10-2012

Raising the Bar

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POLICING DERIVATIVES

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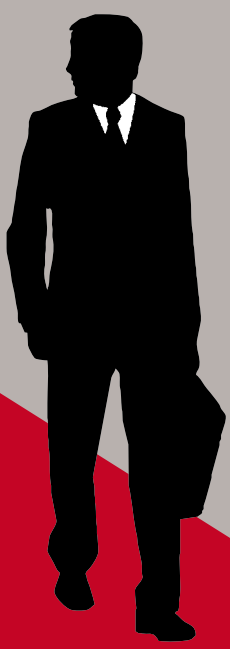
Quantum

FINANCE IN PERSPECTIVE

ISSUE 20 – OCTOBER 2012

RISK



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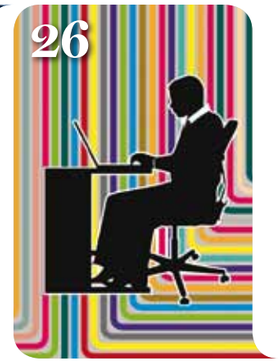

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Managing in a risky world

There is a broad consensus that major shortcomings in risk management were a primary cause of the financial crisis and that an overhaul of systems and approaches was needed to protect the global banking system.

In this issue of *Quantum – Finance in Perspective*, a quarterly magazine published on behalf of the Qatar Financial Centre Authority, we examine how banks are modernising their risk management regimes, and assess the quality of the regulations being introduced by regulators and governments.

Brian Caplen applauds the changes that have been made, but also warns that there is much "unfinished business". He says that it is proving difficult to find suitably qualified people to sit on boards, that systems for data collection and reporting need to be modernised and the culture within institutions changed. Banks, he says, are "struggling to put together a blueprint for the next five to 10 years".

Caplen also warns that the impact of new regulations may be diluted as banks may disperse risk into less tightly controlled parts of the financial sector. And **Brandon Davies** explains his concern at the way risk is now measured, warning that if the tools being used are inappropriate, "the result may be a very accurate wrong answer – and, consequently, disaster, as with the current series of financial crises".

Bankers also have to reckon with the fragile state of the global economy, which has failed to deliver the expected recovery. **David Smith** says that, while there are some grounds for long-term optimism, the immediate outlook is difficult, with the current slow-down spreading to the non-OECD world.

The institutions that cope best in these circumstances are likely to be – as they have always been – those which think innovatively. **Victor Smart** examines the growing role of analytics, the analysis of data to fine-tune decision-making, in banking strategy. He reports that complex modelling is now at the heart of pricing illiquid sophisticated financial instruments, while high street banks can experiment with new offers, tying in the profitable and freezing out the unprofitable customer.

We also examine the new business opportunities available in one of the world's last significant untapped economies. **William Selig** writes that while there is risk involved in entering Myanmar, "so there is also a risk that those who hesitate will be left behind when growth takes off".

Conduct unbecoming

Aaron Brown, a long-time observer of Libor, analyses the latest controversies involving misuse of the key benchmark borrowing rate and asks whether it is salvageable.

> *'There can be no sensible explanation for the fact that governments and regulators ignored the problem for five years and then decided on a solution that was obvious'*

LIBOR IS IN TROUBLE AGAIN. Following a series of scandals, the British government asked financier Martin Wheatley to head an inquiry into how the key benchmark borrowing rate is set. His grim conclusion was that "Libor is no longer fit for purpose". Wheatley, the managing director of the Financial Services Authority's conduct business unit, then released a draft discussion document setting out options for improving or replacing Libor.

This analysis of the role of Libor is long overdue. In the April 2008 issue of Quantum, I pointed out that Libor had broken in the previous August because banks were setting the rate much lower than their true borrowing costs and traders were manipulating it for advantage. However, I predicted reform efforts would get bogged down.

Although Wheatley has not ruled out scrapping Libor completely, the proposals he has put on the table are very similar to those I suggested four and a half years ago. The only major ones I missed were those to increase regulatory oversight of the process and impose tougher penalties for manipulation.

While I stand by my prediction that any fixes will be minor, I admit one major error. While I did not specify a timeframe, I assumed then that it would take about a year – or perhaps a little longer – to address the issues. The reality proved rather different. When I re-examined the subject last year, my conclusion was that no one cared about these abuses and that it looked as if there would be no consequences at all. There can be no sensible explanation for the fact that governments and regulators ignored the problem for five years and then decided on a solution that was obvious from the moment that Libor ceased to fulfil many of its key functions.

Time-lapse is not the only way the report seems disconnected from reality. Wheatley seems to write as if Libor is an official policy rate set by the UK government. In fact, Libor gained traction in the financial world slowly – essentially since the early 1960s – by having characteristics that set it ahead of competing rates. Changing Libor will change whether people use it, and for what purposes.

Libor has already been replaced as the main rate used by mathematical modellers of interest rates. When it broke in August 2007, it became impossible to calibrate a consistent forward curve using Libor rates. That meant it could not be used to price or measure the risk of any derivatives. It is obvious why bad Libor data would mess up interest-rate derivative calculations, but even other types of derivatives require future cashflows to be

discounted, so they need a consistent reference rate. Today modellers for the most part use overnight index swap rates, plus some other swap rates, eurodollar futures and treasury rates.

However, Libor remains the most common nominal reference rate in interest-rate derivative contracts. There is a problem when a contract is written in one rate and priced in another. People are willing to live with the problem because it is so important to have a single nominal reference rate for almost all contracts. If your corporate loan is tied to Libor, you want to be able to do an interest-rate swap referencing Libor, and if you trade that, you want a funding contract in Libor. Anything else creates what is called "basis risk". This is wasted risk, as it represents risk for both parties to a contract. Using a different rate for modelling creates a virtual basis risk, but people are always willing to assume a virtual risk to avoid an actual risk.

When Wheatley proposes using "alternatives to Libor for at least some of its current uses", he doesn't seem to realise that this action may destroy the main reason for people continuing to use Libor. In effect, replacing Libor for some purposes, or discouraging its use in general, might kill it altogether. That might not be a bad thing, except that we don't know what the replacement will be. Another possibility is that there will be multiple reference rates, creating a large pool of unnecessary basis risk.

'Replacing Libor for some purposes, or discouraging its use in general, might kill it altogether. That might not be a bad thing, except we don't know what the replacement will be'

On the other hand, if the UK decides to fix rather than replace Libor, it may change it in such a way that it becomes unsuitable for some current uses. For example, before Libor broke it was generally assumed it was close to the rate at which you could finance high-quality assets or invest cash. That assumption is important for a smoothly functioning financial system. If Libor is fixed, it may no longer represent both rates, and there may be no replacement that can do the job. If the rate at which assets can be financed is significantly higher than the rate paid on cash, it becomes a significant drag on financial markets. Libor helped force the two together, and an alternative designed by government might not be up to the job.

Another pitfall of reforming Libor is keeping it distinct from the nearly identical rate on eurodollar futures contracts. Libor is an official rate, set once a day without ambiguity, which makes it suitable for legal contracts and derivatives. Eurodollar futures measure essentially the same thing, but tick up and down in price many times a second, at the whim of traders. Libor is more stable and rational, eurodollar futures rates are more precise and market-driven. Proposals to make Libor more of a market rate could make it impossible to maintain the distinction, and thereby reduce diversity within the financial system. Short-term interest rates are so crucial to markets that it is important to have independent, redundant systems for measuring and controlling them.

The final major use of Libor is to monitor the health of the banking system. When Libor is higher than government bond rates, it means that the credit of the banking system is in doubt. The height and steepness of the Libor curve relative to other interest-rate curves gives important information about liquidity and jump-to-default risk. Any attempt to go in the opposite direction and make Libor a market rate – but making the setting more bureaucratic and rigid – could result in the loss of this information. There is a real danger that Libor could become the official story instead of the truth.

None of this is to deny that Libor needs some attention. But a sudden political response to five-year-old problems creates the danger that Libor will be destroyed or transformed into something useless. Yes, Libor engaged in behaviour unbecoming a reference rate. But financial markets need a tough reference rate, and a gentleman's rate may not survive. I wish the Wheatley report showed more respect and affection for its achievements and more caution in proposals to fix it. Libor has helped make the world rich, and a robust, trustworthy Libor can help make it richer.

BROWN'S WARNING...

People will talk about ways to make Libor setting more transparent. One idea will be to switch to a backward-looking rate, like EONIA (Euro Overnight Index Average, which has analogues in other currencies). Asking banks what they paid for overnight funding yesterday is less subject to judgment than asking them what they offer to pay today. Another will be to move to an auction process, or to use a market-set rate like the repo rate for standard collateral. Then there will be suggestions for various tweaks, like making the panel of banks larger or smaller or changing the aggregation rule.

My prediction is none of these proposals will be successful. There may be some nominal change, perhaps in the wording of the rules for Libor submissions, perhaps in a retrospective statistical report by the BBA on Libor submission consistency. But I think Libor will continue to be fixed in pretty much the same way as it has in the past.

Quantum, April 2008

Work in progress

BY BRIAN CAPLEN

Most banks now understand the importance of risk management, but despite their best efforts there is still serious work to be done before the system is capable of surviving whatever financial tsunamis may strike.

BANKING IS UNDERGOING a once-in-a-century transformation and, unsurprisingly, this is causing a massive upheaval and disruption, as well as some unintended consequences. The overhaul of risk management is central to this catharsis, with all leading institutions accepting that there were major shortcomings in the governance, systems and approaches in place before the financial crisis.

There is evidence that some significant changes have already been undertaken, with risk strategy now becoming a central part of board responsibilities. Risk teams have been expanded and given

real powers, while the chief risk officer (CRO) has much greater independence and status.

Old risk management models of measuring value at risk and economic capital – upon which firms were wholly reliant pre-crisis to flag up areas of concern, but which in fact had severe limitations – now form only part of a much larger armoury, including stress-testing and assessment of both counterparty and liquidity risk. Indeed, managing liquidity risk has probably received more attention from banks and regulators than any other facet of banking, a reaction to the way liquidity vanished from the system during the worst periods of the crisis.

Yet for all this Herculean effort, there is still unfinished business. Finding suitably qualified candidates to sit on boards is proving a challenge, and those that do make the grade complain of information overload. Measurement of risk has improved, but banks are struggling to produce effective metrics to apply to business units. Systems for data-collection and reporting that were designed for a different era may simply not be up to the job. Obtaining a total picture of a global bank's risks is thus proving elusive.

Then there is the thorny issue of culture: few banks can honestly say that they have embedded a risk culture from top to bottom. This would require all the right incentives to be in place, as well as the wholesale embrace by hundreds of thousands of employees around the world of a common code of ethics and integrity. This is clearly a long-term project that may require a generational change.

While this internal risk revolution is being carried out, banks have to deal with a raft of new regulations (of which Basel III is the lead component) that have an impact on their risk management. The main thrust of these regulations is to ensure that banks are properly capitalised, have ample liquidity and suitable business models, so that they can survive whatever financial tsunamis may hit them.

Add all this up and it becomes easier to appreciate why bankers are running around in circles trying to work out which aspect of their business to reform next, and why they are struggling to put together a blueprint for the next five to 10 years. The harsh reality is that a combination of the new regulations and the banks' own reassessment of risk makes many fundamental banking businesses unviable. Quite simply, the higher amounts of capital that need to be held change the cost/revenue dynamics. Operations that could be curtailed include such bread-and-butter activities as trade finance and small-business lending, as well as more specialised areas such as project and infrastructure finance. The mainstream bank of the future is going to be more narrow and conservative in its outlook. While some may feel this is a desirable result, given the excesses the financial sector indulged in previously, it does have serious implications for economic growth and, ironically, for financial stability.

There are two possible outcomes. Either bank lending becomes so severely restricted that firms cannot obtain the funds they need to expand and the economy flat-lines; or – and, possibly, as well – essential banking business migrates to unregulated institutions. These would include pension and insurance companies, asset managers, hedge funds and private equity firms, as well as internet start-ups that perform activities such as crowd funding and peer-to-peer lending. Collectively these players are known as the shadow banking sector, and there are obvious concerns that, if these businesses remain unregulated, there may be a massive build-up of risk which will have systemic implications. If so, this would be a major unintended consequence of all the new risk and regulatory initiatives.

Meanwhile, banks are obliged to concentrate on the detail of their risk management systems, and the evidence is that they are making reasonable headway in some areas. A recent survey of global financial services firms found that 87 per cent now have board risk committees (which was not the case pre-crisis), and 82 per cent of CROs report directly to the CEO or jointly to the CEO and the board risk committee. In the old days, CROs were often left out of strategy decisions, were not involved in the design of new products and often reported to the CFO.

'Bankers are running around in circles trying to work out which aspect of their business to reform next, and … are struggling to put together a blueprint for the next five to 10 years'

Conducted by Ernst & Young in conjunction with the Institute of International Finance, this is the third annual such survey since the crisis. This means it can plot the changes in thinking and operations over that time period. Altogether, 75 firms with head offices in 38 countries were surveyed.

There is now widespread acceptance in banking that a firm's risk appetite and risk strategy must be set at board level. But organising the institution to achieve that result and then having those edicts take hold throughout the firm can be challenging. Since the crisis, the role of bank board director has become far less attractive. The "good and the great" who would have taken up these posts may now shy away because they fear the bad publicity if mistakes are made. Many were in any case unsuitable for the job, but there is a shortage of senior executives with a risk and banking background to fill the gap.

Those who do take up the challenge often

find themselves overwhelmed. Staff whose responsibility is to inform the board are liable to heap thousands of pages of unedited and unstructured information on their desks. Rather than pick out the highlights, it is easier to give the board directors everything, as this enables staff to avoid criticism for leaving something out. The result is that board members are confronted with far more material than they can reasonably be expected to digest.

All the same, some banks are managing to put into effect frameworks that are quite specific in character and apparently robust. National Australia Bank, for example, has come up with a “risk appetite statement” consisting of three elements. These are the risk budget – the economic capital limit the bank must stay within; the risk posture, which considers the capacity and willingness to take risk in the different business areas; and risk settings which lay down the key operational limits.

Below board level, risk teams are being expanded; in the E&Y/IIF survey 57 per cent of firms said they had increased staff, with 36 per cent reporting that this would continue into the coming year. Even when the teams are larger, the tricky part is to improve the model and methods used, while at the same time not becoming so enslaved to one particular approach, with the result that the firm are blind to unexpected and unlikely developments – so-called long-tail events. The other big challenge is to give the different business units targets they can work with and to embed a risk culture into the breadth of an organisation. Much less progress has been made in achieving some of these aims.

The big change in modelling has been the wider use of stress-testing, which takes a more comprehensive approach to risk measurement than was previously the case. Old models were found to be lacking in their ability to pick up correlations between different asset classes. There was also insufficient understanding of counterparty risk, a lack of data to make good assumptions and, at the same time, too much reliance on pure models and data and a reluctance to ask awkward questions.

Stress-testing may address some of these concerns, but it is already becoming apparent that it has its own limitations. For a start, it is a long-winded and cumbersome business going through a bank’s portfolio loan by loan and item by item. It may take three months to complete and only be performed once a year, meaning that more often than not the information is out of date.

Worse still, stress-testing may not be sufficiently outward-looking and so can end up ignoring the major macro-economic risks facing a bank, such as in the European sovereign debt crisis. A recent McKinsey report points out that to account properly for that crisis in a stress-testing exercise, banks need to consider how they will cope with such things as a severe funding squeeze, economic stagnation, capital shortfalls and a lack of risk-free assets (if sovereign debt becomes tainted).

McKinsey recommends a five-step approach to scenario-planning and stress-testing, designed to bring all the various elements of the process together and to account for variable outcomes. One bank which may not be needing McKinsey’s help, however, is the Royal Bank of Canada, which runs more than 30 stress scenarios every night so that it can understand how the portfolio would fare under numerous different outcomes.

At the end of the day, no model can be considered fail-safe. Fundamental risk management must always contain an element of pure human judgment on what seems sensible. Banks must have a risk culture that allows such hunches to be listened to and not dismissed out of hand. This was woefully missing in the pre-crisis banking environment, and the case for saying that banks have now got this in their DNA is weak. Risk management is definitely a work in progress.

‘Measurement of risk has improved, but banks are struggling to produce effective metrics to apply to business units. Systems for data collection and reporting designed for a different era may simply not be up to the job’

Into the shadows

Banks are under pressure as asset managers and large corporations move onto their territory. The danger, says **Brian Caplen**, is that clamping down on banks will force the risk into darker corners.

THE BEST of many analogies for risk is that of someone lying down on a blown-up mattress or li-lo. The mattress changes shape as they move, but it still contains the same amount of air. Move and the air shifts again, but at no time does it disappear – unless the weight is heavy enough to burst the mattress completely.

Risk in the financial system operates in similar fashion. Regulate or push down on one part of the system and the risk moves elsewhere – maybe, if you are unlucky, to a place where it is less controlled. If the weight on the financial system is too much there is the potential for a blow-out – hence the recent financial crisis.

In fact, the root cause of the failure of regulators and banks to anticipate the crisis was their inability to identify accurately the location of the risk in the system. The danger is that, by clamping down on banks and forcing them to conform to extensive and demanding regulations, regulators will shift the risk to other institutions. Thus there are real grounds for concern that history will repeat itself.

It seems unlikely that even the new breed of regulator – the so-called macro-prudential regulator, whose job is to look at the build-up of risks in the entire system – will pick this up. It is natural that regulators will be guarding against a new banking crisis, but they will be less astute when it comes to other forms of risk, such as asset managers taking on banking business and hitting problems. This, however, is now a real possibility.

Banks are reassessing their business models in the light of the new regulations they face, especially Basel III. Many activities that were considered mainstream in the past now look unattractive, because banks are being asked to hold much larger levels of capital and the pricing has not kept pace. The obvious answer is to ditch these functions – which include small and medium-sized business lending, structured credit and higher risk lending, trade and project finance – and focus on a narrower range of activities that still return a decent profit.

The result is that big names from asset management and even corporate players are moving more heavily onto this territory – sometimes to make money, but also as a way of providing a full service to customers being shunned by the banks. Asset managers in the mix include Blackstone, whose credit arm GSO has become a major lender to sub-investment grade companies on both sides of the Atlantic, and Britain's M&G Investments, which launched a UK company-financing fund back in 2009 on the basis

> *'The lessons we should take from the crisis are that regulation creates its own distortions and that, when it comes to the failure of key financial institutions, governments are likely to be on the hook'*

'Big names from asset management and even corporate players are moving onto this territory – sometimes because they see an opportunity to make money, but also as a way of providing a full service to customers'

that, with the demise of Lehmans, the entire financing model had changed.

