



## **Benefiting from Basel II**

Turning uncertainty to market advantage



**deeper**

## ***Table of contents***

- 3 Executive summary***
- 5 Introduction***
- 6 Major changes between CP2 and CP3***
- 11 Findings from QIS3***
- 14 Strategy and implementation for Basel II***
- 23 Glossary***
- 23 IBM risk and compliance practice area network***

## **Executive summary**

The publication of the Basel II Accord later this year will mark the end of a six-year process that will have effectively re-written the rules of banking. The new Accord will affect the conduct of monetary policy and the stability of financial institutions all over the world.

The pathway from the first Capital Accord of 1988 to the adoption of the new Accord in 2003 has been a slow and, at times, arduous journey. There may have been the odd diversion and dead end but we can now say with confidence that the journey is nearing its conclusion. After an understandable period of circumspection and caution, the feeling in the industry is: 'full speed ahead.'

With the publication of the third consultative paper (CP3), it seems reasonable to assume that much of the Basel II regulatory framework is likely to remain unchanged between now and when the Accord comes into full force at the start of 2007.

Banks that have not fully engaged in a Basel II implementation (at group and business unit level) urgently need to agree their strategic objectives, define their implementation approach and understand, at a detailed level, the scale of implementation effort required across the bank.

Based on IBM's review of Quantitative Impact Study 3 (QIS3) findings, the publication of CP3 and our own assignment experiences, we consider the following points to be critically important in the successful implementation of Basel II.

**Advanced approaches for credit risk:** In terms of capital it will generally be beneficial for larger financial institutions to aim at implementing more advanced approaches for credit risk even though the cost of implementing the advanced approaches is likely to be significant. For smaller institutions, the cost of implementing these advanced approaches is not likely to justify the reduction in capital charge. As such, it is important that financial institutions evaluate their particular circumstances and understand the relationship between the costs and benefits, from both quantitative and qualitative perspectives. This cost-benefit analysis should form the basis of a Basel II implementation business case, which will secure the necessary funding.

**Evolutionary approach:** As CP3 introduced the principle of temporary partial use, financial institutions should consider following an evolutionary path for implementing the advanced approaches for Basel II. An implementation roadmap should be drawn up for each significant business unit and risk category, to get them to a state of advanced compliance. Institutions should engage national regulators to agree what business units and asset classes or risk categories are significant and what implementation activities should be undertaken for the remainder.

**Additional risk and process benefits:** As the Basel II proposals have evolved, minimum requirements (Pillar I) have become less prescriptive. This has given institutions greater flexibility in complying with the regulations and designing their risk management framework. This means that institutions will have more opportunity to achieve additional benefits over and above compliance, in areas such as process optimisation and risk pricing. However, institutions will still need to manage the uncertainty around Supervisory Review (Pillar II) and this can best be done by actively engaging the national regulators in dialogue at an early stage.

**Basel II interdependencies:** Implementation of Basel II presents institutions with a variety of programme management challenges. Managing the interdependencies between the Basel II programme and other projects, such as, International Accounting Standards (IAS) will be a key challenge. In these cases institutions will need to identify, understand and coordinate interdependencies on an on-going basis.

**Data and systems:** For the majority of institutions, data and systems is proving to be the biggest challenge of Basel II. Temporary partial use has given institutions the opportunity to review the design and implementation of their technical architecture. Improving the quality of data collected is generally regarded as the biggest challenge facing most institutions.

## Introduction

Given the importance of Basel II and the complexity and wealth of detail that surrounds the new Accord, it came as no surprise to see that the development of the Accord was not an overnight process. Rather, it has been a long, drawn-out process with the major developments taking place between the publication of Consultative Paper 2 (CP2) and The Quantitative Impact Study 3 (QIS3) Technical Document. QIS3 field-tested proposals for changes to the Accord, and represented a high-water mark in the development process. The changes suggested in CP3 (released in April 2003) seem to be no more than fine-tuning of the QIS3 Technical Document, rather than reshaping the structure, or redefining the central requirements. In our view, the release of CP3 effectively opens the final chapter in the development of Basel II, on an international basis. (See Figure 1).

Major issues such as the partial use debate, capital charge for expected loss and cyclicity of capital charge have already been addressed and a compromise found between the desires of the industry and the concerns of supervisors. One should never say 'never,' but with both

sides apparently content with what has been achieved, we see no reason for further major changes to the international framework.

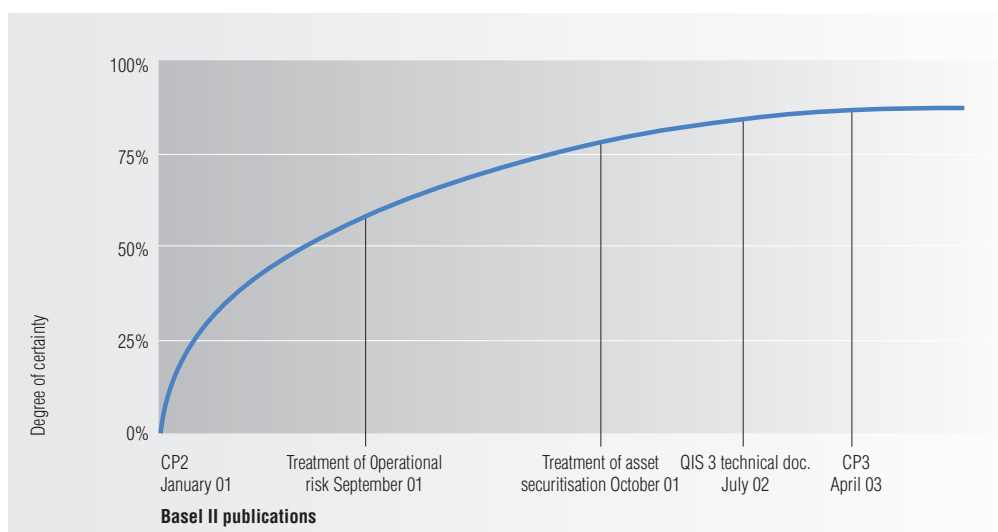
Of course, there are still some important open issues that will be clarified by the local supervisors over the next two years. However, these can be phased into implementation without significantly affecting the route that banks and institutions take.

The aim of this paper is to provide an insight into the implications of CP3 and QIS3 on Basel II strategy and implementation. To derive conclusions, we will analyse the major changes that have occurred between CP2 and CP3. Subsequently we will examine the key points that arose from QIS3.

The issues identified in the overall conclusions from our analysis will largely determine the strategic positioning of financial institutions and directly affect the road to implementing Basel II.

