



BANKING

BaselBriefing 13

January 2008

FINANCIAL SERVICES

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Editorial

Welcome to the 13th edition of BaselBriefing. Basel has been operating for real in Europe as the Capital Requirements Directive (CRD) since 1 January 2007, but the major banks will mainly be adopting the advanced approaches only as of 1 January 2008. Therefore, with the recent turmoil in the financial services industry during the latter half of 2007, our first article examines what has taken place and considers what this might mean for Basel II.

Basel II is truly global, and our second article explores the state of implementation around the globe. Has it been a challenge, has it led to benefits and what more still needs to be done by firms over the coming months and years?

One area of business that has been particularly exposed in recent months is securitisation and our next article looks at how the Basel regulations have evolved in this area and what impact this might have for firms. We continue with three articles exploring different aspects of the risk

management spectrum. Firstly, we cast a critical eye over the requirements for credit risk model validation; then we examine how firms are moving their operational risk management frameworks from a purely regulatory compliance focus to something that can add true value to the business management of the organisation. Lastly, we consider the future of economic capital management post-Basel, with the likely move to a more risk factor based approach.

Liquidity risk is firmly back on the agenda for firms, regulators and industry commentators, and our penultimate article examines the specific implications of recent market events for the way that the industry looks to get a clear picture on its liquidity and funding position moving forward.

Finally, as we transition to a future beyond Basel II, we explore what constitutes the new risk agenda for firms and how this is leading to a new model for overall risk management.

For those firms moving to Basel II for the first time on 1 January 2008, good luck and let us hope that the implementation of the advanced approaches heralds an exciting and successful new dawn for risk management.

Jörg Hashagen
Managing Partner Advisory
Global Head Advisory,
Financial Services
KPMG in Germany

Recent market conditions

What does it mean for Basel II?

Well, edition 13 of BaselBriefing is being written and released at a pivotal point in the evolution of the new Basel Accord. The Foundation Internal Ratings Based (FIRB) approach has been available during 2007, but with few firms having satisfied their respective regulators that they meet the minimum standards, it is 2008 that will see the big switch on of capital treatments under FIRB and the Advanced IRB approach.

Having said that, 2007 was very much a year of two halves – it started with record profits being reported by all the major banks, and the good news seemed to continue during the first six months. However, there were signs of the trouble to come, and rising levels of sub-prime defaults in the US pre-saged the crisis that was

to unfold in the second half of the year leading to the collapse of two German banks and the first run on a UK bank for nearly 150 years. By the end of the year almost all the major banks had reported massive write-downs on mortgage and structured product assets, some were reporting losses and several chief executives were looking for alternative employment (see figure 1).

As commentators trawl through the wreckage asking “how did this happen?”, we consider what lessons can be drawn for risk management and, in particular, for the impact that Basel II has had and will continue to have over the coming months.

Innovate or die?

Over the past few years the banking industry, and in particular the investment banking industry, has been fabulously creative. The growth in securitisation structures and credit derivatives over the past decade has been phenomenal. The lexicon is now filled with a string of three letter acronyms such as ABS, MBS, CDO and CDO squared.

What was originally conceived as a way of spreading the risk out across the industry is now being attacked by some commentators concerned that firms are unaware of the underlying risks that they hold and that they blindly invested in, on the basis of some external rating agency gradings.

Disintermediation, it is said, has also led to a lack of responsible lending, as originators were incentivised to lend without regard to the consequences of the lending, providing the core base material for the investment banking packaging.

The counterfactual (which is difficult to prove) is that without the spread of securitisation and risk transfer mechanisms, firms would have been even more badly hit by the impact of the sub-prime mortgage losses in the US.

As discussed further in our securitisation article, Basel has introduced more requirements including more risk sensitive requirements for securitisation structures, and in particular for the liquidity facilities provided to some of the structured products. The revised Basel Securitisation framework has seen more changes over the development period than possibly any other area in Basel, and it will be interesting to see how it survives in practice.

Blurring between credit and market risk

Another consequence of the recent events has been the demonstration of the significant linkage between credit and market risk, between the trading and banking books. Whilst trading book exposures get preferential regulatory capital treatments, firms have tried to squeeze more and more

Figure 1 Estimated write-downs of structured products

Firm	Amount (US\$bn)
Citigroup	13.7
UBS	13.7
Merrill Lynch	8.4
Morgan Stanley	4.6
Deutsche Bank	3.1
Credit Suisse	1.9
JP Morgan	1.6
Goldman Sachs	1.5
Wachovia Bank	1.1
Bear Stearns	0.7
Lehman Bros.	0.7
Total:	55.0

Source: KPMG International analysis of press coverage

exposures into them. The Basel Trading Book Review¹ introduced enhanced guidance to try to provide clarity around the eligibility of instruments for the trading book, with a renewed focus on the liquidity of the underlying positions and the ability to price them effectively and efficiently. In some respects this principles based guidance was highly prescient with the troubles of the last few months demonstrating how difficult it is to put prices on what have now become highly illiquid assets. As the packaging and re-packaging has gone on and on, it has sometimes become difficult to see where the boundary has been drawn – when has counterparty and underlying credit risk been effectively transformed into market risk, and does it matter?

Further work still has to be done during 2008 to complete the work on the incremental default risk surcharge for the trading book within the Basel

framework; further work on a tricky area that aims to compensate for some of the difficulties outlined earlier.

Role of rating agencies

Unregulated and seemingly with a licence to print money through their bond and entity rating activities, the rating agencies are not currently top of anyone's Christmas card lists.

They have played a key role in the events leading up to the liquidity crisis. They are a key participant in the development and origination of structured products, and whilst this is not the place to undertake a full examination of their rights and wrongs, it is inevitable that they will see a much greater level of scrutiny during 2008. With a significant part of the new Basel Accord dependent on the ratings provided by approved External Credit Assessment Institutions, including the controversial structured credit product area,

questions are already being asked around the implications of this for the new regulatory capital requirements. If nothing else, then market participants and the rating agencies need to reach a greater level of mutual understanding of what each brings to the table.

Firms responses to the crisis

As the crisis has unfolded, organisations have been cutting back on front office staff, taking the sword to the highly remunerated ranks of young salespeople and structurers who were responsible for putting together the sophisticated structured credit products.

At the same time, many are finding that they don't have sufficient experience in the risk control departments; they don't have those individuals with the ability to price, value and carry out stress testing on the products that have been created – it is a boom time for these areas.



The recent inability to finance these off-balance sheet obligations... has sent shockwaves through regulators who have had long held concerns about the degree with which risk had truly been transferred



Another key area is firms spending time reviewing the whole balance sheet to understand what is on it – a fundamental root and branch review of the portfolio to understand the quality, nature and latent risks in the assets.

Implicit support

One of the most interesting areas arising from the growth of securitisation and its subsequent problems has been around implicit support – significant regulatory capital benefits were obtained by originators by demonstrating the appropriateness of their risk transfer mechanisms to third parties. The recent inability to finance these off-balance sheet obligations has led to many firms being forced for various reasons to take these assets back on their balance sheets, whether they were standard securitisations or some of the more in vogue 'conduit' vehicles. This has sent shockwaves through regulators who have had long held concerns about the degree with which risk had truly been transferred. Basel II has increased the attention of the industry on the formality and appropriateness of the risk transfer that has taken place. However, some would argue that their fears had been realised, when, under the first significant stress, the moral hazard and reputational damage arising from just walking away from these assets

has been a deterrent from firms sticking to their contractual protection.

Disclosure

One of the contributing factors in the crisis has been the uncertainty around valuation, around 'how bad actually was it' – recent accounting developments have led to a much greater focus on 'fair value'. For many of the more complex instruments fair value is much harder to establish and firms rely on complex mathematical models loaded with assumptions and reliant on analysis that at times can be considered fairly dubious.

During 2008 and into 2009 two developments in this area may provide greater clarity. The accounting standard IFRS 7 becomes extant for accounting periods beginning on or after 1 January 2007 and therefore most banks will be making IFRS 7 disclosures during the reporting season in early 2008. Whilst no one should argue that disclosure is the panacea for all ills, enhanced disclosure is usually considered to be a good thing, and it certainly focuses the minds of senior management who are having to sign-off on 'what they do' and 'what do we currently have on the books'.

From a Basel perspective, the Pillar 3 disclosures will begin to kick in, with most firms likely to make the

qualitative disclosures during 2008 aligning with IFRS 7 and then the quantitative disclosures in 2009. With regulators hoping that market forces drive improvements in risk management it remains to be seen whether this works.

Pricing for risk

One of the oft quoted phrases during the recent turmoil has been that pricing had become dislocated from the risk (and in particular the credit risk) associated with lending. If there is one thing that has been stressed about Basel II, it is the objective of developing more risk sensitive capital requirements, linking risk assessment methods with business and operational use. It can be hoped that by encouraging robust use test frameworks, strong governance and oversight and the leveraging of Basel infrastructure for business and operational purposes that a re-establishment of the link between price and risk can start to be seen.

Challenges into 2008

With Basel II in full swing in 2008, and the US belatedly embracing the Accord in full, albeit with a one year delay, the challenge now is to restore credibility and reputation to an industry that came under significant public, regulatory and governmental pressure during 2007.

In the minds of many regulators, Basel II is a good thing as it provides a more robust risk sensitive approach for the assessment of banking organisations; it requires an examination of off-balance sheet instruments, such as liquidity facilities, and the effectiveness of risk transfer mechanisms, and the Pillar 2 framework provides scope for a thorough firm-wide review of risk management, especially liquidity risk and a robust regime of severe stress and scenario tests.

Many in the industry are hoping that there are no knee-jerk regulatory or legal responses to the difficulties experienced during the market crisis. With the bad news coming out of the woodwork, the market is now in a better position to assess the underlying issues and gauge the future problems.

What is certain is that attention will now turn to the 'forgotten risk' up to this point: that of liquidity risk. Whilst regulators can point to Pillar 2, and the need for firms to have had a joined up capital management, risk management and financial management strategy, there is no denying that liquidity risk has not been given the exposure or study that it deserved. The events of the last six months have strengthened the arms of regulators, provided impetus and a much needed wake up call for firms and senior management.

Indeed, senior management are likely to face greater pressure during 2008 from regulators, from shareholders and from the general public. They need to understand their businesses like never before and the mantra of appropriate governance and oversight will echo strongly.

For those who thought Basel II was completed and that Basel III was on the horizon, think again. There remains significant work to be done down a robust regime of capital requirements, capital, financial and strategic management, and disclosure that is consistent with the risks facing organisations in the current climate.

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¹ The Application of Basel 2 to Trading Activities and the Treatment of Double Default Effects, BIS (consultation paper, April 2005; and final rules, July 2005)

The Basel II implementation process

Challenge or burden for banks?

With the events of the last few months ringing in our ears, firms are facing up to the implementation date for the Basel II advanced approaches with a sense of expectation and trepidation. Firms are looking forward to taking advantage of the new approaches, and making use of more sophisticated risk measurement systems. Many firms have spent upwards of US\$100m on their complex and lengthy Basel programmes, and a key question is whether Basel II has been a challenge or burden for banks.

To answer this question, current market conditions and challenges and the outcome of Basel activity and implementation are discussed with colleagues from KPMG member firms around the world.

Germany

Klaus Ott
Partner, KPMG in Germany

Klaus, how many banks are going for the more advanced approaches for Pillar 1 in your country and what are their reasons for adopting the advanced approaches? Do you think they are really getting the benefits from implementation that they expect? Why have certain banks remained on the standardised approach?

In Germany, since the first draft of Basel II the German Banking industry, as well as the German regulator, has driven forward the idea of sophisticated approaches to enable banks to evaluate their risk position through internally estimated parameters.

The German Bundesbank initially expected several hundred banks to go for the Advanced Internal Ratings Based (AIRB) approach, but it is now expected that approximately 60 banks are going to use AIRB by the start of 2008 with more adopting the approaches over the following years. Seventeen banks had already passed the approval processes by the middle of 2007, and these firms represent approximately 60 percent



of the assets of the German banking industry. Indeed, by number, Germany seems to be the country with the most AIRB approach banks.

For large international 'tier one' banks it was out of the question not to go for an advanced approach to demonstrate the bank's ability to implement state of the art risk management processes; such banks had to create a database which enabled the banks to implement far more advanced internal management processes and methods, like RAROC¹ – methodologies or more advanced risk based pricing.

On the other hand, the possible capital reductions that were anticipated at the start of the Basel II process have not been quite so dramatic as the regulators have kept any changes within limits due to several recalibrations that have occurred during the process.

For some of the smaller organisations, there has been a desire to keep up, hoping to show that just because they are small it does not mean that they have unsophisticated risk management practices.

As all banks, advanced as well as standardised, are committed to improving their risk management and risk control frameworks following the guidelines given for Pillar 2, this seems to be the 'real' benefit; for the banks, the regulators and even the customers. In Germany the basic principles have been fixed by the regulators in the 'Minimum requirements for risk management'² which is applicable for all types of banks.

The databases set up for Pillar 1 will enable banks to set up appropriate planning and stress testing methodologies and systems and customers might profit through the development of more sophisticated risk adjusted pricing systems.

In terms of those banks that have remained on the standardised approach so far in Germany, it is mainly the mid-sized and smaller savings banks and co-operative banks. These banks did not have the money and resources to run the huge Basel II implementation projects on their own. Therefore the savings banks association as well as the co-operative banks association have provided a lot of support around the development of rating methods as well as supporting the necessary data pooling.

These banks are forced by internal rules to maintain capital ratios above the regulatory minimum. On the other hand such firms concentrate mainly on retail business. Therefore, even the standardised approach provides a considerable capital release compared with Basel I.

In addition the IRB treatment of investments as well as special funds in the EU's Capital Requirements Directive (CRD) is a severe obstacle for these banks. The banks associations and industry representatives of the funds industry have started discussions at an EU level to amend this treatment.

However, German regulators are expecting the larger savings and cooperative banks to apply for the IRB approach within the short term.

UK

Jane Leach
Partner, KPMG in the UK



Jane, with Basel implementation in the UK nearly finished, what are the real opportunities for firms to benefit from Basel II? How do you see the disclosure regime operating and what do you see as the key next steps?

In the UK, for many firms Basel II has been one of the biggest project investments in recent times with some banks having spent more than UK£100 million on risk data and systems, project management and specialist risk management and Basel skills. Thoughts are now turning to how they can extract value from the huge investments that have been made.