BlackRock – which split from Blackstone back in 1994 and, with its acquisition of Barclays Global Investors, is now the largest money manager in the world – also saw its role evolve post-crash. CEO Larry Fink became the sage to whom other Wall Street bosses turned for advice and help. Consequently, BlackRock played a huge part in the bailout process and now oversees the $130 billion of toxic assets the US government inherited from AIG and Bear Stearns. It monitors the balance sheets of US housing finance vehicles Fannie Mae and Freddie Mac and has a critical role in the $1200bn Federal Reserve scheme to kickstart the US housing market.

The firm has also become a large corporate lender. It recently announced that it was moving into mid-market private equity, where it will invest directly into businesses. Advisory arm BlackRock Solutions assists clients with debt restructuring and valuations of structured credit portfolios – both businesses that banks like to take on.

On the corporate side, German engineering group Siemens, which has long had a financial services division, set up banking operations in 2010, enabling it to undertake SME lending and project finance. General Electric and Rolls-Royce, equally, have long financed suppliers, but they are likely to expand this role as the banks retreat.

Basel III is particularly harsh in its treatment of trade finance. Thus for large corporations, with their global scope and financial muscle, this would be a natural area to move into. Purists may argue that this is just the natural operation of the market, with more nimble players moving in to exploit opportunities that less competitive institutions can no longer exploit.

The problem with this analysis is that it sidesteps the fact that banking has never been an activity ruled entirely by market forces. Even before the crisis it was heavily regulated, which in itself led to perverse outcomes such as the huge growth in off-balance-sheet activities. Then, worst of all from a free market standpoint, banks that hit trouble were rescued by governments and did not pay for their mistakes. The result is a massive moral hazard problem.

THE LESSONS we should take from the crisis are that regulation creates its own distortions and that, when it comes to the failure of key financial institutions, governments are likely to be on the hook. It was a failure to appreciate this first point that led to regulators missing the build-up of risk in the system. Banks developed off-balance-sheet structures, such as securitisation of subprime mortgages and other receivables, as a way round the capital restrictions that would apply if they held these assets directly on their books.

Banks also got round the rules on capital by raising hybrid capital, which was accepted by the regulators as equity but treated by the markets as debt. When the crunch came, this hybrid capital did not have the loss-absorbing capacity of equity and banks were left undercapitalised.

On top of that, banks succeeded in diverting regulators' attention by inventing a philosophical basis for the new modus operandi. It was called "originate and distribute": the argument was that the originators of loans and mortgages distributed them around the system to the market participant best able to cover the risk. Risk was dispersed and so it was less likely that an individual bank would get into trouble.

Ironically, when this edifice fell apart (both the structures and the ideology) it was the supposedly safest part – the triple-A bonds backed by subprime mortgages – which came unstuck first. In this latest regulatory iteration, there is clearly a danger that the mistakes of the past will be repeated, because there is a belief that the risk is accounted for when in fact it has been hived off elsewhere – for example, to asset managers and corporates.

Regulators may also be deluding themselves in thinking that if one of these firms hits trouble, market forces will function and the institution be allowed to fail, thereby removing the moral hazard. This is to forget that by the time a non-bank gets into difficulty, the build-up of risk will most likely be so large as to threaten extensive damage to the financial system and the real economy. Because that has happened, politicians will become involved and their concern will be in seeing that voters do not lose money. The fact that the firm in question is not a deposit-taker may be irrelevant by then.

Asset managers argue that part of their advantage in making long-term loans and investments is that their funds from investors are also long-term. This means that their assets and liabilities are matched, in contrast to banks whose depositors can demand their cash back instantly. But if the new model takes off, how long will it be before the demand for funds is so great that short-term vehicles become the preferred method of raising cash?

Regulators are busy designing a system that they hope will allow banks to fail rather than be rescued by governments. This consists of separating out retail from investment banking and forcing banks to write resolution plans, or "living wills", detailing how they can restructure the business in a crisis without support and with minimum market disruption. Of course, no-one can know if this will be successful until it is put to the test in a crisis. But, as with all the other regulatory initiatives, it does not apply to the shadow banking sector.

Regulators are at least discussing how to address the problem of shadow banking. At June's G20 meeting of world leaders in Mexico, the communiqué expressed support for the Financial Stability Board's work "to strengthen the oversight and regulation of the shadow banking system". But this process is in its early stages and policy recommendations will not be developed until the end of 2012. Given that major banking regulation such as Basel III is being phased in over a six-year period to 2019, the time horizon on shadow banking may end up going out to 2030. By that time it may all be too late.

Tools of the trade

Measuring risk effectively is vital. But if the tools that are used to do so are inappropriate, the result may be a very accurate wrong answer – and, consequently, disaster, as with the current series of financial crises.

BY BRANDON DAVIES

IT IS OFTEN STATED that it is impossible to manage what cannot be measured. It is indeed far easier to manage something if you can measure it – as I have had to do many times in a 40-year career in banking – though there is one major problem: you must be using an appropriate measure. Note the use of the word appropriate rather than accurate. If the measure is not appropriate, the result may turn out to be a very accurate wrong answer.

The appropriateness can be gauged by how well a measure does the job of describing the thing to be measured. So the key question is whether the current measures of risk live up to this standard. The answer is not immediately obvious. Many models of risk clearly did not work well in the current series of financial crises that seem to have become a permanent feature of the financial world since the collapse of Lehman Brothers in 2007.

But does that point to problems with the measure, as well as with its application? There is an increasingly strong argument that this is the case, as our problems began when we started developing tools for managing risk. Some 20 years ago a slide (see chart p20) was used to explain to a major bank's board committee some of the problems it was having with measuring risk. The slide focused firstly on the problems of describing an appropriate distribution of prices to fit the relatively sparse historic data available in relation to the assets being measured. But it also covered different risk measures, as it showed the mean/variance and expected shortfall as a measure of risk.

The reason for using two definitions was that bankers and regulators were uncertain how to define risk, but felt that the required measurement tool was dependent on the definition adopted. Risk was defined in two ways. Firstly, what is the maximum loss – within a given probability – that an institution could suffer as a result of holding the given asset portfolio

over a given time period? Or, secondly, what is the maximum loss that an institution could suffer as a result of holding the given asset portfolio over a given time period? The difference is subtle but very important – in essence, should risk be measured as an absolute number, or calculated while constraining the results within a certain probability of outcome?

As time passed, banks became very confident about how to define risk, opting for the first of the two definitions, and they also decided to use value at risk (VaR) as the measure. VaR is a constrained measure – it looks at risk as variance measured at some percentile from the mean (average) outcome. This constraint made for a very much more simple measure of risk than would have been the case if extreme outcomes were assessed.

However, in many ways this was the less intellectually defensible of the two definitions and measurement tools. Anyone who defines risk usually does so in terms of the worst possible outcome. Yet banks decided to measure financial risk at some lesser point. The first reason for this approach is that the risk of financial loss is difficult to measure, even if it is a matter of assessing a relatively simple portfolio of assets.

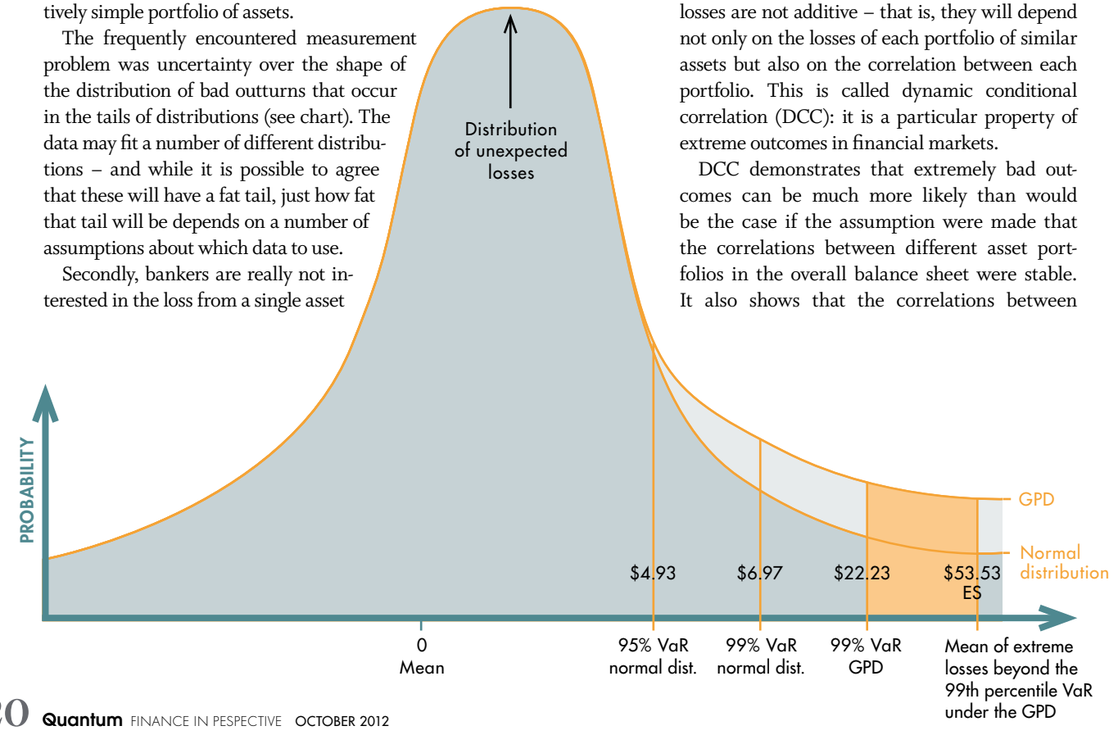
The frequently encountered measurement problem was uncertainty over the shape of the distribution of bad outturns that occur in the tails of distributions (see chart). The data may fit a number of different distributions – and while it is possible to agree that these will have a fat tail, just how fat that tail will be depends on a number of assumptions about which data to use.

Secondly, bankers are really not interested in the loss from a single asset or portfolio of similar assets. Their real concern is in the absolute maximum of losses that could be faced from holding the entire asset base. This means the interest is not in measuring from the mean to the chosen percentile, but rather from the furthest point of the distribution back to the chosen percentile. Measuring risk in this way is usually represented by the expected shortfall measure.

‘While scenario analysis is intuitively appealing to many, it is no more than a “best guess” which is highly likely to be wrong as the future is not simply unknown – it is unknowable’

However, once large and complex portfolios of assets have to be assessed, there is a very serious problem in looking at maximum losses. The losses are not additive – that is, they will depend not only on the losses of each portfolio of similar assets but also on the correlation between each portfolio. This is called dynamic conditional correlation (DCC): it is a particular property of extreme outcomes in financial markets.

DCC demonstrates that extremely bad outcomes can be much more likely than would be the case if the assumption were made that the correlations between different asset portfolios in the overall balance sheet were stable. It also shows that the correlations between



individual asset portfolios change (are dynamic), and change differently, depending on circumstances (are conditional).

The tail risk ceases to be static and becomes dynamic. To put this statistically, we might find in our dynamic world that a seven-standard deviation event is almost inevitable given that a five-standard deviation event has happened, whereas looking at a static distribution in similar circumstances the seven-standard deviation event is still very unlikely.

There are challenges for those looking to use this measurement tool, including describing the event or events which trigger this dynamic correlation process, and measuring how the correlations will change given a certain set of – often evolving – events. One such, which has been connected to DCC, is dramatic changes in the liquidity of markets known as liquidity black holes (see box). Recent events in international markets do seem to validate that liquidity is an important factor in driving changes in asset portfolio correlations.

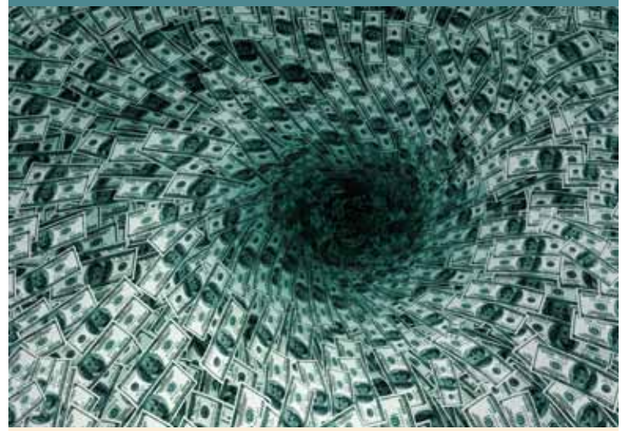
So it is necessary to find ways of measuring how correlations will change given a certain set of events. The first principle is that fat tails and DCC are related concepts, as they are the result of relationships between the observed parameters (say, losses or asset prices) that are not normally distributed. Characteristically, these non-normal observations are recorded in the tails of distributions – which means they are characteristic of extreme values.

Measuring these extreme values has taken on more importance in addressing a wide range of problems in finance, notably in credit, options pricing and risk modelling. It has become increasingly understood that in all these areas many risk and pricing models assumed linearity of results, whereas that was not necessarily the case.

In credit, the example of both structural (Merton) and reduced-form (Jarrow) models produced theoretical values that differed from those observed. In options, pricing the “smile” effect clearly showed that there were effects on options prices that did not conform directly to models based on completeness of markets and the application of arbitrage-free conditions.

To address these problems, there was a growing trend towards the use of copula mathematics – tools for modeling dependence of several

LIQUIDITY BLACK HOLES



A black hole in space is a region of powerful gravity surrounding a point of infinite density, called a singularity, formed from the collapse of a supernova. Nothing, not even light, can escape after falling past the event horizon, the “edge” of the black hole.

Liquidity black holes are not simply instances of large price changes – releases of important economic data are frequently accompanied by such changes, and are arguably a sign of the smooth functioning of the market as it adjusts rapidly to new (exogenous) information. Liquidity black holes appear as large price changes that seem to gather momentum from the endogenous response of market participants.

Whilst the price falls may initially be generated by shocks from outside the price-setting system (exogenous events), they are reinforced by forces that come from within the price-setting system itself (endogenous events). Endogenous risk appears where there is a conjunction of individuals reacting to their environment and where these reactions affect the environment.

How can market distress feed upon itself? When asset prices fall some dealers will suffer losses, at or close to their loss limits. This causes them to sell assets for fear of exceeding their limits, which in turn causes further rounds of selling as other dealers get close to their limits, creating a downward spiral in asset prices.

Portfolio insurance based on dynamic hedging rules is one well-known example of actions that can cause such feedback. However, any widespread sale of an asset class can cause a liquidity black hole.

Perhaps the best example came in the 2008 financial crisis that followed the collapse of Lehman Brothers. The widespread fear that a number of mortgage-backed securities (MBS) and other collateralised debt obligations (CDO) might suffer defaults in their underlying loan contracts far above those commensurate with their credit ratings resulted in just such feedback effects. As institutions sought to sell these securities, the result was (self-defeating) feedback that led to the total drying-up of both the new issuance and secondary market for these securities.

One of the problems liquidity black holes create is that as asset markets dry up they can no longer price the assets in any rational way. This creates the need for regulatory intervention to restore an active market and efficient price discovery. In the 2008 crisis this took the form of the troubled asset relief programme (Tarp).

'While it is possible to understand the issues produced by dynamic conditional correlation in banks' asset portfolios, there is still a long way to go before it offers a reliable statistical methodology for measuring that risk'

random variables – which could be used to look at the dynamics of the underlying asset (or assets). Technically, copulas enable bankers to express a joint probability distribution as a function of the marginal probability distributions. This means it is possible to bypass the problem of using correlations, so it is an effective way to represent co-movements between variables if they are linked by linear relationships – but not if the co-movements are non-linear.

One of the most common uses of copula mathematics in finance was by rating agencies to price collateralised debt obligations (CDOs), including mortgage-backed securities (MBS). In the crisis that resulted from the collapse of Lehman Brothers, these models proved to have significantly underestimated the joint default probabilities of the mortgage assets within the individual MBS.

The problem of these models lay in the choice of a Gaussian copula to replicate the marginal probability distributions. Whilst we commonly associate Gaussian distributions with randomness, this is a very constrained form of randomness (see box), in that the Gaussian distribution is normal. In practice this proved disastrous, as the defaults proved to be very fat-tailed. Indeed, the default process appeared to feed upon itself as defaults mounted and the liquidity of markets dried up. So prices of MBS fell further as defaults mounted, the correlations between the defaulting assets appeared to be both dynamic and conditional. This means that, in this case, the assumed correlations increased as the liquidity of markets decreased.

The lesson is that, while copulas offer a way of measuring non-linear relationships, they also present problems, as the choice of the copula is vital to the outcome. In practice, therefore, it is akin to the problem of the choice between using parametric or non-parametric distributions common in VaR-based market risk models.

If the choice is made to use a parametric distribution, the specific parametric distribution selected will largely determine the outcome. In the case of copula choice, however, only a very limited number of copulas are usually considered for use in finance, not least because the outcomes can be very difficult to interpret. The use of copulas in measuring large portfolios of differing risks is thus in its infancy. While it is possible to understand the issues produced by dynamic conditional correlation in banks' asset portfolios, there is still a long way to go before it offers a reliable statistical methodology for measuring that risk.

Nonetheless, it is necessary to have some means of examining the implications of extreme outcomes. Creating scenarios is today the main methodology for this and has become embedded in legislation (for example, stress-tests). While there is no statistical validity in creating scenarios – there is no way of accurately ascribing a statistical probability to any particular assumed scenario – they do have some benefits.

Scenarios have an intuitive meaning to senior executives, boards and regulators, because it is easy to see the thinking behind any particular scenario and to modify any assumptions to fit a particular bank or economy (or both). They can be tailored to the risk profile and/or business model of the individual bank, which is particularly useful when tying the scenario into the bank's business plan, individual capital adequacy assessment process (ICAAP) or individual liquidity adequacy assessment statement (ILAAS). They can also be bank-specific and/or system-wide, as regulators require for both the ICAAP and ILAAS.

Scenario reports can also be extended to show how, for example, a bank's board and management will react to specific risks thrown up by a scenario. In a similar way, they can also address opportunities that may arise from a specific scenario.

However, the core problem remains: while there are two definitions of risk (measuring maximum loss excluding or including "within a given probability"), there is no really satisfactory methodology for measuring that risk. VaR is widely used to measure maximum loss within a given probability. But it is also a very incomplete measure as it fails totally to deal with the issue relating to the worst outcome.