**Figure 1**

CP3 has provided increased certainty of what the financial requirements are likely to be



**Major changes between CP2 and CP3**

A full discussion of the many issues and changes that have arisen between CP2 and CP3 is outside the scope of this paper. Our aim here is to take a strategic view and to concentrate on those changes that are likely to have a direct and significant impact on strategies, implementation policies, resource allocation and the design of risk management systems.

We shall focus in particular on four important factors.

1. Temporary partial use
2. Enhancing risk sensitivity when risk weighting
3. Adjusting minimum requirements to practicability
4. Reinforcing Pillar II

**1. Temporary partial use**

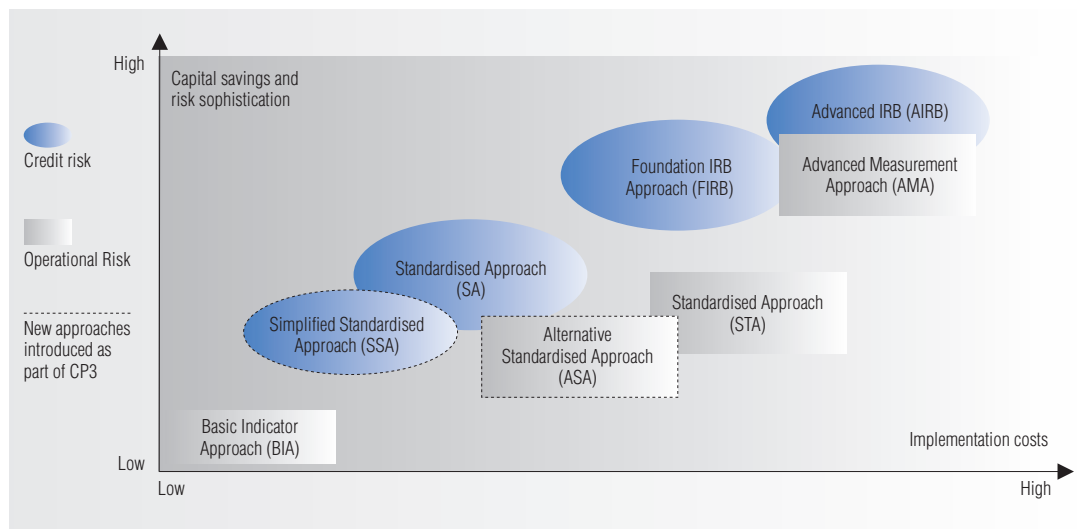
Simply put, the intention of the new Accord is to support and reward those financial institutions that invest in the best risk assessment capabilities. The better the assessment capability, the lower the capital charge.

The main feature of the Basel II Accord lies in the way that it allows financial institutions to choose different approaches to calculate the capital charge for credit and operational risk (See Figure 2). The details of the transition from one approach to another have become an issue.

CP2 required all institutions that opted for more advanced approaches, in credit or operational risk, to comply with all requirements for data, risk measurement, processes and organisation, for all important business lines and business units from day one of the new Accord. This suggestion was not well received by the industry, which favoured a gradual introduction. This so-called 'partial use' would allow some business units to use less advanced approaches than others. This suggestion was rejected because of the fear that it would engender a disincentive for implementation, and create opportunities for capital arbitrage. However, this aspect of CP3 seems to be still under discussion, and it may well be left to the discretion of local supervisors to allow a permanent partial use depending on the size of an institution and the nature of its business. In the final analysis, the supervisory review process has to prevent opportunities for capital arbitrage.

**Figure 2**

The Basel II approaches for credit and operational risk



However since the introduction of CP2, it has been clear that even the most advanced institutions would struggle to make their entire portfolios compliant for the advanced approaches by 2007. As a result, the rule presented an impediment, rather than an incentive, to the regulators' desire to have as many institutions as possible use the more advanced approaches from the inception of the new Accord. For this reason, the rules were significantly changed in CP3 and a temporary partial use has been introduced for credit and operational risk.

#### **Credit risk**

Once a bank decides to adopt the Internal Ratings Based (IRB) approach for part of its holdings it will be expected to roll out this approach across the entire banking group, however, there are likely to be practical difficulties in implementing an IRB approach across all material asset classes and business units at the same time. As such, regulators may allow banks to adopt a phased rollout of the IRB approach across the group.

The banks that apply temporary partial use should develop a phased implementation plan showing to what extent and when it intends to roll out IRB approaches across material asset classes and business units. The plan should show:

- Adoption of the IRB approach across asset classes within the same business unit (or in the case of retail exposures across individual sub-classes)
- Adoption of the IRB approach across business units in the same banking group
- Moves from the Foundation Internal Ratings Based (FIRB) approach to the Advanced Internal Ratings Based (AIRB) approach for certain risk components.

For partial use in particular, it is important that the implementation plan is discussed with the regulator and approved in principle.

#### **Operational risk**

The approach adopted by a bank will depend on the business complexity and risk profile of the bank, and will be subject to the approval of the local supervisory authority.

In order to encourage banks to adopt an advanced approach for operational risk, banks will be permitted to adopt partial usage of the AMA approach. However, the level of day one AMA compliance will vary significantly by country. For example, the UK regulator, the FSA are advocating flexibility at this stage.

In the third of a series of its own consultation papers, the European Commission explicitly does not require the roll-out of the AMA approach to "all material legal entities and business lines," but to 'a material part of its legal entities and business lines'. The effect of this is that permanent partial use is permitted. The Commission wants to encourage less complex institutions to gradually develop an AMA, whereas the original requirement of CP3 is now regarded as appropriate only for large, internationally active banks.

Even though it is not explicitly rejected in CP3, it is to be expected that partial use of BIA with STA will only be allowed on an exception basis, so as to avoid the potential for capital arbitrage. The EU's 3rd consultation paper says that the combined use of the two approaches can only be allowed under exceptional circumstances, such as the acquisition of new business areas.

**2. Enhancing risk sensitivity when risk weighting**

The overall goal of the Accord is to increase risk differentiation: higher risks attract higher capital charges than lower risks.

