A tough nut...
Basel 2, insurance and the law of unexpected consequences

Shirley Beglinger
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‘With thanks to Barry, Angelos and Thomas - for encouragement, correction and guidance’.
Preface

This is a paper that sets out to explain why insurers have (so far, at least) had such little joy out of the Basel 2 experience – despite the fact that it was widely assumed, by both bankers and insurers, that insurance would provide a cheap and effective mitigant for operational risk. It is written from the point of view of a long-time insurance industry professional, but it is written in a language that bankers can understand.

Indeed, that is one of the main conclusions of the paper. Bankers and insurers speak very different languages – though both hack a living out of the financial services jungle. Their vocabulary is different; indeed, their mindsets are different. Concepts that appear virtually identical in each area are, in fact, very different in their application.

Linked to that is the easy assumption that bankers know it all – and that insurers are (in the happy phrase used by our author) little more than “bankers’ idiot cousins”. Of course it’s not true. But what is true is that the new Basel Accord was written by bankers, primarily for bankers, and that – when it deigns to acknowledge the role that insurance can play – it does so through a banker’s eye, which means that, too often, it asks questions of the insurance industry that it cannot answer.

This is the third paper that Shirley Beglinger has written for the CSFI – and it is probably the most challenging. What she says makes uncomfortable reading, both for the Basel Committee itself and for the insurance industry. There is a mismatch between the new rules and the role that has been allocated to insurance that will be very hard to straighten out. That said, she does (as one would expect) offer her own set of recommendations.

Andrew Hilton
Director
Centre for the Study of Financial Innovation
Introduction and summary

This is a paper about Operational Risk (OpRisk) and insurance – and why the two seem to mix about as well as oil and water. Where the discussion strays into areas other than OpRisk, this is intended to draw a parallel and underline an argument.

The Basel Committee has done sterling work, and the European Union firmly expects the new Basel 2 capital regime for banks (as incorporated into the Capital Requirement Directive) to swing into force as from January 1, 2008. Canada, Australia and Japan will be thereabouts.

In contrast, the Americans have decided that only their largest banks will be required to join the party. Congress and the various supervisors are still arguing over whether to press-gang smaller banks (and securities houses not currently registered as banks), to allow them to join or to shut them firmly out with a watered-down Basel 1a. Some of the largest US banks might have wished to decline, while some of the smaller ones would dearly like to be invited. Anyway, while the US debates back and forth, the rest of the world is going ahead.

While the Basel Committee has done its best to future-proof the new capital regime, it also recognises that usage and experience will lead to revision (and a possible rewrite) within a few years. OpRisk practice is still evolving. Presumably therefore, that part of the regulation will also evolve. This paper is intended to offer some thoughts on its evolution:

- **First:** Those banks wishing to take full advantage of the new Accord are being encouraged to calculate their own Regulatory Capital (RegCap) at risk. In the case of OpRisk, that calculation must be performed to the 99.9% confidence interval. This paper argues that the 99.9% confidence interval may be punitive and serve to discourage rather than encourage management excellence in OpRisk.

- **Second:** Both supervisors and banks argue doggedly that insurance has no effective role to play in OpRisk, simply because there are differences between the banks’ definition of their OpRisks and the definitions used in insurance policies. Supervisors seem to be distrustful of the supposed illiquidity of the insurance product as compared with (for example) credit derivatives. In truth, there appears to be an equally high level of basis risk between credit derivatives and their underlying ‘protected portfolio’, and there have certainly been delayed pay-outs on credit derivatives. Despite this, widespread credit derivative usage has led to the development of sophisticated mathematical metrics to calculate the mitigating effect (and relative liquidity) of credit hedges versus the underlying portfolio of loans. This paper argues for the
application of similar metrics to insurance within the OpRisk capital calculation model.

- **Third:** The paragraphs in the Accord which relate to the mitigating effect of insurance on OpRisk have been inserted grudgingly, and seem to have been drafted without regard to legal and contractual fundamentals. Since supervisors surely have no wish to insert superfluous language in an otherwise tightly written document, they are urged to utilise the knowledge of insurance experts when the time comes to re-draft those sections.

**As to the Accord itself...**

My Editor has relegated the potted history of the ‘Old’ Basel Accord (Basel 1) to an Appendix. Those who are interested in what it did and why it was so thoroughly abused that supervisors felt they had to create something new are encouraged to apply a cold towel to the head and proceed thence. (Personally, I still think it should be read first before proceeding from here, but I have been overruled.)

Anyway, the New Accord is cleverly designed to discourage the thinking banker from ‘gaming’ the rules, as was the case with Basel 1. Basel 2 consists of three ‘pillars’:

- **Pillar 1** – capital – is about the hard and fast rules laid down by the Basel Committee and intended to pass pretty much unchanged into national law. The rules specify three main ‘buckets’ of capital which a bank needs to hold in order to underpin its activities. These buckets must be filled to a specific minimum level and held by every bank covered under the Accord: national supervisors may not permit ‘their’ banks to hold less than these amounts.

- **Pillar 2** addresses home country supervision. National supervisors are expected to subject ‘their’ banks to rigorous ‘quality’ inspections and to satisfy themselves that a bank’s management, controls, reporting, compliance and overall governance are up to scratch. Where a bank fails on any score, supervisors should require that bank to hold additional capital over and above the minimum specified in the Basel Accord.

- **Pillar 3** mandates public disclosure - in a single, coherent space - of certain cornerstones of the bank’s own assessment of its risk.

Take a detour to p46...
The Appendix goes into more detail on these points. But for now let’s talk about Pillar 1 ‘buckets’ and confidence intervals.

Pillar 1 specifies the three main ‘buckets’ of capital that a bank is required to hold:

- **Market risk capital**: This is the capital a bank must hold to underpin its trading activities. Banks make (significant) money from trading in the world’s capital markets, but they can equally lose significant money in those markets. So prudent regulators require them to hold capital against their trading book. That capital is calculated (usually by a methodology called Value-at-Risk – VaR) to the 99% confidence interval.

  By dint of a big stick, actuaries have drummed into the heads of non-mathematicians that the 99% confidence interval means the one in 100 year event. A bank’s calculation of capital underpinning should produce a number sufficiently large to cushion it against market turbulence in 99 years out of 100. The converse is that, in one year out of 100 the capital will not suffice. Strangely, markets have undergone a number of one in 100 year events in the past 25 years. There was the crash of ’87, the Argentine meltdown, the Russian debt crisis, the wobble of the early 90s etc etc. On each occasion, a number of banks suffered trading losses which blew through their 99% confidence interval for market risk capital. Rather than dragging the delinquent banks off to explain themselves to a lynch party, supervisors seem to have slapped them on the wrist and everything has gone merrily on. This lay observer suspects that everyone knows that the 100 year event underlying the calculation is really a 10-year event, but no-one wants to upset the applecart by pointing out the wonky math. As long as it sort of works, it seems that all participants are happy to muddle along with a (suspected) fudge.

- **Credit risk capital**: In recent history, more banks have got into trouble over bad lending than over bad trading. So, at first blush, it seems reasonable that supervisors require banks to calculate their capital at risk for the loan book to the 99.9% confidence interval. To a non-mathematician, 99.9% is merely 0.9 more than 99%, and the decimal looks rather risible. To a mathematician, the progression is exponential. 99.9% means that the capital calculated must suffice for a one in 1,000 (that’s right, one thousand) year market event, not merely for a one in 100 year event.

  However, banks themselves are very conscious of how much trouble their lending can get them into. So most of them surround their loan books with as many safeguards as they can think of. There are country limits, industry limits, loan-type limits, etc etc. The serendipitous effect of all these ring-fences is
that, even where they calculate the real one in 1,000 year market event, the resultant number shouldn’t be much larger than for the one in 100 year event.

In addition, in calculating their credit risk capital, banks are permitted to offset any applicable credit hedges (aka credit insurance policies) from their positions. There is a discussion of credit risk hedges in the Appendix, which the editor also won’t allow me to include here. But the thrust of that discussion is that many of the credit risk hedges which are accepted for capital charge calculation and mitigation purposes are at best a dodgy proposition. The instruments in question may bear little or no resemblance to the underlying risk. Their pay-out (if any) may or may not be triggered by an actual loss suffered by the purchasing bank. That pay-out may be delayed (by months if not years) if documentation is not up to scratch.

Banks, both as buyers and as sellers of protection, accept this fudge. Supervisors live with it. They have required only that banks develop mathematical metrics which reflect the basis risk in the hedge. As long as credit derivatives don’t lead to a major meltdown in the world’s lending markets, everyone appears content to live with the fairly crass imperfection which is ‘credit insurance’ as provided by derivatives. Bear this in mind when we come to discuss OpRisk and the imperfect hedge provided by insurance.

- **OpRisk capital:** Which brings us to that third bucket of capital which supervisors require banks to hold, namely for OpRisk. The Accord sets out three different ways of calculating OpRisk regulatory capital. These are, in ascending order of difficulty, the Basic Indicator Approach, the Standardised Approach and the Advanced Measurement Approach (AMA).

### The genesis of Operational Risk

Any discussion of Operational Risk must acknowledge that there is nothing new under the sun. OpRisk has been around forever. It is merely experiencing a high-profile renaissance under Basel 2, which expands upon capital adequacy requirements over the past 20-odd years.

Thus, Pillar 1 now specifically includes a ‘bucket’ of capital for Market Risk – ie the risk that a bank may lose significant funds when trading in the world’s capital markets. Similarly, a much larger ‘bucket’ is set aside to cover the risk that a portion of the bank’s lending may go horribly wrong. The appendix includes a brief discussion of the transition from the old steam-driven credit risk capital calculation method to the newer methods envisaged by Basel 2. The new ‘advanced’ method of
capital calculation is rocket powered, but could easily have led to a sharp dimunition of overall capital in the banking system. The reason was that, under Basel 2, banks were being encouraged (indeed, coerced) into “graduating” to more advanced (ie models-based) methods for setting RegCap. The ‘carrot’ for doing so was that greater sophistication would imply a lower regulatory capital requirement. That would be fine – but, if too many banks went that way, the overall capital cushion in the global banking industry would shrink substantially.

Consternation among the authors of Basel 2. Whereas no-one can claim to know what the ‘right’ amount of bank capital is, the feeling is that the current amount is about right and that any reduction would be unwelcome. But discussion of the application of banks’ own models to their RegCap underpinning was already advanced when this anomaly came to light. And frankly, it made a lot of practical sense for the Accord to entice banks into using their own internal risk models to calculate the capital at risk from their lending activities. Banks had been calculating something they called Economic Capital (EconCap) for years. Whereas EconCap had driven their risk pricing, RegCap had often driven their lending – occasionally right off the risk cliffs. If capital underpinning could be directed so that it followed bankers’ true perception of the risks in their lending book, this would remove most of the market-distorting incentives which had bedevilled Basel 1. Thus bringing RegCap into line with EconCap was a Good and Pragmatic Thing. But if Economic Capital on its own would bring about a reduction in overall RegCap, this was definitely a Bad Thing.

Enter OpRisk. Banks had always informally estimated that approximately 20% of the capital used to underpin their credit risk was in fact underpinning something they called ‘operational risk’. There was no hard-and-fast definition, but it was generally agreed that it was the ancillary ‘noise’ of a bank’s business – the screw-up, rip-off and goofball stuff that happens. Twenty percent sounded like the amount needed, so a suitable marker was inserted into the draft legislation for Basel 2. Problem solved. Or so they thought.

Then someone asked which “pillar” of the new capital accord the charge was intended to fit - Pillar 1 (hard capital rules) or Pillar 2 (where national supervisors have discretion)? Or even Pillar 3 (public disclosure)? Banks themselves were keen on Pillar 2 or 3.

Perhaps Pillar 2? After all, who could better judge the ‘right’ level of capital in a bank than that bank’s national regulator? National regulators would have a view on the quality of risk management, controls, compliance and governance within ‘their’ banks, and would be able to impose suitable strictures. The idea seemed reasonable and the flag-carrying banks of some nationalities were very keen on it, but it was eventually dismissed. After all, some national supervisors are draconian, while others coddle their charges: no matter how bad the controls, these supervisors can be
strong-armed into not inflicting an additional capital charge. Therefore, banks with draconian regulators would get stuck with a higher capital charge, while the coddlers would allow ‘their’ banks to hold less. Effectively, draconian banks would be penalised vis-à-vis coddled banks, and this would lead back to exactly the type of market distortion regulators were trying to stamp out.

Pillar 3 – public disclosure – had many apologists among the banks, because, after all, disclosure costs nothing. But supervisors themselves never really gave it much of a mention. They agreed on one idea only: namely, that if banks were required to publish information describing their risk landscape, that would give stakeholders a better understanding of each specific bank. How this serendipitous blast of clarity would favour excellence in OpRisk management was not clear. In any event, Pillar 3 was not an easily recognisable big stick: it merely represented unrelenting peer pressure.

