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Portfolio Construction: The Horrible Handful

Top five investment risks that every investor in hedge funds should know

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Memory is truly a fleeting quality. It has barely been two years since the start of the calamitous market collapse of 2008-2009 and already investors are showing signs of feeding into new potential problems. Consider China: flows have been very strong even in light of slowing growth and the experience of being an investor shows that large money flows often become less efficient, producing a less profitable experience. Can another 'bad surprise' be far behind?

When portfolio managers devise an investment strategy, they need to know their risks. The most dangerous are, of course, the unforeseeable or hidden ones – namely, those that often cannot be detected or anticipated by a traditional approach to risk control, but which can be inevitable and may lead to a debacle. Therefore, detecting these risks is a condition for successful portfolio management.

If we consider the existing risks based on their media notoriety, we see that the best-known risks, or the most sensational ones, are not necessarily the deadliest. The risks that cause most damage are the ones that are talked about the least.

Focusing on naming the most important risks for hedge fund investing is difficult since mentioning five may certainly mean there is a sixth one that merits attention. Nevertheless, I have attempted to name, in a sequence from the lowest to the highest in terms of their potential damage as well as their increasing predictability, some key risks hedge fund investors must focus on.

- Fraud is perhaps the most spectacular of all investment risks because of the criminal element. Yet, fraud is not the most damaging risk; it is simply the most exposed. Due diligence carried out in the most rigorous manner is the best protection against fraud. Abnormally high returns may be one possible indicator of an ongoing fraud. The use of a tool like a bias ratio – which detects an abnormal lack of small negative returns – suggesting manipulated performance, can also help in uncovering a fraudulent fund operation.



The Horrible Handful

- A fund blow up usually results from a flawed investment strategy of uncontrolled leverage and risk (or asset) concentration. The examples of LTCM being overexposed to liquidity, Amaranth Advisors holding too many concentrated investments in natural gas futures, or Bear Stearns funds investing in sub-prime mortgages are good examples of funds taking this kind of investment risk. Controlling leverage can be performed by monitoring positions, but also by statistical analysis of returns vs. market indices, rather efficiently, at a lower cost and with a lesser risk of error.
- Economic events, like defaults on sovereign debt or a credit market meltdown, remain important sources of hidden risk as they often lead to a domino effect across markets. The 1997 Asian financial crisis began in Thailand and spread to Southeast Asia and Japan, eventually hitting commodity markets, and leading to very significant losses throughout the region. Analyzing possible economic events is a daily activity of many investors. However, the true assessment of their impact on portfolios is very often under-handled by risk managers due, most likely, to a lack of communication between risk managers and corporate economists. Risk reports should systematically contain stress tests based on economic risk studies.
- Trend breaks are another potentially damaging hidden risk. They refer to a sudden shift in a long-term move in the markets. Managers who are exposed to a trend will display excellent returns, but they often fail to forecast or predict the trend's evolution; they simply ride it. If the trend breaks down unexpectedly, those who did not anticipate the sudden change suffer excessive losses. Identifying which trend managers are riding, that is their 'alternative beta', should be the number one concern of risk managers. Stress VaR technology based on nonlinear factor models is a very efficient tool for identifying such trends.
- Vanishing diversification in a portfolio is perhaps one of the most serious and damaging risks in extreme market conditions. It is most often due to a break in correlations consecutive to a liquidity gap. Consider that Madoff's fraud resulted in an estimated \$50bn (€41bn) loss for investors (and that is probably over-estimated) as compared with the credit crunch – a major liquidity gap – which saw Lehman Brothers' demise and caused a global meltdown estimated at \$5trn.

Liquidity risk is when the assets one thought were liquid and realizable either experience a very important slippage or become illiquid and unrealizable. When this happens, correlations reach unusually high levels and destroy diversification. These 'correlation breaks' occur regularly and apparently unexpectedly, whether they are between funds and underlying market factors, or among funds. During turmoil, markets behave very differently: liquidity dries up creating a contagious effect, and asset classes that are normally loosely correlated become very highly correlated. In practice, many hedge fund managers have identified some specific market inefficiencies which differ from one another, and believe they can safely arbitrage as long as markets behave 'normally'. But, when the market becomes unstable, their assumptions are no longer valid and arbitrages become traps from which they cannot escape without applying damaging stop-losses.

This paradigm produces typical option-like behaviors, such as short-put risk profiles, where 'alpha' is only generated when markets are quiet. Upon a strong downturn, the 'beta' dramatically increases and the fund displays significant losses. Portfolio allocation should consider these changing correlations with utmost attention and, in particular, identify under which circumstances they can reach levels close to 100%.



Traditional 'alpha-beta' allocation models use frozen correlations whereas, in order to avert disaster, one should use nonlinear models, which incorporate hedge funds' option-like behavior. Usually, traditional models including those with 'fat tails', fail to anticipate damages due to a crisis, because their calibration mostly relies on "business-as-usual" type of data. On the contrary, the nonlinear approach, which specifically focuses on extreme market conditions, can actually account for it.

Today, simply measuring how much one can lose is necessary, but not sufficient. To manage risk, one needs to fully understand and anticipate all the 'why' and 'how' of the evolving market. If one is manning a sailboat only measuring the risks from the height of the wave without considering its type and destination, a sailor might likely end up on the rocks or be caught in a waterfall.

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