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The PRA's approach to supervising banks, credit risk and related models

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30August 2013

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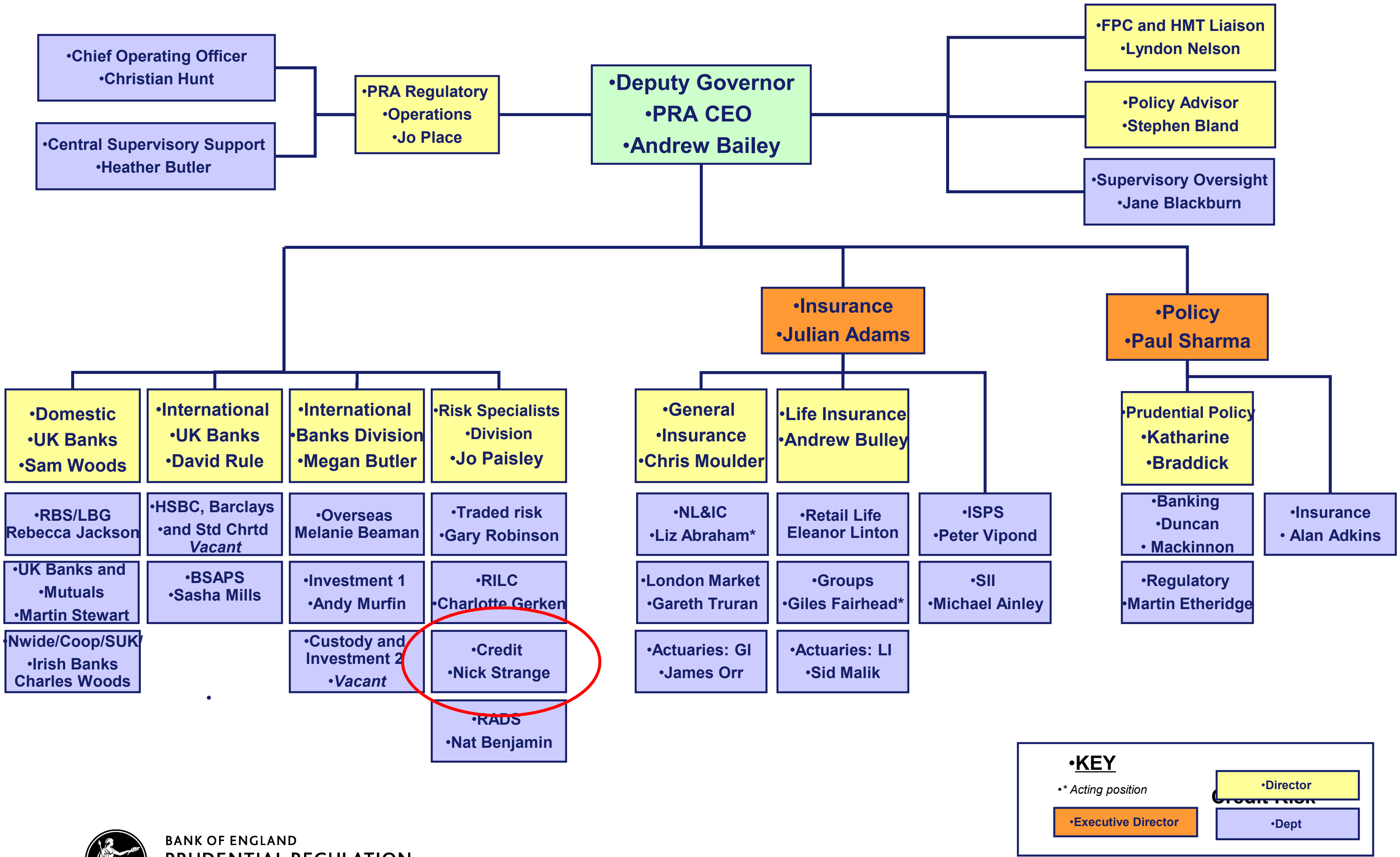
- The presentation will look at the PRA’s objectives and the overall approach to banking supervision.
- It will then consider how the PRA’s risk framework will address firms’ use of quantitative models in credit risk management and internal capital calculation, looking in particular at the articulation of expected and unexpected loss and how these concepts relate to provisions and capital.
- The presentation will conclude by moving down a level of detail to focus on two specific examples where the PRA is concerned that modelling challenges may still exist: what happens to loan losses when interest rates rise from unprecedented lows, and how will forbearance impact on this?