The default position was that a truly level playing field could only be created by placing OpRisk squarely in Pillar 1. Banks were not best pleased. Pillar 1 meant setting aside capital. Capital set aside for OpRisk would be just sitting there, not used and working the way capital underpinning market or credit risk is.

However, OpRisk started to develop a life of its own. First, it needed a definition. Did operational risk include strategic risk – ie the risk that the bank was simply heading in the wrong direction? Did it include reputational risk – ie that a screw-up would cause lasting damage to the bank’s standing in the market? What about indirect loss?

Eventually, a definition was agreed as ‘the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events’. Systemic risk, reputational risk and legal risk were explicitly excluded. Unfortunately, this definition sounds soporific - and it still contains sufficient generalisations to leave room for interpretation. Given the linguistic idiosyncrasies of the various national regulators, neither generalisation nor interpretation are desirable.

And so a more precise definition was required. First, the high level definition was broken down into the types of events which could arise from those root causes. Second, these too were subdivided into further sources of potential loss, and, third, actual loss types were set out, which banks might then use as a template for their own data collection efforts. The resulting table entered the Accord as Annex 9, and is reproduced below:
### Basel 2: Operational Risk Matrix

<table>
<thead>
<tr>
<th>Category Level 1</th>
<th>Category Level 2</th>
<th>Activity Level 3 (Examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal Fraud</strong></td>
<td>Unauthorised activity</td>
<td>Mismarking of position (intentional), Transaction not reported (intentional), Transaction type unauthorized (w/monetary loss)</td>
</tr>
<tr>
<td></td>
<td>Theft and fraud</td>
<td>Account take-over / impersonations etc, Bribes / kickbacks, Cheque kiting, Forgery, Fraud / credit fraud / worthless deposits, Insider trading (not on firm’s account), Malicious destruction of assets, Misappropriation of assets, Smuggling, Tax non-compliance / evasion (willful), Theft / extortion / embezzlement / robbery</td>
</tr>
<tr>
<td><strong>External Fraud</strong></td>
<td>Theft and fraud</td>
<td>Cheque kiting, Forgery, Theft / fraud</td>
</tr>
<tr>
<td></td>
<td>Systems security</td>
<td>Hacking damage, Theft of information (w/monetary loss)</td>
</tr>
<tr>
<td><strong>Employment Practices</strong></td>
<td>Employee relations</td>
<td>Compensation / benefit / termination issues, Organized labor activity</td>
</tr>
<tr>
<td></td>
<td>Safe environment</td>
<td>Employee health &amp; safety rules events, General liability (slip &amp; fall, etc), Workers compensation</td>
</tr>
<tr>
<td></td>
<td>Diversity and discrimination</td>
<td>All discrimination types</td>
</tr>
<tr>
<td><strong>Clients, Products and Business Practices</strong></td>
<td>Suitability, disclosure and fiduciary</td>
<td>Account churning, Aggressive sales, Breach of privacy, Fiduciary breaches / guideline violations, Lender liability, Misuse of confidential information, Retail customer disclosure violations, Suitability / disclosure issues (KYC)</td>
</tr>
<tr>
<td></td>
<td>Improper business and market practices</td>
<td>Antitrust, Improper trade / market practices, Insider trading (on firm’s account), Market manipulation, Money laundering, Unlicensed activity</td>
</tr>
<tr>
<td></td>
<td>Product flaws</td>
<td>Model errors, Product defects (unauthorized, etc.)</td>
</tr>
<tr>
<td></td>
<td>Selection, sponsorship and exposure</td>
<td>Failure to investigate client per guidelines, exceeding client exposure limits</td>
</tr>
<tr>
<td></td>
<td>Advisory activities</td>
<td>Disputes over performance of advisor activities</td>
</tr>
<tr>
<td><strong>Damage to Physical Assets</strong></td>
<td>Disasters and other events</td>
<td>Human losses from external sources (terrorism, vandalism), Natural disaster losses</td>
</tr>
<tr>
<td><strong>Business Disruptions and Systems Failures</strong></td>
<td>Systems</td>
<td>Hardware, Software, Telecommunications, Utility outage / disruptions</td>
</tr>
<tr>
<td><strong>Execution, Delivery and Process Management</strong></td>
<td>Transaction capture, execution and maintenance</td>
<td>Accounting error / entry attribution error, Collateral management failure, Data entry, maintenance or loading error, Delivery failure, Miscommunication, Missed deadline or responsibility, Model / system mis-operation, Other task mis-performance, Reference data maintenance</td>
</tr>
<tr>
<td></td>
<td>Monitoring and reporting</td>
<td>Failed mandatory reporting obligation, Inaccurate external report (loss incurred)</td>
</tr>
<tr>
<td></td>
<td>Customer intake and documentation</td>
<td>Client permissions / disclaimers missing, Legal documents missing / incomplete</td>
</tr>
<tr>
<td></td>
<td>Customer / client account management</td>
<td>Incorrect client records (loss incurred), Negligent loss or damage of client assets, Unapproved access given to accounts</td>
</tr>
<tr>
<td></td>
<td>Trade counterparties</td>
<td>Miscellaneous non-client counterparty disputes, non-client counterparty misperformance</td>
</tr>
<tr>
<td></td>
<td>Vendors and suppliers</td>
<td>Outsourcing, Vendor disputes</td>
</tr>
</tbody>
</table>
Looking at this, one suspects that supervisors found themselves in deeper than they had expected.

Notwithstanding this, supervisors were genuinely keen to make the new capital rules as responsive as possible to the underlying risk in an institution. Hence, they defined three levels of complexity for calculating the OpRisk charge.

### Very simple: Basic Indicator Approach

The simplest is the Basic Indicator Approach, which may be the default option for most banks. Under this approach, a bank must take the average of its positive gross income over the past three years, multiply this by 15% and set aside a commensurate amount of capital for OpRisk. If gross income was negative in any particular year, that negative income is left out of the equation. Thus, if gross income was positive in only two out of three years, the gross income of the two positive years would be added up and divided by two, before multiplying the sum by 15%.

Gross income is defined as net interest income plus net non-interest income, making no allowance for overdue interest, operating expenses or fees to service providers - but also excluding profits from the sale of assets in the banking book, and any extraordinary or irregular items of income.

Fifteen percent of gross income translates into a very large slug of capital that banks are required to set aside simply as a cushion against screw-ups. The rather fearsome number produced by this calculation is intended to encourage banks to jump through the required hoops of risk management excellence in order to move up to the next level of OpRisk capital calculation.

### Simple, but not easy: Standardised Approach

The Standardised Approach is intended to respond better to the risk profile of specific banking activities, and the resultant lower capital charge is a reward to the bank for going through the risk management processes which must be embedded.
Standardised Approach banks must divide their activities into eight business lines: corporate finance, trading & sales, retail banking, commercial banking, payment settlement, agency services, asset management and retail brokerage.

Gross income in each of those lines is averaged over three years, then multiplied by a risk-weighted factor, beta. Beta for corporate finance, trading & sales and payment & settlement is 18%. For commercial banking and agency services, beta is 15%. For retail banking, asset management and retail brokerage, beta is 12%. Where a single line of business has negative gross income and therefore a negative charge, that negative charge may be offset from the positive capital charges in other business lines. However, where the charge over all business lines in any year is negative, that year is effectively ‘ignored’ for the purposes of calculating the average.

The good news is that this more complicated calculation will generally produce a lower capital number. The less good news is that a bank wishing to use this approach must first satisfy some stringent supervisory criteria:

- it must convince supervisors that senior management is actively involved in the oversight of the OpRisk management framework;
- supervisors must then be satisfied that the OpRisk management system is conceptually sound and implemented with integrity; and
- sufficient resources must be devoted to OpRisk management, to control and to audit.

If the bank’s organisational chart does not conform to the eight business lines outlined above, it must also demonstrate a robust, logical and consistent methodology for assigning income from various businesses to the eight business lines. In other words, supervisors do not want to see banks arbitrarily assigning income streams to business lines which will achieve the most favourable beta capital calculation for them.

Supervisors also wish to see higher standards of risk management, and no backsliding. Hence, they have laid down that a bank which has once moved from a ‘lower level’ to a ‘higher level’ (eg Basic Indicator Approach to Standardised Approach) must stay at least at that level. Short of World War 3, supposedly nothing will induce them to allow a bank to step back down to a more simple method.
Neither easy nor simple: Advanced Measurement Approach

Supposedly the pinnacle of achievement - and by far the most attractive place to be - is the Advanced Measurement Approach (AMA). If achieving AMA for OpRisk is anywhere near as difficult as achieving IRB for credit risk, however, a Herculean effort will be required.

A number of internationally active banks have already indicated that, until further notice, they will stop at the Standardised Approach thank you very much. Since this is not what supervisors wanted to hear, they have responded by requiring internationally active banks wishing to stay with the standardised approach to nevertheless jump through many of the hoops required of AMA banks. In particular:

- they must have defined an operational risk management system with clear accountabilities;
- the OpRisk function must include a risk reporting system;
- the system must generate regular reports of OpRisk exposures for senior and business unit management – neither of whom is permitted to simply ignore those reports; and
- the whole thing must be documented up the wazoo, must be validated by regular comprehensive review and must be regularly audited by external auditors and/or supervisors.

Faced with this prospect, a sensible international bank might throw up its hands and agree willy-nilly to go to the AMA level. Bearing in mind, however, that supervisors have dropped a portcullis across the retreat if banks get there and don’t like it, most international banks have peered deeply and suspiciously into the mouth of this gift horse.

AMA – Stick and no carrots?

The supposed carrots which should entice the banking donkey forward to the Nirvana of AMA are that:
- conforming banks will be permitted to use internal models to calculate their own capital requirement for OpRisk; and

- conforming banks will be permitted to use qualifying insurance as a hedge (or mitigant) for the calculated OpRisk capital.

The subtext is that own calculations and mitigating insurance will produce a substantially lower OpRisk capital number than either Basic Indicator or Standardised Approach. Sounds good. But, in addition to those listed above, there are a few more hurdles between the banks and the carrots, starting with the high-level. In particular:

- directors and senior management must be actively involved;

- the OpRisk management system must be conceptually sound and implemented with integrity; and

- there must be sufficient resources available in both the business lines and the control and audit areas.

These high-level requirements then break down into more specific requirements:

- the bank must have an independent OpRisk management function;

- OpRisk measurement must be closely integrated into the day-to-day risk management processes of the bank;

- regular reports must be run up the flagpole;

- the system must be comprehensively documented and must be regularly reviewed by internal and external auditors; and

- both the system and its day-to-day effectiveness must be externally validated.

The short form is ‘tool up, hire lots of people, invest a lot of money and crunch lots of numbers’. Since banks have lots of money and can afford to hire lots of people, it all sounds reasonable enough.

But then we find a snake in the grass: OpRisk must be modelled to a 99.9 percent confidence interval, with an assumed holding period of one year – ‘comparable with
the soundness standard of the own capital calculation for credit risk’, states the rule
disingenuously.

To this observer, there appears to be a hole in the logic here. Market risk must be
modelled to the 99 percent confidence interval, but credit risk and operational risk
need to be modelled to the 99.9 percent confidence interval? To express it
differently: market risk needs to be modelled to the one in 100 year event, but credit
and OpRisk must be modelled to the one in 1,000 year event. Why is one in 100 good
enough for market risk, when an exponential multiple of that figure is necessary for
credit risk and operational risk? Where’s the logic for such a punitive standard?

In truth, not all banks are Barings - and not all bank failures will be the result of
unauthorised trading activities. In fact, historically, a lot of banks got into difficulty
through ill-advised lending. Hence, these days, banks can (and do) control their credit
exposures very tightly. Elaborate aggregate lending limits are set out for countries,
industries, activities, lending types etc. All of those are designed to ensure that
nothing short of Armageddon can blow a life-threatening hole in the bank’s lending
book.

A serendipitous side-effect of this is that an OECD bank can stress-test its credit
capital at risk to an astonishing degree - and still not come up with any wild numbers.
Credit risk means you either get paid or you don’t, so you make absolutely certain
that not getting paid is associated with a firmly finite loss number. Each of the loan
portfolios is so set about with limits and hedges that it would require a global
economic meltdown for defaults in one portfolio to infect another portfolio and yet
another until the contagion became such that it would bring the bank down. Thus, the
aggregate capital cushion requirement for credit risk, as calculated for 999 events out
of 1,000, may not really be terribly much higher than that calculated for 99 events out
of 100.

OpRisk is an entirely different creature. It has no upside, no potential revenue stream
to offset against possible losses, and no carefully enforced set of rules which would
keep any losses within predictable parameters. Quite the contrary: there is
theoretically no limit to possible losses, and their occurrence is beyond the control of
the bank. Unlike market or credit risk, OpRisk is a risk banks don’t get paid to take.
Therefore, long before the designer label became attached to it, banks were
determined to minimise OpRisk. Failure to manage OpRisk costs banks money, and
they did everything they could to minimise the cost.

