



BANK OF ENGLAND

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# Stress testing the UK banking system: 2016 guidance for participating banks and building societies



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## 1 Background

The Bank of England's concurrent stress-testing framework was established following a Recommendation from the Financial Policy Committee (FPC) in March 2013.<sup>(1)</sup> The main purpose of the stress-testing framework is to provide a forward-looking, quantitative assessment of the capital adequacy of the UK banking system as a whole, and individual institutions within it. In doing so, it aims to support both the FPC and Prudential Regulation Authority (PRA) in meeting their statutory objectives.<sup>(2)</sup>

In 2015 the framework was developed further in 'The Bank of England's approach to stress testing the UK banking system'.<sup>(3)</sup> In particular, the Bank set out its intention to conduct an annual cyclical scenario (ACS). For the 2016 concurrent stress test (hereafter the '2016 stress test') the ACS will be implemented for the first time, alongside other aspects of the updated framework, including the hurdle rate.

The 2016 stress test and methodology have been designed and calibrated by Bank staff, under the guidance of the FPC and PRA Board. Ultimately, the results of the stress test will inform both system-wide policy interventions by the FPC and bank-specific supervisory actions by the PRA.

## 2 Objectives of this guidance

This document and the accompanying traded risk methodology publication<sup>(4)</sup> provide participating banks with guidance for conducting their own analysis for the 2016 stress test.<sup>(5)</sup> The templates used for collecting data, along with the document setting out definitions of data items, have been provided to participating banks, and the 'Key elements of the 2016 stress test' (hereafter the 'Key Elements') is published separately.<sup>(6)</sup> These documents should be read in conjunction with this guidance.

This document does not cover the full approach taken by the Bank to arrive at the final stress-test results. In addition to banks' own analysis, Bank staff will perform analysis to independently assess the impact of the baseline and stress scenarios on banks' profitability and capital and leverage ratios. Accordingly, the final stress-test results may differ from banks' own submissions.

## 3 Banks participating in the 2016 stress test

The 2016 stress test will cover seven major UK banks and building societies (hereafter 'banks'): Barclays plc, HSBC Holdings plc, Lloyds Banking Group plc, Nationwide Building Society, The Royal Bank of Scotland Group plc, Santander UK plc and Standard Chartered plc. This is the

same group of banks that participated in the 2015 stress test. Unless agreed otherwise with the Bank, participating banks should complete all aspects of the 2016 stress test.

## 4 Scope of consolidation

Banks should provide results at the highest level of UK consolidation. The scope of consolidation is the perimeter of the banking group as defined by the Capital Requirements Regulation (CRR)/Capital Requirements Directive (CRD) IV, which includes investment banks. Insurance activities are excluded, although banks are expected to assess the impact of the scenarios on their insurance activities and model the impact on any dividend streams, material holdings or minority interest capital deductions and risk weightings.

## 5 Macroeconomic scenario

Banks should follow the guidance outlined in this document to assess the impact of the baseline and stress scenarios. In order to do this, it is likely that banks will need to expand the set of macroeconomic and financial variables provided alongside the Key Elements document. For example, banks may need to derive variable paths for some additional macroeconomic variables (such as different measures of aggregate household income gearing) or to expand the scenario paths across a broader range of geographies or at a regional level within geographies. In doing so, banks should adhere to certain standards. In particular, banks are expected to:

- Ensure that the paths of any additional macroeconomic or financial variables that are required by their models are derived in a way that is consistent with the scenario narrative, and displays an awareness of the ACS framework as laid out in the Key Elements document. The key feature of the ACS framework is that severity varies in line with risks in credit and financial markets. When these risks are elevated — for example, as they were prior to the global financial crisis — the severity of the scenario should become more severe. And similarly when risks are subdued — for example, following a crisis — the severity of the scenario should become less severe. This calibration framework might be applied at a country level, as well as in specific markets.

(1) See 'Financial Policy Committee statement from its policy meeting, 19 March 2013', available at [www.bankofengland.co.uk/publications/pages/news/2013/013.aspx](http://www.bankofengland.co.uk/publications/pages/news/2013/013.aspx).

(2) Unless otherwise stated, references to the Bank or Bank of England throughout this document include the PRA.

(3) See [www.bankofengland.co.uk/financialstability/Documents/stresstesting/2015/approach.pdf](http://www.bankofengland.co.uk/financialstability/Documents/stresstesting/2015/approach.pdf).

(4) [www.bankofengland.co.uk/financialstability/Documents/stresstesting/2016/tradedriskguidance.pdf](http://www.bankofengland.co.uk/financialstability/Documents/stresstesting/2016/tradedriskguidance.pdf).

(5) The term 'bank' is used throughout this document to refer to banks and building societies.

