

Supervisory Statement | SS31/15

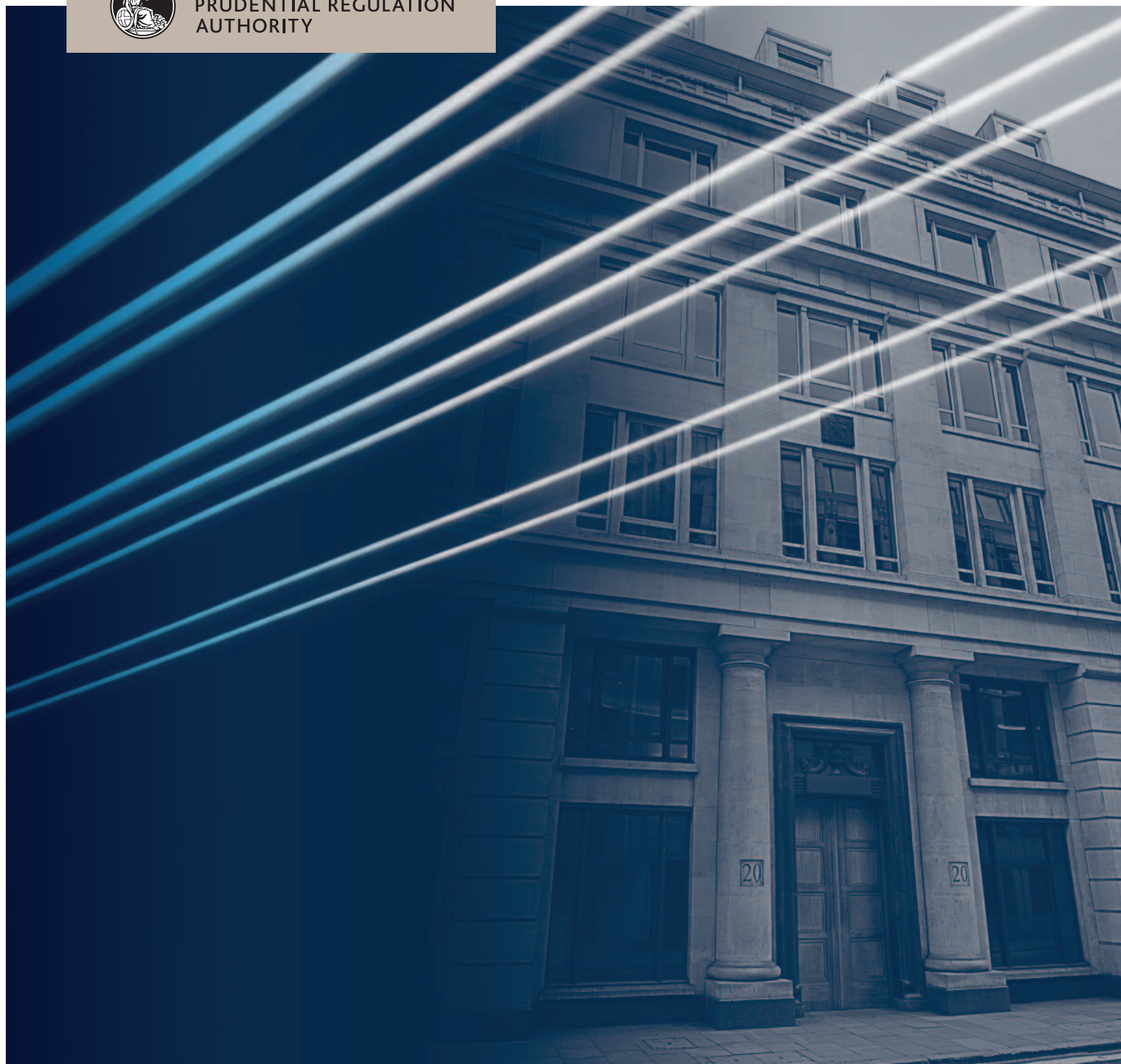
The Internal Capital Adequacy Assessment Process (ICAAP) and the Supervisory Review and Evaluation Process (SREP)

July 2015

(Updated August 2015)



BANK OF ENGLAND
PRUDENTIAL REGULATION
AUTHORITY



1 February 2017 - for an update of this document that is effective from 1 January 2018, see the October 2017 version: <http://www.bankofengland.co.uk/pru/Pages/publications/ss/2017/ss3115update.aspx>

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1 Introduction

1.1 This supervisory statement is aimed at firms to which CRD IV⁽¹⁾ applies and replaces *PRA Supervisory Statement SS5/13*⁽²⁾ and *PRA Supervisory Statement SS6/13*.⁽³⁾

1.2 It provides further detail in relation to the high-level expectations outlined in *The Prudential Regulation Authority's approach to banking supervision*.⁽⁴⁾

1.3 Chapter 2: *Expectations of firms undertaking an ICAAP* sets out the expectations the PRA has in relation to the ICAAP and the requirements set out in the Internal Capital Adequacy Assessment (ICAA) Part of the PRA Rulebook. It sets out the PRA's expectations regarding firms' coverage and treatment of interest rate risk in the non-trading book (more commonly referred to as interest rate risk in the banking book or IRRBB), market risk, group risk, operational risk, pension obligation risk and foreign currency lending to unhedged retail and SME borrowers. It also provides additional detail on data that firms are required or expected to submit with their ICAAP document or otherwise as applicable.

1.4 Chapter 3: *Stress testing, scenario analysis and capital planning* sets out the PRA's expectations of firms in relation to stress testing, scenario analysis and capital planning, and the requirements set out in Chapter 12 of the Internal Capital Adequacy Assessment Part of the PRA Rulebook.

1.5 Chapter 4: *Reverse stress testing* sets out the PRA's expectations of firms in relation to reverse stress testing, and the requirements set out in Chapter 15 of the Internal Capital Adequacy Assessment Part of the PRA Rulebook.