Along comes Basel 2 with a requirement that in order to achieve AMA status and all
the good things that go with it, a bank must model its OpRisk capital requirement to
the 99.9% confidence interval, assumed holding period one year. That’s a pretty
punitive requirement:
Note the difference between the number calculated at the 99th percentile and that at the 99.9th percentile. The progression is not linear but exponential.

In order to reach the crock of gold at the end of the AMA rainbow, a bank must initially demonstrate three years of internal operational risk loss data. In years to come, the bank will also have to show that it has successfully tracked that data over five years, mapped into the supervisory categories set out above. If those categories aren’t appropriate for the bank’s own data collection purposes, it must nevertheless be able to collect data and demonstrate logically and consistently why losses are assigned to one regulatory category and not to another. Losses must be tracked by date and aged, so that at some stage an ultimate net loss after all recoveries can be recorded. Bear this ‘net loss development’ concept in mind: it’s important against the background of discussion further on of the liquidity or otherwise of insurance.

Although banks are required to track separately any OpRisk losses in the credit book, those losses are taken to form part of the credit risk capital calculation. Thus, for example, if an earthquake destroyed a number of houses which were serving as collateral in the bank’s lending book - notwithstanding the fact that the table defines an earthquake as ‘Damage to Physical Assets (Natural Catastrophes)’, and therefore as an operational risk - the capital required to underpin the risk comes out of the credit bucket.

Operational risk losses in the trading book (ie market risk), by contrast, are taken out of the market risk capital calculation and added to the OpRisk capital calculation. The differing treatment adds a new dimension of uncertainty to the calculation. No doubt we all remember a famous example of this: Nick Leeson’s derivative bets
might have worked out in his favour if the Kobe earthquake had not struck. In the aftermath of the earthquake, Japanese markets moved sharply lower - meaning that Mr Leeson’s directional bet went spectacularly wrong. Under the new OpRisk regime, even if Mr Leeson had not been ‘misbehaving’, his enormous trading loss would not be set against the VaR-based trading book RegCap, but against the OpRisk charge. Go figure.

In addition, since a bank’s own loss data may only demonstrate what has or has not happened to the bank itself (and doesn’t address the fearsome universe of what might happen), the bank must also track external data. This external data is required to be scaled and adjusted to the bank’s own operations, then used in the calculation of OpRisk capital. External data is presumed to come from external sources or from data pooling arrangements. External sources = newspapers = vastly inflated loss numbers = questionable data. Pooling arrangements would require that banks share data that could be very embarrassing for their managements. As a result, even banks that have signed up to the various data-pooling arrangements have been very coy about what they share. They’re so keen not to be the first, and not to have recognisable losses open to their peers, that one can’t help but suspect a high degree of self-censorship.

Despite this, a number of independent databases have made their way on to the markets, all claiming to provide satisfactory, clean, anonymous data which banks can cheerfully use to fulfil the ‘external data’ requirement. Some of these tools are good, some are bad; some are simply irrelevant.

Another vexatious issue revolves around scaling. There is no rule that says that small banks will only have small losses and only big banks will have big losses. So how does one take an external loss event – e.g. Sumitomo’s copper trading disaster – and scale it down to fit, say, a Barings Bank? Sumitomo was a big bank, and Barings was fairly small. If one scaled the copper loss to fit Barings’ (known) trading activities, it might have predicted a worst case loss of perhaps US$250 million. And yet history has shown that Barings’ worst case loss was somewhere considerably north of US$1.5 billion. So scaling is likely to become a science unto itself.

And then there’s datapoints: In the midst of all the modelling and scenario-building and actuarial cranking, nobody yet appears to have found a single, Unitarian, satisfactory answer to the question of what, exactly, constitutes a datapoint for modelling purposes. And when, precisely, is a datapoint a datapoint? Think of the Sumitomo matter again: when it first emerged, it was thought to be ‘a few million’. A month later, it had become ‘a few hundred million’. By year-end it had passed the billion mark. After recoveries from trading counterparties several years later, it shrunk again by ‘a few hundred million’. Which of the numbers – and when – is the ‘real’ datapoint? Keep this in mind for the discussion of the liquidity (or otherwise) of insurance.
Banks are required to use scenario analysis to evaluate their exposure to high-severity events. Here we come back to that road-block. The universe of Things That Might Happen looks very different at the 99th percentile (as for market risk) than at the 99.9th percentile (required for OpRisk):

- **The one in 100 scenario is remote, but perfectly imaginable:** It might be that put forward by a group of insurance practitioners to the 2007 World Economic Forum: an Asian flu pandemic. The group felt there was a 1% probability of this occurring, and of more than 50,000 people dying as a result. Whereas insurers would think of grounded airliners and mass life insurance payouts, a bank would think of panicked markets, widening credit spreads, failure of trades owing to staff absences, etc. Mitigation would involve limiting and/or hedging exposure to Asian markets and transacting as much business as possible by phone or videoconference rather than in person. The residual risk to a bank might be estimated at somewhere around US$150 million.

- **The one in 1,000 scenario is one that’s really difficult to imagine:** Perhaps a Richter 6 or 7 earthquake striking Manhattan? Huh? Well, there are a number of seismic fault lines under Manhattan, and they do move every 140-odd years or so. The last time was in 1884, and the shake is thought to have been around 5-5.5 on the Richter scale. There’s been a lot of high-rise construction since then, not all of it designed around earthquake standards. So if a major shaker hit New York – home to many of the major US banks – the direct and the knock-on effects might be measured in hundreds of billions of dollars. Unlike credit risk, this is not a scenario a bank can legislate against. In banking terms, all roads lead to New York, and there is no practical way of setting limits on business done there. So the potential vast loss number hangs out there like Damocles’s sword.

Finally, banks must assess the business environment and internal control factors as against their effect on the overall risk profile. One assumes that a benign business environment and effective internal controls will bring about a huge improvement in the OpRisk capital requirement. Yet somehow the pessimism inherent in the 99.9% requirement doesn’t sit well with the optimism of the assumption.

In plain English, the 99.9% confidence interval required of the calculation means that the bank’s model must produce an amount of capital which would be sufficient to cushion it against the one in 1,000 loss scenario…

There may be good reasons why one in 100 is good enough for market risk but not for operational risk. Perhaps the discussion in the previous paragraphs of datapoints and slow loss development was uppermost in the supervisory mind, and one in 1,000 was supposed to legislate against the mathematical fudging which no doubt will arise out of these and other concerns. But from a distance, it looks like a regulatory own goal?
goal. Far from encouraging banks to migrate away from the Standardised Approach and ‘upward’ along the curve of excellence to the Advanced Measurement Approach, the exponential risk charge - together with the huge cost, effort and investment of getting there (and with no way back) - must surely be a major deterrent to banks. Indeed, early signs are that many larger banks have done the modelling and the math, and taken a view that it is not in their economic interest to ‘go AMA’.

Enter insurance ...

Supervisors attempted to insert a sweetener here: not only will AMA-qualified banks be permitted to calculate their own OpRisk capital, but they will also be able to deduct ‘qualifying insurance’.

Insurers (of course) had long since waded in to point out that many operational loss categories are strongly mitigated by insurance - and that therefore the loss need be no loss to the bank. Accordingly, they argued, the Pillar 1 capital charge should allow for insurance as a mitigating factor, just as it allows options, futures, swaps and other hedges in calculating the capital charge for the lending book.

What supervisors need to do, asserted the insurers, is to think of an insurance policy as a special type of call option. Just like an option, it has a premium payable up-front. But instead of a strike price (ie a pre-agreed price at which the owner of the option has the right, but not the obligation, to buy the underlying security), insurance has a strike event. Upon the occurrence of the strike event, insurance policy-holders have the right to demand that insurers pay for the cost of the event. Effectively, therefore, the insurance policy is an event-triggered option. Or rather, since the policy trigger is an event rather than a strike price, and an insurer’s promise is only as good as its credit rating, supervisors should think of the insurance policy as a sort of credit hedge.

The insurers duly took the table we referred to earlier and added an additional column intended to demonstrate the types of insurance policy which would address a loss event – ie which events would serve as strike events:
### Basel 2: OpRisk insurance mitigants

<table>
<thead>
<tr>
<th>Category Level 1</th>
<th>Category Level 2</th>
<th>Activity Level 3 (Examples)</th>
<th>Activity Level 3 (Examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Fraud</td>
<td>Unauthorised activity</td>
<td>Mismarking of position (intentional), Transaction not reported (intentional), Transaction type unauthorized (w/monetary loss)</td>
<td>Unauthorised Trading policy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Theft and fraud Account take-over / impersonations etc, Bribe / kickbacks, Cheque kiting, Forgery, Fraud / credit fraud / worthless deposits, Insider trading (not on firm's account), Malicious destruction of assets, Misappropriation of assets, Smuggling, Tax non-compliance / evasion (willful), Theft / extortion / embezzlement / robbery</td>
<td>Banks Blanket Bond</td>
</tr>
<tr>
<td>External Fraud</td>
<td>Theft and fraud</td>
<td>Cheque kiting, Forgery, Theft / fraud</td>
<td>Bankers Blanket Bond</td>
</tr>
<tr>
<td></td>
<td>Systems security</td>
<td>Hacking damage, Theft of information (w/monetary loss)</td>
<td>Electronic Computer Crime</td>
</tr>
<tr>
<td>Employment Practices and Workplace Safety</td>
<td>Employee relations</td>
<td>Compensation / benefit / termination issues, Organized labor activity</td>
<td>Employment Practices Liability</td>
</tr>
<tr>
<td></td>
<td>Safe environment</td>
<td>Employee health &amp; safety rules events, General liability (slip &amp; fall, etc.), Workers compensation</td>
<td>General Liability, Workers Compensation</td>
</tr>
<tr>
<td>Clients, Products and Business Practices</td>
<td>Diversity and discrimination</td>
<td>All discrimination types Account churning, Aggressive sales, Breach of privacy, Fiduciary breaches / guideline violations, Lender liability, Misuse of confidential information, Retail customer disclosure violations, Suitability / disclosure issues (KYC)</td>
<td>Employment Practices Liability</td>
</tr>
<tr>
<td></td>
<td>Selection, sponsorship and exposure</td>
<td>Antitrust, Improper trade / market practices, Insider trading (on firm's account), Market manipulation, Money laundering, Unlicensed activity</td>
<td>In some cases only: Errors &amp; Omissions liability, Professional Indemnity</td>
</tr>
<tr>
<td></td>
<td>Advisory activities</td>
<td>Disputes over performance of advice or activities</td>
<td></td>
</tr>
<tr>
<td>Damage to Physical Assets</td>
<td>Disasters and other events</td>
<td>Human losses from external sources (terrorism, vandalism), Natural disaster losses</td>
<td>Property &amp; Natural Catastrophe insurance</td>
</tr>
</tbody>
</table>
## Learning to speak insurance...

<table>
<thead>
<tr>
<th>Category Level 1</th>
<th>Category Level 2</th>
<th>Activity Level 3 (Examples)</th>
<th>Activity Level 3 (Examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Disruptions and Systems Failures</td>
<td>Systems</td>
<td>Hardware, Software, Telecommunications, Utility outage / disruptions</td>
<td>Extra cost of working possibly covered by Business Interruption insurance</td>
</tr>
<tr>
<td>Execution, Delivery and Process Management</td>
<td>Transaction capture, execution and maintenance</td>
<td>Accounting error / entry attribution error, Collateral management failure, Data entry, maintenance or loading error, Delivery failure, Miscommunication, Missed deadline or responsibility, Model / system mis-operation, Other task mis-performance, Reference data maintenance</td>
<td></td>
</tr>
<tr>
<td>Monitoring and reporting</td>
<td></td>
<td>Failed mandatory reporting obligation, Inaccurate external report (loss incurred)</td>
<td></td>
</tr>
<tr>
<td>Customer intake and documentation</td>
<td></td>
<td>Client permissions / disclaimers missing, Legal documents missing / incomplete</td>
<td>In some cases only: Professional Indemnity</td>
</tr>
<tr>
<td>Customer / client account management</td>
<td></td>
<td>Incorrect client records (loss incurred), Negligent loss or damage of client assets, Unapproved access given to accounts</td>
<td>In some cases only: Professional Indemnity</td>
</tr>
<tr>
<td>Trade counterparties</td>
<td></td>
<td>Miscellaneous non-client counterparty disputes, non-client counterparty misperformance</td>
<td></td>
</tr>
<tr>
<td>Vendors and suppliers</td>
<td></td>
<td>Outsourcing, Vendor disputes</td>
<td></td>
</tr>
</tbody>
</table>

## How to confuse your audience...

Supervisors didn’t exactly get this. They thought they understood credit hedges. A credit hedge defines clearly (mostly, well.. sort of) what it protects. **Insurance isn’t quite that simple.**

Imagine a simple transaction. Company BB borrows US$50 million from Bank X – which then buys credit default protection from Bank Y. If Company BB defaults on all or part of its US$50 million loan from Bank X, then Bank Y, which sold the credit default protection to Bank X, will pay the defaulted amount. In exchange, Bank X will deliver US$50 million worth of Company BB bonds. (And of course, there is another parallel to insurance here: if Bank X fails to deliver the defaulted bonds, Bank Y may withhold or delay payment. There are rumoured to be millions of dollars of credit default protection payments outstanding pending paperwork, just as there are millions of dollars of insurance claims outstanding, pending paperwork.)
As far as supervisors are concerned though, the credit hedge works – absent counterparty default or contractual disputes. This being accepted, banks have taken the process a step further. Since buying protection (a hedge) on a single name is expensive, they have sought cheaper alternatives. One such is to combine similar loans (eg 50 loans of US$50 million each to 50 different BB-rated companies) into a single portfolio. Logically speaking, the price for protecting 50 BB-rated companies would simply be the aggregation of the prices of protecting each of the credits separately – still more than may be economically attractive. If, however, one defined the trigger for the protection not as a default by one or more of the 50 BB-rated companies but as a default by a similarly rated company which was active in the same country or in a similar industry (this is known as ‘the reference credit’), then the price of the protection would drop miraculously because (a) the reference credit and its credit history define the price for the entire portfolio, and (b) the reference credit may well be a household name whose perceived risk is lower than its credit rating would suggest. (The logic for constructing a portfolio protection based on an unrelated credit is that if the unrelated credit defaults on any of its debt, then there is a very high likelihood that at least one of the 50 BB-rated companies in the portfolio would also default.)

