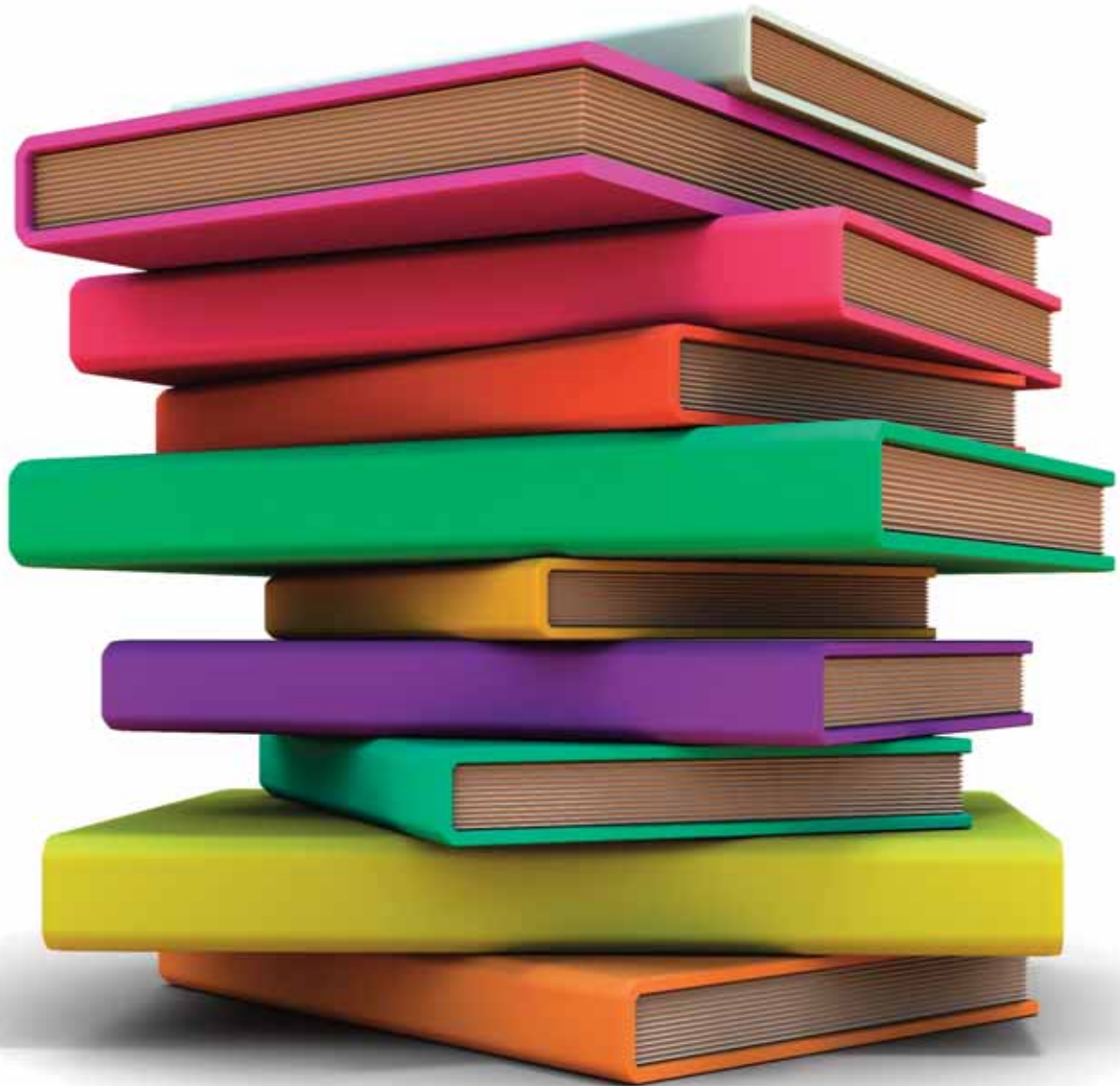




# Risk Reward riskupdate

The quarterly independent risk review for banks and financial institutions worldwide

COMPENDIUM  
Q3 2006 – Q3 2009



## Compendium

Risk Updates September 2006 – August 2009

## Dear Reader

Over the past three years Risk Reward has been publishing the only truly independent global Risk Update, focusing on the financial crisis and critical risk issues as they arise. Our views have effectively tracked the development of the global credit quake and, for our subscribers to date, have provided them with the strategic, practical and technical guidance that they required to steer through these choppy global waters.

Who has been reading the Risk Updates? May we share an enlightening story?

The Risk Updates have been available by free subscription. On the Risk Reward website there is a field whereby the reader is invited to subscribe to our Risk Reward Risk Update, produced quarterly and emailed to the address provided in PDF format. We do not know who the subscribers are, or their organisations. Last year we had a temporary secretary come in to send the emails and she inadvertently sent over 500 subscriber emails without the Risk Update pdf attachment.

We only discovered the error when over the following few days we received hundreds of emails saying –oops – please resend with the attachment... At this point we were now able to see who some of our subscribers were from their auto-signatures in their email to us: Bank Chief Executives, Heads of Risk Management, Heads of Compliance, Chief Internal Auditors, Audit Managers, Lawyers, Big Four accountants and more from all over the world. Today the subscribers list exceeds 1500 and increases daily.

In this **Risk Updates Compendium September 2006 – June 2009** we have republished all of our previous updates in a consolidated compendium so that they may be used as a convenient reference tool by our subscribers and new readers alike. All of the articles are as they originally appeared and no subsequent changes have been made.

We hope that you find this new publication of interest and look forward to hearing from you with your feedback and recommendations for future editions.

Best of luck in continuing to navigate the choppy waters of the global economy.

With best wishes



Dennis Cox BSc, FSI, FCA  
Chief Executive Officer



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## RISK MANAGEMENT CASE OF THE QUARTER – AMARANTH

Undoubtedly the most important case this quarter is the collapse of Amaranth, a hedge fund. In a scenario reminiscent of the failure of Long Term Capital Management, Amaranth Advisers managed to lose USD 6.4bn of investors' funds.

What are the key lessons and what went wrong? At the heart of the problem is that hedge funds tend to operate technical models on which they base their trading activity and by doing so they are trying to seek out enhanced returns for their investors. These investors should recognise that enhanced returns must always come at a price, which is an enhanced risk of loss. However they may easily take the view that whilst they can only lose 100% of their investment, they do have the opportunity of winning returns in excess of 1000% if things go really well.

Remember that most hedge funds are not regulated and that most models make simplifying assumptions to enable solutions to be identified and taken advantage of in the market.

Typical assumptions made in such trading environments may include the following:

1. That all markets are equally and infinitely liquid
2. That every transaction would find an arms length intelligent counterparty
3. That markets are rational and normal

4. That external events can be ignored
5. That counterparty credit risk can also be ignored

These simplifying assumptions enable complex mathematics to identify opportunities in the market for the hedge fund to exploit. Of course every time you implement a model based upon any form of assumption, if that assumption becomes invalid it impacts the accuracy of the model and the trading strategy adopted will be sub optimal.

In the case of Amaranth the list of groups investing client money included Goldman Sachs, Deutsche Bank, Man Group, Credit Suisse and Union Bancaire Privee.

Fauchier Partners manages USD 4.3bn in hedge fund investments and inherited a USD 30m position in Amaranth. In a letter to their investors they identified the shortcomings at Amaranth as being:

Apparent absence of sufficient risk controls:

- High leverage
- Poor transparency
- Performance heavily dominated by one strategy
- Uncapped expenses in addition to management and performance fees
- Annual reset of high watermark on performance fees

- Self-administration, so no external party was verifying returns
- In-house broker dealer, making it possible to smooth returns
- Individual traders who were not investing in their own books
- Poor liquidity terms

**At the heart of the problem is that hedge funds tend to operate technical models on which they base their trading activity and by doing so they are trying to seek out enhanced returns for their investors**

As a result of this Fauchier disinvested from Amaranth in December 2005, foreseeing problems ahead.

At the heart of the issue is the level of due diligence that is conducted on hedge funds by financial institutions. Fauchier clearly believes that this was inadequate and that by implication other similar events will occur. Well Amaranth is the second big loss following LTCM, so another failure next year is probable. The problem purely is working out which fund would be the one to fail!

*Source: The Times (London) 13 October 2006.*



## IAS 39 – ACCOUNTING FOR FINANCIAL INSTRUMENTS

The development of international accounting standards is something that we generally welcome. It will enable accounts to be prepared globally on a set of consistent and well understood accounting policies, facilitating global understanding of risk and performance.

Generally this is all well and good – and then there is IAS 39... Accounting for derivatives has long been a subject of concern. Should they be on balance sheet or off balance sheet? Should the change in value go through profit or loss or be taken to equity?

IAS 39 has tried to address this, but in so doing has developed an arcane set of rules that are difficult to implement, could be abused and result in disclosures that are almost impossible to understand.

The basic idea underpinning the rules is that if a transaction has been entered into to hedge the equity of the company, then any resulting gain or loss should really go to equity. For most of the rest it should go the profit and loss and you need to have some rules to deal with changes between the two and the additional disclosure of the reason for the change.

There we have it – in one paragraph we have managed to come up with what would be a simple and easy apply basic proposition with everything else becoming an example.

IAS 39 takes the opposite approach. By trying to cover everything and therefore moving away from common language usage, the standard becomes hard to understand and sometimes appears rather odd. Firstly you have to designate transactions as being fair value through profit or loss. Fair value is effectively either mark to market or mark to model although there is more guidance on this. This is a formal designation of intention.

Secondly, hedges need to be formally designated as such, with documentation identified and the specific assets set out.

Amongst the hardest to use rules are those on risk and reward and control (in that order). If an institution has managed to transfer the majority of the risks and rewards of a financial asset to a third party, then the asset is derecognised. That means it becomes off balance sheet with an explanation of the remaining risks. Likewise if the majority of the control of the asset is transferred, even though it still has the risks and rewards, then again the asset is derecognised and disclosed. So what is material?

The market appears to be in two camps. One says that there is an 80-120 rule with the other taking the 90-110 approach. That means that identical firms in identical situations will actually treat identical assets differently. This is purely one of many concerns we have over this particular standard, which we would contrast to IAS 21 (foreign currency) which is both easy to understand and simple to implement.

As an accountant one does despair sometimes at the way that we make things increasingly difficult. Creating complicated rules that are difficult to implement and impossible to understand can hardly make any sense, so we hope that IAS 39 is reviewed and amended in the near future.

## RISK REWARD PREDICTIONS 2007

In common with everyone else we will give our predictions for the year ahead. All of these are the estimates that our economic team have come up with on the basis of their view of the markets. Whether they will be right or wrong, we will see next year! Use them with care – all estimates are really worth little more than the electronic media they are written on.

### Global Equities

Our view is that the global equity market will continue to grow over the year, although there will be significant individual variations between areas. A general growth of between 5% and 10% can be expected. In these terms we are probably less bullish than many of our peers.

### UK Equities

As a UK based firm the UK markets are always close to our thoughts. There are a variety of issues that could cause a drag on the UK market, but these have been counteracted by a pull caused through the impact of investment houses taking listed companies private. Our expectation is that the market will grow by 15% over the year.

### US Equities

In comparison we are increasingly concerned at the state of the US economy. The slow deindustrialisation of the US will continue to be a drag on both the market and currencies. Our expectation is that the US will under perform global markets with growth of between 3% and 5%.

### Middle East Equities

The Middle East markets have had a torrid time in 2006. With regret we do not expect a major bounce in 2007. Our expectation is that the markets will on balance recover a little – but only by around 5%.

### UK Property Market

UK residential property still appears to be growing and the lack of adequate supply continues to ensure that a demand led pull will continue. Our expectation is an overall increase of 12% - 17%, with Outer London rates being perhaps 5% higher. This level of optimism does not carry to commercial property where we continue to have concerns and anticipate a reduction of perhaps 5%.

### US Property Market

This is a greater concern than the UK markets. We anticipate reductions in both the residential market (5%) and commercial markets (10%).

### Interest Rates

Our view is that UK interest rates are artificially high. We fail to understand the approach taken – to try to reduce inflation caused by movements in commodity prices by moving interest rates. However on balance we expect rates to be much the same at the end of the year to the beginning of the year.

### The US Dollar

We anticipate that the US dollar will continue to be under pressure and will fall further during the year.

# THE PROBLEM WITH ECONOMISTS

**At this writing the Bank of England has surprised the market and increased interest rates by 0.25% to 5.25%. In itself this may not seem dramatic, but it is a symptom of the application of illogical thinking which remains a concern.**

The Bank of England have a key responsibility to ensure that inflation keeps below 3%. To achieve this they only have one measure available to them – moving interest rates. They believe that increasing interest rates will take consumption out of the economy and therefore will reduce inflation.

This would be a valid argument if there was any evidence that this actually worked in practice. From Risk Reward's point of view we see there as being little or no real inflationary pressure in the economy. We see the recent increases in the government's figures as

reflecting four main things-

- The last increase in interest rates eventually working through
- The increases in indirect taxation working through
- The historic increases in oil prices appearing within costing
- Increases in the price of gas and electricity

This is counteracted by a weak retail and wholesale market which is keeping a lid on real price increases. Of course oil prices have subsided and this in itself result in lower prices next quarter. Yes there has also been another increase in house prices, but this leads to greater dynamism in the economy and an improved opportunity for growth. Increasing interest rates ensures that growing companies are kept under pressure through increasing

costs, whilst increasing the inflationary pressure on wage demands and also causing strengthening of the currency. Not a palatable proposition. Had we been able to vote we would probably have reduced interest rates to 4.5%.

**“Put all of the global economists in one large room ... and leave them there”**

What would the effect of that have been? The currency would have weakened, improving global competitiveness and reducing the costs of imports. Inflation would therefore reduce and the economy would grow – surely a virtuous circle.

## THE BANANA SKINS SURVEY

**The Centre for the Study of Financial Innovation publishes an annual report which sets out the issues which are of greatest concern to the management of financial institutions, entitled the Banana Skins report.**

This report is based on responses from the leading financial institutions globally and always makes interesting reading.

In 2006 the Top 5 Responses were as follows (2005 in brackets)

1. Too much regulation (1)
2. Credit risk (2)
3. Derivatives (4)
4. Commodities (14)
5. Interest rates (12)

The rate of change of regulation is a challenge for any institution, with much regulation not being valued by the end customer who eventually pays the bill for such work. The difficulty of ensuring compliance is resulting in many firms diverting their attention from risk based issues to looking at narrow compliance issues where there is limited value to be gained. Of course this is a key concern for management – they wish to run efficient businesses

that comply with relevant guidance. However good banks try to comply, whilst the rogues will claim they do comply ... quite a difference.

Credit risk is a key risk in this market particularly due to the impact on interest rates rises (issue 5). This is likely to result in increased bad debts within financial institutions, although in our opinion the actual level of risk has been overplayed and such problems may well be short term. We do expect credit risk to still be No. 2 next year.

Derivatives have increased their ranking to No. 3. Risk Reward does not see derivatives as by nature high risk instruments, but the increasing use of them in new areas (credit derivatives, property derivatives) has probably resulted in this increase.

The level of risk that is moved around by derivatives is a cause for concern since the failure of a major counterparty will impact a wide range of institutions.

In our opinion we should put all of the global economists in one large room... and leave them there. The presence of commodities at No 4 is a surprise. Clearly the volatility of the oil price has resulted in this inclusion, but we expect the risk to diminish next year and the ranking to be reduced. In terms of interest rates we are concerned that the global markets are making the same mistakes that were made before by increasing interest rates at an inappropriate time. Will this result in another round of really major rate increases and another US rate spike at perhaps 18%? We clearly hope not, but the concern does clearly exist.



## KEY UNCERTAINTIES IN 2007

There are a range of matters that could cause major disruption to international markets during 2007. Most important and without any particular enthusiasm we are predicting a major terrorist event during the first half of 2007 which will cause financial disruption. Our concern is that this may involve a high level political assassination or an attack on a major international airport and its infrastructure.

Major environmental concerns are also more likely than not, but we do not believe that these will have a major economic global impact.

US economic policy remains a concern. If the US repeats previous mistakes and over compensates on interest rates then the US could fall into recession in Q3 2007. This would be a burden on the US consumer and the global economy, potentially causing a global slowdown. This will be felt hardest in growing economies increasingly dependent upon the US consumer, such as China and India, for their growth.

We do anticipate a major financial failure during 2007 caused by impropriety - hardly a surprise since there is one in most years.

## ARE THE CURRENT GLOBAL WARMING MODELS REAL?

Many of you will have seen Al Gore's worthy work entitled "An Inconvenient Truth" which looks at changes in the global environment and indirectly concludes that the hand of man is at work in potentially ruining the planet. The conclusion is that something must be done.

Risk Reward is not a political company by any possible connotation, so our views are not biased by either industrial or political aspirations. By nature we lean towards a chartist approach to issues, but this is perhaps our only bias.

When looking at changes to the global environment, we take a broader view. We look as to whether there are any forms of historic parallel to what is occurring and are there any alternative but plausible scenarios. Scientific American recently published an article on the factual variation of the earth's axis. Such variations are both certain and predictable and have major impacts upon environment. Are these the causes of the short run climate changes that we are seeing at present? We have no idea, but suddenly the issue is not as clear cut. It is not possible to separate the impact on our environment of a change in tilt of the axis of the earth, from the creation of pollutants. What is clear is that the impact of the change in axis is likely to be dramatic in terms of global impact with areas currently covered by ice and deserts becoming verdant forest, whilst other areas will run out of water or be covered by ice. We call this an inconvenient fact.

In the past the earth has had ice ages and periods of global warmth, apparently with the heating occurring before the ice age. Indeed the global



warming is seen by some as being the precursor to the ice age. You do have to recognise that we have had dinosaurs and mammoths which have disappeared without the impact of a single petrol engine.

We do a lot of work in the Middle East. Here there is clear evidence of global cooling – basically the desert is getting cooler. Having suffered unseasonably cold weather in Dubai and temperatures of no more than three degrees in Bahrain, whilst the orange crop is wrecked by frost in California, it becomes clear that global warming is not a global phenomenon, but perhaps more of a Western construct.

The ices flows are melting, yet getting thicker in the centre... Something is happening, but is it the next ice age and if so what might happen?

The likely scenario appears to be that the pole moves over to the USA with

New York disappearing under a sheet of ice. Northern Europe becomes tropical, Southern Europe desert and the Middle East forest. Does all that seem rather far fetched? Consider that without vegetation of some form you would never had any oil!

The most likely scenario that we see is that the effect of so much carbon dioxide and other pollutants might actually be to delay the forthcoming ice age – so perhaps we should all pollute! Yes there will be movements in global occupation patterns, but there is again nothing new in that.

Clearly the Gorian analysis is weak—you cannot just take one hypothesis and apply it without looking at the totality of all alternatives.

Mind you, this is being written on a plane and of course Risk Reward does have a large carbon footprint.

# SCENARIO MODELLING

## GLOBAL WARMING NATURALLY LEADS TO SCENARIO MODELLING

**For banks scenario modelling is required for any institution intending to follow the Advanced Measurement Approach of the Basel Accord. The intention is clear: to design a series of plausible scenarios to be applied throughout a firm making use of both external data and management knowledge.**

The technique is to look at an external event, identify generic issues that contributed to the loss, then interpret them in a way that creates a plausible scenario applicable to your firm. You then work out the expected loss and the likelihood that such a loss would occur. Simple?

Not really, since there is still a lot of management interpretation required and management have not been trained to anticipate potential but relatively

remote problems, rather they are required to focus on day to day management of the business.

Such scenario analysis should be run quarterly and reassessed annually to ensure that these scenarios actually remain appropriate.

The work is time consuming so probably no more than 25 scenarios will actually be constructed.

However the information that results from such scenario analysis is one of the most useful tools available to the risk manager and also one of the most interesting reports provided to a Board.

Barclays bank in their 2005 accounts

state that their worst possible loss is £14.1bn and that this might occur once in five thousand years. Not sure what the management would do with that piece of information, but the objective

**“Put all of the global economists in one large room ... and leave them there”**

is clear in achieving a high level of management attention to events that have not occurred rather than always focusing on events that have occurred.

Perhaps the event that are modelling is actually the next ice age.

# CORPORATE FRAUD ASSISTED BY MANAGERS

Corporate fraud is one of the most time consuming and expensive matters that can confront a company. The real question is whether there is anything that should be done by management to prevent fraud.

The problem is of course a simple one, in that most fraud is actually committed either by, or with the assistance of management.

Are there any warning signs that a board need to be aware of—perhaps there are...

1. Is there any employee or officer who appears to be acting irrationally? If they appear to be acting irrationally in their private lives and general corporate work, they also are likely to have different ethical standards to those generally expected.
2. Is there any employee or officer who appears to be unduly

financially stressed? When an individual is under financial stress this can also impact on their ethical standards.

3. Is there an officer or employee that appears to be forming business relationships that need to be ratified in arrears? This would suggest that they are not a team player and not to be trusted.
4. Is there any employee or officer that believes that they are owed something by the company, when this is not the case. This is an extremely dangerous individual to maintain within the firm.

Of course matters are never clear cut and the person may not actually undertake a fraud. The employer is often in a position in that if they apply too much pressure then the employee or officer could claim for unfair dismissal, or even worse, take actions that might cause them personal harm.

So what should be done? The answer is additional vigilance over the activities of the individual concerned to ensure that nothing inappropriate does take place.

This part of the newsletter has been written with experience we are aware of, where an individual that appeared to be a friend of the directors had turned against them. The warning signs were there for a year, yet the position of the officer made acting against him difficult. The risks were known, but it was found to be difficult to come up with an adequate response. Two court cases later they wish they had.

# FUNDING SMALL BUSINESSES: THE 3 F'S RULE

We are returning to this subject again due to the number of micro finance requests that we receive. Many of these are in no way international by nature and are not of sufficient size to enable a firm like Risk Reward Limited to be directly involved.

**“..in most cases the individual is looking for funding from the 3Fs— Friends, family and fools”**

That can mean that there is a problem. In a recent case we were asked for advice by someone that wanted to buy out their partner in a business, which is operating

locally. On the assumption that the business is both trading and profitable, the company may well be in a position to raise local finance. However, can an individual raise finance on the same terms and with the same likelihood?

The individual has the following assets.

1. The share holding that they currently own.
2. An expected income stream from the company (salary or dividend)
3. Other personal assets (property etc)

In principal any of these can be used to enable the individual to borrow funds to acquire the securities held by the third party. In terms of the way that these are viewed by the banks, the highest quality asset is the property. This could be used as collateral to enable a loan to be raised which would also be secured on the equities to be purchased.

The current shareholding also has a value but borrowing can be difficult since such unlisted securities are difficult to value with certainty. The costs of doing so would generally result in it not being appropriate to take this route and the bank will reject the asset as a main source of security. The income flow is also clearly important and will provide the credit standing of the individual. This will improve the rate that the individual will get rather than being the prime determinant of the provision of the loan.

What then if the individual has no significant other assets? I regret that in most cases the individual is looking for funding from the 3 Fs- friends, family and fools. I am afraid it is tough. Particularly in the developing world where there is often a shortage of capital to lend within the financial system, the banks will find it easier to decline than to take a difficult analysis or decision. Not good news I am afraid, but realistic.

## THE GLOBAL PROPERTY OUTLOOK: LOOK SOUTH AND EAST

There is clearly a change going on in the property markets. Those that have experienced long term growth may not necessarily be able to support the same growth going forward.

Generally in Western Europe and the USA commercial property yields for prime clients are extremely low in historic terms. Basically the investor is no longer being paid for the risks that they are taking on. We are now regularly being offered properties at a discount to corporate bond rates which we are unable to offer to any investors or purchasers. This is the reason that many of our regular property clients have not heard from us for some months.