1.6 Chapter 5: *The SREP* sets out the factors that the PRA takes into consideration to assess a firm's ICAAP. It explains the setting of Individual Capital Guidance (ICG) and the PRA buffer, the consequences in the event a firm fails to meet ICG or uses the PRA buffer, and disclosure. It also sets out the factors that the PRA takes into consideration to assess a firm's reverse stress-testing approach including the PRA response to weaknesses in the process.

1.7 This supervisory statement should be read in conjunction with the *PRA Statement of Policy*, 'The PRA's methodologies for setting Pillar 2 capital'.⁽⁵⁾

2 Expectations of firms undertaking an ICAAP

2.1 A firm must carry out an ICAAP in accordance with the PRA's ICAA rules. These include requirements on the firm to assess on an ongoing basis the amounts, types and distribution of capital that it considers adequate to cover the level and nature of the risks to which it is or might be exposed. This

assessment should cover the major sources of risks to the firm's ability to meet its liabilities as they fall due, and should incorporate stress testing and scenario analysis. If a firm is merely attempting to replicate the PRA's own methodologies, it will not be carrying out its own assessment in accordance with the ICAA rules. The ICAAP should be documented and updated annually by the firm, or more frequently if changes in the business, strategy, nature or scale of its activities or operational environment suggest that the current level of financial resources is no longer adequate.

2.2 The PRA expects firms, in the first instance, to take responsibility for ensuring that the capital they have is adequate, with the ICAAP being an integral part of meeting this expectation. The PRA expects an ICAAP to be the responsibility of a firm's management body, that it is approved by the management body, and that it is used as an integral part of the firm's management process and decision making. The processes and systems used to produce the ICAAP should ensure that the assessment of the adequacy of a firm's financial resources is reported to its management body as often as is necessary.

2.3 The ICAAP, and internal processes and systems supporting it, should be proportionate to the nature, scale and complexity of the activities of a firm, as set out in Internal Capital Adequacy Assessment 3.3 in the PRA's Rulebook. Where a firm has identified risks as not being material, it should be able to provide evidence of the assessment process that determined this and discuss why that conclusion has been reached.

2.4 Liquidity risk should also be assessed, including in relation to potential losses arising from the liquidation of assets and increases in the cost of funding during periods of stress. The requirements in relation to liquidity risk may be found in PS11/15.⁽⁶⁾

2.5 As set out in further detail below, the PRA also expects firms to develop a framework for stress testing, scenario analysis and capital management that captures the full range of risks to which they are exposed and enables these risks to be assessed against a range of plausible yet severe scenarios. The ICAAP document should outline how stress testing supports capital planning for the firm.

(1) The Capital Requirements Directive (2013/36/EU) (CRD) and the Capital Requirements Regulation (575/2013) (CRR), jointly 'CRD IV'.
(2) *PRA Supervisory Statement SS5/13*, 'The Internal Capital Adequacy Assessment Process (ICAAP) and the Supervisory Review and Evaluation Process (SREP)', December 2013; www.bankofengland.co.uk/praf/Pages/publications/icaap.aspx.
(3) *PRA Supervisory Statement SS6/13*, 'Stress testing, scenario analysis and capital planning', December 2013; www.bankofengland.co.uk/praf/Pages/publications/stresstesting.aspx.
(4) June 2014; www.bankofengland.co.uk/publications/Documents/prapproach/bankingappr1406.pdf.
(5) *PRA Statement of Policy*, 'The PRA's methodologies for setting Pillar 2 capital', July 2015; www.bankofengland.co.uk/praf/Pages/publications/sop/2015/p2methodologies.aspx.
(6) *PRA Policy Statement PS11/15*, 'CRD IV: Liquidity', June 2015; www.bankofengland.co.uk/praf/Pages/publications/ps/2015/ps1115.aspx.

2.6 Where a firm uses a model to aid its assessment of the level of capital adequacy, it should be appropriately conservative and should contribute to prudent risk management and measurement. The firm should expect the PRA to investigate the structure, parameterisation and governance of the model, and the PRA will seek reassurance that the firm understands the attributes, outputs and limitations of the model, and that it has the appropriate skills and expertise to operate, maintain and develop the model.

IRRBB

2.7 All firms must have appropriate systems and processes, proportionate to the nature, scale and complexity of their business, to evaluate and manage IRRBB.

2.8 The systems and processes should allow the firm to:

- measure the exposure and sensitivity of its activities, if material, to re-pricing risk, yield curve risk, basis risk and risks arising from embedded optionality (eg pipeline risk and prepayment risk) as well as changes in assumptions (eg those relating to customer behaviour);
- consider whether a purely static analysis of the impact on its current portfolio of a given shock or shocks should be supplemented by a more dynamic simulation approach;
- model scenarios in which different interest rate paths are computed and in which some of the assumptions (eg about behaviour, contribution to risk and balance sheet size and composition) are themselves functions of interest rate levels; and
- measure the exposure and sensitivity of its available-for-sale and fair value exposures to changes in value resulting from yield curve and basis risk.

2.9 Under Internal Capital Adequacy Assessment 13.1, a firm is required to make a written record of its assessments made under those rules. A firm's record of its approach to evaluating and managing interest rate risk as it affects the firm's non-trading activities should cover the following issues as appropriate:

- the internal definition of the boundary between 'banking book' and 'trading activities';
- the definition of economic value and its consistency with the method used to value assets and liabilities (eg discounted cash flows);
- the size and the form of the different shocks to be used for internal calculations;
- the use of a dynamic and/or static approach in the application of interest rate shocks;

- the treatment of commonly called 'pipeline transactions' (including any related hedging);
- the aggregation of multi-currency interest rate exposures;
- the inclusion (or not) of non-interest bearing assets and liabilities (including capital and reserves);
- the treatment of current and savings accounts (ie the maturity attached to exposures without a contractual maturity);
- the treatment of fixed-rate assets or liabilities where customers still have a right to repay or withdraw early;
- the extent to which sensitivities to small shocks can be scaled up on a linear basis without material loss of accuracy (ie covering both convexity generally and the non-linearity of pay-offs associated with explicit option products);
- the degree of granularity employed (eg offsets within a time bucket); and
- whether all future cash flows or only principal balances are included.