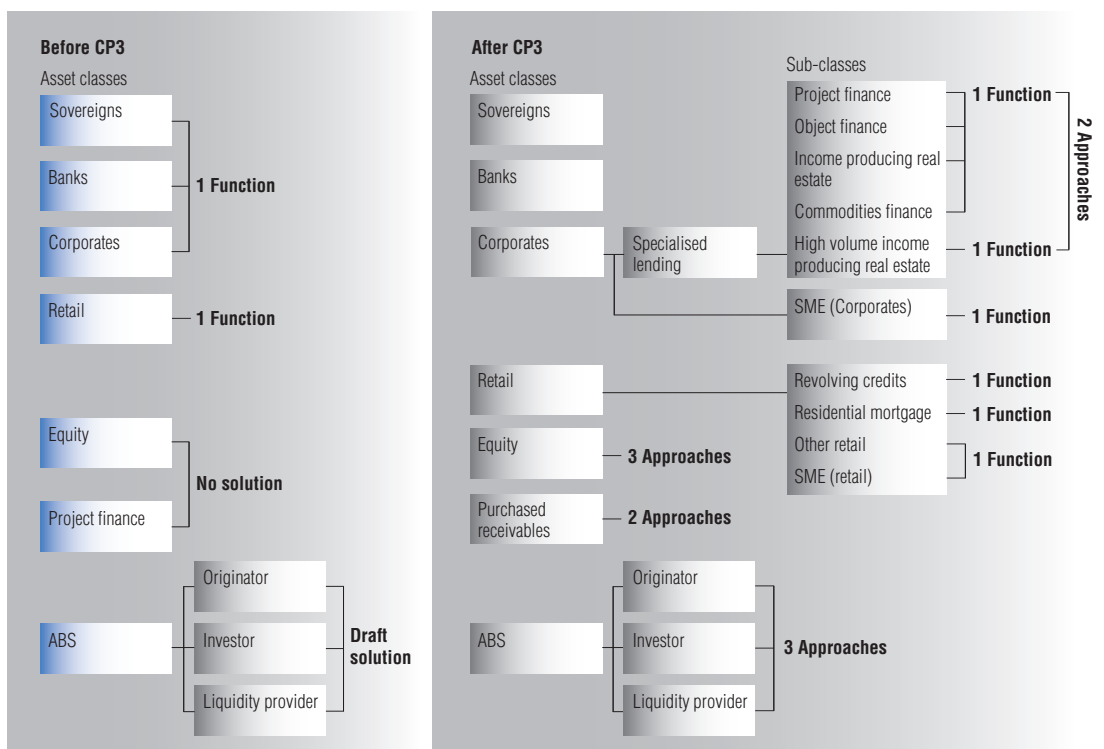
To support this idea, CP2 introduced a system of seven levels of risk categories or asset classes in the IRB approaches. These were drawn up according to the classification of the borrower and/or the type of transaction involved.

In the current framework, the desire to achieve more marked risk differentiation was matched by a significant increase in complexity. What we now have are seven risk categories with ten sub-classes. There are six different functions and ten approaches for some of the risk categories. Figure 3 demonstrates this increased complexity.

The resulting calculation system prices credit risks, in terms of regulatory capital, both adequately and fairly. As we will show later, QIS3 demonstrated that those institutions that have riskier portfolios, because of the nature of their business, have higher charges than, for example, a pure retailer.

**Figure 3**

CP3 demands a much wider differentiation of risk categories when applying the IRB approaches



At the same time, the adequate pricing on capital has a huge impact on the requirements on data availability, data quality and data integration due to the increased need for portfolio segmentation. In effect, increased segmentation would require institutions to deploy risk categories based on characteristics and profiles that they may not have collated in the past.

### **The new approaches introduced by CP3**

In our view, the changes in CP3 relating to the so-called new approaches for credit and operational risks should not be overestimated when it comes to implementation and strategy. Both of these approaches represent only slight alterations to the existing approaches.

The Simplified Standardised Approach (SSA) is based on the Standardised Approach (SA) for credit risk. It is mainly intended to provide supervisors in emerging markets with an adequate choice for smaller local institutions. The most profound features are fewer possibilities for credit risk mitigation and the fact that there is no need for external ratings for corporate portfolios.

The Alternative Standardised Approach (ASA) for operational risk bases the operational risk charge for the retail and commercial banking business line on the portfolio volume rather than on the gross income – which is used in the Standardised Approach (STA). In addition, for the remaining six business lines, a conservative, i.e. higher Beta factor may be applied to the aggregate amount of gross income. It remains to be seen whether this will significantly reduce the operational risk charge for banks.

### **3. Adjusting minimum requirements to practicability**

The formulation of minimum requirements for credit and operational risk management was supposed to create a level playing field, with equal minimum standards for all institutions opting for a particular approach. The range of risk management elements for which requirements have been developed impacts upon a number of different aspects of banking, including the credit approval process, pricing, rating systems design and operations, collateral management and policies, corporate governance and internal control.

The cost of implementation in terms of data, systems, risk management instruments, organisation and processes is directly influenced by the gap between a bank's current standards and these minimum requirements.

There have been many small alterations to the minimum requirements since the publication of CP2. In CP2 the minimum requirements were very prescriptive, with an emphasis on highly detailed regulation. A good example of this can be seen in Reference Number 265, which described precisely the necessary factors for the approval of borrower-rating systems. In some cases, the criteria required were not suitable to all borrowers, in that they bore no relation to the nature of the borrower's profile. Instead of setting a pragmatic set of rules, the regulations provided a straitjacket that denied adequate space for the design of risk management practices that were suitable for all business activities and environments.

Today, the constraints originally outlined in Reference 265 have been removed. Instead the regulations provide reasonably flexible guidelines that leave room for adequate implementation, according to each institution's particular credit risk management needs. However, it would be wrong to confuse a wider framework with the relaxation of requirements. Ensuring compliance with the minimum requirements will be the central role of the supervisory approval process.

Supervisors will want solid reasoning for the design of every piece of the risk management system, in terms of adequacy to risk inherent to the business. They will also want documentation of the thought processes involved.

#### 4. Reinforcing Pillar II

In Pillar I, institutions are asked to implement instruments, systems and procedures to develop robust risk measures. In Pillar II, supervisors will check whether this information is correctly put together, and used not only for regulatory compliance but also for internal risk management.

With the publication of CP3, it became apparent that Pillar II had been strengthened – both in terms of the number of pages allocated to it and in the number of tasks now facing the supervisor and the banks. Most importantly, the two best-known drawbacks of the Accord, the cyclical nature of capital charge and the missing consideration of diversification in the capital charge, are now addressed by the regular review of the supervisor. In CP2, supervisors already had the right to ask institutions to hold more

regulatory capital than the normal 8% when they deemed it necessary. Now, they will explicitly base their judgment on stress tests of the IRB capital requirements and an evaluation of the capabilities of credit risk concentration management.

This may prove to be a grey area, with the discretion of the supervisor proving to be very important. More than ever, regulators are expected to check explicitly the board's compliance with its responsibility for managing capital adequacy and the composition of the institution's portfolio.

In our opinion, these four key topics represent the most significant developments that have occurred between the publication of CP2 and CP3. QIS3 represented an analysis of the computations of capital charges of hundreds of banks and other financial institutions from all over the world. As we shall see, the findings from QIS3 point the way to the future.

## Findings from QIS3

QIS3 was carried out in the last quarter of 2002, and incorporated the responses of 358 participating banks from 54 countries. The Committee published results for three samples: the G10, the EU and the rest of the world. The analysis revealed the responses from two groups of institutions: Group 1 was internationally active banks with a capital of more than \$3 billion, with all other respondents, from smaller international universal banks to local specialised institutions, placed in Group 2.