Both regulators and regulated are increasingly focusing their energies on how to measure worst outcomes, but there are only a few insights (liquidity black holes, dynamic conditional correlation, Cauchy randomness) to guide us in our choice of statistical tool (copulas have at best a chequered history in providing accurate answers).

For measuring maximum loss excluding "within a given probability", the only option is scenario analysis. While this is intuitively appealing to many, it is no more than a "best guess" which is highly likely to turn out to be the wrong guess as the future is not simply unknown – it is unknowable. Therefore financial institutions and their regulators are left with no choice but to adopt processes and procedures which make it possible to manage in the most effective way what cannot be measured. The day the practical banker is replaced by the quantitative analyst is further off than we once thought.

CHANCE AND RANDOMNESS

Chance, in general terms, means either the likelihood of winning or of losing at some game, or something less predictable like a chance meeting with an old friend. On a more specific question such as investment, it means the chance of making or losing money.

But surely when we look at the shares in a company or the movement of an exchange rate, these events have underlying causes. So how can we say they are the result of chance?

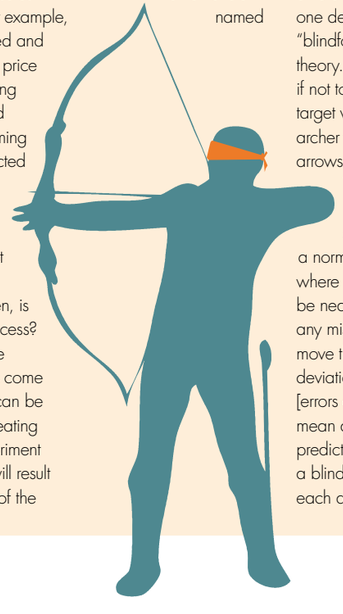
There are two distinct ways to describe events that have causation. One is to look for cause and effect, but this may be very difficult, as the trail of causality may be both complex and extensive and we cannot know everything about the subject.

Another option is to look at outcomes (effects) as if they were the result of a process that cannot be fully understood, and about which it is only possible to observe some inputs and thus infer how the process may work. This is known as the "stochastic" way of viewing the world.

It is particularly useful in finance, as the inputs may be of dubious quality and their links to the outcomes may change over time or given changes in circumstance. Share purchases and sales transactions, for example, can be observed and connected to a price chart. Connecting these inputs and effects by assuming they are connected by a random process delivers an ability to predict outcomes.

But what, then, is the random process? It is here that the mathematicians come into play, as it can be shown that repeating a random experiment often enough will result in the average of the outcomes converging to an expected value. This observation has become the basis for much of finance theory, as it allows analysts to assume that the random process can be described by a normal distribution.

This finding – and the thought processes and mathematics behind it – is most frequently associated with a mathematician named (Johann) Carl Friedrich Gauss, hence Gaussian when describing its application. The powerful properties of normal distributions can be used to describe randomness in finance. But that is far from the whole story, because there is another form of randomness.



Augustin-Louis Cauchy, a French mathematician, developed a rather different approach, one described as the "blindfolded archer" theory. In other words, if not told where the target was, a blindfolded archer would shoot arrows in all directions. There is no reason to believe that the shots would follow a normal distribution where most shots would be near the target and any miss would only move the average deviation a small amount [errors converge to the mean and variance is predictable]. But with a blindfolded archer, each additional shot could cause the average deviation to move very considerably [the errors have infinite expectation and lead to infinite variance].

These two views of randomness fit two very different states of the world. In the first, change happens through the cumulative effect of small changes in the way the world works over relatively long periods of time. In the second, single large events can bring about major change in very short periods of time and the possibility of other world-changing events looms large.

The challenge for bankers and regulators is to decide which scenario best describes the current state of the world. Before they decide on their approach, they have to take into account the fact that there is no Cauchy distribution, let alone a Cauchy copula. In a Cauchy world, life is very unpredictable.

The Basel line

Brian Caplen examines the development of international regulation of banking risk brokered by the Basel Committee on Banking Supervision.

Banking regulation is essentially a national issue. Governments set up regulatory authorities to supervise their banks and write their own rules to prevent banks under their jurisdiction getting into difficulties. But since 1988 the Basel Committee on Banking Supervision, established under the auspices of the Bank for International Settlements – the central bankers' bank – has issued accords with the aim of establishing a global standard for the amounts of capital banks should hold against different types of credit.

Over the years, most major countries have decided to adopt Basel's policy recommendations, although they do tend to modify them according to their own circumstances. The main exception is the United States, which has often preferred to follow its own star on financial regulation and is currently introducing the comprehensive Dodd-Frank Act, which may not sit comfortably with Basel guidelines. In the European Union, the regulations are implemented through the Capital Requirements Directive, or CRD4.

At its core, Basel deals with the amount of capital banks should be required to hold in relation to their assets, the quality of the capital and the assets, and bank liquidity. In each new version of Basel, the regulatory net is spread wider, with the aim of bringing more aspects of banking under control. Whether the result is a safer system is arguable.

In response to the financial crisis, the Basel Committee rushed out what it called its 2.5 version – a sort of halfway house between Basel II and III – to deal with the immediate problems arising out of securitisations and risks in the trading book. Basel III followed in December 2010, the most comprehensive version to date, with an implementation period starting from 1 January 2013 and a completion date of 2019.

However, many banks and jurisdictions were at that point still struggling to get to grips with Basel II, published in June 2004 and with a target implementation date of end of 2006. Whereas Basel I had been a very granular system based on strict percentages of capital related to a rough and ready measure of the riskiness of the assets, Basel II attempted something much more complex, and allowed large international banks to do their own calibrations of the capital needed.

With those banks losing their reputation for good risk management in the crisis, Basel III combines some of the standard elements of Basel I with very detailed prescriptions in the areas of liquidity and capital. The aim is that banks should hold 4.5 per cent of the highest quality capital (equity and reserves, known as Tier 1 capital) against risk-weighted assets by 2019. On top of this, it proposes a 2.5 per cent capital conservation buffer, designed to be built up in good times for use in bad times, making a total capital requirement of 7 per cent.

The key phrase in here is risk-weighted assets. What the Basel system does is lay down guidelines for the amounts of capital that need to be held against assets with different risks attached. Sovereign debt is usually considered risk free (although the eurozone crisis is planting doubts) and so is zero-rated – which means banks do not need to hold capital against loans to governments. Assets at the other end of the risk spectrum attract a 100 per cent weighting, which means that a full 7 per cent of the loan must be held as capital under Basel III.

It doesn't take a genius to see how banks could play around with these risk-weightings to their advantage. If they can classify loans as closer to zero than 100 per cent, they end up needing to hold less capital. The capital released can back new loans and they can make larger profits.

> *'Whether Basel – in conjunction with the many other regulatory initiatives being enacted around the globe – leads to a safer financial system is a moot point'*

To try and counter this gaming of the regulations, Basel III has gone back to a very old idea – that of a leverage or capital-to-asset ratio. Under the new rules, if all the risk-weight advantages are removed, a bank's total capital must still come to 3 per cent of total assets. This means the bank is leveraged 33 times (100 per cent of assets divided by 3 per cent of capital) – still quite high, but less than the 50 times some banks reached going into the crisis.

The other major part of Basel III deals with liquidity and funding. A new liquidity coverage ratio determines that banks must have sufficient assets they can sell quickly to raise funds in times of stress. There is a debate, however, around the types of assets that should be held. Sovereign debt should be the most easily tradable and liquid asset, but the eurozone crisis has prompted questions about its safety. On the funding side, the net stable funding ratio (NSFR) restricts reliance on short-term funding. But it runs counter to the general purpose of banks, which is exactly that – to borrow short and lend long, known as maturity transformation.

In the wake of the crisis, the Basel Committee has become very active and has started issuing papers on every aspect of banking. In the last few months there have been consultative documents on risk-data aggregation and on monitoring intraday liquidity. Another report looks at the internal audit function in banks. Whether Basel – in conjunction with the many other regulatory initiatives being enacted around the globe – leads to a safer financial system is a moot point. There may be ways in which banks can game the system that have not yet been catered for, or the risk may be disappearing to the shadow banks.

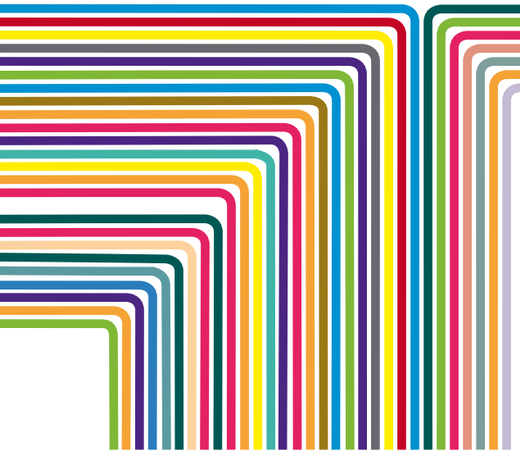
Deciphering the data

Incredibly complex and detailed information on individuals and companies is now freely obtainable thanks to technological advances. Analytics – the analysis of data to fine-tune decision-making – is becoming a key element of banking strategy.

BY VICTOR SMART

BANKS ARE TODAY heavily committed to leveraging the opportunities that "big data" – data sets so large and complex that they become awkward to work with using traditional database management tools – and business analytics present. So they invest billions of dollars every year in technology to store and analyse, mine and manipulate information.

Indeed, Capital One, a Fortune 500 bank, has become the foremost example of the creed of "competing on analytics". Every day millions of individuals' credit scores are used to check in real time the creditworthiness of credit-card holders and spot anomalous transactions that may suggest fraud. Complex modelling is at the heart of pricing illiquid sophisticated financial instruments, while high



street banks can now experiment with new offers, tying in the profitable and freezing out the unprofitable customer.

But while business analytics and big data have proved a boon to both investment and retail bankers – enabling IT suppliers, algorithm-savvy "quants" plus a whole new breed of data scientists to prosper – the science has some way to go before it becomes a panacea for all the financial sector's problems.

Some difficulties are practical. Large financial services firms are already struggling to manage their huge data stores (up to a petabyte: a unit equal to ten to the 15th – 10 followed by 15 zeros – bytes) in a way that satisfies existing regulatory requirements; how will they cope with the additional demands for transparency from regulators? Other issues relate to governance. How does the chief executive (let alone the board) provide oversight of what are fiendishly complex technology and statistical operations? Finally, there is the overriding question: should banks' senior executives really abandon their gut instincts and opt for a fully data-driven strategy?

The reason for the rise of the new information technology is evident enough. The cost of storing data has been falling even faster than the costs of digital processing power, and modelling has got faster and more sophisticated. The result is a step-change in the power of data-mining and data-analysis. With so much of retail banking moving online, data in vast quantities is collected automatically with every click and is there to be analysed. Companies could get rich simply analysing the data they already have.

> *'With so much of retail banking moving online, data in vast quantities is collected automatically with every click and is there to be analysed. Companies could get rich simply analysing the data they already have'*

Financial services organisations are not simply doing the old things better, they have the opportunity to do quite new things. Self-learning algorithms can spot profitable opportunities. New ways of optimising pricing and presenting data (so-called visualisation) are making life easier.

Yet at the same time as business has been disrupted by new information systems, the techniques all too often remain the proprietary knowledge of a narrow group of specialists. Who among the senior executives really understands Hadoop (see box), Olap (online analytical processing, which enables end-users to analyse data extremely quickly), data-warehousing, and so on? The higher echelons of the banks are right to feel a little daunted.

In truth, the concepts of big data and business analytics are only loosely defined. Big data describes the growth in the quantity of data to a point where conventional tools, such as the Excel spreadsheet, are no longer capable of handling it. The trend to big data is being driven in part by the sheer scale of data now collected at point of sale, online, in social media and so on.

Business analytics, a close cousin of big data, is the methodical exploration of data to spot hitherto unsuspected patterns and associations that can be turned into so-called actionable insights, that is insights that can be used to frame decisions and to automate and optimise business processes.

Modelling also allows so-called "predictive analytics". The vastness of the data makes it possible to identify strong correlations that will hold for future customer behaviours. One major US credit card issuer, for example, found that those customers who made regular trips to the dentist tended to pay off their bills more reliably. Analytics also makes it possible to run "what if" scenarios – how many profitable savings customers will you lose if, for example, the withdrawal notice period is extended from one month to three?

It is hardly new to say that banks are awash with data. But in practice it is no easy task to distil insights from data that are strong enough on which to base decisions. Most financial institutions have multiple data sets and systems that are not straightforward to correlate. Metrics will have been collected in different ways, over different periods, with different levels of accuracy. Is the "Larry Zhang" in one data base the same as the "L Zhang" with the same date of birth but living in a different country four years later in another?

In an ideal data-driven business, all information would be comparable and collected in a standard way in all parts of the enterprise. The reality is that organisations are built around silos, each of which proliferates and jealously guards its own information. Hence what should be simple opportunities to cross-sell may be missed, and attempts to build up a picture of a customer in terms of their preferences

HADOOP – THE NUMBER CRUNCHER

Big credit card companies and others are very interested in Hadoop, one of the new set of tools to help handle big data. Hadoop is an open source software framework that enables applications to work with thousands of computational independent computers and petabytes of data. It is emerging as one of the most significant frameworks for dealing with the challenges of data-deluge – storing, processing, indexing, and analysing large amounts of data. Relational database systems are good at data-retrieval and queries but don't accept new data. Hadoop and other tools get around this and allow data ingestion at incredibly fast rates.

for, say, free vouchers rather than a high rate of interest are stymied.

According to Jiake Brownbill, a business analyst in banking, "banking functions in a rarefied atmosphere where employees rarely have the opportunity to appreciate the full scope of the business. Communication between workers is restricted as each individual is isolated in their silo and consumed with their own priorities. Quality and time issues often mean employees are under intensive pressure to provide quick management information to meet deadlines. Unfortunately, this impinges on the time available to complete comprehensive analysis and acquire progressive business insight. This becomes a secondary priority."

Still, a whole industry has sprung up to tackle this: data-mining, data-warehousing, data-cleansing and so on are all specialisms in their own right. Many of those involved now call themselves data scientists, though this is also fertile terrain for management accountants who routinely handle internal reporting. Of course, it is also the field of quants, who bring highly sophisticated modelling techniques drawn from academic disciplines, notably PhD-level physics.

> *'The new spirit of data-driven decision-making is creating a more transparent environment where regulators can pick out rogue trading more easily'*

Few companies in any sector at the moment (with the exception possibly of some start-ups) have the capability to run their strategy on data. To some extent the task facing banks is simply the task faced by all companies – they need to get better at analytics as the rise of social media and use of apps is converting more and more corporates (even coffee store chains such as Starbucks) into "tech companies".

But in other respects banking is distinctly different. Take governance. Banks are institutions that rely extraordinarily heavily on analysis of risk and mathematical models. So how are the chief executive and board to judge whether the famous Black-Scholes mathematical model used to price some derivatives is robust? Could the executives at the top of a bank understand, let alone out-argue, a quant specialist with a PhD in inverse Gaussian statistical distribution?

The strictness and demands of the regulatory framework are another differentiator. Regulators typically talk to large banks on a weekly basis to ensure their liquidity position is satisfactory. Business analytics is good news, since it is accompanied with the growth in dashboards and other reporting tools which make it quick and easy to present robust data to regulators. Equally importantly, the new spirit of data-driven decision-making is creating a more transparent environment where regulators can more easily pick out instances of a rogue trader's activity.

Yet regulators' demand for ever-greater transparency poses fresh burdens. So-called unstructured data – the mountains of information in phone calls, emails and so forth – now have to be sifted for salient comments when things go wrong. New legislation is also taking its toll. One example is the Dodd-Frank Act. A federal statute in the United States signed into law in 2010, the Act brings in sweeping changes affecting almost every aspect of the nation's financial services industry. Support for new regulations will force firms not only to acquire more granular data for enterprise risk management but also to provide increased transparency into their data. Financial institutions will be spending billions of dollars to strengthen, streamline and automate their record-keeping, risk management key performance indicators and dashboards.

As Ravi Kalakota, a partner at professional services firm LiquidHub in New York, argues: "It won't be easy for leadership to change existing financial institutions. To go from calcified corporate cultures that result in business units hoarding their own information in silos into one that embraces risk management, transparency, and governance as a collective cause is not going to be easy or painless."

FINE-TUNED BANKING

A Fortune 500 bank, Capital One runs about three hundred experiments a day to improve its ability to target individual customers. These tests provide a relatively low-cost way for the company to judge how successful products and programmes would be before engaging in full-scale marketing. In its savings business, Capital One found that its experiments in terms of CD interest rates, rollover incentives and minimum balances had very predictable effects on retention rates and new money coming into the bank. Through such analyses, the savings business increased retention by 87 per cent and lowered the cost of acquiring by 83 per cent. "Few companies are set up to apply the principles of this test-and-learn approach, but Capital One's entire distinctive capability is built on it," say Thomas Davenport and Jeanne Harris in their book *Competing on Analytics* (Harvard Business School).

SPEEDING UP THE SYSTEM

In 2010 the law governing UK building societies changed. Nationwide, one of these mortgage-lending mutuals, was required by its regulators to reduce the time it takes to transfer tax-free individual savings accounts (ISAs) between providers from 23 to 15 working days. Failure to do so could result in fines. The system involved moving three million pieces of paper annually between more than 700 branches.

A new digitised system was introduced allowing managers to focus on the flow of cases, both internally and with other ISA providers. The new analytics get information to people who can address it in near real time, as opposed to waiting for monthly reports after the complaints have been filed. Managers can drill down to individual cases that are stuck in the pipeline and transfer them to more experienced staff or chase the other ISA provider.

Nationwide says it has moved from retrospective investigation to forward-looking management. Most important of all, rather than have to explain delay to the regulator, the company can ensure – by monitoring the analytics on a daily basis – that it not only meets its deadlines, but can also prove it.

Sitting chilly

As gloom continues to envelop the global economy and fears grow for 2013, opinions differ over when and how growth will begin to accelerate again. What are the prospects for light at the end of the tunnel?

BY DAVID SMITH

THIS SHOULD be a time of optimism for the world economy. Global recoveries, even those that take a while to get going, are normally in full swing at this stage in the cycle, as they were in both the "roaring" 1990s and the 2000s. So policymakers would by now typically be more worried about how to prevent recoveries from getting out of hand and generating inflationary pressures than struggling to invent ways to avoid a drift into stagnation.