As an example of this approach, let’s think of (say) 50 companies involved in manufacturing, exporting and installing turbines and power generation and transmission equipment. Each of them makes slightly different things and sells them to different companies and countries. Owing to the capital-intensive nature of their business, such companies tend to have substantial borrowings and therefore different credit ratings. A bank with a portfolio of loans to such companies might define the reference credit as the Swedish/Swiss company ABB, which could be viewed as a good proxy for the whole industry.

This is good in theory. However, practice has showed up a number of flaws.

First, one or more of the companies in the ‘protected’ portfolio could very well go bankrupt without triggering the credit default protection (in banking parlance, “without triggering a credit event’). If there were no credit event, the credit default protection wouldn’t be triggered – no matter how much money the bank had lost in bankruptcy.

Second, what exactly constitutes a ‘credit event’? There are several possibilities:

- the reference credit may fail to pay a debt owing to a legal dispute as to whether the debt is due;

- the reference credit may fail to pay interest on an outstanding loan;
- the reference credit may fail to pay back capital when it is due – or 1, 3 or 6 months after it becomes due; and/or

- the reference credit may be declared bankrupt or put into receivership.

This is not simply an academic issue. Banks have had lengthy legal battles as to whether or not their protection has been triggered. Obviously, if a bank has a credit loss in its portfolio, it wants protection to be triggered by even the slightest late payment on the part of the reference credit. On the other hand, the seller of protection wants it triggered by nothing less than the irrevocable bankruptcy of the reference credit.

In the end, standard contract documentation has been developed. But that doesn’t mean either that the credit hedge always does what it says or that the counterparty is willing (or able) to perform. And standardised contract documentation has not prevented many further legal battles being joined, particularly when the bank buying protection thought it was buying something different from what the seller thought he was selling. Here too, there are parallels between sellers and buyers of insurance: when push comes to shove, each side of the transaction fondly imagines he has bought or sold something different than his counterparty, and it often requires several years (and several judges) to get to the bottom of the matter.

Of course, there are many cases where a credit hedge doesn’t do what it says on the box. For instance, one of the turbine manufacturers may well default on its debt. But if ABB is still doing fine, there will be no pay-out under the hedge. This difference between the underlying credit and the description of the credit hedge trigger has become known as ‘basis risk’. As a result, regulators now require banks to assess the basis risk in their hedging strategy, and to take a “haircut” on the mitigation afforded depending on that risk.

Going back to our example where Bank X lent US$50 million to (turbine manufacturer) Company BB, then bought a US$50 million hedge from Bank Y, there are various possibilities:

- If the US$50 million hedge were triggered by the failure of Company BB to service its debt, then the hedge would be perfect and Bank X could take 100% credit for it – ie the bank need not count any residual credit exposure to Company BB.

- If the US$50 million hedge were triggered by the failure of a reference credit (e.g. ABB) to service its debt, then the hedge contains basis risk and the bank could not take full credit for it. Instead, it has to develop a well-founded view on how closely the debt of company BB is correlated to the debt with ABB. If
the correlation is very close, the hedge might be judged to be 90% effective, and the bank could take 90% credit for it when considering its residual credit exposure. It is more likely though that the basis risk would be estimated at around 30-40%, meaning the bank could take credit for only around 60% of the hedge.

A science has grown up around estimating correlations for portfolio hedges. As far as supervisors are concerned, the credit hedge (i.e., insurance policy) is not perfect, but it sort of works. Or, at least, when it doesn’t work, everyone purports to understand why it doesn’t work.

Not quite as comparable as they thought ...

The same cannot be said of bankers’ understanding of insurance. Instead of challenging some of those correlation scientists to develop new corollary metrics for insurance and operational risk, people on the banking side of the debate simply mark insurance down as ineffective for their purposes and chuck it into a basket labelled ‘too difficult to think about’. This smacks slightly of intellectual inertia. If one allows the hypothesis that insurance is essentially just a hedge against a risk whose terms do not exactly match the underlying risk – rather like our credit hedge above – there is absolutely no reason why a science should not arise around calculating required ‘haircuts’ for the basis risk of insurance. Nevertheless, the suspicion of insurance appears to run so deep that, so far, no banker has appeared even remotely willing to develop the science. Perhaps this is because every non-insurance professional has unhappy memories of forking over loads of premium, then having the insurer find some legal excuse in the policy small print to weasel out of paying a claim.

Supervisors’ dim view of insurers was further confirmed when the Quantitative Impact Studies (QIS) on Basel 2 were carried out. These questionnaires were circulated among banks and were intended to give a steer as to the effectiveness of the proposed regulations. In any event, QIS 2 seemed to indicate that many banks bought insurance, but that insurance mitigated almost no OpRisk losses.

There are a number of reasons why this response can be both correct and misleading:

- Most of the mathematical whiz-kids who were then developing OpRisk quantification models for banks had no idea what insurance their banks bought, or how that insurance worked.
The statistical pyramid says that any bank (or widget-maker for that matter) will have numerous small losses (high frequency, low severity) but very few large losses (high severity, low frequency). In order to avoid huge administrative burdens (and incidentally to keep their policyholders honest), insurers always inflict a deductible, which they attempt to pitch well above the ‘high frequency loss’ level. Thus, if the QIS question was ‘(a) how many OpRisk losses have you experienced, and (b) how many of those losses were paid for by insurance?’, the correct answer may have been e.g. (a) 500 losses experienced, (b) none paid for by insurance. If the 500 losses were for varying amounts between say US$1,000 and US$10,000, and a typical deductible was US$25,000, then quite correctly none of the 500 losses was paid for by insurance.

The main ledger may not be the easiest place to extract loss and indemnification information. While the value of a loss shows up in the ledger on the day it happens (e.g. a fire), the insurance payments may not enter the ledger until several months or even years later, when all the bills have been settled.

Whatever, bank supervisors concluded from the QIS exercise that:

- insurance is at best a dodgy proposition; and

- even in those cases where it sort of works, it isn’t very liquid (or, more bluntly, insurers are slow and unwilling payers).

Despite that, supervisors eventually conceded that certain insurance policies could serve as a partial hedge for OpRisk. They were reluctantly prepared to allow insurers’ claims of effectiveness; but they were profoundly unhappy with the basis risk – ie the fact that the underlying descriptor of the risk itself differed from the description in the relevant insurance policies.

Thus, for example, the Basel category might be ‘Internal Fraud – Unauthorised Activity – Transaction not reported (intentional)’. Insurers might claim (see Table 3) that two insurance policies respond to losses falling under this rather vague description: the Bankers Blanket Bond policy would respond in cases of employee infidelity, while the Unauthorised Trading policy might respond where a trader had deliberately breached his limits and deliberately not reported a transaction in order to avoid having the breach noticed by his superiors.

There is also the issue of timing.
Supervisors would be delighted to discover an insurance policy would pay out as soon as a bank had a loss. At that, however, insurers would hastily back-pedal. Before any payment is contemplated, they would say, it is first necessary to ascertain:

- whether the bank has indeed suffered a loss;
- the amount of that loss, if any;
- whether the loss is covered under the terms of the insurance policy;
- whether any of the policy exclusions apply; and
- whether there is any contributory negligence on the part of the bank.

Certainly, there is no question of a bank merely determining that it had suffered a loss and the insurer simply coughing up millions.

Faced with this, even the least imaginative supervisors can conceive of situations that would fall under the descriptions laid out in the table, but which would not be indemnified by insurance. They therefore demanded that, in order to qualify as mitigation, **insurance policies be re-written to exactly mirror those descriptions**. In addition, they want liquidity: if a credit derivative pays out immediately upon the occurrence of a defined Event, then so should the insurance ‘derivative’ – no more of this ambiguous ‘exclusions apply’ and ‘breach of warranty’ gobbledegook.

Inevitably, this provokes insurers into a long diatribe about policy triggers and conditions precedent and warranties and representations and exclusions.

Conversations after that tend to be marked by an almost comical lack of mutual understanding. Each side may have thought that, since it was talking about a financial service, the other would understand instantly and effortlessly. With hindsight, it’s difficult to say whether that mutual misunderstanding contributed to the muddle surrounding OpRisk and insurance, or whether the muddle would have arisen anyway. Whatever, neither side seems able to comprehend the essential messages:

- **The fundamental of insurance is fortuity**: In order for insurance to function as a risk mitigant, three tests must be passed: the buyer of insurance cannot know what exactly is going to happen, when it’s going to happen, or how much it’s going to cost. One purpose of the weasel language in the policy is to prevent a version of ‘insider trading’ in the insurance universe: namely, the
bank wouldn’t willingly spend the money on an insurance policy unless it knew for certain that it was going to have a loss (rather like trading out of a stock on the basis of inside information that the quarterly results will be disastrous). The only way to prevent this is to place a duty upon the policyholder to do its utmost to prevent losses.

- **Insurance lives by the law of large numbers**: In order for the ‘risk warehouse’ concept to function, the risks must be similar (a banker might imagine a portfolio of standard loans). If the risks themselves are not similar, those parts of them which can be homogenised must be extracted (by means of the policy wording), and the homogenous bits consigned to the appropriate shelves in the risk warehouse. For insurers to write a policy which exactly mirrors the OpRisk definitions in the Rules is tantamount to fulfilling bankers’ rather utopian wish to have all of the risk subsumed under an insurance policy with no exceptions and no conditions. The banking parallel to this would be to extend a huge loan to a known bankrupt with no security and no conditions other than a vague hope of being repaid. Insurers aren’t that daft: if bankers are not willing to set some part of the risk against their own capital, why should insurers risk all of their capital? They aren’t getting paid for it.

- **Insurance is about indemnification – not profit – to the policyholder**: Whenever ‘whatever’ has happened, the cost must be capable of monetary valuation. Until the cost of ‘whatever’ has been identified, insurance cannot indemnify. Insurers therefore seek to ascertain the exact amount of the loss and pay exactly that – not one penny more. Frequently, the bank itself does not know how much its loss is (think of the Sumitomo discussion above). And this is a key difference to the trading book: at the end of a trading day, a bank can do its sums and know exactly how much it has gained or lost. At the end of an insured loss event by contrast, ‘doing the sums’ may take several weeks or months. Once the loss amount is known, insurance can pay out. But ‘instant liquidity’ as demanded by supervisors simply fails the practicality test.

### ‘Qualifying insurance’

In any event, what finally found its way into Basel 2 was a proviso that AMA-compliant banks (and only AMA banks) might take advantage of risk mitigation provided by ‘qualifying insurance’. However, in order to qualify, the insurance in question has to fulfill a number of criteria. The first two concern credit quality and reinsurance:

- **Credit quality**: The risk-bearing insurer must have a minimum credit rating of A or equivalent. That seems pretty logical: there’s no point in exchanging a nebulous operational risk for a pretty clear-cut credit risk.
- **Third parties and reinsurance**: The insurance must be provided by a third party entity (i.e., not a member of the bank’s economic family). Where insurance is ‘provided through captives and affiliates, the exposure must be laid off to an independent third party entity, for example through reinsurance’.

The part about third party entities is also understandable, but the proviso about captives, affiliates, and reinsurance is distinctly problematic. A captive is a subsidiary which provides insurance to its parent company and derives all or most of its premium from that parent. There are variations on the theme, but since the bank provides the capital for the captive and finances its operations and claims payments by means of premium, operational risk insurance provided by a captive would effectively be just an illusion – taking money out of one capital pot to put it into another capital pot for zero total effect.

For this reason, many banks – particularly in Europe – are devoting much thought to establishing a mutual insurer. Each would contribute to the capital of the mutual, and each would own a minority share – say 5% or less. The minority shareholding would ensure that no member bank would need to consolidate the mutual into its own accounts. Each member would be insured by the mutual, and the mutual would purchase reinsurance.