2.10 For building societies, interest rate risk should be managed with reference to *PRA Supervisory Statement SS20/15*, 'Supervising building societies' treasury and lending activities'.⁽¹⁾ Only societies not on the administered or matched approach to financial risk management should incur any significant interest rate risk.

2.11 In accordance with Internal Capital Adequacy Assessment 9.2, a firm should apply a 200 basis point shock in both directions to each major currency exposure. The PRA will periodically review whether the level of the shock is appropriate in light of changing circumstances, in particular the general level of interest rates (for instance, during periods of very low interest rates) and their volatility. The level of shock required may also be changed in accordance with guidelines issued by the European Banking Authority (EBA).⁽²⁾ A firm's internal systems should, therefore, be flexible enough to compute its sensitivity to any standardised shock that is prescribed.

2.12 Alongside the requirement to monitor and evaluate the potential impact of changes in interest rates on economic value, the PRA expects firms to monitor the potential impact on earnings volatility. This should be assessed on an

(1) *PRA Supervisory Statement SS20/15*, 'Supervising building societies' treasury and lending activities', April 2015; www.bankofengland.co.uk/praf/Documents/publications/ss/2015/ss2015.pdf.

(2) *EBA/GL/2015/08* Guidelines on the management of interest rate risk arising from non-trading activities; www.eba.europa.eu/documents/10180/1084098/EBA-GL-2015-08+GL+on+the+management+of+interest+rate+risk+.pdf.

appropriate timeframe of three to five years, and factor in the firm's forward-looking view of product volumes and pricing, based on its proposed business model during the scenario, and the projected path of interest rates. Careful consideration should be given to how any resulting volatility is managed.

Market risk

2.13 Firms should provide in their ICAAP document sufficient supplementary evidence, to an auditable standard, which shows how the firm's capital add-on for market risk is calculated. Specifically, firms need to provide evidence of sound approaches for assigning liquidity horizons in stressed situations, and demonstrate a conservative translation of liquidity horizons into appropriately severe stress scenarios.

2.14 The PRA expects firms to submit this supplementary internal methodology documentation, when pertinent, on a quarterly basis.

2.15 To this end, the PRA expects firms to:

- identify illiquid, one-way or concentrated positions;
- stress these positions (or risk factors) over an appropriate holding period (ie greater than ten days) and confidence level;
- identify any capital mitigants already in place that directly relate to the illiquid, one-way or concentrated positions (eg capital for Risks not in VaR (RNIVs), capital for the Incremental Risk Charge (IRC) and reserves (such as bid/ask and prudential valuation reserves)); and
- suggest a Pillar 2A capital amount based on the stressed losses and capital mitigants or reserves.

Group risk

2.16 Under the Systems Sourcebook, SYSC 12.1.8R, of the PRA Handbook a firm is required to have adequate, sound and appropriate risk management processes and internal control mechanisms for the purpose of assessing and managing its own exposure to group risk,⁽¹⁾ including sound administrative and accounting procedures.

Operational risk

2.17 In meeting the general standard referred to in Internal Capital Adequacy Assessment 10.1, a firm that undertakes market-related activities should be able to demonstrate to the PRA:

- in the case of a firm calculating its capital requirements for operational risk using the Basic Indicator Approach or Standardised Approach, that it has considered; or

- in the case of a firm with an Advanced Measurement Approach (AMA) permission, that it has complied with, the Committee of European Banking Supervisor's Guidelines on the management of operational risk in market-related activities published in October 2010.⁽²⁾

2.18 In meeting the general standard referred to in Internal Capital Adequacy Assessment 10.1, a firm with an AMA approval should be able to demonstrate to the appropriate regulator that it has considered and complies with Section III of the EBA's Guidelines on the AMA — Extensions and Changes, published in January 2012.⁽³⁾

2.19 Business continuity plans are also a key component of operational risk management. Plans should include consideration of:

- resource requirements such as people, systems and other assets, and arrangements for obtaining these resources;
- the recovery priorities of the firm's operations;
- communication arrangements for internal and external concerned parties (including the PRA, clients and the media);
- escalation and invocation plans that outline the processes for implementing the business continuity plans, together with relevant contact information;
- processes to validate the integrity of information affected by the disruption; and
- regular stress testing of the business continuity plan in an appropriate and proportionate manner.

2.20 In addition, the PRA does not expect that smaller firms will complete the operational risk data items but expects such firms to provide in their ICAAP document at least the following information (historical losses at an aggregate level are regularly available to the PRA via COREP 17):

- (i) forecast operational risk losses, broken down between conduct and non-conduct losses and by future year; and
- (ii) information on the operational risk scenarios they have considered in their ICAAP, covering a description of such scenarios and an assessment of their impact and likelihood.

(1) Group risk, as defined in the PRA Rulebook, means the risk that the financial position of a firm may be adversely affected by its relationships (financial or non-financial) with other entities in the same group or by risk which may affect the financial position of the whole group, including reputational contagion.

(2) www.eba.europa.eu/regulation-and-policy/operational-risk/guidelines-on-the-management-of-operational-risk-in-market-related-activities.

(3) www.eba.europa.eu/-/guidelines-on-ama-extensions-and-chang-1.

