29 July 2015 – this document has been superseded, see
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Supervisory Statement | SS6/13

Stress testing, scenario analysis and capital planning

December 2013

BANK OF ENGLAND
PRUDENTIAL REGULATION
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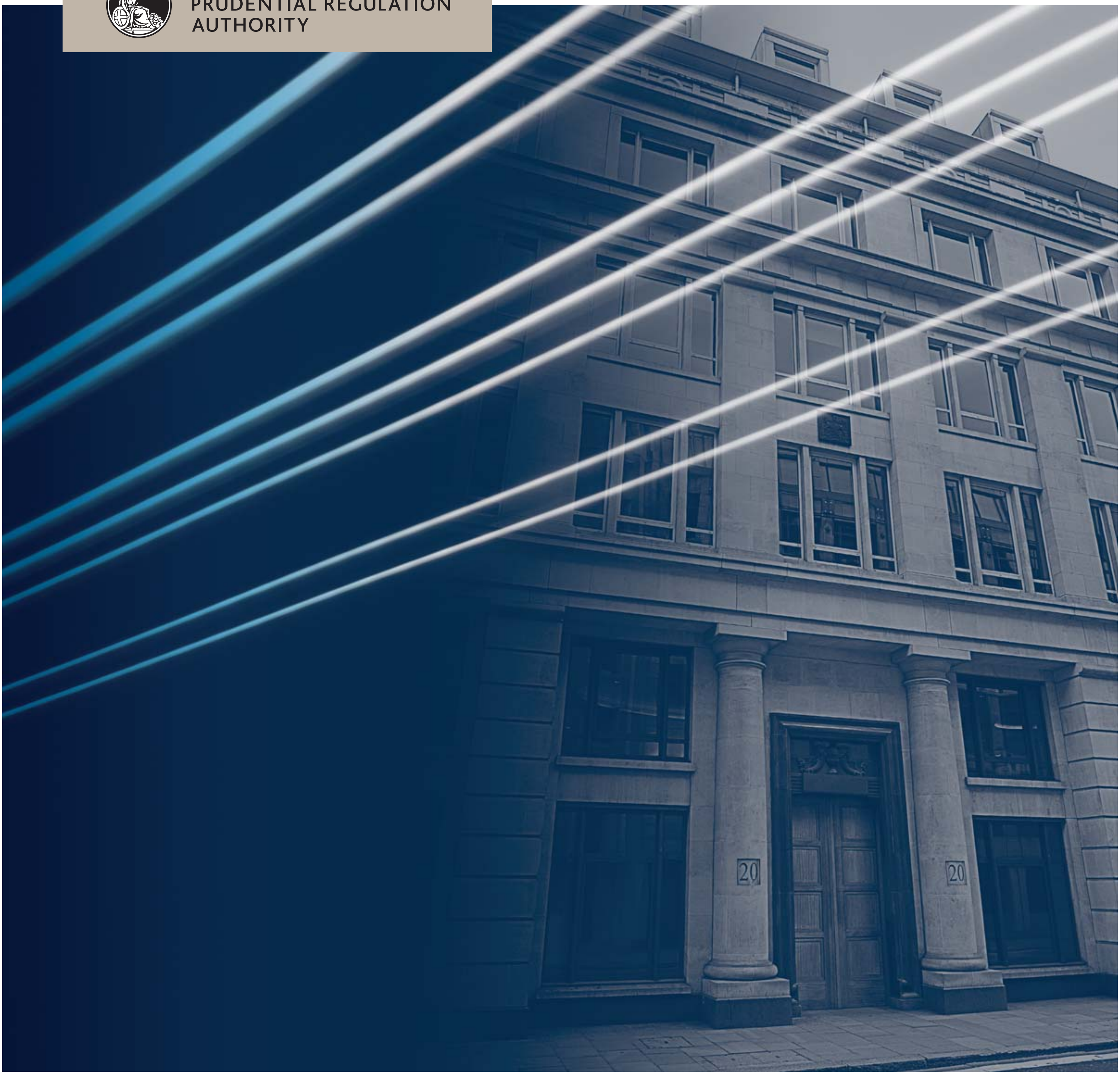

Prudential Regulation Authority
20 Moorgate
London EC2R 6DA

Prudential Regulation Authority, registered office: 8 Lothbury, London EC2R 7HH.
Registered in England and Wales No: 07854923

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1 Introduction

1.1 This supervisory statement is aimed at firms to which CRD IV applies.

1.2 This statement sets out the Prudential Regulation Authority's (PRA's) expectations of firms in relation to stress testing, scenario analysis and capital planning, and the requirements set out in the PRA Rulebook in Chapter 12 of the Internal Capital Adequacy Assessment rules.

