Papers

Implementing Basel II: A case study based on the Barclays Basel II preparations

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Received: 5th April, 2004

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Abstract
KEYWORDS: Basel II, implementation challenges, capital management, credit models, relationship with regulator, available expertise

This paper forms part of a presentation on the same subject given by the author to the Basel II conference organised by the Securities Institute in London during March 2004. It is a case study based on the author's experience in Barclays Bank on the preparations required for successful implementation of the new Basel II Accord. First it considers changes to regulatory capital, and then goes on to examine the main challenges that lie ahead and, finally, the advantages and disadvantages of adopting one of the internal ratings-based approaches.

The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views or opinions of the Barclays Group.

INTRODUCTION

No matter what the business's starting position, ultimate goal or the progress that has been made to date, it is fairly certain that the business still has a great deal of ground to cover before it can pass the regulator's test for Basel II compliance.

The impact of Basel II has been compared to preparing for the millennium bug. It is more complex than that. At its most involved it will require: cultural shift; re-engineering of all major processes and systems; data capture and storage mechanisms; risk management theory and practice; product profitability; capital management . . .

At the end of it all the company still will not know if it will pass the test, and even if it does manage to reach the standard, next year the pass mark will be higher.

Implementing change in this environment is a major challenge. Barclays plc has moved a significant way towards meeting this challenge and overcoming the issues that it presents. While this paper will not resolve a firm's implementation issues, it does offer some key observations drawn from the author's close association with the

Journal of Financial Regulation and Compliance, Vol. 12, No. 4, 2004, pp. 297–305

Barclays Basel II programme. This will give other firms either a measure of comfort in their progress so far or a greater understanding of how to meet their Basel II aspirations successfully.

Implementation of Basel II is a broad topic and the scope of this paper has therefore been limited to cover credit risk, and focuses on the following key areas:

- understanding the firm's capital requirement
- the main challenges that lie ahead
- the advantages and disadvantages of using an internal ratings-based (IRB) approach.

UNDERSTANDING CAPITAL REQUIREMENT

Understanding the company's capital requirement and how it will be affected by each of the three approaches available is critical, it allows the company to:

- make a choice between the standardised approach or one of the IRB approaches
- develop or realign value-based business cases for change that support its Basel II compliance
- plan its approach to capital management.

The last formal assessment of capital requirement was carried out by the Bank of England (BoE) at the end of 2002, in the third quantitative impact study (QIS III). This was a best endeavours exercise in which many companies struggled to produce accurate figures through problems with data availability, incompatible data dimensions and exposure categories. Many companies aiming for advanced IRB used the foundation approach as a proxy where internal loss given default (LGD) models were not available.

Since undertaking this exercise most institutions will have been affected by a number of factors which can be classed as project or business related.

Project-related changes

The industry has moved on since 2002 in its understanding of the proposals, and through planned change to risk processes or systems. The Basel committee and local regulators have also made progress in clarifying the rules and their interpretation of the rules. This means that there are likely to be a number of areas where capital levels if recalculated now will have changed since QISIII. The most significant of these are:

- changes to the original consultative documents advised by the Basel Committee such as: the move to covering unexpected loss only in the capital assessment for IRB banks that was announced following a meeting in Madrid at the end of 2003; the revised securitisation framework released for consultation in January
- better data quality achieved through advances in processes, data storage and retrieval systems as a result of Basel II change management or planned improvements in risk management capability
- changes in understanding of the meaning of Basel II or regulators' consultative papers, eg assessment horizons, stress testing and collateral
- decisions to include certain assets or portfolios within the materiality exemption. Barclays has taken a conservative approach to this, recognising that the 15 per cent allowance is not a target, and should not include either strategic portfolios, nor higher-risk portfolios where risk measurement is possible but expensive.

Business-related change

In addition to project-related change, the business has also moved on since the end of 2002. Independent of Basel II the business will be different due to a number of factors such as:

- changes in balance sheet size or mix, through organic growth or merger and acquisition activity
- introduction and use of new risk measurement techniques
- strategic and operating decisions such as changed segment focus or product mix.