(6) [www.bankofengland.co.uk/financialstability/Documents/stresstesting/2016/keyelements.pdf](http://www.bankofengland.co.uk/financialstability/Documents/stresstesting/2016/keyelements.pdf).

- Use robust statistical techniques as a starting point to derive additional variable paths. These should be calibrated using long periods of historical data in order to capture a full credit cycle, rather than being restricted to periods of macroeconomic stability. Banks are expected to deviate from purely statistical techniques if there is a lack of historical data that is relevant to conditions today (such as factors relating to the low level of Bank Rate) and conditions envisaged as part of the stress scenario. Where banks deviate from such statistical techniques, they are expected to explain how and why such judgements were made (see Section 13); and
- Take a prudent approach to deriving additional variable paths and ensure that any correlation assumptions are consistent with a stressed environment.

Banks should project the countercyclical capital buffer (CCyB) for all relevant jurisdictions in baseline and stress. Banks should assume that the UK CCyB is zero in the stress, consistent with the hurdle rate framework and previous FPC statements on the nature of the buffer. Banks should project non-UK CCyBs based on statements provided in those jurisdictions, or with reference to the Basel Committee's guidance for national authorities operating the CCyB.<sup>(1)</sup>

## 6 Time horizon and reference date

The 2016 stress test will cover a five-year horizon. Unless otherwise agreed, and with the exception of some elements of banks' market and counterparty credit risk (see Section 10.3), the reference date will be 31 December 2015 and banks are expected to submit projections as at 31 December for each subsequent year end.

## 7 Definitions of capital and leverage ratios

Banks are expected to submit starting point capital positions and projected capital positions in the baseline and stress scenarios. The adequacy of banks' capital resources will be judged with reference to risk-weighted capital ratios and leverage ratios. Banks should submit projections of both risk-weighted capital ratios and leverage ratios using the following definitions:

- Common equity Tier 1 (CET1), Tier 1 and Total capital ratios as defined by the UK implementation of the CRR, via the PRA Rulebook.<sup>(2)</sup>
- End-point Tier 1 leverage ratio as defined in the Leverage Ratio part of the PRA Rulebook.<sup>(3)</sup>

## 8 Publication of results

The results of the 2016 stress test will be published in 2016 Q4.

## 9 Submission

Submission instructions are outlined in the Firm Data Submission Framework (FDSF) Target Operating Model that was communicated to all banks with the data request in January 2016. These instructions need to be followed for both structured and unstructured data requests.

## 10 Guidance on modelling risks and income

### 10.1 Balance sheet modelling

Banks are expected to report baseline and stress projections using their reporting currency. Banks should use actual balance sheet data at the reference date as the starting point for their submissions. After that point, banks should submit projections based on the baseline and stress scenarios (Figure 1).

The macroeconomic scenarios begin in 2016 Q1. Banks should not replace projections with actuals where data for actuals exist. Submission of actual rather than projected data should only be considered selectively and in exceptional circumstances, where:

- There is a sale of a material asset scheduled, and completed, immediately after the end of 2015.
- There are assets for which a sale has been agreed at the end of 2015 such that: the timetable for sale was agreed; the contractual terms and price were certain; the contractual terms were binding under a stress; and there is evidence that the counterparty could honour the contract under stress.

In these exceptional cases, the Bank may allow banks to include the asset in their data for the end of 2015 only, and for the bank to exclude the asset from the projections submitted as part of the detailed FDSF template. The same principles, in reverse, should be followed for asset purchases.

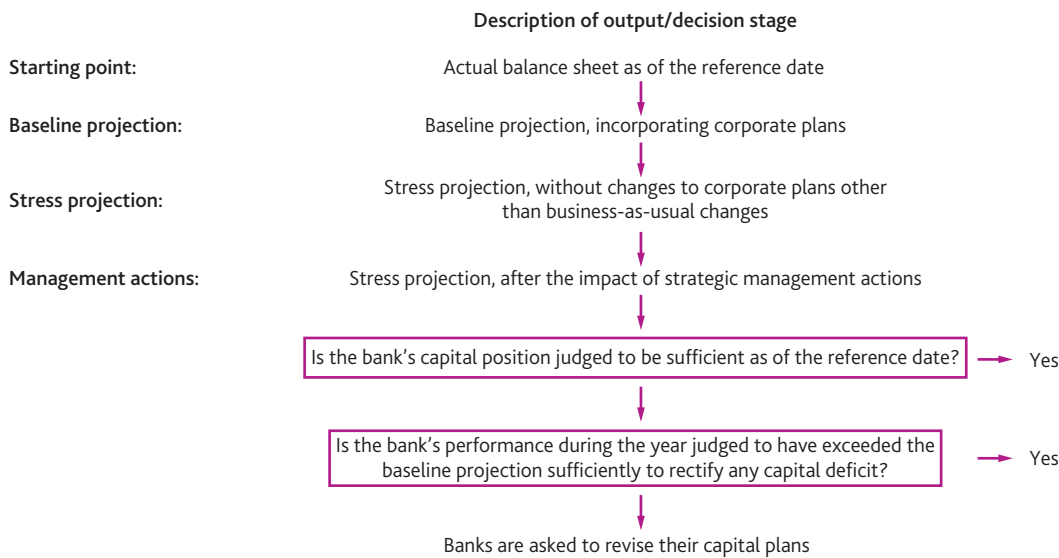
The 2016 stress test will be performed on a dynamic balance sheet basis. This means that banks' projections will take into account changes in the size and the composition of their balance sheet, both in the baseline and in the stress scenario.