But, as we move into the busy autumn season for international meetings dominated by fears for 2013, influential voices warn not of overexuberance but of downside risks. This was not how it was meant to be for the global economy. No one has spelt out the growing alarm about the next year more starkly than Christine Lagarde, the International Monetary Fund's managing director. In a recent speech she noted: "In today's interconnected world, we can no longer afford to look only at what goes on within our national borders. This crisis does not recognise borders. This crisis is knocking at all our doors. There are risks in all corners of the globe – Europe, the United States and in Asia and Japan."

The numbers tell their own story. Global growth peaked early in the recovery, world gross domestic product rising by 5.3 per cent in 2010, one of only three years in the past three decades in which a figure of more than 5 per cent has been posted. If 2011 was respectable, with a growth rate of 3.9 per cent, 2012 has been a much more challenging year, with growth slowing to 3.5 per cent.

Everyone is familiar with the pattern of global growth: strong in the emerging world, much weaker in the crisis-damaged West. In the West, in particular, one of the most obvious consequences is high unemployment, which reached 48 million in the OECD in the summer and is on course to reach 50 million. Angel Gurria, the OECD secretary-general, argues: "It is imperative that governments use every possible means at their disposal to help jobseekers, especially young people, by removing barriers to job creation and investing in their education and skills. The young are at most risk of long-term damage to their careers and livelihoods."

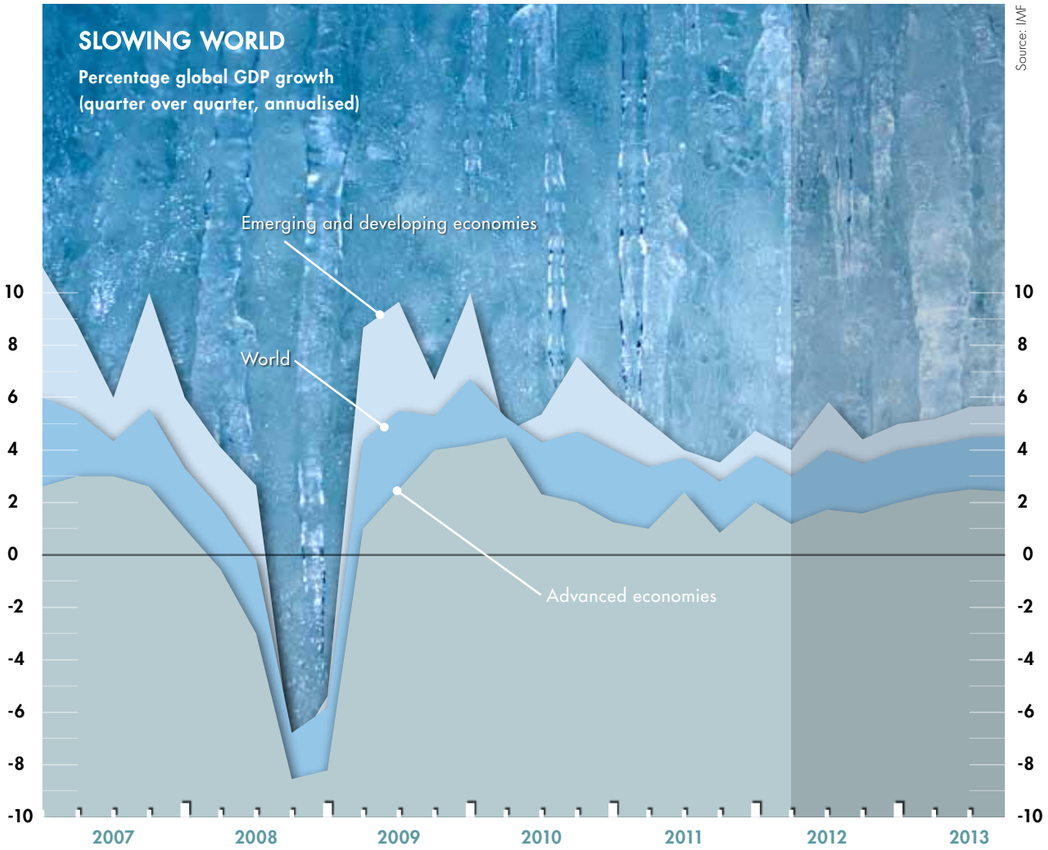
What is new, according to the leading international economic organisations, is that the slowdown is affecting the non-OECD world in a significant way. The IMF, for example, sees sub-6 per cent emerging-world growth in both 2012 and 2013, which is a far cry from the 7.5 per cent of two years ago.

Some analysts are even gloomier. Not for the first time, one of the most pessimistic is Nouriel Roubini, of Roubini Global Economics. He argues that the world is heading for what he describes as "a global perfect storm" in 2013. "Financial and economic clouds are, it seems, rolling in from every direction: the eurozone, the United States, China, and elsewhere," he says. "Indeed, the global economy in 2013 could be a very difficult environment in which to find shelter.

"The eurozone crisis is worsening … and capital flight could turn into a full run on periphery banks. US economic performance is weakening … so the US may reach stall speed by year-end. Worse, the risk of a double-dip recession next year is rising. China – its growth model unsustainable – could be underwater by 2013, as its investment bust continues, and reforms intended to boost consumption are too little too late."

Will "Dr Doom" be right, or are we in danger of talking ourselves into a new downturn? Economists at BNP Paribas, like those at the IMF, expect a stronger global picture in 2013, led by emerging

> *"This crisis does not recognise borders. This crisis is knocking at all our doors. There are risks in all corners of the globe – Europe, the United States and in Asia and Japan"*
>
> CHRISTINE LAGARDE, MANAGING DIRECTOR, IMF.



economies. In the bank's Third Quarter Global Outlook, it sees emerging economies leading the world into more robust growth. "We believe China is at, or close to, the turning point in its cycle, and expect growth of 8.7 per cent next year, up from 8 per cent this year," says the bank's Michal Dybula.

"It is unlikely that US policymakers will allow the "fiscal cliff" of forced tax hikes and spending cuts to jeopardise the rescue of the economy"

BNP Paribas has two alternatives to its main forecast. One, on which it places a 25 per cent probability, is a disorderly eurozone break-up. The other, which it estimates as a 5 per cent probability, is a disruption in global oil supplies. "In a worst-case scenario, tensions with Iran could lead to a disruption of Middle East oil supply, such as the closure of the Strait of Hormuz," the bank says. "Under a scenario in which the disruption lasted some time, we believe the oil price could initially jump 50 per cent. Such a spike would immediately push up headline inflation globally, hurting fragile consumer demand in developed economies and cutting manufacturing output everywhere."

Though it believes any such effect would be short-lived, the bank's analysis provides a reminder that there are other threats to the global economy than the eurozone. They include disappointing growth in America, together with the threat of an impending "fiscal cliff", as automatic deficit reduction measures kick in. Even in the eurozone and America, however, some see tentative reasons for optimism. Joachim Fels, global economist at Morgan Stanley, argues: "lnternal rebalancing in the US and in Europe is under way, providing some light at the end of the tunnel. Over time, the US will likely experience a manufacturing and export revival thanks to a competitive currency, modest labour cost developments, and cheap new domestic sources of energy."

What will it be? I would still subscribe to the view that the big shock for the world economy was in 2008-9, and that what we are seeing now are the aftershocks rather than the start of a whole new crisis. But, as any geologist will tell you, when it comes to earthquakes, the aftershocks can be more devastating than the original event. Fears are centred on the eurozone, and the question of whether policymakers have the tools – and the vision – to solve a formidable problem, which has its roots in three linked crises.

Those crises – the growth and competitiveness crisis for peripheral economies, a continuing banking crisis and a eurozone sovereign debt crisis – will take years to resolve. The question for the next 12-18 months is whether policymakers can establish a credible direction of travel. At times they have appeared to be on the verge of doing so, at others as far away as ever.

Some of the other worries appear to be overstated. Anything is possible in Washington, but it is unlikely that US policymakers will be so locked in ideological stalemate that they will allow the "fiscal cliff" of forced tax hikes and spending cuts to jeopardise the rescue of the economy. As for China and the other emerging economies, it remains likely that we are witnessing a response to an earlier policy-tightening in response to inflationary pressure, plus some loss of export growth to the advanced economies, rather than a more fundamental shift. The Chinese authorities have already responded by relaxing monetary policy.

It is possible, nonetheless, to be concerned about short-term prospects, as bodies such as the IMF are, while remaining optimistic about the longer term. Certainly, there are plenty of reasons to believe that the world economy will regain momentum at some stage, from the forces of technology, the search for new sources of energy and the rise of the BRICs and other emerging economies. For policymakers, and for businesses, the challenge is how to negotiate the tricky short term to get to those better times.

VIEW FROM THE IMF

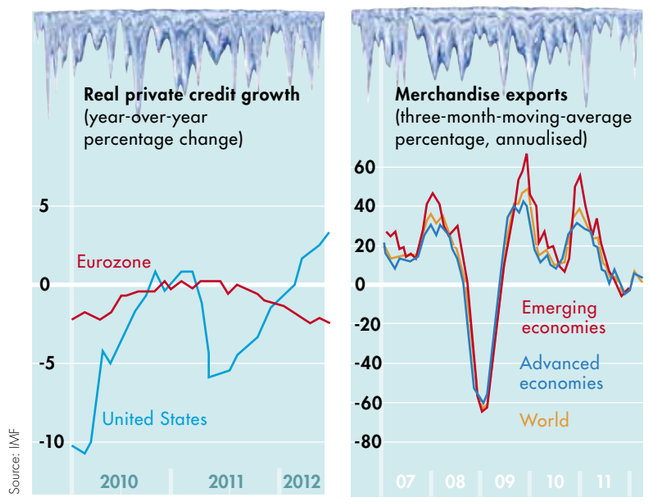
The IMF's most recent forecast, ahead of the update it will provide for an important set of autumn meetings, was for 3.5 per cent global growth for 2012, accelerating slightly to 3.9 per cent in 2013. "More worrisome than revisions to the baseline forecast is the increase in downside risks," said Olivier Blanchard, the IMF's chief economist. "Simply put, the euro periphery countries have to succeed."

The IMF's figures show, unsurprisingly, that Eastern Europe and the former Soviet Union have been hardest hit. Developing Asia, including China and India, is still expanding at a 7 per cent-plus rate, and 2012 has been a good year for the Middle East and North Africa, with 5.5 per cent growth – but, if the IMF is right, that will slow to a little below 4 per cent in 2013.

It adds: "These forecasts are predicated on two important assumptions: that there will be sufficient policy action to allow financial conditions in the euro area periphery to ease gradually, and that recent policy easing in emerging market economies will gain traction. Clearly, downside risks continue to loom large, importantly reflecting risks of delayed or insufficient policy action."

World trade, which grew by 12.8% in 2010, slowed to 5.9% in 2011 and is expected to grow by a very modest 3.8% in 2012, followed by 5.1% in 2013.

CREDIT WORRIES HIT THE EUROZONE



Red for danger

Governments may seek global lessons from Japan's economic meltdown, but, says **John Vail**, differences in culture, attitude and circumstances mean that Europe and the United States are unlikely to face identical problems.

THE STARTING POINT for any examination of the lessons that the advanced economies can learn from Japan's "two lost decades" must be an acknowledgment that, whatever the similarities in the economic positions, in terms of culture, attitudes and expectations, Japan is very different from anywhere in Europe or the United States.

These differences have been a strength and a burden for Japan. It was very slow to recognise the depth of the crisis and slow to react but, throughout, the general public has maintained discipline and been very cautious with household budgets. To find anything like the same thrift in the West, it is necessary to go back the Great Depression of the 1930s. Nor is that the general American approach, which is invariably optimistic. Certainly there is some stress in the national psyche at the moment, but Americans do not react in the same way as the Japanese.

Of course, one of the reasons why the Japanese policy response has been so conservative is that the country is trapped by its huge deficit, currently around 200 per cent of GDP. If the economy ever grew too strongly, or inflation rose above 2 per cent, their interest payments would rise sharply, which would aggravate the deficit more than economic growth would help it. That is the crux of Japan's dilemma and explains much about how the Japanese government and the Japanese Central Bank have conducted economic and monetary policy.

The rise in US debt now means that the American government faces very similar constraints. The boom years look to be over, and are unlikely to return for a very long time. One significant economic measure that needs to be considered is the Nairu (non-accelerating inflation rate of unemployment), which measures the relationship between unemployment and inflation. As the economy moves into a growth phase and more jobs are created, unemployment goes down and inflation starts to rise. But US economists are starting to realise that, even with a large unemployed base, there can still be inflation if China's growth accelerates. This means the level of Nairu at which inflation starts to rise is a function not just of the US

JAPAN'S CORPORATIONS AND MARKETS

Japanese equities have been through a tremendous de-rating since the country's economic bubble burst. At the peak, Japanese equities were on a multiple of 70 to 80 times earnings, a figure never achieved by the US. This means that Japanese equities are now about as cheap as they are likely to get. Earnings multiples are now down to around 12 times earnings, which means that they are approximately a fifth of what they used to be.

Moreover, earnings multiples are not falling simply because of lower stock prices; the average earnings of all non-financial stocks just before the 2008 global financial crash were 50 per cent higher than at the top of the market in 1989. By the first quarter of 2011, this average figure had risen to 30 per cent higher than in 1989. So valuations are now very acceptable, even if Japanese stocks may not look overly attractive when compared to global stocks in general. Obviously, the crises of 2011 impacted earnings, but Japan is now bouncing back.

A common criticism of Japanese companies concerns the standard of corporate governance, with some recent scandals making the point. However, the US and Europe, too, have corporate governance issues, not the least of them being executive pay and bonuses at US and European banks. In defence of Japanese firms, it is extremely rare for them to have accounting problems or to be forced to restate their accounts – something one sees many examples of in US listed companies.

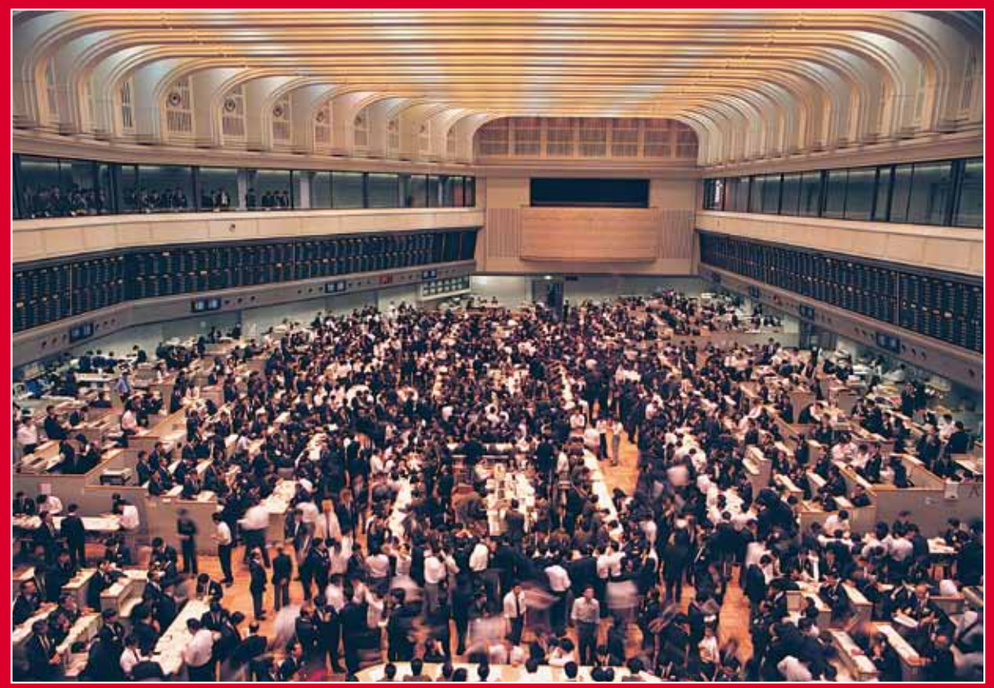
Another criticism is that Japanese companies hold too much cash and do not return enough of it to shareholders. There are companies in Japan that are world class in this respect, while there are also some who do not have a high reputation. Japan does have a profit motive, but it is a disciplined and tempered one, due to a feeling of social cohesion, and the dominance of the Japanese middle class – and middle-class values – remains strong.

The dominant set of attitudes lends itself to the long view, so local investors are not too begrudging about companies retaining cash for investment. Sometimes this is abused, but there are now share buybacks in Japan, which, of course, improves the position of anyone owning stock, since their holding is thus that bit less diluted.

There has also been a tremendous improvement, dating back to around 2005, in the willingness of major Japanese companies to return value to shareholders. There are some outstanding examples of this, and the dividend payout ratio in Japan is equivalent to that in the US. Share buybacks are not at US levels, but the fact that in the US they are inflated by the buybacks of share options to management has to be taken into account.

'The strong yen has been a big deflationary factor for Japan, which accumulated very large net investment positions in terms of ownership of overseas assets.'

The Tokyo Stock Exchange in action



'Too much austerity can create a social backlash that destroys the whole project, so policies have to be carefully managed... so Japan's social cohesion puts it in a better position than more socially fragile countries.'

economy but of its interaction with other major economies. So the critical level of Nairu depends on global growth.

Experience over the past few years certainly shows that inflation can be high in the US and Europe even though unemployment is high – and this does not seem likely to change unless global growth turns negative. Add in other factors, notably the monetisation of US and European debt, and it is possible to suggest that deflation – or zero inflation, which is part of what has characterised the Japanese situation – will not take hold in the same way.

In the short term it might look as if the West is "going Japanese", but the intermediate to longer-term view suggests not. Actually, the consumer price index in Japan has hovered around zero for a very long time. This can be called "no-flation" rather than deflation. It is extremely difficult to imagine the US tolerating "no-flation" for very long. The chairman of the Federal Reserve, Ben Bernanke, would make sure that this did not happen.

There are other reasons, too, why Europe and the US are unlikely to face the same problems as Japan. The central banks on both sides of the Atlantic have done a very reasonable job of pulling their respective economies out of a complete tailspin by acting very quickly. Some people, of course, argue that everything should have been allowed to "take its natural course", which would have cleared out "mal-investment" and led to a faster recovery. But the majority view is that these central banks did a good job. The same cannot be said for the Bank of Japan in the years after the stock market and property market crash. It was very slow to react and, when it did, it vacillated between tightening and loosening.