This is not only improved risk management, but also streamlined internal processes as firms look to take competitive advantage rather than struggle in a competitive position.

There are a range of areas impacted by Basel in a positive way, including improved business decisioning (e.g. risk based pricing, improved retention strategies and enhanced cross-selling); enhanced operational efficiency (e.g. early warning and account management, collections and recoveries); and strategic planning and capital allocation (e.g. improved portfolio management).

Firms are now looking to embed their Basel activities in a robust way, looking to reap the benefits outlined above. To some extent organisations have taken a breather after getting over the Basel line, and this is in many ways a mistake as the impetus and momentum gained from the Basel project can be lost and firms are left feeling that it was solely a regulatory project now that FSA approval has been granted.

IRB approval shouldn't be seen as the end of the line, and indeed for many organisations the sense of euphoria has quickly been replaced by a need to finish off Pillar 2/ICAAP³ processes and sort out the Pillar 3 disclosure regime. In the UK, the integrated regulatory reporting regime is also keeping the finance and IT people up to their eyeballs in work.

From a technical risk perspective those firms fortunate enough to have few conditions attached to their waivers and little portfolio roll-out to complete, are trying to complete or start model based approaches to exposure measurement for derivatives and securities financing transactions, the so-called Expected Positive Exposure (EPE) requirements.

A further fly in the ointment for firms with trading books and Value at Risk (VaR) approvals is the need to develop and implement an approach to specific risk modelling that satisfies the regulator – debate continues around the acceptable approaches to the incremental default risk charge.

As firms look to 'finish off' their projects many will be considering how they can build them up into strategic solutions, trying to tidy up the 'sticky tape and string' based tactical solutions that have been put in place to get over the line.

With the events of the recent months fresh in people's minds, work on liquidity risk and appropriate stress testing will intensify over the coming months.

In the UK, the FSA has let the industry get on with Pillar 3 disclosure in its own



Canada

Diana Lowe
Associate Partner, KPMG in Canada

way – it has adopted a copy out approach to the rules as set out in the EU's CRD and is expecting market discipline to operate. As such it has provided very little additional guidance to organisations and the industry body, the British Bankers' Association (BBA), has taken up the mantle in the last few months trying to reach consensus around some of the critical items such as format, interpretation and timing.

Many organisations are looking to make the disclosures outside of the financial statements to avoid the difficulties with potential audit requirements, and to provide greater flexibility to update them via the internet.

In terms of timing then we can expect to see the first significant disclosures during early 2009 as the big banks look to make quantitative disclosures using 2008 year end data – in this way, it is unlikely that we will see much impact from the analytical disclosures for some time to come. In the meantime, much of the qualitative disclosure required will overlap with the requirements from IFRS 7⁴ which comes in for accounting periods beginning on or after 1 January 2007.

Whether the Pillar 3 disclosures will have the desired effect regarding improving risk management discipline is debatable, with most interested parties already able to access greater levels of information on a more granular and periodic basis than Pillar 3 will provide. Whilst competitors may be looking forward to seeing more information about the opposition portfolios it remains to be seen whether any systemic benefit will arise.

Diana, have you observed banks taking advantage of any benefits in Canada? How is the disclosure regime coming in, and do you see this highlighting the advantages?

In general, a range of developments were observed amongst the Canadian banks which can be summarised across the three perspectives of credit risk, operational risk, risk and capital:

Credit risk

- Continuous refinement of credit capital methodology and loss parameters;
- Significant ongoing enhancement of risk rating methodologies;
- Changes to credit processes including distinct phases for quantitative (model) and qualitative (judgmental) analysis resulting from the introduction of the enhanced rating methodologies;
- More consistent benchmarking of ratings and credit trends to external sources; and
- Changes to monitoring and reporting of key risk measures including expected loss unexpected loss and economic capital values, in addition to the percentage of impaired loans.

Operational risk

- Establishment of central risk management and designated line responsibilities;
- Significant revamping of risk and control self-assessments to address operational risk information as well as Sarbanes Oxley requirements;
- Tracking of operational losses and loss database development; and
- More focus on comprehensive and consistent frameworks and development of key risk indicators (KRIs) than pure modelling.

Risk and capital perspective

- Bank-wide limit structures – in order to address concentration risk and associated capital costs in a better way, there is development of credit limits based on economic capital analysis (i.e. in place of, or in addition to, notional credit limits); and
- Banks have the key objectives to integrate the risk, return and capital measurement processes to develop a framework or risk adjusted performance measurement system.

In terms of Pillar 3, then the Canadian supervisory guidelines indicate that although the Basel II framework requires disclosure to be made on a semi-annual basis, the frequency of the quantitative disclosures made by Canadian institutions should align with financial reporting in Canada. This means that institutions will be required to make quantitative disclosures on a quarterly basis. The qualitative disclosures (e.g. risk management objectives and policies) can be made on an annual basis. For smaller institutions, annual reporting may be acceptable for all disclosures, both quantitative and qualitative.

The Canadian regulator encourages institutions to begin disclosing information under Pillar 3, particularly the quantitative disclosures, in Quarter 1 2008 (which in Canada means 31 January 2008). However, there is some expectation that there will be some flexibility throughout 2008 to meet all the Pillar 3 disclosure requirements.

Some of the challenges that KPMG in Canada is finding from clients (and these are most likely common among other international institutions) is that for risk and accounting professionals there is a need to ensure consistency between internally and externally reported information, as well as ensuring that they take advantage of any synergies between IFRS and Pillar 3 requirements.

Netherlands

Carola Steenmeijer
Director, KPMG in the Netherlands



Korea

Hyun Soo Jang
Partner, KPMG in Korea

Carola, what have been the main lessons learned from Basel programmes and how do you see the interaction moving forward between Pillar 1 and Pillar 2 implementation?

First and foremost, an open dialogue with the regulator is essential in order to resolve areas where there is a lack of clarity. Furthermore most of the Basel programmes started within the risk functions of the bank and remained there for a long period of time, resulting in finance and business staff becoming involved late in the day. It would have been beneficial for data and 'embedding' issues if these areas had been involved at an earlier stage. In particular some further lessons learned include:

- The importance of lobbying to get the changes that are required – the trading book revisions only came in very late in the day as firms didn't push hard enough at the beginning;
- Appropriate sponsorship at the senior level to ensure that the project gets done, and that there is sufficient buy-in at the senior levels and sufficient education for senior management;
- The need to get appropriate levels of resources early and not to rely on the contractor market without a plan for appropriate knowledge transfer to the firm's own resources; and
- A considered plan for moving to business as usual (BAU) in an effective way as the Basel programme winds down.

In terms of the use test and the Internal Capital Adequacy Assessment Process (ICAAP), the supervisor expects banks to manage capital in terms of Pillar 2 with the Pillar 1 capital levels serving as a regulatory minimum. Current discussion

on the interaction between Pillar 1 and Pillar 2 depends on the type of bank.

Large IRB and Advanced Measurement Approach (AMA) banks are using the same methodologies under Pillar 1 as they do under Pillar 2. These banks are holding an additional capital cushion on top of the Pillar 1 amount for interest rate risk, business risk and stress testing. As these banks are typically working with economic capital models, the biggest discussion they have with the supervisors is usually on the use of diversification. Diversification effects might bring the Pillar 2 capital requirement very close to the Pillar 1 regulatory minimum again. However, the supervisor is currently not very keen on allowing the use of diversification effects at the moment (data problems make it difficult for the banks to prove their diversification assumptions) and so there is still quite some buffer under Pillar 2 compared with Pillar 1.

For the smaller standardised banks, some rough estimates for business risk and interest rate risk under Pillar 2 also create a substantial capital buffer on top of the Pillar 1 requirement. However, the Pillar 1 capital floor is more restricting for a small number of mid-sized banks that would like to use IRB models under Pillar 2, but not yet under Pillar 1. In itself this is allowed, but there are some discussions with the supervisor about the conditions under which the supervisor is willing to grant the resulting capital relief. For these banks the Pillar 2 capital requirement can be very much in line with or even under the level of Pillar 1. The latter case is not allowed, but the supervisor also has difficulty in accepting very small buffers between the Pillar 1 and Pillar 2 capital requirements.

Hyun Soo, has the Korean regulator required certain banks to adopt specific approaches and how have the banks responded to the challenges?

In Korea, the financial institutions are allowed a free choice of which approach they want to adopt based on the investment they wish to make. Although many financial institutions believe that there is not much preparation and implementation required when adopting the standardised approaches, it seems quite natural for the major big banks to adopt the more advanced approaches, whereas the smaller financial institutions are adopting the standardised approaches.

Four of the major Korean banks have already submitted applications for Foundation IRB approval and are now under regulatory review. There are also currently six major Korean banks that are planning to apply for the AMA by the end of June 2008. Most of these banks have already made substantial investments to implement the appropriate frameworks and necessary IT systems, and many securities firms and insurance companies are now following in their footsteps.

The banks that are going for AMA have encountered some problems and challenges as they have proceeded. Some banks have undergone merger or acquisition activity recently which has caused substantial changes to their systems and data as they have integrated. The banks have realised that their lack of data and the instability of their models has become a problem which hinders them from generating consistent outcomes. In some cases, the lack of data and the inability to prove that the changes made to the system

are only minor, has meant that some banks have had to remain on the standardised approach and have not been able to apply for the advanced approaches. However, regardless of which approach is adopted, the costs involved in implementing Basel II are relatively large, and it may come as a burden for the financial institutions when they are not sure whether the capital incentive obtained will outweigh the cost of implementation.

In Korea, the primary purpose for banks to use the advanced approaches was to reduce minimum capital requirements; however, they are beginning to understand that risk management can add value to their institutions by mitigating risks and improving operating efficiency, and this ultimately leads to optimisation of the risk-return relationship and capital use. I expect the next step will be to find these banks a way to reap benefits out of their new risk framework and systems that align with Basel II, which are not just focused on avoiding loss and complying with regulations, but also add a positive contribution to their organisations.

Asia-Pacific

John HH Lee
Partner, KPMG in Malaysia

John, how many banks are going for the more advanced approaches for Pillar 1 in your region and what have been the main challenges for their Basel II implementation?

In Asia-Pacific, there are varying levels of readiness among banks. The approach postulated by many regulatory authorities in this region is that of a 'Phased Implementation', whereby banks are required to adopt the standardised approaches in the initial period, with the

flexibility to move to more advanced approaches at a later stage.

Nonetheless, some banks have expressed the intention of adopting the more advanced approaches and are implementing the necessary processes and infrastructure to do so. These are normally leading banks (local and international alike) in the respective countries, which are already ahead in their Basel II readiness. Their adoption of the more advanced approaches is driven by the perceived benefits of Basel II, and their intention to maintain their reputation as an innovative and advanced bank. There are also the 'lets wait and see' banks that will largely move to the tune of regulatory pressure.

Many banks in Asia-Pacific are toiling with their implementation programmes to meet the impending deadlines set by their regulatory authority for even the simple approaches. I believe that a major hurdle these banks are facing is the issue of dealing with data. The main area that most banks need to address revolves around gathering accurate and reliable data, storing this data in an accessible and organised manner as well as having an optimal and integrated architecture to enable the banks to harness and use relevant and pertinent data on a timely basis.

I also believe that having adequate internal expertise to assess and assist in Basel II implementation, given the complexities of financial regulation and the added complexities of the Basel II framework is critical. This continues to be another major impediment for many banks in this region.

Another obstacle plaguing Asia-Pacific banks tackling the more advanced approaches is their dealing with regulatory authorities. Many regulatory authorities in this region have 'localised' Basel II for their various jurisdictions. However, these are primarily for the standardised approaches. There is still a gap, and in many instances a lack of clarity, in terms of direction, deadlines and specific requirements for the more advanced approaches.

Australia

Rachael Phelan
Partner, KPMG in Australia

Rachael, how have banks in Australia fared with APRA, and do they expect to see long financial and non-financial benefits?

The financial regulator, APRA⁵, expected the major Australian banks to constitute the first wave of applicants adopting the advanced approaches to Basel. This initial wave is now coming to an end, with the banks receiving their accreditation notices in early December. The second wave is due to commence in early 2008, as a series of second tier banks decide to seek accreditation. Each applicant is required to apply for the advanced approaches to operational and credit risk simultaneously. However APRA will allow a staggering of accreditation for the various components if required. Many of the banks seeking advanced accreditation have done so in the expectation that it will lead to regulatory capital relief and that they will benefit from the use of more advanced risk management systems. The main difficulties encountered by banks in Australia included:

- An underestimation of the cost and time required to design, develop and implement solutions;
- Historical data limitations;
- IT system development and the sourcing of appropriate IT skills, with most banks seeking expertise offshore; and
- Meeting the requirements of the use test.

Initial opportunities to benefit from Basel II on the capital front are limited, as APRA has indicated that it is unlikely to allow capital relief of more than 10 percent in the first one to two years until the new systems have been



Italy

Fabiano Gobbo
Partner, KPMG in Italy

sufficiently tested in use. All the banks will, however, be benefiting from the more advanced risk management systems that they have been investing in over the past two years, allowing them a more accurate view of their risk profiles and economic capital benefits through more accurate pricing of risk. The non-capital related near-term impact is more uncertain, since the regulator's proposed approach to Pillar 2 has only recently been released and is therefore subject to further discussion.

the impacts and implications in the business environment causing difficulties in the definition of the scope, development and implementation of the banks' projects. The obstacles appear to increase every day which indicates that the more the organisation learns and progresses in the implementation, the more obstacles that are encountered;

- The number of changes is very high and the implementation timescales are one of the main concerns, particularly for large financial institutions, which comprise hundreds of products, different portfolios and a number of characteristics to be defined and maintained under the control of the project scope;
- The need to implement the Basel II requirements at the same time that other initiatives and changes are occurring in the Brazilian banking industry. For Brazil, as well as for other countries in the same situation, it has been a difficult timeframe to implement Basel II, alongside International Financial Reporting Standards (IFRS), as well as projects associated with other business initiatives. There is a big challenge, especially for the IT area due to the fact that these resources are often subject to competing demands and deadlines from several different projects;
- As usual, the lack of data seems to be one of the biggest obstacles. The identification and collection of data for the determination of Probability of Default, Loss Given Default and Operational risks are probably the key issues in this area; and
- Finally, many major Brazilian banks have noticed that the cost of compliance with Basel II will be very high and continue to revise their budgets.