Banks' submissions should reflect their corporate plans, including any costs and business changes. These should be adjusted appropriately to reflect changes in the expected performance and execution of these plans in each scenario, including business-as-usual changes in the stress scenario (also see Section 11).

(1) [www.bis.org/publ/bcbs187.pdf](http://www.bis.org/publ/bcbs187.pdf).

(2) The PRA Rulebook is available at [www.prarulebook.co.uk/Home](http://www.prarulebook.co.uk/Home).

(3) [www.prarulebook.co.uk/rulebook/Content/Part/319681](http://www.prarulebook.co.uk/rulebook/Content/Part/319681).

**Figure 1** Stylised stages of the stress-testing process

Banks should clearly set out their assumptions for forecast balance sheet growth or contraction in the baseline and stress scenarios. These assumptions should be consistent with the macroeconomic scenarios and variable paths for lending provided (see Box 3 in the Key Elements document). To ensure comparability and consistency between banks, the Bank is providing the following guidance on the overall approach to balance sheet growth:

- To the extent that a bank's corporate plan includes a reduction in the size of their balance sheet (or certain portfolios within it), either via outright asset sales or a reduction in new business, they may incorporate that reduction into their baseline and stress projections.<sup>(1)</sup>
- **Where the Bank has provided a variable path for lending** in the variable paths for the 2016 stress test, banks' market share of the stock of lending in each year of the stress scenario should be at least as large as their corresponding market share in the baseline scenario. Banks should calculate their market share in each year of the baseline and stress for each of the lending categories by dividing their own stock of lending by the overall stock of lending as implied by the published growth rates. Banks can report the impact of reductions relative to this threshold as a potential management action (Section 11).<sup>(2)</sup>
- **Where the Bank has not provided a variable path for lending and where banks have assumed positive asset growth in the baseline scenario**, banks may assume slower growth but should not assume a contraction of these portfolios except as a result of higher impairments. Banks can report the impact of reducing these portfolios relative to their end-2015 position as a potential management action (Section 11).

- **Where the Bank has not provided a variable path for lending and where banks have assumed a contraction in the size of assets in the baseline scenario**, relative to the end of 2015, banks should not assume further contraction in the stress scenario except as a result of higher impairments. Banks can report the impact of reducing these portfolios further as a potential management action (Section 11).

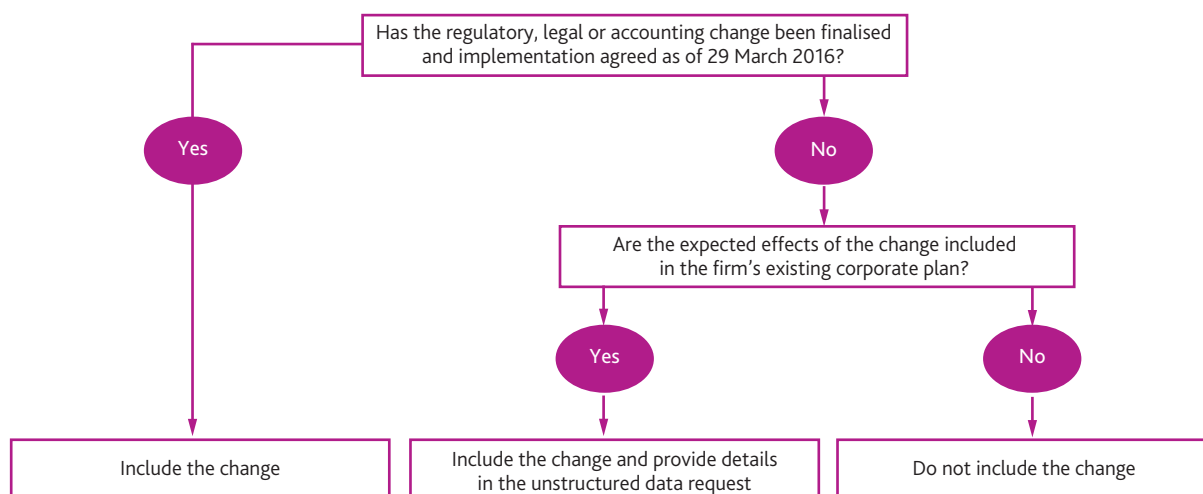
- Banks are expected to consider the impact of the stress scenario on the timing and price of any planned asset sales that are included in their baseline submissions and should document the reasoning behind the impact. In particular, banks are expected to provide clear supporting evidence in cases where the bank has assumed that an asset disposal in the stress scenario would improve the bank's capital position.