In addition, the strong yen has been a big deflationary factor for Japan, which accumulated very large net investment positions in terms of ownership of overseas assets. Returning revenue flows from those assets led to large current account surpluses and the inflow of capital into Japan, a very different situation to that which faced the West.

But arguably the most important distinction between Japan and the western economies is that the latter have noted the problems faced by Japan because it built up such high levels of debt. Now approaching 200 per cent of GDP, it is unsustainable at present levels and needs to be reduced to manageable proportions. In this sense, Japan is a huge warning flag for Europe. There is now a global realisation in all advanced nations that benefit entitlements have to be reformed so that countries can achieve sustainable gross debt positions. Europe's politicians have already achieved a great deal since the start of the sovereign debt crisis, with extensive austerity measures introduced in Italy, Portugal, Spain, Greece and Ireland.

Nonetheless it remains a dangerous period for European economies. This is the most painful part of the cycle. Austerity pushes economies into contraction and recession. Tax revenues go down and generate a need for further cuts and less public spending, so there is more austerity. This creates a negative cycle that takes a long time to work through. Pushing for too much austerity can create a social backlash that destroys the whole project, so policies have to be managed very carefully. In this respect, Japan's social cohesion clearly puts it in a better position than many more socially fragile countries.

Three-way stretch

The United States, the United Kingdom and the European Union are at loggerheads over how derivatives should be policed, leading regulators to emphasise and advocate different reforms. Can these differences be reconciled?

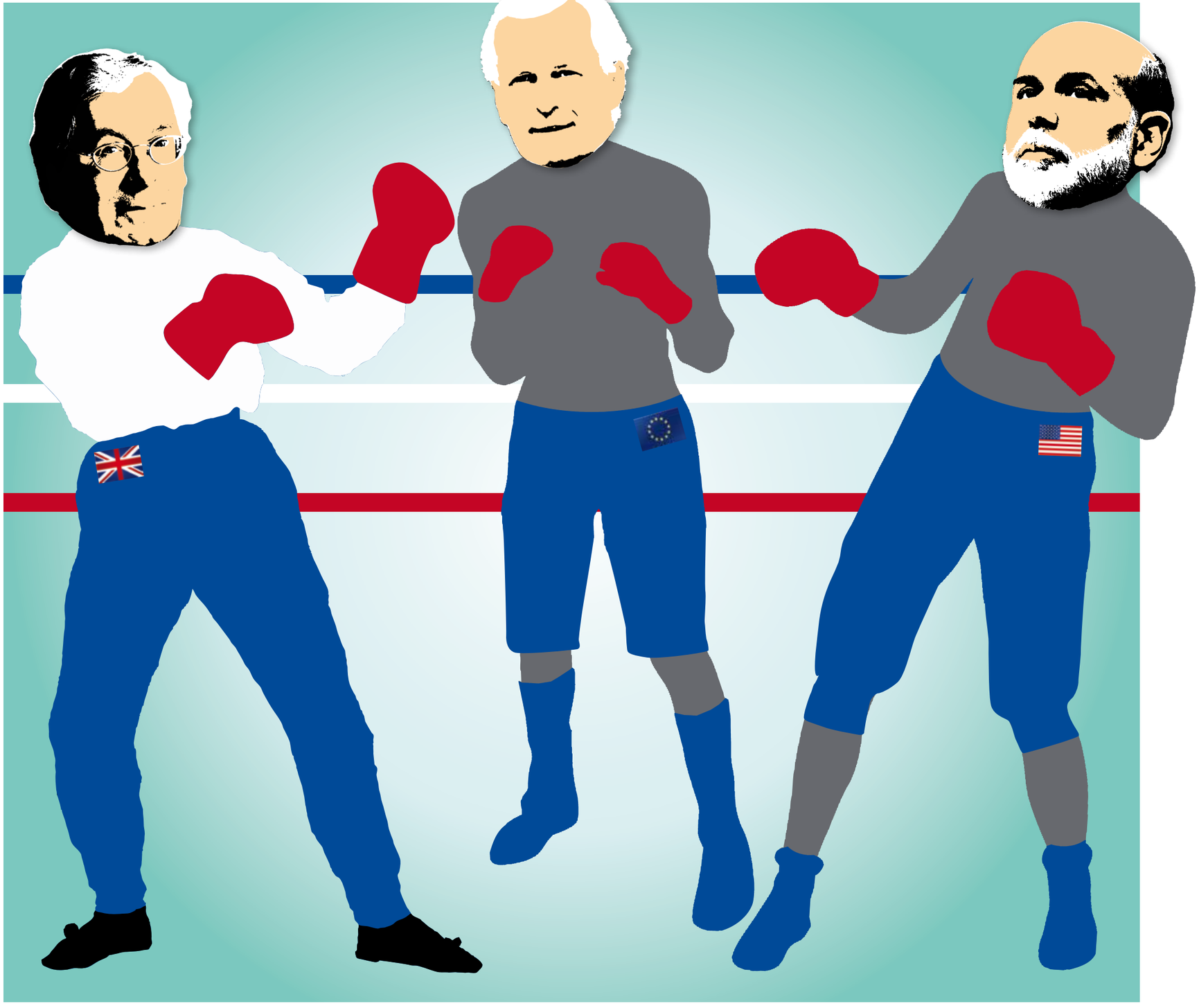
BY AARON BROWN

THE APHORISM "if goods don't cross borders, soldiers will" is usually attributed to the great 19th century French economist and liberal Frédéric Bastiat. Whoever said it first, it is undoubtedly accurate – and is as valid an analysis today as when it was first made. Goods flows require offsetting financial flows, which create demand for derivatives, which in turn creates conflicts between the regulations – and inevitably regulators – in different countries.

For example, the Bank of England governor Sir Mervyn King is said to have lost his temper in a meeting on the subject with European internal markets commissioner Michel Barnier. The latter has also been undiplomatically blunt in expressing his unhappiness with the American approach, arguing that "the United States must not override European Union regulators".

For all the rhetoric, there is a general agreement among regulators about the broad areas in which changes should be made to the way derivatives are controlled (see Box). The problem comes in translating these general principles into detailed policy, particularly as there is no international body to enforce any system of global financial regulation.

Indeed there was no formal international co-operation at all until 1974, when the minds of regulators were focused by the fall-out from the



decision of German bank supervisors to force Bank Herstatt into liquidation. Due to time zone differences, other banks had released German deutschmark payments to Herstatt before the seizure, in return for US dollar payments to be made in New York after the seizure. As a result, these banks lost out. This failure of co-ordination led the G10 countries to form the Basel Committee on Banking Supervision at the end of that year.

From its modest beginning as a forum for bank regulators to keep in touch, the Basel Committee has grown to become the main source of rules for global financial institutions. However, it has no direct authority. In each country, national bank regulators set specific regulations that are supposed to be compliant with Basel standards. The agreement is that each country will respect other countries' implementations. As long as an institution is supervised by a Basel-compliant national regulator, all other countries are supposed to accept it as if it complied with their domestic versions of the rules.

For all the criticisms of Basel I, II and now III, it is an impressive international achievement. Countries with different economic philosophies and interests have managed to agree on detailed rules over decades as political leaders came and went. The financial crisis, however, has strained relations. The US, EU and UK are all pulling in slightly different directions. But it's not the differences of opinion that matter so much as whether each set of regulators will continue to accept foreign rules as equivalent to its own. If that agreement breaks down, there won't just be inconsistent regulation of derivatives, but also the risk of a step backward in general global financial cooperation.

The issues are, of course, complex, and there are many shades of opinion within each jurisdiction. But, in simple terms, the primary focus of the US is to ensure that there will be no need for another bailout of the financial system, not least because it seems unlikely that any federal official would be re-elected after voting for such a policy.

The United States banking system is relatively strong and it controls its own currency, which is still the reserve currency and safe haven for the world. So its government can afford to concentrate on protecting taxpayers. Moreover, the size and sophistication of American financial markets means that global investors need to participate in them, however much inconvenience they face in doing so.

While United Kingdom policy is also designed to avoid another bailout, this is not a short-term priority, as many of the largest banks are nationalised, and the politicians do not have to face the electorate for two or three years. The UK's main focus has been on rebuilding bank capital so financial institutions can stand on their own. It has been reluctant to accept the restrictions on derivative trading which the US and EU want, because it cares about the profitability of its banks. In fact, the UK would like to profit from over-regulated US and shaky EU systems.

Continental Western Europe, of course, faces the biggest problems and the greatest dilemmas. It has the weakest banks, and sovereign credit problems make it much more difficult – if not impossible – to support financial institutions which come under pressure. Policy-making in the EU is further complicated by the need to get agreement between more than 20 governments, in most of which internal opinion is deeply divided. There is a particular problem in that the UK, while an EU member, has such radically different interests to its partners. Continental European governments cannot afford the levels of capital requirements the UK would like to impose, nor the ruthless transparency the US is pushing for. On the other hand, it has the least to lose if rules reduce the profitability of derivatives trading.

These different interests have led regulators to emphasise and advocate different reforms. The US argues that it is necessary to have lots of collateral which will stand between taxpayers and disaster; and it also advocates central clearing and swap execution facilities to reduce risk. The UK sees the solution mainly in terms of increasing bank capital. The EU has focused on standardisation and reporting – in other words, the solutions that cost the least but might prove the most restrictive to the market.

With the usual give and take of multilateral negotiations, there should in principle be little difficulty in putting together a compromise that meets the needs of all three groups. After all, the regulators want elements of all of the six ways of controlling the market and all jurisdictions will benefit from consistent international standards. Unfortunately, there are more fundamental differences that are harder to smooth away. The US argues that it can only protect itself if it includes under its regulatory authority anyone who makes large trades with US financial institutions anywhere in the world, and also with all the foreign entities controlled by US institutions.

It has also committed itself to a very aggressive schedule for introducing regulations for the highly complex derivatives market. This makes it difficult for the US to agree to accept slower and (from its point of view) possibly weaker regulations that may not be compatible with US versions. Consequently, it may impose its rules on all sorts of foreign entities, leaving the EU and the UK with an unpleasant choice: they can either impose double regulations on their financial institutions or surrender regulatory control to the US.

CONTROLLING DERIVATIVE MARKETS

1 CENTRAL CLEARING. Exchange-traded derivatives have always had clearinghouses, but until recently most over-the-counter (OTC) derivatives have been private bilateral contracts between the parties. When Lehman Brothers went bankrupt in 2008, it had 906,000 OTC derivative contracts totaling $35 trillion in notional value, with 6,120 different counterparty combinations. It took more than three years to sort everything out.

With central clearing, some of Lehman's contracts, as much as 90 per cent by some estimates, would have offset each other. In any event, all of them would have been with a single counterparty, the clearinghouse. That might have made the resolution speedier and more efficient, posing less systemic risk to the financial system.

2 SWAP EXECUTION FACILITIES. Exchange-traded derivatives are bought and sold in active markets where multiple parties can make bids and offers. If similar markets could be set up for OTC derivatives, it might improve price information, liquidity and fairness.

3 REPORTING. No one knows the total notional value of derivatives in the world: estimates range from $600 trillion to $1.5 trillion. Moreover, total notional value is not a useful measure, either of the risk of a systemic crisis caused by derivatives or of the effect of derivative trading on underlying security prices.

4 STANDARDISATION. All the first three objectives stated above are made easier to achieve if OTC derivatives are standardised. While full standardisation is not practical, many regulators believe that a relatively small set of standardised OTC contracts could absorb much of the notional volume in the market.

5 COLLATERAL. If counterparties cannot make payments under derivative agreements, it could cause a gridlock that freezes the financial system. A cannot pay B, so B cannot pay C, and so on until Z cannot pay A, and financial activity stops due to failure of a relatively small institution. If counterparties post large amounts of collateral, the potential for problems is reduced significantly.

6 CAPITAL. Collateral helps the liquidity of the financial markets in the short term, but regulators are also worried about the solvency of financial institutions in the long term. Financial institutions have less chance of failing if they hold enough capital to cover potential losses from derivatives trading.

"Continental European governments cannot afford the levels of capital requirements the UK would like to impose, nor the ruthless transparency the US is pushing for. On the other hand, it has the least to lose if rules reduce the profitability of derivatives trading"

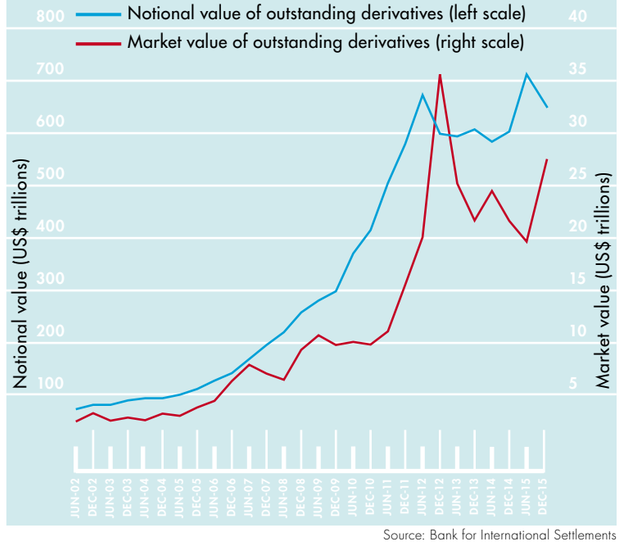
DERIVATIVE RISK

Regulators have been worried by the rapid growth in notional amounts of global over-the-counter derivatives, peaking at over $700 trillion in 2011. They argue that, while derivatives can be used to increase or to decrease risk, there is a risk to the financial system.

However, market practitioners argue that the lower market value (showing how much money would change hands to settle all derivatives) is a much better guide than the notional figure. Market value is 5 per cent of the notional value, though it would still peak at $35 trillion. Even the red line is overstated, however, because a lot of those derivatives are offsetting contracts held by the same entity.

When collateralisation of debt and the potential market value of debt are taken into account and the focus is on bank-to-bank and sovereign-to-bank derivatives, the risk can be calculated at $100 billion globally. These are affordable numbers in a $70 trillion global economy. Practitioners argue that derivatives just aren't all that risky compared to natural disasters, wars, pollution, government defaults and recessions. But it appears that this argument has yet to convince the regulators.

Outstanding derivatives



Source: Bank for International Settlements

With the usual give and take of multi-lateral negotiations, there should in principle be little difficulty in putting together a compromise that meets the needs of all three groups

The UK's policy goal, raising bank capital requirements, is in principle much more straightforward than designing a derivatives trading system from scratch. However, while it has no interest in enforcing the higher requirements on EU or US banks, it does not want to cede control of capital levels for its banks to foreign regulators. It particularly does not want to cede this power to foreign regulators which are unable to set strict rules and high levels because their banks cannot afford them.

If the US wants to tell everyone what to do, and the UK doesn't want anyone to tell it what to do, the EU's goal is to reach a consensus. That makes the EU sound like an organisation seeking the best compromise. However, Brussels does not want to agree to anything as sophisticated as the US plans or as simple as those proposed by the UK. The EU wants to make the financial system safer by restricting derivative trading, not by fixing it or putting capital against it.

There is another level to this controversy. Central bankers are arguably more concerned with international harmony than specifics of regulation. In contrast, other financial regulators are more likely to focus on domestic concerns and worry less about whether their actions will make life difficult for regulators in other countries. This means that central bankers could probably get together and thrash out agreement without too much of a problem, but that a host of newly-created and newly-empowered regulators will find it almost impossible to reach a consensus.

The most likely outcome is that the central bankers will exercise their authority and that international comity will prevail. This means there will have been an acceptance that the spirit of Basel is far too important to be put in jeopardy. International financial cooperation is necessary for too many reasons to let a dispute over regulating derivatives strain relations.

That means that the final resolution is likely to include looser capital levels than the UK would like and more restrictions on derivative trading and less collateral in the system than the US would like. For the EU, it's not a question of like or dislike, it's a question of survival. Therefore the compromise will be tilted toward EU interests. But this will mean that inevitably more derivative trading business will move to the US and UK (where most of it is anyway). This doesn't seem like a great solution, or even a solution at all, but at least no soldiers are marching.

Rocket fuel, anyone?

BY ROBERT HAMBURGER

Worries about the US corporate debt market may be misplaced – low borrowing costs mean that the potential for profit is still there and is being exploited by smart operators.

'US corporate bond issuance soared in the first quarter, driven not only by historically low borrowing costs but also by strong investor demand for both investment-grade and high-yield securities'

FITCH RATINGS

SOME BANKERS and commentators in the United States appear to be increasingly worried about what they see as a lack of liquidity in the country's $8 trillion corporate debt market. This could, they fear, increase the cost of raising funds, thereby putting at risk US economic revival. There is a case for saying that these worries are misplaced. The US corporate debt market has invariably been and continues to be a relatively illiquid market, due mainly to the diverse nature of its securities.

For that reason alone, the cost of unsecured US corporate fixed-income capital has always been higher than most other forms of unsecured debt capital. The US corporate debt market is generally divided up between investment grade securities issued by companies like IBM and P&G and non-investment grade securities issued by smaller companies with more balance-sheet leverage and riskier cashflows.

According to Bloomberg, average borrowing costs on US investment-grade bonds fell to a record low of 3.096 per cent in July 2012, compared with 3.37 per cent barely three weeks earlier. High-yield debt, rated below Baa3 by Moody's Investors Service and lower than BBB- by Standard & Poor's, was yielding 7.66 per cent on the same day, the least since May. Bearing in mind that a little more than ten years ago the yields on investment grade and non-investment grade US corporate debt were more than double those of today, the cost of debt capital to US corporates is not a major obstacle to borrowing.

When the return on equity to Wall Street investment banking firms from dealing in listed US corporate fixed-income securities was high and the risks relatively low, the dealing firms were willing to make markets, commit capital, and provide liquidity. However, that changed when investing institutions increasingly focused on reducing their dealing costs in order to increase their yields, and regulators instituted rules that effectively reduced return on capital. Neither the institutional investors nor the regulators should have been surprised that the investment banking community responded to these developments by moving on to more lucrative dealing opportunities with a similar or lower risk profile.

Careful scrutiny of the private, non-listed US unsecured corporate debt market reveals that it still provides an important source of income, not only to the intermediary investment banking community but also to the investing institutions. Equally, it supplies a very important source of capital to both investment-grade and, to a much lesser extent, non-investment-grade corporate borrowers, both US and foreign. Investment banking intermediaries and institutional suppliers of capital make a lot of money supplying needy borrowers who prefer relatively high-cost debt to higher-cost equity. Therefore this market works well, with all the participants benefitting.