Fabiano, have you seen any differences between the experiences of different sized banks within Italy in their implementation of the IRB approaches?

For the last 18 months, the Italian market has experienced significant merger activity that in some cases has slowed down the adoption of the more sophisticated Basel II approaches. In addition, some of the small and medium-sized banks recognised that they had started to implement the more advanced approaches far too late, realising that Basel II has implications for many areas across the banks, from the organisational point of view through to IT systems.

In Italy all of the big banks and the majority of the medium banks have developed internal models for credit risk evaluation, although only a few of the medium ones are going to apply to the national authority for approval to use their models for regulatory capital calculations.

The implementation of the Basel II framework has been a long and difficult project for all Italian banks. The main challenge is probably linked to the new culture that top management have had to adopt to manage firms that are becoming ever more international, in a market environment that is changing every day. The adoption of statistical models to evaluate risk is not always welcomed by analysts and sometimes is not fully understood by the entire organisation. Compliance with the regulations can be difficult due to the fact that the rules are not always completely clear and the adoption at

Brazil

Carlos A. Gatti
Partner, KPMG in Brazil

Carlos, what have been the main challenges for the Basel II implementation in Brazil?

In Brazil, market agents consider the adoption of Basel II rules as being a very positive development. They believe that it will lead to a strengthened capacity of banks to assess and manage different types of risk and, as a result, contribute to the solidity of the banking system. However Brazilian banks perceive that the major challenges to achieve these objectives are:

- The lack of knowledge of the Basel II requirements and a clear view on

national level can vary from country to country. In addition, the adoption of common rules at the banking group level raises many questions that are not easy to solve (i.e. alignment of default definition, unique counterparty rating, application process for international group, etc.) All of these issues then had to be implemented on an IT infrastructure with a high level of precision and this process has been complex and complicated.

The efforts that banks have put in for Pillar 2 and Pillar 3 are also now beginning to show their initial results. However, the journey here is not yet over and firms need to finalise the implementation of an enterprise-wide risk management framework that ties regulatory capital to economic capital. The expectation in Italy is that the coherent disclosure of new risk based information will increase market transparency and this can only be a benefit for all the economy.

US

Hugh C. Kelly
Partner, KPMG in the US

Hugh, with the dust finally settling on the US discussions, what is the final state of affairs?

On 2 November 2007, the US banking agencies (The Office of the Comptroller of the Currency (OCC), the Board of Governors of the Federal Reserve System (Board), the Federal Deposit Insurance Corporation (FDIC), and the Office of Thrift Supervision (OTS), which are collectively referred to as the 'Agencies') announced adoption of the final 'Basel II Capital Rule' for US banks. The final rule sets out the Basel II

regulatory expectations for US banks that: (1) have consolidated assets equal to US\$250 billion or more, (2) have consolidated total on-balance sheet foreign exposures of \$10 billion or more, (3) elect to use the rule, or (4) are subsidiaries of a bank or bank holding company that uses the rule. It is expected that up to eleven large and complex 'core' US banks will be required to adopt the Basel II bank capital rule. These banks will have to use the most advanced approaches to measuring their credit and operational risks to determine the minimum capital they need to absorb shock losses.

The Agencies decided not to release final supporting Supervisory Guidance for AIRB, AMA, Pillar 2 and Pillar 3. It is uncertain when such guidance will be issued as the AIRB credit risk guidance and Pillar 2 guidance are still being debated in light of the current credit crisis. In the absence of final Supervisory Guidance, mandatory 'core' US banks and 'opt-in' banks that commence the parallel run on 1 January 2008 will be expected to conduct readiness assessments against the principles contained in the final capital rule as opposed to the proposed supervisory standards contained in the previously released Draft Supervisory Guidance. This is a departure from previously stated US regulatory expectations.

US banks that implement the advanced approaches will be subject to three-year transitional floors on potential capital reductions versus current risk-based capital rules (2009 95 percent, 2010 90 percent, 2011 85 percent). In addition, annually and prior to possible termination of the 85 percent floor, an inter-agency study is required to determine if material deficiencies exist.

The Agencies dropped the previously proposed Basel IA option for non-'core' banks. However, they did announce that a new Notice for Proposed Rulemaking (NPR) will be released in 2008 for the 'Non-Advanced Approaches' (the Standardised and Basic Indicator Approaches).



In summary, a relatively small number of large and complex 'core' banks can begin their 'parallel run' year in 2008 under the new Basel II rule for the advanced approaches. Other US banks that wish to 'opt-in' to this new rule should be able to declare to begin a 'parallel run' in 2009 or later. However, the vast majority of US banks that do not intend to adopt the advanced approaches must wait until the NPR for the non-advanced approaches is released, publicly commented upon and the final rule is released, which is not expected before late 2008.

Mexico

Nicolás Olea
Partner, KPMG in Mexico

Nicolás, how are Mexican banks advancing towards Basel II compliance?

In Mexico the Basel II standardised approach is being implemented from 2008. However, for the IRB approaches the local regulators (Comisión Nacional de Bancaria y de Valores and Secretaría de Hacienda y Crédito Público) only issued the final drafts of the local Basel II rules at the end of 2007. Therefore, it is only now that most banks are beginning



Conclusion

to prepare for compliance with these approaches which can be used from the beginning of 2010 at the earliest.

However, this does not fully reflect the status of Basel II implementation in Mexico, as all except one of the six largest institutions in Mexico are owned by large foreign banks (Citigroup, Nova Scotia, HSBC, BBVA and Santander), whose home regulator is pursuing their group-wide Basel II approval on a faster timetable. Accordingly, several of these largest Mexican banks have already applied for local approval of some of their internal credit models, and in some cases have received this approval.

Seen from a European perspective, a peculiarity of the Mexican regulation is that the regulatory compliance criteria for the use of internal credit grading models are in essence the same for the Basel II IRB approaches as for their use to calculate loan loss provisions under local provisioning rules. Interestingly, compliance with the use of internal models for regulatory capital calculation is tied to their simultaneous use for provisioning. With local implementation of Basel II expected around 2010, this is resulting in banks first seeking approval of the internal models for calculating provisions before they start using them for calculating capital requirements.

As far as implementation hurdles are concerned these are much the same as elsewhere in the world with data requirements high up the list of main challenges. Of course some of the large banks face specific issues trying to satisfy the Basel II requirements both locally and with the home regulator of their foreign parent simultaneously.

In summary, it is clear that different regions, and different firms within the regions, have faced and continue to face different pressures. But it seems equally clear that we are now in a place where Basel II is a reality and will be a major driver of the financial industry for the coming years.

Obtaining IRB approval does not mean that it is mission accomplished. Many banks which have already received approval have a lot of 'leftover' items which need to be fixed during the temporary roll-out periods, like developing appropriate methods and databases for certain portfolio areas i.e. project finance and investments.

Many banks need to come to terms with the fact that it is one thing to develop risk rating methods for PD, LGD and EAD (even while considering the use test requirements), and quite another to produce the full set of regulatory reporting in a day-to-day BAU environment. They continue to find it challenging to roll systems out across the business and to move from a development environment into a production environment.

Meanwhile, several banks moan about the 'cost of compliance'. The Basel II implementation had been carried out in a 'hard manner', often focussed mainly on meeting regulatory deadlines and compliance requirements, and not fully considering the efficiency benefits that might arise.

These issues need to be resolved, and firms need to implement an intelligent combination that addresses performance and compliance issues.

The 'risk view', driven and improved by Basel II, needs to be combined with the 'return view', which should assure banks long term profitability through a 'single view of risk and return'.

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- 1 Risk Adjusted Return on Capital
- 2 'Minimum requirements for risk management (MaRisk)', October 2007, Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)
- 3 Internal Capital Adequacy Assessment Process
- 4 International Financial Reporting Standard 7 'Financial Instruments: Disclosure', August 2005
- 5 Australian Prudential Regulatory Authority

Life after the liquidity squeeze

Basel II developments in the securitisation market

Introduction

The implementation of Basel II and the recent developments in the credit markets have given banks both the opportunity and the impetus to rethink their current processes and policies around securitisations. In some senses it is probably unfortunate that the credit crunch and liquidity squeeze has hit the markets this year; due to the timing of firms' implementation of Basel II systems and methods, the processes to capitalise and report securitisations effectively is currently still work in progress within many banks.

Securitisations under Basel II

As we considered in BaselBriefing 12¹, under Basel II the capital requirements for securitisation positions are stricter, with less opportunity for capital arbitrage and more sophisticated reporting requirements. This is particularly the case for liquidity facilities that have been one of the major causes of the problems over the recent months.

Originator's perspective

As part of their preparations for Basel II, banks which securitise their own assets are focusing on the following aspects:

- **Transparency:** In order to control the securitised portfolio effectively, banks need to be able to look in central systems to identify assets that have been securitised, rather than having to analyse local systems to obtain that information. This has implications for both local and

central systems with regard to the flagging of securitised assets (IT infrastructure).

- **Economic capital management:** For the purposes of managing economic capital, the bank should be able to attribute economic capital to each asset as if it were securitised and as if it were not securitised to be able to compare positions and enhance portfolio optimisation.
- **Pre-deal analysis:** This should ensure that each and every new securitisation meets both internal and external requirements, including the regulatory compliance requirements set out in Basel II. One area that is of particular relevance given the recent events is the ability to demonstrate that significant risk transfer has taken place. Firms are now finding themselves between the devil and the deep blue sea, facing a choice between standing behind some of their structured product structures (and therefore bringing all the assets back on balance sheet) and letting them go (and therefore facing possible litigation and reputational damage).
- **Controls:** Firms need to define explicit policies which should include the definition of tasks and responsibilities, the accounting and regulatory treatment and the associated processes.
- **Consolidation:** The bank should be able to consolidate by Special Investment Vehicle (SIV) or Special Purpose Vehicle (SPV). This could be an issue for larger banks, where different local entities may hold



securitisation positions in the same structures.

Investors and sponsor positions

As part of their preparations for Basel II, banks who fulfil the role of investor or sponsor, are focusing on the following aspects:

- **Clear, central policy around securitisation definition:** To determine whether the securitisation complies with the Basel II definitions, the bank should have a clear, central policy in place. This could be combined with a checklist and a sound process that checks the outcome with a central database.
- **Clear, central policy around risk weight approach:** The bank should have a clear, central policy in place to be able to determine which approach (e.g. IRBA, RBA) is



The new requirements within the securitisation framework that has been introduced with Basel II will lead to more insight into the securitisation structures currently in place within the industry

applicable for the calculation of risk weighted assets.

- **Internal Assessment Approach (IAA):** Where firms are looking to apply the IAA, they should set up the IAA with good governance and validation of the associated models. Within this process, there is a role for internal auditors.

Conclusion

The new requirements within the securitisation framework that has been introduced with Basel II will lead to more insight into the securitisation structures currently in place within the industry. They should also lead to better management of the structures due to the regulatory requirements regarding policies, processes and procedures. Though it is unlikely that Basel II could have prevented the credit crunch and the liquidity squeeze, the revised securitisation requirements might have had some impact on the reputations of banks as they might have been able to communicate better to the market about their positions.

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¹ 'Implementing the Basel II securitisation framework', written by D. Sommer, Y. Sun and R. Man, BaselBriefing 12, KPMG, July 2007

'Asset-Backed Commercial Paper programmes', written by D. Sommer, B. Granitza and D. Faller, BaselBriefing 12, KPMG, July 2007

Credit risk model validation

Do the Basel II requirements over-engineer the model validation process?

Introduction

In order to comply with the requirements of the new Capital Requirements Directive (CRD)¹ and the FSA's handbook (BIPRU)², credit risk rating models need to be reviewed and validated to ensure that they meet the specific Basel requirements.

For banks to achieve the Advanced Internal Rating Based (AIRB) approach there is an exhaustive list of validation requirements that must be satisfied. As a result it has forced many banks to revisit their validation frameworks. Over recent years, banks have put significant time and resources into raising the bar of their validation standards in order to meet the requirements.

Under Basel II, validation of the models is required at the development stage and ongoing validation is required post implementation of the models. A broad approach to validation should encompass: development evidence (logic of the approach, conceptual soundness, etc.), ongoing monitoring (checking that the methods are applied as intended and remain appropriate to the current population), and outcomes analysis (back-testing and other types of evaluation).

Traditionally, pre-Basel II testing of the model would often have been performed by the model developer but Basel II requires formal model validation to be performed by an independent party and validation must therefore be independent of the model development process and not a part of it.

Validation framework

The validation of a rating system involves checking the effectiveness of the credit risk rating tools (in particular Probability of Default, Loss Given Default and Exposure at Default) taking into account the data sources, model build method, transformation from raw data to input data, the model theory and workings, its discrimination power and its calibration. Basel also requires the validation process and results to be thoroughly documented by banks.

Many of the requirements have already been used by many banks in their validation frameworks before the introduction of Basel II, however they often lack the controls and documentation that would be required under Basel compliance. Model validation may typically have been done by the same person who was also responsible for the model development and the quality of the work often varied based on the experiences of the model developer. Key person risk and independence risk are the major concerns for these financial institutions. Basel II addresses this by ensuring that the level of model documentation must be articulated to a level such that it would enable an audit trail for an independent third party to replicate the model development.

A model developer would probably claim that it would be impossible for another person to come up with an identical model even if they were to use the same data. Unfortunately this

would be unacceptable under Basel definitions but it is easier said than done to ensure that replication would be possible. Model development is not exactly a science but a fine combination of art and statistics. There are more judgemental influences that come with a model development than one would expect in a standard statistical procedure.

For example, variable selection is typically carried out based on a combination of business and statistical outcomes. A variable with low predictive power may still be included in the final model based on the experience of the model developer. Under Basel II, the model developer must be able to justify and document their judgement.

Due to the increased sophistication of technology, in recent years the model development process in some portfolios has been done by merely pushing a button. This has changed the landscape of model development, creating a situation where it has become more of a manufacturing process. The change is inevitable due to the ever increasing number of models that are required for business and compliance purposes. As model development becomes more mass production, rigorous controls and documentation must be implemented to ensure reliability and validity of the models. Basel II simply acts as a catalyst to the process to standardise the validation process within the financial institution.