Banks should include the effects of regulatory, legal or accounting changes in their projections where final requirements and implementation or effective dates have been announced or endorsed publicly by the relevant authority on or before 29 March 2016. Where relevant, these changes should be modelled in line with their respective implementation dates. Banks' projections should also reflect the expected effects of such changes where requirements or implementation details have not been finalised, to the extent that these effects are included in banks' existing corporate plans. This should include the expected effects of each bank's current view of ring-fencing arrangements. The Bank

(1) Balance sheet plans in the baseline scenario are not expected to differ materially from those in a bank's most recent corporate plan.

(2) For more information see the 'Sources and definitions' tab in the variable paths for the 2016 stress test; [www.bankofengland.co.uk/financialstability/Documents/stresstesting/2016/variablepaths.xlsx](http://www.bankofengland.co.uk/financialstability/Documents/stresstesting/2016/variablepaths.xlsx).

**Figure 2** Stylised guidance for including the effects of regulatory, legal and accounting changes in banks' submissions



recognises that regulatory policy on ring fencing has not yet been finalised but expects banks' corporate plans to include at least an estimate of associated one-off implementation and ongoing costs. Banks are not required to provide separate submissions for their ring-fenced and non ring-fenced entities. For the purpose of this exercise banks should not model the impact of IFRS 9.

Banks that have modelled the impacts of changes that are not yet finalised or where questions on implementation exist should provide details of these changes as part of the unstructured data request. This should include details of the assumptions and financial impacts that have been modelled in relation to ring-fencing. **Figure 2** summarises this overall approach.

## 10.2 Credit risk

Banks should use their own stress-testing methodologies to translate the macroeconomic scenarios provided into projections for impairments and risk-weighted assets (RWAs), categorised by both asset class and country of exposure. In doing so, banks are expected to follow the high-level guidance outlined in Section 5. Moreover, banks should not assume that there is a material lag between the macroeconomic shock materialising and credit quality deteriorating that might delay the impact of the scenario. This does not preclude instances where it may be appropriate to apply a natural lag between certain variables and the emergence of defaults. For example, some firms have previously observed an initial lag between rising unemployment and mortgage defaults.

Banks should provide details of the assumed impact of any unwind of acquisition-related fair value adjustments relating to impairment losses on loans and advances as part of the unstructured data request, split by asset class and year. Banks should describe any material assumptions used to determine the timing of that impact.

In line with the calculation of capital requirements for all risks:

- Banks should not assume changes to their approach to calculating credit risk capital requirements (eg adoption of, or changes to, IRB models) unless by prior agreement with the Bank; and
- Banks' baseline projections should be consistent with the credible execution of their business plans in the baseline scenario. Similarly, banks' RWA projections in the stress scenario should take into account the impact of the stress scenario on the risk profile of the positions associated with these RWAs and of the bank's ability to execute its business plan.

Banks are expected to articulate the following judgements clearly and with justification as part of the unstructured data request (see Section 13):

- Any choices about statistical or judgement-based approaches used to produce banks' projections, including evidence of the effectiveness of their governance process. Governance processes should include effective challenge from senior officials and the use of expert judgement to confirm or adjust key assumptions used within their models or affecting the outputs of models.
- Assumptions affecting banks' forbearance practices or provisioning model assumptions that have been included within their projections. Banks are also expected to adhere to the guidance regarding the permissible path of balances through the stress scenario (Section 10.1).
- The governance process should also assess the validity of any business-as-usual management actions assumed within banks' projections.



### 10.3 Market and counterparty credit risks

This section provides banks with guidance for calculating stressed losses and RWAs for fair-value positions (excluding securitisations and covered bonds) with respect to market and counterparty credit risk. For the 2016 stress test, the Bank has produced a set of financial variable shocks that are consistent with the ACS approach.

The market risk approach outlined in this section covers: all fair value positions in the regulatory Trading Book; and all Available for Sale (AFS) and Fair Value Option (FVO) positions and their hedges in the Banking Book, excluding securitisation positions and covered bonds. This approach differs in its treatment of Trading Book (Section 10.3.1) and Banking Book (Section 10.3.2) positions, with Banking Book positions typically being subject to longer holding periods and correspondingly larger shocks. For counterparty credit risk, banks should include all Trading Book and Banking Book derivatives and Securities Financing Transactions (SFTs) when applying the approach outlined in Section 10.3.3.