Context - PRA Structure



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The PRA's objectives

The PRA's role is defined in terms of two statutory objectives:

- **to promote the safety and soundness** of banks, building societies, credit unions, insurers and major investment firms, focusing on the harm that firms can cause to the stability of the UK financial system; and
- specifically for insurers, to contribute to the securing of an appropriate degree of protection for policyholders.

The PRA will make forward-looking judgments on the risks posed by firms to its statutory objectives. Those institutions and issues which pose the greatest risk to the stability of the financial system will be the focus of its work.

(A stable financial system is one in which firms continue to provide critical financial services – a precondition for a healthy and successful economy.)

The PRA’s risk model

Gross risk			Mitigating factors				
Potential impact	Risk context		Operational mitigation		Financial mitigation		Structural mitigation
Potential impact	External context	Business risk	Management and governance	Risk management and controls	Capital	Liquidity	Resolvability

- The risk model provides a framework for assessing the risks posed by PRA-supervised firms to the PRA’s objectives. Within this model are eight risk elements, including explicit reference to risk management and controls.
- The risks include capital management, **credit risk,** market risk, asset and liability management, liquidity and counterparty risk, spanning all asset classes.
- The PRA aims to lead technological change in risk analytics to facilitate the research and assessment of micro-prudential risk of all regulated firms.
- We will look (amongst many other things) at risk appetite, the risk management framework, the control framework, management information and the use of quantitative models.

PRA approach to quantitative models

While quantitative models can play an important role in supporting firms' risk management, the PRA expects firms **to be prudent in their use of such models given the inherent difficulties with risk measurement**.

Senior management and the board should therefore understand the extent of reliance on models for managing risk, as well as the limitations arising from the structure and complexity of models, the data used as inputs and underpinning assumptions.

Models, and their output, should be subject to effective, ongoing and independent validation to ensure that they are performing as anticipated.

The PRA expects senior management to have a clear understanding of the risks that are not adequately captured by the models used, and the alternative risk management processes in place to ensure that such risks are adequately measured and incorporated into the firm's overall risk management framework.

PRA approach to internal capital models

The misalignment between firms' incentives and the regulator's desired outcomes, could lead to a potential for firms to use models to game regulatory requirements by masking the inherent riskiness of activities.

Models can be complex and time consuming to review, and biases can be well hidden. In addition there are inherent difficulties in measuring risk using models, including limitations from their structure and complexity, the data used as inputs and the underlying assumptions.

The PRA's overarching principle is that it expects firms to maintain at all times an amount of capital that adequately reflects the risks to which they are exposed.

In consequence, **if firms use internal models in calculating their regulatory capital requirements, the PRA expects the models to be appropriately conservative**.

Where the PRA judges the conservatism applied in internal models not to be sufficient, it will take appropriate action to address the situation, which can include requiring methodological adjustments or recalibration, setting capital floors or imposing adjustments to modelled capital requirements.

PRA approach to internal capital models (2)

Importantly, **where internal models are used for regulatory capital purposes, they should contribute to prudent risk management and measurement**.

Consistent with this, firms should not select between internal model-based and non model-based ‘standardised’ approaches to calculating capital adequacy on the basis of lower capital requirements. Where separate models are used for regulatory capital purposes and for internal purposes, the firm must be able to explain the difference between those models and show that they are reasonable.

A firm should use a model as the basis for its capital calculation only where model calibration, controls and governance arrangements are adequate, with the model and its output subject to effective, ongoing and independent validation to ensure that it is performing as anticipated.