At first glance this seems like an ideal solution, but in practice it may not be workable.

First, when it comes to OpRisk and insurance, experience suggests that the mutual’s member banks may have difficulty in agreeing on anything more complicated than the date:

- Bank A might wish the mutual insurer to use a tightly-written policy wording with no room for interpretation on either side, which gives greater certainty of policy performance. However, Bank B might wish something fluffy and potentially much wider (subject of course to time-consuming legal interpretation), while Bank C may be unwilling to take the risk of Bank B’s proposed wording but wishes something broader than Bank A - and so on.

- There may be profound distrust between institutions. Presumably, they all pay in their share of the capital and they all pay a premium. But will it be the same premium across the board, or will the dodgier banks pay a higher premium? Who will decide upon premium levels?

- What about bankruptcy? Assume that three member banks have major operational risk losses soon after the mutual commences business. The loss to Bank A wipes out the premium collected, the loss to Bank B wipes out the
mutual’s capital, and when Bank C shows up the pot is empty. Do they now recapitalise the mutual? Or allow it to remain bankrupt, and that’s just tough luck for Bank C?

Of course the mutual could buy reinsurance, but this adds an additional layer of legal complexity. After all, where a bank purchases insurance from a mutual insurer, its contract of insurance is with the mutual. The mutual in turn enters into a contract of reinsurance with the reinsurer. These are two separate and wholly independent contracts: the reinsurer is not a party to the contract with the bank, and the bank is not a party to the contract with the reinsurer.

This legal doctrine is called privity of contract, and it means that there is legally no such thing as ‘laying off exposure through reinsurance’ as suggested in the Accord. Privity of contract lays down that neither party to a contract may place any of the rights or obligations of that contract upon a third party without the consent of that third party. Privity of contract is not peculiar to insurance – it is universal. But in the practice of insurance and reinsurance, it means that the bank has no legal relationship with the reinsurer. If the mutual fails to pay a loss, the bank has no legal ability to reach through the contractual relationship and demand payment by the reinsurer. Privity of contract means that the mutual could never place an obligation on the reinsurer to pay in its stead unless the reinsurer agreed. In practice, reinsurers very rarely accede to this type of clause because history has demonstrated that it could involve them in paying twice for the same loss.

The final issue with a mutual insurer is corporate governance. A bank’s management will rightly point out that shareholders may be unhappy with the notion of ‘their’ bank insuring another bank. After all, if a shareholder has bought shares of Bank A, then that shareholder ought to have reviewed its risk profile, its business model and its likely return. Presumably, he has judged that the risk/reward of buying those shares is satisfactory. If the shareholder has not bought Bank B, then it is because he has carried out the same review and judged the risk/reward ratio to be unsatisfactory. If the shareholder finds that his Bank A is taking (via a mutual) the risk of Banks B, C and D – banks whose risk he had specifically elected not to purchase – he will naturally either demand a higher reward for the risk or sell the stock of Bank A since it no longer represents the risk he wishes to take.

Among the other criteria that ‘qualifying’ insurance has to fulfil are tough strictures on cancellation and term:

- **Cancellation:** The Basel 2 Rules require that qualifying insurance should have a minimum cancellation notice period of 90 days. That’s a little perplexing. Is the proviso intended to discipline the bank or the insurer? Most insurance policies have a notice period of at least 90 days. In practice, insurers rarely
cancel except for non-payment of premium, and it’s the bank which gives notice – often in the expectation of getting a better deal from another insurer.

- **Tenor**: The insurance policy must also have an initial term of at least 12 months, and the bank must ‘haircut’ the value of the mitigation if the residual period until the expiry of the policy is less than 90 days.

Here, one is inclined to suspect insurers may have done it to themselves by suggesting that supervisors think of an insurance policy as a call option on insurance capital. In a banker’s mindset, a call option can only be exercised before its expiry date. Accordingly, the value of the option decays sharply in the 90 days immediately preceding expiry. Once the option has actually expired, its value is zero. Even if a replacement option is purchased, with exactly the same strike price, the two options are completely separated from each other, and one has no effect on the other.

An insurance contract is different from a call option in a few key ways:

- The contract is usually for 12 months.

- Unlike derivatives, an insurance contract is generally concluded with the assumption that there was an insurance contract in place before, and that there will be one in place after. This is called continuity of cover, and it can affect the ability of a bank to collect under the policy.

- Whereas some of the risk may be laid off via reinsurance, neither the insurance nor the reinsurance is liquid during the policy period. There is no market where insurers can trade into and out of a risk on a single name: once they’ve signed up, they’re on the hook for the full period, regardless of how other risks associated with that name develop during the year.

- Even when there is no renewal of an insurance policy, there will often be a period of 180 days or more after the end of the policy where the bank can still notify losses (ie exercise its call option on the insurer’s capital). This is called an Extended Reporting Period, and is a fairly standard feature in several of the policies which figure in the table above.

It might therefore be more appropriate to compare the time value of the option to the time value of an insurance policies as follows:
The only reason there is any decay in the value of the insurance policy (as against the value of the option) is because supervisors mandate that there is such a decay. And yet (subject of course to the usual insurer weasel-speak), a claim submitted after the end of the policy period is quite likely still to be paid, so the insurance ‘option’ actually still has value after its expiry. It may well be that the 90-day residual period requirement was inserted into the Rules simply because insurers failed to describe clearly this peculiar feature of the product they sell.

Nevertheless, many banks (and some of their supervisors) have responded by demanding that insurers write at least 24-month policies with a rolling renewal every
12 months to ensure that both the minimum initial term and the minimum residual period requirements are met. Insurers have pointed out that this risk would already be very illiquid for them, since they are stuck on it for 12 months (or even more as matters currently stand). To be stuck for double that period would simply be a stop too far. Banks change fast, and so does risk: unless insurers can re-evaluate the risk relevant to their own risk appetite at least once every 12 months, they will be unfairly penalised in a longer contract. Since reinsurance arrangements generally only permit 12 months (plus odd time) on risk, they might find themselves without reinsurance for all or part of the period on risk - and would therefore be endangering their own capital base.

For their part, banks have responded that it’s not unreasonable to demand that insurers change their ways and make the necessary reinsurance arrangements.

Unfortunately, since the number of reinsurers has shrunk drastically, the negotiating muscle of the survivors is such that the annual rule is unlikely to change any time soon. So bankers have now suggested that, if reinsurers are really so uncooperative, insurers should write the risk on their net underwriting capacity – ie only take a share of the risk that they are happy to retain for own account.

Even if insurance really is (as bankers seem to think) the idiot brother of banking, insurers do know the fundamentals of portfolio management. Accordingly, most follow a more sophisticated version of the traditional rule of thumb whereby an insurer should never risk more than 5% of his capital on a single class of business, and never more than 1% on a single risk. If an insurer limits himself to 5% in the aggregate, and breaks that down further so that he can spread across at least 100 risks, then he will not commit more than 0.05% of his capital to a single risk. This 0.05% of capital translates into an uninsured underwriting capacity of somewhere between US$1 million (for the many smaller carriers) and US$50 million (for the few big ones). So if a bank wished to purchase, for example, Unauthorised Trading Insurance for US$350 million, that bank might have to spread the policy among 35 or more insurers – just to find the capacity. In banking parlance, if the insurer is unable to syndicate the ‘risk loan’ to reinsurance, then his share of risk becomes an equity tranche of the transaction, and his risk limits on equity are a lot smaller than his risk limits on loans.

Standoff. Until someone explains the peculiarities of insurance in language which makes sense to banks and their supervisors, nothing seems likely to happen.

And that’s not all. According to the Rules (Para 678), in order to ‘qualify’, an insurance policy may not preclude cover for supervisory actions. And where a bank has failed, the policy may not preclude liquidators recovering expenses and damages incurred prior to the bankruptcy.
The carve-out for supervisory action is an interesting one. Under longstanding legal precedent, it is deemed to be against the public interest for insurers to provide any form of indemnity for actions which are either illegal or criminal. Supervisory actions are often triggered by illegal or criminal acts, as are fines and penalties. During recent upheavals surrounding Enron, WorldCom and Parmalat, a number of supervisors re-affirmed that precedent. Their view is that if a bank has been engaged in wilful wrongdoing, the penalty is intended to hurt the perpetrators financially, and to serve as a warning. If the financial pain can be shoved off on to an insurance policy, then both the punishment and the deterrent effect are negated. Thus, depending upon how one interprets Paragraph 678, supervisors may be demanding something on one side which they have stoutly refused on the other.

As regards bankruptcy, well, many insurance policies are automatically cancelled when a policy-holder goes bankrupt, but they also automatically convert into something called ‘run-off’. ‘Run-off’ means that losses incurred prior to the bankruptcy can still be recovered under the policy, and the liquidator may indeed present a claim which will be considered just like any other claim. Insurers cannot grant ongoing cover to the original policy-holder, because the bankruptcy renders him (or it) legally incapable of entering or maintaining a contract (again, this is not exclusive to insurance – in theory a bankrupt doesn’t even have the legal capacity to enter a contract to buy a cup of coffee). Similarly, if the liquidator winds up the business, the winding up is regarded as a fundamentally different activity, so cover cannot continue. Equally, if the liquidator attempts to run the business as a going concern until buyers can be found, this amounts to putting the business under new management – again, a fundamental change in the underlying risk, which insurers may choose to accept but more frequently will decline.

So, in part, the supervisors’ requirement is already met. In other cases, however, it legally cannot be met. Here too, standoff.

In the end, the problem is pretty simple: bankers and insurers don’t speak the same language. And – in the insurers’ eyes, at least – there simply isn’t enough new business in Basel 2 to put them to the inconvenience of learning a new language.

Reflecting this, banks can and do complain to their supervisors that there is a big difference between risk as defined by them and risk as defined in an insurance policy. By no means does an insurance policy cover every single loss which could fall under the supervisory description. Supervisors counter that this is simply a matter of policy negotiation. So banks march off to the insurers. What is needed, they say, is an insurance policy which defines the risks it covers using the same language as the supervisors. All that ghastly antediluvian language about warranties and conditions precedent should be revised to fit the requirements of the modern AMA-compliant bank.
For their part, insurers point out that the match between their policy and the underlying risk is at least as good as some of those peculiar credit derivative things the bankers seem so content with. And there are only likely to be about 50 banks in the whole world that will make it into AMA Nirvana in the foreseeable future. Every other bank will get stuck with the capital charge, and will still continue to buy insurance. So why should insurers revise products with which those other 20,000-odd banks appear perfectly satisfied?

This makes bankers grit their teeth. They are bankers, not insurance experts. Why can’t insurers develop policies which are actually Fit for (Capital Charge Mitigating) Purpose?

Insurers explain (teeth equally gritted) that whereas bankers demand to lay off all OpRisk, their purpose is precisely not to assume all the risk from a bank, only that portion which fits their risk warehouse. The policy is intended to ensure that only the desired portion of risk is transferred. The proper name for people who assume all the risk (provided they’re getting paid) is ‘shareholder’. The proper name for people who assume all the shareholders’ risk without getting paid is ‘idiot’.

Since insurers have failed to make this clear enough in the past, bankers and supervisors have felt free to cast down further gauntlets in the row over AMA-compliant insurance.

Liquidity is a particular concern, since users of insurance complain frequently that insurance is slow to pay out. When there’s a loss, it takes ages to get the money - and the bigger the loss, the longer the money takes (think World Trade Centre). There is obviously some truth to this. Indeed, insurers’ own statistics suggest that in some cases (e.g. Professional Indemnity claims), it can take as long as seven years from notification of a claim to payment. Surely, therefore, no-one can assert that an instrument which pays so slowly can be used to mitigate operational risk.

In part, this is correct - but not for reasons which can be easily sorted out.

First, two misconceptions: insurance frequently pays out very fast. Anyone who has ever been involved in an industrial fire can report that insurers are usually right behind the loss adjustors, chequebook at the ready. This is not because they’re ‘misunderstood good guys’ but because they know that the sooner the factory (or whatever) is back in action, the lower the subsequent Business Interruption claim will be. The best way of speeding things back into action is to accelerate reconstruction or relocation of on-account payments.

Second, let’s disaggregate that seven-year PI claim.
Once the claim is notified and accepted, the insurer will usually post a court bond (frequently in the value of hundreds of millions of dollars) and pay legal defence costs on behalf of the insured (note the liquidity aspect here). However, the insurer cannot pay the claim because nobody knows what the *amount* of the claim is. If Mr. American sues the bank for a gazillion dollars, the newspapers report at length on the headline number. The bank (of course) counter-asserts that the suit has no merit, but may mentally earmark say half a million dollars for settlement and defence costs. The newspapers don’t report the half-million, but in the meantime neither the bank nor Mr. American can put a reliable number on the ultimate cost of the claim. Claims wend their way through the court system, with suit and counter-suit and appeal ... and only when they’ve reached the end of all that can anyone ascertain with certainty what the *amount* of the claim is. Only then, when the *amount* is known, can the insurer pay. Because insurance is about *indemnity*- and in this connection indemnity means to place the policyholder in the same financial position as he would be if the claim had not happened’.