As there were large discrepancies in the different samples obtained from one institution to the next we would counsel caution when assessing the results from QIS3. Three important points arose from the study.

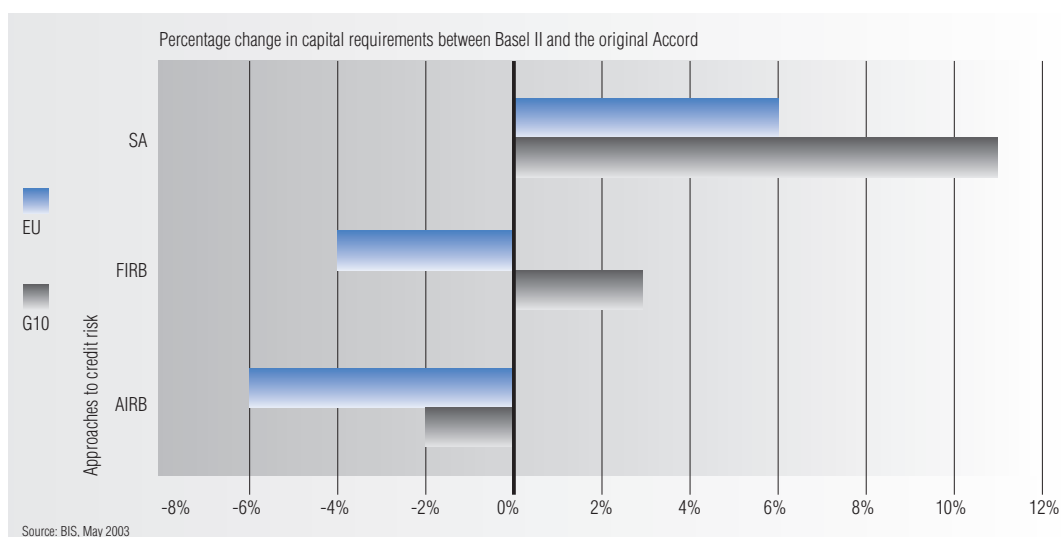
### 1. Capital charge varying according to approaches

Looking at the results of the study for credit risk across the different samples (see Figures 4 and 5) for the majority of institutions, the IRB approaches produced a lower capital charge. However, the results of the study, across all samples, do not always show that FIRB will afford Group 1 banks a clear benefit. In general, the biggest reduction of regulatory capital can be achieved by opting for the AIRB approach. Unfortunately, evidence of the effects of AMA for operational risk is very scarce, as very few institutions were able to provide reliable estimates.

**Figure 4**

QIS3: Average percentage change in capital requirements for Group 1 banks

- Simpler approaches require more capital
- AIRB seems to be the most capital-efficient approach
- Strong variance of results across different institutions



The introduction of the different risk categories, and the design of different functions for risk weighting, lead to lower capital charges for lower risk asset classes.

The results show that banks and governments will generally require more capital than they currently do. This is especially true when only PDs are used as the basis of the calculation, as in the FIRB. An offset can be achieved by self-estimation of loss rates (LGDs) as in the AIRB. The higher charge is a direct consequence of the original Accord not differentiating the creditworthiness of individual counterparts and classifying OECD countries and banks, on the whole, as low risk.

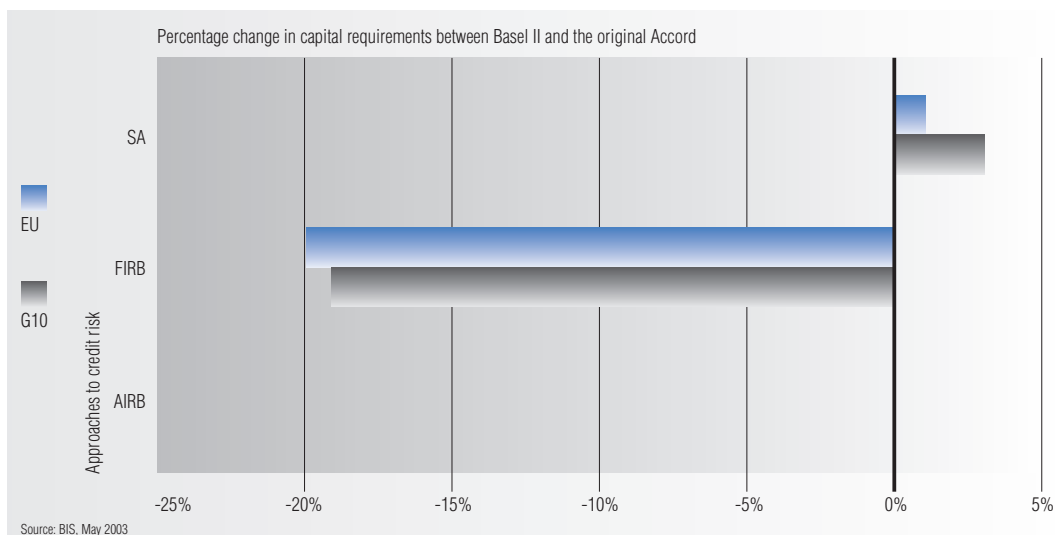
On average, lending to corporates becomes cheaper in the IRB approaches in comparison to today. However the German experience, for example, shows very clearly that in a recession, when high default rates prevail, the capital charge in the FIRB can increase significantly (by 16% in comparison to the original Accord).

The real capital savers are the small to medium enterprises and the retail portfolio. In varying degrees this finding has been confirmed across all samples (see Figures 6 and 7).

Figure 5

QIS3: Average percentage change in capital requirements for Group 2 banks

- Simpler approaches require more capital
- FIRB leads to significant capital savings
- No data available for AIRB as too few Group 2 banks opted for this approach
- Strong variance of results across different institutions