In terms of residential property we are expecting an adjustment in the USA, although this will primarily occur in the main residential conurbations and rural property will not be affected.

In the UK we anticipate property

prices will continue to rise for the foreseeable future (which we normally define as about three years). This is due to the imbalance of supply and demand exacerbated by the Olympic effect in the East London Area.

The position in Asia is very uncertain. The equity price adjustment in China in the last few weeks will have a dramatic effect on the property market. Historic parallels would again suggest a price decline of perhaps 20%, although this will reverse in the following three to five years. Again, we shall have to see.

So where does Risk Reward believe that value does exist? We consider that developing markets, particularly in Eastern Europe and Africa can produce



extremely high yields and capital growth. However before buying in any such market you need to fully understand local land rights, the legal framework and any political risks that might occur.

Generally if you are looking to source or sell international property then it is always worth contacting Risk Reward Limited's property division.

# CURRENT MARKET TURBULANCE

## WAS THIS PREDICTABLE & WHERE WAS THE STRESS TESTING?

The key risk event in the last quarter has, as expected, emanated from the United States property market, and in particular its impact on the sub-prime lending market. We are seeing credit spreads increasing and stock markets reducing as a consequence of this. Below is a one-year chart of the Dow index from Bloomberg, which highlights the August market turbulence.

One of the main victims has been the Goldman Sachs Group who were required to inject USD 2bn into one of their hedge funds after it lost significantly as a result of the market turbulence. Goldman Sachs referred to this as a “significant market dislocation”. We would refer to this as either the manifestation of a scenario or a stress event actually occurring.

Let us analyse a little further what is actually happening at present. The US property market for probably the first time in at least 50 years is experiencing a downturn. This in turn is putting pressure on the sub-prime market lenders who are experiencing a higher level of default. Generally this has led to a loss of interest in the sub-prime market and also on companies that are dependent upon that market for their success. Accordingly sub-prime corporate bonds cease to be an attractive option and a consequent sell off occurs.

Basically there is a general rule that under a stress event the following occurs:

- There is a flight to quality away from sub-prime assets
- There is a move to cash and away from securities
- There is a move to commodities and away from synthetics
- Capital repatriates to its home market

Some markets become illiquid, whilst others remain liquid. All of these effects are completely predictable. There have been a series of similar events in the past – is it so long since Long Term Capital Management’s failure? However some parts of the market are more susceptible than others to such market movements.

Hedge funds depend for their success on the quality of their financial models. These models will identify a trading strategy, which they are able to follow and, in principle, achieve success. However, any model will by its nature include a series of assumptions, common amongst which are the following:

- Markets are liquid
- There are no market discontinuities
- Liquidity is constant
- Markets are rational

Effectively this is almost taking an extrapolation approach to risk analysis and so long as these key assumptions remain valid, then the strategy will be effective. The problem is that when the assumptions cease to be valid, the model becomes unreliable and significant losses will occur.

What appears to have happened in this case is that Goldman Sachs was too slow to identify that they were entering into an environment which was likely to exacerbate the occurrence of a stress event that would undermine the modelling.

Typically US houses have been using models that have been tested over historic data sets. That is fine as far as it goes, but there are a number of effects that actually mean that current markets work differently to historic markets of twenty or even ten years ago. These include the following:

- The development of the internet over effectively the last ten years provides information far faster to a broader group than was previously the case
- The growth of day trading to take advantage of short term movements
- The growth of hedge funds to multiply the impact of movements in the market
- The growth of short selling enabling a firm to make money as the market falls
- The growth of quantitative trading strategies creating momentum in the market.

What this should tell you is that you

cannot rely upon historic correlations and market movements to adequately predict the impact of stress events. Instead a firm needs to develop a series of plausible stress events that should be assessed across their investment and trading strategies.

The only question left is to consider what is plausible. Is 99% adequate? That means that one in a hundred movements would be outside the parameters sets and would result in potentially unacceptable losses.

How about 99.9% or one in a thousand losses? Is the fall in the US property market actually a one in a thousand event? I would expect a firm to have a strategy which identifies any event that actually is occurring but was in the 95%+ likelihood to enable existing trading strategies to be immediately reassessed to ensure that significant losses do not occur. Yes this will in itself result in the flight to quality being even more pronounced, but it will prevent the occurrence of such unacceptable losses.

Was this event therefore predictable? Let us look at what has happened in US property prices running up to the end of the first quarter of 2007 from the US Office of Federal Housing Enterprise Oversight

**Hedge funds depend for their success on the quality of their financial models.**



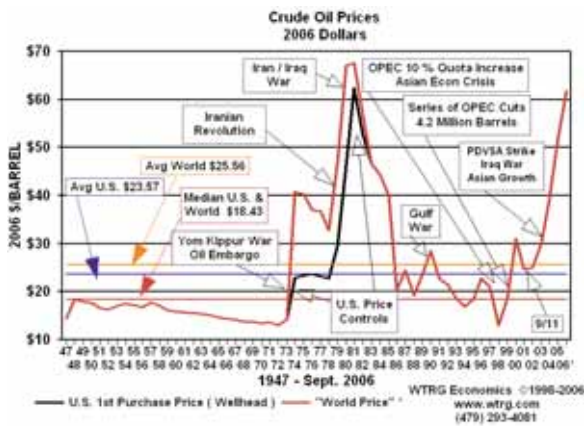
This clearly demonstrates a significant change in the market, which started in 2006 and continued throughout that year and into 2007. The continued

CURRENT MARKET TURBULANCE CONTINUED

collapse of this market would therefore have been the expected position, rather than the unexpected event.

What this tells you clearly is that the US property market was moving out of its normal trend and this should have been recognised. Were there any other indicators?

This wonderful chart from WTRG Economics also highlighted that the oil price has been moving out of its normal trading cycle.

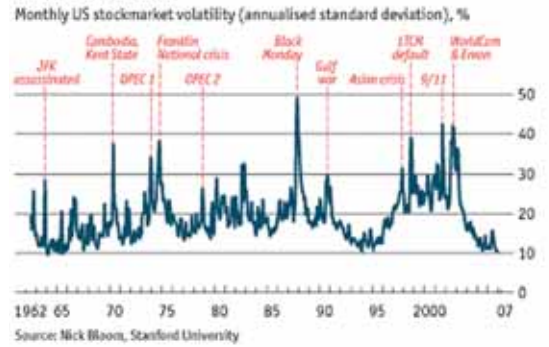


This chart also provides a warning sign that something else might be about to happen – there is a clear 10% resistance line operating. These are just a few of the indicators which Risk Reward typically looks at and they were all indicating that something

was likely to happen. It was not would something happen – but what would happen. Accordingly we would have expected

firms to have undertaken a higher level of stress testing in 2007 having read these signals that would have previously been the case.

Shocks and stocks



So what happens if you fail to see the signs? Effectively your model becomes worse than having no model at all. Stocks that are predicted to rise will fall. Stocks or positions that are predicted to be offsetting actually become positively correlated – basically the model is worse than useless and a bank suffers losses.

Perhaps one of the benefits of this failure will be an increase in the use of stress testing and scenario modelling.

# THE CHALLENGE OF MICRO FINANCE

IN MANY COUNTRIES OF THE WORLD A MAJORITY OF THE POPULATION OPERATES OUTSIDE OF THE CLASSICAL FINANCE SECTOR.

Banks are not interested in lending small amounts of money to companies or individuals that are either difficult or expensive to service, or are seen as relatively high risk. Accordingly traditional banking is not available to them.

MicroFinance is designed to meet these needs, providing small amounts of funding to a distributed client base that is in need of assistance but will be motivated to make repayments. This sort of finance is clearly beneficial to an economy. The provision of such small loans enables the individual to rise out of poverty and become a productive member of society.

The problems are as follows:

- The banks are not interested since

the market is expensive to exploit – the returns are better elsewhere.

- The customers have a distrust for the banks
- There is a propensity for such loans to be at rates which are at best punitive.

The challenge is to develop more such institutions where profit motive is not the only driver, enabling a more paternalistic or egalitarian approach to be adopted. The important thing is to ensure that the customer feels obliged to make the repayment. This can often be achieved by lending to the secondary income generator in a family, the spouse rather than the breadwinner. It can also be of assistance if there are regional development funds to leverage

such opportunities. Another approach is to work through the organisations that the customers trust, perhaps retail outlets or petrol stations. These could provide a funds transmission system to enable micro finance to flourish.

For the regulators a change of approach is required. It would be wrong to assess such an institution on the same basis as a multi national bank. They are simpler institutions and require a light touch in regulation together with simple to understand systems and controls.

What is certain is that the demand and growth of micro finance will continue in the long term. It is now just a part of the financial services industry which needs to receive appropriate recognition.

# TOTAL RISK MANAGEMENT & BASEL 2

THE BASEL ACCORD PROVIDES INSTITUTIONS WITH A CHALLENGE, BUT ALSO SOME OPPORTUNITIES.

The challenge is to make the process cost effective whilst meeting the requirements of the regulations. The opportunity is to add value to your firm whilst implementing these obligations.

Much has been written about the Basel Accord and the approaches taken for credit and operational risk – with trading book issues remaining with a similar calculation as that employed in Basel 1. The key problem that we face is that the new Basel Accord does not really align well with total risk management.

Consider first market risk, now known as trading book issues. Essentially the calculation is to come up with a mark to market assessment of trading open positions. This then takes essentially historic data to calculate Value at Risk (VaR) data. It is working in the fairly expected and current modelling space, using historic data.

Basel II has changed credit risk. The modelling is now, if using the internal ratings based approach, based upon an internal assessment of Exposure at Default, Loss Given Default and Probability of Default. These assessments are essentially to be based on historic data ideally taken across the credit cycle. Of course for many firms this is difficult to achieve, so a data quality problem clearly arises. The assessment is therefore entirely backward looking working on expected loss.

This then brings us to operational risk – introduced for capital calculation purposes for the first time with Basel II. Using a combination of internal and external loss data, control and risk self assessment, scenario modelling and stress testing and excluding losses that have been budgeted for, a forward looking loss expectancy is developed. This is looking towards the unexpected losses that might arise, rather than the expected losses that regularly arise – effectively marking to future.

In operational risk the Bank for International Settlements (BIS) has recognised that a bank needs capital to protect itself against unexpected losses, rather than both budgeting for a loss and then taking capital. Put simply there is no point in calculating the capital required for expected losses on a credit card book. The losses are regular and similar year by year. As credit cards are priced the losses that are expected to result are factored in. There is no need for capital; it is simply factored into the pricing. However both credit risk and trading book issues (Market risk) would require capital to be maintained in such cases. Operational risk does not.

There are of course no pillar one charges required in respect of liquidity risk, reputational risk and strategic risk. This should not mean that a bank would place less priority on such areas, rather that they are unable to influence actively the calculation of the capital to be maintained. Because it is seen as difficult the result is that the capital values are actually calculated by the supervising authority and imposed upon the institutions as a pillar two charge.

The challenge for a risk manager is to build this into a consistent framework. Regardless of what Basel II says, the Board of a bank would want to know the impact of a scenario or event on the totality of their risk framework – credit, market, liquidity, operational, strategic or reputational risks. They are as interested in loss of income as an increase in costs. Accordingly some form of probabilistic modelling approach must be adopted across the totality of the risk framework.

This means changing market and credit risk. In the trading book the most interesting areas would be the 99.9% one day loss value (ie the loss that would occur one in a thousand days), or perhaps even the 99.99% one day loss (the loss in ten thousand days, or 30 years). The loss would be net of any

provisions that are created for such a possibility.

The same would occur for credit risk – the loss that could occur in a calendar year from the existing book under a series of scenarios. In this case looking at losses over the entire economic cycle may not be enough, so additional modelling will still be required. Again any capital value will be net of the provisions that have been made.

Operational risk at 99.9% VaR already moves in the right direction and meets the requirements that we are now setting. Similar approaches can be taken for the remaining risk types and we would recommend that a consistent view be taken (ie 99.9% VaR net of budgeted or expected losses).

If this is all implemented then the Board will be in a position to evaluate the totality of the risk framework on a unified basis and also to undertake appropriate modelling. There should be increased efficiency and better decision making by the bank. In terms of software, the similarity in modelling approach suggests a unitary software solution.

So there is a real challenge here – but do not just do it for Basel, instead do it because it will add value to your firm.

**“..There are of course no pillar one charges required in respect of liquidity risk, reputational risk and strategic risk”**

# THE PROBLEMS OF ZIMBABWE

RISK REWARD SPECIALISES IN PROVIDING RISK MANAGEMENT TRAINING AND CONSULTANCY WITHIN THE DEVELOPING WORLD, AND IN PARTICULAR WITHIN AFRICA.

Whilst we have been active in many countries, we have not undertaken assignments within Zimbabwe at this stage – however we have seen the developing issues impacting the Zimbabwe economy.

This is not a political article, rather it looks at the problems as they currently manifest themselves and seeks practical solutions.

The key issue currently is the rampant levels of inflation, reputedly at up to 12,000% or about 1% an hour (perhaps four times the official published level). When inflation reaches this level the financial systems start to fail and commerce generally leaves the mainstream to be replaced by barter. Businesses continue to fail, unemployment and interest rates rise and the agricultural sector goes into a state of decline leading to increased hardship.

There are a series of options available to a country at this time. These include:

- Controlling the money supply
- Controlling prices
- Controlling the currency
- Stimulating the economy

Not all of these options are available to Zimbabwe. In previous cases where a country has been in significant distress, significant problems have occurred. In the case of the Russian default, for example, interest rates hit 150% and the stock market declined by 80%. South American cases identified a similar pattern of behaviour.

There is no doubt that a radical solution is required. Basically local currency is no longer trusted, leading to the growth of barter. Price controls put enormous pressure on companies, which fail and therefore are unable to support the necessary recovery of the economy when the situation is suitable. Accordingly a solution that results in a change to the currency is the most sensible approach.



We would suggest that the current currency be discontinued from a set date, perhaps five working days after the announcement. At that time all currency holdings must be converted into a new currency. Due to the weakness of the local currency a currency that is interchangeable internally with a recognised external currency (for example the US Dollar) should then be implemented. The interchangeability, which must be enforced, will ensure that the currency remains strong.

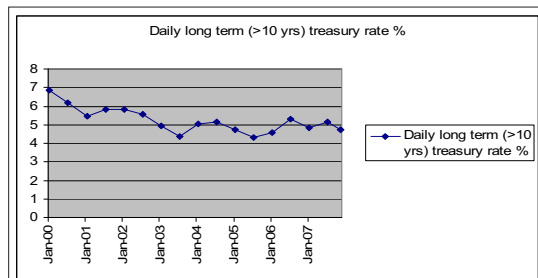
With the basis of a strong and secure currency, Zimbabwe should then seek to grow its economy. The twin issues of agriculture and industrial production should both be addressed through direct government intervention, providing fiscal advantages for excess production and penalising under production. The excess production and the consequent production of wealth will then progressively drive the economy.

We have no doubt that a vibrant Zimbabwe would be good for Southern Africa and are also convinced that the climate is potentially right for this to be achieved.

# WHAT REALLY CAUSED THE SUB-PRIME CRISIS

What a quarter we have just had. Suddenly the credit market has become a high risk environment in which to operate as the sub-prime credit problems of the USA start to travel around the world. We have all seen the write offs by the various global banks as they seek to mark to market paper that they had originally thought was extremely low risk, but what really is causing the problem?

Risk Reward has been predicting this scenario for two years and consider the subprime "crisis" to be only a symptom of a much greater problem.



**Sub-Prime Lending**  
Data source: US Treasury

Sub prime lending is the practice of making loans to borrowers who do not qualify for the best market interest rates because of their deficient credit history. A sub prime loan is offered at a rate higher than A-paper loans due to the increased risk.

Clearly the rates need to be higher to compensate for the higher likelihood of default that clearly occurs. There are however two effects that we are seeing in the market. The first is true concerns over an increased likelihood of default from US based borrowers with deficient credit records. This is in part due to the issue discussed in the second section of this newsletter (Wither the USA?). However normally you see this type of an issue when the interest rates have increased significantly and also costs have put pressure on narrow budgets, whilst the economy is not in growth. Is this really the case in the US? Let us look at what has happened to US long term interest rates over the past seven years.

Do you see any evidence of an increase in rates? We suspect not and actually it does not really matter which date set you look at. So if borrowing is not increasing, are costs increasing? We have seen that oil prices have gone up significantly.

However is this enough to really cause a major downturn in the earnings potential of the US borrower with a poor credit record?

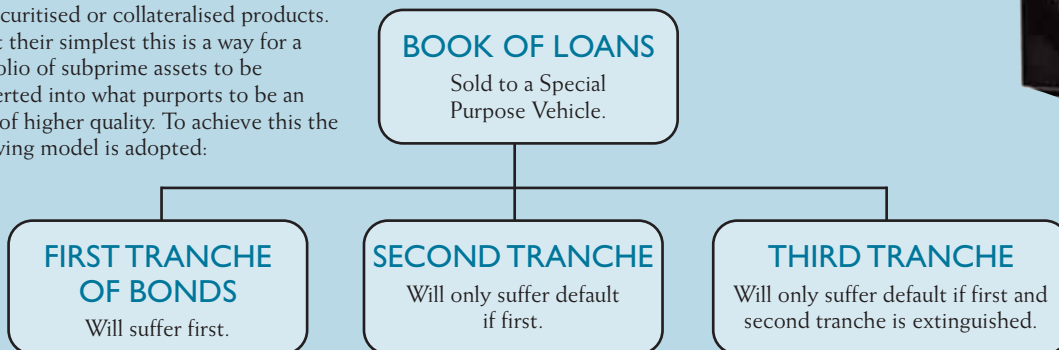
Whilst there undoubtedly has been an increase in the number of defaults within the US banking sector, these are not currently sufficient to cause international concerns and are only returning to historic norms after a period of unusually low default rates.

“Is this enough to really cause a major downturn in the earnings potential of the US borrower with a poor credit record?”



## Securitisation has an Effect

As credit derivatives have grown, this has combined with the growth in the market for securitised or collateralised products. Put at their simplest this is a way for a portfolio of subprime assets to be converted into what purports to be an asset of higher quality. To achieve this the following model is adopted:



## WHAT REALLY CAUSED THE SUB-PRIME CRISIS CONTINUED

The consequence of this is that the first tranche is extremely high risk, with the second tranche being lower risk and the third tranche actually being a good quality asset. This type of structure is used in the US for mortgage loans and other assets that can be easily packaged – including sub-prime debt.

Taking sub-prime the first tranche is highly likely to suffer losses and will therefore have a very low rating, but a high interest rate. The second tranche is probably roughly at the rate of the original portfolio of assets. It is the third tranche which is the high quality asset and may well represent 50% or more of the total portfolio of assets. This tranche will be a much higher quality asset than the originating loans and will therefore have a prime rating – and a consequently lower interest rate.

It is these assets which are then sold internationally. Not the first tranche of assets, but the second and third tranches. Indeed it is mainly third tranches that are being held in overseas funds and are now being written down – yet there is little evidence to support there actually being many incidences of significant default in these third tranches.

### The Real Driver – US Legislation

The real issue that has been impacting the sub-prime market results from the difficulty that some banks have had in valuing assets after the credit market turmoil of the summer. Typically where assets cannot be ‘marked to market’ because no market is available, a ‘marked to model’ system is used. This process has been incorrectly derided by critics as ‘marking to myth’.

The US has implemented a new standard US Financial Accounting Standards Board disclosure rule 157, which came into affect on November 15. This required that assets be described under three broad levels:

- Level 1:** Quoted prices: Prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.
- Level 2:** Inputs other than quoted prices included in Level 1 that are observable either directly or indirectly:
- Quoted prices for similar assets or liabilities in active markets;
  - Quoted prices for identical or similar assets or liabilities in markets that are not active,
- An example of a Level 2 input would be the LIBOR swap rate.

**Level 3:** Unobservable inputs:

- Unobservable inputs reflect the reporting entity’s own assumptions about the assumptions that market participants would use in pricing;
- The reporting entity’s own data (adjusted if information is reasonably available without undue cost and effort to reflect market based assumptions).

Examples of Level 3 inputs include historical default and returns for an entity’s portfolio.

This is another case where the law of unintended consequences really applies. The standard was intended to enable readers to establish which assets are being valued with certainty – and which with uncertainty. The market is then taking the view that anything that is uncertain must by necessity be high risk and related to the sub prime crisis, so any such asset is being written down.

### The Goldman Sachs Example

One of the firms that is often quoted as having problems is Goldman Sachs. However Goldman said that of the \$72 billion level three assets, it wholly-owned only \$51 billion worth and that private equity investments and real estate comprised half of the remainder.

A Goldman Sachs spokesman said that “private equity and real estate assets were placed in the level three class – the category for assets that are difficult to value – under the new standard. The remainder is made up of leveraged loans that were moved from level two to level three after the credit crisis kicked in” (ie because the prices are now difficult to obtain).

The spokesman said: “There has been a lot of talk about how level three assets are difficult to value. We fundamentally disagree. Our point of view is that you can value everything – and if you’re an investment bank it’s your business to.”

So it is essentially ignorance in the market that is causing these write downs. This in itself is interesting because if we are correct in our assumptions that the write downs are not actually based upon fundamental problems, but are instead based on a hastily introduced and quite frankly rather illogical accounting standard, then if the firms retain those assets after the market turbulence many of the write downs will actually reverse.

# THE 2008 RISK REWARD PREDICTIONS

Predictions area tricky business—  
how did we do?

Last year Risk Reward predicted  
the following:

Global equities –  
**5-10% growth**

UK equities –  
**15% growth**

US equities –  
**3-5% growth**

Middle East equities –  
**5% growth**

UK residential property –  
**12-17% growth**

UK commercial property –  
**5% reduction**

US residential property –  
**5% reduction**

US commercial property –  
**10% reduction**

UK Interest rates –  
**no change**

US dollar –  
**more falls**

*Other predictions:*

**Terrorist attack at an  
airport**

**Major financial failure**

**US heading for recession  
Q3 2007**

UK equities have actually grown nearer 4% with US equities between 3-6% depending on the index. UK residential is up 7% and interest rates in the UK have increased from 5% to 5.5%, having come down from 5.75%. US property has declined and the US dollar has fallen. There was an attempted terrorist attack at Glasgow airport, Northern Rock failed and the US is having problems. On balance the predictions are not too far from those predicted.

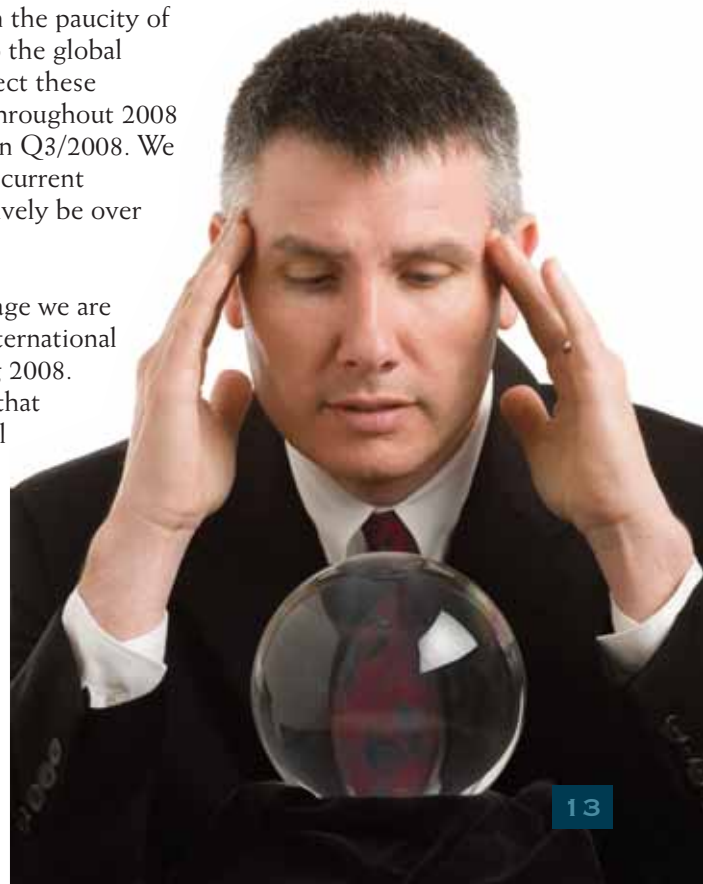
2008 is actually harder to predict. For UK equities we are expecting modest growth due to the reversal of decline in banking stocks and predict a 7% increase. We remain cautious over the US economy prospects and therefore expect only a 3.5% increase in US indices.