Considering the wide range of possible changes since 2002 and the likely impact that a large change in any of the exposure categories could have on a company's regulatory capital figure, it makes sense to review the company's capital level again through either a top-down or bottom-up process to evaluate the major changes. This will give valuable information that will allow the company to check:

- the existing business cases for the chosen approach
- that the project is still valid and on track

and, in extreme cases, where a significant change is believed to be likely, this should be discussed with the regulator to allow early mitigation of issues that arise such as a change in choice of approach, from foundation IRB (FIRB) to advanced IRB (AIRB) or standardised.

THE MAIN CHALLENGES THAT LIE AHEAD FOR ALL FIRMS

To meet Basel II standards the financial services industry is facing major changes right across the business. But even now the problem is not fully defined. In the UK the industry has to wait to see how the rules will be interpreted when they are made into law. There are difficult decisions that have to be made before understanding the size and nature of the challenge, and there is the potential for making very expensive mistakes.

Given this complex background, it is likely that many businesses will find themselves in the situation where getting their senior management fully engaged is difficult because:

- responsibility for change and meeting the standards is not always clear
- there is a substantial increase in the number of rules and their complexity which places a barrier in front of anyone who wants to understand
- the implementation date has always seemed rather distant, and there are more urgent priorities calls on resources.

The experience gained through the Barclays Basel II programme shows that to be a winner in this situation there are a few critical areas of focus. A successful organisation will have prioritised activity around the following issues:

- capital management
- programme management
- risk management
- relationship with the regulator.

Capital management

There are two main approaches to capital management to consider, these are pre and post-origination of management assets.

Pre-origination management of capital requires an understanding of the impact of regulatory rules on target portfolios, and the products associated with each segment. In order to be effective, each business line and product area must have a deep understanding of the regulatory capital effects of the new regulation, and the boundaries that they must work within. They cannot be expected to do this alone, Basel II covers a broad range of issues with some complexity, and a successful Basel II project team will ensure that each area of the business is in a position to react to the pre-origination issues.

Product teams will have to understand if current facilities are economic under the new rules, and what they are allowed to do in order to change the risks associated with the customers and products to ensure ongoing profitability.

Post origination there is a possibility for the business to reduce capital if it elects to do so. There may be a reduction in weighted risk assets (WRAs) and a chance to reduce Tier 2 capital over time while retaining the equity and risk–asset ratio scrutinised by rating agencies. The ability to change the balance sheet to release regulatory capital depends upon the views of the key stakeholders, which in this case are the

— regulator
— business
— rating agencies.

For the regulator to agree to a reduction in regulatory capital, a bank will have to convince them that the measurement system in place produces a robust capital amount under Pillar I, and that Pillar II add-ons are limited to levels that bring the total charge below existing levels. For the business to agree to reduced capital on the balance sheet, the internal measurement of economic capital and the risk appetite of the business must be aligned with the regulatory reduction. Under Basel I rules the capital allocations were so far removed from the real risk associated with bank credit exposure that many banks quickly moved away from managing and targeting based on regulatory capital, instead preferring to manage the business based on the true cost of capital. Regulatory capital only became an issue during periods of low liquidity, such as the late 1990s where demand for credit became so high that banks started running up against regulatory capital constraints.

For rating agencies to allow a reduction in capital without reducing their current rating they will want to see banks maintain equity levels.

There are many scenarios that may allow a bank to take advantage of an overall fall in its regulatory assets. The options available will depend on the current structure of the balance sheet, and the amount of capital that is available below the equity portion. The potential for big savings relies upon getting agreement from each of the stakeholders to a proportionate release of Tier 1 and 2 capital. Lower savings may be available through lowering the equity ratio, eg by reducing the capital ranked below equity in order to maintain the risk–asset ratio.

Programme management

The scope of the document is not broad enough to cover the subject of programme management, which for Basel II is worthy of a separate case study, but there are some key lessons, and observations that can be drawn from Barclays' experience.

Socialising the issue

The first of these is that the scope and complexity of change is so pervasive that it cannot be achieved by a central project team alone. To achieve any measure of success, the issues must be 'socialised' across all the business areas. Through this mechanism each part of the business must be completely bought into the reasons for change, and take on the responsibility for meeting the challenge.