The PRA expects firms not to use internal models for particular asset classes where it judges that it is not possible to measure risk to a sufficient degree of confidence, notably because of a lack of data.

PRA model approval

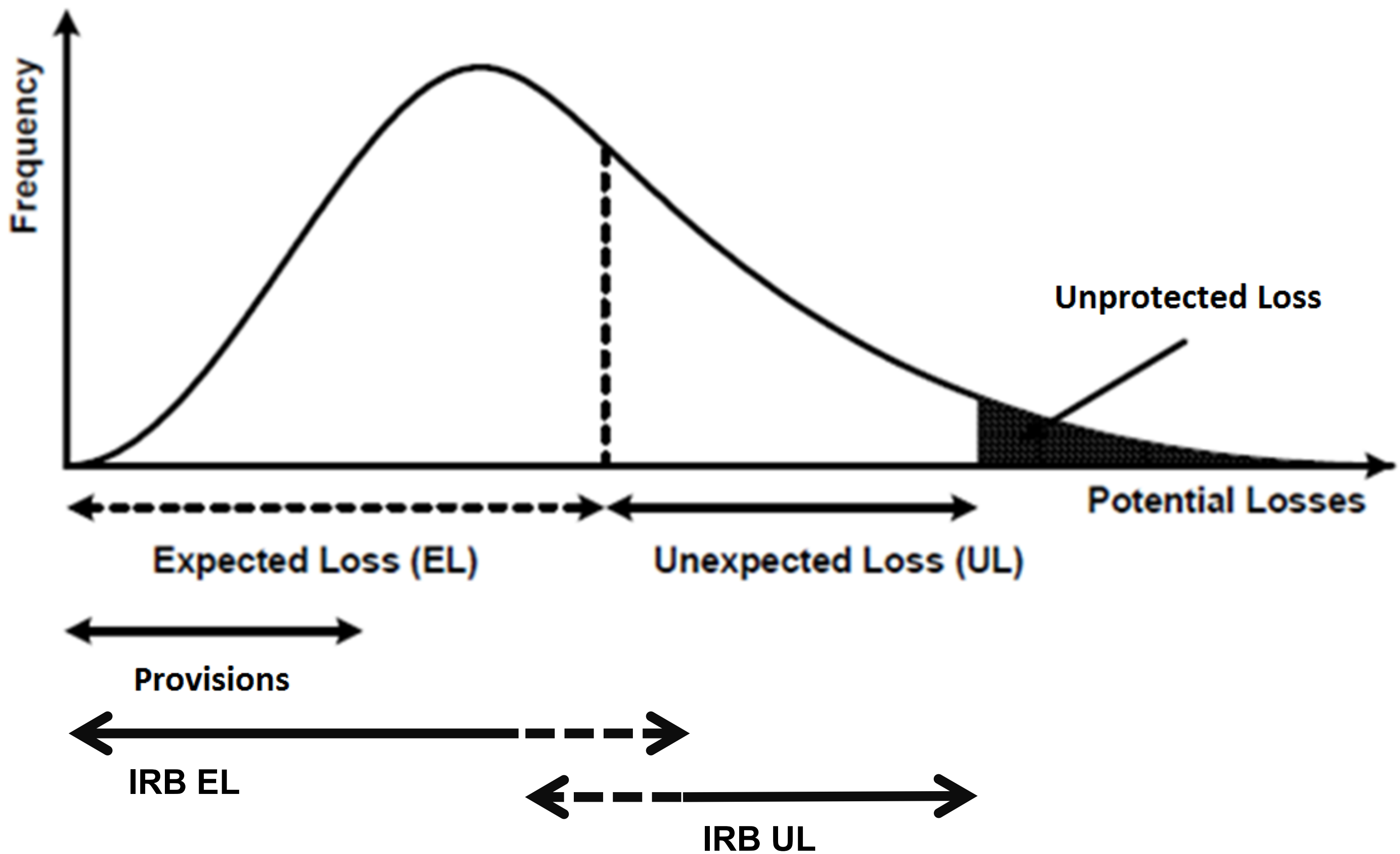
Where they are approved by the PRA, UK firms are able in principle to use internal models to quantify Pillar 1 capital requirements.