So there’s some truth in the seven-year accusation, but the remedy doesn’t lie within the insurer’s gift. To put it simply: in order for insurance to pay, the loss must be capable of monetary valuation. If it takes seven years to put a monetary value on the loss, then:

- during that time it is at best a footnote in the bank’s annual statement, not a genuine hard red loss number in the P&L; and

- speeding up the finalisation of the loss would speed up the payout, but that ‘speeding up’ is not in the gift of the insurer.

**Linguistic confusion**

*Language is another problem.* Insurance contracts are littered with shibboleths - terms that carry particular meanings within the insurance industry that not all will accept. A classic example is in the table above: the OpRisk loss descriptors include cheque-kiting, forgery, fraud/credit fraud/worthless deposits, malicious destruction of assets, misappropriation of assets, theft/extortion/ embezzlement/robbery. The insurers’ response to this is a ‘Bankers Blanket Bond’ (BBB). A full BBB policy would quite likely respond in each of the cases listed in this paragraph, but not necessarily for all of the event types listed in the table. For instance, the BBB doesn’t call it ‘embezzlement’ but ‘employee infidelity’, and the relevant insuring clause is set about with conditions precedent and exclusions. The same can be said of most of the other clauses. Equally, ‘forgery’ is covered, but there’s a very careful definition as to what it means.
All of this is unnecessary obfuscation, bankers feel. ‘Moral hazard’, insurers retort. Thus, a BBB policy very carefully outlines that (for example) the employee involved in credit fraud must be doing so for improper personal gain, and that this does not include salary, bonus or employment benefits. This is intended to keep the bank honest and rigorous in its risk controls. A suspicious insurer does not want its BBB policyholder to relax and to extend millions of dollars of loans which it knows to be duff in the expectation of then accusing an employee of dishonesty and simply collecting all those defaulted loans from the BBB insurer. By carefully defining the circumstances under which they expect to pay, insurers seek to place temptation out of the bank’s reach – ie to reduce moral hazard.

The notion that bankers may seek to stiff insurers in this way may sound insulting, but bankers don’t like to lose money, and have tried – and occasionally succeeded – in claims which insurers would regard as spurious. So insurers are careful. They’re not about to experiment with new wordings which might result in their getting stiffed again.

This is one example (out of many) where insurers are keen to take the operational risk only after the bank has done its best to ensure that no loss will be suffered. And when, despite best efforts, a loss is suffered, insurers want to be sure that it’s an OpRisk loss, not a credit or market risk loss. If they then set up further conditions - eg to avoid straying into areas of cover frowned upon by the law - the end result must be that they simply cannot cover all areas of OpRisk. The cover may be for 60, 70 or even 90 percent of specific areas of OpRisk - but the ‘linguistic basis risk’ is never going to go away.

In fact, it is likely that insurance experts will build up a lucrative consultancy sideline analysing banks’ insurance policies to find out:

- does the policy cover specific event types (as set out in the table)?

- if it does, how certain is the response? and

- if the insurance pays, how swiftly will the pay-out take place?

The result may well be a patchwork, rather like the one below, suggesting that a typical bank may have insurance cover for about 60-70% of OpRisk events:
Not the end of the affair...

Even if a bank surmounts all these obstacles with regard to getting insurance relief, its problems are not over.

Potentially AMA-compliant banks were hopeful at the outset that they would be permitted to simply take a ‘plug-number’ deduction from the OpRisk capital charge which would be more or less equivalent to the face value of the insurance policies they had bought. Unfortunately, supervisors saw them coming. Rule 678 specifies that the methodology for recognising mitigation should be transparent, logical and consistent. No shortcuts.

When an AMA-compliant bank has calculated its RegCap number, it will probably fall off its chair in shock. It will then pack its whiz-kids off to develop models which produce a less mind-boggling figure. Unfortunately, these whiz-kids cannot simply suck numbers out of their thumb; given the 99.9% confidence interval requirement, even the revised number will still be unpleasantly large – especially for those with large trading or investment banking operations.

If one assumes that the first set of OpRisk RegCap numbers came out somewhere close to the 20% of total capital mentioned when regulation was first mooted, and that the number gets massaged down as far as it can go, the reduced number may still amount to 12-14% of total capital. Even in the case of a relatively little bank, with (say) US$10 billion of capital, 12% still amounts to US$1.2 billion.
Supervisors have inserted a very clear ceiling in the amount of mitigation allowed for insurance – 20%. So, best case, our bank can hope to cut its US$1.2 billion OpRisk charge by US$240 million, down to US$960 million. Assume that our little bank is required to produce an RoE of say 20%; if it can reduce its OpRisk charge by US$240 million, then its ‘cost of OpRisk capital’ reduces by US$240 million x 20% = US$48 million.

If we assume (conservatively) that insurance provides cover for about 60% of all OpRisk categories, we might argue that one dollar of insurance reduces the RegCap charge by 0.6 dollars. Therefore, in order to obtain US$240 million of mitigation, higher insurance policy limits are required: US$240 million ÷ 0.6 = a required insurance policy limit of US$400 million. The RegCap calculation would then look as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpRisk charge (per actuarial calculation)</td>
<td>US$1.2 billion</td>
</tr>
<tr>
<td>Qualifying Insurance per Rules 678 &amp; 679</td>
<td>US$240 million</td>
</tr>
<tr>
<td>Net mitigated OpRisk charge</td>
<td>US$908 million</td>
</tr>
</tbody>
</table>

The RoE calculation would be:

- US$240 million of RegCap Charge saved @ 20%      | US$48 million
- Less cost of insurance – say 5% of the policy limit | US$8 million
- Opportunity Cost of capital saved                | US$40 million

All clear? Now, the only question is whether the insurance market can actually supply US$400 million of insurance. The answer is: it depends. For certain lines of business – property, business interruption and natural catastrophes, for example – the statistics are clear, claim development is swift, and insurers feel confident enough to deploy that kind of capacity. In other lines of business – PI, D&O, BBB - the statistics are less reliable and the US courts seem bent on driving claim amounts beyond the financially bearable. Hence, the aggregate insurance capacity for more ‘difficult’ lines is markedly smaller.

As a result, bankers sometimes assert that limited market capacity means that insurance isn’t relevant. Compared to the billions of dollars they have to set aside for OpRisk, a couple of hundred million of insurance capacity is a drop in the bucket, insufficient to take them anywhere close to the 20% mitigation ceiling.

Can the insurance industry deliver?
That may be true. But one is also inclined to suspect that what passes itself off as logic in the above calculation is:

- spurious;
- not workable; and
- not what supervisors intended.

The reason for this is Basel’s Rule 678, which requires that the risk mitigation calculation reflect ‘the bank’s insurance coverage in a manner that is … consistent with the actual likelihood and impact of loss used in the bank’s overall determination of its operational risk capital’.

**Translating supervisor-speak into concrete calculations ...**

To me, a close reading of Rule 678 suggests that what supervisors actually want is for a bank to calculate three separate loss distributions:

- A loss distribution ‘as is’, using scenarios, internal data and external data - which may well equate to an aggregate OpRisk capital requirement in the region of the infamous 20%.

- A loss distribution capturing ‘internal control factors that can change its operational risk profile’ (Rule 676) – which may amount to a slightly lower capital number.

- A loss distribution taking account of insurance. Not easy: the data-points would obviously need to be assessed by an insurance expert, who would have to give an opinion on whether insurance will really respond in each specific case. And, if so, how fast?

As an illustration of how supervisors might expect things to be done, let’s think of three (quite realistic) cases where data points could be expected to flow into a bank’s OpRisk RegCap calculation – and where insurance may have a role to play:
Example 1:

Base scenario: One of our bank’s prize assets is the listed Victorian building right beside the river which serves as its headquarters. One scenario suggests that if the Thames should burst its banks, damage to the building and contents will be considerable and very expensive to repair. While repairs are ongoing, the bank will have to be housed elsewhere. Estimated cost of worst case scenario: US$500 million.

Mitigation: Ship the splendid art collection to the Tate Gallery on a long-term loan, thus reducing total value at risk to US$350 million. Insure the building and contents for full value replacement cost and up to five years’ worth of business interruption.


Example 2:

Base scenario: Our bank makes a tidy profit each year from proprietary trading, mostly on Far Eastern exchanges. The desk is small, but very efficient because the back office is right next door. Back office and front office staff are a great team and some of them even socialise outside office hours. If one of the traders should turn out to be another Nick Leeson, the time difference between London and the Far East means it could take up to a week to notice any irregularity. Worst case scenario: up to US$1.5 billion.

Mitigation: Move the back office to Southampton, or better yet to Singapore. Agree trading limits with counterparties which can only be altered with Board approval. Shift from paper trading tickets to electronic blotters with a direct feed to the back office. Ensure that all positions are reconciled at the end of each trading day. Require automatic reports to the CFO if any settlement breaks occur. Total exposure thus reduced to (say) US$500 million. Buy Unauthorised Trading Insurance (UTI).

Insurance expert opinion: UTI would respond for prop trading losses, but could take up to a year to reach final settlement. Net anticipated loss: US$500 million minus cost of deductible US$100 million, minus some costs which insurers might decline (say US$30 million) minus one year’s interest [5% x US$370 million] US$18.5 million = US$ 148.5 million.
Example 3:

**Base scenario:** Several of our bank’s traders have access to inside information in the markets where they trade. They could use that information to maximise their trading profits. Or, with a little help from buddies on other banks’ desks, they could manipulate the smaller or less liquid markets in their favour. Worst case scenario: the bank could be banned from trading in a market and fined. If this happened, for example on the Tokyo exchange, the bank would lose trading profits of (say) US$500 million and suffer a fine of (say) US$100 million.

**Mitigation:** Set up an independent risk function to monitor trading patterns and report anything suspicious. Seek dialogue with supervisors and underline willingness and ability to cooperate if anything untoward should occur. Result: ban temporary rather than permanent, possible reduction in the fine to say US$80 million. Buy insurance.

**Insurance expert opinion:** Insider trading and market manipulation are illegal. It is against the public interest for insurance to provide any type of indemnity for illegal or criminal actions. Ergo, insurance would be no help whatever. Don’t even try. Net loss still US$580 million.

If this approach were worked all the way through the bank’s loss data, we might finish up with three loss distributions looking something like this:

Note the difference between these three curves: the back curve represents the likely loss distribution as calculated using (among other information) the base scenarios described above. The middle curve represents the effect of the mitigating steps outlined, and the front curve represents the reduction of potential losses through
insurance recoveries. An actuary would aggregate these three distributions (by means of arcane actuarial science) into three ultimate numbers to be used as the basis for setting aside OpRisk capital.

The ultimate result produced by the post-mitigation post-insurance loss distribution might well be a reduction in the bank’s OpRisk RegCap from its original US$1.2 billion to (perhaps) US$1.0 billion. Not quite the 20% reduction that the bank was looking for, but still a good result.

Supervisors would likely also be content with this, since they would have achieved their stated aims of:

- making a bank’s risk assessment more forward-looking and more reflective of the quality of control of the bank’s operating and business environment;

- aligning capital assessments with risk management objectives; and

- recognising improvement and deterioration in the operational risk profile.

The above is a long-winded way of suggesting that the question ‘Is there enough capacity in the insurance market?’ may not be the right question. There quite probably would be sufficient capacity in the insurance market to cover some fairly hair-raising scenarios.

But if one asks insurers to develop new all-encompassing insurance products just for AMA–compliant banks, and then to back up those untried products with billions of dollars of capacity, well …it won’t happen. The problem is twofold:

- **Insurance lives by the law of large numbers** – ie the premiums of the many pay for the losses of the few. If only 50-odd banks sign up for AMA, then the premiums of the few will be insufficient to pay for the losses. That ‘risk warehouse’ needs to contain a large number of similar risks for the portfolio design and pricing to fulfil its purpose. Fifty or even a hundred banks (out of thousands worldwide) simply is not viable.

- **Insurance is a grudge purchase for most banks.** They’re all convinced that their risk is better than everyone else’s and would rather go bare than pay the premium insurers feel is appropriate for new products. Thus the laws of supply and demand drive ‘new product’ capacity down. If the price isn’t right, insurers don’t play.
Contrast this with tried and tested products which insurers know to be effective (and largely Fit For AMA Purpose), but which are also purchased by banks not going AMA and therefore not receiving mitigation. Here, there is a wide spread of diversified risks, and the premiums of the many can pay for the losses of the few. Insurers are in their comfort zone, so there’s plenty of capacity.

What about using standardised products?

This is another demand that the insurance industry hears from time to time – even as their ears are still ringing with bankers’ (conflicting) strident demands for new and different products.

In reality, much of the discussion between insurers and banks on OpRisk is really about the desire of the insurance industry to provide substantially standardised products - and the desire of the banks to mess with them. Any move away from standardised products reduces capacity – something that is recognised by both sides, though it doesn’t prevent banks all over the world from tweaking ‘their’ standardised product just a little bit. Every bank of sufficient scale to (theoretically) aspire to AMA status seems convinced that its standardised insurance product would be enhanced by the addition or subtraction of a phrase here or there.