Additional validation requirements from Basel II

While banks are generally competent and comfortable with the technical requirements of the model validation process, they are less comfortable with the additional requirements from the Basel II validation framework. The framework extends beyond the model itself and it also requires banks to assess the overall rating process. This involves the review of how the model is implemented; training and understanding of personnel using the rating tools; ongoing monitoring and model maintenance; and assessing and reporting of model outputs. Basel II also incorporates governance into the framework. The validation of model governance typically involves the review of the organisational governance and policy frameworks associated with models that are required under the Basel II. The areas to be assessed include the governance for model development, implementation, ongoing monitoring and maintenance and the bank's audit processes.

Generally speaking, credit risk modelling can be broken into four areas of focus and risk (see figure 1):

Data – Are the sample data representative of the rating population? Is the amount of available historical data sufficient? Do data quality, accuracy and completeness differ significantly across the variables, time periods, etc.?

Method – Does your rating tool rate accurately using relevant theories? Is the discrimination power of the model reasonable? What are the reasons and the justification for accepting the level of discrimination?

Process – Are the processes surrounding your model and its outputs efficient, and is there a feedback and escalation process in place to update the model if it is found to be inadequate?

Governance – Are the organisational governance policy frameworks for the development, ongoing monitoring and use of the rating tools robust? Is the model's performance monitored, and included in audit processes?

Conclusion – is validation necessary?

Validation is more than a series of statistical tests and banks need to demonstrate the accuracy and power of models and their use within the organisation. Validation of the credit modelling process is complex as it covers statistical validation, data and IT implementation and business use within the organisation. KPMG member firms have incorporated over 300 individual requirements into our validation framework derived from the Basel II accord for both business and compliance purposes. Our framework is designed to consider high level requirements such as whether the rating system is through-the-cycle (TTC) or point-in-time (PIT) to minute details such as the reasoning for exclusion criteria and reasonableness of the matching rate of the development dataset.

Many people would wonder whether it is necessary to carry out all the extra effort and resources to fulfil the model validation requirements of Basel II. After all, the model outcomes have either a direct or indirect impact to the calculation of capital required by the banks. However we believe that there are other benefits than just the numeric impact. The requirements all contribute to establishing a sound credit risk management framework

within the bank. The benefits from a better validation framework include:

- A more transparent validation process enhances knowledge transfer between employees and significantly reduces key person risk within the organisation;
- A more transparent validation also allows employees to have better access to information and greater understanding of the model validation process;
- Third party development vendor products will also be assessed to confirm whether they comply with the Basel requirements. The increased transparency and better documentation required to meet the standards helps to eliminate the 'black box' approach from these vendors;
- Improved quality of the models as they are now subject to a rigorous set of validation requirements and better understanding of the internal requirements; and
- A good validation framework should have clear escalation and action outcomes. This improves management oversight and senior management involvement.

On balance therefore, many observers would conclude that the enhanced formality around the validation process that is introduced and enforced through the Basel II requirements is beneficial for firms directly and the wider market place indirectly.

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Figure 1 Credit risk model validation framework



Source: KPMG in the UK, 2007

1 EU's Capital Requirements Directive. Directive for the European Parliament and of the Council relating to the taking up and pursuit of the business of credit institutions (recast), June 2006 version

2 The Financial Services Authority Prudential source book for banks and investment firms, October 2006.

Operational risk management

Transformation from regulatory compliance to strategic business management

Introduction

Although Basel II was developed to help banks improve risk management, it quickly became perceived by many banks as yet another regulatory compliance obligation. Meeting its requirements was initially so complex that Basel II seemed to create more work than value. For many banks – facing time and resource constraints and under pressure to gather extensive data and meet compliance deadlines – the focus became meeting the requirements rather than driving business value from the effort. In addition, compared with credit risk management (the more mature process, but one that also required a major effort to reach Basel II compliance), operational risk management suffered from either an inaccurate perception about its nature or a lack of appropriate understanding by senior management – many of whom believed they were already managing these risks.

Many of the traditional operational risk management areas – including IT security, compliance, legal, or insurance – continue to work in silos rather than in an integrated manner. Their efforts tend not to be fully coordinated with the operational risk management function or supervised by a risk or an operational risk management committee. In many cases, these individual operational risk management areas use their own instruments for risk assessment (e.g. independent assessment for business continuity or anti-money laundering; independent set of indicators to

measure IT-security risk; and so forth) or use similar ones, but not in a consistent manner, which creates considerable potential for overlap. These areas may work completely independently and are not integrated with operational risk management. Indeed, many banks have not integrated the instruments for identification and measurement of operational risk into day-to-day management (efforts that are required for the AMA).

Consequently, in many banks, the operational risk management function neither supports the strategic and day-to-day decision-making process of the bank nor provides substantial management information to business lines. It may conduct an after-the-fact analysis of business decisions – such as those involving outsourcing, penetration of new markets, or launch of products and services – but its work is not integrated into the strategic planning efforts that drove those decisions. Having been set up for regulatory compliance in the first place, operational risk departments typically compile information of a type and in a manner that management does not find useful.

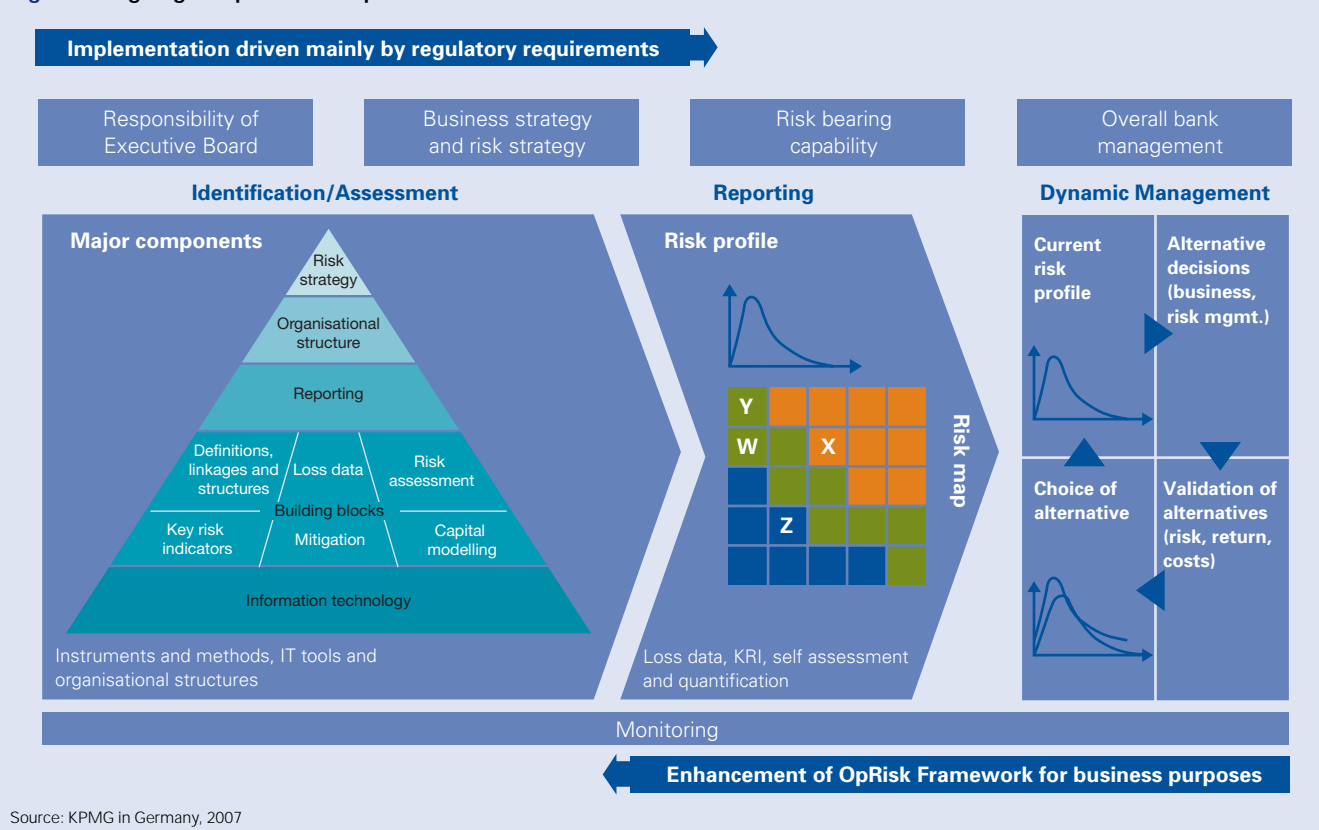
This article explores how operational risk management can move from being a regulatory compliance exercise and enable improved business management. In particular we consider how a bank can make use of insurance cover as a risk mitigant that is aligned with its operational risk profile and its strategic business objectives.

Leveraging operational risk management to enable better decision-making

Now, however, with several years of Basel II implementation experience behind them, banks have a new opportunity to integrate operational risk management into day-to-day and strategic decision-making to provide value to business and management. There is an opportunity to integrate operational risk into the local day-to-day business management (not only risk management) and make operational risk measurement and analysis a core element of strategic decision-making. To do so, management must align and coordinate the different operational risk management activities within the bank and make the results of individual risk analyses comparable between different areas. Regulatory compliance tends to focus on risk capital and implementation of minimum standards in a cost-effective manner. However, better practice risk management ensures that operational risk is considered in any decision-making process. Specifically:

- A comprehensive view on the risk profile of all areas of the bank enables much more informed decision-making;
- Coordination of risk management activities prevents overlap and inefficiencies, thereby allowing management to leverage resources available for risk-reducing measures (e.g. insurance programmes, business continuity management);

Figure 1 Aligning compliance with performance



- Including risk analysis of new products, processes, systems, or markets in business decision-making helps management decide on countermeasures at an early stage of the decision-making process; and
- A deeper understanding of operational risk at the business-process level supports the enhancement of these processes or systems and can have a direct influence on improved performance.

Basel II has prompted banks to gather operational risk information for compliance purposes. Now that compliance efforts are established – or, for those still in the midst of the process, a clear path is visible – the challenge is to derive new business value from operational risk information and related processes – specifically by aligning the management of operational risks with efforts to improve business performance. Organisations can benefit from a process that helps them link the operational risk framework more closely with the risk reporting, management, and monitoring efforts that are key aspects of enhancing

business performance (see Figure 1). This endeavour starts with efforts to identify and assess operational risk information to improve business and risk management decision-making. The focus should be on identifying the risk information decision makers need to improve the cost-benefit analysis of business opportunities.

Operational risk information can support a variety of decision-making activities. Operational risk information better enables strategic business decisions (such as those involving investments, M&A activities, expansion or contraction of business areas, and outsourcing) as well as day-to-day business decisions (involving, for example, efforts to enhance processes or skill sets).

Current efforts to manage operational risks typically take place after business decisions have been made. Ideally, however, knowledge of these risks, and efforts to manage them, should become part of the decision-making process. When considered early in the process, operational risk information can help decision makers



evaluate the risks inherent in various choices, develop risk/reward calculations, and determine how subsequent alternatives would affect the organisation's risk profile. The methodology in place at most banks, however, is nowadays not sufficiently robust to support this kind of analysis. Indeed, in the bigger picture, culture and tradition typically have greater influence over decision-making than methodology and data availability. In addition, many banks' business is still volume driven; better decision-making will evolve with a shift in focus from pure volume to an equation in which decision makers balance risk and reward information. Operational risk management methodologies and processes can be used in a number of ways to enhance business decision-making. For example:

- Scenario analysis can help organisations find the optimal balance between risk appetite and cost reductions. Decision makers can use scenario analysis strategically – ideally in conjunction with an estimate of the influence on value-at-risk (VaR) in an economic capital setting – to judge risk-adjusted profitability and thereby forecast the influence of strategic decisions on the organisation's operational risk profile;
- Economic capital calculations enable organisations to use operational risk information to evaluate the risk-adjusted returns on potential investments or new businesses;
- Process efficiency efforts should be aligned, to the extent possible, with

operational risk management to achieve the best result in each area. Enhancing processes can lead to a reduction of operational risk as the process structure becomes increasingly transparent and better documented. However, when controls are eliminated or staff or IT capacities are reduced to cut costs, operational risk might increase; and

- New product approval processes are enhanced when they encompass operational risk management. In the past, risk management in this area has often meant simply checking for signatures or other evidence of compliance. Instead, operational risk information should be considered in every aspect of new-product processes – such as marketing, sales, back-office, accounting, legal, training, and IT – so decision makers can analyse what risks are inherent in the new product and provide their judgement on that product and the risks it may pose to the organisation.

Operational risk information is also useful in making decisions that primarily aim to adjust the risk profile. Such decisions can involve:

- Strategic e.g. insurance portfolio enhancement (see the case study in the next section), business continuity management, capital management planning, and alternative risk transfer; or
- Day-to-day risk management e.g. enhancement of controls, introduction of new products.

The important step is to establish a regular flow of information between the operational risk management function and business functions including IT, legal, insurance, or the purchasing department. Such communication can help organisations make sure their decisions include an overall view of risk (and are not based solely on one factor such as price).

Improving the use of operational risk information requires changes in how the organisation manages its operational risks – so that it can ultimately align this process with performance management. Addressing each aspect of the risk framework can help facilitate the process, as discussed below. In each of the framework areas, decision-makers should consider the following:

- **Operational risk strategy:** Take steps to ensure that the operational risk strategy is aligned with the business strategy and that updates are made continuously. Embed operational risk information into the business strategy development process to help improve overall performance outcomes.
- **Organisational structure:** Intensify communication between the various business and support functions and the operational risk management function to facilitate increasingly informed decisions. Make operational risk management an integral part of decision-making processes. Establish committees to discuss cross-unit issues on a regular basis. Use this framework more efficiently.

