



David Miller - Head of Alternative Investments
Cheviot Asset Management Limited

Tel: 020 7438 5686
www.cheviot.co.uk

Email: david.miller@cheviot.co.uk

Cheviot Asset Management, 90 Long Acre, London, WC2E 9RA



Spurious accuracy, precision and psychometric testing

We have just passed the first anniversary of the event that brought the sub prime crisis to public attention. This time last year, HSBC surprised the market with news that its US operation had lost money in this area of the market, a rather modest amount with hindsight. Since then, in the single largest destruction of capital yet seen, major financial institutions have written down (lost) \$120 billion and it looks like there is more to come. Fortunately, as noted last month, Sovereign Wealth Funds have been ready to provide much needed investment in a series of high profile transactions. Apart from them, only Warren Buffet seems willing and able to risk real money to capitalise on the problems within the financial system, although his target is the monoline insurers rather than the banks.

Interest rates are falling with the Federal Reserve leading the way. In January, we had a two stage cut of 1.25% to 3% and now the futures market is predicting with a probability of 66% that there will be a further reduction of 0.5% in March. It looks like there is a good chance that rates will be below 2% sometime this year; a level last seen between 2000 and late 2004.

Which brings me to the subject of this month's note: the uses and abuses of mathematical models in the financial market. Anyone with a scientific education will know that a good experiment or theory that yields a result that is accurate to an order of magnitude, which meant less than 10 times wrong is a success. Scientific method focuses on calculating the likely spread of results rather than a point target and so, for example, 10 +/- 3 is a better answer than 9.87. Although I did once persuade a well respected strategist, who will have to remain anonymous, to admit that in any year, he felt he had done a good job if he had managed to predict the direction of interest rates correctly and that his chances of hitting the correct number were negligible, most investment research and commentary is highly detailed and uses accuracy to persuade us of its validity. Perhaps some of the models used to value CDOs would have been more effective if common sense had been applied to the determination of a sensible answer and less to the sophistication of the mathematical techniques employed.

This is not to say that precision is unnecessary when making investment decisions. At times of stress in the market, like now, there is a huge premium placed on gaining a full understanding of the risk/reward balance. Far more so than when a bull market is running and those who ask too many questions tend to miss opportunities. Structured products are a good example of this. We invest in structured products in order to make money, but if we get it wrong, we know that there is downside protection. Effectively an insurance policy. The last thing you would want is for the insurance policy to fail when you need to make a claim. Investors in structured products should know who is underwriting this insurance, but many seem unaware or unconcerned about counterparty risk. Ask yourself the question; would you rather have a slightly better return in good times with a highly leveraged bank as the counterparty or know that you have a top quality clearing bank on the other side in the event that market conditions deteriorate unexpectedly?

Bond investors should also be aware of the importance of precision. As the credibility of the rating agencies deteriorates and an AAA rating is about as much use in assessing risk as the number of Peers of the Realm on a board of directors. Detailed balance sheet analysis and a full understanding of the fine print in the back of the issuing prospectus is vital. Apparently, similar bonds issued by companies in the same industry may have the same credit rating and offer similar yields, but the position of the bonds in the list of creditors could be entirely different.

Private client investment managers and private banks spend a lot of money on assessing client objectives and attitude to risk. In many cases, this takes the form of an extensive questionnaire, which is used to determine 'the client's objectives and financial personality'. A sort of psychometric test with questions such as 'How did you feel about October 1997 and what did you do?'

Having looked at some of these models in detail, there are really two separate processes going on. The underlying mathematical model assumes correlations between different asset classes based on past results, together with a view on future interest rates and inflation. This part delivers a diversified asset allocation with an estimated volatility. The other part of the process is the handling of the client's responses to the questions. Weightings are given to each and, although not apparent, some answers are far more important than others. In fact, some are of no importance in determining the end result, but are there purely for cosmetic reasons.

At the conclusion of the process, a portfolio is recommended that is made up of asset classes that in the past have offered diversification benefits together with a return target that matches the client's objectives.

This approach is reasonable, but there are flaws from the client's point of view. Investment is a tricky business, best summarised by Nassim Taleb in his recent book 'The Black Swan'. "We create models to simplify, narrate and categorise, restricting ourselves to specifics when we should be focusing on generalities." It is quite possible that apparently sophisticated models will break down during times of stress and, as a result, the diversification benefits forecast will be over estimated for the strategies put in place. Also, if the results are disappointing then the investment adviser will be able to go back to the questionnaire responses in order to divert criticism from the client.

Far better for an investment manager to make sensible investment judgements based on the information available, a rigorous assessment of what might happen in the future and experience. Knowing the assumptions made when constructing a portfolio will introduce a vital element of flexibility and allow adjustments to be made as circumstances change. When we look back at 2008 it is likely that a number of preconceptions and assumptions will have been severely tested. Models are for the obedience of fools and the guidance of the wise.

David Miller - February 2008