Trying to predict \$/£ rates is also very hard since two scenarios do appear. On balance we expect the \$ to strengthen during Q1/2008, but then to weaken for the rest of the year to a rate of around 2.05.

Global commercial and residential property prices are in decline and we can see no good news for either the US or the UK. We expect residential property in the US to decline further during 2008, but UK property prices to increase by a modest 3% year on year.

The major risk remains the US debt. The most recent treasury auction did receive the required level of interest to suggest that the US debt remains serviceable at present – perhaps given the paucity of other assets available to the global market. We do not expect these conditions to operate throughout 2008 and remain concerned in Q3/2008. We do however expect the current liquidity crisis to effectively be over by end of Q2/2008.

On the international stage we are expecting two major international figures to depart during 2008. We are also concerned that political uncertainty will exist in South Africa pending the realignment of political parties to represent the post apartheid paradigm.



# THE FIASCO THAT WAS NORTHERN ROCK

Perhaps you have heard this story by now? Bank lends money long to its customers to buy property. Bank funds this by deposits, but finds that increasingly difficult so resorts to using short term interbank money market funding which is cheaper.

Northern Rock was a building society based in Newcastle-upon-Tyne which converted into a bank and became the UK's fifth largest mortgage lender. It operated a virtuous circle of

business. The mission talk about products, efficiency and growth, but the "Virtuous Circle" replaces efficiency with cost control. Perhaps that is where the real problem lies – was it wrong for a bank to rely so heavily on money markets?

Did the money markets themselves dry up and cause the problem – or was the view taken by Northern Rock that such funding was too expensive. Perhaps the market took the view that under these extreme stress conditions Northern Rock was too much of a risk and therefore a run on the bank becomes inevitable.

Where was Risk Management at Northern Rock? Clearly they were reviewing liquidity risk for their 2006 statutory accounts show the following:

## LIQUIDITY RISK

**Liquidity risk arises from the mismatch in the cashflows generated from current and expected assets, liabilities and derivatives. The Group's liquidity policy is to ensure that it's able to meet retail withdrawals, repay wholesales funds as they fall due, and meet current lending requirements. It also ensures that it meets FSA liquidity rules, which require the Group to be able to meet its sterling obligations without recourse to the wholesale money markets for a period of at least five business days.**

**To ensure that it meets these requirements, the Group has approved a Liquidity and Treasury Policy Statement, compliance with which enables it to meet both the requirements of the FSA and internal policy requirements. This is achieved by managing a diversified portfolio of high quality liquid assets, and a balanced maturity portfolio of wholesale and retail funds. Longer term funds are raised through the Group's Medium-Term Note programmes. The board reviews the Policy Statement annually, and on a more frequent basis if any significant changes are proposed or required.**

As well as approving the types of liquid asset that may be bought, the Liquidity and Treasury Assets Policy Statement sets out approved operational limits and establishes operational guidelines for managing the Group's liquidity risk. The Treasury Director monitors liquidity on a daily basis, using daily cashflow liquidity and sterling stock liquidity reports, together with daily

**movement reports, portfolio analyses and maturity profiles. The board receives monthly liquidity reports analysing the liquid assets and showing the percentages of assets held in each asset type.**

This is clearly what you would require a prudent institution to do. They are managing the risk in the book through a combination of techniques. However they were caught out when the markets changed on them – so what did they do wrong?

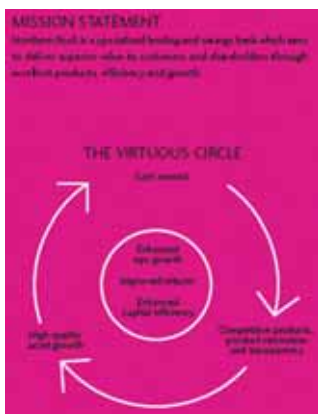
Clearly we do not know the full story at this time, but it is clear to Risk Reward that Northern rock were not taking full advantage of the derivative techniques that were available in the market place. Typically institutions try to obtain funding when they are under stress, which is quite simply the wrong way to manage a business. What is more effective is to put in a series of derivatives at an early stage when you do not need the funding.

If a collar is placed around interest rates with the firm giving up some of the upside to protect themselves from the downside, then they are in a position where the change in interest rates does not really cause any effect.

The consequence of this is that the firm is able to borrow at the higher rate with the derivative picking up the slack. The use of a collar will typically ensure that the cost of such an approach is either modest or negligible to the institution.

Hence a proper risk management approach would have been to recognise that Northern Rock does not make money through the management of liquidity and that this risk should be hedged out to the maximum extent. By using a collar consisting of a series of purchased options the totality of the risk could have been much better controlled and we suggest Northern Rock would have weathered the crisis without intervention.

**“Institutions try to obtain funding when they are under stress, which is quite simply the wrong way to manage a business.”**



## THE PROBLEM WITH REGULATION

It is now very clear that current financial regulation has not helped the crisis in liquidity. We have had runs on banks, major disruption in global financial markets and a meltdown in the prices of some financial assets.

At the heart of this is a common fallacy of financial regulation – that capital is the answer to everything and that 8% of risk weighted assets is the right level. Examining this even briefly must raise questions in the mind of even the most hardened regulator. At the heart of the issue is how to regulate a bank.

If you take some form of calculation based on risk weighted assets, then it effectively considers what normally

happens. The capital calculated in this way would represent the funds that the regulator views as the bank requiring to cover normal operations.

However what we have seen is that problems occur in times that are not normal and that capital is not a useful way of protecting the firm at that stage. Liquidity risk in particular is not helped by capital, since the assets in which the liquidity capital would be invested themselves could become illiquid and exacerbate the position.

If capital was designed to cover remote events – perhaps 0.1% likelihood events, then in 99.9% of cases the capital would be excessive to the actual

requirements. Effectively it would force the banks to incur a loss every year in the expectation that eventually they would have enough capital to cope when the bad year actually hits, if it ever does. No business can work effectively on that basis since this will of necessity result in charges to customers being higher than should be the case. What is needed is for the regulators to move to a stress testing/scenario modelling approach to regulation and to look for processes and controls that would operate under such circumstances.

These are likely to be in the system as a whole rather than the capital calculation of a single bank.

## WHAT IS THE ROLE OF THE BANK OF ENGLAND & THE FINANCIAL SERVICES AUTHORITY (FSA)?

For anyone reading this from any country other than the UK the thought of a unitary regulator for the whole financial services industry (the FSA) that is separate from the Bank of England may be surprising.

The Bank of England is responsible for the money supply and the management of inflation, whilst the FSA regulates firms.

In the normal course of events this is clearly fine – the Bank of England sets interest rates in the knowledge that firms will meet the requirements set by the FSA. What Northern Rock highlighted is that in abnormal times there is a need for joined up writing.

The Bank of England signalled that Northern Rock would receive support by issuing the following statement

*“Tripartite Statement by HM Treasury, Bank of England and Financial Services Authority 14 September 2007*

*‘The Chancellor of the Exchequer has today authorised the Bank of England to provide a liquidity support facility to Northern Rock against appropriate collateral and at an interest rate premium. This liquidity facility will be available to help Northern Rock to fund its operations during the current period of turbulence in financial markets while Northern Rock works to secure an orderly resolution to its current liquidity problems. The*

*decision to authorise was made by the Chancellor on the basis of recommendations by the Governor of the Bank of England and the Chairman of the Financial Services Authority in accordance with the framework set out in the published Memorandum of Understanding between the Bank, FSA and HM Treasury.*

*The FSA judges that Northern Rock is solvent, exceeds its regulatory capital requirement and has a good quality loan book. The decision to provide a liquidity support facility to Northern Rock reflects the difficulties that it has had in accessing longer term funding and the mortgage securitisation market, on which Northern Rock is particularly reliant.*

*In its role as lender of last resort, the Bank of England stands ready to make available facilities in comparable circumstances, where institutions face short-term liquidity difficulties.”*

The consequence of this is that every institution is now covered in what must be one of the most unusual decisions taken in banking for many years. Clearly this public statement caused the customers of Northern Rock to seek to withdraw a higher level of funds from the bank than would otherwise have been the case, resulting in queues around the block of the offices. Historically the Bank of England would have worked silently behind the scenes

to solve the problem – their inability to do so in this case put the entire banking sector at risk and has resulted in a significant loss to the UK taxpayer (who has some £30bn currently at risk or £730 for every UK taxpayer).

So what are the lessons from this? The most important thing is for governments to design regulatory systems and structures which operate effectively when the institutions are under stress. This means that one institution needs to have control of the assets of the country (ie the money supply) and the regulation. Further it needs to be recognised that having an independent body purely responsible for the money supply cannot be effective since under stress conditions since under those conditions that institution must cease to be independent. So what is the option? Historically the Bank of England undertook regulation and managed the money supply, with interference from government. It is our view that actually that is a better system than the amalgam that currently operates and we therefore would cede the FSA back to the Bank of England and eliminate the need for an independent regulator in its totality. The only other alternative would be to return the setting of interest rates to the government and make the Bank of England purely an arm of government interacting with market participants, but we view that as being a suboptimal solution.



# WHY WERE THE SIGNS OF PROBLEMS IN THE BANKING SECTOR IGNORED?

Politicians and reporters have been seeking scapegoats without the right level of understanding of the issue and effectively aim at the wrong targets.

We have been increasingly frustrated by the failure of the market to deal with the causes of the contagion in the banking sector and that instead they seem to be focussed on treating the symptoms and looking for scapegoats. We do not believe that the problems started with mortgage failures in the USA, rather that the increased problems of the mortgages are the consequence of a series of failures.

Firstly, SFAS 157 (which required reporting of mark to model assets in the US) and IAS 39 (which imposed fair value accounting and took away the right to hold to maturity assets in certain cases) were certain to lead to exactly the problems we are seeing. This was entirely foreseeable. It is also clear that fair value is not mark to market if a market is failing to

behave in a rational fashion.

The consequence of these two standards was that securitised mortgage assets, which were designed to provide low risk held to maturity assets for the banking book, could not be used for the purpose for which they were designed. In the absence of any other buyer for the assets the answer is obvious – freefall.

Secondly, many of the banks have lost exactly the expertise that they require to deal with difficult times, having refreshed their teams such that too many had developed their roles in identically positive market conditions.

Thirdly, Basel II focussed on operational, credit and market risk to the detriment of work being conducted on liquidity risk. Worse than that the focus on the expected end of the loss curve swayed management attention away from the unexpected events which are really what matters.

Further, politicians and reporters have been seeking scapegoats without the right level of understanding of the issue and effectively aim at the wrong targets.

So what should be done? Firstly stop looking at the banks as if they are some form of bizarre gambling machine. Secondly revise SFAS 157 and IAS 39 such that assets can be held at intrinsic value. If a tranche or layer of a securitisation of a set of mortgages is only expected to lose 10% of its value, then it should be written down by 10% - not 85% as is currently the case.

Why, then, were the signs of problems in the banking sector ignored?



# CAN YOUR RISK SOLUTIONS COPE WITH CHANGE?

What an amazing year to be a risk professional. With the problems of Northern Rock, Bear Stearns and Societe Generale to name but three, risk management has never been in closer focus than is currently the case. In this issue of the Risk Reward update we take a look at the current risk climate and the regulatory responses. We also look for the causal links that have given rise to the current climate of uncertainty. In so doing we hope that our readership will gain an insight into the world of risk in banking and its impact on the global markets.

There are some clear messages for the risk management industry and many of these relate to stress testing and scenario modelling. The concerns about risk management techniques have been clearly identified within the Banana Skins report which we discuss later in this issue. In brief we believe that all risk managers need to consider the following:

## Stress Testing

The objectives of stress testing are to take a unitary variable and extend this to a plausible extreme.

The Bank for International Settlements have identified that more stress testing needs to be undertaken by management of institutions. The problem has been that management can only see plausible from the current market perspective. Of course plausible is likely to be much more extreme. Our first clear message is that stress testing should be extended to include plausible but unlikely events.

There can be no doubt that the liquidity position of the first half of this year (or indeed the previous two years or so) was outside of the stress testing conducted by most management. There can be no doubt that had the management of Northern Rock actually applied a comprehensive series of stress tests, leading to management action, then the current problem could have been avoided.

## Scenario Modelling

It never ceases to amaze a professional risk manager how the same type of events recur. The problems at Societe Generale are a case in point although in no way unique. Providing staff with the

ability to conduct fraud or to mislead management inevitably leads to some party taking advantage of this at some stage.

Scenario modelling, as readers of our Risk Reward Update will know from the past, is used where more than one variable is required to be stressed. It takes information from published events that have impacted upon another institution and applies the lessons to your business. The mistake that many firms make is to take the external event too literally, for that is not the point of the exercise.

What is clear from Societe Generale and Bear Stearns is that neither firm was able to learn the lessons from other public events and that a potentially avoidable problem became a disaster.

## Risk Models

Again this appears as a significant risk within both the Banana Skins survey and also speeches and papers appearing on the web site of the Bank for International Settlements ([www.bis.org](http://www.bis.org)). The problem with risk models in general are as follows:

1. The assumptions that are inherent in the risk models are not clearly articulated to enable management to interpret whether they remain appropriate
2. The risk models portray a specious level of accuracy which neither the underlying assumptions nor the quality of the data are able to support
3. Modelling techniques are inconsistent so the management are unable to gain a clear understanding of the true position of the firm and the actions that they are able to take
4. The models themselves are not regularly stress tested to see how they cope with changing market conditions
5. Risk specialists working in different risk areas tend to favour different approaches. This exacerbates the problem that there is likely to be inconsistent modelling.

## Senior Management Training

Many senior management have risen to senior positions during the last economic cycle. Depending on when you consider this to have started it has

lasted for some 15 years during which time a benign market for banking has predominantly applied. Management, including risk management, trained and promoted during this period have not had an exposure to the stress environments

of the past, accordingly they may be unable to grasp the current issues and the actions to take in the best interests of the firm. Perhaps they are too close to the issue. It could of course be a fault of the training that has been provided which often focuses on materials provided and designed by academic institutions – theoretically brilliant,

practically useless. This is compounded by the confusion and focus of the regulators on expected as opposed to unexpected loss. We shall revisit each of these issues in future issues of the Risk Reward Update and would welcome your views on what you consider to be the key issues of the day. Please send your ideas to [dwc@riskrewardlimited.com](mailto:dwc@riskrewardlimited.com)

**‘There can be no doubt that had the management of Northern Rock actually applied a comprehensive series of stress tests, leading to management action, then the current problem could have been avoided.’**



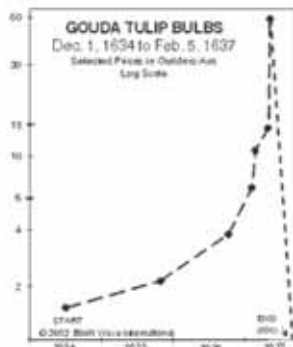
# WHAT IS HAPPENING IN THE COMMODITIES MARKETS?

Recently Dennis Cox, the CEO of Risk Reward Limited, presented as part of a panel at the Investment Horizons event organised by the UK based Securities and Investments Institute. At that event he promised to develop some of these themes in the next Risk Reward Limited update.

In terms of our views of the current commodities markets we conclude that there are parallels from the past which do need to be considered. There have been a number of times in the past when markets have left reality with the price of assets either massively exaggerating a trend, or having the opposite effect. It is our view that such matters are entirely predictable.

## Tulip Bulbs

The first event of what might be called the modern age was the Dutch bulb bubble. In this case the humble tulip bulb was the subject of major speculation resulting in a pricing spike. The reasons for this are perhaps less important than the result and were the first of a series of "bubbles" ranging from the South Seas bubble to the internet bubble.



## Rice

What is most important is to notice the trend – firstly there is a demand led trend and then there is a speculative trend. The end of the speculative trend is a warning that the market is likely to collapse – the only question is how high is the peak and when will the market collapse?

Consider a staple food like rice, for example:



This is a graph downloaded from CME Groups web site. Notice once again the trend. During the period 2002-2007 there is a demand led increase in the market price of rice which lasts until the middle of 2007. At that time speculation takes over and the price exceeds 2,000 in Q1 2008 when the extrapolation of the previous trend would suggest perhaps 1,300.

The Risk Reward view is that the long term demand trend for commodities will apply in the longer term and therefore the graph will revert to that position, suggesting a real price for rice (Rough) at nearer 1,400 than the current price.

## Gold

The key issue is whether this is replicated in the case of other commodities. Let us consider how the gold price has moved: This graph is downloaded from www.usagold.com and shows some interesting issues. Once again if there is a demand trend which in this case operates during the period 2001-2005. A speculative trend then takes over, and the gold price spikes. At the peak there is a high level of price volatility which we explain as being the impact of a demand led curve impacting upon a speculative curve. The demand curve would suggest a natural price for gold of perhaps 575 and our view is that the price will long term revert to this trend.



## Platinum

Taking this further let us review the movements in the platinum price:



Once again there is a demand pull operating between 2001 and 2007, then the speculation takes over to hit a high point and a period of volatility. This would suggest that the natural price of platinum is in fact perhaps 1,600 and again that the long term trend will revert to such a position.

## Copper

Of course not all markets actually have the same level of speculation. In terms of such markets Copper is perhaps a prime example. Because the copper price was previously exploited by unscrupulous traders, this time they do appear to have kept away. Look at the following graph downloaded from www.kitco.com:

Here there is some evidence of speculation on April-June 2006, but the price has reverted to its long term demand led trend. Indeed we would expect the copper price to remain above 4,000 for the foreseeable future.

**Oil**

So the judgement is clear – it is our view that the market is effectively demand led and that speculation moves the price away from this trend, but that it reverts over the longer term. Let us now apply this through process to the oil price: The graph that you normally see produced is as follows: This graph care of WTRG Economics shows a relatively steady growth curve, however let us look at the longer term trend:



Now we see rather a different trend. Here you see a rather volatile demand curve during 1994-2004 to be followed by a speculative curve. This has continued from 2004 to the current date. What we are now seeing is the volatility that tends to be a signal for the peak of the trend.

Of course in the case of the oil price it is hard to remove the impact of speculation, but our view is that the natural price of oil is in the \$50-\$75 band. This is consistent with the view of Saudi Arabia which is stating that \$60 is the natural price.

The question is not will the price revert to a long term trend, it is when will this happen.

One of the clear messages that come from this is to the teams that are setting interest rates in country around the world. This temporary speculation causes externally generated inflation which will revert. It is important for governments and central banks to discount such inflation in their management of their economies. The classic answer of increasing inflation to reduce demand in the economy and suppress inflation will have the opposite effect this time since the inflation pressures are externally generated, rather than internally driven. The best thing that the economists can do is nothing.



## THE PROBLEMS OF ACCOUNTING STANDARDS

In previous updates we have discussed IAS 39 and its problems. Of course the problem that we identified then has now occurred. To explain what is happening you do need to go back into the vagaries of IAS 39 (and its ill considered cousin SFAS 157).

IAS 39 states that assets may be held to maturity in the banking book. If there is a permanent diminution in value then the assets should be written down, the comparison being against what is referred to as fair value. If anything other than an insignificant amount of the assets are sold then all held to maturity assets must be shown as fair value and gains and losses should be taken through the profit and loss account.

Worse than that any firm that sells anything other than an insignificant amount of held to maturity assets loses the right to have held to maturity assets for a period of three years.

Let us look at the current crisis and what is actually happening. Look at the following graph:



This is from the economist. What you can see is that AAA rated bonds have been written down by 20% under these current rules and the misinterpretation of fair value that is currently occurring. The statistics show that for a AAA rated tranche of a mortgage book to be impacted by a downturn in the market, 29% of the portfolio needs to go into arrears. The figures for Northern Rock were published today – arrears are 0.75%. Not 1%, not 5%, not 25%... but Northern Rock bonds will have been written down by 20% without any prospect that there will be a default.

What this actually means is that anyone that has sold such bonds in the current climate has managed to crystallise a loss that does not exist. The provisions that have been made by many of the financial institutions also do not really exist. If they were to hold the assets to maturity then they would receive full value for such assets. Of course if they have sold such assets, probably under pressure from the media and people that should know better, then they have managed to incur an unnecessary loss.

What should be done? In our view if an asset does not have any long term impairment and is to be held to maturity then it should not be written down – the current speculative market price is irrelevant. In this case we have negative speculation caused by the asset no longer being suitable for the market for which it was designed.

All that this requires is a formal definition of fair value and a change to the terms of Held to Maturity Assets. What is clear is that accounting standards that are developed without considering their implications to business will likely be fatally flawed.

**Come on IASB wake up and smell the roses.**

## THE NEED FOR ACCOUNTING TRAINING

What this shows is that the accounting rules are becoming increasingly complex and that many financial institutions in particular have a challenge in ensuring that their accounting and finance functions are both up to an adequate standard and up to date.

accountants meet required technical standards, for the first time non-chartered accountants can study ICAEW materials (either examinable or non-examinable).

The objectives of this new programme are clear. It enables the Finance Director and CEO to know that their finance functions are at least able to meet the benchmark standard that the ICAEW sets for technical competence in the following areas:

- Financial accounting
- Management information
- Business and Finance

Three other modules are also available addressing Audit and Assurance, Taxation and Law and nonexaminable

**‘The Institute of Chartered Accountants in England and Wales (ICAEW) have recognised this problem and developed a new series of products to meet the demands of this market.’**

advanced courses are also available again using ICAEW produced materials.

These courses are available through the ICAEW training partners and we are pleased to announce that Risk Reward is the leading global training partner for this extended programme.



**THE INSTITUTE OF CHARTERED ACCOUNTANTS**  
IN ENGLAND AND WALES

**PARTNER IN LEARNING**

The Institute of Chartered Accountants in England and Wales (ICAEW) have recognised this problem and developed a new series of products

to meet the demands of this market. Created using existing materials developed to ensure that all chartered

# THE CREDIT QUAKE: WHAT SHOULD OR SHOULD NOT BE DONE NOW?

IT WORKS FROM THE POSITION THAT WE ARE WHERE WE ARE AND THERE IS LITTLE TO BE GAINED BY LOOKING FOR SCAPEGOATS AND CULPRITS. INSTEAD OUR CONSULTANTS LOOK AT A RANGE OF AREAS WHERE CHANGE COULD BE REQUIRED OR MAY BE PROPOSED AND CONSIDER WHERE ACTION SHOULD, OR SHOULD NOT BE TAKEN.

We start by publically answering some of the questions that have been posed to Risk Reward Limited consultants in recent days and then look at the various areas where change may be requested or required, recommending areas for action as appropriate.

## I. The Key Questions

### How long will the crisis last?

We are regularly being asked for our views about the crisis. Our view remains that there will remain turbulence in the financial markets until the conclusion of the US election and that recovery will commence in December 2008. However the recovery will be sporadic and certainly not euphoric. We expect 2009 will see a gradual return to what will become a relative normality, although the credit markets will remain cautious throughout 2009 and probably into 2010.

### Will more banks fail?

This question has appeared in almost every meeting that we have had with senior bank management. As many of you will be aware we had expected some additional banks to fail in the June to September quarter.