## 2. Large variance of results

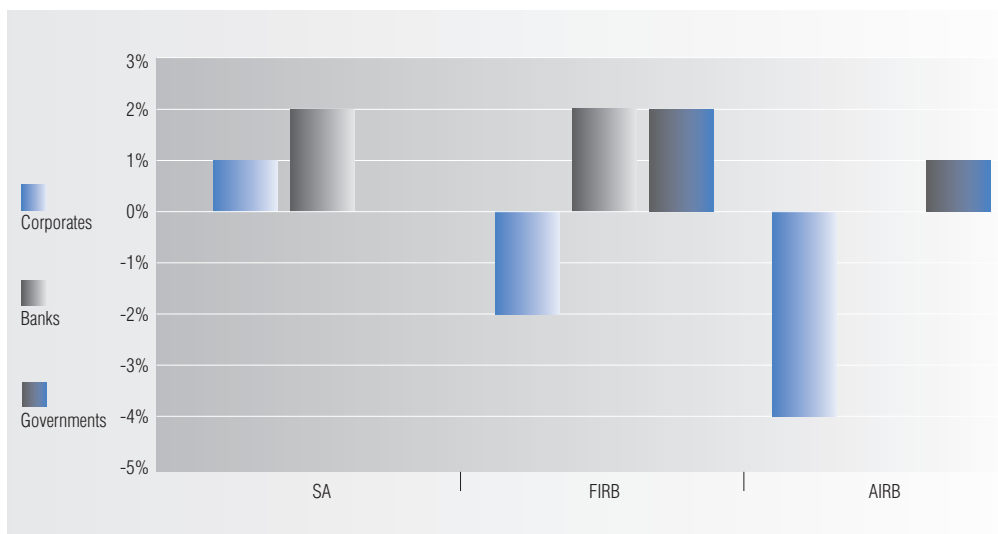
We see a large and puzzling variation in some of the replies received from individual respondents, compared with the overall findings. The causes of these differences probably lie in varying borrower quality, the variety of risk measurement methods employed and unsatisfactory data quality. Feedback from supervisory authorities indicates that unsatisfactory data quality may play a key role in

influencing these results. A good example can be seen in the LGDs of the residential mortgage portfolio in a single region. For example, in a country with a fairly homogenous market for residential property one sees reported loss rates ranging between 6% and 65%. Such a huge variance can hardly be explained by different methods of collateralisation or calculation of LGDs.

**Figure 6**

QIS3: Average percentage change in total capital by asset class

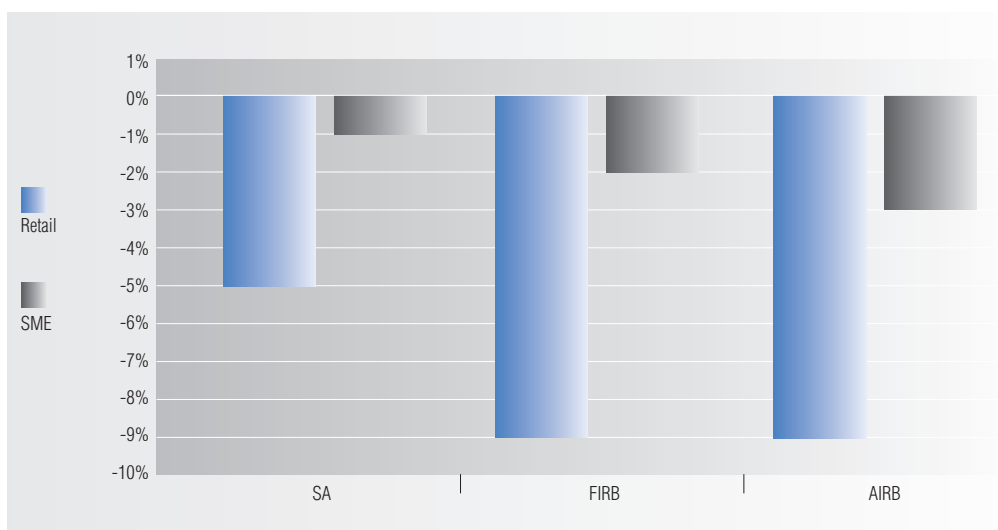
- Capital requirements are reduced for corporates using the IRB approaches
- Generally Basel II makes business with banks in capital terms much more expensive than today. Only by using AIRB can the charge be diminished
- The capital charge for governments also increases for IRB approaches



**Figure 7**

QIS3: Average percentage change in total capital by asset class

- Increased capital savings can be made in the SME portfolio as the approach to credit risk becomes more advanced
- The largest capital savings of all the asset classes can be found in the retail portfolio



In addition, far more than 358 banks attempted to complete QIS3. However, not all of them were able to provide data for every portfolio. For example, 93 German banks provided responses to QIS3, but only 58 were included in the analysis. Data availability across all portfolios is a big issue for many institutions. Indeed, data quality, data availability and data consistency are among the biggest challenges that banks face for Basel II.

Now that we have considered the major issues arising from CP3 and looked at the impact of QIS3, we need to examine the implications for strategy and how institutions should face up to the implementation challenges ahead.

### ***Strategy and implementation for Basel II***

#### **Strategy for Basel II**

As we now have a high degree of clarity about the final content of the new Accord and with the evidence of QIS3 results and the industry's experience of implementation progress to date, we can look forward to implementing the Basel II requirements with a relatively high degree of certainty.

From a strategic perspective, institutions will need to make a number of key decisions that will impact the nature, scale and complexity of their Basel II implementation. These go beyond the approach to aim for and include the extent to which benefits will be targeted over and above compliance and the choice of implementation approach (tactical or strategic, centralised or de-centralised).

From IBM's experience two key observations can be made on implementation strategy:

1. In the medium to long term, the most advantageous strategy is to implement the more advanced approaches, and
2. An evolutionary approach that incorporates a phased rollout for implementation is likely to be the most effective way to adopt the more advanced approaches.

Let's examine these two observations in more detail.

#### **1. In the medium to long term, the most advantageous strategy is to implement the more advanced approaches**

When deciding on the approach to target for credit and operational risk, banks should consider the following key questions:

- **What approach do regulators expect institutions to target?**

Overall, the regulators' intention is to encourage each financial institution to implement an approach that reflects the institution's complexity, risk profile and market standing. CP3 states that internationally active banks and banks with significant operational risk

exposures are expected to use an approach that is appropriate for their risk profile and level of sophistication. This would clearly limit the number of institutions allowed to apply for the less sophisticated approaches. This seems to indicate that, for example, the BIA would only be suitable for smaller, local banks with low risk profiles.

Unofficial comments from regulators lead us to believe that the Basel Committee expects Group 1 institutions (the large internationally active banks that participated in QIS3) to aim at implementing FIRB / AIRB for credit risk and STA / AMA for operational risk. As such, it is unlikely that these institutions will be allowed to opt for the simpler approaches.

- **What points have emerged from QIS3?**

As we stated earlier, the published results for QIS3 showed that, on average, banks of all sizes would incur an increased overall capital charge when using the SA for Credit Risk and the BIA for Operational Risk. Across all samples, the highest overall capital saving was achieved by the AIRB approach. Unfortunately, no clear conclusion could be made on the impact on the capital charge for larger institutions targeting the FIRB approach between the G10 and the EU samples.

The results of QIS3 also indicated a substantial capital saving for smaller institutions targeting the FIRB approach as a result of the large share of the retail portfolio. One of the main causes for this lies in the adaptation of the default definition. Depending on the current policy of the bank, triggering a default event at 90 days can lead to an increase in the probability of default (PD) which, in turn, leads to higher capital charges for the bank, sovereign and corporate portfolios.