Pension obligation risk

2.21 The PRA's framework for Pillar 2A pension obligation risk capital consists of two elements:

- the firm's own assessment of the appropriate level of Pillar 2A pension obligation risk capital; and
- a set of stresses on the accounting basis which will be used by the PRA in assessing the adequacy of the firm's own assessment of the level of capital required.

2.22 The firm's own assessment and the stress tests on the accounting basis can be reduced by:

- offsets and management actions; and
- any pension scheme deficit deducted from Common Equity Tier 1 (CET1).

2.23 The PRA expects firms to carry out their own assessment of the appropriate level of Pillar 2A pension obligation risk capital in their ICAAP. Firms should use methodologies and assumptions that are consistent with their approach to risk management and are therefore not restricted to using the IAS 19 basis in carrying out this assessment.

2.24 In carrying out their assessment, firms should consider risks to the financial position of their pension schemes consistent with a stress event that has no more than a 1 in 200 probability of occurring in a one-year period.

2.25 For the purpose of firms' own assessment of Pillar 2A pension obligation risk capital, the PRA expects firms to use stress testing and scenario analysis where appropriate to quantify the gross impact on the existing scheme surplus or deficit. The PRA does not necessarily favour a stochastic approach over a deterministic one. Firms should decide which approach is most appropriate.

2.26 As part of their ICAAP submission, firms are required to calculate and (if they have a defined benefit pension scheme) report the stressed accounting value of their pension scheme's assets and liabilities using stress scenarios specified by the PRA in accordance with *PRA Statement of Policy*, 'The PRA's methodologies for setting Pillar 2 capital' and Reporting Pillar 2, 2.6 as set out in the PRA Rulebook. This requirement is in addition to the firm's own assessment referred to above, unless the data required in that data item have already been reported to the PRA by other means. In doing so firms are expected to:

- calculate the stressed value of assets and liabilities assuming all the elements of the stress apply instantaneously and simultaneously;

- decompose the IAS 19 discount rate into a risk-free element and a credit spread element. Firms should make use of their own methodology to do so but should provide a description of the approach taken in their ICAAP. The long-term interest rate stress should be applied to the risk-free element and the credit stress to the credit spread element in order to derive the stressed discount rate; and
- use their own methodology to decompose the yield on bonds into a risk-free element and a credit spread element and describe the approach taken in their ICAAP.

2.27 The PRA expects the valuation measure of liabilities to be the same as that used for International Financial Reporting Standards (IFRS) reporting. The PRA expects firms' approaches to setting the valuation assumptions to be stable over time and any changes to the approach should be justified in the ICAAP document.

2.28 More information on the scenarios is available *PRA Statement of Policy*, 'The PRA's methodologies for setting Pillar 2 capital'. The PRA scenarios are highly simplified by design and firms should decide which stresses to apply to individual asset and liability classes. The broadest possible interpretation should be used (eg a single stress is specified for equity prices); and this should be applied to all categories of investments that exhibit properties similar to listed equities, such as UK equities, overseas equities, unlisted equities, private equity and limited partnerships.

2.29 Where firms believe that the scenarios produce inappropriate levels of capital for their pension schemes, they should provide evidence of this together with a detailed explanation in their ICAAP document.

2.30 When considering management actions and offsets, firms must clearly demonstrate that offsets are valid and that management actions are realistic. They must also demonstrate that both offsets and management actions do not result in double counting and would be effective under stressed conditions.

Pension obligation risk in firms and groups

2.31 Firms should ordinarily hold pension obligation risk capital against the total liability resulting from past or present employment:

- (i) with the firm (including any legacy or overseas entities); and
- (ii) outside the firm, pro-rated according to whether the pension fund principal beneficiaries' service was performed for the benefit of the firm.

2.32 Firms should also consider whether they may be exposed to pension obligation risk greater than that captured by these general criteria, given the potential for The Pensions Regulator to impose a contribution notice or a financial support direction on any company associated with an employer.

2.33 When Pillar 2A pension obligation risk capital is calculated at group level, these expectations apply to the group as a whole. Accordingly, firms must allocate Pillar 2A pension obligation risk capital to entities within the group in a way that adequately reflects the nature, level and distribution of the risks to which the group is subject.

Pension obligation risk: addressing the risk of increased pension losses near the point of resolution

2.34 There are situations where liabilities related to a defined benefit pension fund may, as the sponsor firm's financial condition deteriorates, increase substantially and unexpectedly above the stressed deficit which is covered under Pillar 2A.⁽¹⁾

2.35 Should such events materialise as a firm's financial condition deteriorates, unexpected losses well in excess of Pillar 2A capital already set aside might crystallise prior to the point of resolution.

2.36 In order to address the risk of increased pension losses near the point of resolution, the PRA expects firms to articulate in their ICAAP document how they intend to deal with the defined benefit pension scheme under relevant firm-specific extreme scenarios, bearing in mind the potential for additional loss and describing available management actions. The analysis should be sufficient to demonstrate the institution's awareness around this tail risk and the adequacy of its mitigating actions. The actions should be consistent with the firms' recovery and resolution plans. Additionally, under Reporting Pillar 2 2.6 firms with defined benefit pension schemes must calculate and report to the PRA their defined benefit pension scheme deficit if a debt became due under section 75 of the Pensions Act 1995, unless the data required in that data item have already been reported to the PRA by other means.

Foreign currency lending to unhedged retail and SME borrowers

2.37 Foreign currency lending is defined in the EBA Guidelines on common procedures and methodologies for the supervisory review and evaluation process (SREP).⁽²⁾

2.38 As part of its obligation under Internal Capital Adequacy Assessment 3.1 a firm that lends in foreign currency to unhedged retail and SME borrowers should determine whether it meets the thresholds of materiality in Title 6, Section 1 paragraph 117 of the EBA's Guidelines on common procedures and methodologies for the SREP. Where a firm meets the

threshold it should notify the PRA and reflect the risk in its ICAAP.

