

A new era of lower capital requirements?

Matthew Salisbury of Volterra Consulting considers the effect of the revised Basel framework on the capital requirements of UK mortgage lenders



Matthew Salisbury

On 31 December 2006, as the sound of countless parties reverberate around the nation, the Revised Basel Framework and Risk Based Capital Directive (RBCD) will take effect, enacting a new regime of capital standards for banks and building societies. While the new regulations will undoubtedly cause lenders a headache one way or another, there is some strong evidence to suggest that, with careful planning, they need not be left with a New Year hangover.

Volterra Consulting has been working with lenders to prepare the analysis that they need in order to uncork more champagne. We are a niche research based consultancy, led by Paul Ormerod and Bridget Rosewell, two of the most experienced business economists in the UK. We specialise in the innovative techniques which are necessary to enable lenders to estimate the default rates which will enable them to take advantage of the business opportunities which the revised Basel framework opens up.

Options for lenders

There are two stages to deciding a capital requirement under the RBCD, the

Executive Summary

- New capital standards following from the revised Basel framework come into force on 31 December 2006.
- Mortgage lenders face a choice between two regimes: the standardised approach, similar to the current system, or the internal ratings based (IRB) approach, where their own experience of arrears and defaults can be used to assess what capital they need to put aside.
- Based on data from the CML, there is good reason to expect that the IRB approach will offer a significantly lower level of capital requirement for mortgage lenders than either the standardised approach or the current requirements.
- Estimates indicate that adopting an IRB approach could cut credit risk capital requirements on standard mortgages by between 45 and 65 per cent, compared with the standardised approach.

first governed by Pillar 1 of the Accord, involves the calculation of minimum capital requirements and the second, governed by Pillar 2, involves negotiation with the Financial Services Authority (FSA) about additional capital required. The second stage will be influenced by the FSA view on how comprehensively the first stage is completed.

In calculating the minimum requirements under Pillar 1, lenders will be able to choose between two approaches:

- the standardised approach, or
- the internal ratings based (IRB) approach, where the capital requirement is founded on the historic experience of the institution and their specific lending policies.

The standardised approach varies only slightly from the current system. In respect of standard mortgages, lenders must hold capital equivalent to 6 per cent of exposures where the loan to value ratio (LTV) is greater than 80 per cent and 2.8 per cent of exposures where it is less, compared to applying a flat rate of 4 per cent to all exposures under the current rules. This will not make a significant difference to lenders unless they have an extremely skewed split of lending around the 80 per cent LTV level.

The IRB approach, however, is significantly different. It does allow the lender to calculate a capital requirement that is related to the lender's historic experience of defaults and arrears. The lender must first identify different pools

of exposure with different levels of risks and categorise each exposure on its books into one of the pools. A natural basis for dividing up exposures would be to separate them according to LTV and credit score. The lender must then come up with three key numbers for each pool and apply them to the formula specified in the revised Basel framework to get its capital requirement for each pool.

The three key numbers are:

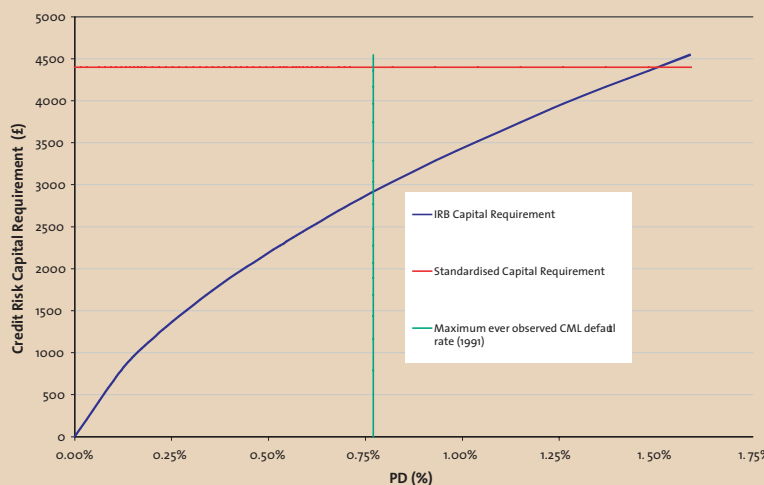
- Probability of default (PD) - the likelihood that a borrower will default in the year
- Loss given default (LGD) - the proportion of the exposure that will be lost if default occurs
- Exposure given default (EAD) - the gross outstanding value of all loans in that particular pool

What's the difference?