For the AIRB approach, the effect of increasing default rates, because of the stricter default definition, is offset by a reduction of the self-estimated loss rates. This relation is one of the major reasons for the observed capital increase in the FIRB approach and a parallel decrease in the AIRB approach.

- **What other factors should be considered?**

One of the key challenges facing banks is to accurately measure their risks in an increasingly uncertain business environment. The Pillar III Market Disclosure requirements within the new Accord now require that these risks are not only measured accurately but are reported to the outside world both quantitatively and qualitatively.

Traditionally it has been very difficult to get an independent perspective of the risks facing a particular bank, as banks have tended to be relatively secretive about their risk management processes. Generally, any insightful and objective risk information that the bank publishes is well received within the market and increases the market's trust and confidence in the bank. This is particularly important given the current economic downturn, the abundance of bad credits and an increasing lack of trust in the financial sector, which has led to a significant increase in refinancing costs for many institutions.

To target the more sophisticated approaches banks will need to publish more information about their risk management processes and the losses that they incur. The greater the quantity and quality of information that the bank can provide, the more the market will assume that the bank is able to understand its own risks. This information, particularly the disclosure of the quality of the bank's assets, may be deemed price-sensitive and will be of great interest to competitors. However, it will also convey a confident and positive message to the market.

Market analysts and rating agencies are likely to place increasing emphasis on a bank's response to Basel II, so banks that aim for the more sophisticated approaches are likely to be rewarded with strong market confidence and a maintained or improved credit rating. Naturally banks that opt for simpler approaches will not have to provide a great deal of information about their risk situation to comply with Basel II regulations.

- **What approaches are being targeted by different institutions?**

From IBM's experience, the smallest banks generally tend to choose a combination of the least advanced approaches – SA for credit risk and BIA for operational risk. Although the strong retail focus of this group means that capital savings are achievable, the adoption of the FIRB approach is not widely regarded as being feasible because of prohibitive implementation costs. In Germany, however, the picture looks different with 800 to 1,000 small local banks aiming for the FIRB approach, at least for a significant part of their portfolio. This has been possible because the savings and cooperative banks have worked together to develop common rating systems.

We have also seen that most large local banks and smaller international banks (the majority of Group 2 banks within QIS3) are aiming at a combination of the FIRB approach for credit risk and the BIA or STA approach for operational risk. This reflects a 'middle of the road' approach involving the implementation of sound risk processes and measures, whilst reducing the chance of excessive implementation costs.

These banks may need to apply a more cautionary approach if they are aiming to get all their portfolios to FIRB status at once. A lack of data or data quality issues may lead to 'blind spots' for certain portfolios. As such, it may be better for these banks to follow a strategy that allows them temporary partial use of IRB for a small part of the portfolio and an SA approach for the remainder. After a period of time, the bank would be able to move to the FIRB approach for all its portfolios.

IBM strongly recommends that before fully committing to a particular approach, institutions thoroughly evaluate all the relevant considerations, as these will have a fundamental impact on the scale and nature of their Basel II implementation. In addition, once institutions have formed a view on which approach to target, they should re-visit their strategic position at regular intervals during implementation to ensure that their objectives are still valid and achievable. Figure 8, the nine box model, provides an overview of the approaches that different institutions are likely to take.

**2. An evolutionary approach that incorporates a phased rollout for implementation is likely to be the most effective way to adopt the more advanced approaches**

As we have seen from a regulatory, economic and reputational perspective, there are many good reasons why institutions should move to the more advanced approaches for credit and operational risk. However, practically it may not be possible for all of a bank’s business units and risk categories to achieve advanced status by the 2007 deadline.

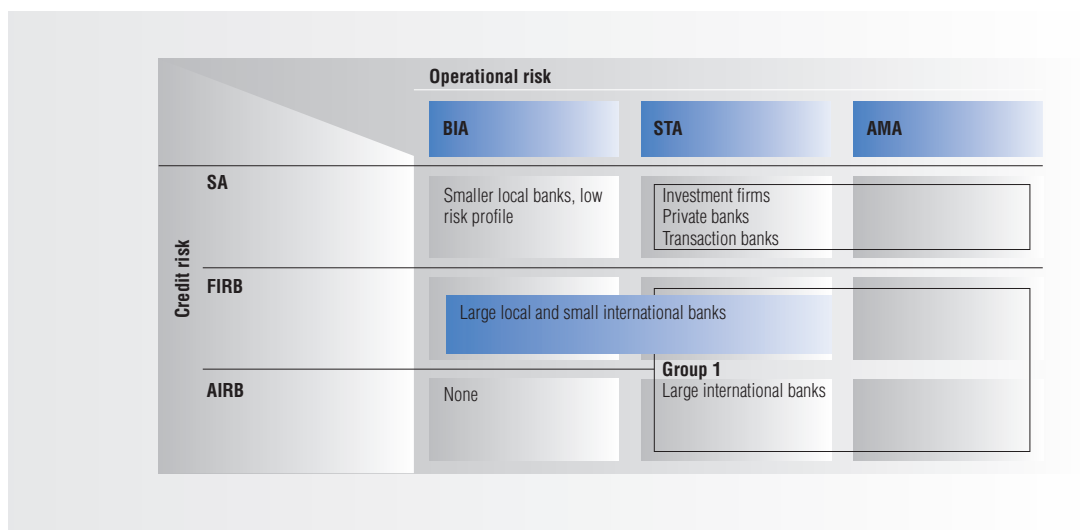
The typical implementation challenges involved in complying with the advanced approaches include:

- Difficulty in quantifying and justifying the implementation costs involved, particularly if detailed implementation plans have not been produced
- Constraints over funding availability for Basel II budgets because of poor liquidity or financial results. Advanced approaches in particular can be very expensive to implement and maintain.

**Figure 8**

The IBM nine box model

Approaches for operational risk and credit risk which IBM believe different institutions are likely to take for Basel II



- The scope of the implementation can be a key factor, as many of the larger institutions have a wide geographical reach with subsidiaries in a variety of mature and emerging markets. These institutions face replicating their implementation costs and effort across different countries, and different functions. They must also contend with further uncertainty over the interpretation of the Basel II requirements according to different national supervisors
- There is a critical shortage of relevant skills within the market, particularly in risk and compliance. External recruitment alone will not bridge the gap. Institutions will also need to identify their resource requirements and then train and develop their own people
- The required data may not be available, consistent or be of sufficient quality
- Implementing Basel II means coordinating a large number of implementation and support work streams. Interdependencies and stakeholders will need to be carefully managed and this will require effective programme management and change management skills
- The time frame for a 2007 implementation is getting tighter, increasing the pressure on institutions to act quickly

These challenges demand a flexible approach towards implementing Basel II. By opting for temporary partial use, institutions can apply a combination of approaches across business units and risk categories by aiming for the advanced approach in certain business units and less advanced approaches in others. This evolutionary approach will reduce the implementation risk for the bank as a whole and allow smaller business units, which are likely to use less sophisticated risk management techniques and who may not benefit from such a move, to evolve more naturally towards the advanced status.