3 Stress testing, scenario analysis and capital planning

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

3.2 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.

3.3 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 drivers affecting all of a firm's business operations, such as business volumes and investment values.

3.4 There are three broad purposes of stress testing and scenario analysis:

- (i) as a means of quantifying how much capital might be absorbed if an adverse event(s) occurs;
- (ii) to provide a check on the outputs and accuracy of risk models, particularly in identifying non-linear effects when aggregating risks; and
- (iii) to explore the sensitivities in longer-term business plans and how capital needs might change over time.

3.5 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 improve 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 economic, financial, operational or legal, or relate to any other risk that might have an impact on the firm.

(1) The following events could trigger such losses: a request to the firm, by the pension trustee, to make additional payments to the pension fund when there is a concern that the firm may not be able to continue to make payments in the future (eg due to its deteriorating financial conditions); a different valuation of the firm's assets and liabilities under duress (eg under Article 36 of the Bank Recovery and Resolution Directive when recovery actions are initiated and/or prior to conversion/write-off of capital instruments); a loss on transfer of the scheme to another party (eg if required as part of a recovery action); and a trigger of an insolvency event.

(2) [www.eba.europa.eu/documents/10180/935249/EBA-GL-2014-13+\(Guidelines+on+SREP+methodologies+and+processes\).pdf](http://www.eba.europa.eu/documents/10180/935249/EBA-GL-2014-13+(Guidelines+on+SREP+methodologies+and+processes).pdf). Title 1 'Subject matter, definitions and level of application' of the EBA Guidelines, Section 2, pages 16 and 18, provide definitions of 'FX lending' and 'unhedged borrowers'.

Under Recovery and Resolution 2.4 in the PRA Rulebook, a recovery plan must contain a comprehensive range of options setting out actions that could be taken in a number of different scenarios and stresses.

Overall approach

3.6 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.

3.7 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 test or scenario analysis actually materialise. Such measures might be a contingency plan or more concrete risk mitigation steps.

3.8 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 change its 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.

3.9 The PRA expects a firm to project its capital resources and capital requirements over a three to five year horizon, 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.

3.10 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

3.11 The PRA expects a firm's management 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.

3.12 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

3.13 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.

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

- the nature, scale and complexity of its business and of the risks that it bears;
- its risk appetite, including in light of the adverse conditions through which it expects to remain a going concern;
- the cycles it is most exposed to and whether these are general economic cycles or specific to particular markets, sectors or industries;
- 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); and
- 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.

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

Common stress scenarios

3.16 As part of its Concurrent Stress Testing framework,⁽¹⁾ the Bank of England publishes a common stress scenarios aimed at

(1) A framework for stress testing the UK banking system, October 2013; www.bankofengland.co.uk/financialstability/fsc/Documents/discussionpaper1013.pdf.

assessing the UK banking system's capital adequacy. This scenario is run concurrently across a number of participating firms, on an annual basis.

3.17 Additionally, for firms not participating in the concurrent stress testing, the PRA publishes a macroeconomic scenario to serve as a guide and, where relevant, as a severity benchmark, for firms designing their own stress scenarios.

3.18 Firms should consider the relevance of the PRA's stress scenario in the context of their business and specific risk drivers, and use this scenario as a starting point to build and calibrate their own scenarios. The scenario reflects minimum adverse conditions, through which firms should assess their ability to maintain minimum specified capital levels. This is particularly important for specialised firms, or firms whose business models are less affected by the PRA scenario (eg firms with major exposures to countries other than the United Kingdom, mono-lines, and investment banks).

3.19 More generally, all firms should continue to develop their own scenarios and ensure that these are as severe in relation to their business model as the concurrent stress testing scenario (for firms participating in concurrent stress testing) or the scenario published by the PRA (for all other firms).

3.20 The PRA may ask some firms to run concurrent stress test scenarios or the PRA scenario as part of their range of stress scenarios for Pillar 2 capital planning. Asking firms to run common scenarios, or scenarios that are broadly comparable in terms of severity (eg for firms with different business models) will allow supervisors to more easily compare and benchmark individual results and firms' approaches to stress testing.

3.21 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 Chapter 15 of the Internal Capital Adequacy Assessment Part of the PRA Rulebook. Reverse stress testing may be expected to provide useful information about the firm's vulnerabilities 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.

Forward-looking, multi-year risk assessment

3.22 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 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 severe 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.

3.23 In making the estimate required by Internal Capital Adequacy Assessment 12.3, 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. 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.

3.24 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.

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

- reflect how its business plan would respond to the adverse events being considered, taking into account factors such as changing consumer demand and changes to new business assumptions;
- 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;
- estimate the effects on its financial position of the adverse event without adjusting for management actions;
- separately, identify any realistic management actions that the firm could, and would, take to mitigate the adverse effects of the stress scenario; and

- estimate the effects of the stress scenario on its financial position after taking account of realistic management actions.

3.26 The PRA expects firms to identify any realistic management actions intended to maintain or restore capital adequacy. 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.

3.27 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.

3.28 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 materialise. Such measures might be a contingency plan or more concrete and immediate risk mitigation steps.

4 Reverse stress testing

4.1 This chapter on reverse stress testing was added to this supervisory statement on 3 August 2015 following consultation on proposals in CP17/15.⁽¹⁾

4.2 Reverse stress testing is a risk management tool used to increase a firm's awareness of its business model vulnerabilities. Firms in scope of Chapter 15 of the Internal Capital Adequacy Assessment Part of the PRA Rulebook must carry out reverse stress testing in accordance with Chapter 15 of that Part. This includes requirements on the firm to reverse stress test its business plan; that is, to carry out stress tests and scenario analyses that test its business plan to failure.