Take an example from two decades ago which demonstrates the important international role of the US corporate debt market. The chairman of Williams Holdings, a UK public company with a very large portion of its business and profits in the US, was approached by the US Prudential Insurance Company – through the then-independent US investment bank Smith Barney – with an offer of $100 million in ten-year unsecured debt capital. The Prudential's internal analysis indicated that even unsecured senior debt payable by the top-tier holding company would be investment grade if rated by the

"Many looking into the future believe that national securities exchanges will gradually become financial dinosaurs as they become interlinked and increasingly move toward electronic platforms"

agencies. Had Williams approached the UK domestic market for that amount of unsecured debt without any support from the operating subsidiaries, they would have been promptly shown the door – as would have any other significantly even more creditworthy UK companies.

However, Prudential saw an opportunity to earn a handsome return from a high-quality company; Williams Holdings saw a unique opportunity to raise what was seen in the UK as high-risk capital that could not be justified at any interest rate. When the deal was done, dusted and well seasoned, Williams's chairman was asked about the importance of US Prudential's commitment to his company. He responded that the money was the rocket fuel that powered his company forward to its next stage of development. That response is as valid today as it was then. This year many corporate borrowers are using the US public and private corporate bond market to obtain much needed capital to fuel their own expansion plans.

According to Fitch, "US corporate bond issuance soared in the first quarter, driven not only by historically low borrowing costs but also by strong investor demand for both investment-grade and high-yield securities. Fitch Ratings' preliminary tabulation of first-quarter bond market activity indicates that issuance by both financial institutions and industrials rose by 76 per cent from fourth-quarter 2011 as global macro fears subsided somewhat and spreads tightened."

Issuers are attracted by overall low interest rates, and investors by the spreads over US treasuries, which remain very attractive. The second quarter of 2012 saw record amounts of high-grade bonds being issued by the likes of IBM, Berkshire and Diageo to eager investors for even modest spreads over US treasury bonds. The third quarter saw more of the same, with resurgence in the issuance of high-yield, non-investment-grade bonds and the leveraged buyout market once again beginning to thrive.

IN A "going private" transaction being sponsored by Goldman Sachs and P2 Capital Partners, Interline Brands was able to secure highly attractive high-yield debt that has minimal covenants and that will provide the company with an important part of the rocket fuel it needs to take advantage of expansion opportunities.

How could this rosy picture change? The first factor could be the fragile state of the global economy. Current market conditions appear buoyant, but, beneath the surface, a serious slowdown in economic activity lurks and investors, especially those in Europe, have become more cautious. A leading European money manager confided recently in London that large institutional clients and ultra high-net-worth family offices started sitting on their hands in May and did so even more in following months. There are authoritative US voices, too, suggesting that there is a general waning of confidence.

If the US and global economies were strong and growth was clearly on the cards, politicians would have more room for manoeuvre. Unfortunately, it seems that growth is waning in Europe and some key economies that traditionally fuel global growth are slowing or even contracting. For example, the UK economy has thus far contracted in 2012 and there is serious concern that it will continue to do so unless the political leadership and the Bank of England act quickly. China's economic growth is moderating, and the US economy is certainly not poised for meaningful expansion.

The second factor that could radically change the nature of the US corporate debt market is the introduction of more technology. At present – and for most of the next decade – the most important factor influencing this market is, and will continue to be the individuals who lead the corporate debt market. Most US fixed-income markets have traditionally been populated by highly intelligent, creative people rather than processors or safe pairs of hands, but none more than the US corporate fixed income market.

These clever people gravitated there because of the need to make judgments on a variety of issues, such as credit quality, the impact of a company's name on investor appetite, the need for one type of covenant against another type. These are the sorts of decisions that processors and machines cannot readily make. For these and other reasons, they could make more money in the US corporate fixed income market for themselves and for their firms than in many other areas of investment banks.

Such people can produce a higher return on capital than processors or algorithm-driven machines. However, the return on capital from this market is decreasing, while the risks of participating in this market are staying the same or even increasing, just as they are in other fixed-income markets. This means that US corporate debt securities will be simplified and electronic platforms will eventually be developed to replace the talented individuals who used to make this market work so efficiently.

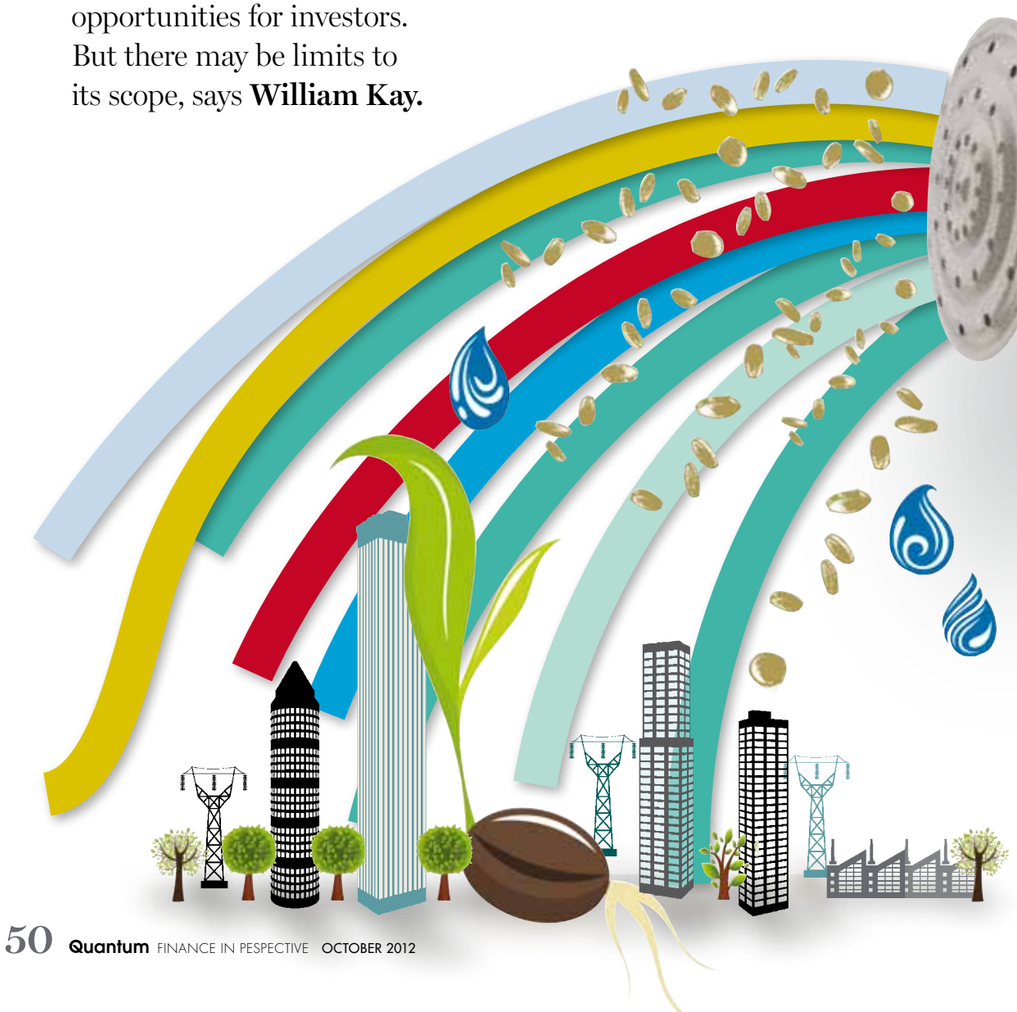
Many of those looking into the future believe that national securities exchanges will gradually become financial dinosaurs as they become interlinked and increasingly move toward electronic platforms. They extrapolate from this starting-point that a truly global interlinked exchange for all types of securities will provide more liquidity for investors and lower prices for securities, as expensive people will gradually be dramatically reduced if not eliminated. They also see technology enabling a more stable market for securities, as there will be fewer surprises and less market manipulation.

Clearly, the US corporate debt market is impacted not only by people, regulations, market conditions, politics, the US and global economies, and technology, but also by market dynamics. For the lion's share of the next decade, people will continue to play a major role in this market. Thereafter, other factors will begin to replace human input. On balance that is likely to make for a more efficient and attractive US corporate debt market.

"The second quarter of 2012 saw record amounts of high-grade bonds being issued by the likes of IBM, Berkshire and Diageo to eager investors for even modest spreads over US treasury bonds"

Seeding future growth

At a time of severe financial restraint, venture capital is the one bright spot amid the gloom for enterprises seeking start-up funding or investment, and also offers exciting opportunities for investors. But there may be limits to its scope, says **William Kay.**



THE CONTINUING global recession has intensified the search for potential catalysts to kick moribund economies into much-needed activity. That search has turned renewed attention onto venture capital, which conveniently pumps life into start-ups and smaller businesses, sectors that have the potential in aggregate to be major employers.

Venture capital (VC) can also satisfy the parallel hunt by investors for outlets offering more excitement than floundering stock markets and bonds which, at the most secure end, offer the poorest of returns. The big question is whether VC can attract finance on a sufficient scale to achieve what its supporters claim. On this question, the controversial initial public offering (IPO) of shares in Facebook this year has led governments and investors to reassess its potential.

Facebook raised $16 billion, making it the largest tech IPO in history and the third-largest American IPO ever, outstripped only by Visa's $19.7 billion in March 2008 and the $18.1 billion raised by General Motors in November 2010, according to Thomson Reuters. Of the total amount raised for Facebook, Accel Partners, one of the early VC investors, turned $12.7 million into $7 billion. With fellow backers Greylock Partners and Meritel Capital, Accel can expect to bask for years in the enhanced credibility and deal flow from that one transaction.

While Facebook waved the flag for VC, it is a sector that has traditionally financed the early-stage enterprises that politicians see as engines of job creation, increasing spending power and therefore economic regeneration. President Obama signed his Jobs Act into law in April with the observation relating to entrepreneurs that "when their ideas

take root, we get inventions that can change the way we live. And when their businesses take off, more people become employed". In Britain, this argument has convinced the government to increase the capital Venture Capital Trusts can invest in each prospect.

As VC often provides the fuel for those take-offs, it should logically be centre-stage in the search for ideas to regenerate economies that have been flat-lining. A report by Experian for the British Venture Capital Association indicated that VC-backed businesses showed stronger turnover growth between 2006 and 2010 than other enterprises, trebling sales compared with their benchmark. Profit growth and job creation were also much stronger within VC-backed companies, with an 80 per cent rise in employment over the four-year sample period. Other enterprises saw very little change in overall employment numbers.

Colin Ellis, chief economist of the BVCA, said: "This study shows that VC-backed businesses have outperformed their peers, but without enjoying vastly higher margins, suggesting that these companies are good at winning market share, thereby putting themselves on a sustainable footing going forwards."

That is sweet music to entrepreneurs who have been struggling to obtain bank finance, as capital adequacy rules make loans scarcer and the banks become more preoccupied with fighting off legislators and regulators. Even though VC finance can be demanding in terms of boardroom representation and share of the exit cake, business founders are more willing to consider it.

The message is spreading. Deloitte and the US National Venture Capital Association's 2012 global venture capital confidence survey show surges of interest in countries as far-flung as Brazil. The overall economic performances of Germany and India have inspired their VC sectors too, but in absolute terms they still lag far behind the US and UK. Yet the widely perceived image of the sector remains, by and large, that of a bit-part player with a small-scale business model that can have only a marginal impact.

Nevertheless Frederick Adler, the doyen of venture capital, said: "The biggest change is the enormous amount of capital coming into the industry, which has precipitated many people into looking for new prospects. But VC has been moving slowly, surprisingly so to me. The people in it are capable of doing much more."

A few leaders of VC firms, such as Jim Breyer at Accel, have already been making personal fortunes rivalling those of top bankers and private equity managers, without suffering anything like as much public opprobrium. The reason is that in most cases, unlike the bankers, they have risked their own capital and – more pertinently – their operations are relatively transparent.

The search by wealthy investors for reliable alternatives to crisis-hit traditional bonds and equities led many into VC. But as more money poured into the sector and trading conditions became tougher in the global recession, the tendency grew to favour larger, more established, safer bets at the expense of out-and-out blue-sky start-ups. The approach is in effect becoming closer to that in the investment spectrum traditionally occupied by private equity.

The debate about the role of VC is really part of a wider discussion over primary financing for what are, despite Facebook, overwhelmingly small firms. In 2009, the US Small Business Administration said that of 600,000 business formations a year, only about 1,000 received VC finance. But a study by two respected academics, Steve Kaplan at the University of Chicago and Josh Lerner at Harvard Business School, found that between 1999 and 2009 60 per cent of IPOs were VC-backed. So the sector has a good track record in picking winners.

Some observers argue that there is an inherent limit to the size of VC funds. Roger Ehrenberg, managing partner at IA Ventures, said: "VC, unlike hedge funds, doesn't scale as well, due to the illiquid nature of the asset class and the time required to manage a single investment. Also, the costs of compliance, reporting and control are much more easily attained by smaller firms through outsourced service-providers. Once a firm achieves a certain scale – somewhere between $50 and $100 million in committed capital – I argue that the competitive advantages of scale, as it relates to running the operation, have largely been neutralised."

As VC firms stretched themselves in the 1990s, that limitation may have contributed to the crash that burst the dotcom bubble, which took the sector a decade to live down. Then it was hit by the recession. In 2009 and 2010, 252 venture firms raised a combined $25.2 billion, compared with the $68.7 billion raised by 419 funds in the two years before that.

But, buoyed by the success of the Facebook flotation, VC's supporters are speaking out ever more strongly. Adler insists that "it's technology, technology, technology, technology. And it's expanding. I can debate whether it's overpriced or underpriced. In the new period, there is an enormous burst that will go on for quite a while. If you are smart enough and willing to do the work, and have the access to technology, you are going to win."

Breyer, too, is extremely bullish. He says: "We are in a period now that I've never seen in terms of the environment for young entrepreneurs, be they in Palo Alto, Boston, Beijing or Sao Paolo. When there's this much change and uncertainty occurring in all the major technology stacks, it simply offers unprecedented opportunity for entrepreneurs to build new technologies and applications. This kind of innovation tends to occur once or twice a decade historically."

Breyer believes the most exciting opportunities are "where traditional ecosystems and industries are seeing accelerating disruption", adding that "for the next couple of years I can't imagine a better

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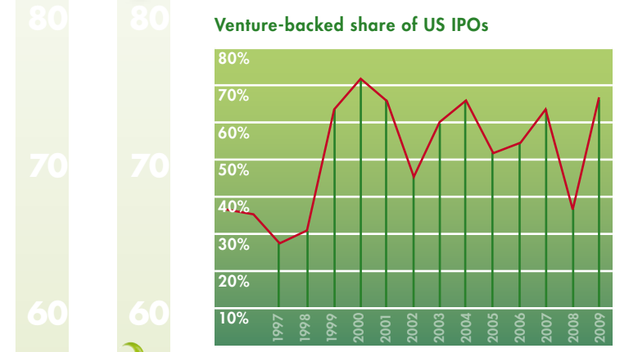
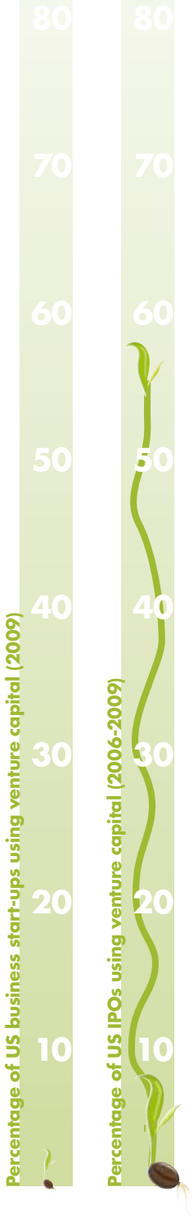
> COLIN ELLIS, CHIEF ECONOMIST OF THE BVCA.





environment around the world to be disrupting traditional companies and providing innovative new applications and services."

Whilst insisting that Accel Partners has well-tested systems for valuing start-ups, Breyer accepts that luck plays a large role in every success story. "That means daily testing and retesting of our investing hypotheses," he said.

Why is VC so resilient? Simply because, according to Georgeanne Perkins, a managing director of Fisher Lynch Capital, inventors do not stop inventing. The key, she says, "is to be selective and patient. VC is not for the faint of heart or those who can't manage with some illiquidity, because building value takes time. But invention never has a recession. Technology continues to evolve at a rapid pace, and entrepreneurs continue to actively start new companies and seek the most experienced VCs to help fund and build them."

She argues that the index returns for VC never have been, and never will be, worth the risk and illiquidity, but that there should always be great returns for those few VCs who consistently make visionary, educated, valued-added bets on innovation. "In a slow-growth economy with volatile public markets and low interest rates, top-quartile venture capital should outperform other asset classes, because VC – that virtuous circle – is the only investment opportunity that creates something out of virtually nothing," she says.

That eternal hope is what keeps VC's supporters going through thick and thin. The entrepreneurs offer hope, and the VC funds offer the means to convert that hope into riches. Governments would like to turn this "hope machine" into an engine for economic revival but – other than by loosening its tax restraints – they have had little success when getting too directly involved.

Past efforts at state-controlled VC have been about as successful and creative as they have been in state-controlled film industries. Immediately after World War II, the UK government created Investors in Industry and the Industrial and Commercial Finance Corporation – later bundled up and floated on the stock market as 3i. British administrations discovered that there is an inherent conflict between the need to deploy taxes responsibly and the flair to take a gamble on what may seem at first blush to be hopelessly unlikely business prospects. Now China is trying to square that same circle (see Box).

Perhaps VC is too fragile to withstand the weight of too much expectation as an economic regenerator. Once it reaches that scale and importance, the entrepreneurial lifeblood is liable to be stifled by bureaucracy. It's a niche and that's how they like it. As Kaplan and Lerner observed, VC is a cyclical business that will come and go and there are dangers in expecting too much from it.

"Despite ongoing concerns," says Mark Heesen, president of the US National Venture Capital Association, "the opportunistic nature of the industry remains clear. Venture capitalists are nimble and can quickly move to where the most promising entrepreneurs, policies and innovations exist."