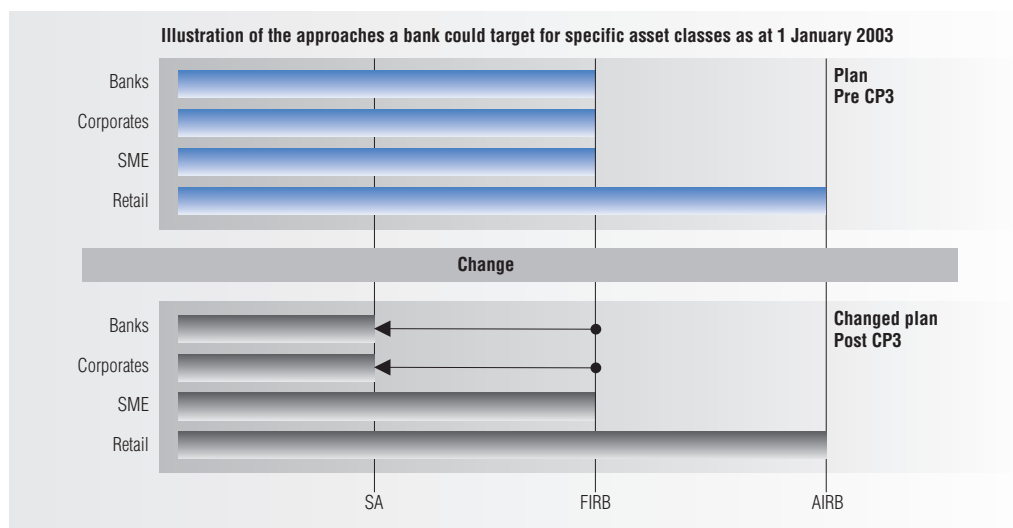
Consequently, institutions will be able to stretch their implementation beyond 2007 although most banks still face a huge challenge in achieving compliance status (simple or advanced) by the start of 2007.

Figure 9 illustrates how institutions are likely to adopt different implementation strategy by using partial use.

**Figure 9**

By opting for temporary partial use institutions can apply a combination of approaches for Basel across their business units and asset classes

Institutions do not have to move to an advanced approach for all asset classes at the same time



## **Implementation of Basel II**

So far, we have looked at the recent changes in the new Accord proposals and considerations for deciding upon an implementation strategy. Over the last two years IBM has worked with a number of banks to implement Basel II and we have seen that implementation strategies work well. Our review of implementation activities will focus on two aspects:

1. Programme management, and
2. Processes and risk management

### **1. Programme management**

Before temporary partial use, in an attempt to be compliant by the start date, most institutions planned and structured their Basel II implementation activities so that their projects would be completed by the start of 2007. As we discussed earlier, it is now widely recognised that many banks would have struggled to achieve this deadline and implementation costs and implementation risks would have been excessive. Temporary partial use has now given banks an opportunity to rethink their existing implementation approach and project plans. Obviously this is likely to involve some re-work of project plans and business plans, however, this is likely to be a small price to pay for banks to be able to effectively extend the compliance deadline for parts of their portfolio.

Before embarking on any significant implementation, it is important to understand your starting and finishing points. This is why a thorough interim assessment is so important. The assessment should be used to check the current state of Basel II compliance, based on the new formulation of minimum requirements. It should also identify significant gaps in terms of data, systems architecture, strategy, process, risk measurement and governance. In this context it might be helpful to compare results with a previous gap analysis, and then draw conclusions on the advances that were actually achieved. The analysis should highlight the significance of each gap and the likely effort required to address it.

The scale and nature of a Basel II implementation results in a number of interdependencies across the programme. Interdependencies can exist both within the Basel II programme and with other projects or change management programmes. Many institutions, for example, recognise the potential overlap between Basel II and IAS. Indeed, in a recent survey conducted by the Institute of Financial Services, two-thirds of respondents said that synergies existed between these two programmes. At an early stage, banks need to form a view on what the significant interdependencies are likely to be, and agree a process by which these can be monitored and managed. Similarly, project managers whose projects will be impacted by Basel II will need to adjust their design and implementations in line with the Basel II requirements.

Once the gaps and interdependencies are properly understood, a detailed implementation plan can be prepared at a business unit level and consolidated at group level. The plan should be structured by implementation workstream, asset class and business unit. Business plans can be prepared on the basis of these detailed plans or revised if they have already been completed. Without detailed implementation plans, it is often very difficult to fully justify the implementation costs involved and therefore

successfully secure adequate funding. Project plans and business plans will need to be updated as and when the implementation approach or proposed regulations are further refined.

Planning and organisation are critically important when managing any large project or programme and IBM's experience over the last two years shows that there is a clear need to spend enough time on planning from the start to avoid problems later. Three key lessons that have been learned are:

1. In institutions with a wide geographical reach it is almost impossible, and probably impractical, to set up an integrated programme across the entire group. Transformation projects of this scale and complexity can only be successfully conducted if decentralised business units have sufficient authority and flexibility to manage their own implementations. A supportive central group function can greatly ease the implementation burden on business units and help ensure a consistent and integrated implementation across multiple business units.

At an early stage banks will need to decide the extent to which they are going to manage the implementation centrally within group. In addition they will need to decide the role of the central group function i.e. whether it is a large, supportive function or a smaller, streamlined function. As a minimum the central group function should monitor and report on implementation cost and progress across the bank and provide implementation guidelines where appropriate e.g. consolidation requirements. Additional functions that could be performed centrally to support individual business units in their implementations are stakeholder management, inter-dependency management, technical design and support (IT, risk and compliance), training and communication.

2. Historically, business units have tended to work independently and this may have been an appropriate approach for change management projects like Y2K that needed minimal central co-ordination. However, Basel II requires a consistent approach to be implemented across the group. As business units are likely to face similar problems and challenges there are also good opportunities for solutions to be shared across multiple business units. This is another area where a central group function can add value by co-ordinating implementation activities across the group and facilitating the identification and implementation of common solutions.
3. A Basel II programme will impact many different business units and requires the involvement of many people within each business unit. These people are likely to be a mix of internal and external resources with a mix of skills and experiences. Due to the complexities of the Basel II regulations, it is very important that adequately qualified people review the programme approach and deliverables. Employing skilled people with sufficient understanding of the regulations and interpretation of the regulations is critical, as costly mistakes can easily be made.

## **2. Processes and risk management**

As we pointed out earlier, the wider formulation of the minimum requirements leaves greater opportunity for a bank to design processes, internal risk measurement instruments and risk management practices appropriate to the risk exposure of different business activities.

