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Riding the waves – how to achieve low correlation in volatile equity markets

Many investors remain unwilling to allocate assets to alternative investments at the best of times because of risk and control issues. Yet, in certain market conditions, alternative investments can prove very useful when employed to diversify an equity portfolio and the use of managed accounts[1] can overcome many of these concerns

Portfolio diversification and hedge fund investments

Most institutional investors use allocation in hedge funds to improve their performance or risk. However, investing in hedge funds with a large equity exposure does not necessarily provide the desired diversification during an equity market crisis. Figure 1 shows that historical six-year correlation between the CS Tremont Index and MSCI World is around 50%. One way to overcome this difficulty is to select hedge funds with a low correlation to equities, and to monitor the portfolio over time.

Correlation of hedge funds with equity returns

Long-term analysis of correlation of hedge fund strategies shows that some strategies are more correlated than others. Indeed, while the CS Tremont Index's correlation to equities has increased during recent years, the correlation of Fixed Income Arbitrage, Global Macro, CTA, Equity Market Neutral and Convertible Arbitrage strategies has remained at consistently low levels.

Hedge Low Correlation process – correlation-oriented risk control

Given the diversification and performance requirements of institutional investors, it is necessary to design a solution combining potentially attractive performance with low correlation to equity markets that is, at the same time, consistent over time.

Investment process

Crédit Agricole Structured Asset Management's (CASAM's) Hedge Low Correlation process relies on: qualitative analysis (extensive due diligence on hedge fund managers); strategy allocation constraints (for the diversification objective); and quantitative process for correlation control (lowest possible).

The process consists of selecting managed accounts on the CASAM Group platform to create a portfolio, which is closely monitored on a weekly basis. The allocation of the underlying funds is defined on a six-month horizon. Under exceptional circumstances, the investment manager may also conduct portfolio rebalancing.

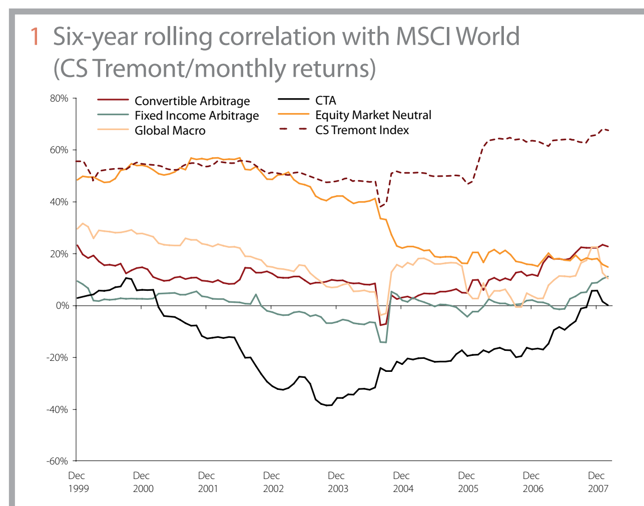
Performance and ex-post correlation

The Hedge Low Correlation process has been applied to a real portfolio, managed since July 31, 2007, shortly before the onset of the 2007 market turmoil.

Long-term pro forma performance

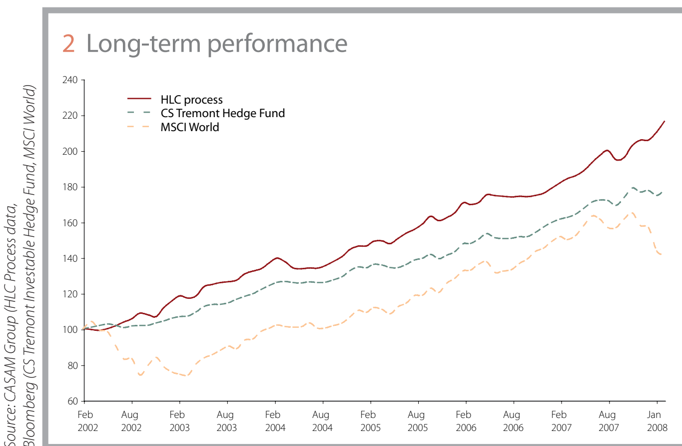
The historical pro forma performance based on the portfolio allocation determined as of July 31, 2007, together with actual performance of the portfolio, provide interesting elements for comparison. (All performance data is net of direct management fees of 0.95% per annum) (see figure 2).

The average pro forma outperformance of the process compared to Euribor one-month capitalised would have been 10.77% per annum over a six-year period (February 2002 to February 2008). The historical six-year volatility of the process would have been 5.03%, while the historical six-year correlation with MSCI World monthly



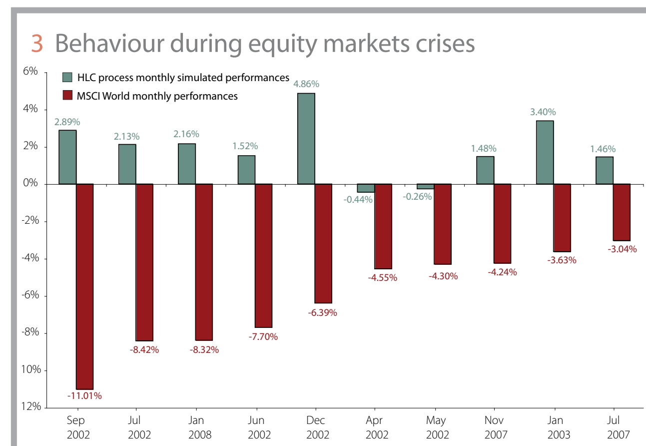
Past performance, or performance simulations based on historical data, cannot be regarded as an indication to future results, nor can they guarantee expected returns