- **Reporting:** Align the reporting contents, frequency, and recipients with decision-making needs. Improve the quality of the information reported and the degree of analysis provided with it (e.g. comparisons across time and units, benchmarking with external information, and so forth). Add value with information by considering what individuals need to know and how it can be supplied rather than what is available or what can be reported. Enable the operational risk managers to learn and use the business language so they can interact more effectively with business managers.
- **Building blocks (methods for identification and assessment):** Make the information generated more reliable (i.e. more robust VaR models, quality assurance of self-assessments, and scenario analysis) and tailor it to enable ad hoc analysis in addition to scheduled calculations and assessments. Involve the business closely to increase relevancy of generated information and buy-in to the results. Aim to provide what is needed and continuously improve its quality and reliability. These efforts could encompass the following adjustments to the methodology:
 - *Definitions, linkages, and structures:* Align risk categories closely with the business needs rather than following regulatory standards with excessive strictness; keep the business unit and/or process structure up to date.
 - *Loss data:* Validate internal loss data with appropriate sources (such as the general ledger, claims handling, error reports) and avoid duplication of work in collecting the data.
 - *Risk assessment:* Take into account not only the current controls structure but also any expected changes to the business and the corresponding controls.
 - *Key risk indicators:* Leverage existing management information systems (e.g. on key performance indicators); use KRIs that management believes in rather than dictating KRIs from a central operational risk management perspective.
 - *Capital modelling:* Enhance the capital model to incorporate ‘what-if?’ analysis on changes to the business, such as in the case of strategic decisions.
- **IT systems:** Ensure IT can support decision-making by upgrading operational risk systems to provide the information needed. Make the system work for the business rather than allowing it to determine what information is gathered and reported.

Operational risk in practice: optimisation of a bank’s insurance portfolio

Insurance products have always been one way of mitigating a bank’s operational risk by transferring risk to the insurance market. In the past, insurance was in many banks the responsibility of the procurement department. Moreover, decisions on

insurance coverage were often based solely on the cost of insurance and the available budget rather than on a thorough analysis of the risks to be covered. Banks had somewhat limited knowledge of the insurance market including factors such as available products, possible risk coverage, and capacity. This often led to the decision-making process being potentially influenced by external insurance brokers.

Risk transfer through insurance assumes an increasingly prominent role as part of the management of operational risk in the course of implementing the new Basel Capital Accord (Basel II) in banks around the world. The new regulations allow insurance coverage to be incorporated in the operational risk capital calculation as part of an Advanced Measurement Approach (AMA). Banks moving towards an AMA view insurance as a promising means to reduce their capital requirements.

The use and importance of insurance management within banks is changing as operational risk measurement techniques continue to become more sophisticated. As a result of compliance with Basel II, banks’ treatment of operational risk is now based on qualitative as well as quantitative information allowing banks to optimise their insurance programme from a business and risk management perspective.

Acquiring insurance coverage is not only a risk management decision but also has many strategic implications.

The use and importance of insurance management within banks is changing as operational risk measurement techniques continue to become more sophisticated

The decision on whether to insure certain risks depends on the risk appetite of the bank, the capability to bear the risk, and on the banks tolerance towards cash flow volatility. A bank needs to consider different dimensions of protection of its P&L from operational losses in order to establish or maintain a high degree of confidence from investors and rating agencies in its ability to sustain operational losses:

- Events with a very severe financial impact could lead to serious liquidity issues for a bank – even if it is well capitalised. In stress situations refinancing in the capital or money markets to cover the losses could become an insurmountable obstacle. Insurance coverage for the very extreme losses could ensure that it is able to maintain a high degree of liquidity in these very rare events.
- Highly frequent but less severe losses could introduce a high degree of volatility to the P&L. Insurance covering these types of losses can reduce the volatility significantly in return for paying a fixed premium to the insurer each year. With respect to risk mitigation this dimension is of less importance.
- An increasing sensitivity towards cost requires that the expense of insurance premiums is reduced while maintaining the desired level of risk mitigation. Alternating insurance coverage within the operational risk portfolio between risk types and coverage layers could serve both objectives.
- Pressure on available capital could force banks to reduce risk positions in order to invest in new opportunities. Insuring parts of the operational risk portfolio could release some capital that was previously allocated to operational risk.

The impact of insurance is limited with respect to regulatory capital. Regulators have defined a cap of 20 percent reduction on the required regulatory capital from recognition of insurance. For economic capital banks are not limited by the regulatory capital.

The different dimensions require different strategies for appropriate

insurance coverage. Professional insurance management includes the selection of appropriate insurance products and coverage layers and structuring the insurance portfolio of a bank to meet the strategic objectives.

With decisions on insurance coverage dependent on the bank's risk profile, the management of the insurance portfolio needs to be tightly linked with the operational risk management function. Results of the risk identification and assessment process are the fundamental basis for decisions on insurance coverage requirements. The choice about whether to insure a particular risk depends on the operational risk profile of the bank – or of parts thereof – and its influence on the aforementioned strategic objectives.

The risk profile of AMA banks is determined with the respective model for calculating the capital requirement for operational risk. This model covers all relevant parts of the bank's operational risk i.e. the expected and unexpected loss of all event types and significant business areas. Non-AMA banks could determine their risk profile based on the results of their risk assessment or scenario analysis. The methodologies for calculating the expected and unexpected loss do not need to comply with Basel II requirements. A pragmatic approach could be used to estimate the level of operational risk that is only used for the purpose of optimising the insurance programme.

For AMA banks, the regulatory requirements for insurance deduction play an additional, significant role in the decision-making process. The inclusion of insurance in the capital model, and any related reduction of operational risk capital, is subject to regulatory review and approval. This fact influences the choice of a particular insurance, the selection of the insurer, and the terms and conditions of the policy.

Apart from these qualitative criteria, the impact of the different options on the operational risk profile is key to optimising the insurance portfolio both

Box 1 Insurance for operational risk

The following list contains common insurance products that are typically acquired by banks to transfer parts of their operational risk to the insurance market:

- Fidelity insurance/Bankers blanket bond: covers losses from fraudulent or criminal activities of a bank's employees. Events from the Basel II category 'Internal Fraud' could be covered by this insurance.
- Professional indemnity: protection against claims of negligence in the performance of providing professional service. Events from either 'Clients, products and business practice' or 'Execution, delivery and process management' could be covered.
- Property insurance: protects the bank from losses related to the destruction of physical assets i.e. buildings and inventory. Some events belonging to 'Damage to physical assets' could be covered.
- Terrorism: covers losses from terrorist attacks. Events of this type usually belong to the Basel II event category 'Damage to physical assets'.

Source: KPMG in Germany, 2007

A proper structuring of the insurance portfolio involves the analysis of the operational risk profile before and after application of the insurance products or any alternatives

for AMA and non-AMA banks. These factors could even be of higher priority than the potential relief on regulatory capital; thus leading AMA banks sometimes deliberately to decide to use insurance products that do not comply with the Basel II requirements.

The availability of insurance products and capacity of the insurance market can limit the risk mitigation strategy of a bank. Possible alternatives should be taken into account e.g. establishing a captive insurance. Such an approach requires a comprehensive understanding of the bank's operational risk profile and the mechanics of captives and the re-insurance market. Integrating the operational risk expertise into the setup of a captive allows an appropriate level of capital for the captive and a fair pricing of the premium to be determined. Both figures are crucial for a sustainable structure of captive and re-insurance.

A proper structuring of the insurance portfolio involves the analysis of the operational risk profile before and after application of the insurance products or any alternatives. Insuring a particular risk influences different financial components that in total determine the cost of risk. The financial components that must be considered include:

- Expected loss per annum as a proxy for future realised losses (which are either below the deductible or above the limit of the relevant insurance policies);
- Cost of capital (economic and/or regulatory) for retained operational risk (unexpected loss);

- Insurance premium; and
- Investments and cost of alternative risk mitigating measures.

In order to optimise the insurance portfolio, the parameters of different policies need to be altered to analyse the effect on the risk profile. These parameters include the deductible, which determines the minimum loss amount that has to be covered by the bank and the individual payout limit of the insurance. The difference between the two determines the actual coverage of the insurance. Also, some insurance policies include an annual aggregated payout limit restricting the maximum risk per year that could be transferred to the insurer.

Insurances and captives, which again layoff parts of the risk to the insurance and reinsurance market, are risk mitigation instruments with limited power. Not all operational risks can be transferred due to a lack of availability of insurance products. Using a captive transfers the risk out of the bank but it usually remains within the group. In stress situations the task of maintaining a high degree of liquidity could be challenging from a group's perspective. Therefore based on the efforts of being compliant with the AMA requirements and the knowledge gained from understanding their risk profile, banks are currently thinking seriously about alternatives to insurances for transferring their risk. The most promising alternative could be selling the risk to the capital market. Banking industry groups – e.g. the loss data sharing initiative ORX – are discussing the possibility of establishing

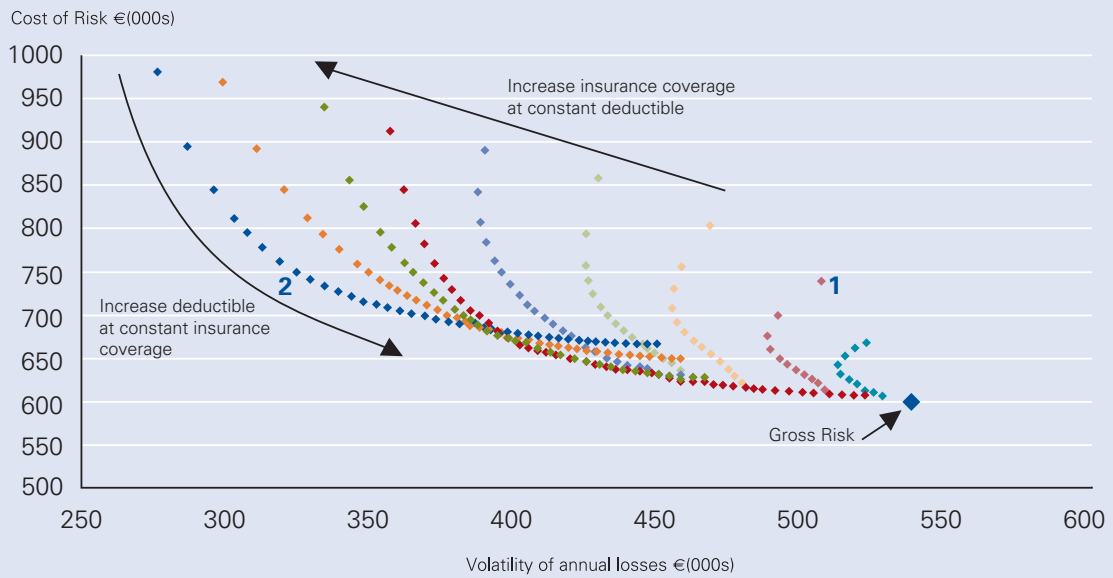
derivatives based on a loss data index. These means of transferring the risk – although still at a very early stage – should also be considered for structuring the risk mitigation programme.

The analysis of a single insurance policy covering all operational losses demonstrates the importance of proper selection of insurance parameters in order to meet the bank's strategic objectives. Figure 2 shows an example of the effect on the retained risk of changing the parameters of a single insurance policy.

The total costs (including capital cost, expected loss, and premium) are plotted as a function of the risk (in terms of volatility), each point in the graph representing a different set of insurance policy parameters with the identical underlying gross operational risk profile. Each branch in the graph – illustrated in different colours – represents different risk coverage. The coverage increases from the right to the left branch. Within a branch the deductible increases from the uppermost data point downwards.

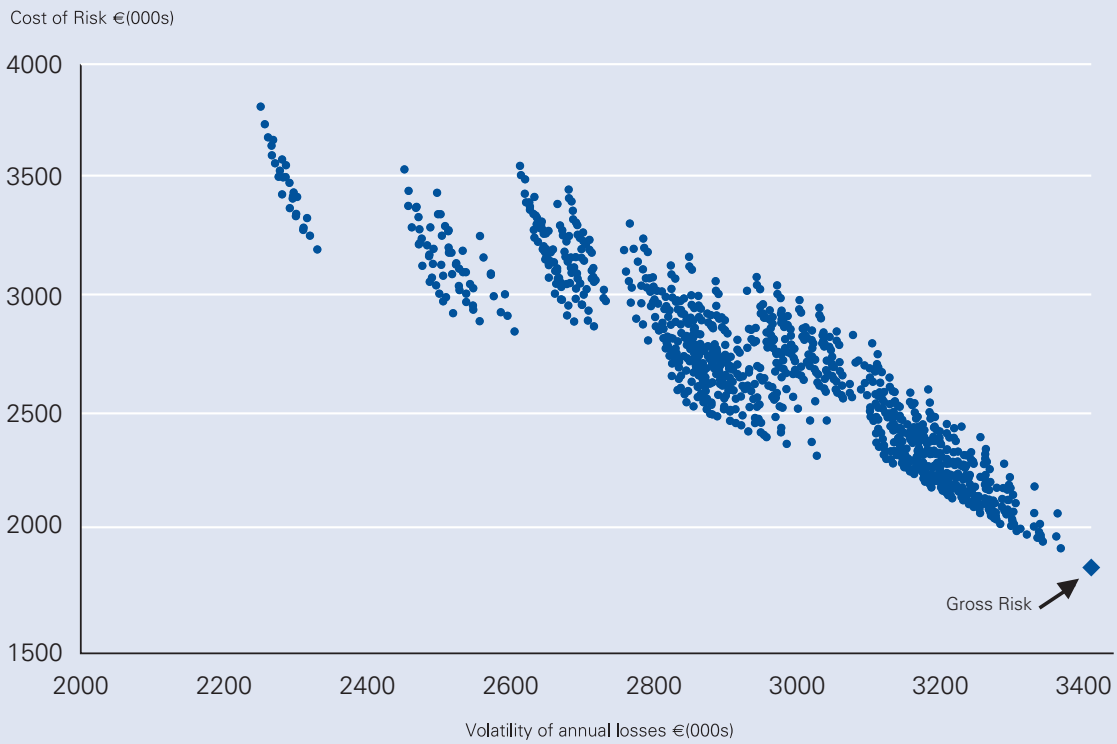
The insurer has to cover the expected loss and the cost of risk for the portion of operational risk that is transferred from the bank. This determines the premium, which also includes an add-on for administration cost, margin, and tax. Assuming that the capital costs are similar for the insurer and the bank, transferring risk to the insurance market is always more expensive for the bank than bearing the risk. The retained risk and the total cost of risk

Figure 2 Illustration of the retained risk and the cost of risk for a single insurance policy



Source: KPMG in Germany, 2007

Figure 3 Illustration of the retained risk and the cost of risk for an insurance policy portfolio



Source: KPMG in Germany, 2007

Box 2 Strategies for risk mitigation using insurance

Figure 2 illustrates examples of two different strategies for an insurance programme:

- Case 1 is an example for keeping the volatility of the P&L at a low level. The insurance has no deductible and the payout limit is twice the average single loss. The insurance covers the smaller but more frequent losses ensuring a predictable cash flow.
- Case 2 is an example for covering large losses in order to ensure liquidity under stress situations. The deductible is four times the average single loss which in this case is the 95%-percentile. The payout limit is set to 20 times the average single loss amount covering the very severe events.