THE CHINESE WAY

The Chinese do many things differently from the West, and they are pursuing a different investment model through the dominant state-owned Shenzhen Capital Group, with its mixture of VC, regional guidance funds, international joint ventures and commercial funds.

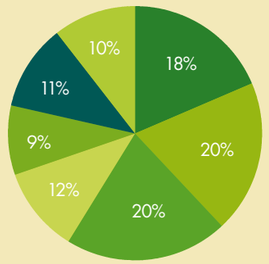
Shenzhen claims a 36 per cent average annual investment rate of return and by July 2010, the latest figures available, had invested $9.5 billion in 287 projects, an average of $33 million each. That is equal to 0.16 per cent of annual Chinese output, where GDP was $5.9 trillion in 2010. US venture capital investment accounts for 2 per cent of GDP.

Chinese VC growth has been startling since 2006, even allowing for the impact of the global recession, but this may be a temporary phase.

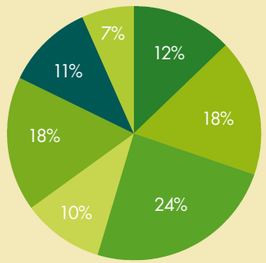
Studies indicate that the Chinese approach is based much more than in the West on investors building relationships, not just with CEOs but right down to mid-level managers.

Their preference for eschewing the quick hit in favour of a long-term approach may be coming through in the cumulative numbers, but it also suggests that there may be a plateau until the next set of relationships bears fruit.

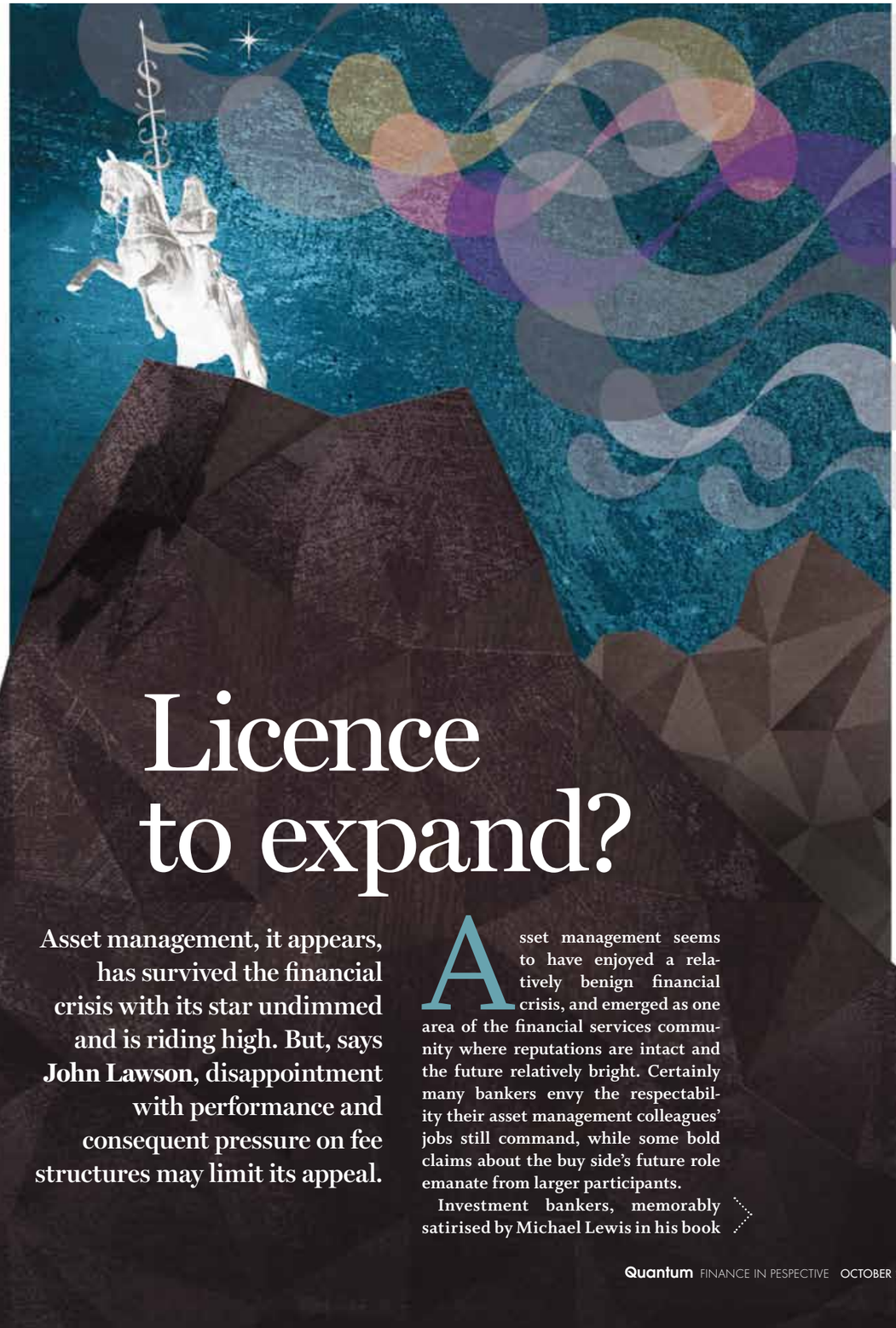
SCGC Number of Deals by Industry (%)



SCGC Investment Amounts by Industry (%)



IT/Chips, Optical/Mechanical/Electrical, Consumer/Logistics/Retail, Life Sciences, Energy/Environmental, New materials/Chemicals, Internet/New media

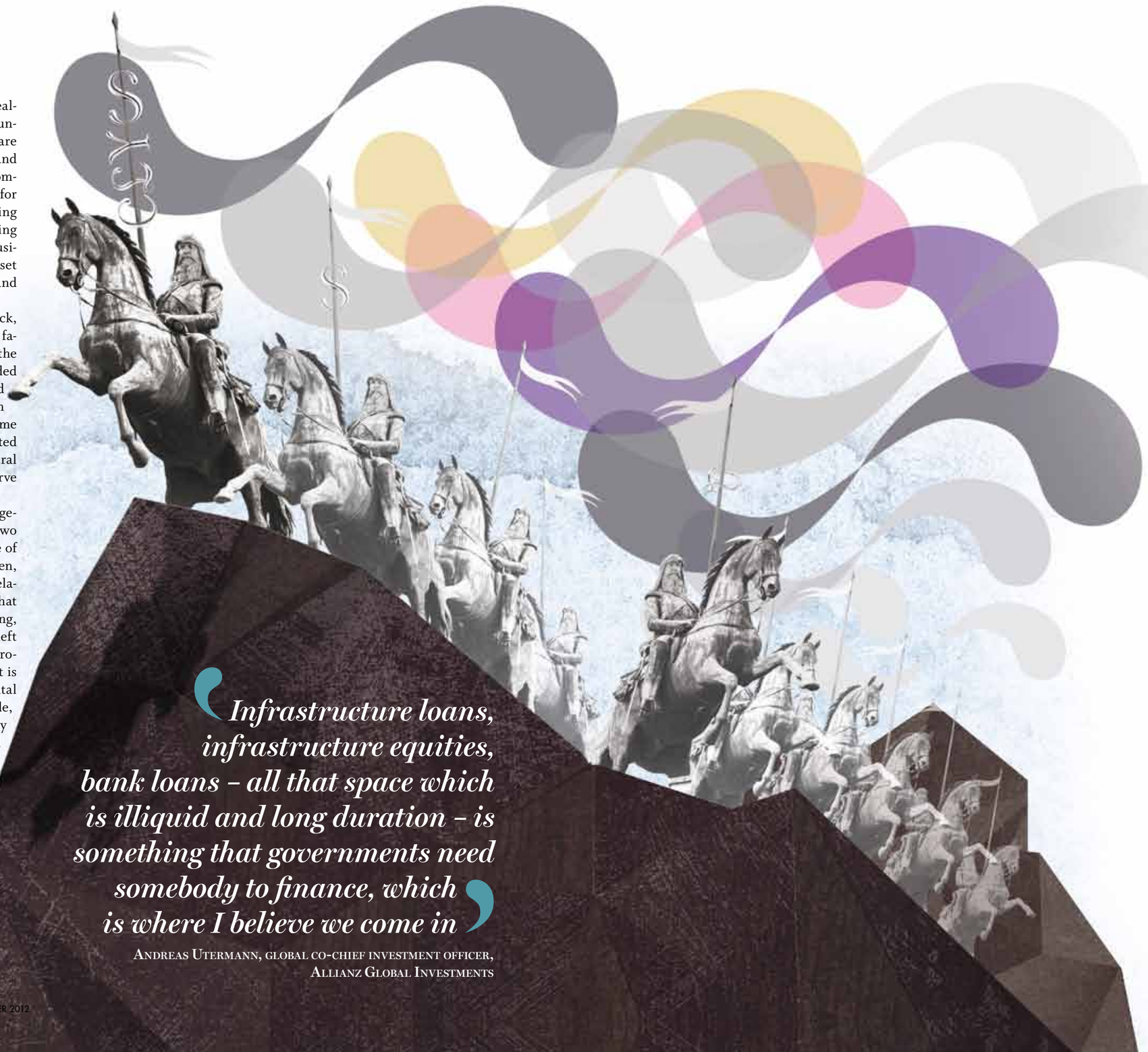


Licence to expand?

Asset management, it appears, has survived the financial crisis with its star undimmed and is riding high. But, says John Lawson, disappointment with performance and consequent pressure on fee structures may limit its appeal.

Asset management seems to have enjoyed a relatively benign financial crisis, and emerged as one area of the financial services community where reputations are intact and the future relatively bright. Certainly many bankers envy the respectability their asset management colleagues' jobs still command, while some bold claims about the buy side's future role emanate from larger participants.

Investment bankers, memorably satirised by Michael Lewis in his book



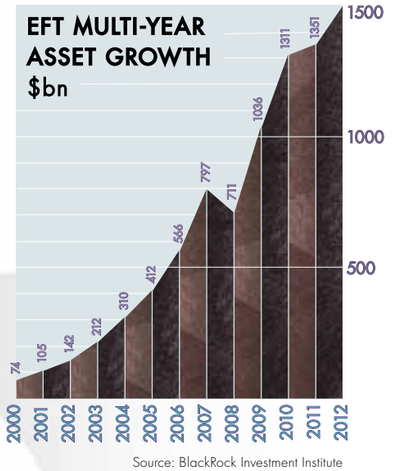
Liar's Poker as "a master-race of dealmakers possessing vast almost unimaginable talent and ambition", are currently cowed by regulation and accused of creating the crisis. Commercial bankers are castigated for the abandonment of prudent funding principles at the same time as being vilified for a failure to finance business. Yet their counterparts in asset management are riding high and consorting with governments.

The sector's behemoth, BlackRock, is even compared regularly – and favourably – to Goldman Sachs in the finance firmament. It has persuaded Philipp Hildebrand, former head of the Swiss National Bank, to join (from October 2012) and has become a "go-to" advisor for sophisticated organisations, including the Central Bank of Ireland, the Federal Reserve of New York and HM Treasury.

The bull thesis on asset management's future seems to hinge on two factors: expectations that the role of the sector may evolve and broaden, and that regulation will remain relatively light. Proponents suggest that the group may supplant financing, advisory and even trading roles left vacant by shrinking banks and brokers. This "promotion" in status, it is argued, would reflect a fundamental shift in power from sell to buy side, with asset managers potentially by-passing investment banks and dealing directly with customers.

This is also predicated on the continuing retreat of banks, based on regulation and tightening of capital requirements, and a financing gap which bank balance sheets may no longer be able to accommodate. Andreas Utermann, global co-chief investment officer of Allianz Global Investments, argues that

> *'Infrastructure loans, infrastructure equities, bank loans – all that space which is illiquid and long duration – is something that governments need somebody to finance, which is where I believe we come in'*
>
> ANDREAS UTERMANN, GLOBAL CO-CHIEF INVESTMENT OFFICER, ALLIANZ GLOBAL INVESTMENTS



Source: BlackRock Investment Institute

"infrastructure loans, infrastructure equities, bank loans – all that space which is illiquid and long duration – is something that governments need somebody to finance, which is where I believe we come in, tapping our institutional investor and sovereign wealth contacts".

Andrew Dyson, in charge of global distribution at Affiliated Managers Group, is more circumspect. He says: "Clients recognise that the withdrawal of banks from the credit provision process is an opportunity. How that happens is still up for debate."

Asset managers certainly seem to be testing whether they are able to take on a more active role in channelling capital from investors to companies and governments, by-passing investment banks. This is seen in private debt placements, while alternative managers are busy raising capital for debt funds. In a world starved for yield, direct lending to issuers is proving an attractive model. BlackRock is even beta-testing its own securities trading platform, which would supplant traditional market-makers.

But while there are examples, there is not yet an avalanche of change, perhaps partly because – with such weak corporate demand for debt and recent long-term bank refinancing – there is less pressure on banks' balance sheets, pending incoming

new capital adequacy regulations.

The second helpful factor is regulation. Fund firms and asset managers responsible for huge volumes of clients' cash have so far been largely spared the intense scrutiny experienced by other financial professionals in the fallout from the global financial crisis. It should not surprise us that asset managers have enjoyed a better press.

All investment banks insist that their customers come first – this is the first of Goldman's "business principles", for instance – yet asset management companies have this defined in their structure, as money managers for clients. The investing client normally retains direct ownership of the assets managed and openly carries the market risk to those funds. However, there are also plenty of challenges to the asset management business, as clients remain very uncertain where to invest amidst current market volatility and low returns.

Philipp Hildebrand, the former chairman of the Swiss central bank, is joining BlackRock

"The bull thesis on asset management's future seems to hinge on two factors: expectations that the role of the sector may evolve and broaden, and that regulation will remain relatively light"

The crisis has focused attention on fees, which remain under pressure, particularly for equity products. Product innovation in mainstream funds appears to have dried up in the face of weak investor appetite. New fund launches in Europe, once the lifeblood of the sector, are running at a quarter of peak rates. In the United States, 16 straight months of equity fund net outflows showed that investors have continued to lose faith in both equity markets and their managers.

Too much of the activity of asset management has been zero-sum squabbling over institutional mandates or distribution relationships. McKinsey's latest survey of the global asset management industry (published in June 2012) indicates that, although total global financial assets have continued to rise to €169 trillion, AMs' share of this has declined from 25 per cent to 22 per cent. This implies a slight fall in assets under management (AUM) over the last four years. A key reason is competition from simple term-deposit products from the commercial banks and consumer finance houses to support their liquidity.

Meanwhile, passive index and exchange-traded funds (ETFs) are gaining ground, shading the performance of the traditional mainstay of defined contribution retirement business in mutual funds. According to the latest edition (June '12) of BlackRock's ETP Landscape, total AUM in indexed products has grown by 16 per cent CAGR, even over the five years since market peak in 2007. These highly scalable products, particularly ETFs, are mix-negative for the sector's returns. In June, the European Federation of Financial Services Users told IndexUniverse, a leading independent authority on ETFs, that they found an asset manager charging 25 bps in fees for a CAC40 ETF, versus 295 bps for its own equivalent index-tracker.

The other growth area is "alternative" investment: namely hedge funds, private equity including venture capital, and real estate/commodities. These are less easily scaled, could prove more volatile and more reputationally risky. Unlike traditional portfolio investment in public markets, these are more politically sensitive investment areas and may require greater recourse to third parties.

Finally, the ownership of the industry remains highly fragmented and diverse. The piece which has seen most shrinkage, but which is still large, is ownership by insurance companies – and especially investment banks themselves. Goldman Sachs continues to compete as an asset manager amongst its other activities. Merrill (now BofA/ML) and Citi largely disengaged during the crisis.

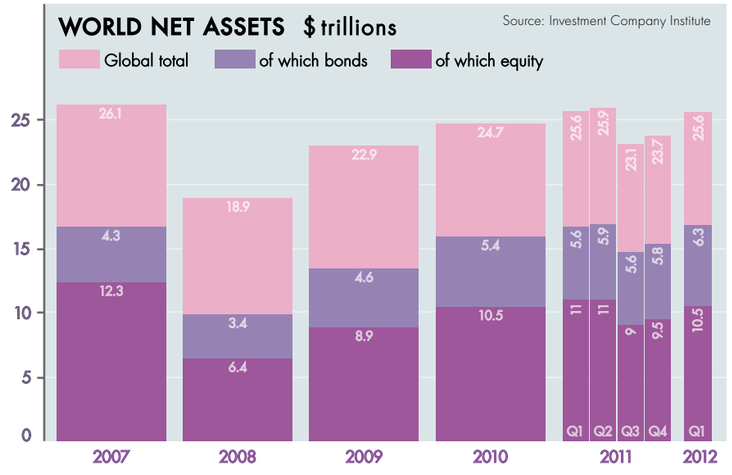
There is a widespread belief, yet to be turned into a well-documented trend, that bank and insurance company deleveraging will throw off further fund management operations and allow the independent sector to grow. Consolidation and additional scale will certainly be needed if asset management's role is to expand. Investment banks often have hundreds of staff members engaged in risk assessment, far out of reach of many firms in today's fragmented asset management industry.

"Asset managers certainly seem to be testing whether they are able to take on a more active role in channelling capital from investors to companies and governments, by-passing investment banks"

But the greatest challenge for asset management may be that, if it does succeed in evolving its role, it may start to look increasingly like investment banks themselves, and acquire a riskier profile, which will inevitably attract the attention of regulators. Take those bulging ETF issuers: though not yet proposed, it is not too far-fetched to suggest that firms like BlackRock, State Street Global Advisors and Lyxor may end up having to apply for banking licences for this activity.

ETFs have been drawn into the shadow banking debate in particular as a result of their use of derivatives, securities lending and repo transactions, all of which are seen as key shadow banking activities. "Market finance", as ETF providors prefer to term it, plays a critical role in the profitability of the product. Its further growth may suggest greater need for regulation. AUM in fixed-income ETFs (the fastest-growing area) could reach US$2 trillion over the next 10 years, according to iShares.

There is also a danger in overall firm size: in the US, which is still 40 per cent of the AM industry, the FSOC (Financial Stability Oversight Council) may shortly designate non-bank SIFIs (systemically important financial institutions). This could include asset management firms, and draw them into a web of further oversight, public scrutiny and capital requirements.