Banks should use positions at 19 February 2016 for the purposes of calculating their market and counterparty risk, with the exception of AFS and FVO Banking Book positions and their hedges, for which banks should use positions at 31 December 2015. Banks should also use positions at 31 December 2015 for all other submissions covered in this section, including stressed RWA projections for market risk, counterparty credit risk and credit valuation adjustment (CVA) risk. Banks should allocate all Trading Book losses (both market risk and counterparty credit risk) to year 1 of the scenario, for the purposes of their submissions. For AFS and FVO Banking Book losses, banks should allocate losses in a way that is consistent with the scenario description.

#### 10.3.1 Market risk in the Trading Book

As with the 2015 stress-testing exercise, the market risk approach aims to capture variation in the liquidity of banks' Trading Book positions and the speed at which banks would be able to unwind positions during a stress scenario. This approach involves three parts, comprising: a 'Liquids' stress for the entire Trading Book; an additional 'Structural Liquids' stress to capture positions which banks may choose to not fully exit for franchise reasons; and an 'Illiquids' stress to capture banks' illiquid positions.

The Bank will provide a number of key financial variable shocks for one-day, two-week, one-month and one-year liquidity horizons, which banks should interpolate between in order to obtain the shock that is appropriate to the liquidity of their positions in the stress scenario. Banks are expected to use the financial variable shocks supplied by the Bank, together with the macroeconomic scenario, to expand the set of shocks to other risk factors to which the bank is exposed. The Bank will review each bank's approach for expanding these shocks as part of the stress-testing process.

#### The Liquids stress

Banks should apply the Liquids stress to all Trading Book positions. In order to do this, banks should apply an instantaneous shock, the size of which depends on the liquidity of the position. However, any product or positions that a bank assesses to have a liquidity horizon greater than two weeks should be classified as illiquid and should also be subject to the Illiquids stress described below.

#### The Structural Liquids stress

The Structural Liquids stress is incremental to the Liquids stress and is intended to take account of risks that banks would continue to take, for business reasons, in the aftermath of the initial Liquids stress. Specifically, banks may be unable or unwilling to reduce their inventories fully in response to a large market shock, in order to continue to make markets for franchise-supporting reasons (eg maintaining bond inventories to support a corporate credit business). This risk is considered 'structural' in that it is a necessary part of the bank's business and therefore exposes the bank to the possibility of multiple market shocks over longer time horizons. For the purpose of the Structural Liquids stress, banks should identify the affected assets based on a prudent assessment of the stock of inventory that the bank would need to maintain for franchise purposes. Banks should then apply further stresses to this inventory, as appropriate, and add the result to the Liquids stress.

#### The Illiquids stress

The Illiquids stress is incremental and is intended to take account of risks from particularly complex or illiquid positions that are not captured adequately by the Liquids or Structural Liquids stresses. Banks should identify positions as being illiquid if any of the following characteristics apply at the reference date or may be anticipated to apply under the stress scenario:

- Positions that are difficult to model and consequently may have significant non-modelled characteristics that are not captured in the stressed value (eg legal enforceability risk or rating-downgrade contingencies);
- Positions with characteristics that may be modelled, but with significant uncertainty;
- Positions where there are only thin or one-way hedging markets available — or where such one-way markets would likely be produced under the stress scenario — such that the ability to ascribe a liquidity horizon is very uncertain; or
- Positions that would take longer than two weeks to fully liquidate or hedge, whether complex or not (eg a corporate bond held in large size relative to the amount of the bond in issue).

The severity of the illiquid stresses applied by banks should be consistent with the macroeconomic scenario. The Bank would expect that the specific stresses applied in each case will require bespoke treatment by each bank depending on the specific characteristics of the illiquid product or portfolio in question.

#### Bid/offer spreads

Banks should explicitly assess the increase in bid/offer spreads arising from the stress and should report any additional losses arising from wider bid/offer spreads as part of their results.

#### Defaults

Banks should consider defaults in the Trading Book to the extent that this is necessary for consistency with the defaults assumed under the Counterparty Credit Risk stress (Section 10.3.3). That is, all obligations of a given name should be consistently defaulted.

#### 10.3.2 Market risk in the Banking Book

The approach to market risk in the Banking Book should be applied to all AFS and FVO positions, excluding securitisations and covered bonds. Given that these positions are unlikely to change frequently, banks should apply the one-year shock parameters to these positions and any hedges that are in place at the reference date, but also model the impact for each subsequent year of the five-year stress scenario. Banks should not assume that hedges on these positions can be rebalanced.