4.3 Business plan failure in the context of reverse stress testing should be understood as the point at which the market loses confidence in a firm and, as a result, the firm is no longer able to carry out its business activities. Examples of this would be the point at which all or a substantial portion of the firm's counterparties are unwilling to continue transacting with it or

seek to terminate their contracts, or the point at which the firm's existing shareholders are unwilling to provide new capital. Such a point may be reached well before the firm's financial resources are exhausted.

4.4 The PRA may request a firm to quantify the level of financial resources which, in the firm's view, would place it in a situation of business failure should the identified adverse circumstances crystallise.

4.5 In carrying out the stress tests and scenario analyses required by rule 15.2 of the Internal Capital Adequacy Assessment Part of the PRA Rulebook a firm should at least take into account each of the sources of risk identified in accordance with GENPRU 1.2.30R(2).

4.6 Reverse stress testing should be appropriate to the nature, size and complexity of the firm's business and of the risks it bears. Where reverse stress testing reveals that a firm's risk of business failure is unacceptably high, the firm should devise realistic measures to prevent or mitigate the risk of business failure, taking into account the time that the firm would have to react to these events and implement those measures. As part of these measures, a firm should consider if changes to its business plan are appropriate. These measures, including any changes to the firm's business plan, should be documented as part of the results referred to in rule 15.4 of the Internal Capital Adequacy Assessment Part of the PRA Rulebook.

4.7 In carrying out its reverse stress testing, a firm should consider scenarios in which the failure of one or more of its major counterparties or a significant market disruption arising from the failure of a major market participant, whether or not combined, would cause the firm's business to fail.

4.8 Firms may choose to use reverse stress testing as a starting point for their recovery plan scenarios.

5 The SREP

5.1 The SREP is a process by which the PRA, taking into account the nature, scale and complexity of a firm's activities, reviews and evaluates the:

- arrangements, strategies, processes and mechanisms implemented by a firm to comply with its regulatory requirements laid down in PRA rules and the CRR;
- risks to which the firm is or might be exposed;
- risks that the firm poses to the financial system; and
- further risks revealed by stress testing.

(1) PRA Consultation Paper CP17/15, 'The PRA Rulebook: Part 3', April 2015, www.bankofengland.co.uk/praf/Pages/publications/CP/2015/cp1715.aspx.

5.2 As part of the SREP, the PRA will review the firm's ICAAP and have regard to the risks outlined in the overall Pillar 2 rule in Internal Capital Adequacy Assessment 3.1, the firm's vulnerabilities under reverse stress testing, the governance arrangements of firms, its corporate culture and values, and the ability of members of the management body to perform their duties. The degree of involvement of the management body of the firm will be taken into account by the PRA when assessing the ICAAP, as will the appropriateness of the internal processes and systems for supporting and producing the ICAAP.

5.3 When the PRA reviews an ICAAP as part of the SREP, it does so as part of the process of determining whether all of the material risks have been identified and that the amount and quality of capital identified by the firm is sufficient to cover the nature and level of the risks to which it is or might be exposed.

5.4 The PRA may request a firm to submit the design and results of its reverse stress tests and any subsequent updates as part of its risk assessment.

5.5 The SREP will also consider:

- the results of stress tests carried out in accordance with the CRR by firms that use an internal ratings-based (IRB) approach or internal models for market risk capital requirements;
- the exposure to, and management of, concentration risk by firms, including their compliance with the requirements set out in Part Four of the CRR and Chapter 6 of the ICAA rules;
- the robustness, suitability and manner of application of policies and procedures implemented by firms for the management of the residual risk associated with the use of credit risk mitigation techniques;
- the extent to which the capital held by firms in respect of assets which it has securitised is adequate, having regard to the economic substance of the transaction, including the degree of risk transfer achieved;
- the exposure and management of liquidity risk by firms, including the development of alternative scenario analyses, the management of risk mitigants (including the level, composition and quality of liquidity buffers), and effective contingency plans;
- the impact of diversification effects and how such effects are factored into firms' risk measurement system;
- the geographical location of firms' exposures;
- risks to firms arising from excessive leverage;

- whether a firm has provided implicit support to a securitisation; and
- the exposure to and management of foreign currency lending risk to unhedged retail and SME borrowers by firms, in line with Title 6, section 2 paragraphs 158–59 of the EBA's Guidelines on common procedures and methodologies for the SREP.⁽¹⁾

5.6 The PRA also assesses as part of the SREP the risks that the firm poses to the financial system.

5.7 The PRA may need to request further information and meet with the management body and other representatives of a firm in order to evaluate fully the comprehensiveness of the ICAAP and the adequacy of the governance arrangements around it. The management body should be able to demonstrate an understanding of the ICAAP consistent with its taking responsibility for it. And the appropriate levels of the firm's management should be prepared to discuss and defend all aspects of the ICAAP, covering both quantitative and qualitative components.

5.8 The SREP will generally be the same across all types of firms, but will be proportionate to the nature, scale and complexity of a firm's activities. There may also be a different emphasis depending on the type of firm or its potential risk to the financial system. For example, banks and building societies may be more exposed to credit concentration risk and IRRBB, with investment firms being more likely to be exposed to market risk. These potentially different areas of emphasis will be reflected in the conduct of the SREP, where applicable, for relevant firms.

5.9 On the basis of the SREP, the PRA will determine whether the arrangements implemented by a firm and the capital held by it provide sound management and adequate coverage of its risks. If necessary, the PRA will require the firm to take appropriate actions or steps at an early stage to address any future potential failure to meet its prudential regulatory requirements, or to prevent or mitigate the risk of business failure revealed by reverse stress testing. The PRA recognises that not every business failure is driven by lack of financial resources and will take this into account when reviewing a firm's reverse stress-test design and results.