To illustrate the difference between the IRB approach and the standardised approach we present a worked example based on Council of Mortgage Lender (CML) historic possessions data. We create four notional pools according to credit score and LTV. We then estimate a PD from CML possessions data and make some simple, reasonable assumptions about how much more/less risky each pool is than the average to give us four different pools with distinct PDs. The data suggests that the average PD is less than half a per cent.

Data on the actual loss, once default has occurred, is not available from the CML. The Basel authorities say it cannot be set at less than 10 per cent. Indications are that they, and the FSA, do not expect it to be higher than 40 per cent so a conservative view would be to use an LGD of 30 per cent. On this basis, and with an example total exposure of £100,000 we calculated the capital requirement under the two different approaches. The results show clearly how the IRB approach produces a lower cap-

Chart 1: Probability of default and credit-risk-related capital requirement on £100,000 of exposure, with LGD = 30%



Source: European Mortgage Federation

ital requirement.

We can extend this analysis by using the same set of assumptions and method for adjusting PDs and plotting how the IRB approach changes as the average PD changes. This is shown in Chart 1.

As we can see, the IRB approach only gets close to the same level of capital requirement as the standardised approach at average PDs of around 1.5 per cent. This is almost twice the highest rate ever observed from the CML data. FSA consultation papers state that 'PD estimates are intended to reflect a 'long-run average' - much less than the maximum ever observed. Taking values either side of the PD estimate from our example gives us a likely range of capital requirement reduction achieved by using the IRB approach rather than the standardised approach of 45 per cent to 65 per cent - a very significant difference.

Getting approval for IRB status

Proving to the FSA that the calculations required for IRB status approval have been done accurately and prudently, however, is likely to be a complicated and difficult task even for lenders with the most extensive historic data. The scope of data requirements and analysis are formidable. Fulfilling the requirements under Pillar 1 will be crucial because the relationship between Pillar 1 and Pillar 2 is important. It will be a bit like doing your homework, and getting a gold star if you did sums properly. If lenders can prove to the FSA that their calculations under Pillar 1 are as pru-

Example Assumptions

Total exposure £100,000
 Average PD 0.4%
 Assumed LGD 30%

PDs by group:

		Credit score	
		Low	High
LTV	Low	0.4%	0.19%
	High	0.86%	0.4%

Exposures are assumed to be split equally into the 4 groups.

Results

Credit risk capital requirement (£) per £100,00 under the different approaches

Standardised approach	IRB approach
£4,400	£1,716

dent and accurate as possibly, they will be well placed to avoid additional capital being levied under Pillar 2.

PD and LGD estimates must be produced in a transparent, prudent manner that moves from the lender's raw data on account records, through rigorous data checking, reasonableness and completeness checks, to a documented process of production of historic series of default rates for each pool. These must then be used to calculate reliable, unbiased PD estimates. The FSA definition of default produces a further twist as it is based on six months of arrears rather than possession as such.

An equally exacting analysis must be performed to provide estimates of LGD for each pool. The lender must show that its data produces default rates that are both representative of its experience in mortgage lending and go far enough back to take account of variations over the economic cycle. If data does not date back far enough, the lender will need to come up with an estimate satisfactory to the FSA. PDs and LGDs can then be used to produce capital requirements for each pool, which come together to give the final capital requirement. And this is just the minimum required to satisfy Pillar I. The lender must then enter into discussions with the FSA under Pillar 2, where additional capital may be required if the FSA is not happy with the lender's calculations. To add to all of that, there are brand new additional requirements that must be applied in relation to operational risk.