Unfortunately, only one thing is certain: all of this ‘enhancement’ slows down the payment process. When a loss occurs and both parties to the insurance contract reach for their lawyers, the lawyers have a field day because the ‘enhancements’ require interpretation by a judge (which is generally a slow business). If both parties could simply agree to stick to phrases which have already been tried at law, lawyers could point to the appropriate precedent and settle the matter between them, without recourse to a judge. As a result, insurance payments could be speeded up.

Insurers are probably not Machiavellian enough to think this far, but from their point of view, ‘enhancements’ are actually quite convenient. Statistically, across a large portfolio of comparable insurance policies, minor tweaks here and there don’t really change the behaviour of the overall portfolio. But when a specific loss occurs and the insurer concludes that there is a reasonable likelihood of a valid claim under his policy, he can post a reserve and sit back. The case will wend its way through the courts, and during all the time it is wending, the insurer will be earning interest on the reserve. In the insurer’s book, slower payments are A Good Thing.
In short then, the insurance industry can provide standard products - but bankers all too often want to buy made-to-measure. Among themselves, bankers agree that standardised product is desirable, but each is convinced that standardisation should be centred around his product and not around the rubbish that others buy. Hence, discussions have been grinding on for years - always ‘on the verge of finalising a policy wording’ which all members will then use, and never quite delivering the goods. Insurers are not holding their breath.

A few other problems...

Just in case the standoff between insurers and bankers isn’t daunting enough, banking supervisors have challenged the insurance industry to pass a number of other tests before mitigation becomes a routine part of the Basel Rules:

- **Diversity**: Are there enough players in the insurance market to ensure diversification of risk?

  The answer is probably yes. Different insurers write different lines of business. Some will write all classes, others only very specific classes. In total, there must be several hundred (if not more) A-rated insurers. That seems like a reasonable degree of diversification.

- **‘Linguistic basis risk’**: Is there a clear and objective methodology for mapping risk exposure to insurance coverage?

  At least one major insurance broker has established a consulting facility which brings insurance experts together. Risk exposures (as identified by the bank and mapped into the categories established by the Rules) are compared with the bank’s own insurance policies. In some cases, there is a standard policy for a particular line of business that would provide adequate coverage. In other cases, policy ‘tweaks’ might lead an insurance expert to conclude that coverage is enhanced or reduced. It’s time-consuming and tiresome, but it can be (and has been) done and documented clearly and objectively.

  If the long-awaited standardisation of insurance policies ever does happen, the work will be reduced to a one-off exercise, requiring review only when a bank adopts different loss scenarios.

- **National banking models and insurance mapping**: Can the insurance mapping methodology be made compatible with national banking models?
It may well be that, in addition to ‘linguistic basis risk’, there is also a straightforward language barrier between OpRisk experts and insurance experts. Many of the OpRisk people use English as a *lingua franca* while their insurance buyers stick grimly to German or French or whatever else the home language may be. The laws governing the interpretation and application of insurance policies differ between countries, even within the EU.

Nevertheless, an insurance expert can still map insurance coverage to risk exposure. Language and legal practice shouldn’t present an insuperable barrier.

Supervisors may find the mapping inconsistent from country to country, but the inconsistency arises not from the methodology or from the ‘national banking model’ but from the policy language and the national insurance-buying habits. Thus, for example, a German bank would map ‘Internal Fraud – Theft and fraud – Cheque kiting’ as not-covered by insurance. A UK bank would map the same loss as covered, with a high likelihood of insurance payout within 12 months. This is not inconsistent; it simply reflects the fact that German BBB policies tend to provide much less cover than the comparable UK policy.

If indeed our prediction is accurate and very few banks aspire to (or are forced into) AMA compliance, those will likely be the large international banks, active in several jurisdictions and possibly subject to review by several supervisors. Certainly, it seems logical to assume that smaller banks - such as, for example, the local and regional banks in Germany - will stick with the Basic Indicator or the Standardised Approach for OpRisk, where insurance and insurance mapping simply don’t enter the equation.

**Conclusion**

Establishing a brand new regulatory regime in the teeth of opposition and lethargy is no easy task, and the Basel Committee deserves applause for a comprehensive job. Nevertheless, the banking industry changes constantly, and no doubt the Rules will require some tweaking once they are in use.

In the run-up to 2008, most larger banks are doing the work which might carry them to AMA status, but early signs are that many are concluding that it is not in their economic interest to ‘go AMA’. The ambition to be part of a select club of AMA banks may well be over-ridden by economic concerns if ‘going AMA’ doesn’t deliver a substantial saving of (expensive) RegCap. If ‘going AMA’ damages their competitive edge, then they won’t go willingly. National supervisors may force
‘their’ banks down the AMA road by specifying that a bank which isn’t AMA on OpRisk cannot be IRB on credit risk. But such an action would almost certainly reveal the lumpy playing field between draconian regulators and coddling regulators.

In order to make AMA and its higher standards of risk management and oversight attractive in a competitive capitalist world, I believe that supervisors need to wrap the RegCap stick in a thick layer of heavily-sugared carrot. A couple of suggestions:

- First, reduce the confidence interval to which OpRisk RegCap must be calculated – initially to 99.5%, but ultimately to 99%. 99.5% still provides a sizeable cushion, but the cushion is not as dauntingly large as it would be at the 99.9% level. If the revised Rules also suggest that banks with robust controls and sufficient own data (gathered over say 5-7 years) can later drop to a 99% confidence interval, the incentive toward excellence would be increased.

- Second, banks should be encouraged to consider the mitigation provided by insurance in their operational risk capital calculation. If metrics (and fudge factors) can be developed – and widely accepted – for the risk mitigation supposedly provided by credit derivatives in the credit book, there is absolutely no reason that the same or similar mathematics should not apply for OpRisk and insurance. The manner in which insurance is presently relegated to a basket market that ‘couldn’t be bothered to think about it’ smacks of intellectual idleness.

Certainly newer, more readily comprehensible products might provide enhanced cover, but two things need to happen for those products to be developed:

- there needs to be a viable pool of AMA banks to populate the risk warehouse (500 or preferably 1,000) – which may be tied to the first point; and

- the members of that pool of AMA-compliant banks must be willing to pay for the enhanced coverage – and, at the moment, there is little or no sign of that.

In the meantime, there is nothing to stop banks from unleashing their army of bright young mathematicians on the insurance mitigation question. Better maths and better statistics may mean better pricing for the OpRisk hedge; they will certainly help to construct a reasoned argument for supervisors to entertain a bank’s view of its reduced OpRisk Capital requirement.
- **Third**, invite insurance practitioners to support a re-write of the Rules so that the updated version of the Accord (which will no doubt be due within a few years) can be both pragmatic from the users’ point of view and legally workable from the insurance industry’s point of view.

In theory, the Rules seek to reward a bank for good corporate governance and risk management. In theory, insurance rewards risk management excellence and better governance with lower premiums and enhanced cover. Fortunately, insurers’ inability to explain themselves in terms which make sense to bankers doesn’t detract from the service they can offer in terms of measuring, monitoring, managing and outsourcing OpRisk. The trick now is to have all parties realise that insurers’ services in these areas are immensely valuable. **Could some brave insurer please point out that insurers and supervisors are pulling on the same rope and in the same direction?**

Experience of the Rules will doubtless do much to break down barriers. In the meantime, however, a good beginning might be for bankers, supervisors and insurers to stop regarding each other as ‘the enemy’ and start thinking about how they can make the evolving Rules work for everyone.
Appendix I

A potted history of the “New Basel Accord”

The way they thought it was

Basel 1 (the “Old” Basel Accord) was put together by the Basel Committee on Banking Supervision in the late 80s, after a few wobbles in the global banking system. The Committee has no legislative power, but since its members are mostly representatives of central banks and/or banking regulators, it follows that its recommendations should pass fairly smoothly into national regulation.

Basel 1 required that banks underpin their activities with Tier 1 (ie high-quality) capital equivalent to 8% of risk-weighted assets. The risk-weighting itself was a fairly steam-driven affair:

- loans to sovereigns were all zero risk-weighted – ie they required no capital underpinning at all;
- loans to other banks in OECD countries were 20% weighted (ie 20% of 8%) - therefore needed a capital underpinning equivalent to 1.6% of their face value; and
- loans to companies – non-banks and non-sovereigns – were 100% risk-weighted.

Thus, even where a bank lent money to a company with a far better credit history than a dodgy banana republic, it was still required to underpin that loan with Tier 1 capital equivalent to 8% of its face value.

The way it turned out to be...

If a bank made a loan to a company, then purchased credit protection from another bank (ie an insurance policy against a loan default), it was permitted
to offset the value of the protection against the outstanding value of the loan - requiring capital only against the net remaining loan and the appropriate offset from its counterparty bank. As an example, Bank X lent Company AAA US$100 million, then purchased a credit default swap from Bank Y in the amount of US$50 million. For the purpose of calculating regulatory capital requirements, Bank X could now offset the US$50 million it had ‘insured’ from the total loan outstanding. Obviously, Bank X still had credit exposure to Bank Y, but assuming Bank Y was an OECD-based bank, that credit exposure only needed to be underpinned with 20%. Thus, the regulatory capital (RegCap) charge was now calculated as follows:

- US$50 million net lent to Company AAA x 8% = Required capital underpinning of US$4 million.

- US$50 million of credit exposure to Bank Y x 8% x 20% = Required capital underpinning of US$800,000.

Capital is expensive: most banks expect to generate a Return on Equity of 15% per annum. Thus, the cost of RegCap to the bank of lending to Company AAA amounted to:

- US$4 million x 15% = US$600,000;

- plus US$800,000 (for the insured or ‘hedged’ part of the loan) x 15% = US$120,000;

- for a total RegCap cost of US$720,000.

Turning to the loan itself, Company AAA would pay annual interest of (say) LIBOR plus 100 basis points per annum. In other words, the bank would be borrowing funds at LIBOR, then lending onward to Company AAA for a net interest rate margin of 100 bp. So if the bank did not buy the hedge, it would be required to underpin US$100 million with 8% of capital, resulting in capital charge costs of US$8 million x 15% RoE = US$1.2 million. Thus, the capital cost of lending to Company AAA would be higher than the interest the bank could expect to charge, making the transaction unviable for the bank. By hedging part of the loan as discussed above, the capital cost is reduced to US$720,000. Better yet, if the bank were able to hedge the entire loan, the RegCap charge would be US$1.6 million x 15% = US$240,000.

Close observers will point out the weakness of the above argument: surely, the hedge is not free.
True. Bank Y, which sold the hedge to our lending bank, did indeed charge a premium. That premium was based upon the credit quality of Company AAA (and not on any consideration of the charge for regulatory capital). Obviously there could be price movement in either direction depending upon the terms of the hedge, but the pricing might be in the general region of 0.16-0.30% for an AAA credit. Thus the bank’s total cost of lending is the RegCap charge of US$240,000 + the cost of the hedge (US$100 million x 0.30%), US$300,000. This means a total cost of lending of US$540,000, for a net profit on the loan to the bank of US$1 million interest less the cost of lending US$540,000 = US$460,000.

Lending out US$100 million for a net profit of US$460,000 doesn’t sound very attractive – even if it is better than going unhedged and making a net loss of US$200,000 after RegCap charges.

The thinking banker quickly concluded that it was far more attractive to lend money to less highly-rated companies or sovereigns. For instance, our banker could lend the same US$100 million to Company BB and charge LIBOR plus (say) 600bp. The higher loan pricing reflects the greater likelihood of default on the part of the lower-rated company. But up-front, the transaction looks more attractive: 6% interest means the bank collects US$6 million in net interest. Irrespective of the higher risk, the RegCap charge remains unchanged: 8% of US$8 million – costing US$1.2 million of capital charges, meaning the profit on the loan would be US$4.8 million. If, in addition, the bank were able to hedge the loan, the capital charge would be reduced to US$1.6 million as above, attracting capital charges of US$240,000. The hedge of course would be more expensive, reflecting the ‘insuring’ bank’s perception of the higher default risk – say somewhere in the region of 0.8%, or US$800,000. This means the total cost of the loan to the lending bank is US$1,040,000 - meaning it clears a net profit of US$4,960,000.

Thus, all unwitting, the regulatory capital regime of Basel 1 established clear incentives for banks to trash the quality of their loan books.

The accounting rules – particularly in the US – supported this. Under them, a bank could sell credit default protection, and since this was a derivative, it was treated as an off-balance sheet item. Being off-balance sheet, the credit default protection did not have to be underpinned with capital.

Bankers are not foolish. Whether on balance sheet or off, a risk is a risk is a risk. Thus they had a pretty reasonable view of what the real risk in their loan book was, but gaming of the rules could make profits look much better - with a commensurate effect on bonuses. As long as credit derivatives were a
footnote to the financial statements dealing with the loan book, rather than an on-balance sheet item in the trading book, they were a useful tool both to increase income and to manage risk.