5.10 There are two main areas that the PRA considers when assessing a firm's capital adequacy under a SREP: (i) risks to the firm which are either not captured, or not fully captured, under the CRR (eg IRRBB and concentration risk); and (ii) risks to which the firm may become exposed over a forward-looking planning horizon (eg due to changes to the

(1) See footnote (2) on page 9.

economic environment). The PRA refers to the first area as Pillar 2A and the second as Pillar 2B.

5.11 To assess the capital adequacy of a firm under Pillar 2A, the PRA has developed capital methodologies. The methodologies are published in *PRA Statement of Policy*, 'The PRA's methodologies for setting Pillar 2 capital'.

5.12 The PRA will set ICG in light of both the calculations included in a firm's ICAAP and the results of the PRA's own Pillar 2A methodologies. Setting ICG is subject to peer group reviews to ensure consistency of decisions across firms.

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

The setting of ICG and the PRA buffer ICG

5.14 Following the SREP, including both a review of the ICAAP and any further interactions with the firm, the PRA will normally set the firm an ICG, advising the firm of the amount and quality of capital that the PRA considers the firm should hold to meet the overall financial adequacy rule in Internal Capital Adequacy Assessment 2.1.

5.15 The PRA will set ICG for firms which must comply with the overall financial adequacy rule in Internal Capital Adequacy Assessment 2.1 on a consolidated basis. The PRA may decide not to set ICG on an individual basis to members of a group where firms are able to demonstrate that capital has been adequately allocated among subsidiaries and that there are no impediments to the transfer of capital within the group. This does not absolve individual firms or members of the group of their obligation to comply with the overall financial adequacy rule in Internal Capital Adequacy Assessment 2.1, which applies to all firms on an individual basis whether or not it also applies to the firm on a consolidated basis.

5.16 Where the PRA gives ICG to a firm it will generally specify an amount of capital (Pillar 2A) that the firm should hold at all times in addition to the capital it must hold to comply with the CRR (Pillar 1). It will usually do so by stating that the firm should hold capital of an amount equal to a specified percentage of the firm's Pillar 1 RWAs (the total risk exposure amount calculated in accordance with Article 92(3) of the CRR), plus one or more static add-on in relation to specific risks in accordance with the overall Pillar 2 rule in Internal Capital Adequacy Assessment 3.1. The PRA expects firms to meet Pillar 2A with at least 56% CET1 capital, no more than 44% additional Tier 1 (AT1) capital and no more than 25% Tier 2. For these purposes, firms should follow the

provisions on the definition of capital set out in the Definition of Capital Part of the PRA Rulebook and Supervisory Statement 7/13.⁽¹⁾

5.17 It is for firms to ensure that they comply with the overall financial adequacy rule in Internal Capital Adequacy Assessment 2.1. If a firm holds the level of capital recommended as its ICG that does not necessarily mean that it is complying with the overall financial adequacy rule. Deviation by a firm from the terms of the ICG given to it by the PRA does not automatically mean that the firm is in breach of the overall financial adequacy rule or that the PRA will consider the firm is failing, or likely to fail, to satisfy the Threshold Conditions (TCs). However, firms should expect the PRA to investigate whether any firm is failing, or likely to fail, to satisfy the TCs, with a view to taking further action as necessary.

5.18 The PRA expects a firm not to meet the CRD IV buffers with any CET1 capital maintained to meet its ICG. If a firm agrees with its ICG, the PRA will expect the firm to apply for a requirement under section 55M of the Financial Services and Markets Act 2000 (FSMA) preventing the firm from meeting any of the CRD IV buffers that apply to it with any CET1 capital maintained to meet its ICG. The firm will normally be invited to apply for such a requirement at the same time as it is advised of its ICG. If a firm does not apply for such a requirement the PRA will consider using its powers under section 55M(3) to impose one of its own initiative.

5.19 Where a firm is subject to the Basel I floor, the PRA expects a firm not to meet the CRD IV buffers with any CET1 maintained by the firm to meet the Basel I floor and will use its powers under section 55M to prevent a firm from doing so. Where applicable to a firm, global and other systemically important institution buffers will also be set by the PRA using its powers under section 55M.

The PRA buffer

5.20 Following the SREP, the PRA may also notify the firm of an amount of capital that it should hold as a PRA buffer, over and above the level of capital recommended as its ICG and over and above the CRD IV buffers. The PRA buffer, based on a firm-specific supervisory assessment, should be of a sufficient amount to allow the firm to continue to meet the overall financial adequacy rule in Internal Capital Adequacy Assessment 2.1. This should be the case even in adverse circumstances, after allowing for realistic management actions that a firm could, and would, take in a stress scenario.

5.21 In setting a PRA buffer for a firm the PRA will not just consider whether the firm would meet its CET1 capital

(1) *PRA Supervisory Statement SS7/13, 'CRD IV and capital'*, December 2013; www.bankofengland.co.uk/praf/Pages/publications/crdcapital.aspx.

requirements under the CRR and its ICG in the stress scenario. Other factors informing the size of the PRA buffer include but are not limited to: the maximum change in capital resources and requirements under the stress; the firm's leverage ratio; the extent to which the firm has used up its CRD IV buffers (eg the systemically important financial institution (SIFI) and capital conservation buffers); Tier 1 and total capital ratios; and the extent to which potentially significant risks are not captured fully as part of the stress.

5.22 Where the PRA assesses a firm's risk management and governance (RM&G) to be significantly weak, it may set the PRA buffer to include an amount of capital to cover the risks posed by those weaknesses until they are addressed. This will generally be calibrated in the form of a scalar applied to the amount of CET1 required to meet Pillar 1 plus Pillar 2A. Depending on the severity of the weaknesses identified, the scalar could range from 10% to 40%. If the PRA sets the PRA buffer to cover the risk posed by significant weaknesses in risk management or governance it will identify those weaknesses to the firm and expect the firm to address those weaknesses within an appropriate timeframe.