Both strategies generate the same cost of risk but have a completely different impact on the expected loss and the retained risk.

Source: KPMG in Germany, 2007

can be altered by applying different insurance strategies – e.g. high coverage and high deductible or vice versa (see box 2 for details).

Operational risk losses are usually not insured by a single insurance policy but by a portfolio of policies covering different parts of the loss spectrum. In this case the retained risk is analysed as a function of the different combinations of insurances with different insurance parameters. Figure 3 shows an example of an insurance portfolio consisting of three different policies each with ten different parameter sets.

Each data point in figure 3 represents one out of a thousand possible combinations of the different insurance policies and insurance parameters. By changing the policy parameters of any of the three policies, deductible or payout limit, different objectives of the insurance portfolio optimisation can be met. Either the retained risk is reduced while keeping the total cost constant, or the costs are reduced keeping the retained risk constant. The optimum with respect to the objectives is reached at the left and bottom boundary of the figure.

The analysis and the optimisation can be extended from one policy to a portfolio of insurance policies covering different risks. The effort for identifying the best portfolio structure and parameter combination rises with the number of policies. The optimisation process therefore focuses only on the most relevant insurance policies.

AMA banks should calculate the total cost and retained risk based on the same model used for capital calculation. When considering different operational risk types or business units, they could also take into account diversification effects within the bank for calculating the retained risk. Non-AMA banks could use a simple form (e.g. self assessment or scenario analysis) for estimating their operational risk and expected loss.

Conclusion

As operational risk management efforts mature and gain both the support and the confidence of management, they are becoming increasingly valuable to the business. Conceived initially to support regulatory requirements, these efforts can be leveraged and aligned with business performance management. To be successful, however, such alignment must be based on a clear vision of the potential benefits, with the risk team openly communicating what works and what does not in an implementation plan oriented toward management needs rather than regulatory deadlines.

As one practical example, the parameters and the structure of the insurance portfolio can be balanced so that retained risk remains in line with the risk strategy established by the board of the bank. Optimising the insurance portfolio allows risk managers to meet the board's risk appetite and its objectives for risk management while reducing the expenses of insurance coverage. The insurance portfolio analysis places the bank in a strong position to negotiate a policy's terms and conditions with the insurer. It also allows the bank to state its requirements for insurance coverage precisely and demonstrates a sound and professional operational risk management to the insurer – circumstances that could lead to a reduction in the insurance premium.

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Economic capital measurement

What will the future bring?

Introduction

Many banks have invested significantly in improving their risk measurement and management in the last few years to comply with the requirements of Basel II. In particular, banks have invested in methods, resources, processes, and technology to assess, monitor, manage, and model their risks. Most of the effort has focused on compliance with Basel II and other regulatory requirements, and some banks continue to struggle with meeting these demands as they work through the approval process. Now that the Basel II programmes within leading banks have either become significantly mature or have virtually finished the following questions are often raised:

- What is the next challenge for the management of banks?
- Will it be (banking) business as usual once Basel II is implemented and digested with limited change to 'the way we do things around here'? or
- Will leading firms find new ways to capitalise on their substantial Basel II investments?

Organisations will either react with horror or delight to know that some regulators have already emphasised that Basel II is only a milestone on the way to Basel III (unified definition of regulatory capital) and Basel IV (full internal risk model). However, there are numerous other reasons why bank management should seek to leverage the Basel II compliance effort and develop an integrated

management of risk, return, capital, and value (see article page 34).

Modern banks and other financial institutions already operate in an environment where management is focused not only on the regulatory view but also on the bank's relationship with rating agencies, its shareholders, and other stakeholders. Driving these circumstances are the increasingly integrated global financial markets, which allow potential stakeholders (i.e. shareholders and creditors) to focus on a bank's ability to create value, thus driving more competition among institutions. Accounting regulations reinforce the trend; for example, International Accounting Standard (IAS) 1 mandates that banks disclose the capital they manage, which will increase the visibility of economic capital (ECAP). Moreover, the emergence of private equity funds and hedge funds over the last decade will exert increasing pressure on banks and other financial institutions to create value and limit overly large capital buffers.

Together with the effect of strengthened minimum capital requirements arising from Basel II, these developments will result in a much smaller range of acceptable capital ratios available to senior management. As a consequence, forward-looking capital management will become a hot topic not only for leading banking institutions but also for banks planning to remain independent institutions. In this environment, ECAP as a 'common currency for risk' is an indispensable





Organisations will either react with horror or delight to know that some regulators have already emphasised that Basel II is only a milestone on the way to Basel III

concept because it allows banks to measure and manage the overall risks in combination with the return and capital of a bank at the group, entity and business unit levels.

Where does the industry stand today?

The following two core aspects need to be considered in order to arrive at an ECAP model:

- 1 Identification and measurement of all major risks; and
- 2 Group-wide aggregation of these risks to arrive at ECAP.

Although all banks which employ ECAP normally cover these two aspects, in our opinion there is still a long way to go until within the development of firms' measurement frameworks. The reason for why we think this is because KPMG member firms have seen quite heterogeneous approaches among firms, even among those institutes which consider themselves 'leaders of the ECAP pack'. The range of different

approaches adopted would yield quite different results in terms of ECAP if one was to give leading banks the same risk portfolio and asked them to compute ECAP figures based on their own methodology.

Identification and measurement of all major risks

One would not dispute that there are certain banking risks which need to be included into an ECAP framework asking "How much ECAP would I have to hold to protect the bank against unexpected losses from those risks?". Examples of such risks would include credit risk, market risk, business risk or operational risk. On the other hand there are other risks which cannot be cured simply by holding enough ECAP and these include liquidity risk and reputational risk.

These risks need to be addressed differently: the former by assuring that even in situations of markets drying up the bank has access to enough liquidity to avoid a bank run;



the latter by establishing incentives and structures to reduce damaging behaviour of its employees towards the public and by avoiding spectacular losses by prudent decision-making. However, it is unfortunately still 'frequent market practice' among leading institutes that these risks are treated quite separately so that spill-over effects are not properly reflected in their ECAP framework.

For example, the recent near-collapses of banks like IKB or Sachsen LB in Germany or Northern Rock in the UK were not due to the realisation of one specific risk type but rather were the result of a domino effect: ever-rising US interest rates at some point started to drive up borrower delinquencies in such a way that many market participants recognised that the default correlation of mortgage credit is not as low as previously thought. This, in turn, led to a drastic value drop in top-rated asset-backed securities and in the aftermath led to a crisis of confidence among market participants such that these commercial paper markets almost entirely dried out. As a consequence, many banks started to doubt whether they had enough liquidity themselves for replacing the break-away of demand on the commercial paper market. This behaviour caused the dry-up of the inter-bank market. For Northern Rock with its reliance on short-term funding, this came as a shock which finally sparked a bank run whereas IKB and Sachsen LB nearly failed because the liquidity lines they had provided to some Asset Backed Commercial Paper (ABCP) conduits became fully

drawn. In an ECAP framework where the causality between different risk types and their common macro – and microeconomic drivers are not explicitly considered such domino effects will neither be measurable nor manageable. This is one area that will presumably drive changes in ECAP measurement in the future.

Group-wide aggregation of these risks to arrive at ECAP

Because many leading banks still measure their individual risks on a stand-alone basis the need arises for ECAP measurement to happen at a group level to aggregate the individual risks in some way. To do this some banks still simply add the risk figures up; others use a variance-covariance approach with some inter-risk correlation figures typically based on rules of thumb, dubious benchmarks or own guesstimates; and finally others use copula methods.

Whereas the first two methods are at least very simple, they suffer from so many methodological problems¹ that it is surprising that so many institutes still use them. Instead, the use of the copula approach avoids many methodological problems thus consisting an improvement but generates the question that nobody has yet answered: "Which copula to choose?"

In addition, none of these methods really allow the banks to study and understand economically driven interactions and the causalities between different risk types. This is

Because most leading banks still measure their individual risks on a stand-alone basis the need arises for ECAP measurement to happen at a group level to aggregate the individual risks in some way

because the interactions between risk types are generally too variable to be properly reflected in either a variance-covariance or copula framework given the static nature of their parameters. This is why we think that ECAP models based on common macro – and microeconomic risk drivers are the way forward. Such models will quite likely be multi-period models where the realisation of risks at time t will determine the volume and pricing of new business (both on the asset as well as the liability side) at time t . This will therefore change the basis for future risk, return, and capital demand as well as the supply. Forward-looking management of risk, return and capital will thus be made possible in an unprecedented way allowing senior management truly to maximise the value of the bank.

Summary and conclusion

The next generation of ECAP models will probably evolve as 'Economic capital risk factor models'. These models have the following advantages:

- They avoid the somewhat artificial question of how to aggregate the single risk types at the overall bank or group level and will thus accelerate convergence of leading banks towards similar numerical values of ECAP given the same risk structure;
- They accommodate the interdependence (both causally and over time) of risk and return, relying on causal and structural modelling and thus better help explain (and hopefully avoid!) the financial trouble

of banks à la IKB or Sachsen LB in Germany or Northern Rock in the UK;

- They provide a natural link to capital management since today's realisation of risk drives returns and costs tomorrow and thus the capital endowment the day after (e.g. via retained earnings);
- They allow consistent answers to questions about the macroeconomic dependence of a bank's financials, such as: if the economy's growth rate declines by 0.5 percent, how would this change affect the P&L, balance sheet, and capital endowment?; and
- They provide a natural framework to evaluate a bank's strategic options (pricing, underwriting, M&A activities, and so forth) in a quantitatively consistent way.

Experience shows that leading banks took their first steps toward a full-fledged ECAP framework more than a decade before discussions about Basel II had begun. Their driver was the insight that an efficient 'currency' for the overall risks a bank faces is essential in managing its competitive position. Experience also suggests, however, that even these leading institutions have a way to go before their models will converge to a common ECAP measurement and management standard.

On the other hand, Pillar 2 will encourage many banks to adopt more sophisticated approaches to the use of ECAP in the coming years. Regulation, together with the pressure of competition and the fear of hostile takeovers sparked by global financial

markets, will thus be the driver for ECAP measurement and management becoming the central topic in banks' risk and capital management over the next decade.

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¹ For a more detailed discussion see KPMG, 'Managing Economic Capital. Beyond Basel II', October 2007.

'The forgotten risk'

Liquidity risk is back on the agenda

For many years, liquidity has not really been an issue for banks and many other market participants; due to low interest rates and an abundant supply of liquidity by major central banks, the liquidity market was a buyers' market. Moreover, the risk sensitivity of investors was low, the credit spreads were low, and there was little differentiation between the various rating classes.

This has led to a degree of negligence around the need for further development of liquidity management and control frameworks by the industry, and if efforts were actually taken to this end they were rather driven by new or tightened regulatory requirements around Basel II rather than by economic needs.

The 2007 liquidity crunch

The liquidity crunch of 2007 showed the particular nature of liquidity risk; it does not strike often, but when it does, it is sudden and with a severity that most market participants would not have even dared consider beforehand.

What happened in the so-called US sub-prime crisis that has led to such severe liquidity problems in mature financial markets around the globe? The origin of the crisis was indeed the US sub-prime loan market. After a period of strong growth and deteriorating lending standards the market recently experienced a strong rise in defaults and losses. The result was a collapse or near-collapse of a couple of US banks that were very active in this market, such as

Countrywide Financial or American Home Mortgage.

In addition, the last few years have seen a strong increase in securitisation activities, and sub-prime loans played a prominent role in this market. This meant that it wasn't only sub-prime lenders that had exposure to sub-prime loans. Many other investors, including many banks, were also very exposed. The latter exposure, together with a general opacity about the level and nature of investments into such products, led to wide-spread mistrust between banks, eventually leading to the collapse of the money markets.

This climate of fear was aggravated by vehicles known as asset backed commercial paper (ABCP) programmes. Such vehicles were often set-up by banks to profit from accounting and regulatory arbitrage for highly leveraged investments in asset backed securities (ABS) and collateralised debt obligations (CDO), including

those containing sub-prime loans. The vehicles funded their investments through Commercial Paper (CP), a short-term form of funding, which had the effect of further increasing the risk profile of the vehicles.

The increase in defaults and losses in the sub-prime loan market led to funding pressure on these vehicles. They were left with only a few options as to how to react:

- Sell assets in a market with little demand;
- Draw liquidity lines that had very often been provided by the sponsoring banks; and
- Sell assets back to the sponsoring bank, leading to the same liquidity issues at the bank and making its exposure to the market more transparent.

As a result, the selling pressure from ABCP programmes on sub-prime ABS led to a significant drop in market prices, leading to margin calls or risk

The liquidity crunch of 2007 showed the particular nature of liquidity risk; it does not strike often, but when it does, it is sudden and with a severity that most market participants would not have even dared consider beforehand

reducing measures at other leveraged investors such as banks and hedge funds. As the liquidity in the sub-prime ABS market was already widely reduced, those investors started to liquidate other assets, spreading the crisis to almost all asset classes.

Banks supporting such ABCP programmes which had granted liquidity lines to such vehicles were suddenly faced with potentially huge liquidity demands. Rumours about these potential liquidity obligations were enough to destabilise IKB and SachsenLB, two rather small German banks that supported a number of ABCP vehicles with several billions of assets. The collapse of these two banks was only prevented by the joint efforts of the support provided by the German banking industry, and the discretionary additional tender transactions that the European Central Bank initiated to calm the markets.

In such an environment, transparency rules (arising from the 2005 EU Market Abuse Directive), that were originally intended to improve investor confidence, can actually lead to the opposite result. The day after the Bank of England (BoE) announced the support it was providing to Northern Rock, Europe saw its first bank run for decades.

So why did Northern Rock need the BoE support in the first place? As an organisation that has suffered directly from the sub-prime crisis, was it simply a reckless player with regard to funding? Or was Northern Rock the victim of a successful, rapidly expanding business being largely financed on the capital markets – the fatal mistake being that Northern Rock didn't reduce its new business quickly enough once it was clear that new funding was not available for some time due to the crisis?