Conclusion

The requirements for FSA approval of IRB status for mortgage lenders are exacting and there is no doubt that they will involve an enormous amount of detailed data work and frequently a search for suitable mathematical and statistical methods to patch the holes left by incomplete data and produce as robust a set of estimates of PD and LGD as possible. Analysis of where it all may lead to, however, indicates that it might, in the end, be worth all the hard work, as there is potential for significant reductions in capital requirements. Our analysis, using data on possessions from the CML indicates that adopting an IRB approach could cut credit risk capital requirements on standard mortgages by between 45 and 65 per cent, compared with the standardised approach.

Capital requirements that are built on lender's own experience and lending policies could be a great thing for mortgage lenders, not only intuitively reasonable and fair, but also much lower than an arbitrary levy. To achieve them will take a lot of hard work but the reward is a much more professional grasp of the real risk in lenders' portfolios and freeing up capital for more productive and profitable use. **MFG**

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Capital adequacy: from Basel to Brussels (via Mongolia)

By Simon Walley, head of economic affairs, European Mortgage Federation

The Directive which implements the Basel Framework in Europe has now fully started its passage through the European Parliament. Alexander Radwan MEP, who is responsible for presenting the Parliament's view on the Directive, published his report on 4 April. In total he proposed almost 300 amendments to the Directive as drafted by the European Commission in July 2004.

During the discussion in Parliament on 26 April, there was once again a reminder of the global importance of this new regulatory framework which will change the way banks measure and protect themselves against risk throughout the world. One of the proposed amendments was to extend the period after which a loan is considered to be in default from 90 days to 180 days. Patrick Pearson of the European Commission intervened, explaining that the rest of the world will be implementing Basel II and therefore using a 90-day definition.

There is no reason why the EU should be out of step with Australia, Japan the US or indeed Mongolia who will all adopt a 90-day definition.

Good news for mortgage credit...

The route from Basel to Brussels has been long drawn out one with many delays along the way. Ultimately however, it promises to be a rewarding journey for mortgage lenders, with benefits on both sides of their balance sheets.

There will be reductions in capital requirements for both mortgage assets and for some of the liability instruments used to fund them such as covered bonds or mortgage backed securities.

At end 2003, there was some €4.2 trillion outstanding in mortgage credit in the EU. Under the Basel I rules this requires lenders to hold some €168 billion in capital, which was widely seen as a disproportionate amount in relation to the risks inherent in secured lending. Under the new rules there is a big drop in the risk weighting for mortgage credit, from 50 per cent to 35 per cent under the standardised approach, which could be even greater for those banks adopting the more complex internal ratings based approaches (IRB). Overall the Basel Committee estimates that the capital requirements for mortgage credit will fall from between 14 per cent for small banks using the standardised approach

up to 56 per cent for banks using the foundation IRB method which could rise still further for those on the advanced IRB.



...but at a price

It should be recognised that the new regulations will impose a substantial cost in terms of investment for banks to meet the new rules. There are many data requirements which need to be met especially for those banks opting for the model approaches. Additionally much of the lower capital requirements granted on mortgage credit are clawed back through a new operational risk charge, and higher capital requirements on other forms of lending to corporates or sovereigns.

Clearer definition of capital

One of the important benefits deriving from Basel will be that for the first time when a banking supervisor, a credit institution and an accountant have a discussion on risk and capital they will be speaking the same language. The 'rapprochement' of regulatory capital used by banking regulators, combined with the new accounting standards and the increasing use of economic capital models will all lead to a better understanding of financial risk for all concerned.

Not perfect, but an improvement

The European Mortgage Federation has actively participated in all of the consultations which have taken place over the years and more recently has engaged in discussions with European parliamentarians. The Radwan report took on board a number of EMF concerns and suggested amendments on the issue of covered bonds. Further work will continue to ensure a good deal for the industry right up to the final plenary session vote at the Parliament in September. Overall, there is a general agreement that the new framework represents a change for the better, which will improve the way financial risks are measured, and provided for. Ultimately this will improve the efficiency of the financial sector with resulting benefits for lenders and borrowers alike.