When approving internal models, the PRA's focus is on ensuring that the capital requirements arising from them are appropriate when compared with other approaches, historical experience, other firms and earlier estimates of capital requirements for the same firms.

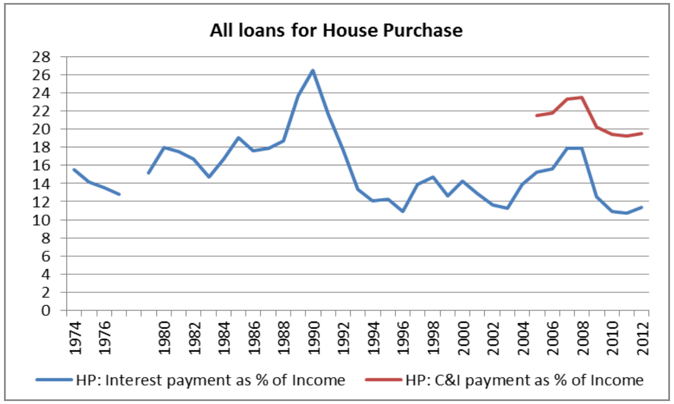
Firms must have their models approved by the PRA before use, and the PRA will consider withdrawing approval if it ceases to be convinced that the model is meaningfully measuring risk.

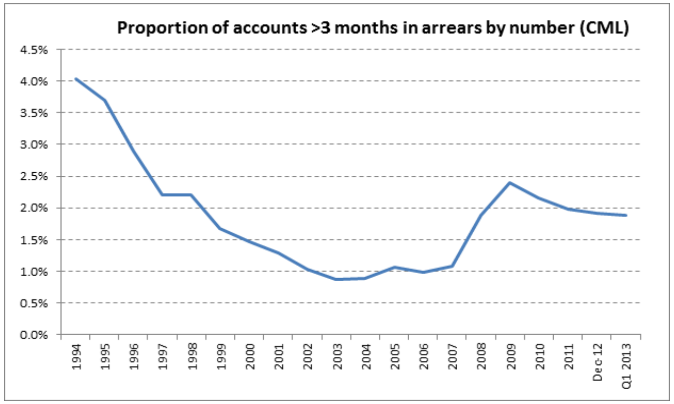
The PRA may also choose to review a firm's approach to provisioning or its valuations of trading book and other fair-valued assets and liabilities, to identify where it is out of line with peers.

