Correlation To Managed Futures (Jan 2000 to June 2015)**

<table>
<thead>
<tr>
<th></th>
<th>Correlation</th>
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<tbody>
<tr>
<td>Equities</td>
<td>-0.09</td>
</tr>
<tr>
<td>Bonds</td>
<td>+0.23</td>
</tr>
</tbody>
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In accordance with Modern Portfolio Theory (Markowitz), combining assets that are not significantly correlated (i.e. between -0.6 and +0.6) can lower risk within a portfolio, allowing for potentially higher risk adjusted returns.

If we analyse Graph 2 and look at the seven years when the annual returns for either equities or bonds were negative, we can see that, with the exception of 2011, managed futures were profitable in each of these years (2000 to 2002, 2005, 2008 and 2013). The evidence therefore suggests that incorporating managed futures into an investment portfolio could be an effective way of reducing portfolio risk and increasing risk adjusted returns.
Risk Adjusted Performance

The next stage of our analysis involves considering a Traditional, a Diversified, and a Managed Futures portfolio. The Traditional portfolio assumes a 60% allocation to equities and a 40% allocation to bonds, which is the generally accepted typical exposure for a traditional portfolio. The Diversified portfolio assumes a 40% allocation to equities, a 30% allocation to bonds and a 30% allocation to managed futures. Finally, the Managed Futures portfolio assumes a 100% allocation to managed futures. We assume that each portfolio is fully invested with no cash holdings, and rebalanced every month.

In our opinion, rather than just looking at total return figures, it is more important to consider risk adjusted returns, which we measure using the Sharpe Ratio.

<table>
<thead>
<tr>
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<th>Traditional portfolio</th>
<th>Diversified portfolio</th>
<th>Managed Futures portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annualised Compound ROR</td>
<td>4.34%</td>
<td>4.82%</td>
<td>5.19%</td>
</tr>
<tr>
<td>Annualised Volatility</td>
<td>9.72%</td>
<td>6.92%</td>
<td>8.69%</td>
</tr>
<tr>
<td>Sharpe Ratio (Real-time RFR)</td>
<td>0.33</td>
<td>0.49</td>
<td>0.45</td>
</tr>
</tbody>
</table>
Graph 3 shows that for the period in question, adding managed futures into the Traditional portfolio (forming the Diversified portfolio) would have increased returns whilst at the same time reducing risk. There is, however, an optimal allocation, after which the risk adjusted returns deteriorate as the portfolio moves towards a 100% allocation to managed futures (the Managed Futures portfolio). Table 2 shows that the annualised compound rate of return of the Managed Futures portfolio (5.19%) is slightly superior to both the Traditional (4.34%) and Diversified portfolios (4.82%) for the period in question. However, it is on the annualised volatility comparison where the real value of adding managed futures into a traditional portfolio would have been seen. The annualised volatility of the Diversified portfolio (6.92%) was significantly lower than that of the Traditional portfolio (9.74%) and the Managed Futures portfolio (8.69%). Therefore, in our example, the Diversified portfolio would have earned a similar return to both the Traditional and Managed Futures portfolios, but with significantly less risk, as reflected by the improved Sharpe ratio (0.49 versus 0.33 and 0.45).

**Negative Correlation**

We have already shown that the correlation between managed futures and equities became negative during the two equity bear markets that occurred during the period in question. Graphs 4 and 5 show the monthly returns for the Traditional and Managed Futures portfolios for each of these periods. In them we can clearly see what this negative correlation means on a month by month basis. Every month during these two periods where the Traditional portfolio suffered a loss of 3.50% or more, the Managed Futures portfolio was profitable.
### Long Term Performance

Looking at the long term performance of all 3 portfolios in Graph 6, we can see the periods where the Traditional portfolio suffered deeper drawdowns and took longer to recover than both the Diversified and the Managed Futures portfolios (during the aftermath of the dot-com bubble and the global financial crisis).
After the dot-com bubble burst, the Traditional portfolio dropped by nearly 25% from its peak in the early part of 2000 to its lowest point in September 2002, and did not regain its starting value for another 17 months. In total, this portfolio took nearly four years from the 2000 peak to reach new highs. Meanwhile, the Diversified portfolio fell by less than 10% at its lowest point during this period, whilst the Managed Futures portfolio suffered a sharp fall of just over 9% but rebounded almost immediately and was back above its starting value by the end of 2000. In May 2003, after climbing back to its starting value, the Diversified portfolio began to rise steadily, reaching new highs nine months ahead of the Traditional portfolio.

Analysing another period of market turmoil during the global financial crisis, we again see the superior performance of the Diversified portfolio during and after that crisis. Although it fell over 21% from its peak in October 2007, the depth and duration of the Diversified portfolio’s drawdown was far shallower and shorter than the Traditional portfolio’s, which fell over 35% and gave up all the gains made since the beginning of 2000. The Managed Futures portfolio meanwhile continued to power ahead. At the 2009 low point for each portfolio, the Diversified and Managed Futures portfolios remained 24% and 89% above their starting points back in 2000 respectively. This compares to the Traditional portfolio which had dipped nearly 5% below its starting value.

The reason why the Diversified portfolio outperformed the Traditional one during these periods of turmoil is due to the allocation to managed futures, and their ability to take short positions, unlike traditional long-only equity and bond investments. Therefore, managed futures are able to capture and profit from negative price trends as well as positive ones, with times of crisis often providing particularly attractive environments for trend followers due to significant price moves driven by the flow of bad news and investors’ fear.

However, the years following the eurozone sovereign debt crisis proved to be challenging for managed futures. Global central bankers coordinated their efforts to keep interest rates low and inject liquidity into the financial system in their attempts to aid the global recovery. Correlations between different asset classes...
subsequently converged towards +1 or – 1 (risk-on / risk-off). This resulted in volatile sideways price trends, which are in general unfavourable for trend following strategies. Trends which did begin to form often reversed rapidly due to central bank intervention and political initiatives. This was a phenomenon not seen for at least a generation. As a result, most fund managers’ strategies have evolved as they factor this into their on-going research and development. Since mid-2013, correlations between different asset classes have again diverged, increasing the opportunities for managed futures and providing a more favourable environment.

Whilst the Managed Futures portfolio outperformed the Diversified and Traditional portfolios for the period in question, with a total return of 119% versus 108% and 93% respectively, the route of travel is different. For many investors, the journey can be just as important as the destination - and this is where the Diversified portfolio, with its smoother return profile, stands out against the Traditional portfolio.

Summary

So why did managed futures have such a dramatic impact on portfolio performance? The diverse range of markets they trade, their ability to generate positive returns from falling as well as rising markets, and the removal of human emotion from the trading process all combined to provide a historically un-correlated asset class. But the real benefit came from their negative correlation to equities during bear markets.

In our view, supported by the evidence above, investors seeking to create more diversified portfolios should be encouraged to consider an allocation to managed futures. Those with concerns that the portfolio mainstays of equities and bonds could be due a reversal of fortune may find reassurance that, if this happens, an allocation to managed futures may help protect their portfolios from the worst of any declines.

_Darran Goodwin is Fund Manager of Garraway Financial Trends, a systematic trend following managed futures UCITS fund, domiciled in Ireland. Further details can be found at_ www.garrawaycm.com/funds/garraway-financial-trends._
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