#### 10.3.3 Counterparty credit risk

Banks should follow the guidance in this section in order to calculate counterparty credit risk losses for Trading and Banking Book derivative and SFT positions. Banks should calculate: (i) CVA losses, (ii) losses arising from default of specific counterparties and (iii) portfolio-level default losses.

For CVA losses, price shocks must be calibrated to a one-year liquidity horizon for both the CVA and all its hedges, whether these are hedging credit or market risk.

For the default of specific counterparties the following approach should be adopted, the precise details of which will vary in any given year depending on the severity and regional focus of the stress scenario. For 2016 these details have been provided in a separate traded risk guidance document.<sup>(1)</sup>

- A set of regions or key countries will be specified for which the bank should separately identify and rank its largest uncollateralised counterparty exposures, after applying the stressed risk factors;
- A certain minimum number of vulnerable uncollateralised counterparties in each of these ranked lists will then be defaulted;

- A separate ranking and default process should then be undertaken for globally significant collateralised counterparties.

Banks should assess counterparties' vulnerability based on the stress scenario and their understanding of their counterparties' risk profiles.

For portfolio-level default losses, banks should identify cohorts of uncollateralised counterparties that will be particularly impacted by the stress and default a proportion of the cohort without consideration of the specific underlying names.

#### 10.3.4 Revenue and cost projections

Banks should provide baseline and stress projections for investment banking revenues and costs for each year end, broken down by sub-business area. Revenues should include both trading income and fee and commission income. Banks should ensure that their baseline projections are consistent with the credible execution of their business plans. Under the stress scenario, banks are expected to create revenue and cost projections that are consistent with the scenario, by taking account of the impact of the stress scenario on the bank's ability to execute its business plan.

#### 10.3.5 Risk-weighted assets for market risk, counterparty credit and credit valuation adjustment risk

Banks should provide projections for RWAs for each year end in the baseline and stress scenarios, broken down into: market risk, CVA, and counterparty credit. For each category, further breakdowns are required between standard rules and advanced model components.

#### 10.4 Prudential Valuation Adjustments (PVA)

The 2016 stress test includes an assessment of the investing and funding cost component of PVA. While the market risk stress may partly capture the impact of changes to investing and funding costs on valuations, banks may also be applying a PVA on investing and funding costs that is not recognised in mark-to-market accounting values. Banks should assess the impact of a shock to their cost of funding on this component of their PVA and should deduct this from their capital resources. Banks should assume that all other components of PVA remain constant.

#### 10.5 Structured finance

For the purpose of the 2016 stress test, structured finance (covering Trading Book and non-Trading Book assets) includes the following assets:

(1) [www.bankofengland.co.uk/financialstability/Documents/stresstesting/2016/tradedriskguidance.pdf](http://www.bankofengland.co.uk/financialstability/Documents/stresstesting/2016/tradedriskguidance.pdf).

- Exposures to third-party cash or synthetic securitisations, including liquidity lines for securitisation transactions, as specified in Chapter 5 of Part 3 of the CRR;
- Exposures to own-originated securitisations which have achieved significant risk transfer; and
- Exposures to third-party covered bonds that are risk weighted as per CRR Articles 120, 121 or 129.

The structured finance component should exclude: securitisations issued or guaranteed by international organisations, multilateral development banks, governments, or government agencies; covered bond exposures capitalised under Value-at-Risk; and derivatives related to eligible assets that are not capitalised under the relevant securitisation or covered bond framework as per the CRR.

Own-originated securitisations should only be treated as securitisations during the period that these are expected to achieve significant risk transfer. If banks expect this to cease during the scenario horizon, then parameters pertaining to the underlying assets should be considered for the parts of banks' submissions relating to the remainder of the scenario horizon. Banks should provide details of these considerations as additional comments as part of the relevant structured finance data templates.

For individual structured finance assets, banks should produce projections of the following variables for each year of each scenario:

- regulatory carry value, which should be gross of impairment charges and, for fair value and AFS assets, should be net of market value movements and AFS reserve balances, respectively;
- incremental market value movements (ie the annual change in market value) for fair value and AFS assets;
- annual impairment charges for held-to-maturity (HtM), AFS, and loans and receivables assets. These should take into account the impact of credit enhancements and other structural features;
- AFS reserve balances (ie the balance sheet value of AFS reserves), which should be consistent with projected market value movements and impairment charges;
- expected losses over the full economic life of the asset (re-estimated at the end of each projection year), for HtM and loans and receivables assets; and
- RWAs, which should be calculated after impairment charges and market value movements have been estimated. Market

value and AFS reserve balance movements should be applied before the RWA calculation and impairment charges should be applied in accordance with the relevant approach.