Leadership

The leadership of a programme on this scale must be dedicated to the task; it cannot be carried out off the side of a desk. Successful implementation relies upon a strong and visible leader with a clear sense of direction and an ability to understand the bigger picture. This must cover systems, governance, data, process and business requirements, as well as risk management requirements. A successful programme will need to call on significant numbers of people with deep understanding of their own subject and the ability to understand, at least at a high level, other areas' issues.

Available expertise

Basel II is a moving target, but takes so long to prepare for that businesses must start to make changes now. Many situations arise where businesses need to take a position — using expertise to assess how the standards described in the consultative papers will be interpreted by the regulator. Waiting for clarity on all the issues from external sources is suicide. To overcome this, Barclays created a team of subject matter experts, with strong connections to the regulator and the business in areas such as modelling, data management, risk process and governance.

This group developed detailed position statements based on those areas where the businesses needed clarity on the meaning or interpretation of Basel Committee's Consultation Paper (CP) 3 and the FSA's CP189. Making this expertise available is critical. It is no good having experts in the programme with detailed understanding of the rules and issues, unless value can be extracted from this knowledge to use in the business. The result for Barclays of forming a centre of expertise with a responsibility for developing position papers was a rapid transfer of understanding of the issues to the business. This led to a healthy debate about the choices available and solution options on critical issues, such as data consolidation and assessment horizons.

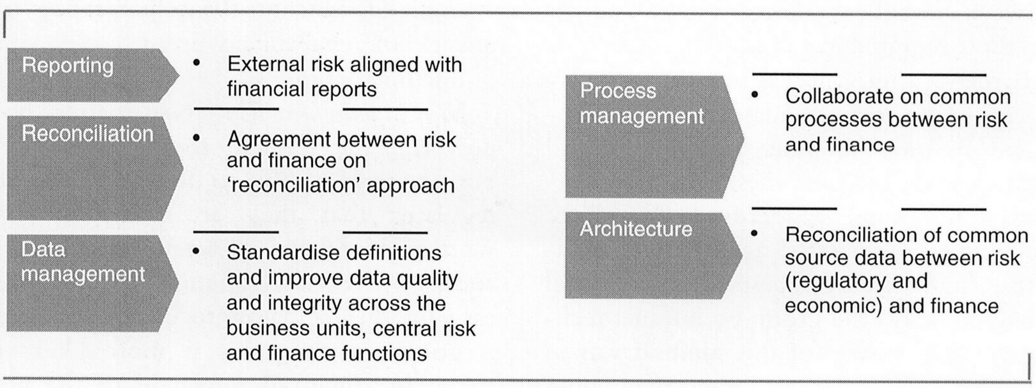
Successful implementation depends upon available expertise.

Cost efficiency

Once the approach to Basel II has been chosen it is necessary to make sure everyone knows what it is and sticks to it. For example, if the goal is AIRB compliance at minimum cost, then scope creep and wish lists should be controlled, and it should be ensured that the business only pays to get over the hurdle.

Opportunities for doing things once across a number of linked programmes should be sought. Barclays has a large and complex systems infrastructure and it is time consuming and expensive to make changes. Barclays recognised early on that there may be opportunities to manage some of the Basel II change alongside other major change projects such as International Accounting Standards (IAS), as both of

Figure 1



these may require changes to the same systems. Some of the key areas of overlap have been identified in Figure 1.

Risk management

The key purpose of Basel II is to align regulatory capital assessment more closely with the risks faced by the business. Banks have been managing credit risk for many years with differing levels of sophistication. No matter what the current level of risk management capability there are areas that will need changing in order to comply with the specific requirements of the available approaches. It is important to maintain the standards that already exist in the business where these are more rigorous or further advanced than Basel II, as well as ensuring that regulatory standards are met. There are a few key areas that Barclays concentrated on in the early stages of the project that are still critical to the success of compliance with the regulation. These are:

— models
— standards and policy
— governance and reporting.

Models

This is the area where much of the early effort was expended in Barclays' preparation. Driven by the need to comply with minimum data periods for the validation of certain models, this grew into a significant effort across the business to understand the gaps between current model quality and standards and those required by the regulators.