It remains to be seen if the conditions which could support realignment and broadening of the asset management role prove contradictory. Consolidation is needed, as scale seems a precondition for developing the in-house capabilities and staffing behind competitive external services, for advisory mandates, for valuation and risk management, or even for trading platforms. Yet scale and role change will probably attract regulatory attention in a world where financial innovation is now treated with suspicion. Paul Volcker's comment that he couldn't think of a useful financial innovation since the ATM seems to set the tone for regulators' current thinking.

A further acid test of whether asset managers have trumped investment banks may come in the recruitment statistics as we learn whether, despite all the vilification, mainstream financial markets and investment banks remain the most interesting to top graduates. Despite sporadic signs of changes in its role, and the continued respectability of asset management compared to banking, its humdrum reputation – and current disappointment with performance and consequent pressure on fee structures – may continue to limit the pull of asset management unless much greater concentration evolves.

Raising the bar

Should governments step in to regulate capital markets? **Wang Jiwei** argues that intervention will often worsen the outcome in developed markets, but in emerging markets accounting-based regulation may deliver benefits that exceed the costs.

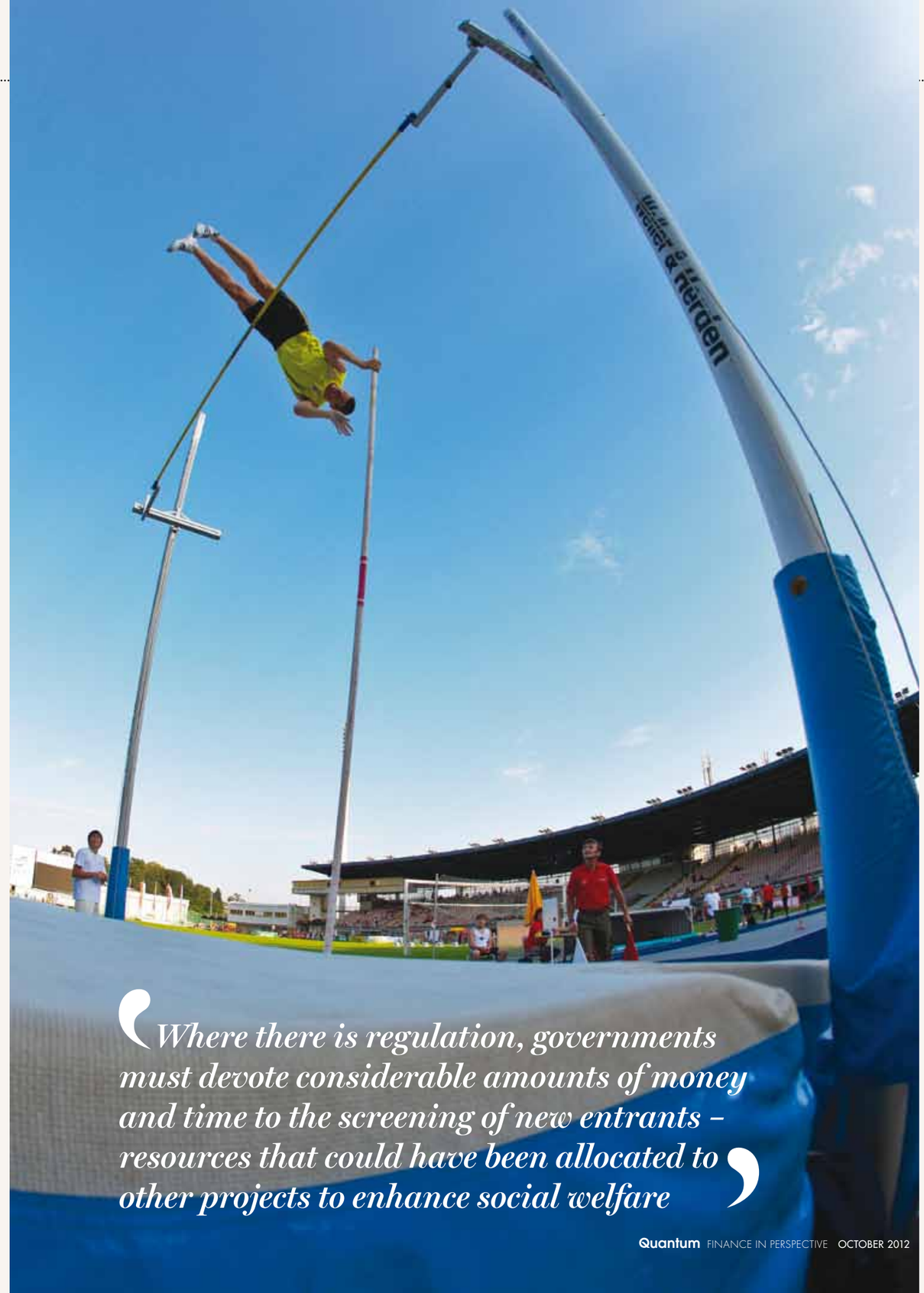
ONE OF THE MOST CONTROVERSIAL questions in economic policy is whether governments should intervene in or regulate capital markets. Pure free-marketeers believe that the "invisible hand" is a self-correcting mechanism, while advocates of intervention say that regulation enables governments to correct market failures and maximises social welfare.

When it comes to regulating stocks after their initial public offerings (IPO), many governments adopt a "disclosure-based approach", involving limited government intervention. No official approval is needed before additional shares are issued so long as companies provide adequate disclosure. Nor is there an accounting-based profitability threshold that the company has to meet before issuing stock – the rationale is that such thresholds would create additional costs for investors.

There are inevitably costs associated with accounting-based regulation. In a world without transaction costs, parties will naturally achieve an efficient outcome without any intervention. Regulation, then, can only worsen the outcome, at the very least by imposing undue costs. Where there is regulation, governments must devote considerable amounts of money and time to the screening of new entrants, resources that could have been allocated to other government projects to enhance social welfare. Applicants also incur costs related to compliance.

Moreover, when an accounting-based threshold is a key element of a regulation, there may be agency problems for investors. Regulations based on accounting numbers, such as a minimum return on equity (ROE) threshold, can provide incentives for contracting parties to manipulate accounting data opportunistically to meet these thresholds. Corporate managers may do so because they believe it will be costly for regulators to "undo" such behaviour. If a manager manipulates accounting data to meet criteria for issuing additional shares to the public, this action will trigger inefficient allocation of capital resources, and hence damage the interests of investors.

However, there are considerable benefits from using accountancy-based regulation in the correct way in the right markets. In efficient capital markets, investors are sophisticated enough to weed out poorly performing firms, so accounting-based regulations are not needed to gauge the performance of new entrants. However, the situation in emerging markets can be very different; here accounting-based regulation may deliver benefits that exceed the costs. At the early stage of capital market development, investors do not have enough sophistication to distinguish



"Where there is regulation, governments must devote considerable amounts of money and time to the screening of new entrants – resources that could have been allocated to other projects to enhance social welfare"

between the good and bad companies in the market.

Moreover, firms can manipulate the selling price of stocks at a big discount. This means existing shareholders have to choose between either buying additional shares, irrespective of the firm's performance, or seeing their ownership diluted. Finally there are severe "adverse selection problems" in emerging markets, especially in comparison with developed markets. That is because managers, as insiders, know more than market participants about the true value of the firm and have an incentive to issue additional shares when stock prices are overvalued.

These market failures cannot be automatically corrected, because the market per se is inefficient. In these circumstances, governments should help by intervening and imposing accounting-based regulation. This helps investors to differentiate between good and bad firms and can minimise adverse selection by managers. These benefits may exceed the costs associated with the misallocation of capital resources.

China is an example of where this approach has been adopted. The government has used accounting-based methods to regulate shares issued by listed companies, and its experience sheds light on the costs and benefits in emerging capital markets. In the early 1990s, China's listed companies could only issue additional shares through pre-emptive rights offered to existing shareholders. Due to the lack of other means of raising capital and the Chinese investing public's insatiable demand for stocks at this time, rights offerings were excessively abused. To curb this, the China Securities Regulatory Commission (CSRC) issued regulations to restrict rights issues after November 1993. From that date, listed companies were only allowed to issue rights to existing shareholders if they had been profitable in the previous two years.

Then, in September the following year, the CSRC decided that listed companies that wished to issue additional shares must show at least three years' profits and a minimum three-year average return on equity of 10 per cent. The CSRC decided on this measure because they had found that listed companies wanting to make rights offerings were manipulating accounting numbers to report a profit. In January 1996, the threshold was increased to a minimum return on equity of 10 per cent in each of the previous three years, since the 1994 regulation was failing to curb the abuses.

Further changes were required in 1999, when the CSRC lowered the threshold to a minimum three-year average return on equity of 10 per cent and a minimum of 6 per cent in each of previous three years. This decision was taken because the 10 per cent annual return on equity threshold regulation introduced in 1996 triggered significant opportunistic earnings manipulation.

> *"Any emerging market government that wants to introduce accounting-based regulation must have an excellent understanding of the status of its capital markets."*

The evidence for this comes from the sharp increase in reported return on equity, which was 10-11 per cent for 1995-1998 (see chart). It marked a sharp contrast to the pattern between 1992 and 1994 when there was no ROE requirement. The CSRC responded to public criticism by lowering the threshold – though the principle of a threshold was still contained in the regulations.

The next stage in extending the options to raise additional capital came in 2000, when the CSRC allowed large-scale seasoned equity offerings (SEO) by issuing regulations similar to those introduced in 1993 to govern rights offerings. The CSRC believed that China's capital market had become more efficient during the first seven years and would automatically correct market failures. This regulation did not impose a strict profitability threshold, and any company with profits in the previous three years could apply to the CSRC for SEO authorisation.

However, there were to be changes in these regulations over subsequent years. Amendments to the regulations for seasoned equity offerings followed a similar path to those introduced for rights offerings. The original regulation issued in May 2000 which allowed listed companies with three years' profits to apply for approval to conduct seasoned equity offerings was replaced 10 months later with rules which increased the threshold to a three-year average ROE of 6 per cent.

This was not a definitive threshold, in that a company which did not meet these standards could still qualify – for example, if the management and underwriter provided detailed evidence of the healthy state of the company. But introducing a threshold had become essential to curb abuse by some Chinese listed companies.

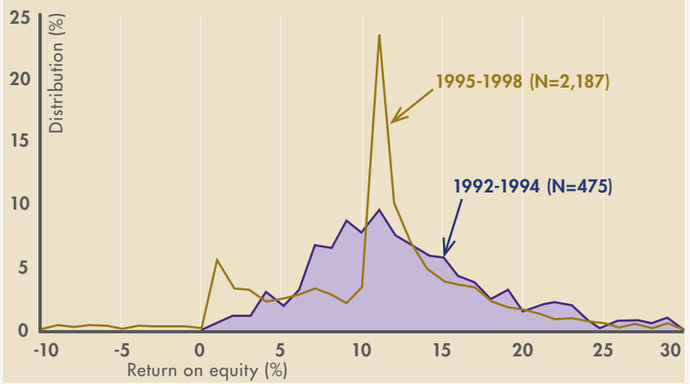
Then in 2002, the CSRC raised the bar to a three-year average ROE of 10 per cent and a minimum ROE of 10 per cent in the previous year. Since the threshold introduced in 2001 allowed some exemptions, management and underwriters were able to collude to help poor companies to gain additional market resources. For example, Wuhan Department Store Group announced a seasoned equity offering proposal immediately after the 2001 regulation went into effect – even though its ROEs between 1998 and 2000 had been 3.16 per cent, 2.72 per cent and 2.41 per cent, all below 6 per cent.

So what lessons can be learnt from the Chinese experience? The various regulations on rights offerings and SEOs detailed above imposed at least two types of cost on China's capital markets. The first was the earnings "management" needed to achieve the numerical accounting threshold. Managers of poorly performing companies could manipulate accounting numbers to meet the threshold in order that they could then raise additional capital from investors. Thus investors' capital may be allocated to less efficient projects, to their disadvantage.

The second cost of a numerical threshold was that it could exclude firms with a potential for good future performance, and allow firms with probable poor future performance to conduct rights offerings or SEOs. Despite the costs that have resulted from adopting numerical rules, the Chinese government continues to use a similar approach to establish rights issues and SEO qualifications, arguing that accounting-based regulation helps to minimise resource misallocation, and that regulation can reduce the adverse selection problem in equity offerings.

The message is clear. Any emerging market government that wants to introduce accounting-based regulation must have an excellent understanding of the status of its capital markets. Governments need to promote rigorous capital market research by academics and consultants and undertake other investigations to ensure that they understand the demand and supply of their capital markets. They need to impose a strong threshold when the first regulations are introduced, but also actively to monitor market reaction and adjust their rules to take genuine concerns into account. In this way, they can maximise the benefits of accounting-based regulation and avoid imposing unnecessary burdens on the markets.

Costs and benefits of accounting-based regulation in emerging capital markets



Golden opportunity

Now that the political signals are favourable, the influx of international entrepreneurs is the key to what could be a glittering future for Myanmar and its commercial centre, Yangon, says **William Selig.**

THERE CAN BE no clearer evidence of the transformation in Myanmar's global standing than the presence of so many international investors in its commercial centre, Yangon. Flights to and from the city are consistently full, the cost of hotel rooms – even in the current low-peak monsoon season – has leapt from $75 a night just six months ago to $250, and restaurants are inundated with international bankers and business leaders looking for ways into one of the world's last significant untapped economies.

Myanmar, after 50 years of economic isolation and deterioration, is fast becoming one of the most talked-about emerging market investment stories. Investors had been waiting patiently for the right signals before establishing a presence in what was once the jewel of South-East Asia. Now the green light has been given. The political foundations are in place, a significant portent being the election to parliament in 2012 of Aung San Suu Kyi. This was followed three months later by a far-reaching shift in American policy when the Obama administration lifted nearly all its economic sanctions.

It is no surprise that international investors have responded so positively. Myanmar has abundant natural resources, including the world's largest ruby and jade deposits, 90 per cent of the world's teak, the fourth-largest natural gas reserves and some 60 million consumers on tap. It is planning huge investment in rebuilding its infrastructure. The largest ten projects in the pipeline are worth $90 billion, and will include roads, railways, sewage and power networks, as well as ports to match the largest in the world.

With limited public sector resources available, this programme of reconstruction will require not only international technical expertise but also global funding – and foreign investors will only commit if they are comfortable with the foreign direct investment (FDI) laws. The signs here are also positive. The government is preparing a new foreign investment law, which aims to preserve territorial and economic sovereignty while ceding the rights foreign investors will insist on, including the right of ownership.

Finalising this law is proving to be a slow process, though this hardly makes Myanmar unique among emerging and frontier markets. However, there is no doubting the government's commitment to reform. From politicians to business leaders, diplomats and taxi drivers, there is a conviction that the paradigm shift to economic openness is "real and irreversible" – and most significantly, the government is widely praised for supporting reform.

The new foreign investment law is only part of the solution. Without a channel to allocate money and resources efficiently, it is unlikely that incoming FDI will deliver its full benefit to the economy. As has been the case in the early days of every emerging market, this will be facilitated here by the international brokers, who will look to deliver the banking and credit facilities needed by the public and private sectors.

"There is a risk to entering Myanmar today, but also a risk that those who hesitate will be left behind when the country takes off on its path of rapid growth"

Already a significant number have arrived in Yangon. Many do not work for large banking institutions but are either freelances or work for boutique investment advisory companies. They seek to invest directly or on behalf of their high-net-worth clients. As this network grows, so will the size of deals and, correspondingly, liquidity.

The success of these financial entrepreneurs is the key to Myanmar's future in securing funding for infrastructure projects. For example, shortage of capital has led to some delays in Dawei, a $56 billion 10-year project which includes a deep-sea port and a special economic zone, an integrated steel mill, oil and gas project, and a petrochemical complex, as well as a fertiliser plant.

Even though the Thai government made a commitment to provide $1 billion in funding, the developer, the Italian-owned Thai Development (ITD), has had difficulty arranging adequate financing. In July, ITD's main partner, Max Myanmar, announced its withdrawal from the venture. ITD now hopes to secure three-quarters of the financing from various Japanese financial institutions.

As Myanmar seeks solutions to the financing challenge, brokers are drawing parallels with the strategies adopted by Indonesia and the Philippines. Having developed strong financing structures in partnership with such institutions as the IMF, the World Bank and the Asia Development Bank, they were able to tap into enormous global funding resources, lightening the burden on the state budget. It is essential that Myanmar provides the appropriate structures and transparency if it is to access these funds. Indeed it may also help trigger the involvement of international banks, which cannot alone deliver enough funding, given the size and scope of Myanmar's projects.

A further benefit is that the involvement of

international agencies and foreign investors in infrastructure projects would assist Myanmar's banking and financial sector to develop sufficiently to support the country's growth plans. As they see opportunities, local and foreign investors will press for domestic financial and capital markets.

At present, the creation of an efficient and transparent system of financing sources is at an early stage. However, there are clear signs that the problems are being addressed. In March, currency reform ended the opaque and complex multiple exchange-rate system used for the last 35 years. The government is also actively promoting growth in the banking sector. A year ago, the central bank authorised 17 local private banks to open 57 money exchange counters and licensed 11 to conduct foreign banking services.

While the central bank is confident that better management and information systems will make local banks sufficiently competitive, this may be over-optimistic. Greater foreign bank participation will be needed for the financial sector to keep pace with the country's economic restructuring, and there is little doubt that the presence of international banks would lead to its exponential growth.

Today, there are four state-owned banks, 19 private domestic banks, one finance company (the state-run insurance programme) and 17 foreign bank representative offices. Shortcomings are evident from the list of prohibitive regulations, including a cap on deposit interest rates below the prevailing inflation rate, a ban on private commercial bank lending to farmers, and complex rules on collecting interest from loans. There are no basic resources such as a credit rating system and properly trained staff to manage it. This gap deters the inflow of international capital and this will need to be addressed.

> *In March, currency reform ended the opaque and complex multiple exchange-rate system used for the last 35 years*

Modernising the financial system and corporate environment will require time and effort. But the government is clearly eager to address the problems; and the presence of more brokers, financiers and business executives reflects a growing belief that the opportunities in Myanmar outweigh the risks.

Some recent visitors to Yangon have said they would return in a few years when the country is better set up for foreign investment. However, just as there is a risk to entering Myanmar today, so there is also a risk that those who hesitate will be left behind when the country takes off on its path of rapid growth. Each investor has to weigh the balance of these risks. Those who decide to invest will be taking what may well be one of the last chances in a very long time to participate in such a promising, large frontier market story.

*References the 2008 Forbes Tax Misery & Reform Index

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