However, this greater opportunity also creates ambiguity and a number of open issues. For example:

- When is a 90-day overdue credit obligation actually material?
- What is a representative sample of exposures in a pool?
- How is an essential role in the credit approval or risk management functions defined?

These questions, and others like them, are likely to have a significant impact on the implementation approach and effort. Banks need not only to develop their own views to these questions but also try and anticipate the view that will be taken by the supervisor. To manage this uncertainty, banks should establish a regular and intensive dialogue with the regulators at an early stage.

The implementation of Basel II provides banks with a good opportunity to undertake a thorough review of their risk management processes. The extent of change that Basel II compliance will require will present banks with a number of golden opportunities to streamline and consolidate risk-related processes. Although banks need to demonstrate to the regulator that they have a robust risk management framework they do not necessarily need to prove that their processes are efficient. In addition, banks could use Basel II as an opportunity to reduce their operational cost base through the introduction of automated scoring systems and simplified underwriting policies, or the automated generation of management reports. Optimising and rationalising risk processes could be a welcome additional benefit of the implementation process.

Finally, a strong focus on change management is a must for a successful implementation. Often implementers do not allocate sufficient time and effort to ensuring that changes are implemented efficiently and effectively through the institution. Different aspects of a Basel II implementation will have different effects on different parts of the institution and the ramifications of these changes can spread like ripples on a pond across the bank. The daily work of many people is likely to be impacted by implementation activities and to avoid confusion banks will need to anticipate these changes, identify the impact and manage the change through effective communication and consultation, awareness sessions and training programmes.

Ultimately, what regulators will want to see is how procedures and methods are being employed and whether they are applied equally and consistently through all parts of the institution.

### Data and systems

Data issues dominate the Basel II debate. Whilst it is not the purpose of this paper to look at data and systems issues in detail, it should be recognised that these elements are critical to a successful implementation. Institutions can implement very robust and sophisticated data warehouses, models, calculation engines and reporting systems but if the data is not complete, consistent, in the right format and of sufficient quality then these institutions will simply not comply with Basel II.

Financial institutions will have to overcome a number of challenges with regard to data. A significant amount of data will need to be collected from a number of different sources. The data must be harvested at regular intervals and larger or more complex institutions will use Extract-Transform-Load (ETL) tools to do this. The data will also need to be checked for consistency and to ensure that it is in the right format and granularity before being stored in a data warehouse or data mart at group or business unit level, ready for processing.

From our experience, probably the biggest challenge that we have seen lies in ensuring that the data is of sufficient quality and integrity. This is particularly difficult as the required risk data could emanate from a number of different business units, different countries (including different time-zones and languages) or even from sources external to the bank. Institutions can address these challenges by developing common data standards and definitions, processes for measuring data quality, an integrated policy for data collection and ensuring that robust data verification processes are in place for all relevant source systems.

From a systems perspective, we believe that the introduction of temporary partial use has shed a new light on the IT architecture. Until recently, it had been widely accepted that banks should aim at an integrated rather than tactical approach – ideally one that made use of a centralised architecture. However, now that the regulations allow for a more evolutionary approach, some business units will effectively be implementing at different speeds to others. As such, it may no longer be desirable to aim for a fully integrated strategic architecture across the whole bank. We expect that an increasing number of banks will aim for tactical approaches with architectures being developed within single or multiple business units rather than across the bank as a whole.

Banks that have already decided on an implementation approach should use the publication of CP3 as an opportunity to review their current and planned technical architecture and evaluate whether their approach is still optimal.

## Glossary

AIRB	Advanced Internal Ratings Based Approach (Credit Risk)
AMA	Advanced Measurement Approach (Operational Risk)
ASA	Alternative Standardised Approach (Operational Risk)
BIA	Basic Indicator Approach (Operational Risk)
CP2	Consultative Paper 2
CP3	Consultative Paper 3
EAD	Exposure at Default
FIRB	Foundation Internal Ratings Based Approach (Credit Risk)
LGD	Loss Given Default
M	Maturity
PD	Probability of Default
QIS3	Quantitative Impact Study 3
SA	Standardised Approach (Credit Risk)
SSA	Simplified Standardised Approach (Credit Risk)
STA	Standardised Approach (Operational Risk)

## IBM risk and compliance practice area network

### For further information on our Basel II and other risk and compliance expertise, please contact:

Christian Terp in Frankfurt:  
christian.terp@de.ibm.com  
+49 69 5976 8450

Pierre Pourquery in London:  
pierre\_pourquery@uk.ibm.com  
+44 20 7202 3534

### For additional enquiries, please contact the appropriate office representative listed:

#### Amsterdam

Peter Meijer  
peter.meijer@nl.ibm.com  
31 36 5454056

#### Brussels

Alex Van Ceulebroeck  
alex.van.ceulebroeck@be.ibm.com  
+32 2 416 5639

Robert van der Eijk  
robert.van.der.eijk@be.ibm.com  
+32 2 4165363

#### Copenhagen

Anders Holm  
anders.holm@dk.ibm.com  
+45 39486353

Jakob Brochmann Laursen  
jakob.brochmann.laursen@dk.ibm.com  
+45 70101121

#### Dublin

Hubert Laird  
hubert\_laird@ie.ibm.com  
+3531 8154178

#### Frankfurt

Eric Hansen  
eric.hansen@de.ibm.com  
+49 30 3496 7760

Christian Terp  
christian.terp@de.ibm.com  
+49 69 5976 8450

Michaela Zattler  
michaela.zattler@de.ibm.com  
+49 30 3496 7770

#### Johannesburg

Tertius Mostert  
tertius.mostert@za.ibm.com  
+27 11 302 9111

#### London

Graham Biggart  
graham.biggart@uk.ibm.com  
+44 20 7202 5372

Oscar McCarthy  
oscar.mccarthy@uk.ibm.com  
+44 20 7202 3107

Pierre Pourquery  
pierre\_pourquery@uk.ibm.com  
+44 20 7202 3534

Andrew Pullen  
andrew.pullen@uk.ibm.com  
+44 20 7021 8111

#### Madrid

Javier Moreno Cepeda  
javier.moreno@es.ibm.com  
+34 915 684 765

Severino Fernández Iglesias  
severino.fernandez@es.ibm.com  
+34 915 684 685

#### Paris

Serge Malka  
serge.malka@fr.ibm.com  
+33 1 4903 2206

Pierre Reboul  
pierre.reboul@fr.ibm.com  
+33 1 4903 2114

#### Rome

Massimo Cova  
massimo.cova@it.ibm.com  
+39 02 5962 9881



IBM United Kingdom Limited  
76-78 Upper Ground  
South Bank  
London  
SE1 9PZ  
United Kingdom

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