Barclays' approach was to create a superset of credit risk standards that encompassed existing internal benchmarks and hurdles, and combined these with new regulatory minimum standards. Each area of the business was tested against these standards, facilitated by a bespoke survey tool delivered across the group by intranet technology. The power of this method was in delivering consistent responses that could be aggregated at group level and then used to identify common issues and major gaps.

In a distributed and diverse business control of model development and performance standards is critical. Lack of control will mean multiple standards, acceptance of different performance quality and complexity in producing group-level risk-reporting measures. A successful solution to this problem has been the use of a fact base for all Barclays' credit risk models. Using a database of all the credit risk models has allowed Barclays to maintain control over all the critical modelling dimensions such as validation history and performance ranges and to review triggers, ownership responsibility and sign-off levels.

Model materiality: The use of materiality measures for each model type allowed the bank to focus its model build and control effort on those models where errors will have the greatest impact. In this approach each model type, eg behavioural scorecard, provision forecast, pricing, customer attrition, is assessed against internally developed materiality criteria, linked to risk appetite of the business.

This materiality level is then used throughout model development and maintenance to inform the level of effort that should be applied. While basic standards apply to all models, the most material will receive greater attention, and higher standards will be expected from the owners in terms of performance levels and the strength of the control mechanism, eg frequency of review, and breadth and depth of documentation.

Model documentation: No matter how powerful the models, to be successful a business must be able to demonstrate to the regulator that they are compliant and worthy of advanced status. As with any audit or overview function, if it is made easy for the regulators to understand what is going on then this is more likely to encourage them to move on to the next model, or bank. There are two things that can be done to improve a business's chances in this area. The first is have standardised documentation for each major Basel II component, probability of default (PD), exposure at default (EAD) and LGD, perhaps split across retail and corporate. The second is to ensure that the documents highlight Basel II issues clearly and wherever possible adopt the same language. Consider the mood of the regulatory assessment team that has 300 model documents to review in the first month following live date, all of them 30 pages or more in length and none of them with a specific section on their key areas of interest, with a content page that does not mention issues in the language that they are expecting. The regulators' feedback may reach the bank in the form of a Pillar II capital add-on.

Standards and policy

The key here is to understand that it will not be sufficient to reach the current regulatory hurdle. Standards will be expected to rise over time, and the successful business will need to have the right culture in place to ensure that policies, and the standards that support them, drive continuous improvement. It is useful to look back at the organisation over the last three years, and consider all the areas that have improved, and all the areas that have stayed as they were. Will the business be able to change the culture of the risk function to ensure that from 2007 standards are raised consistently, everywhere? Cultural change can be very difficult to manage quickly and effectively, and this is an area that will separate the successful business from the unsuccessful.

Governance and reporting

Even if the conversion of the Basel II proposals into European law brings about major simplification, the result will still be a broad and complex set of rules. Successful self-assessment and the ability to demonstrate this will be a principal weapon in the implementation of Basel II. This will require a mechanism to assess compliance with each of the standards. For Barclays one of the mechanisms for self-assessment will be further development of the original standard gap analysis tool used in the early stages of the project. This will deliver an online tool that will capture the status of all Basel II models, processes and systems and track this over time.

Regulatory relationship

Interpretation of the new standards is complex and understanding how they might be implemented by the regulator in some cases can be little more than guesswork. To improve the chances of getting it right Barclays invested considerable effort in liaising with regulators on a one-to-one basis at different levels in the organisation. Barclays also gained value from taking every opportunity to present its opinion and hear the views of other banks and regulators at the major industry forums and discussion groups. This proved to be enormously valuable not only in obtaining guidance on interpretation but also in being able to shape the regulator's views on practical implementation issues.

Many of the rules within Basel II have been written generically for banks, and do not reflect common practice. For example, in the UK banks generally provide facilities to business customers under a clause that allows banks to cover all future lending with earlier taken security — known as the 'all monies' charge. This makes it very difficult to apply LGD to each facility individually as required by CP3. A better solution would be to allow LGD to be applied at customer level. Following discussions with FSA, Barclays is now comfortable that meeting the regulatory standard in this area will be far less expensive than the bank's original strict interpretation of the Basel II text.