Banks should use their own stress-testing methodologies to translate the macroeconomic scenarios provided into projections for the variables detailed above. In doing so, banks are expected to follow the same high-level guidance set out in Section 5. Moreover, banks should not assume that there is a material lag between the macroeconomic shock materialising and credit quality deteriorating that might delay the impact of the scenario.

Banks are expected to articulate the following judgements clearly and with justification as part of the unstructured data request (see Section 13):

- Any choices about statistical or judgement-based approaches used to produce banks' projections, including evidence of the effectiveness of their governance process. Governance processes should include effective challenge from senior officials and the use of expert judgement to confirm or adjust key assumptions used within their models or affecting the outputs of models.
- Any choices regarding asset prepayment rate assumptions, default rate assumptions and other cash flow related assumptions. Banks are expected to adhere to the guidance regarding the permissible path of balances through the stress scenario.
- The governance process should also assess the validity of any business-as-usual management actions assumed within banks' projections.

As part of the unstructured data request, banks should provide details of the assumed impact of any unwind of acquisition-related fair value adjustments relating to impairment losses, split by asset class and year. Banks should describe any material assumptions used to determine the timing of that impact.

For the purpose of the 2016 stress test, projections for any structured finance positions included in the trading book should be made using a firm's stress-testing methodology and the relevant macroeconomic scenario and not using the traded risk scenario.

## 10.6 Interest income and interest expense

Banks should assess the vulnerability of projected net interest income (NII) under the baseline and stress scenarios. Banks will be expected to demonstrate that they have analysed the potential impacts of the interest rate and economic environments set out in the Key Elements document in detail. In particular:

- banks should not assume that they will benefit from a 'flight to quality' in the stress scenario;
- banks should consider the possible effects that reduced liquidity and higher risk premia in wholesale funding markets might have on competition in the retail saving markets and on deposit volumes and pricing; and
- banks should also consider a range of related effects, including the likely impact of credit quality and demand when pricing assets and liabilities.

In addition, banks are expected to assess the impact of the following factors on NII in all material currencies:

- balance sheet evolution;
- funding mix and pricing;
- product interest rate and margin movements;
- foreign exchange movements; and
- structural hedging programmes.

The data submitted should be consistent with that supplied for other workstreams and be aligned with FINREP reporting.

Banks should separately identify and provide details of any existing use of central bank facilities (including the Bank of England's Funding for Lending Scheme and liquidity insurance facilities and the European Central Bank's longer-term refinancing operations). Banks that intend to make additional use of central bank facilities, in either the baseline or stress scenarios, should calculate the marginal effect on funding costs and interest expenses of using these facilities compared with wholesale market funding. Any such use should be identified separately as a strategic management action (see Section 11).

### 10.7 Other income and costs

Banks are expected to model the impact of the baseline and stress scenarios on their 'Other income', such as income from fees and commissions on both retail and wholesale products, and how this relates to the variable profiles for activity (GDP, unemployment etc).

Banks may include lower costs where there is a direct relationship with profitability and may also include business-as-usual cost reductions. However, these reductions are expected to be modest. Significant cost reductions that would require additional senior management or board decisions, such as redundancy programmes in response to a stress event, should be included as a strategic management action and should not be included as part of banks'

pre-management action submissions (see Section 11). Banks should provide details of how they expect to achieve any cost reductions, including key judgements affecting their ability to achieve these, as part of the unstructured data request.

### 10.8 Operational risks and misconduct costs

Banks should project operational risk losses (excluding misconduct costs, which are covered below) and RWAs (in line with their current Pillar 1 approach). In addition banks should provide details of the methodology used to produce these projections, in line with the guidance that accompanied the unstructured data request.

Banks should not include any additional misconduct costs beyond their end-2015 IAS 37 provisions in their baseline projections. In the stress scenario banks should include a stressed projection of all potential costs relating to known misconduct risks, in excess of existing IAS 37 provisions, allocated to time periods on a systematic basis. Banks' stressed projections of future misconduct costs should be determined, irrespective of whether a provision has been recognised, by evaluating a range of settlement outcomes and assigning probabilities to these outcomes. On a case by case basis, stressed projections are expected to exceed provisions, unless there is a high degree of certainty over the eventual cost (Table A provides further details).

Banks may ignore individual risks and outcomes where the likelihood of settlement is remote. However, banks should assess the need to include costs in the stressed projections to cover the possibility that, at the aggregate level, one or more remote settlement outcomes crystallise. Banks should provide the Bank with any information they have used in forming this assessment.

Misconduct costs for known issues may vary as a result of the impact of the macroeconomic stress scenario. For example, the amount of redress or damages due may depend mechanically upon market prices such as securities prices, interest rates or foreign exchange rates. Such impacts, if material, should be included in the stressed projections and identified separately in the projections template.