It is our view that the main failures have now taken place and that increasingly the remaining global players will now be in a position to capitalise on their success. Whilst a few secondary players will disappear through reorganisation of the sector, this will be due to merger and acquisition activity rather than any form of administration.

It has become clear in recent weeks that most governments are prepared to nationalise or rescue any further struggling banks.

### How will investment banking change?

There can be no doubt that investment banking will change as a result of recent events. We believe that the days of the

feast are, with regret over. However not all corporate activity on which the investment banking scene was predicated will end. We do not expect there to be a flurry of new issues for either equities or bonds in 2009. Instead a few transactions will take place which slowly rebuild some degree of confidence in the system.

There will be growth in 2009 and 2010 but activity levels will not return to historic levels until probably 2012 at the earliest. Without the pipeline of transactions which are the lifeblood of the investment banking sector, it will shrink dramatically with a few global players together with niche boutiques providing the support. Basically we expect that part of the industry to decline to perhaps only 25% of its size prior to the crisis.

## 2. The Global Regulator

Whilst there is no global regulator for the entire banking industry, banks of course each have a single Home Regulator that takes ultimate responsibility for the regulation of the institution. These Home Regulators need to work closely with Host Regulators to make sure that the regulatory system works effectively. These rules have been revised fairly recently and should be allowed to work.

Of course that is not the issue that is concerning the market. The suggestion is being made that we now require some form of global regulator to take some level of international oversight. Our view is that any such development is bound to cause more problems than it solves. At present there are two bodies which operate on a global basis and have impacted on the crisis.



## THE CREDIT QUAKE CONTINUED

The first is the Bank for International Settlements, which is essentially the committee of banking governors. It is not answerable to anyone and is able to make rules that impact on the global markets. If there is a view that regulation needs to be altered globally, then the Bank for International Settlements already provides the mechanism for this to be achieved.

If there is a view that regulation needs to be altered globally, then the Bank for International Settlements already provides the mechanism for this to be achieved.

The other global body is the International Accounting Standards Board. Again not really answerable to anyone it is able to design standards of disclosure, valuation and reporting for the financial services sector which are then imposed on the industry through the rules of individual stock exchanges and by regulatory pressure.

**‘Far too much regulatory effort globally has been wasted looking at things that, in retrospect, just do not seem to matter’**

The key problem with any global body is oversight and that has been shown to cause difficulties in the current crisis. A solution that may be theoretically brilliant could be practically useless. Increased scrutiny of these global institutions is required – but who should do it and to whom should they report? Without oversight these bodies can tend towards academic solutions which themselves create additional issues. It is the absence of such a reporting mechanism to ensure accountability that results in our opposing the creation of another unaccountable global body.

In our view it holds that the regulatory status quo remains the least worst solution. However we do believe that major and urgent changes to regulation are required.

### 3. The Bank for International Settlements (BIS)

The BIS have been putting the global banking industry through Basel 2. This standard has changed many times since its original drafting and is already out of date. There are real problems with the standard which have become increasingly clear during the current crisis.

If you look at the three risks which are addressed directly in Basel 2 you immediately see the concern. Credit risk is primarily based on historic loss data which should be across the credit cycle. The capital required currently covers both expected and unexpected loss at a 99.9% confidence level. Market risk is based on a mark to market calculation using historic data over a 99% 10 day VaR. This clearly is not predictive and again covers both expected and unexpected loss.

Operational risk uses a range of techniques (internal and external loss data, control and risk self assessment, scenario modelling and stress testing) to identify at a 99.9% confidence level expected and unexpected loss. Budgeted losses can then be taken into account and the result is supposed to be a forward looking estimate of unbudgeted and unexpected loss.

Strategic and liquidity risks are not addressed in the Pillar 1 charges, but are instead covered in Pillar 2, hence the lengthy ICAAP reports that many banks are doing. So what is wrong?

Clearly a bank needs to implement Enterprise Risk Management, capturing each risk they face on a consistent basis and enabling a Board to properly understand their risk position under a range of plausible yet extreme scenarios. This is also what the regulators require. There is no point in a regulator understanding how much a bank would lose in credit risk from a specific event if the impacts on the other risk types cannot be gauged.

Basel 2 needs to be completely redrawn to ensure that it deals with all risk types on a consistent basis. It should require Enterprise Risk Management to be implemented in every bank worldwide. No rule should be produced by the BIS which is contrary to this objective – accordingly the current SILO committee structure should also go. The focus for all risk types needs to be on unexpected loss regardless of risk type.

There is no point in the regulators wasting their time looking at expected loss, which is a decision for management as part of product pricing and profitability discussions. Far too much regulatory effort globally has been wasted looking at things that, in retrospect, do not seem to matter.

### 4. Financial Education

As a firm that specialises in financial services training we have been dismayed by the rather limited level of familiarity with global finance that has appeared in debates, political statements and in the press.

Global finance has become of greater complexity and it is incumbent upon the market to provide better training to the population in general. This should clearly start in the schools and we would hope that finance becomes an integral part of general education. However in the short term we clearly need training for journalists and politicians so that they have some understanding of the matters on which they are expounding with such passion. Many public speeches and discussions have exacerbated a difficult position through repetition of half truths and relatively incomplete analysis. We believe the global market should demand a more qualitative approach from its political leadership and encourage the spread of quality financial education and international best practise, as is being encouraged by the ICAEW, for example.

### 5. Legislation and Split Regulation

The US continues to have a multiplicity of regulators for different parts of the financial services industry. Put at its simplest this just cannot work. It is important that the US now moves to combine all of its regulators into a single Markets Regulator enabling that regulator to understand the impact of actions in one part of the industry on other parts of the industry.

In the UK there is less need for change. The legal structure is sound and can address any change that is necessary. What does need to change dramatically is the Bank of England and the Financial Services Authority rule book. This is too long and too detailed to meet the needs of the market. A move back to principles and objectives in



regulation would be much more effective. Rules that do not clearly add value to the overall objectives of regulation should be abolished. Perhaps the FSA could adopt an objective of halving the size of its rule book in a year.

A better focussed series of rules and regulations would be far more appropriate than the detailed analysis that is currently in place.

We remain concerned that there will be knee jerk regulation in response to the crisis. Without doubt any regulation passed in haste will need to be repented at leisure. Putting additional burdens on the banks at this stage will slow their recovery and deepen problems in the economy generally.

This should be avoided.

There will be countless people calling for additional disclosure and reporting from the banks. Much of this will be based on the bizarre notion that reporting would have made any difference to the crisis. We take the firm view that additional disclosure to the markets is the least of the problems that we are currently facing.

Bank's accounts are full of disclosure, much of it academic, such that the accounts are already almost impossible to decipher. Additional disclosure will make them even harder to understand and the weakness of the press to analyse such matters would actually cause the next failure to be even worse.

Without doubt the main cause of the

current credit crisis was liquidity. However, from a regulatory perspective, what we believe is required is not more disclosure, but better disclosure and here we take issue with international accounting standards. IAS39 in particular is one of the causes of the crisis effectively requiring assets to go to fair value regardless of the reason why they are held. In our view it remains completely incorrect to force a fair value adjustment onto an asset which is likely to repay at full value.

The standard resulted in securitised asset tranches no longer being appropriate for exactly the reason that they were created. Without anyone else actually wanting the assets the results were always going to be obvious – freefall of securitised asset prices. These are not toxic waste mortgages, purely an accounting standard that has undermined an entire market.

Again too many people are aiming their fire at the wrong culprits.

## 6. The International Accounting Standards Board

The IASB needs to replace IAS39 as a matter of urgency. They also must make sure in future that their theoretical ideas are fully reviewed to understand practical impacts and also the law of unintended consequences which clearly applied in this case.

## 7. The Banks

Enterprise Risk Management (ERM) must be the new mantra of all banks. Our views are that for too long many banks have not really embedded risk management fully into the way that they do business. The consequence is that unexpected events cause them to have unexpected problems. The embedding of risk management such that all staff really understand their roles within the Bank and how that leads to ERM being achieved has not been done.

This will need major educational programmes and changes to systems and behaviour. Risk management will need to be far more approachable and appreciable to all staff. It is not a regulatory construct, it is the way that you should do business to ensure that your institution survives.

# RISK MANAGING THE ELEPHANT IN THE ROOM

As Risk Reward has been consistently reviewing the causes of the crisis (this is well documented in previous updates) in this update we look at the lessons from the past and their impact on the solutions for today.

It remains our belief that the actions being taken are dealing with symptoms and are actually ignoring what we see as the elephant in the room.

Globally we are seeing governments and central banks seeking to reduce interest rates and increase public spending to stimulate their economies. The question that everyone is now considering is whether this will actually have the desired results. Our views are clear. Since the actions do not deal in any way with the causes of the crisis, but with the symptoms, they will inevitably make matters significantly worse.

Risk Reward has previously explained the crisis dates from 2003/4, not 2007, so any analysis that commences with the latter date will be fundamentally flawed. Further the crisis commenced with concerns over asset securitisation and whether these assets, which have no other significant acquirers, actually

can be suitable for the banking book of financial institutions. This is a real problem since the assets were designed to develop AAA rated assets for the banking book to replace sovereign assets and thereby enhance the yield.

## The Impact of Reducing Interest Rates

Both the UK and the USA have now reduced interest rates below rates of inflation. The consequences of this are many:

- Anyone with deposits will feel worse off. In real terms their deposits will decline in value and they will consequently wish to reduce their consumption to compensate. Since for every borrower there are typically eight depositors, this has a significant impact on market consumption.
- Companies with significant cash will move their deposits to higher interest rate countries, thereby removing liquidity from the banking sector at exactly the time when it is most required. Such countries include the GCC, for example.

The reduction in interest rates has had a significant impact on the currencies concerned. In the case of sterling we are seeing a reduction of typically 30% against a basket of currencies. This had to be expected. The problem for a country like the UK which imports a significant proportion of the goods available for sale due to the limited manufacturing base is that it starts to import inflation. With commodities priced in dollars (a 25% depreciation) and the remainder experiencing 30% depreciation, cost inflation is certain to take off at exactly the time when people are feeling times are tough.

Basically the governments have taken a historic economic model that is effective for an exporting country and applied it to a country that is a net importer. With regret this will have exacerbated the problem as we will see later.

## Funding Large Scale Projects

The other issue has been whether countries should commence large infrastructural projects

in an effort to stimulate the economy. The problem with such projects is that the type of work uses labour that tends to come from overseas and therefore there is a leakage of cash from the economy. Further these assets are often not income generative and are therefore unable to increase the value of the economy.

There is no evidence that a failure to build was actually the cause of the crisis. Indeed there is a lot of concern at the level of borrowing within the economy. That bank borrowing is in effect being replaced with government borrowing is one of the most surprising outcomes of this entire process. We cannot see any way in which such spending can in any way result in a shortening of the crisis – indeed we are concerned that it may in effect extend the process significantly.

## The Actions that Were Actually Required

Perversely perhaps we are of the view that increasing rather than reducing interest rates would have assisted with solving the issues that are of concern. Higher interest rates provide support to the currency and reduce the price of imports. At the same time there is a real rate of return if such rates are higher than inflation, resulting in both individuals and firms placing greater funds on deposit at the banks. This in turn provides additional liquidity within the banking sector and enables the banks to extend credit to other firms – effectively unlocking the credit impasse which we are currently suffering.

One of the concerns that we have had throughout the crisis was the limited experience in their roles of many of the international global players during this crisis. This lack of experience combined with a similarity of outlook and an intention of dealing with symptoms rather than problems has compounded the situation.

It is our belief that eventually sensible people will recognise the actions that must be taken that drives our expectations for next year. It is our view that the actions taken on the UK economy will have extended recession in the UK by at least six months and that such a recession will be far deeper than was in effect necessary.



## WHAT NEXT FOR RISK MANAGEMENT?

There is vocal demand for an increase in regulation to deal with the last crisis. Of course that is always the problem – regulation developed to deal with the last crisis can often exacerbate the next crisis.

The first question to consider is whether there was in fact a failure of regulation, and if there was where was it? Previous updates have considered the problems caused by SFAS 157 and IAS 39, so these will not be repeated here. Clearly there is limited back up for the minimum capital requirements for a bank being 8%, with 10% being applied by some countries. At the heart of the issue regarding the appropriateness or otherwise of the regulatory structure is the question as to the role of capital. Historically it was designed to protect the industry from a failure of one institution – in other words were one institution to fail then it would not cause the failure of another institution.

What appears to be being considered is some form of protection to deal with unlikely events, events that might only happen once in a hundred years, for example? The problem about that type of approach is that for ninety nine years out of a hundred there will be a cost to the institution (the capital) whereas in the one year when it is required the capital will be seen to be inadequate. The consequence of this is that if capital cannot protect in normal conditions (when losses are budgeted for, so no capital is required) and it does not work in extreme conditions (when it can never be adequate), then the focus on capital as the measure of risk is probably inappropriate.

We have also seen commentators recommending capital for liquidity risk, together with a requirement for additional reserve lines. Since liquidity is actually the management of capital, providing capital for liquidity risk cannot make sense. We also doubt the value of reserve lines. In the case of a major failure of an institution where significant sums are

required would you REALLY expect a bank to send \$500m to a stricken competitor in the expectation that they will not get it back? Surely they would take the view that the administrators could see them in court?

We have a lot of sympathy with the view that the role of regulatory capital as a key measure of risk should be questioned and wonder whether the focus on regulatory capital has itself contributed to the crisis.

Our views remain that stress testing and scenario modelling are of paramount importance to an institution and should lead to action from the Board of the firm.

In 2009 we are expecting to see increased focus on liquidity risk management particularly in the light of the Basel paper issued in November 2008. Since this is likely to be to the detriment of other risk management within institutions, the next crisis will be from a different source. We believe that this will be credit risk where firms utilising the standardised approach in countries where general provisions are not permitted will have insufficient capital to deal with the losses that will actually occur. This is due to the standardised credit risk calibration being based on a QIS undertaken by the BIS in a benign credit environment. We would anticipate that all institutions on the standardised approach would now calculate a lower capital requirement than the equivalent bank using the IRB.

We are also expecting to see a greater focus on enterprise risk management due to the requirement for institutions to understand the totality of their risk environment on a consistent basis. This will involve better and more consistent modelling of risk appetite used as a driver of the risk programme within a firm, linked into stress testing, scenario modelling and economic capital modelling.

## THE RISK REWARD 2009 PREDICTIONS

It must be emphasised that these are our views on the next 12 months. These are not in any way a forecast that should be used for trading purposes and we always recommend that you should take independent advice prior to making any investment decisions. We do not accept any responsibility for the accuracy of the materials contained in this section. However many of you will know that we have been quite successful in previous years in reading the market. Together we will see how we do this year.

**The real question is are we going to have a downturn or a crash?**

### Interest Rates

Whilst the short term pressures from what we see as being incorrect

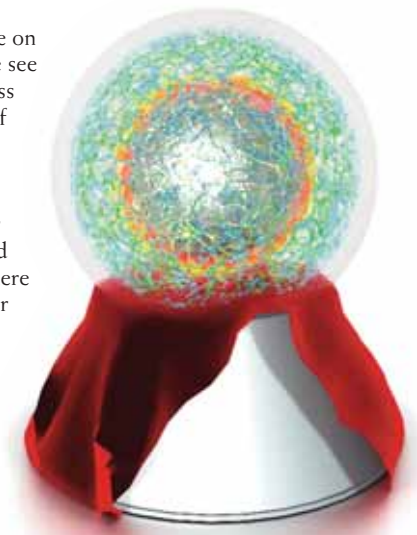
government intervention will drive interest rates downward, perhaps to 1%, this is unsustainable. Our expectation is that by the end of the first quarter of 2009 interest rates will have started to rise. We anticipate this to continue throughout 2009 and are extremely concerned at a potential spike in rates during 2010. As at 31 December 2009 we anticipate base rates in the UK being at 4.5% and are concerned that they could double in the following year.

### US Dollar Exchange Rates

The unprecedented and unfunded US deficit continues to grow with a series of promises being issued which the US government in our view will be unable to finance long term. This is a serious source of concern and will represent a

continual pressure on the US dollar. We see continual weakness against a basket of international currencies including depreciation over the year of around 15%. However there will not be a major change in the exchange rate against sterling as discussed below.

**Sterling Exchange Rates**  
The UK



## THE RISK REWARD 2009 PREDICTIONS CONTINUED

government borrowing is also at a unsustainable level and needs to be taken under control as a matter of urgency. We cannot see any reason for sterling to strengthen against a basket of international currencies and expect a further 20% depreciation. In terms of the dollar the rates will remain at roughly current levels due to the combined weakness of both currencies.

**The Oil Price**

Last year we forecast that oil would fall within what we still consider to be its natural price band of \$40-\$60. We can see no reason to change this expectation and therefore continue to believe that the oil price will continually strive to stay within this band. In the short term the removal of the consumption pressures from both the USA and also China/India is having a significant impact and will result in the oil price continually stressing the bottom of the range. At 31 December 2009 a price of around \$30 - \$40 is to be expected.

**Property Prices**

Property is falling throughout much of the world. Whether you are considering commercial property in Dubai or residential property in the UK there is nothing that we can see that should cause property prices to rise. The development of infrastructural investments increases the costs of building and the lowering expectations of both companies and people will continue to cause problems for property. Our expectations are a reduction in UK property of 10%-15% and for UK commercial property of 20%-30%. In the case of retail space the fall will be higher – perhaps 35%.

In the US falls will continue, but we expect the largest falls globally to be in Dubai where a 40% fall in commercial property due to the absence of demand is to be expected.

**Stock Markets**

Again there is no reason for much optimism. The lack of trust that is

compounded by recent public failures will continue to represent a drag on the markets for the foreseeable future. We do not expect a significant rebound during 2009 with markets rising by perhaps only 5% over the entire year.

**Bond Markets**

The place where you will not want to be in 2009 is in our opinion fixed rate securities. Since interest rates are approaching their bottom you can expect to see fixed rate securities starting to fall. During 2009 a fall in value of perhaps 20% is to be expected on a global basis.

**Commodities**

As you will have noted we are not very optimistic about assets in general. Some of the brighter spots will be in physical commodities, particularly foodstuffs, which will retain current prices and could experience a small level of growth. Not spectacular but at least they may represent a safe haven in times of stress.

## PONZI SCHEMES

IN THE LIGHT OF CURRENT NEWS PONZI SCHEMES ARE BACK IN THE NEWS, THE QUESTION YOU MAY BE WONDERING IS WHAT ACTUALLY A PONZI SCHEME IS AND WHO WAS CHARLES PONZI?



A Ponzi scheme is a technique used by fraudsters where the operator of the scheme promises high return to investors in short-periods but makes no actual investments at all. Instead, the operator will use money from future investors to show previous investors that a profit has been

made, paying out sums that actually have not been earned. The scheme is completely reliant upon money coming in from new investors to continue to pay out the returns to existing investors. Effectively the investors who withdraw their funds are actually defrauding the new investors. If the flow of money from

new investors ceases, so does that Ponzi scheme.

The scheme is named after Charles Ponzi who in 1919 conducted a scheme involving the buying and selling of international mail coupons. He promised investors a forty percent return in just ninety days. The prospect of high returns within a relatively short period of time is all a part of the attraction that comes with Ponzi schemes. Ponzi was able to take in \$1 million within just a three-hour period in 1919. It emerged that he had only in fact purchased \$30 worth of mail coupons.

**A Ponzi scheme is different to a Pyramid scheme in two significant ways.**

Firstly, a Pyramid involves payments being made to an investor on the next level up. In a Ponzi scheme, money is paid directly to the operator of the

scheme. Furthermore, the latter can only be sustained by current investors continuously recruiting new investors. A Ponzi scheme does not require new investors necessarily, provided that the operator of it can persuade an existing investor to reinvest his 'profits'. It is only when the investor withdraws funds that the scheme actually fails.

So the question is how can you identify a potential Ponzi scheme? In the typical scheme returns are higher than the market and normally higher than could be realistically expected from the nature of the activity being conducted. The seller of the investment vehicle is highly credible and normally well connected, such that the regulatory structure either does not apply or loosely applies to the fund.

**Finally always remember that if something looks too good to be true then it normally is too good to be true!**

# FREQUENTLY ASKED QUESTIONS

IN THIS SECTION WE ADDRESS A SERIES OF QUESTIONS RECENTLY ASKED AT RISK REWARD TRAINING EVENTS AROUND THE WORLD:

**Q: Is there a requirement for a new regulator to consider international bank regulation?**

A: This question is being posed by politicians internationally. Of course anyone involved with the banking industry will know that regulatory requirements are set internationally by the Bank for International Settlements. This is a committee of central bank governors tasked with devising suitable global banking regulation.

They have developed the proposition of the Home and Host regulator. The Home regulator is the regulator of the head office and works with a college of regulators (Host regulators) to regulate the international business. One of the strange results of the current crisis is hearing politicians, notably in the UK, recommending the structure that already exists. The real issue is whether the Bank for International Settlements (BIS), based in Basel in Switzerland, has a sufficiently broad remit and the right membership. Since its membership has remained fixed in a post second world war mindset, we would argue that it is not representative of the global banking community.

We would also suggest that central bank governors alone should not be responsible for bank regulation and that other BIS stakeholders should also be involved. The current structure enables theoretical solutions to be applied which may have unfortunate side effects.

Further the BIS are focussed on bank regulation. This crisis has shown that the financial industry operates as one consolidated body including asset managers, insurers, brokers and hedge funds. Accordingly we would recommend extending the scope of the BIS to include the whole industry rather than solely banking.

**Q: Is more capital the answer for the banking industry?**

A: The original rules that came up with the capital requirements of 8% are now rather old and do not stand up to scrutiny. Some countries actually apply 10% already – but that then leads to the questions as to the objective of capital maintenance.

If capital is to deal with unexpected events, then most of the time it will not be required. Expected losses are dealt with best through robust budgeting and pricing strategies and therefore it is unexpected loss that is dealt with through capital. But an averaging style of calculation to deal with events that happen on average can never work effectively. In terms of an unexpected event it will either happen or it will not. One fiftieth of an event will not happen. Effectively the answer is binary – yes or no.

That means that the capital held will probably never be sufficient to deal with extreme unexpected events – which is why it is held in the first place. To get institutions to hold the maximum capital would put a cost structure in place which would ruin the global economy for the foreseeable future.

Accordingly we have great concerns at the focus on bank capital as being the solution and recommend that instead banks should focus on improved stress testing and scenario modelling.

**Q: Are zero interest rates good for an economy?**

A: If an economy is a net exporter we view low interest rates as good. The declining currency enables an exporter to grow their markets at the expense of local incumbents. This creates growth in the economy, leading to improved employment and increased revenues for the relevant government. If the economy is a net importer however, low interest rates are a disaster. The collapse in the currency leads to imported inflation, increasing pressure on local standards of living. Perceived inflation (the inflation felt by people) is higher than actual inflation and then drives wage inflation.

This is combined with a collapse of government revenue and the withdrawal of industry cash deposits from the banking system. The build up of inflation in the economy forces a change in economic policy by increasing interest rates at the wrong point of the cycle causing massive unemployment. Our concern is that governments are using policies suitable for an exporting country to address the



problems of a net importing economy. Such action will generally increase the ferocity and length of the recession in those countries.

**Q: What are the Long Term Prospects for the Banking Industry?**

A: This is an issue that we will come back to in future Updates. Our answer to this is that at the end of the crisis there will be a banking industry, but the major players may well be significantly different from those at the start of the crisis. Many of the major players will have either gone altogether or significantly reduced in size. New types of firm will emerge and they are likely to offer different types of service than had previously been the case. The resulting industry may initially be smaller than the industry before the crisis, but you can expect growth to commence almost immediately again. In twenty years a new industry of comparable size with comparable global players will emerge. In terms of the five year view, it is hard to be optimistic. Much of the global action that has taken place has in our view been misguided and exacerbated a difficult situation. It will probably take up to ten years for all of these issues to work through the financial markets, with the borrowing and funding structures representing a long term drag on the economy. What we do expect for new types of ethical transparent instruments to evolve that better meet the demands of the customer base whilst adding value to the international community.