5.23 Where the PRA sets a PRA buffer it will generally do so stating that the firm should hold capital of an amount equal to a specified percentage of the firm's Pillar 1 RWAs (the total risk exposure amount calculated in accordance with Article 92(3) of the CRR). The PRA expects firms to meet the PRA buffer with 100% CET1. The PRA expects firms to meet the PRA buffer with additional CET1 capital to the CET1 capital maintained to meet its CRD IV buffers.

5.24 The PRA may set a firm's PRA buffer either as an amount of capital which it should hold from the time of the PRA's notification following the firm's SREP or, in exceptional cases, as a forward-looking target that a firm should build up over time. Where the general stress and scenario testing rule, as part of the ICAAP rules, applies to a firm on a consolidated basis the PRA may notify the firm that it should hold a PRA buffer on a consolidated basis. The PRA may in certain circumstances notify a firm that it should hold a PRA buffer on an individual basis.

5.25 If a firm considers that the ICG or the PRA buffer advised to it by the PRA is inappropriate to its circumstances it should notify the PRA of this, consistent with Fundamental Rule 7. If, after discussion, the PRA and the firm do not agree on an adequate level of capital, the PRA may consider using its powers under section 55M of FSMA to impose a requirement on the firm to hold capital in accordance with the PRA's view of the capital necessary to comply with the overall financial adequacy rule in Internal Capital Adequacy Assessment 2.1. In deciding whether it should use its powers under section 55M, the PRA will take into account the amount of capital that the firm should hold for its PRA buffer.

Transitional arrangements

5.26 All firms are expected to hold the PRA buffer entirely in CET1 capital from 1 January 2019.

5.27 Firms are expected to meet their PRA buffer in increasing proportions of CET1 from January 2016 to January 2019:

- at least 25% by January 2016;
- 50% by January 2017;
- 75% by January 2018; and
- 100% by January 2019.

5.28 During the transitional period, firms may meet the remaining portion of their PRA buffer with any form of CRR-compliant regulatory capital unless the PRA decides that in the particular circumstances of an individual firm it should hold higher quality capital to meet the PRA buffer.

5.29 Some firms have been set a Core Capital Planning Buffer in the form of CET1 capital. The PRA expects these firms to meet their PRA buffer entirely in CET1 capital from 1 January 2016.

5.30 The PRA will continue to apply a more flexible approach to new entrants and expanding banks when setting the PRA buffer, as set out for the CPB in the Bank of England and Financial Conduct Authority (FCA) publication *A review of requirements for firms entering into or expanding in the banking sector: one year on*.⁽¹⁾

Failure to meet ICG and use of the PRA buffer

5.31 The PRA expects every firm to hold at least the level of capital advised to it in its ICG at all times. If a firm's capital has fallen or is expected to fall below that level it should inform the PRA as soon as practicable (even if the firm has not accepted the ICG given by the PRA), explaining why this has happened or is expected to happen. The firm will also be expected to discuss the actions that it intends to take to increase its capital and/or reduce its risks (and therefore capital requirement), and any potential modification that it considers should be made to the ICG.

5.32 Where this has happened, the PRA may ask a firm for alternative and more detailed proposals or further assessments of capital adequacy and risks faced by the firm. The PRA will seek to agree with the firm the appropriate timescales and the scope for any such additional work.

5.33 Use of the PRA buffer is not itself a breach of capital requirements or TCs. However, where a firm has a PRA buffer

(1) Bank of England and FCA, July 2014; www.bankofengland.co.uk/praf/Documents/publications/reports/2014/barriers2014.pdf.

in place, it should only use that buffer to absorb losses or meet increased capital requirements if certain adverse circumstances materialise. These should be circumstances beyond the firm's normal and direct control, whether relating to a deteriorating external environment or periods of stress such as macroeconomic downturns or financial/market shocks, or firm-specific circumstances.

5.34 Consistent with Fundamental Rule 7, a firm should notify the PRA as early as possible where it has identified that it would need to use its PRA buffer (even if the firm has not accepted the PRA's assessment of the amount of capital required for the PRA buffer). The firm's notification should state as a minimum:

- what adverse circumstances are likely to force the firm to draw down its PRA buffer;
- how the PRA buffer will be used up in line with the firm's capital planning projections; and
- what plan is in place for the eventual restoration of the PRA buffer.

5.35 A firm which does not meet its PRA buffer can expect enhanced supervisory action, and should prepare a capital restoration plan. If the PRA is not satisfied with the capital restoration plan or with the firm's reasons for using the buffer it may consider using its powers under section 55M of FSMA to require the firm to raise sufficient capital to meet the buffer within an appropriate timeframe.

5.36 The automatic distribution constraints associated with the CRD IV buffers do not apply to the PRA buffer.

Disclosure

5.37 Firms should disclose the letter setting ICG or the PRA buffer to their auditors and may disclose their total ICG to other third parties. Otherwise, the PRA expects firms to treat all other information relating to ICG, and all information relating to the PRA buffer, as confidential unless they are required to disclose it by law. If firms wish to disclose the letter or any part of it to any third parties (other than their auditors) they should, consistent with Fundamental Rule 7, provide appropriate prior notice to the PRA of the proposed form, timing, nature and purpose of the disclosure. PRA does not expect firms to provide prior notice where they only propose to disclose their total ICG

5.38 Where an immediate market disclosure obligation exists, prior notification to the PRA should not lead to any delay in disclosure. But any firm intending to disclose information relating to ICG (except the total ICG) or the buffers should (consistent with Fundamental Rule 7), where reasonably practicable, provide appropriate notice in advance of the proposed disclosure and the reasons for it.

5.39 The PRA does not advise firms on their market disclosure obligations and firms should seek their own advice on this matter. The FCA is responsible for oversight of issuers' compliance with their market disclosure obligations.