1.3 It provides further detail on the high-level expectations outlined in *The PRA's approach to banking supervision*.

1.4 Stress testing typically refers to shifting the values of individual parameters that affect the financial position of a firm and determining the effect on the firm's financial position.

1.5 Scenario analysis typically refers to a wider range of parameters being varied at the same time. Scenario analyses often examine the impact of adverse events on the firm's financial position, for example, simultaneous movements in a number of risk categories affecting all of a firm's business operations, such as business volumes, investment values and interest rate movements.

2 Expectations of firms

2.1 There are three broad purposes of stress testing and scenario analysis. First, it can be used as a means of quantifying how much capital might be absorbed if an adverse event or events occurred. This might be a proportionate approach to risk management for an unsophisticated business. Second, it can be used to provide a check on the outputs and accuracy of risk models, particularly in identifying non-linear effects when aggregating risks. Third, it can be used to explore the sensitivities in longer-term business plans and how capital needs might change over time.

2.2 The general stress test and scenario analysis rule in Internal Capital Adequacy Assessment 12.1 requires a firm to carry out stress tests and scenario analyses as part of its obligations under the overall Pillar 2 rule in Internal Capital Adequacy Assessment 3.1. Both stress tests and scenario analyses are undertaken by a firm to further and better its understanding of the vulnerabilities that it faces under adverse conditions. They are based on the analysis of the impact of a range of events of varying nature, severity and duration. These events can be financial, operational or legal, or relate to any other risk that might have an economic impact on the firm.

3 Overall approach

3.1 As part of its obligation under the general stress and scenario testing rule in Internal Capital Adequacy Assessment 12.1, a firm should undertake a broad range of stress tests which reflect a variety of perspectives, including sensitivity analysis, scenario analysis and stress testing on individual portfolios as well as at a firm-wide level.

3.2 Stress tests and scenario analyses should be carried out at least annually. A firm should, however, consider whether the nature of the major sources of risks identified by it in accordance with the overall Pillar 2 rule in Internal Capital Adequacy Assessment 3.1 and their possible impact on its financial resources suggest that such tests and analyses should be carried out more frequently. For instance, a sudden change in the economic outlook may prompt a firm to revise the parameters of some of its stress tests and scenario analyses. Similarly, if a firm has recently become exposed to a particular sectoral concentration, it may wish to amend and/or add some stress tests and scenario analyses in order to reflect that concentration.

3.3 The firm should document its stress testing and scenario analysis policies and procedures, as well as the results of its tests in accordance with Internal Capital Adequacy Assessment 13.1. These results should be included within the firm's ICAAP document.

Governance

3.4 The PRA expects a firm's senior management and governing body to be actively involved and engaged in all relevant stages of the firm's stress testing and scenario analysis programme. This would include establishing an appropriate stress testing programme, reviewing the programme's implementation (including the design of scenarios) and challenging, approving and taking action based on the results of the stress tests. The PRA expects firms to assign adequate resources, including IT systems, to stress testing and scenario analysis, taking into account the stress testing techniques employed, so as to be able to accommodate different and changing stress tests at an appropriate level of granularity.

Scenarios

3.5 In identifying scenarios, and assessing their impact, the PRA expects a firm to take into account, where material, how changes in circumstances might impact upon:

- the nature, scale and mix of its future activities; and
- the behaviour of counterparties, and of the firm itself, including the exercise of choices (for example, options embedded in financial instruments or contracts of insurance).

3.6 Firms should develop a range of firm-wide scenarios including some based on macroeconomic and financial market shocks for the purposes of their own stress testing. These scenarios should be developed so as to be relevant to the circumstances of the firm, including its business model, and the market(s) in which it operates. When the PRA publishes macroeconomic scenarios, firms are expected to consider their severity to inform the design of their own stress-testing frameworks. In addition, the PRA may also ask a firm to apply specific scenarios directly in its ICAAP submission. More information on ICAAP expectations is outlined in the supervisory statement on the ICAAP and the SREP.

3.7 The calibration of the stress and scenario analyses should be reconciled to a clear statement setting out the premise upon which the firm's internal capital assessment under the overall Pillar 2 rule in Internal Capital Adequacy Assessment 3.1 is based.

3.8 In identifying adverse circumstances and events in accordance with Internal Capital Adequacy Assessment 12.1, a firm should consider the results of any reverse stress-testing conducted in accordance with SYSC 20. Reverse stress-testing may be expected to provide useful information about the firm's vulnerabilities and variations around the most likely scenarios for the purpose of meeting the firm's obligations under Internal Capital Adequacy Assessment 12.1. In addition, such a comparison may help a firm to assess the sensitivity of its financial position to different stress calibrations.
Impact on resources

3.9 In carrying out the stress tests and scenario analyses required by the general stress and scenario testing rule in Internal Capital Adequacy Assessment 12.1, the PRA expects a firm to also consider any impact of the adverse circumstances on its capital resources. In determining whether it would have adequate financial resources in the event of each identified realistic adverse scenario, the firm should:

- only include financial resources that could reasonably be relied upon as being available in the circumstances of the identified scenario; and

- take account of any legal or other restriction on the use of financial resources.