# THE PROBLEM WITH RATING AGENCIES

On December 4, 2008 the Securities and Exchange Commission (SEC) approved a series of measures to improve the transparency and accountability of rating agencies. The importance of this pronouncement is of significance to the global community since the major ratings agencies all have a US base and are therefore required to comply with these regulations.

## STANDARD & POOR'S

where the (agency) or an affiliate of the (agency) made recommendations to the obligor or the issuer, underwriter, or sponsor of the security about the corporate or legal structure, assets, liabilities, or activities of the obligor or issuer of the security."

The structure of the industry has always been a cause for concern to many of us.

The combination of these with consultancy arms means that the ratings agencies are providing ratings to financial institutions where they have also provided guidance on the risk management techniques that they should employ

provision of various consultancy style services. In credit risk Moody's KMV is one of the market leading credit risk products, whereas Fitch owns Algorithmics, Opvantage and Fitch First, all risk products. The combination of these with consultancy arms means that the ratings agencies are

These proposals were issued for responses within 45 days. Amongst the changes was the following:

**"(the rules) would prohibit an (agency) from issuing a credit rating with respect to an obligor or security**

Ratings are paid for by the company that is rated, therefore ratings agencies actually go about selling ratings. If a company receives a rating that they consider inappropriate then there must be a tendency for them to wish to surrender their ratings. This has been exacerbated by the Basel Accord where banks lending to firms that are unrated receive a lower capital charge than those lending to firms with poor credit ratings. The surrender of the rating results in a lower capital charge for the bank and also therefore a lower interest charge to the firm.

The ratings agencies also have significant businesses involved with the

providing ratings to financial institutions where they have also provided guidance on the risk management techniques that they should employ.

We do not at this stage believe that such activities will be expressly prohibited by the SEC. However, we do remain concerned that the provision of such services does create the perception of bias in ratings subsequently provided. Indeed more than one of the ratings agencies has stated that they will reward firms that have appropriate risk management systems with higher ratings.

The situation parallels the notion that previously existed with the accountancy practices where there had been concern at such firms providing consultancy services to those firms to which they provide external audit services. This resulted initially in an effective prohibition of the provision of such services, although these rules have now been relaxed.

The industry has a difficult conundrum to deal with. The market needs ratings agencies that are independent and also needs them to look at

## Moody's.com

issues from a series of different perspectives. Anything that creates a potential for bias within such a system is to be abhorred, yet both the ways that the ratings are paid for and the provision of additional services provides the perception that such bias might potentially exist. The alternative is rather draconian and would require a central levy to fund the provision of ratings by quasi-governmental agencies that cannot provide any other services. We have real concerns whether such an agency would either be effective or sufficiently accountable.

**We would also welcome the development of a new ratings competitor with a non-US perspective to form some level of balance to the existing market participants.**

Whether any real progress in these areas will occur is subject to doubt, but the natural imbalance in the industry will remain a cause for concern. What we do expect is for the ratings

## Fitch Ratings

KNOW YOUR RISK

agencies to continue to come under greater scrutiny and for them to reduce the number and range of services offered to

clients that they rate. Our concern is that this might undermine the profitability of the ratings agencies potentially resulting in one of the firm becoming a pure consultancy play and giving up the ratings business altogether. This once again would be the law of unintended consequences applying.

# THE G20 RESPONSE - THE FUTURE OF FINANCIAL SERVICES REGULATION

SO THE G20 HAS MET AND LOOKED INTO THE ABYSS OF THE FINANCIAL CRISIS AND COME UP WITH... VERY LITTLE

The key issues that they have raised are the following:

- Tax havens
- Bank secrecy
- Bank regulation
- The Financial Stability Board

There is very little new in any of these pronouncements. The concern that you will be having is whether this will actually work in practice. Our view is that the current discussions, were they to lead to new regulations, would certainly provide no benefit and could actually harm further the global economy.

## Tax Havens

Firstly tax havens. G20 governments have concluded that these are bad things. This is nothing whatsoever to do with the financial crisis, rather it is about the G20 trying to use their weight to stop smaller countries earning income through offering low cost and low taxation environments. Of course some of the best low tax environments are actually on shore, not offshore, with perhaps the Dublin free zone being a typical example. This is purely a grab for tax revenue and nothing to do with the current financial crisis.

## Bank Secrecy

We are seeing pressure on many jurisdictions, including Switzerland and Luxembourg, to provide further information on their customers. The objective is once again to reduce tax leakage from G20 countries and to assist money laundering deterrence efforts. This is a relatively pointless gesture that will result in a lot of discussion, but very little value. Money laundering will not reduce unless crime reduces and there is little evidence of that. We are in the process of issuing a new book on Money Laundering (not money laundering deterrence) to be published by Wiley in the summer which will consider this issue in more detail.

## The Financial Stability Board

The Financial Stability Forum is part of



the Bank for International Settlements structure and has previously issued papers which are more academic in their outlook. It has been great for research papers and the development of ideas. Is it the right place to look at contagion within the financial sector? We would suggest that is not right.

The Bank for International Settlements is a committee made up of central bank governors of the G10 with a few added members. By passing this responsibility to the Financial Stability Forum and renaming it the Financial Stability Board the G20 is again making sure that they have the key controls over the issue. Basically smaller institutions are excluded.

The solution should have been to create a forum within the International Monetary Fund, probably using the already existing Institute for International Finance. This is a global grouping which includes elements from all areas of interest in the financial

community, including governments and banks. Surely that is a better forum for discussion.

## Bank Regulation

The current discussions seem to be suggesting a "back to the 1950s" approach to banking. What we would like to say to the G20 is "Well if you all want to go bankrupt, go ahead." Put at its simplest, for every £1 reduction in the borrowing by a bank, you add £2 to the borrowing by a government. This simple adage has been made very clear in the current crisis.

## The Role of Capital

There are so many issues with current regulation that need to be addressed, that they have failed to do so is perhaps disappointing. A single concern is the role of capital itself. What is capital actually for? We seem to spend enormous amounts of time discussing that this bank or that bank has a capital ratio which is below the market expectation – but what does it mean?

## THE G20 RESPONSE – THE FUTURE OF FINANCIAL SERVICES REGULATION CONTINUED



The logic for capital maintenance has always been that it is to protect the market from a failure of a bank in times of stress. Effectively it is a fund to cover a rainy day. Guess what – it is not just raining, there is a storm outside. Surely if capital has any use at all it should be being used at present? **That means that in times of stress, capital requirements should be reduced.** They would then be built up again during the good times to cover the future expectations of disaster. It would suggest a cyclical regulatory capital which is not there at present.

#### The Regulations Themselves

Were the regulations the cause of the crisis? Actually the focus in the Basel Accord on credit risk and operational risk, with no changes to the massively inappropriate market risk rules, did take the eye of management away from certain risks that really matter. We have said in previous Risk Updates going back many years that we were concerned that banks were not prioritising the modelling of liquidity risk. This was in part due to the regulations not requiring such movement, but also due to the availability of liquidity being such that nobody really worried.

What we do need is for a regulatory

**...the focus in the Basel Accord on credit risk and operational risk, with no changes to the massively inappropriate market risk rules, did take the eye of management away from certain risks that really matter.**

regime that actually is consistent and logical. **We do not need more rules, we need better rules.** All of the risk assessments required by the Bank for International Settlements should be

directed at ensuring a bank knows what the risk might be if certain plausible events were to occur in the future. There should never be a capital requirement for anything that a business budgets for. That is just illogical – if a risk is addressed in product pricing then it does not need to be included in a capital charge.

The rules need to be consistent and all to the same confidence level. No longer should the market accept a combination of 99.9%, 99% and 96% as being acceptable. Actually we recommend abolishing all of the risk committees at the BIS and replacing them with a single risk grouping that will deal with all risk issues. This will hopefully result in a consistent and intellectually valid approach to regulation. Of course there is no intellectual rigour regarding the minimum capital rules of 8% and there is no evidence that expected losses can be used to infer unexpected or unlikely losses; so there is actually rather a lot to do.

We are firmly in the camp that believes principles-based regulation is the only approach that is effective.

If the regulators end up trying to go for detailed rules, this effectively results in regulators and governments trying to run banks, and with regret that can only end in tears. Just look at what the governments are actually doing at present – can much of it make sense? If the crisis was caused by problems of liquidity and rules requiring assets to be priced to a market value which massively understates inherent value, then these are the issues you need to deal with. There is no evidence that this was understood by the G20.

#### The Role of Non-Executive Directors

Separately we have seen thoughts that non-executive directors should be in a position to question management appropriately. Clearly risk specialists are the ideal candidates for such roles and we think that this is a useful addition to the debate. As a firm we possess access to one of the largest groups of experienced risk professional in the world and anticipate receiving regular requests for non-executive directors. Our risk specialists all have more than 20 years of relevant experience and can add significant value to the Board discussions at any financial institution.

# NEW HIGH LEVEL PRINCIPLES FOR RISK MANAGEMENT

On 8 April 2009 The Committee of European Banking Supervisors (CEBS) issued a consultation paper (CP24) on High Level Principles For Risk Management. According to this analysis, "EU and international supervisory bodies have produced a comprehensive set of guidelines covering all aspects of risk management". You may well disagree with this statement, since our view is that such principles are inconsistent and incomplete. The CEBS does state that "the coverage of the guidelines is somewhat fragmented". They also note that CEBS' guidelines have gaps in the following areas:

- Governance and risk culture
- Risk appetite and risk tolerance
- The role of the Chief Risk Officer and risk management functions
- Risk models and the integration of risk management areas
- New product approval policy and process

The CEBS has consolidated all of its principles and guidelines addressing risk management into a comprehensive guidebook.

CEBS state that these high-level principles proposed in CP24 should be considered both by institutions and supervisors within the supervisory review framework under Pillar 2 (i.e. the ICAAP).

Whilst these principles are aimed mostly at large and complex institutions, they can be adapted to any institution under review, taking into account its size, nature and complexity.

## The High Level Principles

These fall under the same headings set out above. In this brief article we only set out a few issues of specific interest. For the full information, reference should be made to the original document.

## Governance and Risk Culture

They require a comprehensive and independent risk management function under direct responsibility of the senior management. They also require that the management body have a full understanding of the nature of the business and its associated risks. Specifically they are looking for senior

management with capital markets experience, although the key from our perspective is for the non-executive directors to be in a position to adequately challenge risk management.

They require that every member of the organisation must be constantly aware of his responsibilities relating to the identification and reporting of risks and that a consistent risk culture must be implemented, supported by appropriate communication.

## Risk Appetite and Risk Tolerance

CEBS state that risk tolerance should take account of all risks, including off balance sheet risks. Then the paper requires management focus on consistency of targets, with responsibility residing with the management body and senior management.

In our opinion there is much confusion surrounding risk appetite and risk appetite modelling and it is perhaps disappointing that this paper does not really add any clarity to the issue. Risk appetite in our view is a single metric that is then converted into a series of measures as appropriate, driving behaviour and control systems appropriately. We are seeing many installations that are impossible to either use in practice or fail to add value to their institutions - and the solutions are having to be changed and simplified significantly. A little more clarity of thinking would be of assistance here. The remainder of this section repeats wording from the Bank for International Settlements (BIS) Sound Practices paper from 2003.

## The Role of the Chief Risk Officer and the Risk Management Function

Basically there needs to be a person responsible for the risk management function across the entire organisation – and this means all risk types. They need to have sufficient independence and seniority to challenge (and potentially veto) the



decision-making process and possess the expertise that matches the institution's risk profile. From our experience many of the CRO roles do not have this level of authority. Further, the professionalisation of the risk management function is at a relatively early stage of development; so many risk professionals are only comfortable in certain risk areas. Perhaps they really understand credit risk, but not operational risk. Perhaps they originally commenced in market and liquidity risk, but counterparty credit risk is beyond them. As an enterprise risk management firm we recognise both the challenge and the opportunities that a developing ERM framework and CRO can provide to any firm.

Importantly CEBS state that risk management should not be confined to the risk management function, since it needs to be in the business. Perhaps this is one of the failings of certain functions we have seen, where the risk professionals have undertaken significant assignments without the business actually being impacted. This



## NEW HIGH LEVEL PRINCIPLES FOR RISK MANAGEMENT CONTINUED

has to be the wrong approach since risk management facilitates the implementation of policies and procedures, rather than actually undertaking the primary transactions itself.

#### Risk Models and Integration of Risk Management Areas

CP24 requires firms to identify and manage all risks whilst avoiding over-reliance on any specific risk methodology or model. The requirement for a risk register would therefore appear obvious and we would suggest that this should be clearly linked to the control framework and risk appetite. These concerns over risk models have surfaced before, being prominent in the 2008 Banana Skins survey promulgated by the CSFI (Centre for the Study of Financial

Innovation). CEBS raises concerns over the conceptual limitation of metrics and models, highlighting the need for qualitative and quantitative data to be combined, with stress tests being considered. This also provides many firms with a challenge related to the natural inaccuracy of much of the modelling that is conducted. This should not concern banks unduly since much of this data is actually required for strategic risk management as opposed to tactical risk management and accordingly the same level of accuracy is not necessary.

#### New Product Approval Policy and Process

There is nothing much in this section apart from a requirement for a new product approval policy and new product due diligence.

#### Conclusion

I am sure we will not be alone in thinking that the CEBS could have provided more useful guidance in such an important area. It is perhaps the issues that they have failed to address - in particular the development of an enterprise risk management framework and the role of the non-executive director - that provide us with the greatest disappointment.

There are however a few key messages, perhaps the loudest of which is that **risk management is now central to the way that a institution operates and can no longer be relegated to a more junior level.** The elevation of risk management as a principal driver must be welcomed and the CEBS therefore generally applauded for their added impetus.

## ASSET MANAGEMENT SOLUTIONS: FOR THOSE LEFT HOLDING THE (MONEY) BAG

THE 'CREDIT CRUNCH' HAS BROUGHT NEW CHALLENGES TO THE ASSET MANAGEMENT INDUSTRY RESULTING IN MANY PARTICIPANTS FUNDAMENTALLY REVIEWING THEIR BUSINESS MODELS AND PRODUCT OFFERINGS. ASSET MANAGERS ARE FOCUSING ON THE FUTURE CHALLENGES AND THEIR REAL, AS OPPOSED TO THEORETICAL, RESILIENCE TO COPE WITH EXTREME OR UNEXPECTED EVENTS.

Asset Management is a core Financial Services industry function but with its own unique demands, challenges and specialisms. We recognise that many of the issues and techniques required to manage and control 'Buy-Side' Asset Management businesses are different to other financial businesses.

Accordingly, we have designed a range of services to support Asset Managers. These are offered to:-

- Those working within Asset Management businesses, and for
- Those for whom Asset Management may be part of their wider remit or responsibility (including Independent Directors, Business Managers and Controllers, Risk, Audit and Compliance professionals).

We also offer dedicated courses and advise those who employ asset managers such as Pension Fund Trustees and Institutional Investors.

#### Training

Risk Reward offers a wide range of services specially tailored to Asset Managers including the following courses and in-house training:-

- Asset Management for Professionals
- Asset Management for Institutional Customers and Pension Fund Trustees

- Financial Investments and Markets
- Operational Risk Management for Asset Managers
- ICAAP Preparation and Review
- Risk Assessment Reviews
- Auditing Asset Managers
- Asset Management for Independent or Non-Executive Directors

#### Consultancy

Risk Reward provides support, consultancy and co-sourcing services for Asset Managers including the following:-

- Design and development of a 21st Century Risk Department for Asset Managers
- Corporate Governance and Controls for Asset Managers
- Re-organisations and Restructuring
- Mergers and Acquisitions
- Regulatory Inspection Visit Preparation



# THE TURNER REPORT REVIEWED - THE FSA'S RESPONSE TO THE CREDIT CRISIS

## What is the Turner Report?

Lord Adair Turner, Chairman of the FSA, has recently published his much heralded report on the credit crisis. He examines in sometimes tedious detail the causes of the failures leading to the crisis and then sets out his recommendations for the future.

It is worth noting that the UK's FSA is the first major regulator to publish such a detailed report although its release just before the G20 Summit in London may be seen as both timely and pre-emptive. Some might argue that it actually was presumptuous. It is clear that Lord Turner and the FSA are hoping that their proposals will be both taken up in the UK and internationally. Many of the changes recommended by Turner go to the heart of the Basel Accord and impact on the international regulatory and supervisory frameworks.

Indeed, given the international and global nature of so many of the key market participants, really effective regulation can only work if it is implemented across each of the key financial jurisdictions on a consistent basis. Only by achieving this can regulatory arbitrage be avoided.

## Turner's View of the Causes of the Crisis

Turner identifies three underlying causes of the crisis:-

- Macro-Economic Imbalances
- Financial Innovation is 'of little social value' and
- Important Deficiencies in Key Bank Capital and Liquidity Regulations

These, Lord Turner says, were underpinned by an exaggerated faith in rational and self-correcting markets. He makes an obvious observation in stressing the importance of regulation and supervision being based on a system-wide "macro-prudential" approach rather than merely focusing solely on specific firms.

Readers of previous Risk Updates will know that the first two issues were actually nothing to do with the crisis and to blame them in our opinion suggests faulty analysis working from an invalid hindsight perspective. Given

that we disagree with the analysis conducted by Lord Turner, it is perhaps unsurprising that we have reservations about his recommendations.

In his report Lord Turner added that "The financial crisis has challenged the intellectual assumptions on which previous regulatory approaches were largely built, and in particular the theory of rational and self-correcting markets. Much financial innovation has proved of little value, and market discipline of individual bank strategies has often proved ineffective".

He identified the "fault lines in the regulatory approach", due to the globalisation of banking activities, which led to "global finance without global government". This is an issue that has been recognised for many years and appears within the Basel Sound Practices paper from 2003. Indeed the Basel Accord and subsequent papers were specifically designed to deal with such matters. However, was Northern Rock really caught because it was a global institution? What about Fannie Mae or Freddie Mac? Almost all of the institutions that had difficulties – these were problems of liquidity not problems of international regulation.

Unsurprisingly Turner calls for more and improved regulation supported by a more intrusive approach by supervisors and the end of 'light touch' regulation. Whether a more heavy handed rules based approach would be more effective is not necessarily an automatic consequence - as the SEC has demonstrated so very recently. It is clear to us that the detailed rules approach – which actually has been followed by the FSA and other regulators (specifically those adopting Germanic approaches) – does not work. The focus on detailed pointless rules stifles innovation and prevents banks from appropriately managing their business. Worse than that, the



regulators stop focusing on what really matters and instead look towards death by a thousand cuts. It never happens.

## The Turner Proposals

Lord Turner proposes major reforms in the regulation of the European banking market, creating a new European regulatory authority together with increased national powers to constrain risky cross-border activity. In our view this will be a challenge to make happen due to the problems of national rules and the certain disagreement as to where it should be housed. The threat could of course lead to some institutions leaving Europe, which would hardly be in anyone's interest.

Similarly predictable, Turner proposes major increases in regulatory capital to levels 'significantly above existing Basel rules'. He does not really justify this because it cannot be justified. The problem that the banks faced was a failure of liquidity, not a failure of capital. Northern Rock did not run out of capital – it just could not get the liquidity it needed at any price it could afford. Lord Turner also calls for a fundamental review of the trading book capital regime not just with a view to increasing capital 'by several times' but to addressing the shortcomings of the current VaR approach. Our view is the

## THE TURNER REPORT REVIEWED CONTINUED

current VaR regime is a problem and does need to be addressed, but whether capital is the answer is open to debate.

This would, of course, affect banks' profitability and, particularly in the current climate, would have a strong political impact too since it would reduce banks' ability to provide credit, which in turn will impact economic growth. What is clear is that everything that Turner is recommending will have the effect of ensuring that the recession is longer and deeper than would otherwise be the case.

More controversially, he recommends counter-cyclical capital buffers, to be built up in good economic times so that they can be drawn on in downturns. As mentioned earlier, this is something that we agree with.

#### What Turner Did Not Recommend

Interestingly, there are several areas where recommendations were expected but were not made in Lord Turner's recommendations.

1. Turner has rejected the idea of a Glass Steagall separation of banking and securities businesses as being impractical.
2. Contrary to many expectations Turner has not called for a major review of or changes to the Accounting Standards which so many felt were at the heart of the problems leading to the credit crunch.
3. Similarly Turner highlights areas where he believes it is premature to recommend specific action, but where wide-ranging options need to be debated. These include product regulation in retail (e.g. mortgage) and wholesale (e.g. CDS) markets.
4. While Hedge Funds might expect some greater interest from supervisors Turner did not call for wholesale new regulation for them.

Really the accounting rules are not within the remit of the FSA, which could be the only reason for Turner to keep clear. Were hedge funds the cause of the crisis? Was it derivatives? It is our belief that derivatives have been the savior of the global financial services industry this time and, had they not been available, currency would have failed by this stage.

#### Dumb or Dumber?

However, amongst his other proposals, Lord Turner has recommended a number of specific changes, including the following:

- Regulation of "shadow banking" activities on the basis of economic substance not legal form: increased reporting requirements for unregulated financial institutions such as hedge funds, and regulatory powers to extend capital regulation;
- Regulation of Credit Rating Agencies to limit conflicts of interest and inappropriate application of rating techniques;
- National and international action to ensure that remuneration policies are designed to discourage excessive risk-taking;
- For the UK he also proposes major changes in the FSA's supervisory approach, building on the existing Supervisory Enhancement Programme, with a focus on business strategies and system wide risks, rather than internal processes and structures.

#### Was shadow banking at the heart of the crisis?

**Not really** – where is the evidence to support such an increase in costs? The ratings agency issue needs to be covered much more carefully and is an issue we shall return to. If Lord Turner's suggestions are taken into account this will probably result in the demise of the ratings agencies as businesses. Basically the increased costs will result in an unexciting volume business becoming unprofitable and we would suggest that some or all will close. Now that would really be an achievement for Turner to take to his grave.

The report also calls for improved risk management and governance and the up-skilling of the regulator's own staff. As one of the causes for the crunch, Turner refers to a 'misplaced reliance

on sophisticated maths' which made it 'increasingly difficult for top management and boards to assess and exercise judgment over the risks being taken'. We have much sympathy with this point of view and do consider that misplaced reliance on inaccurate modelling is a problem. However once again Lord Turner must be stopped from throwing the baby out with the bath water. What we need is better modelling and better trained boards, perhaps including non-executive risk specialists. What we do not need is prejudiced ignorance.

Perhaps, with all the change and fresh thinking that is now being debated, it might be sensible for regulators and bankers alike to reflect carefully on the enormous reliance we do place on models and statistics to the exclusion of good old fashioned common sense. The Accord itself sets very clear objectives for any model – how often it should be tested and validated and the importance of understanding assumptions. The rules are already there – they just need to be applied in practice.

What will be interesting is to see how the global regulators agree or disagree

## What we need is better modelling and better trained boards, perhaps including non-executive risk specialists. What we do not need is prejudiced ignorance

to proceed. There was the appearance of broad agreement at the April G20 meeting in London. However when we move from the discussion stage to the 'development' and 'implementation' stages will the approach really be a united and integrated one or will it be local and, dare we say, protectionist. Let us hope that the Turner report is not the blueprint that he hopes it is. We do not believe it is the answer to the problems of the current world and also are concerned that the next crisis can be seen in the inappropriate responses being suggested to this one!