With capital adequacy and accounting rules as they were, it was logical for the credit derivatives market to explode. Clever bankers thought up new ways to earn additional income, or to reduce RegCap expenses. Such was the degree of deal structuring and restructuring that it became almost impossible to guesstimate the true amount of 'underived' risk-adjusted capital required.

Plainly, Basel 1 was giving banks all the wrong incentives. Indeed, it was actually contributing to risk in the global banking industry, rather than reducing it.

The way they set out to fix it...

As a first step to stopping this free-for-all, supervisors agreed that it would be sensible to require banks to underpin their trading book with capital. Banks (of course) dragged their feet, since the trading book had hitherto been a free lunch in terms of RegCap. At the same time, supervisors were loath to simply bung in some sort of charge for fear that would create the same sort of skewed incentives in the trading book as had been accidentally created in the lending book.

After a few discussions, the major internationally-active banks came to realise that some sort of capital charge was inevitable, and that it was perhaps no bad thing. A capital charge, applicable equally to all banks, would probably increase the amount of capital overall in the worldwide industry. Plus, while a capital charge of some sort might temporarily depress earnings, it would rein in some of the cowboys. The task then was to design a RegCap regime which aligned supervisory and risk management interests.

The regime that supervisors came up with was based around banks' own assessment of the risks inherent in their trading activities. Many of the more sophisticated banks had been using Value-at-Risk – VaR – for some time, and thus had the statistics and the back-testing to demonstrate that the numbers it produced were robust and un-skewed. Risk-aware banks had long understood that they made their money by taking risk and getting paid for it. If risk was taken, it was obvious that losses could occur – indeed, statistically speaking, would occur. The trick was to define the maximum acceptable loss, and then to create metrics which would ensure that the loss would never exceed that number. VaR was the result of that philosophy: it
represented a bank’s own internal calculation of how much money it could lose as a result of any one day’s trading activities.

Put simply, VaR is calculated by establishing a value for all of the bank’s trading positions at the close of trading on any given day. A computer simulation then re-values each trading position as though it had been in the book at close of trading on each day over the previous year or several years. The value of each position will have theoretically fluctuated over the chosen period both up and down. Those fluctuating values are then aggregated to give a theoretical overall portfolio value on each day of the chosen period. It will be found that on 99 days out of 100 the bank could theoretically have gained or lost a certain amount. That potential gain or loss represents the VaR for the bank on any given trading day.

Different banks might choose different confidence intervals and different holding periods to calculate their VaR. One bank might choose a 96% confidence interval, and a holding period of one week – ie its model assumes that securities in the trading book will be held for a maximum of one week, and that on 96 days out of 100 the aggregated swings in the value of the portfolio will not exceed (say) US$80 million. Another bank may choose to model on the basis that securities will be held for no longer than one day, but that on 99 days out of 100, the value swing will not exceed (say) US$85 million. Holding periods and confidence intervals may vary, but the numbers produced are broadly comparable.

VaR as calculated nowadays is more than just a theoretical number: it tells the bank what the general riskiness and volatility in its trading portfolio is. VaR also tells the bank’s regulators how much risk and volatility that bank adds to the banking system, and how much capital that bank should be required to hold. Thus, the VaR number flows directly into the RegCap calculation for the bank. Where supervisors have confidence in the bank’s models, calculations and back-testing, the RegCap requirement may be pretty close to the bank’s own VaR number. Where the supervisor has less confidence or the markets are extremely volatile, the RegCap requirement may be a multiple of the calculated VaR.

VaR, in any event, has proven to be an excellent tool: it represents the bank’s own assessment of the risk to its capital, and hence there is no incentive to game the rules.
But the fix needed to go further...

While VaR worked well for the trading book, the greater risk was still perceived to be in the lending book, where the RegCap regime was still unreconstructed.

Recognising that the world of banking changes swiftly, the Basel Committee set out to create a new, comprehensive Capital Accord which would be coherent, future-proof and unburdened with behaviour-modifying incentives.


First, supervisors determined that the new Accord would consist of three complementary “pillars”: capital, regulatory oversight and public disclosure.

The first pillar – capital - is all about the hard and fast rules laid down by the Basel Committee which are intended to pass unchanged into national law. The Rules specify what counts as ‘capital’ and how much of it a bank needs to underpin its activities. Thus, a VaR number plus a certain cushion needs to be set aside for the risk in the bank’s trading book. Similarly, lending operations need to be underpinned with an additional slug. All of these slugs of capital are laid out as minimum amounts to be held by every bank covered in the Basel Accord: national supervisors may not permit banks in their jurisdiction to hold less.

Pillar 2 then addresses home country supervision: national supervisors are expected to subject ‘their’ banks to rigorous quality inspections. Where a national supervisor feels that a bank in its bailiwick does not meet rigorous criteria, the expectation is for that supervisor to impose additional capital requirements – ie require the bank to hold capital over and above that specified as ‘minimum’ in the Basel Accord.

Today, shareholders buy stocks with an expectation of how much profit per dollar of capital the company must earn. Anglo-Saxon banks, for example, are expected to produce 20-25 cents of annual pre-tax profit for every dollar of capital. Thus, there are good shareholder-driven reasons why a bank would want to hold ‘just the right amount’ of capital - and hence, equally good reasons why a bank required to hold more than that is at a competitive disadvantage. A bank required to hold extra capital will still only be able to produce a certain absolute amount of profit, which, when spread across outstanding capital, will amount to less than the required 20-25 cents per
dollar. Shareholders whose expectations are not met tend to look for the exits; so an underperforming bank has trouble attracting capital and is forced to pay more for that capital when its available. Thus, Pillar 2, in the hands of an activist supervisor, can be a pretty big stick.

Pillar 3, on public disclosure, is a sneaky one. At first glance, supervisors have endeavoured to align supervisory disclosure requirements with those which are already hard-wired into the accounting rules. So the Basel Committee is not requiring anything new; rather it is simply mandating that the risk disclosure should take place in a single, coherent, publicly available space. The preferred public space appears to be the Annual Report and Accounts. So the additional costs should be minimal. In fact though, Pillar 3 may turn out to be the biggest stick of all.

The Accord defines several separate risk areas (credit, market, operational, interest rate and equity) where specific information is required to be disclosed regularly. Those disclosures should be consistent with how management manages the risk of the bank, and should be of a standard and materiality which would enable stakeholders to assess the bank’s true capital and risk position. Recognising that some of the information required is likely to be proprietary and sensitive, supervisors are not imposing penalties for a failure to disclose, merely indicating that the brave new world of Basel 2 will not be available for banks which fail to comply.

The key here is the unspoken realisation that the market itself is the most rigorous regulator. Banking counterparties already subject each other to stringent reviews. With additional information made available, stock and credit analysts will have a far clearer and more consistent view of the risks in an institution. Where a bank doesn't measure up, counterparties may refuse to trade, limit their trading, or demand a premium. Lenders will cut back or cut out. And stockholders will trade the stock at a discount. So Pillar 3 may be the most effective stick supervisors could wish for.

And now some nitty-gritty...

Defining what capital requirements would form part of the overall Pillar 1 RegCap charge is a step into hard slogging territory. Ten years of good experience with VaR mean that there really isn’t anything controversial about the RegCap underpinning of the trading book. But the lending book is nothing less than a minefield.

This is no joking matter. Whereas the Basel Committee is the guarantor of global financial stability, each of its members has political masters to serve
on the home front. Political masters need to win elections - and elections are often won and lost on the basis of Mr & Mrs Lunchbox’s financial wellbeing. Financial wellbeing in turn may be dictated by access to credit, either personally, or as the proprietor of a SME (bearing in mind that SMEs account for more than 50% of jobs in the OECD). If the RegCap rules skew lending behaviour against Mr and Mrs Lunchbox, Mr and Mrs Lunchbox are very likely to un-elect their politicians.

Aware of this, supervisors tried to find a capital calculation for the lending book which was as effect-neutral as VaR, but that would nevertheless be robust and preferably not lead to a massive reduction in RegCap requirements. Balancing the interests of Mr and Mrs Lunchbox against global financial stability produced many iterations of a new RegCap regime. At times, supervisors must have felt they were chasing their own tail. Finally, some sensible regulator suggested that the experience of embedding VaR in the RegCap regime had been extremely positive: would it not therefore make sense to allow banks to calculate their own capital at risk in the lending book?

Banks have a variety of credit measurement tools at their disposal, and comprehensive data on their lending activities. Whereas the legal treatment of bankruptcy differs from country to country, most banks have a good handle on both their expected credit losses (e.g. credit card default as a proportion of overall credit-card lending) and their unexpected credit losses (e.g. Russian meltdown, Argentine sovereign default).

With all this data, many banks have now been calculating something they call ‘Economic Capital’ for several years. Economic Capital represents their view of how much capital they really need to underpin their lending book, and the number has often been substantially different from the RegCap requirement.

After much debate, the Basel Committee concluded that it would be sensible to bring RegCap as closely into line with EconCap as possible. Plainly, to protect against deliberate or accidental underestimation of capital requirements, a bank wishing to calculate its own RegCap requirement would need to demonstrate vast amounts of data over at least one economic cycle, as well as robust models and ample back-testing. In no event did regulators wish to see banks using internal models to underestimate capital requirements, only to find themselves unable to withstand economic shocks when one or more large credits defaulted.

Recognising that some banks are more sophisticated than others, supervisors proposed that there would be two main methods for calculating the RegCap underpinning the loan book:
- the [relatively] simple Standardised Approach; and

- the [extremely] complex Internal Ratings-Based (IRB) Approach.

The Standardised Approach

The Standardised Approach for credit risk is a more sophisticated version of the ‘old’ Basel 1. Recognising that loan counterparties can no longer simply be bashed into a few basic categories, the Committee has developed a detailed list of counterparty types, combined with external review of the credit quality subdivisions. In contrast to Basel 1, the new Rules set out considerable detail on the weightings for sovereigns, banks, securities firms, corporates, etc. In addition, past due loans can no longer simply be rolled over, but must have an appropriately punitive capital weighting assigned to them. Credit risk mitigation is also addressed: collateral, credit default swaps, securitisation, credit derivatives, on balance-sheet netting arrangements and guarantees are all handled in a way which leaves no doubt in the mind of the thinking banker that the supervisors understand all the clever ways that the old RegCap system had been gamed.

The IRB Approach – carrot and stick

The Internal Ratings-Based Approach (IRB) was designed for use by the most sophisticated globally-active banks. The carrot is a juicy one: namely that IRB banks can [within certain parameters] calculate their own capital requirement for RegCap underpinning their lending book. The stick is that banks wishing to ‘go IRB’ first must meet those stringent Pillar 3 disclosure requirements - and second must obtain supervisory approval of their internal approach.

Supervisors have also indicated that banks will need to satisfy them on the stability of their measurement of the various risk components. These include:

- accurate estimates of the likelihood of a given group of credits defaulting, called Probability of Default, or pD;

- an estimate of what the likely loss will be after recoveries – Loss Given Default, LGD;

- exposure at Default, EAD; and
- an estimate of effective maturity – M.

M represents a bank’s best estimate of when a drawn-down loan will be repaid. Banks generally have a good sense of M, and are thus able to calculate a Net Present Value of recoveries.

The new Accord, as it stands, breaks lending assets down into five categories: sovereigns, corporates, retail, banks and equity. Some of those categories have sub-categories, and each category receives detailed consideration of hedges, offsets and collateral. There is much detail related to risk-weightings by asset class and comparison of internal ratings matrices with external criteria. In all, the discussion of IRB runs to over 120 pages of very precise requirements. Finally, although various components of credit risk need be modelled “only” to the 99th percentile confidence interval, the formulae scattered through the paragraphs seem to indicate that the aggregate credit exposure – and therefore the RegCap requirement – should be modelled to the 99.9% confidence interval.

The carrot is that there is a huge competitive advantage for banks which can achieve approval of their IRB calculations, thus bringing RegCap into line with Economic Capital.

Clearly, supervisors would like to see as many banks as possible move up the sophistication curve to achieve IRB status. IRB banks will genuinely be managing their credit risk, rather than trying to manage the RegCap charge. In order to achieve the right motivational effect in the cut-throat world of banking, the IRB carrot is designed to be very attractive indeed. The stick is that the supervisory requirements require a bank to engage in huge data-gathering, data-crunching and data-monitoring exercises – all of which represent sizeable investments.

The largest Anglo-Saxon banks do not appear troubled by these hurdles: they have been collecting data for many years. Large French banks also appear unfazed, and the larger Italians have simply geared up to get the models going. The non-[quasi]-state banks in Germany also swiftly set to work. They all realised that if RegCap requirements were in sync with Economic Capital, it could only be to their advantage.

For the moment however, this paper is about Operational Risk, so we’ll leave credit risk to the armies of bright, keen mathematicians who are already labouring over it.
26. “Banking Banana Skins: 1997”: A further survey showing how bankers might slip up over the next two or three years. April 1997


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