Lessons learned for liquidity management

So what can we learn from this analysis of recent events? Liquidity risk is back again, and it rules the financial markets even though there is still abundant liquidity overall. So the origin for this



year's liquidity crisis is not the lack of liquidity, but actually a mixture of operational risk, credit risk, business risk and market risk materialising, combined with opacity in the markets and resulting reputational issues.

Was this crisis predictable? If you had talked to risk managers as late as the first quarter of 2007, very often the answer you would have got would have been that such a scenario – the complete drying up of the markets for many asset classes, severe drops in market values of many others, and all asset classes moving in the same direction downwards – was practically impossible. However, if you had talked to economists, many of them would have pointed out that there was a bubble in the US home market and that the risk appetite of the market



was too high (i.e. credit spreads were too low). So, did risk managers not read the signs as they should have done, perhaps due to insufficient scenario modelling?

Looking forward, one obvious question is whether we have seen a 'once in a century event' or whether we should prepare ourselves for the next shock. Is another liquidity shock of similar or even bigger magnitude possible? Jochen Sanio, Head of BaFin, Germany's Federal Financial Supervisory Authority, leaves no doubt about his views on the subject¹ "The current crisis around US sub-prime mortgages has shown that even those dangerous events that are evaluated as very unlikely shall not be discarded. 'Impossible is a word used by fools only'".

When one thinks about the carry trades in Japanese Yen, the inflated housing market in the UK, the highly leveraged private equity market, or certain emerging markets, there are

certainly many other bubbles whose bursting might trigger the next crisis, a crisis that could easily spread to many other markets and asset classes as a result of highly leveraged hedge funds looking for liquidity, resulting in the next general liquidity crisis.

Liquidity management tool-box as a basis

In such an environment, it is crucial to have a solid liquidity management framework in place. The necessity for such a framework was stressed by the regulators as early as 2000 when the Basel Committee on Banking Supervision released the document 'Sound Practices for Managing Liquidity in Banking Organisations'². Such a framework consists of the following main components:

- **Clear organisational and operational model for liquidity management:** assigning clear group-wide and local responsibilities for liquidity management within a banking group;
- **Comprehensive set of liquidity scenarios:** covering normal business as well as medium to extreme stress scenarios, aligned with a bank's business and the markets it operates in;
- **Cash flow analysis and maturity ladders:** determination and, if necessary, modelling of all future cash flows of assets, liabilities and off-balance sheet items under various scenarios and their aggregations to liquidity maturity ladders to allow for reliable forecasts of the bank's liquidity

needs covering periods from the next couple of days to several years;

- **Funding potential analysis:** evaluation of the funding potentials from various sources (wholesale markets, corporate customers, retail customers, various regions) under normal and stressed conditions;
- **Asset liquidity analysis:** detailed analysis and classification of the liquidity of the bank's assets covering hair-cuts and liquidation periods under various scenarios to allow for a forecast of available financial resources to fill potential gaps showing in the maturity ladders;
- **Liquidity limit system:** reflecting the bank's risk appetite with regard to liquidity risk and being in line with results from the analysis above;
- **Liquidity contingency planning:** detailed contingency plans covering responsibilities, data sources, communication guidelines and action plans, connected to the scenarios identified, to be able to react swiftly and professionally in any liquidity stress situation and therefore gain valuable time for the organisation;
- **Liquidity reporting:** frequent, comprehensive and timely reporting built on reliable and up-to-date data to achieve internal transparency with regard to the liquidity situation and to provide a sound basis for management decisions.

Liquidity risk and holistic risk management

While such a framework is undoubtedly the basic tool-box for successful liquidity management in

The 2007 liquidity crisis has shown again that the origin of liquidity issues is typically a problem arising from many other risk categories such as market or reputational risk

rough waters, the 2007 liquidity crisis has shown us that an isolated view of liquidity management is dangerous as existing risks might be understated. This implies that the liquidity tool-box described above should be accompanied by further strategic measures such as:

- Increasing co-operation between risk managers and bank economists to identify potential future macro-economic scenarios and their impacts on the institution, rather than using potential scenarios focusing only on one risk category that are largely derived from historical events;
- Integrating liquidity management into the overall bank management, as liquidity problems typically originate from other risk categories, and, as they occur, liquidity problems can often only be resolved by drastic measures and changes to the business model;
- Improving the risk analysis of business divisions and products by accompanying the existing bottom-up analysis by risk categories with a scenario based integrated risk analysis, covering the inter-dependencies between all risk categories;
- Reviewing the risk appetite based on the analysis above and adapting the business plan, if necessary. Many banks have suffered heavy hits in the current crisis. Some have had to record losses, but the crisis has only led to the collapse of a few firms, those with a weak earnings base that had to be subsidised through running particularly high risks.

Conclusion

The 2007 liquidity crisis has shown again that the origin of liquidity issues is typically a problem arising from many other risk categories such as market or reputational risk. While it is essential for liquidity management to have an effective tool-box in place to know at all times the liquidity status of the organisation, the liquidity models currently used often do not cover the integration with other risk categories when modelling cash flows and considering stress scenarios. Hence, they are not sufficiently efficient and effective.

It is therefore important to develop the scenario and stress testing analysis into a comprehensive framework that will also build on the bank's macro-economic expertise to include potential future scenarios that are not derived from past market behaviour. Moreover, the current crisis has shown that liquidity risk is a core risk and a significant driver of value creation and destruction. Therefore, liquidity management needs to be integrated into the holistic risk-and-return management of a bank.

At the end of the day this will not only effect liquidity management but is crucial for the banks' entire risk management agenda. To help you achieve this goal KPMG member firms have set up the Single View of Risk and Return (SVRR) initiative³. The strategies developed under this initiative are designed to help you to generate extra returns on improving your risk management, not just for liquidity risks.

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1 Börsen-Zeitung, No. 202 (2007), 20.10.2007 – original German quote
Die aktuelle Krise um US-Subprime-Hypotheken habe gezeigt, dass selbst jene gefährlichen Ereignisse nicht ausgeklammert werden dürften, die als sehr unwahrscheinlich eingestuft wurden: 'Unmöglich ist ein Wort, das nur im Wortschatz von Narren auftaucht.'

2 'Sound Practices for Managing Liquidity in Banking Organisations', Basel Committee on Banking Supervision, Basel, February 2000.

3 Frontiers in Finance, Single view of risk and return, KPMG, 2007

Outlook beyond Basel II

The new risk management agenda

What next?

To conclude this 13th edition of Basel briefing, it is time to look beyond Basel II towards the new risk management agenda that has emerged from the Basel II process. By codifying some of the innovations in risk management of the 1990s and early 2000s, Basel II has, as intended, catalysed these innovations and fast forwarded the banking industry onto a new development path (see figure 1).

Of course Basel II, and the associated changes in national regulation, has not been the only driver of change; a number of parallel developments have taken place, including other regulation (IFRS, SOX, etc.), growth in secondary credit markets, intensified competition and consolidation in the industry, increasing scrutiny from debt/equity markets, increasing complexity of the businesses and the risks taken on by banks and, of course, the current market crisis.

Together, these developments have driven very significant advances in risk management. In a nutshell, banks are now exposed much more directly to the economics of their risks, be that through:

- Availability (and volatility!) of market prices of risks that previously had no market; or
- The transparency of their external reporting and increased stakeholder sophistication; or
- Through intensified competition arising from both a much clearer internal view of where (risk-adjusted) value is created as well as from an increasingly global and unprotected market place.

A new risk agenda, leading to a new model for risk management

Given this background, it is not surprising that the new risk management agenda represents a swing away from the compliance

focus that has dominated the last few years and back towards a focus on performance. The topics on this agenda broadly fall into four key themes as summarised in figure 2.

At the top of the house, banks are integrating the management of risk, return and capital, getting risk, finance and strategy to team up much more than would typically have been achieved in the past. This is an imperative to satisfy stakeholders' scrutiny around the relationships between risk, return and capital. For most risk functions, this requires building out 'strategic' risk management capabilities and integrating these into the corporate calendar (see inset 1 on Integrated Management of Risk, Return and Capital).

At the top of the house, banks are integrating the management of risk, return and capital, getting risk, finance and strategy to team up much more than would typically have been achieved in the past

Inset 1 Integrated management of risk, return and capital

For many banks, Pillar 2 and associated national regulation has forced progress in an area which had hitherto been left to one side. Typically, the reasons for this apparent oversight were not because it was not recognised that progress in this area is immensely beneficial in relation to the required investment, but because it fell in between the cracks of responsibilities (or disputed territory!) claimed by risk, finance and strategy.

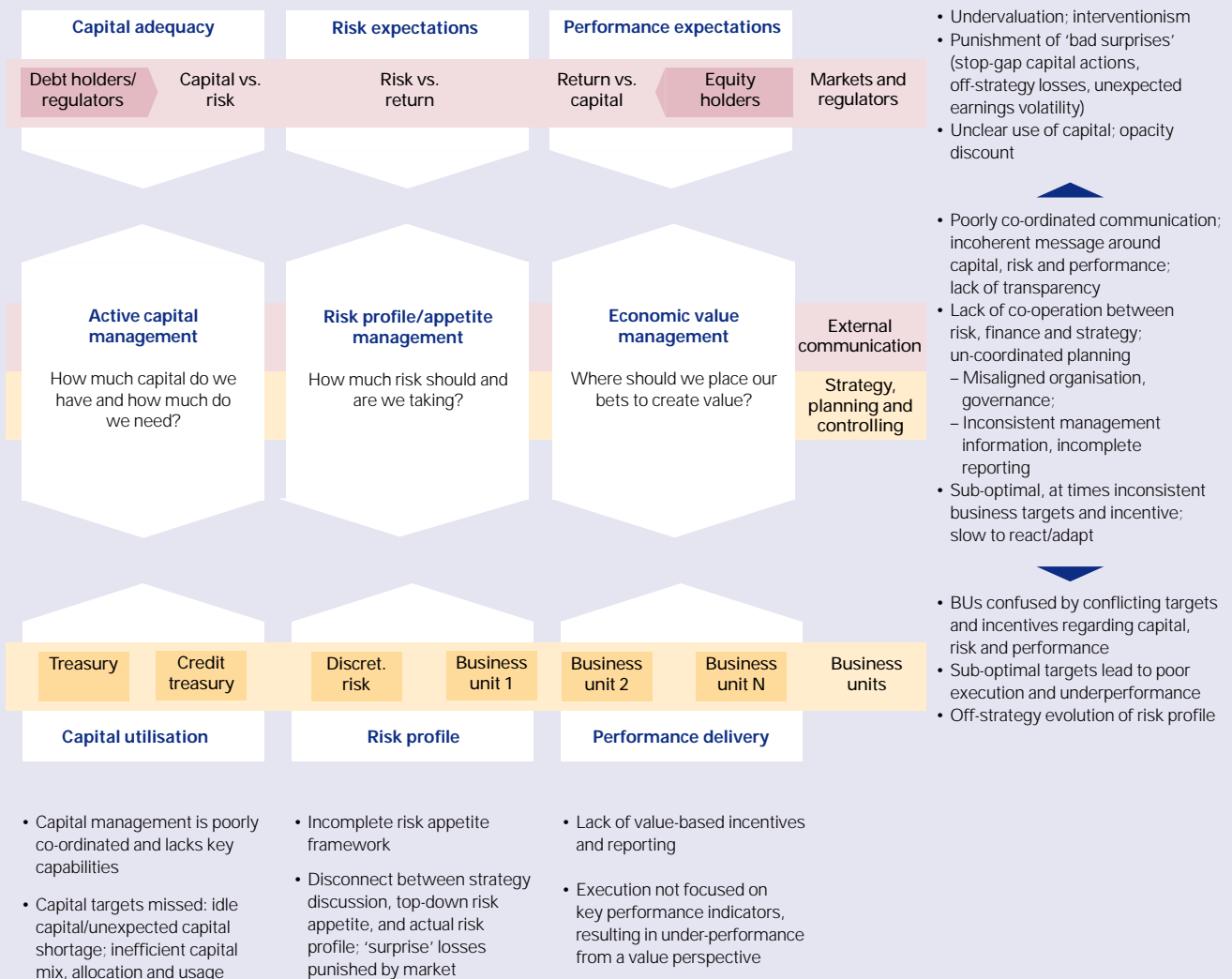
However, apart from its requirements under Pillar 2, Basel II is also indirectly driving progress for several reasons. First, Basel II has made institution-wide risk measurement and reporting available, which is the foundation for an integrated approach to managing

risk, return and capital. Second, under Basel II risk-sensitive regulatory capital requirements (capital demand) as well as recognised capital (capital supply) will become much more cyclical. This is further exasperated by the point in time nature of incurred loss impairment calculations under IFRS. Dealing with this volatility will require a much more active and forward-looking approach to managing capital. Third, the increased transparency through disclosure requirements under Basel II and IFRS will result in much closer scrutiny by rating agents, equity analysts, activist shareholders and regulators alike. Banks will face much more questioning of their capital allocation and use, of the evolution of their risk profile within the stated risk appetite, and of their performance against the communicated strategy.

Furthermore, intensified competition and excess capital are driving down returns in established markets, forcing banks to venture into new markets and/or business models and taking on more challenging risks that lie outside their comfort zone. At the same time, shareholders demand returns on equity (RoEs) that are in line with the market, despite the heavy compliance spend in the banking industry. Making best use of the compliance investment to improve performance is therefore not a nice-to-have option but a necessity.