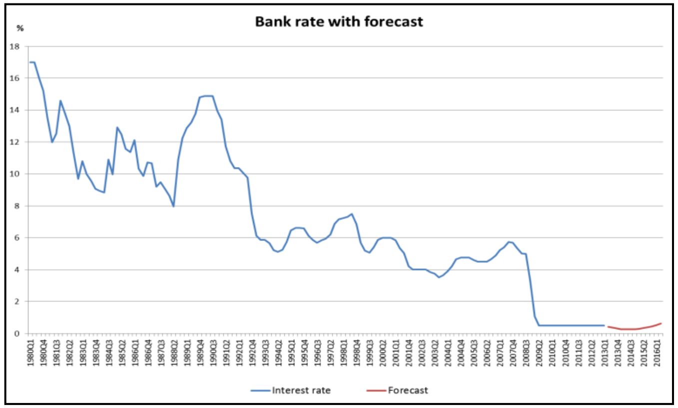
UL, EL, provisions and capital

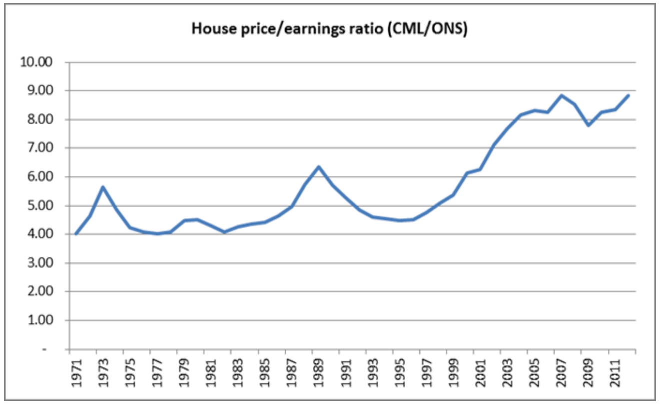


Modelling issue 1: Low interest rates







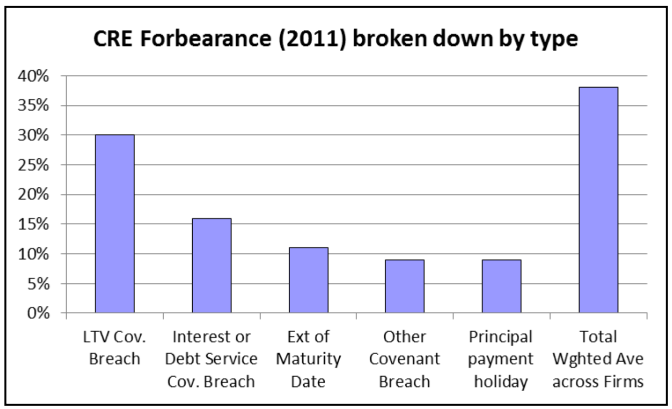


Although mortgages are affordable now, and arrears are below the 1990's peak, interest rates are at an unprecedented (in recent times) low, how will our models perform when the rise again? There is clear stress demonstrated in the house price to earnings ratio.

Modelling issue 2: Forbearance

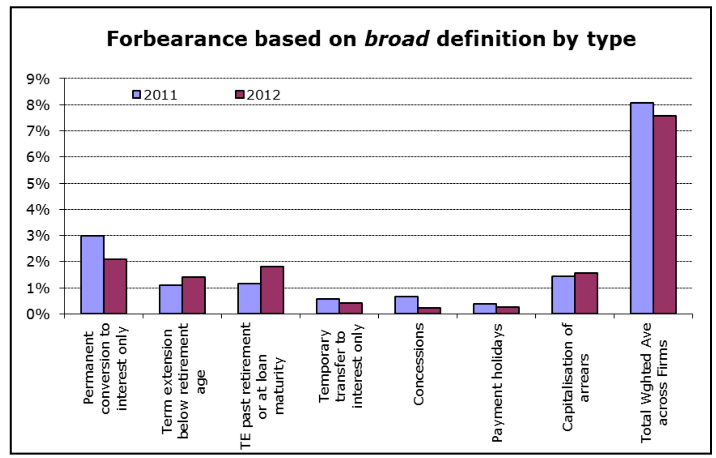
UK CRE Forbearance

- Our cross Firm review of CRE Forbearance found that the range of reported forbearance was wide 0% to 22% for live loans, 52% to 71% for watchlisted loans and 52% to 85% for NPL loans.
- Our later CRE Thematic found that forbearance levels in Firms' CRE portfolios ranged from 9%-70% with a weighted average of 35%



UK Mortgage Forbearance

- As at H1 2012 we reported the level of forbearance at between 5.2% (~£47bn) and 7.6% (~£68bn) respectively under narrow and broad definitions.
- The chart below shows estimated UK Mortgage Forbearance levels, by type included under the FSA "broad" definitions and their occurrence in H1 2012 compared to H1 2011.



Forbearance too is playing a role in keeping arrears and defaults low, but forbearance is cheap while interest rates are low. How quickly will forbearance disappear when interest rates rise and how will this impact borrowers? Even if not removed, are borrowers still more sensitive to interest rate movements than historically?

Note: Total %'s do not add up across the types as different types of forbearance can be applied to a loan