The message is that where possible and practical for both parties the business should keep its regulator informed of its plans, and work together to understand the impact of these on its capital level and roll out capability.

If this is not possible then at the very least the business must be represented at key industry briefings and discussions, this will allow it to understand the hot topics, and how these are being interpreted. It will also add the weight of the business to any concerns that the industry has that can still be lobbied. A good example is the securitisation rules, which are still being debated following a revised consultative paper issued in January 2004.

THE ADVANTAGES AND DISADVANTAGES OF USING AN INTERNAL RATINGS-BASED APPROACH

Consider a business where the decision has been made to adopt one of the IRB approaches, foundation or advanced. The capital level under each scenario has been assessed, and this has been weighed against financial and non-financial issues including brand, and reputation, but has the starting point been considered and does the business really understand the effort that will be required to get where it wants to be?

The business needs to be extremely honest with itself. Even if it has the budget, and the will to move to IRB, it must be able to say yes to the following questions.

— does it have the numbers of quality people to enable it to reach and maintain IRB
— does it have the process and systems change capability, and can this be sustained alongside all the other change that is planned by the business?

If the business can answer 'yes' to these questions then it is time to think about the advantages and disadvantages of moving to one of the IRB approaches.

Disadvantages

The change required to reach FIRB or AIRB is significant and comes with a high cost attached. Connected to the size of change is also the amount of energy that the organisation will have to use in managing the change.

Timing is a big issue. Businesses that want to enjoy IRB status from day one will need to be in a position to put together a waiver application soon. In the UK, FSA plan to accept the first waiver applications in the second half of 2005. Putting together a waiver application is a major task, and will require the creation and collection of documentation addressing each of the high-level IRB requirements as well as model and validation documents for each internal rating model.

Even if the business is successful in obtaining IRB status, there are significant maintenance costs that must be absorbed. Models have to be validated annually or more frequently if they fall outside predetermined performance ranges. The whole risk infrastructure has to be able to keep up with any rising standards that the regulator can impose at its discretion.

Finally, there is the risk of failure and the associated repercussions. Having spent considerable resource in building and maintaining a near compliant IRB system, failure would mean a bank having to use the standardised approach or something close to it, as agreed with the regulator. This will mean losing any capital advantage that was expected, and facing repercussions in the marketplace such as share price devaluation, and loss of reputation among ratings agencies.

Advantages

While there are a number of contributors to the downside, fortunately the advantages can outweigh them.

As already mentioned there is the potential to reduce capital charge. The business will also have the opportunity to build on or maintain its reputation for being an organisation with strong risk management skills and abilities.

Supporting this perception should be an actual improvement in risk management skills and abilities. Consistency of risk systems and controls will increase, and the improvement in the quality of data origination, storage and use will lead to far better decision making at all levels throughout the organisation.

Using the same measurement system for both economic capital and regulatory capital will be a positive step. Barclays has spent a great deal of time and energy moving away from regulatory capital as a driver of risk-related business decisions in favour of using economic capital. Bringing regulatory capital back into line with this approach will mean that the bank no longer has to be concerned about arbitrage opportunities from the competition, where other banks are able to do business because internal pricing is aligned to the old Basel I system.

Improved competition will also result from the ability to use the latest developments in risk measurement techniques to make decisions in the business. The use test requires the use of tools that calculate the risk for capital purposes to run the business. The more advanced the business becomes the greater potential there is for creating a competitive advantage. Product innovation is stifled under the standardised approach as the regulator may not be able to deal with the product or offer realistic risk costs to associate with it. Banks that want to continue to innovate in product areas will find it difficult to compete unless they follow an IRB approach.

Finally, under the current proposals there is a significant advantage to making the move to IRB now. The transition rules allow a phased transition up to the required standard. This may not be available in the future, but at the moment will allow banks that have gaps in certain areas (especially retail exposure measurement) to get up to speed over a few years rather than having to hit the ground running.

CONCLUSION

Wherever a business is in its Basel II preparations there is still a long way to go. Its next steps are still important. To be successful, it needs to understand its likely capital requirements under the options available to it. It can learn from the Pillar I process and get involved with the regulator in the Pillar II debate. And it should be sure to get a grip on the implementation issues, and maximise all the advantages from its chosen approach.