Institutions that are ahead in this game have realigned and built up new capabilities at their group centre to address the key questions that need to be answered in order to translate stakeholder expectations into the right plans, targets and incentives for the

Figure 3 Integrated management of risk, return and capital: theory and practice



Source: KPMG A.S. S.a.r.l., 2007

Figure 5 A new model of risk management

Top-of-the-house impact

Passive	Little or no impact	Passively responds to requests for input on strategic issues	Reactively translates overall strategy into risk strategy	Active input into strategy regarding risk appetite and capital usage	Fully integrated into strategic planning; key driver of risk return optimisation	Active/ integrated
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Configuration and infrastructure

Aligned with compliance/ avoiding loss	Focus on minimum requirements	Focus on risk control and loss minimisation	Focus on balance sheet protection	Focus on risk/return optimisation; compliance efforts aligned with value	Fully focussed on value creation	Aligned with value creation
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Coverage and capabilities

Narrow	Qualitative management of individual transactions/risks	First quantification of market and credit risk	Rigorous Basel II risk measurement, including operational risk	Focus on portfolio view; economic capital embedded in management	Active portfolio management capabilities, full coverage of all risks	Comprehensive
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Leverage into business

Unavoidable burden	'Risk police'	Controls-based approach limiting business flexibility	Empowerment of business through risk measurement	Basel II fully embedded in businesses	'Business partner'	Competitive advantage
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Outdated

Lagging

Standard

Advanced

Vision

Source: KPMG A.S. S.a.r.l., 2007

At the same time, banks are already developing their core risk management functions beyond Basel II standards across a range of dimensions. These span everything from a broad reconfiguration of their organisational model and infrastructure of risk management, to advancing further their capabilities to manage different categories of risk and their portfolio aggregation. These developments also include rolling out (and in some cases redoing) hasty compliance efforts to achieve a less compartmentalised and more cost-efficient implementation of the different compliance requirements (Basel II, SOX, IFRS, etc.) against the different risks these requirements address. These efforts are aimed both at

improving the cost efficiency of the risk management function itself as well as gaining competitive advantage through superior risk management capabilities.

Finally, banks are leveraging their advances (and investments) in risk management into business applications. These applications are diverse, but in essence allow better informed decision-making around risk taking, more efficient business processes and closer alignment of targets and incentives to (risk-adjusted) performance. Realising the associated potential value and competitive advantage requires risk management to conclude the evolution of its role from 'risk police' to 'business partner', not

only at the senior management level, but also across the different businesses. Driving progress across these four themes will cause a profound transformation of risk management, taking banks to a new model in risk management as outlined in figure 5.

Approaches to transforming the risk management function

Bringing about this transformation of risk management represents an effort arguably of the same order of magnitude as the Basel II programmes that were conducted during the last years, though with a much smaller proportion of the investments falling within the strict confines of the risk function.

Figure 6 Moving from Basel II work onto the new risk agenda**Getting more value from risk management****Realign objectives of risk with shareholder goals and towards 'business partnership'**

- Clarify objectives of risk e.g. balancing loss control, risk-reward optimisation and service agreement
- Explicit performance metric of risk aligned with objectives and incentives

Extend role of risk in strategy

- Risk input to challenge strategic planning/budgeting
- Process to align risk profile with risk capacity/appetite; link risk appetite and capacity into capital allocation and risk limits
- Process to optimise risk-return positioning
- Identification of targets with favourable risk/return profile

Strategy and objectives

- Role in communication to stakeholders
- Goals of risk management
- Risk strategy; control principles
- Risk underwriting/mitigation principles, policies and procedures

Reports and methods

- Reports and documentation
- Methods used for risk, capital and economic performance

Organisation

- Organisational structure of risk function (units, networks, committees)
- Roles and responsibilities of individuals/units; committees' composition and agendas

People and location

- People (resources and skills) and incentives
- Risk culture
- Location

Management process

- Corporate calendar of risk and capital decisions
- Ongoing processes: risk identification, risk analysis/evaluation, risk monitoring/reporting
- Top-of-the-house management decision and execution

Data and systems

- Data architecture: risk, performance etc.
- Application architecture
- Technical architecture

Realign risk infrastructure**Re-configure risk management framework to improve efficiency**

- Removal of redundancies, also including systems and reports
- Streamlining of regulatory compliance processes
- Integration of compliance into business management

M&A integration

- Integration of multiple risk management organisations and cultures
- Synergies through streamlining

Build out risk management framework to address 'new' or 'rediscovered' risks

- Certain non-financial risks, including IT risk
- Reputation risk
- Liquidity risk

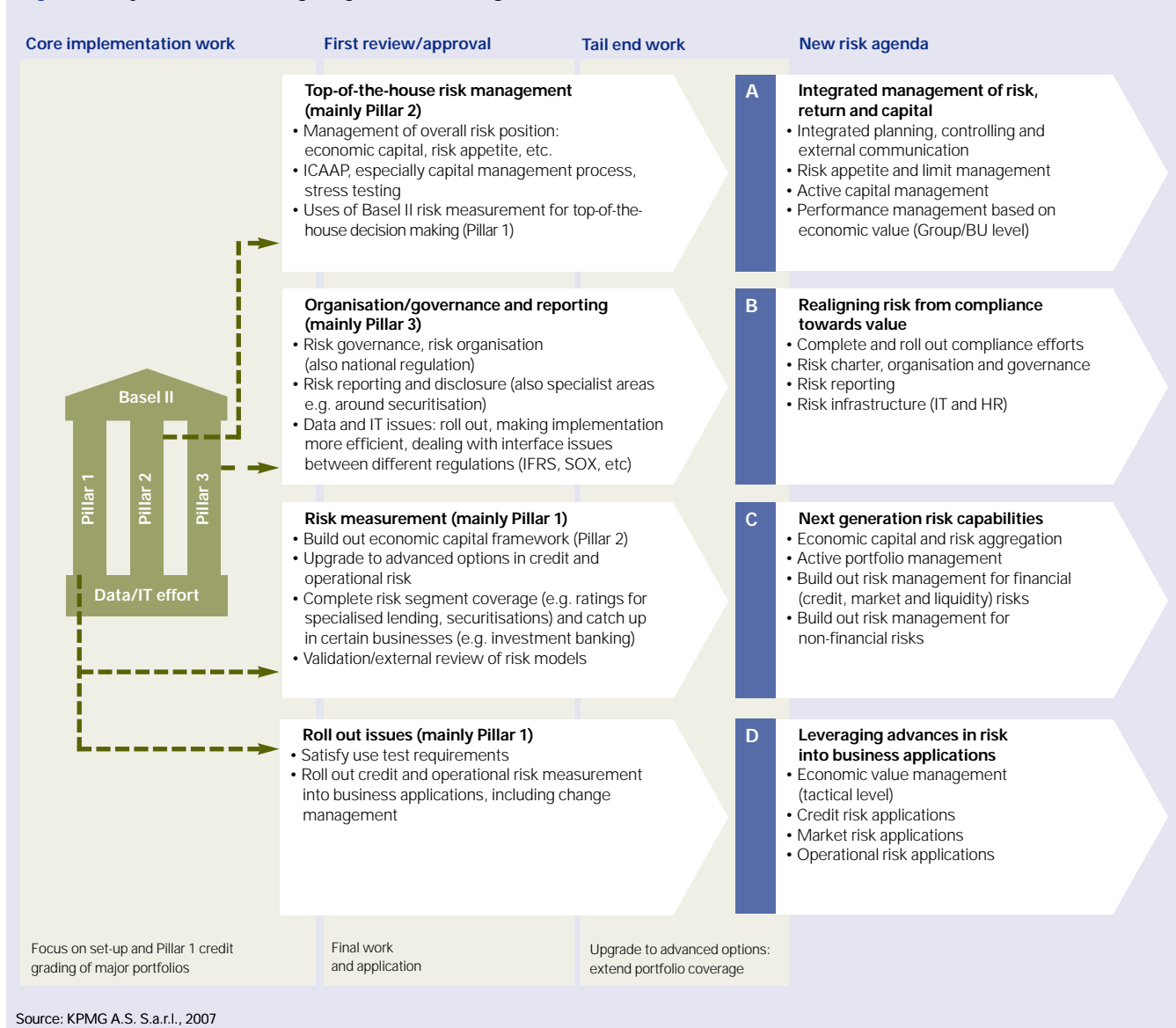
Source: KPMG A.S. S.a.r.l., 2007

Banks are pursuing different approaches to organising this effort. Some institutions are stepping back to take a fresh look at their group-wide risk management, systematically rethinking all elements of the risk function, ranging from the function's strategy and objectives to risk data and IT systems (see figure 6).

The individual institution's objectives for reconfiguring its risk management function will vary, but will typically involve different flavours of getting more value from risk management, on the one hand, and realigning the risk infrastructure on the other hand (see figure 6).

Bringing about this transformation of risk management represents an effort arguably of the same order of magnitude as the Basel II programmes that were conducted during the last years

Figure 7 Why are banks reconfiguring their risk management framework?



Independently of how banks are approaching the new risk agenda, they will find it hard to ignore it

Other institutions are approaching the transformation of their risk management model by conceiving it as a change programme in risk culture, with an emphasis on driving the Basel II developments into other support functions and the business units. This approach is especially relevant for those institutions where the Basel II efforts were driven by a relatively narrow group within head-office risk management and which predominantly focussed on compliance with little buy-in into the business benefits. The approach is also typical for larger/international institutions where some subsidiaries are trailing behind developments at the group centre, especially if they are located in countries that are implementing Basel II with a significant time lag.

Yet another approach, followed by many institutions that have now reached the tail end of their Basel II work, is simply to move on to the topics of the new risk agenda as a natural extension of the final stage of their Basel II work (figure 7).

In some institutions this approach is driven by significant senior management pressure to justify the Basel II investments that cannot be recouped solely through regulatory capital savings (which in any case may not materialise as anticipated). At other institutions risk management is taking advantage of the remaining Basel II work and its momentum to push for advances that are not strictly required for compliance, but for which it would otherwise be difficult to obtain buy-in. Either way, in effect these institutions are approaching the transformation of their risk management by extending the Basel II programme.

The challenges ahead

Independently of how banks are approaching the new risk agenda, they will find it hard to ignore it. As banks enter 2008, risk management is therefore facing a triple challenge:

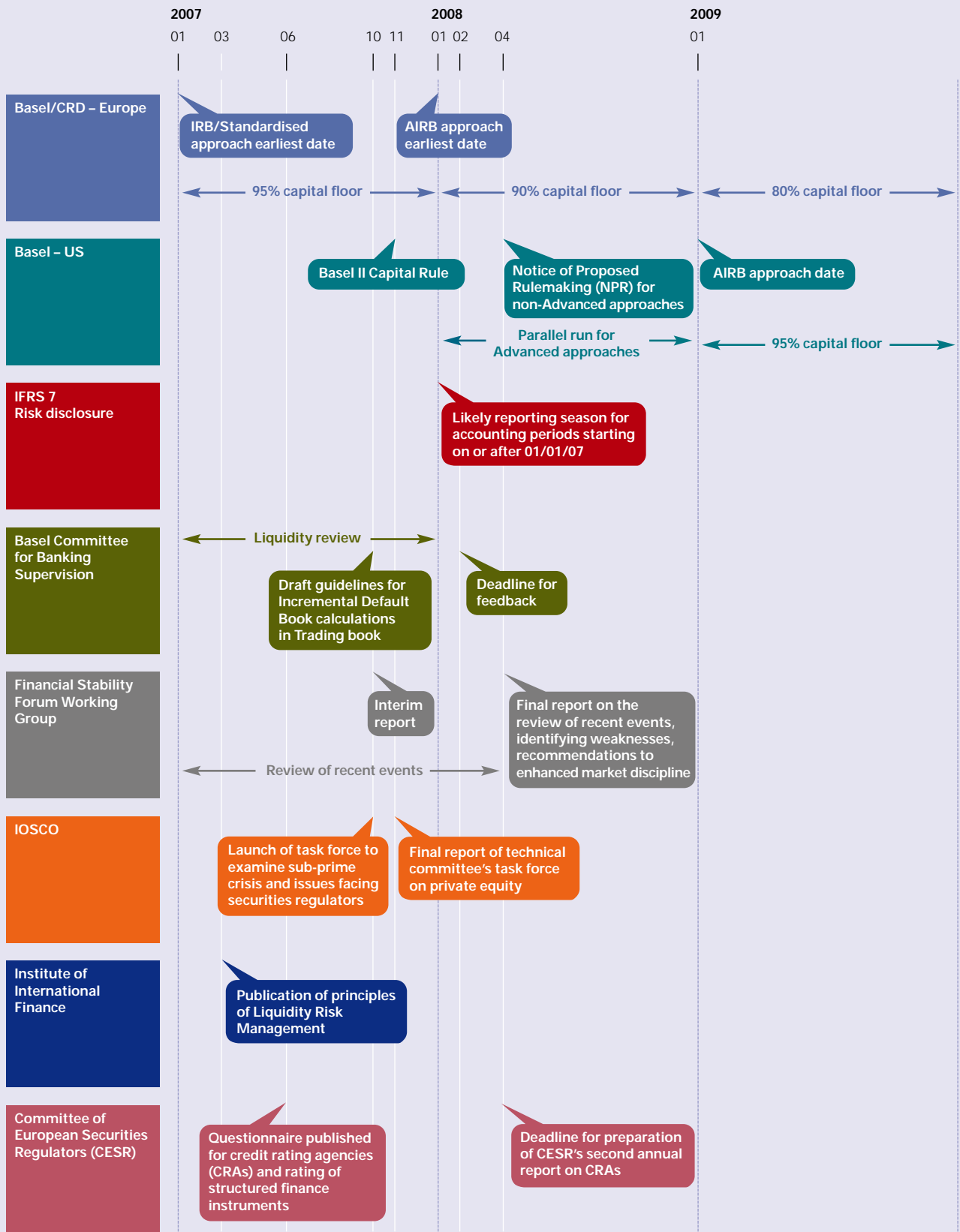
- 1 Dealing with the current crisis, working their way through the crisis as it unfolds, readjusting to its consequences in areas such as liquidity management and, for a large set of institutions, digesting a new wave of consolidation;
- 2 Completing Basel II implementation, including its roll-out across the organisation, rationalising the IT and data environment, as well as consolidation across different compliance implementations (IFRS, SOX, etc.); and
- 3 Addressing the new risk agenda in the post-Basel II environment, in particular satisfying increased stakeholder expectations and scrutiny unleashed by Basel II, capitalising on the investments in risk already undertaken and realigning the risk function both in terms of cost efficiency and stepping up to the next generation of risk management capabilities.

If anybody had hoped that now was the time to sit back to look over the achievements of years of increasingly frantic Basel II preparations, that optimism may have been a little premature. Work in risk management will shift away from Basel II, but the work in 2008 and beyond will be as intense as ever. Getting the priorities right and the overall approach for addressing the new risk agenda will be the key to facing this challenge.

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Produced by KPMG's Global Financial Services practice
Designed by: Mytton Williams
Publication name: BaselBriefing 13
Publication no: 311111
Publication date: January 2008
Printed on recycled material