[1] *A managed account is a segregated pool of assets allowing access to the expertise of hedge fund managers in a controlled environment. The key to managed accounts is that the managed account provider, in our case CASAM, controls the assets and parties involved in the process. The selected hedge fund managers have been identified for their institutional quality, significant assets under management, extensive track record and demonstrated strength of infrastructure. The managers' mandate is to implement their successful investment strategy on the managed account platform within a set of pre-defined and agreed investment guidelines.*



Source: CASAM Group (HLC Process data, Bloomberg (CS Tremont Investable Hedge Fund, MSCI World)

Past performance, or pro forma performance simulations based on historical data, cannot be regarded as an indication to future results, nor can they guarantee expected returns. All underlying data, in other currencies than EUR, have been euro-hedged



Source: CASAM Group (HLC Process data), Bloomberg (MSCI World monthly performance)

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returns would have been negligible (-0.07).

Over the period February 2002 to February 2008, long-term correlation was low, especially when equity market performance was negative. The allocation would also have provided a substantial performance during the 10 worst equity months since July 2002 (see figure 3). This suggests that the Hedge Low Correlation process combining qualitative due diligence and a systematic quantitative process could provide diversification when it is most needed.

Since the implementation of the Hedge Low Correlation process, the allocation of the portfolio to CTA, Global Macro and Equity Market Neutral strategies has clearly contributed during the market downturn and we observe a positive return of 8.19% (as of July 31, 2007).

Using the Hedge Low Correlation process in structured products

Given the risk control and the liquidity provided by managed accounts, this process can be used in structured products. Structured products indexed on a managed account portfolio can be adapted to different client needs according to their investment horizon and can provide income, leverage or enhanced protection features.

Here are two examples of how the Hedge Low Correlation process can be applied to structured products:

Sharpe note with coupons

In addition to a capital guarantee at maturity (five years), the product will pay, each year, a coupon.

- The coupons are 5.5% multiplied by the effective annual Sharpe ratio of the portfolio, calculated with a reference based on Euribor 12-month rate:
  - Annual coupon (year *T*) calculation:
  - Coupon (*T*) = 5.5% x max. (Sharpe (*T*-1 year, *T*), 0)
    Sharpe (*T*-1 year, *T*) = [Portfolio nav (*T*)/portfolio nav (*T*-1 year) – 1 – Euribor 12 month (*T*-1 year)]/max. (3%, portfolio volatility (*T*-1 year, *T*))

The structure provides uncapped payments linked to the added value of the portfolio, with annual calculation. Since annual Sharpe ratio calculations are independent from one year to the next, the product strongly limits the impact of any bad year.

The historical pro forma simulation of the Sharpe note on Hedge Low Correlation portfolio indicates an internal rate of return (IRR) around 8% per annum, with a low variability of the IRR (minimum was 4% per annum), thanks to the annual calculation mechanism.

The advantages of the product are the expected high annual coupon payments, with full capital protection at maturity. Products can also be designed with short-term maturities (one year), and are a useful, low-risk alternative to direct investment in hedge funds.

Leverage bull note

In addition to a capital guarantee at maturity (five years), investors receive 100% of a dynamic strategy performance, which invests in the Hedge Low Correlation solution with a constant x2 leverage. Guarantee fees are 0.6% per annum with a borrowing cost of Euribor + 0.5% per annum.

This solution provides significant exposure to the underlying performance through the leverage strategy, without losing the full capital protection at maturity. When cash is scarce, the synthetic leverage strategy is a simple and transparent way to increase the expected exposure to the underlying, in a cost-efficient way.

The leverage bull note is an efficient way to benefit from the Hedge Low Correlation solution performance. The delta of the structure can be significantly above 100% and the leverage note often outperforms a direct investment in the underlying portfolio.

On pro forma historical returns, the average internal rate of the five-year note would have been 14.65% per annum. In more than 90% of historical cases since December 1997, the leverage bull note would have outperformed a direct investment in the portfolio at maturity.

These examples of structures are given as illustration only and do not constitute products to subscribe. Any structured products in which the Hedge Low Correlation process is applied are reserved for institutional investors only for private placement.

Crédit Agricole Structured Asset Management (CASAM) is a joint venture equally owned by Calyon Crédit Agricole CIB and Crédit Agricole Asset Management. CASAM manages a total of €50.8 billion ($75.4 billion) in assets, of which €4.1 billion ($6.1 billion) is invested in over 80 alternative managed accounts (as of January 31, 2008) across nine investment strategies. With a seven-year track record, the CASAM Group managed account platform provides: stringent risk control; liquidity; independent pricing and valuation; and customisation.

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