**'If Lord Turner's suggestions are taken into account this will probably result in the demise of the ratings agencies as businesses.'**

# INVESTMENT STRATEGY IN THE CURRENT ENVIRONMENT

**The extreme volatility combined with the dramatic value declines in the vast majority of asset classes over the past 12 months has stunned even seasoned investors. Further, the (originally) disjointed and separatist pronouncements by Governments and regulatory authorities following the collapse of the financial markets only increased uncertainty and has led to a concerted drive towards both cash and the most secure of investments, notably US Treasury Bills and gold.**

The investment community is beginning to emerge (although very battered and bruised) from out of the glare of the headlights to plan the path ahead. But what path and to where are we heading? If nothing else, the market correction has acted as a catalyst and in many cases has stimulated investors to adopt a “clean sheet approach” to formulate a plan for going forward.

A comprehensive investment strategy covers a multitude of areas including for example, asset selection and allocation, timing, investment risk, capital risk, currency risk, liquidity risk and (in many instances) reputational risk. These areas on their own can be complex and contain sub-areas that could be the subject of lengthy articles on their own. However, the aim of this article is to stimulate some lateral thought on a clean sheet basis to indicate how one can refine a search down to select targeted investment areas.

## Where to Start?

But first, how can one describe an investment? In our experience the rationale behind the purchase of investment assets can broadly fall into one of two categories– (i) those assets that are purchased on the belief that they can be sold in the future to someone else at a higher price; or (ii) those assets that it is believed will accrete in value over time (through capital appreciation and/or income). Obviously many assets fit into either or both categories – but it is the investor’s rationale (or attitude) behind the purchase that is the segregator, not the asset itself.

Some investors pay great attention to the economic cycle and select and rotate their investments depending on their views of the current position within a cycle and its length and strength. For example cyclical stocks such as steel manufacturers and steel stock holders are the classic early cycle out-performers, but are relatively unattractive later on as the cycle develops.

Another early cyclical play is the general retail sector and, as an example, look at the graph below of the Marks & Spencer PLC share price. For many market participants it may come as a surprise that the current share price is actually above the level of July last year - i.e. before the dramatic collapse in investor sentiment following the failure of Lehmans. Further, despite the company recently announcing a fall in sales of over 4%, the shares have risen by more than 50% from their lows in November – a classic example of the markets looking through the worst of the downturn and anticipating the economic recovery after a recession.



However, in this article, rather than engage in the merits or otherwise of sector and specific stock selection, we shall explore briefly some thought processes behind a few long-term investments ideas. We will leave the related questions such as asset allocation and risk mitigation to later articles.

## Fundamental Research

Fundamental top-down research can identify major discernable trends that can indicate areas where investors can concentrate their efforts to uncover

attractive investment opportunities. The following are three discrete examples selected specifically to demonstrate the breadth that free thinking can lead to.

## Nuclear Power & Thorium

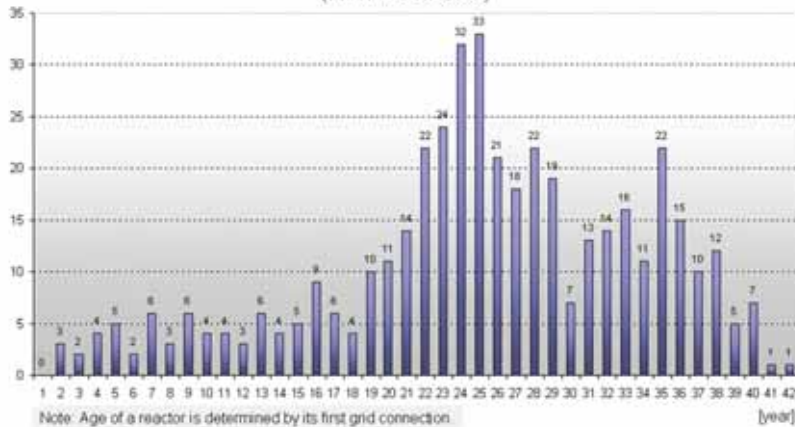
Since the Chernobyl incident in 1986, the paucity of commissioning new power stations has led to a sharp slowdown and virtual stagnation of global nuclear power generation. There were 340 nuclear power stations in operation in 1987, which grew to 438 in 2002 as plants under construction came on line (with Japan, S. Korea, India, China, France accounting for 62 of these) and currently number 436. Of these, 339 are over 20 years old with 127 of these over 30 years old – which is very significant considering the 40 year standard operating license period.

With world electricity demand forecast to double by the early 2030s - and by which time all but 72 of the existing nuclear power stations will have passed their 40th anniversary – nuclear power alone has the ability to satisfy this demand without the negative impact of carbon emissions. This process has already commenced with the number of power plants under construction rising from 33 in May 2008 to 44 today. Further evidence of growth comes from

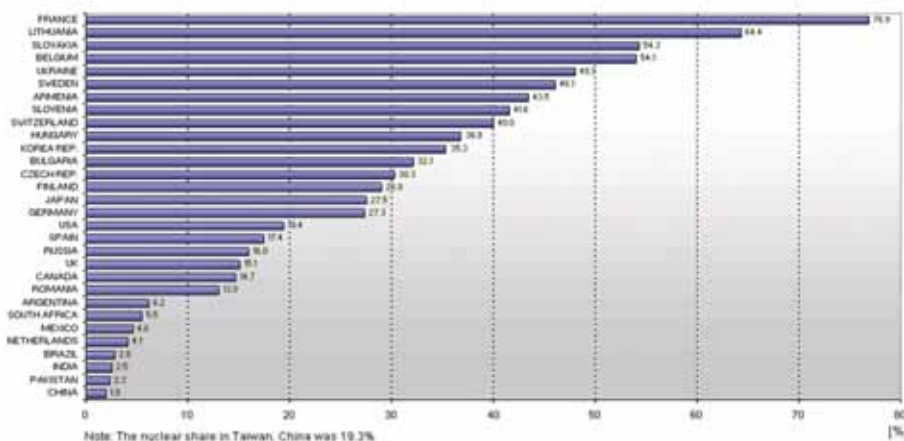


## INVESTMENT STRATEGY IN THE CURRENT ENVIRONMENT CONTINUED

**Number of Operating Reactors by Age**  
(as of March 2009)



**Nuclear Share in Electricity Generation in 2007**



Source: International Atomic Energy Agency

India which plans to increase the number of its nuclear plants by a factor of 4 times by 2020 and China by 10 times within the same period.

There are a number of ways investors may benefit from this explosive growth. These could include investing in the companies that specialise in nuclear power plant construction and operation. Examples of such companies include Westinghouse in the United States and both EGF and Areva in France. Of course it is for the investor or their advisors to undertake the necessary investigation. Another area might be the companies that mine and process the necessary fuel required by such nuclear plants. These would again include Areva in France, but also companies like Cameco and other specialist miners, such as Extract Resources. A final potential market would be investing in organisations

involved in plant decommissioning and the treatment and storage of the waste. Here apart from Areva, another company worth considering might be BNFL Plc.

#### Fuel Development

One of the biggest problems with nuclear power plants is that the waste fuel and its reprocessed by-products (notably plutonium) can supply the material for nuclear weapons. It was by using the waste from a Canadian-built reactor that India in 1974 was able to detonate a nuclear bomb. There is a need therefore for a new type of fuel to be developed for the nuclear industry which does not produce any such byproducts.

Thorium Power, a company supported by the US Department of Energy has been working in Moscow since the mid 1990s employing former Soviet

scientists and is researching and testing the use of Thorium as a replacement for uranium as well as developing the ability to retro-fit existing power plants to use the new fuel.

Thorium appears to offer the opportunity of a increase in yield and a 70% drop in the overall production of waste and more importantly an 85% fall in the amount of plutonium (not a gram of which could be used for nefarious purposes). Of course, it has to work....

With the largest known deposits located in Australia, North America, Turkey and India, an investment in a Thorium mining company could prove spectacularly profitable should the metal deliver on some or all of its promises.

#### China

The International Monetary Fund forecast in March this year that it expects GDP growth in China to be in excess of 6% during 2009. This continues the strong growth achieved since China began its move towards a market-based economy in 1978. Over this period of time its economy has grown by a factor of over 70 times with most commentators concentrating their reviews on the manufacturing cost advantages during this period and the resultant growth in exports to the developed world. However, with the strength of the Renminbi over the past few years and the recent collapse in world trade, this area has suffered drastically.

In our view, China still appears to offer extraordinary investment opportunities – but investors should concentrate on those entities that benefit solely from growth in the domestic economy, rather than dependence on international trade. With a growing domestic economy, the usual sectors should perform well (retail, consumer products and personal banking/ credit). An area that has strong growth fundamentals is the delivery of fuel for transportation, including both petrol stations and LNG stations. There is also a rapid growth expected in the use of alternative fuels for taxis, local authority and government vehicles - China Natural Gas has exposure to this area. The recently announced huge Government stimulus through capital and infrastructure spend.

Investors could look further away from the norm to identify areas of future growth that appear relatively

INVESTMENT STRATEGY IN THE CURRENT ENVIRONMENT CONTINUED

undiscovered. Demographics are a very useful investor tool and China is no exception in this. The IMF forecast that China will experience the highest percentage growth in the proportion of the population over 65 in the G20 countries between now and 2040, by a factor of over 3.5 times. This fact, combined with the growth in the wealth of the country would seem to indicate a strong rise in the requirements for the provision of healthcare and related services and products. The fact that the ratio of male births to female births is currently a very high 1.2 in China (versus 1.05 for the world as a whole), would also indicate that investment in the provision of healthcare services in China could be refined further still.

**UK Residential Property**

UK residential property has historically been an outperforming asset class for investors (see the graphs below).

**The current demand and supply fundamentals of the UK housing market are in significant disequilibrium, with a housing shortage that has been estimated to equate to between 7 and 10 years of supply** (Source: Joseph Rowntree Foundation, Barker Report, NHBC). Projections of the number of households for England & Wales, and London and the South East in particular, indicate that demand for all types of residential property is expected to increase rapidly over the next 20 years. There is no sign that the house building industry will be able to keep pace with these expectations even with the Government’s proposed house-building programme in the South East.

Certain commentators expect that the fall in UK house prices will emulate, or even surpass, the decline in US house prices. However, the characteristics of both the demand and supply profiles

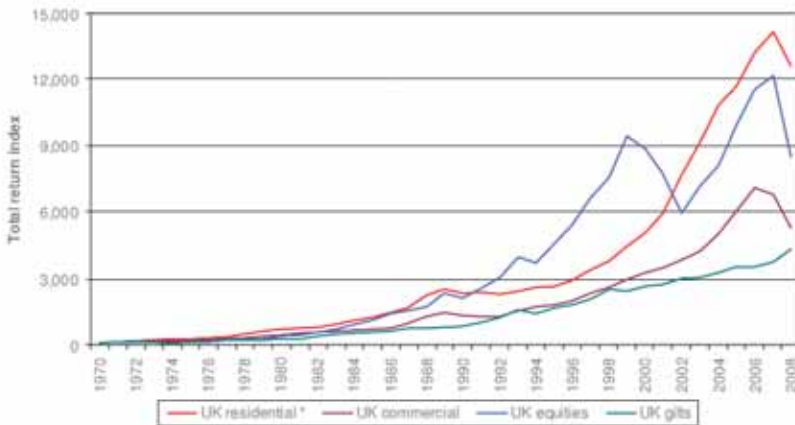
for the two markets are very different. Various studies have calculated that the price elasticity of supply for the US market is high (above 1) and is generally between 2 and 4 (meaning that a 10% rise in house prices will lead to between a 20% and 40% increase in the supply of houses) and could be as high as 20. In contrast, Kate Barker in her Interim Review, stated that the UK housing market has “a low elasticity of supply in response to price changes” (i.e. a 10% increase in house prices will lead to less than a 10% increase in the supply of houses). Further her report stated that not only do “UK households have a high income elasticity of housing demand, but a low price elasticity of demand”. This means (i) that as household income rises, the demand for housing rises faster; and (ii) that as house prices rise, demand for housing will not decline in proportion, but much more slowly.

**With a high single figure net yield, investors can afford to be patient in awaiting future capital appreciation.**

Currently, it is possible to acquire portfolios that yield up to 10% on cost located in and around London that address the market segments with the greatest projected excess of demand over supply. Investing in straightforward physical bricks and mortar provides its own comfort and risk mitigation as compared to derivative and leveraged investment products. With a high single figure net yield, investors can afford to be patient in awaiting future capital appreciation.

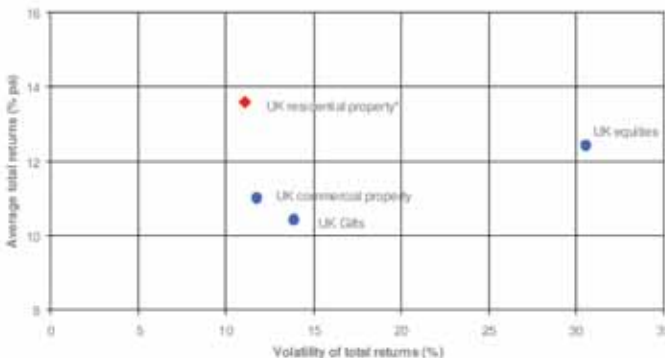
In conclusion, the recent market turmoil will, if nothing else, force investors to examine more closely the methods and rationale behind their selection of investment assets and /or investment managers. History indicates that if an improvement is sought, then one’s methods and constraints should change – or at least be examined afresh. It would be contrary to reason to expect things to change whilst doing nothing differently.

Total returns of UK asset classes 1970-2008



\* Source: see article for residential property; all other asset class data calculated as Nationwide house price index (excluding plus a 4% cap)

Risk and returns of UK asset classes 1970-2008



\* Source: see article for residential property; all other asset class data calculated as Nationwide house price index (excluding plus a 4% cap)

Source : Property Investigations, Nationwide, IPD

# CO-SOURCING OR THE NEW WAY TO ENSURE AUDIT EXCELLENCE

## HAVE WE REALLY BEEN THROUGH A RISK MANAGEMENT REVOLUTION?

Well, they're not our words. In fact they come from the South African Reserve Bank's guidance on the Internal Capital Adequacy Assessment Process (ICAAP) which was a key document in a consulting assignment we recently completed for a South African client. So we thought it would be helpful if we spent some time pondering on this so-called revolution. Has one really taken place and, if it has, what are the implications for internal auditors?

There is no question that a risk management revolution has indeed happened and life in a bank, as we knew it, will never be the same again. The events that led up to the revolution are spread over more than a decade and are well documented. They include the deregulation and globalisation of financial markets, business consolidations through mergers and acquisitions and greater concentrations of processing power in fewer locations enabled by the rapid pace of technological innovation. Most important, perhaps, is the emergence of risk intermediation and the proliferation of securitisations and derivative transactions and an ever increasing complexity of deal structures.

**‘There is no question that a risk management revolution has indeed happened and life in a bank, as we know it will never be the same again.’**

The truth is that this advancing sophistication of financial products and the markets where they are traded have combined with technological innovation to produce a new reality. Banks must now come to terms with the fact that when trades and transactions enter their operating environments they trigger risk exposures that can go well beyond nominal transaction values.

The current financial crisis can be linked to accumulating risk exposures which, in a number of well publicized cases, escalated to \$ billions without always finding expression in the affected banks' financial accounting and risk reporting systems. The Société Générale fraud and sub-prime failures are such examples. What is also evident is that such unidentified and unmeasured accumulations of risk were not attributable to any particular category of risk but a rather potent cocktail of all of them... credit, market, liquidity and operational.

These events served to heighten the awareness of banks and regulators to the need for the ongoing identification, measurement and management risks across the enterprise. The global regulatory response was Basel II complemented by

a requirement from most national regulators that banks confirm, in their Internal Capital Adequacy Assessment Process (ICAAP), that all risks have been identified and measured, are subject to appropriate management and are covered by sufficient capital reserves. There is also a direct impact on internal auditors as every regulatory authority around the world that we are aware of requires that the ICAAP be subject to regular internal audit.

But if the evidence suggests that conventional financial and risk management systems are simply not capturing and reporting all of a bank's exposures to risk, what chance does internal audit stand of identifying unreported and / or improperly measured risks during the course of their audits? The answer is quite a good one provided the audit plan is suitably risk-based and the audit team has the necessary skills and preparation. This may be easier said than done.

There are two ways Risk Reward can help:

### TRAINING

We have first class internal audit courses that have been developed by leading experts covering risk management, capital management and the ICAAP and our trainers are the best in the business. In the post 'Risk Management Revolution' era these are the skills that all your auditors must possess.

### CO-SOURCING

A solution that is becoming increasingly popular with our clients. Risk Reward will provide seasoned audit professionals who are experts in risk management and specialize in the technical areas where risk exposures are likely to be prevalent, for example, Treasury. Co-sourcing ensures you have the necessary skills available in your audit team without compromising any of your managerial integrity or auditing methods. Our experts will readily adapt to your auditing methods and approaches and all working papers prepared by them are your property and form an integral part of your audit's working papers. They can contribute to any aspect of the audit at your entire discretion... audit planning, programme writing, field work or report writing. As we are not a firm of external auditors there are no conflicts of interest. Indeed, on the occasions that there has been interaction with regulators they have positively endorsed co-sourcing.

# STRESS TESTING PRACTICES AND SUPERVISION

## What is Stress Testing?

The Bank for International Settlements (BIS) published a paper under the Chairmanship of Mr Klaas Knot entitled "Principles for sound stress testing practices and supervision" in May 2009. It stated that stress testing plays an important role in:

- providing forward-looking assessments of risk;
- overcoming limitations of models and historical data;
- supporting internal and external communication;
- feeding into capital and liquidity planning procedures;
- informing the setting of a bank's risk tolerance ; and
- facilitating the development of risk mitigation or contingency plans across a range of stressed conditions

We define sensitivity analysis as the unitary movement of key variables and the stress test as the impact of taking such movements to a plausible extent. Basically you look at the relationships that underpin the analyses and then look to see at what point the relationships fail to hold together. The point at which an accepted (or expected) relationship breaks down can be defined as the Stress Event. With previous Basel papers the soundness standard had been set at 99.9%, so it would appear appropriate to use the same confidence level for stress testing as is used for capital calculation.

Before looking at the principles themselves, one should ask a number of questions: Can stress testing really achieve what is suggested in the paper? Can stress testing achieve what is claimed? Is it forward looking? Well stress testing certainly looks to ascertain the financial impact of what might happen in a relatively unlikely event - but even if that event is found to be manageable, the evaluation is hardly likely to be accurate. Can it get over the model problems and the limitations of historical data? Since the stress testing uses these models extensively it surely cannot achieve that – and it is calibrated using historic data.

Communication is a real problem. Providing the populace with data to

deal with events that are unlikely to occur is likely to cause unnecessary concern. Even internally information needs to be provided with care – but externally?? Be scared – be very scared.

Risk tolerance is set by the Board and drives other behaviours as set out above. It is a view about the goals and missions of the bank and the appetite of management to the level of risk that they are willing to take. The stress testing will tell the bank the events that are unacceptable so that they can change the approach and avoid the loss occurring. This idea that stress testing needs to result in action is absolutely crucial and needs to be considered carefully by management. So given that the objectives for stress testing in the introduction are open to question – how about the principles themselves?

**Principle 1**  
**Stress testing should form an integral part of the overall governance and risk management culture of the bank. Stress testing should be actionable, with the results from stress testing analyses impacting decision making at the appropriate management level, including strategic business decisions of the board and senior management. Board and senior management involvement in the stress testing programme is essential for its effective operation.**

## Analysis

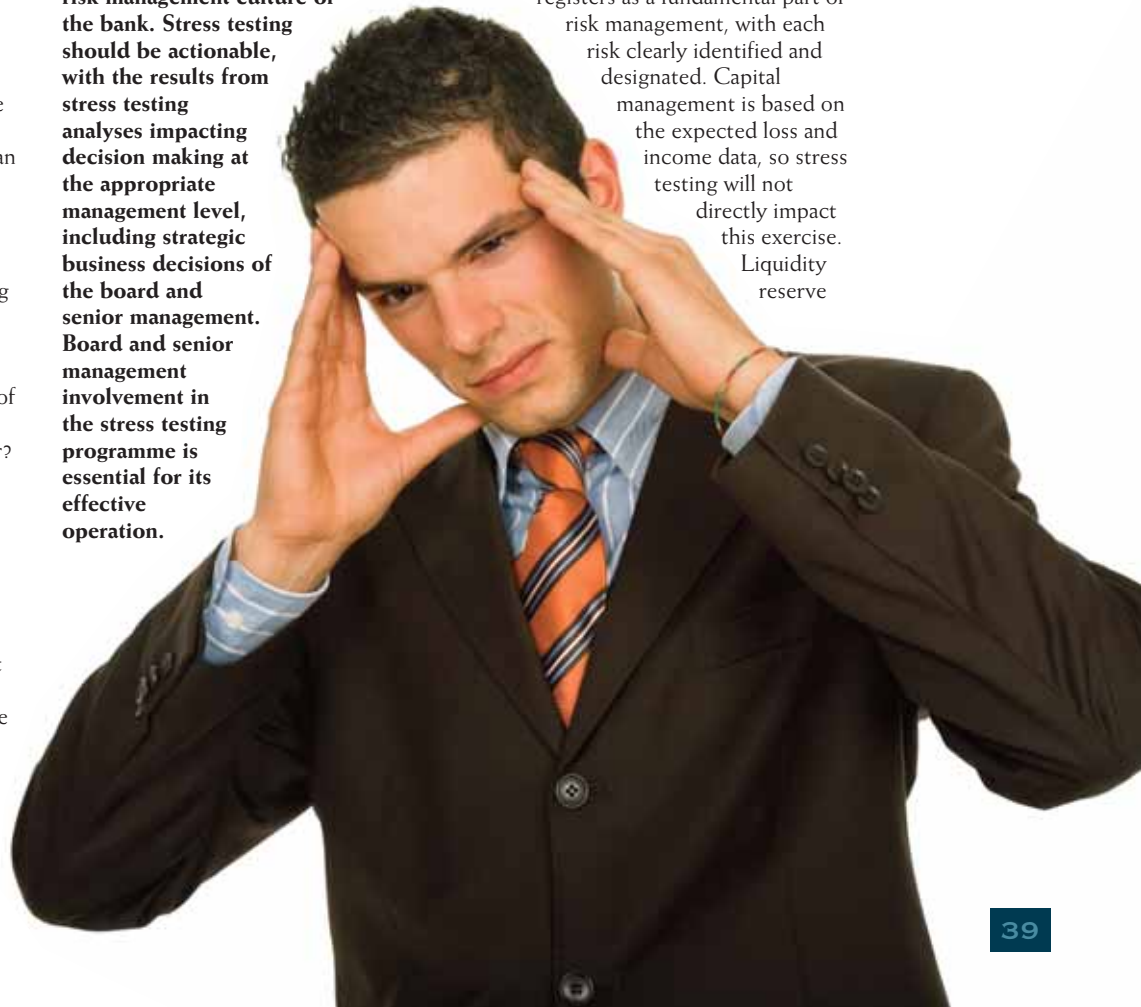
This focus on corporate governance is welcomed and important, operating as it does throughout all subsidiaries of the bank. If there is no action resulting from the calculations conducted, the entire process becomes meaningless – turning into a pointless mathematical exercise. The strategic options may well include ceasing some form of sales activity to alter the risk profile, for example.

## Principle 2

**A bank should operate a stress testing programme that promotes risk identification and control; provides a complimentary perspective to other risk management tools; improves capital and liquidity management and enhances internal and external communication**

## Analysis

This is the principle that is a little confusing. Banks should maintain risk registers as a fundamental part of risk management, with each risk clearly identified and designated. Capital management is based on the expected loss and income data, so stress testing will not directly impact this exercise. Liquidity reserve



## STRESS TESTING PRACTICES AND SUPERVISION CONTINUED

lines and strategies may be based on likely or plausible stress tests, but these also are at an extreme – not in the day-to-day. Communication can be dangerous - as has been seen in part in this crisis through the inappropriate explanations provided by journalists who should know better.