3.10 In identifying an appropriate range of adverse circumstances and events in accordance with Internal Capital Adequacy Assessment Rules 12.1, a firm will need to consider:

(a) the nature, scale and complexity of its business and of the risks that it bears;

(b) its risk appetite, including in light of the adverse conditions through which it expects to remain a going concern;

(c) the cycles it is most exposed to and whether these are general economic cycles or specific to particular markets, sectors or industries; and

(d) for the purposes of Internal Capital Adequacy Assessment 12.1, the amplitude and duration of the relevant cycle which should include a severe downturn scenario based on forward-looking hypothetical events, calibrated against the most adverse movements in individual risk drivers experienced over a long historical period.

Time horizon

3.11 Both stress testing and scenario analysis are forward-looking analysis techniques, which seek to anticipate possible losses that might occur if an identified economic downturn or a risk event crystallises.

3.12 In making the estimate required by Internal Capital Adequacy Assessment 12.1(3), a firm should project both its capital resources and its required capital resources over a time horizon of three to five years, taking account of its business plan and the impact of relevant adverse scenarios. In making the estimate, the firm should consider both the capital resources required to meet its capital requirements under the CRR and the capital resources needed to meet the overall financial adequacy rule. The firm should make these projections in a manner consistent with its risk management processes and systems as set out in Internal Capital Adequacy Assessment 3.1.

3.13 When deciding the planning horizon over which to conduct their analysis, firms should consider how long it might take to recover from any loss. The time horizon over which stress tests and scenario analyses should be carried out will depend on, among other things, the maturity and liquidity of the positions stressed. For example, for the market risk arising from the holding of investments, this will depend upon the extent to which there is a regular, open and transparent market in those assets, which would allow fluctuations in the values of the investments to be more readily and quickly identified.

3.14 In projecting its financial position over the relevant time horizon, the firm should:

(a) reflect how its business plan would 'flex' in response to the adverse events being considered, taking into account factors such as changing consumer demand and changes to new business assumptions;

(b) consider the potential impact on its stress testing of dynamic feedback effects and second-order effects of the major sources of risk identified in accordance with the overall Pillar 2 rule in Internal Capital Adequacy Assessment 3.1;

(c) estimate the effects on the firm's financial position of the adverse event without adjusting for management actions;

(d) separately, identify any realistic management actions that the firm could and would take to mitigate the adverse effects of the stress scenario; and

(e) estimate the effects of the stress scenario on the firm's financial position after taking account of realistic management actions.

Management actions

3.15 The PRA expects firms to identify any realistic management actions intended to maintain or restore capital adequacy. These could include ceasing to transact new business after a suitable period has elapsed, balance sheet shrinkage, restricting distribution of profits or raising additional capital. A firm should reflect management actions in its projections only where it could and would take such actions, taking account of factors such as market conditions in the stress scenario and any effects upon the firm's reputation with its counterparties and investors. The combined effect on capital and retained earnings should be estimated.

3.16 In order to assess whether prospective management actions in a stress scenario would be realistic, and to determine which actions the firm could and would take, the PRA expects a firm to take into account any preconditions that might affect the value of management actions as risk mitigants. It should then analyse the difference between the estimates of its financial position over the time horizon, both gross and net of management actions, in sufficient detail to understand the implications of taking different management actions at different times, particularly where they represent a significant divergence from the firm's business plan.

3.17 A firm should use the results of its stress testing and scenario analysis not only to assess capital needs, but also to decide if measures should be put in place to minimise the adverse effect on the firm if the risks covered by the stress or scenario test actually materialise. Such measures might be a contingency plan or more concrete risk mitigation steps.

4 PRA review: the SREP

4.1 The PRA will review the firm's records referred to in Internal Capital Adequacy Assessment 13.1 as part of its SREP to enable it to judge whether a firm will be able to continue to meet its CRR and the overall financial adequacy rule in Internal Capital Adequacy Assessment 2.1 throughout the time horizon used for the capital planning exercise.

4.2 If a firm's stress testing management plan shows that the firm's projected capital resources are less than those required to continue to meet its ICG or less than those needed to continue to meet the overall financial adequacy rule over the appropriate time horizon, the PRA may require the firm to set out additional countervailing measures and off-setting actions to reduce such differences or to restore the firm's capital adequacy after the stress event.