The paper does include the requirement that stress testing is fundamental within the internal capital adequacy assessment model or ICAAP –but this is about how the regulators assess the capital within a firm, and is in itself perhaps questionable. That the ICAAP must address such matters (together with risk appetite) will encourage banks to look towards such plausible events and is clearly welcomed.

**Principle 3**

**Stress testing programmes should take account of views across the organisation and should cover a range of perspectives and techniques.**

**Analysis**

This is where the BIS link stress testing with scenario analysis, without really adding anything new.

**Principle 4**

**A bank should have written policies and procedures governing the stress testing programme. The operation of the programme should be appropriately documented.**

**Analysis**

They state that the following should be documented:

1. the type of stress testing and the main purpose of each component of the programme;
2. the frequency of stress testing exercises;
3. the methodological details; and
4. the range of remedial actions envisaged.

**How bold of them!** These requirements really only represent common sense – which perhaps is not very common and can, of course, keep the internal and external auditors busy! Interestingly we are now through four principles without actually giving any real guidance to anyone as to what should be done in practice.

**Principle 5**

**A bank should have a suitably robust infrastructure in place, which is sufficiently flexible to accommodate different and possibly changing stress tests at an appropriate level of granularity**

**Analysis**

Is this really guidance? We recommend that the suite of stress tests should be conducted monthly where possible and reviewed quarterly to ensure that they meet the demands of the market and the business. This, of course, is real guidance, so clearly would not be in the principles.

**Principle 6**

**A bank should regularly maintain and update its stress testing framework. The effectiveness of the stress testing programme, as well as the robustness of major individual components, should be assessed regularly and independently.**

**Analysis**

They state that the independent control functions such as risk management and internal audit should also play a key role in

the process, although what this role should be is not specified. Of course internal audit will conduct such work as they consider appropriate, so that is clear. Risk management in many cases are conducting the stress tests and if the wording here is suggesting that this should not be the case, then it would be a major change for many firms – which perhaps in time will be appropriate.

**Principle 7**

**Stress tests should cover a range of risks and business areas, including at the firm-wide level. A bank should be able to integrate effectively, in a meaningful fashion, across the range of its stress testing activities to deliver a complete picture of firm-wide risk.**

**Analysis**

The integrated stress testing requirement has been stated before. However firms, and to some extent regulators, have still been looking in silos. The stress tests used for market risk, for example, were rarely considered in credit risk. This is both illogical and unhelpful, so these requirements may help to redress this issue.

**Principle 8**

**Stress testing programmes should cover a range of scenarios, including forward-looking scenarios, and aim to take into account system-wide interactions and feedback effects.**

**Analysis**

I think this really repeats previous principles.

**Principle 9**

**Stress tests should feature a range of severities, including events capable of generating the most damage whether through size of loss or through loss of reputation. A stress testing programme should also determine what scenarios could challenge the viability of the bank (reverse stress tests) and thereby uncover hidden risks and interactions among risks.**

**Analysis**

What is interesting here is the term “most damage”. This poor wording means that the worst case scenario should be considered. I suppose that would be 385,000,000% inflation, for example... but if that is not plausible what is the point of working it out? I suppose the sun could go out and everyone could die – any point in working out the impact? What would the action be? Move to Mars??

Earlier I suggested we aim for the 99.9% soundness standard for consistency and I would hope that is what the target in practice will be. Of course we do not expect to hit the target accurately – it is stress testing after all and at best an estimate.

The Other principles are:

**Principle 10**

**As part of the overall stress testing programme, a bank should aim to take account of simultaneous pressures in funding and asset markets, and the impact of a reduction in market liquidity on exposure valuation.**

**Principle 11**

**The effectiveness of risk mitigation techniques should be systematically challenged.**

**Principle 12**

The stress testing programmes should explicitly cover complex and bespoke products such as securitised exposures. Stress tests for securitised assets should consider the underlying assets, their exposures to systematic market factors, relevant contractual arrangements and embedded triggers, and the impact of leverage, particularly as it relates to the subordination level in the issue structure.

**Principle 13**

The stress testing programme should cover pipeline and warehousing risks. A bank should include such exposures in its stress tests regardless of their probability of being securitised.

**Principle 14**

A bank should enhance its stress testing methodologies to capture the effect of reputational risk. The bank should integrate risks arising from off-balance sheet vehicles and other related entities in its stress testing programme.

**Principle 15**

A bank should enhance its stress testing approaches for

highly leveraged counterparties in considering its vulnerability to specific risk categories or market movements and in assessing potential wrong-way risk related to risk mitigating techniques.

**Analysis**

Principles 16 to 21 provide the rules for the supervisors and really echo the principles for the banks. As you can see what they have actually done is provide some high level principles, then allowed some people to put in specific areas that concern them now. These are not forward looking concerns for what might happen in the future – for example a massive increase in interest rate volatility or a US default – rather they are things that have happened and would actually appear in a historic data set. So many words and so little content, but remember it will be reviewed “regularly and comprehensively”, so no doubt we will all be tying ourselves up in ‘Knots’ to make sure we comply. In doing so please do not lose sight of the objectives of stress testing – to enable you to see what might happen and then **GET OUT OF THE WAY**. This is not about counting the dead; it is about prolonging the living.

# ISLAMIC FINANCE

## AN INTRODUCTION

THIS IS THE FIRST OF TWO ARTICLES INTRODUCING ISLAMIC BANKING AND FINANCE CONCEPTS WRITTEN BY MARK ANDREWS, HEAD OF ISLAMIC BANKING AND FINANCE, RISK REWARD LTD. PART 2 WILL APPEAR IN THE NEXT RISK UPDATE Q3 2009.

There is much to both admire and praise about Islamic Finance. Its stated ethos and principles are probably as close to a model for truly ethical and moral banking that has yet been developed and actually implemented on a large scale.

Based on the Quran, Islamic Finance offers its clients Shari’ah compliant banking but the real meaning and to be fair, the true benefits of this, are often lost on Western observers, some of whom have tended to dismiss the sector as yet another example of fundamentalist religious doctrine applied to real life. But this cynical view is not only undeserved it is also mostly inaccurate. In reality, even a cursory study of Islamic Finance and its guiding principles will confirm it is indeed probably the most successful model for ethical banking to date. But it is not without its weaknesses, not least of which is whether any institution can

actually achieve the blueprint and live up to its full potential. The answer is almost certainly “no” but does this detract from its merits?

The whole concept of Shari’ah compliant banking is by Western terms still very much in its infancy. Some conventional banks have been trading for more than 400 years, most for at least 50 and it is often a surprise to many observers that modern Islamic Finance actually started in its present format as recently as 1985. Of course trading and commerce in the Islamic world is actually thousands of years old and pre-dates not only banking but Islam itself. The remarkable legacy of this ancient history is that the basic trading contracts have been refined over millennia and still survive, still work (in the main) and still underpin Islamic Finance.

The guiding principle of Islamic

Finance is to provide banking and financial services which are compliant with Shari’ah. Shari’ah is the Divine Law as revealed in the Quran (Book of Allah SWT) and Sunnah (words or acts) of His Prophet Muhammad (PBUH).

The primary authority for Shari’ah is the Quran which means “the text of God” and is actually a blueprint for running a society with detailed rules covering every aspect of a Muslim’s life including religious, family, community and of course trading obligations. It stresses fairness, honesty, integrity and morality to all, even towards non-believers, which comes as a surprise to some people.

Next is the Sunnah which means ‘well known path’. It covers the words, acts and tacit approvals of the Prophet (PBUH) as recorded at the time and subsequently and includes the Sayings

## ISLAMIC FINANCE CONTINUED

(Hadith) which He used to lay down the law and give moral guidance.

Next comes Ijma or “consensus/agreement” under which suitably qualified Islamic Scholars or Jurists are asked to rule on points of Shari’ah law where the answer is not immediately available from the two senior sources. Then follows Qiyas or “analogy”, which extends the law by applying common underlying attributes. Finally there is Ijtihad or “interpretation”, where Islamic Scholars are asked to rule on an apparently unique problem.

This structure seems to be comprehensive enough until you are reminded that the primary sources, the Quran and the Sunnah, are actually 1,400 years old and chronicle the moral, commercial and religious challenges of that time. Even though the Prophet (PBUH) was clearly a pragmatist and may well have accommodated some of the modern structural differences, it is obviously a matter of faith that the historical texts are doctrine and must be applied literally and strictly.

Having to apply ancient standards to modern banking is and has been a real challenge. Critics say it is disingenuous involving replication and retrospective “shoe horning” to make it fit, but this dismissive swipe cheapens unreasonably the value of what has been achieved in a very short time. If you study the subject in detail it is hard not to congratulate most scholars for reaching remarkably successful compromises even where the challenge seemed incapable of being resolved.

Underpinning Islamic Finance are several basic rules which cannot all be listed in detail in this article but the main ones are:

- No uncertainty
- Trade must be in real goods and assets
- Sellers must be honest, totally frank and actually own what they sell
- There can be no speculation or gambling
- No trade in activities or products considered Haram or un-Islamic

These prohibited activities are generally well known and include no trade in pork, alcohol, armaments, pornography, etc.

The most significant basic rule and the

one that perhaps most defines the ethos of Islamic Finance, is that all commerce must involve the real sharing of both profits and losses so that all parties, including the bank, have a real and tangible stake in the outcome of the transaction being undertaken. Consequently, and unlike a conventional bank which does, an Islamic Bank does not have a debtor or creditor relationship with its depositors and customers.

With one exception (Amanah or Trust accounts which are safe custody deposits and are not usually significant in numbers or amount) “depositors” are actually investors, all of whom agree to invest alongside or via the Islamic bank and whose return is based on a share of the banks actual profit and losses. Investors place money in the Islamic bank as trading partners and are given a profit (and loss!) sharing share based on the term, purpose, maturity, etc of the investment.

The actual investor accounts are based on the ancient contracts of Amanah, Wikala, Wadia, Mudaraba and Musharaka but are generally also reported as current accounts, investment accounts and special investment accounts by many Islamic Banks.

The key difference between Islamic “investors” and the “depositors” in a conventional bank is that Islamic investors agree to share profits and losses whereas conventional depositors do not, especially the loss part! In theory, therefore, a loss making Islamic Bank could and should pass on these losses to its investors who would see their investments reduced as a consequence.

So far, this has not been put to the test in a major way and it is debatable whether an Islamic Bank could actually pass on losses on a large scale, given that in reality most investors regard their stakes as a one way bet. Would it trigger a Northern Rock exodus? Possibly.

There are many myths about Islamic Finance principally that it is banking for Muslims only. This is not true at all. Anyone can open an investment account and apply for the full range of services on offer. Non-Muslims are welcomed.



The biggest challenge facing the sector is liquidity but not in quite the same sense that we use when looking at conventional banks. In a conventional bank liquidity is needed to repay depositors and liquidity “difficulties” usually means the bank cannot meet their withdrawal requests. It is fear that drives this process and usually triggers panic, which in turn starts a wholesale stampede as depositors jostle to get their money out first. Restoring confidence, very quickly, is the only solution, something the authorities failed to do with Northern Rock.

Faced with bank collapses in the West, all Islamic jurisdictions made it clear in unequivocal terms that they stood fully behind the Islamic banks in their territories. As these territories included some of the richest countries in the world, most Islamic investors are now satisfied that the risk of losing their money is minimal. Anecdotal evidence from various institutions suggests investors having seen the worst are now relaxed and no major withdrawals have been reported.

The liquidity challenge in Islamic banks is actually a treasury and profitability problem. There is no effective Islamic inter-bank market and banks cannot lend to or borrow from each other in conventional terms. As a result a bank that finds itself with too many investments or is short of cash, has limited options. The issues posed by this are beyond the scope of this article but typically surplus funds have to be held in low or nil yielding cash form and shortfalls are met by seeking discreet deposits from sovereign departments on a “lender of last resort” basis. This “super tanker” approach to liquidity management will be a real constraint on future growth.

### Islamic Finance: Part 2

In the next quarterly Risk Update we consider Riba or the banning of interest and the asset side of an Islamic Bank, including Musharaka which should be the star of Islamic banking but sadly is not.

# BASEL SETS THE STANDARD...IS YOUR BANK INTERNAL AUDIT FUNCTION UP TO IT?

**Peter J Hughes, Head of Risk & Internal Audit at Risk Reward Ltd, (former Head of Internal Audit, ChaseManhattanBanco, Brazil), is a risk-based bank internal auditor co-sourcing and training in emerging markets. Two recent assignments, one for a Gulf bank and one southern Africa bank led him to suggest here it is worth investing in a high quality, modern risk-based audit function as one major positive step towards meeting Basel requirements and preventing the next financial crisis.**

In October 2006 the Basel Committee on Banking Supervision issued its Core Principles Methodology which sets the standards for the prudential regulation and supervision of banks. Among its 25 principles is Principle 17 that addresses internal audit and control. Specifically, with respect to Internal Audit, supervisors will need to conclude whether a regulated bank:

- “has sufficient resources and staff that are suitably trained and have relevant experience to understand and evaluate the business they are auditing;
- has appropriate independence, including reporting lines to the Board and status within the bank to ensure that senior management reacts to and acts upon its recommendations;
- has full access to and communication with any member of staff as well as full access to records, files or data of the bank and its affiliates, whenever relevant to the performance of its duties;
- employs a methodology that identifies the material risks run by the bank;
- prepares an audit plan based on its own risk assessment and allocates its resources accordingly; and
- has the authority to assess any outsourced functions.”

Apart from setting high expectations, Principle 17 expects Internal Audit departments to have a methodology that identifies material risks and an audit plan based on its own risk assessment. In other words, there is an expectation that banks will have adopted risk-based audit approaches.

So what is risk-based audit? In his book Phil Griffiths<sup>1</sup> describes risk-based auditing as, ‘a process, an approach, a methodology and an attitude of mind rolled into one’. This may seem a little vague. But there’s a good reason for this vagueness because there’s no standard risk-based ‘one-size-fits-all’ audit template. Quite simply, it’s about being totally professional.

The best analogy for risk-based audit is to be found in a doctor’s surgery. The good, professional doctor is highly trained to recognise and interpret the symptoms of ill health, makes enquiries to understand what the patient is suffering or potentially could suffer, conducts an examination to identify and assess the causes of the suffering, decides on a course of treatment to remediate the causes and monitors the patient to ensure that the course of treatment is being adhered to and having the desired effect.

This doctor analogy applied to banking is what risk-based auditing is. Gone are the standard audit checklists and audit



programmes that are applied systematically and repetitively and, sometimes mindlessly. Gone are the audit reports that only discuss what the auditor did and found with the accompanying exception statistics. Gone is the auditor who sits in judgement of management and staff to declare them ‘satisfactory’ or ‘unsatisfactory’ or even ‘marginally satisfactory’.

Instead we have a new breed of auditor who has in-depth understanding of the business, knows how to identify and assess the risks inherent in the business, is able to apply expertise and creativity to suggest and agree with management how identified risks can be most effectively mitigated and writes audit reports that explain the risks with appropriate quantification, the actions agreed to mitigate the risks to acceptable levels and details of the cost benefit of such actions and their risk reduction impact.

Many banks now perceive a need to modernise their internal audit function. Indeed, Risk Reward is advising a number of clients on audit modernisation programmes and providing immediate solutions through co-sourcing<sup>2</sup> and training.

It’s a moot point whether higher standards of auditing would have prevented the current financial crisis and the concomitant failures, bailouts and nationalisations that affected banks of all sizes. But one thing is for certain... it’s probably worth investing in a high quality, modern audit function as one major positive step towards preventing the next financial crisis.

<sup>1</sup> *Risk Based Auditing* by Phil Griffiths, published by Gower Publishing Limited

<sup>2</sup> Refer to the article in the Risk Update Q1 2009 ‘Co-Sourcing or the New Way to Ensure Audit Excellence’

# THE BIAS RATIO – CAN FRAUD BE MODELLED?

Gary van Vuuren PhD, a risk and financial modelling expert asks the question can fraud risk be modelled and therefore predicted. The US\$50bn losses expected from the US firm, Madoff Securities (recently exposed as a giant pyramid scheme), are severe and extensive. Astonishingly, the fraud escaped regulatory scrutiny for years. The Securities and Exchange Commission claims that only monthly returns were provided and these did not warrant suspicion. Had the Bias ratio – a metric which augurs potential fraudulent activity – been applied, potential deception would have been signalled after only a few months of monitoring returns. Gary offers a description of the ratio and suggests a practical implementation scheme and then further illustrates this on a South African hedge fund returns.

## Introduction

The US hedge fund firm, Madoff Securities LLC, was recently exposed as a giant pyramid scheme and losses derived from its inevitable collapse are now estimated at US\$50 billion. Bernie Madoff – the owner of the firm – had provided investors with modest, steady returns, claiming to be generating these by trading in Standard & Poor's 500 Index options. All positions were closed prior to mandatory reporting dates so investors were denied access to the hedge fund holdings. Madoff was a former chairman of NASDAQ Stock Market Inc., well-known, popular and apparently above suspicion: individuals, charities and numerous 'funds of funds' had invested in Madoff Securities hedge funds, amongst them HSBC Holdings PLC and Banco Santander SA. The steady positive returns Madoff offered to his clientele – even in turbulent times – perpetuated the illusion of responsible investing.

The severity and reach of these losses have been disastrous. That the fraud escaped regulatory scrutiny – as well as

reported monthly fund returns, it could not have detected foul play.

The Bias ratio, introduced in 2008, is a new metric devised to highlight possible fund return manipulation. As such, the ratio may be used as an indicator (but not ultimate proof) of fraudulent activity. Despite its novelty, the Bias ratio would have identified suspicious activity early in the history of the deception (i.e. using relatively few monthly return data): results show that deliberate attempts by Madoff to skew smooth monthly returns would have been exposed after only eight months. The need for wide dissemination of just such early indicators is important, particularly given the fragile nature of the current market which is prone to overreaction to bad news.

The remainder of this review article is structured as follows. Section 2 presents a brief literature overview of the subject of the fraudulent manipulation of returns and other financial statistics. Section 3 outlines

the mathematics underlying the Bias ratio and Section 4 then explores some interesting features of the measure. A base case (a normal distribution of returns) is determined and other potential return distributions assessed relative to this base case.

The Madoff fund returns are then scrutinised using the Bias ratio and, for completeness, three different sets of hedge fund returns (which each employ a different investment strategy) are examined using the new metric.

Section 5 concludes the article.

## What the Literature Says

Several studies have reported strong evidence of a positive relation between fund performance and the subsequent flow of investor capital. Berk and Green (2004) interpreted this relationship as the entirely rational response to updated beliefs about fund managers' investment skills. Even after allowing for cumulative returns, investors exhibit an incremental sensitivity to the number of prior monthly losses – in other words, zero was found to be a powerful 'quantitative anchor'. In addition, in order to consistently achieve positive returns (no matter what the economic milieu), many institutional investors pursue 'absolute return' strategies (Waring and Siegel, 2006). Investors are also prone to exaggeration – particularly in the current fragile economic environment – and tend to overreact to bad news (for example, when a negative monthly return is reported, regardless of how small the negative return) lest worse news awaits.

The prevalence of misreporting in the hedge fund industry was investigated by Bollen and Pool (2008) who examined discontinuities in pooled monthly returns.<sup>1</sup> A sharp discontinuity was indeed detected at zero: the number of small gains was significantly greater than expected while the number of small losses was substantially lower. An interpretation of the anomaly was that hedge fund managers distort monthly returns to avoid reporting losses. If this construal were correct, subsequent fund performance should weaken since overstatement must eventually reverse (though this may not necessarily occur in the month immediately subsequent to the



suspicion, given the level of investor nous – is difficult to comprehend. The US agency responsible for fund oversight (the Securities and Exchange Commission) has claimed that, without significantly more information than the

<sup>1</sup> These returns were those reported to the Center for International Securities and Derivatives Markets (CISDM) database from 1994 to 2005. The CISDM database includes live and defunct hedge funds, funds of funds, CTAs, commodity pool operators, and indices.

overstatement month). Results from several tests concluded that, indeed, the discontinuity was due to temporarily overstated returns Bollen and Pool (2008). The discontinuity was also found to be prevalent in both live and defunct funds, so it was not simply a reflection of survivorship or backfill bias.

Approximately 10% of fund returns studied were distorted, indicating that overstating returns was a widespread occurrence. Though these small return distortions do not place investors at risk directly, they could indicate a more serious violation of managerial fiduciary duty. Fund net asset values were also overstated when returns were overstated resulting in new investors overpaying for entry to the fund (Getmansky, Lo and Makarov, 2004). If reporting of fund losses is avoided, investors may underestimate hedge fund risks and overestimate managerial performance. As a direct result, investors may allocate more capital to hedge funds than is warranted.

Getmansky, Lo and Makarov (2004) also report that the purposeful smoothing of hedge fund returns biased fund volatility downwards and the Sharpe ratio upwards.

Fund returns were also found to be positively serially correlated. Serial correlation does not necessarily indicate misreporting: positive serial correlation is sometimes recorded when marking to model those funds which are invested in illiquid securities even though there is no intention to deceive. Bollen and Pool (2008) speculated that a fund manager would be more likely to smooth losses than gains, resulting in greater serial correlation when funds perform poorly. Cross-sectional analysis indicates that the propensity for funds to feature conditional serial correlation is positively related to proxies for the risk of capital flight.

Carhart et al. (2002) examined the daily returns of equity mutual funds around quarter (and year)ends and found that funds with the highest year-to-date returns tended to feature larger returns on the last day of a quarter (or a year). These returns were largely reversed the following day. Carhart et al. found that some mutual fund managers temporarily inflated fund asset values by adding illiquid stocks to their positions on the final day of a quarter (or a year). Buying pressure

then increased trade prices and the entire position was re-valued upwards. Next-day reversals provided convincing evidence that year-end performance was distorted, since the impact of the trading activity on the last day of the year is only temporary.

Agarwal, Daniel and Naik (2007a) found that average hedge fund returns were higher in December than all other months. The incentive for fund managers to report higher end-of-year returns was measured and the December pattern was found to be more pronounced for managers with higher incentives.

Several studies have also documented evidence of discontinuities in corporate

principal components and neural networks have been used in evaluating this evidence, but these are complex to implement and the output is no less ambiguous than that derived from much simpler techniques (Derrig, 2005).

The Madoff fund has now been exposed as a Ponzi scheme.<sup>2</sup> These offer abnormally high short-term returns to entice new investors. The perpetuation of high returns requires an ever-increasing flow of investor funds in order to maintain the scheme. Ponzi schemes have been responsible for US\$ billions (Algo, 2009), but Madoff's deception dwarfs the remainder, as shown in Table 1.

**Table 1: Large Ponzi schemes sorted in order of decreasing loss amounts.**

Organization	Loss Amount	Settlement Date
Bernard Madoff Investment Services LLC	50,000,000,000	11-Dec-08
Princeton Financial Group	950,000,000	14-Sep-99
Mutual Benefits Corp.	837,000,000	31-Dec-04
Bennett Funding Group Inc.	750,000,000	01-Jan-97
RBG Resources	597,393,000	01-Jun-02
Towers Financial Corporation	500,000,000	31-Dec-93
InverWorld	325,000,000	01-Jan-99
Evergreen Security, Ltd.	214,000,000	31-Dec-01
Mustang Development	139,000,000	31-Mar-95
Gestion Privee Japon	102,000,000	31-Jul-05

Source: Algo FIRST Newsletter.

earnings or changes in corporate earnings around zero, including Hayn (1995), Burgstahler and Dichev (1997) and Degeorge, Patel and Zeckhauser (1999). Dechow, Richardson and Tuna (2003) as well as Burgstahler and Dichev (1997) found a discontinuity in the distribution of corporate earnings deflated by market capitalisation.

Large Sharpe ratios have been used to indicate possible fraud (KPMG, 2009:6). Asset purchase prices, returns, periodic growth rates, dividends and other relevant statistics have been employed to accurately assess asset return values, but for illiquid assets these may not be readily available nor reliable. The Bias ratio, introduced by Abduli (2006), may be used to overcome limitations inherent in other statistics and may also be applied to statistics suspected of manipulation. Some evidence of positive correlation between Sharpe and Bias ratios exists:

### Technical Details

The Bias ratio operates on return data with mean  $\mu$  and standard deviation  $\sigma$ . A closed interval  $[0.0, +1.0\sigma]$  and a half-open interval  $[-1.0\sigma, 0.0)$  is then defined. The fund return in month  $i$  is  $r_i$  where  $1 \leq i \leq n$  and  $n$  is the total number of returns in the data series. The Bias ratio (BR) is then defined as:

$$BR = \frac{\sum_{i=1}^n r_i \in [0.0, +1.0\sigma]}{k + \sum_{i=1}^n r_i \in [-1.0\sigma, 0.0)} \quad (1)$$

The numerator summation is over the closed interval  $[0.0, +1.0\sigma]$  while the denominator summation is over the open half interval  $[-1.0\sigma, 0.0)$ . The

<sup>2</sup> Fraudulent investment operation that pay returns to investors from their own invested funds or paid by subsequent investors rather than from profit.

BASEL SETS THE STANDARD ... IS YOUR BANK INTERNAL AUDIT FUNCTION UP TO IT? CONTINUED

small positive constant,  $k$ , is included in the formulation to prevent division by zero in cases where there are no returns reported in the interval  $[-1.0\sigma, 0.0)$ . In continuous terms, Equation 1 may be stated as follows:

$$BR = \frac{\int_0^{+\sigma} r dr}{k + \int_{-\sigma}^0 r dr} \quad (2)$$

The Bias ratio also has the following properties:

1.  $0 \leq BR \leq n$ ,
  2. if  $r_i \leq 0, \forall_i$  then  $BR = 0$  and
  3. if  $r_i > 0, r_i > +1\sigma, \forall r_i$  then  $BR = 0$ .
- This formulation is easily implemented in spreadsheet software: only return data are required as input.

**Data and Results**

To understand the operation of the ratio, first consider normally

distributed data with  $\mu=0\%$  and  $\sigma=1\%$  as shown in Figure 1. A histogram of the data is shown as well as the normal distribution curve on the same  $x$ -axis.

The area (using the histogram) over the intervals  $[0.0, +1.0\sigma]$  and  $[-1.0\sigma, 0.0)$  are identical for a normal distribution, hence using Equation 1,  $BR = 1.0$ . Return data manipulation should ideally be signalled by several indicators, rather than total reliance upon only a single – potentially fallible – one. There are many ways in which return data may be manipulated, these will be distributionally manifest in prominent ways, i.e. through the mean and the overall shape of the curve, e.g. the skewness and kurtosis. The statistical coefficients of skewness and excess kurtosis (i.e.  $>3$ ) are thus included in Figure 1 for comparison. For a normal distribution, both of these are 0: the values indicated in Figure 1 above are measured values.

Bias ratios (all  $> 0$ ) that could arise from an infinite number of ‘mean return adjustments’. It is important to note, however, that a Bias ratio  $> 1.0$  should not automatically trigger suspicion of wrongdoing. Skilled fund managers can easily (and often do) obtain Bias ratios  $> 1.0$  with no deception involved. It is the maintenance of these high Bias ratios for long periods of time as well as the magnitude of the excess above 1.0 that should provoke suspicion.

Assume now that the shape of the distribution is lognormal. Again, there is no incentive to adjust returns such that these returns are negatively skewed (i.e. a long tail to the left of 0%): any fraudulent modifications are likely to adjust returns such that the altered values are positively skewed, i.e. to the right of 0%. The situation is shown in Figure 3. Since the Bias ratio formulation assumes a normal distribution<sup>2</sup> (for the calculation of  $\mu$  and  $\sigma$ ), the ‘fit’ in Figure 3 is therefore not accurate.

Figure 1: Histogram of normally distributed return data with  $\mu=0\%$  and  $\sigma=1\%$  and normal distribution superimposed over the same data bins.

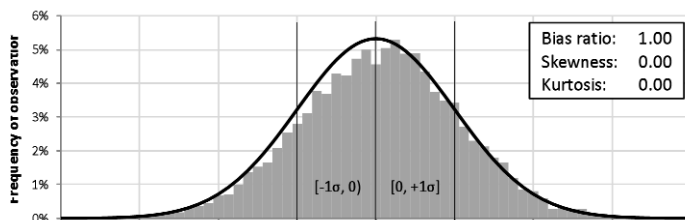


Figure 2: Histogram of normally distributed return data with  $\mu=+1\%$  and  $\sigma=1\%$  and normal distribution superimposed over the same data bins.

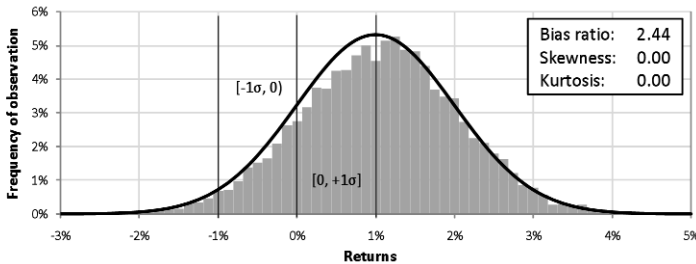
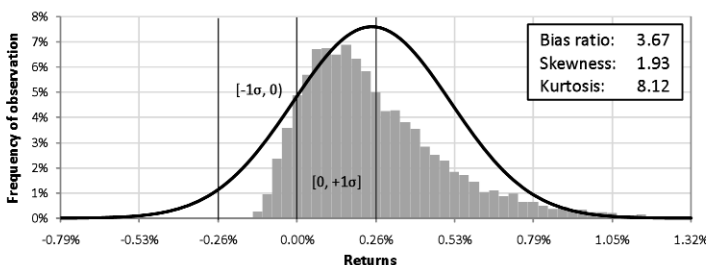


Figure 3: Histogram of lognormally distributed data. The normal distribution is superimposed over the same data bins.



Assume first that the shape of the distribution (in this example, normal) is maintained, but the average return has been altered. There is clearly no incentive to adjust returns such that the new average return is lower than the true mean, hence, any modification is likely to shift the mean in such a way as to only increase it. The situation is shown in Figure 2. The data are normally distributed, but now with  $\mu=+1\%$  and  $\sigma=1\%$ . The histogram and normal distribution curve are again shown on the same  $x$ -axis.

The areas measured over the requisite intervals are no longer identical. In the example illustrated in Figure 2, Area:  $[-1.0\sigma, 0.0) <$  Area:  $[0.0, +1.0\sigma)$  and Equation 1 gives  $BR = 2.5$ . Note that Figure 2 is for illustrative purposes only: there are an infinite number of

In the particular example shown in Figure 3, Area:  $[-1.0\sigma, 0.0) <$  Area:  $[0.0, +1.0\sigma)$  and Equation 1 gives  $BR = 3.67$ . In this case, in addition to the suspiciously high Bias ratio, the high positive skewness of  $+1.93$  (indicating highly skewed returns) and the large excess kurtosis of  $8.12$  both also warn of potential misrepresentation.

Turning to a practical example – a histogram of the monthly returns from Madoff’s Fairfield Sentry hedge fund recorded since 1990 are shown in Figure 4 facing. Superimposed is the best fit normal distribution.

In this case, Area:  $[-1.0\sigma, 0.0) \ll$  Area:  $[0.0, +1.0\sigma)$  and Equation 1 gives  $BR = 13.5$ . This value is particularly high although even a cursory glance at the histogram of returns shows suspiciously few returns below 0% measured over some 19 years. The relatively high positive skewness and excess kurtosis combined with the Bias ratio, should have provoked scepticism. The important conclusion is that these indicators are all measured using only monthly returns.

For completeness, the return series of three different strategies of South African hedge funds were investigated using this analysis. There are different quantities of returns: some were

<sup>2</sup> The area used in the Bias ratio formulation is, however, empirically derived.

measured over the period January 2000 to December 2006, others later, but all spanned at least four years ending in December 2006.

Although the skewness coefficient is highest in (b) – the market neutral fund – this value is not disproportionately high. Analysis indicates, however, that all three strategies report high Bias ratios and kurtosis coefficients. In particular, the Bias ratios of funds employing market neutral and fixed income strategies might hint at possible return manipulation. These results are not presented to raise the alarm on South African hedge funds, but rather to illustrate real-life examples of measured Bias ratios and point out the conclusions that may be drawn from high values thereof.

### Conclusions

The early detection of fraud – or at the very least – the early signalling of potential fraud is of paramount importance at all times, but particularly in the current economic milieu of falling asset prices, failed banks, reduced lending and broad market uncertainty. The Madoff Securities deception cost investors many US\$ billions and, at the time of writing (February 2009), these have not yet necessarily all been disclosed. The need for a simple, effective early warning metric is long overdue. Complex techniques for possible fraud recognition exist, but are usually difficult to implement and exact a heavy resource toll – both in skilled quantitative personnel and in computing requirements. The Bias ratio is a simple, robust technique for evaluating possible deception and may be easily implemented in simple spreadsheet software. Interpreted together with other (standard) statistical coefficients, it could provide the much-needed measurement currently sorely lacking in the market.

### For more on this topic

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Figure 4: Histogram of Madoff's Fairfield Sentry fund return data. The normal distribution is superimposed over the same data bins.

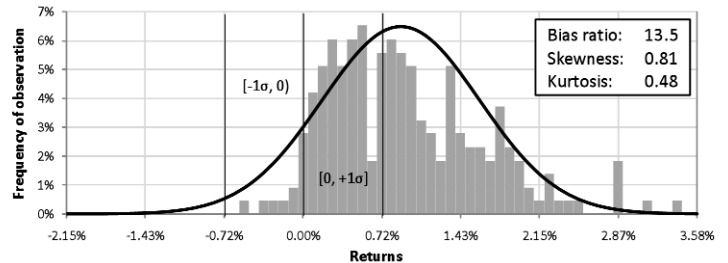
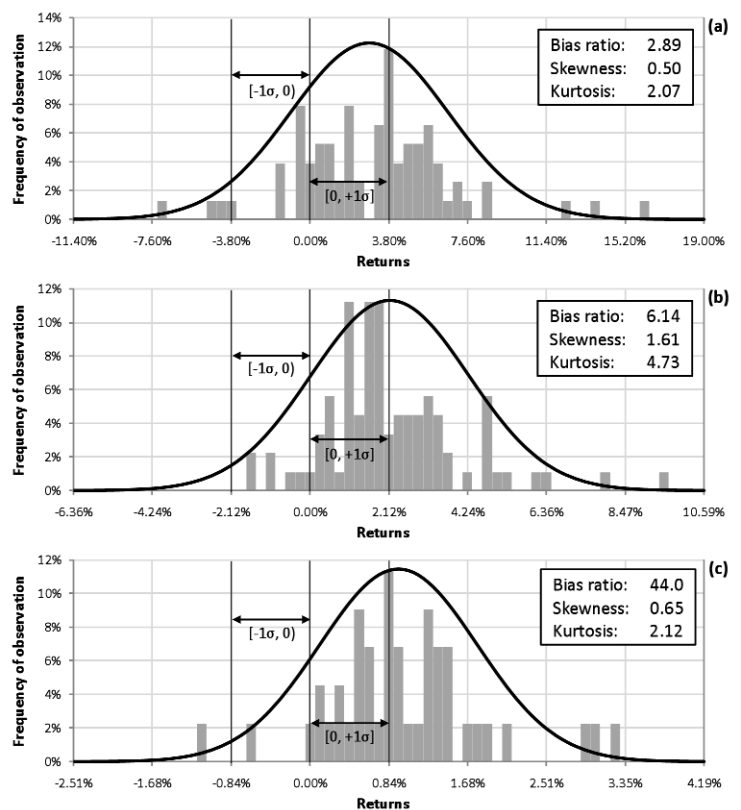


Figure 5: Histogram of three South African hedge fund strategy returns: (a) a long-short equity fund, (b) a market neutral fund and (c) a fixed income hedge fund. The normal distribution is superimposed over the same data bins in each case.



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# CROSS BORDER TRADING

**This article, written by Anthony J Smith, FCII, Head of Risk & Compliance, Risk Reward Ltd, focuses on why, for a financial services firm working across different jurisdictions, it is imperative to manage its regulatory footprint.**

Many investors consider putting their nest egg savings into offshore investment bonds to take advantage of 'tax free' roll up and protection from inheritance tax through trusts. However local tax requirements will still apply and there may be other restrictions on the way the policy is sold depending on the residency of the policyholder.

The impact of the global recession has brought increasing attention to the offshore financial services industry and brought greater attention by governments on the retention of precious tax revenues as the impact of the credit crunch reduces the amount of revenue through regular sources. Turning a blind eye is no longer an option and the chances of loopholes being closed have never been greater.

The 3rd Life Directive in the European Economic Area (EEA) covers 30 countries (EU member states, Norway, Liechtenstein and Iceland) and is designed to allow cross border trading of life assurance enabling firms to sell policies in other EEA countries without establishing a branch on what is known as a 'freedom of services' basis. Unfortunately tax rules and other local requirements have not been harmonised and insurers must abide by the 'general good' in each country where the policyholder is habitually resident. It makes no difference where the sale takes place e.g. a life company based in the Isle of Man sells a policy through an intermediary in Jersey to a Spanish resident (Spanish general good requirements apply).

To sell life policies to Spanish residents requires a tax representative based in Spain and translation of policy documents into Spanish. Just to complicate matters the policyholder will soon be able to select the contract law of their native state e.g. a UK ex pat resident in Spain could have a UK contract however all other general good requirements including taxation still apply.

General good also applies to other local requirements. Belgium in particular lays out whole areas of Belgian law in Royal Decrees that must be compliant with for its residents. Germany does not allow illustrations of with profit policies, Portugal requires a contribution to its insurance institute and Latvia expects firms to participate in its insurance guarantee scheme (IGS) or plan.

Policyholders also expect an insurance guarantee scheme (or plan) to be in place but only 8 EEA countries offer such schemes for life assurance with very restrictive cross border coverage. A German policyholder with a UK policy is not covered by the UK Financial Services Compensation Scheme (plan) and even if the UK firm had a German branch it would not be allowed to participate in the German scheme. This is probably in breach of Article 12 of the EC Treaty but so far has remained unchallenged. In Spain branches of EEA offices must contribute to the Spanish IGS but their policyholders are not covered. Many compensation schemes also fail to recognise individual policyholders with investments in life policies and treat the insurer as an investor with limited or no recognition by the

scheme. France allows foreign branches to participate in its IGS but so far no EU branches participate in the French Insurance Guarantee Scheme (FGAP).

When you multiply these scenarios across many different countries it soon becomes uneconomic to sell across the EEA without focusing on key markets and imposing strict residency restrictions on intermediaries. The new Payment Services Directive will also restrict recognition of life policies cross border to those providing 110% life cover unlike the 101% currently offered by many UK life bonds.

Of course the difficulties of the 3rd Life Directive only apply in the EEA but countries outside the EEA have their own requirements. Switzerland imposes stamp duty on policies for Swiss citizens and the multiplicity of regimes and requirements worldwide would require a large team of regulatory and tax experts to manage effectively. The offshore life industry in Europe has some very difficult questions to consider if it is to continue to trade compliantly. The recent G20 conference also focused attention on offshore tax havens where tax rates are often considerably less than developed countries.

Of course the life industry is not the only one affected by the dangers of cross border trading. In one Canadian province additional taxes are charged for non licensed brokers and unauthorised insurers. Whilst they allow them to operate for non standard risks the costs can be considerable with taxes as much as 10% and 20% respectively. The impact of failing to be aware of these local difficulties can amount to a considerable back tax bill to pay and a possible fine when the authorities find out making it essential to fully investigate the local market before going on risk.

For a financial services firm working across different jurisdictions, it is imperative to manage its regulatory footprint. This will begin with identifying where business is taking place and to whom services are being sold. Just because a sale takes place in one jurisdiction does not necessarily prevent it from being subject to the requirements of another. Often a deep understanding of the requirements of local law and taxation is essential to avoid the pitfalls of penalties and prosecutions for tax violations. As countries become even more sensitive about avoiding tax leakage the control of such risks will become much greater.



# WHERE IS REGULATION REALLY GOING?

HERE WE GO AGAIN. EVERYONE APPEARS TO BE POSTURING BASED ON THE THINGS WE THINK HAVE HAPPENED AND SO WE NEED NEW REGULATIONS. NEW REGULATIONS FOR OFFSHORE FINANCIAL CENTRES. NEW REGULATIONS FOR LIQUIDITY AND STRESS TESTING. NEW REGULATIONS FOR CAPITAL CALCULATION, BONUSES AND THE PRICE OF A CUP OF TEA....

Regulation always makes the same mistake – it looks at what has happened and designs a regulatory structure to stop it happening again. Of course there are two main problems with this approach:

1. What happened last time will not happen next time, and
2. Most of the politicians, regulators and reporters really have very little idea about what happened last time anyway.

Hearing a prominent reporter from a so-called reputable newspaper referring to the crisis starting in 2008, for example, is all part of the problem. Of course the crisis did not start with a credit crisis, but with a liquidity crisis, and this commenced in 2004. If you look at responses from 2008 you are looking at symptoms not causes, and acting on symptoms may actually make matters worse.

Put at its simplest we need more regulation like a whale needs a hole in the head.

## International Regulation

In the US there are 47 main regulators and probably a load of other minor ones. In the UK we have a single regulator for almost everything. Which is better? The answer is that they both have advantages and disadvantages. You clearly cannot regulate a major business by looking at a part that only represents perhaps 5% of the total. The risk of multiple regulators is that something gets missed. But the single regulator may not have sufficient skills to get into all of the issues of a specialist area. So what is best?

If we move towards international regulators for international firms, that is taking a view that they will somehow do a better job that is currently the case. The international regulators will



not be based in any one country and will take a high level view of matters. They are less likely to understand the role a firm plays in a local market, or the legal jurisdictional rules that apply. In short they are likely to have their findings ignored since they would be inconsistent with those of other firms in the market – perhaps creating an even more uneven market.

For us the best system is the lead regulator structure, where the Head Office regulators take the lead and coordinate the activity of subsidiary regulators – with each regulator ensuring that the firm maintains sufficient capital and liquidity locally to protect the local market. These are the rules that have only just been put into place, so clearly should be allowed to work for a while. If we move towards a central international regulator, we can

expect one of the next problems to be caused by exactly that change.

## Capital for Stress

There is a lot of nonsense being written about the capital in the system. I remind you that we started with a liquidity crisis that caused a credit crisis. There is no suggestion that if Lehman Brothers had 50% more capital, then it would have survived. Put at its most basic, when the reputation of the firm has been impacted (rightly or wrongly), it is going to fail and no level of capital is likely to help it. If we allow the regulators to put capital charges onto the banks at a stress (or near stress) level this will be an unmitigated disaster for mankind.

The argument goes like this. The banks will need to have more capital and will

## WHERE IS REGULATION REALLY GOING? CONTINUED

therefore not be able to lend, since each loan increases the capital they need. The cost of borrowing will increase and the availability decrease. The increased rates on loans will cause more companies to fail, unemployment to increase and poverty to follow. It cannot work and must not be allowed to happen. What is capital for? If it is to guard a bank against a rainy day, then capital rules should be reduced now, not increased. A rainy day? It is pouring outside. Neither the reporters, politicians nor regulators appear to really understand why we have capital and what its role really is. Forcing banks to keep capital that they cannot use is like buying a painting and leaving it in storage. It does not achieve anything or add to the common good.

**Stress Testing**

As you will see later the Bank for International Settlements (and most other regulators) has mandated stress testing. They have not really said what should be done, or how much, or even how. They just want some. Actually they want rather a lot. So how could the US government stress test for unemployment be exceeded within three months? Do they really understand what stress testing is about? I am not sure that they do. The tool needs to be used carefully and not as a capital calculator. You do not want the stress event to happen. If you know that there is a tree in the road and if you crash into it you will die, will you just say "Oh Well, Never Mind" as you drive headlong into disaster? I would hope that you might at least brake, or change direction – avoiding hitting the tree. So you would not need capital for stress testing – you need thinking. More of this later.

**More Regulation**

There is a call for more regulation – almost anything so long as there is more of it. The regulators and politicians are forgetting the law of unintended consequences: Man that changes rules needs to rule the changes. As you make changes there is greater stress within the business caused by changing roles, processes, systems and controls. Some of these will be effective, but other will be ineffectual. Basically the uncertainty resulting from change inhibits the control structures, distorts historic results and trends and can actually mask true trends that need to be acted upon.

Worse than that, the last problem will not be the next one. Whatever the focus of the regulations are this time,

will warn you what the problems will be next time. I would suggest that interest rate volatility, high interest rates and a default by a major Western country all would need to be factored into any new regulatory structure. If it cannot deal with that type of event then it will not provide the level of protection that we all require.

**Salary and Bonus Caps**

The greed culture is now working overtime. Is it true that some people were over remunerated for what they did? What about footballers or pop stars? Do you want to call up Wayne Rooney and tell him that he is only worth £200,000 a year? Banking is not unusual in paying large sums to so-called stars, and in those terms corporate CEOs are definitely stars. If you limit their remuneration in the banking sector some will pack up, others will go to places where they can earn more and a few will take the reduced remuneration and work just fine. What has that got to do with the crisis? Do you really think that the bonuses made any difference to the actions taken?

From experience we know that many people are actually not motivated by money, what they want is recognition and success. That means that even if they were not paid much they would probably have done exactly the same things. When you look at the new regulations see if they are driven by greed or malice, or whether they would really make a difference.

**What do we need?**

I would suggest a few changes are required:

1. We do not need a longer rule book, instead we need a better rule book. Too much regulation is almost worthless, really being little more than pointless motherhood statements. Other rules go to a level of detail which is nothing to do with risk. We need a risk based rule book that actually hits the big issues, rather than getting lost in massive amounts of detail.
2. We need better and more intelligent regulators who have actual experience of the areas that they are looking at. Too many junior staff have been relied upon to do work that experienced staff need to do.
3. We need enlightened debate that is not biased through ignorance, self

interest, envy or blind prejudice. This area is too important for that and reporters in particular need to take heed.

4. The schools need to be part of the solution providing education into financial principles such that key issues will be better understood.
5. Risk based modelling should drive risk management, regulation, internal and external audit. It should be at the heart of regulation, rather than a sometime peripheral figure that is dragged out only when there is a problem.
6. The rules should encourage more thinking and less modelling. Spurious data sets that mask real problems inhibit the ability of Boards to achieve their objectives.
7. We need to enhance corporate governance, raising the standing of internal audit and non-executive directors. We would recommend that all non-executive directors should be required to attend courses to understand the business they are doing and in particular should be required to attend risk management courses. One non-executive director with risk management expertise should be appointed to the Board to provide the level of independent scrutiny that is really required.
8. The Lead regulator concept should be made to work effectively, requiring formal coordination between regulators.
9. We do not need more transparency and reporting, instead we need better regulation and understanding. A set of 400 page accounts in tiny print is not transparency; it is purely a hernia for the postman and the end of another forest of trees. Clear information that is short, concise and easily understandable is the requirement.
10. Fair value as it was introduced was a disaster. Fair value is not market value when the market is not fair – neither on the way up, not on the way down. There should be a rule based on intrinsic value, being represented by expected future cash flows to amend the current rules which clearly do not work effectively.

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