Banks should provide a breakdown of the stressed projection by material misconduct risks. Banks are expected to identify each risk that amounts to 10% or more of the total additional misconduct costs each year during the stress-test horizon. Banks should also provide quantitative and qualitative information to support material assumptions underlying their stressed projections of misconduct costs. For example, where future customer redress is estimated using statistical data, banks should provide details (by vintage) of the volume and value of past business written, the proportion of business that the bank expects to pay redress for, and the average expected value of redress.

**Table A** Guidance for estimating stressed projections of misconduct costs**Existing treatment of the misconduct issue**

An accounting provision has been raised. There is a high degree of certainty over the eventual cost.

An accounting provision has been raised. There is not a high degree of certainty over the eventual settlement cost. Whilst the IAS 37 provision strikes a balance between potential upside and downside, the likelihood of adverse outcomes exceeding existing provisions is greater than remote.

An accounting provision has not been raised. Whilst a settlement cost is not probable, there is sufficient evidence to determine a range of settlement outcomes and the possibility of a significant settlement cost is greater than remote.

An accounting provision has not been raised. Current evidence is insufficient to be able to reliably quantify any actual or potential liability, or range of liabilities, that may exist. The possibility of a significant settlement cost is greater than remote.

(a) The Bank of England accepts that for the majority of misconduct issues significant judgement over and above statistical methods is required to achieve a specified level of confidence; however, specifying a target level is believed to be the most appropriate way to achieve greater consistency in the interpretation of a 'high level of confidence'.

**Approach to modelling stressed future misconduct costs**

The stressed projection will equal the existing IAS 37 provisions.

The stressed projection shall exceed the existing IAS 37 provision. Banks are expected to provide a stressed projection, even if they are unable to reliably quantify the full range of potential outcomes, by exercising expert judgement and targeting a high level of confidence (90%)<sup>(a)</sup> of settling at or below their stressed projection.

A stressed estimate should be determined by evaluating a range of settlement outcomes and assigning probabilities to these outcomes.

A stressed projection should be determined by exercising expert judgement and targeting a high level of confidence (90%) of settling at or below the stressed projection.

In rare cases where a bank is unable to provide a stressed projection for an individual misconduct risk due to the extent of uncertainty, banks should clarify that this is the case and provide evidence to support their assessment.

**10.9 Pension risk**

Banks are expected to apply a stress across all balance sheet assets and liabilities. This includes banks' pension schemes. Banks must therefore model the change in their pension scheme surplus or deficit in each year of the scenario, as measured using the IAS 19 accounting standard. Remeasurements of the pension scheme should flow through into 'Other Comprehensive Income' thereby affecting banks' retained earnings. Other changes to the value of pension schemes should be recorded as a cost within banks' income statement. Banks should also take account of the restriction that disallows any pension scheme surplus when calculating capital resources.

This restriction means that banks will need to consider how contributions to a pension scheme might change over the projected period, since additional contributions to a scheme already in accounting surplus will act to reduce capital resources. For UK schemes, it will be necessary to estimate a future funding position and recovery plan. The sophistication required for this estimate will depend on the timing of the expected future triennial valuations and likely interaction with the scenario. This in turn will require particular care that the contributions to the scheme are consistent with projections of the non-pensions items of the balance sheet.

Banks should take appropriate account of the scenario and narrative when modelling pension assets and liabilities and should pay particular attention to profiles for gilt yields, inflation, expected inflation and equity prices.

**10.10 UK impact**

As set out in 'The Bank of England's approach to stress testing the UK banking system', stress-test results are one input to the FPC's decision regarding the level at which to set the UK CCyB rate.<sup>(1)</sup> To help inform this decision, it will be important to isolate the 'UK impact' of the stress scenario.

Banks have been requested to provide a 'UK' and 'non-UK' split for some profit and loss and balance sheet items that affect capital resources and requirements. In addition, as part of the Basis of Preparation request (see section 13), banks should supply information on the methodology adopted for splitting these items.

**11 Management actions**

Banks are asked to consider what realistic strategic and business-as-usual management actions could be taken in response to the stress scenario:

- Strategic management actions are defined as extraordinary actions taken in response to the stress scenario. Typically, the Bank would expect these to include any actions that require Board sign-off before they can be undertaken. These actions should not be included within banks' projections. Instead they should be set out separately in the management actions section of the projections templates. Banks are asked to provide all the strategic management actions that they could take in the stress, along with the triggers for taking each action, and indicate in their submissions which actions they would choose to enact based on their projected results.

(1) [www.bankofengland.co.uk/financialstability/Documents/stresstesting/2015/approach.pdf](http://www.bankofengland.co.uk/financialstability/Documents/stresstesting/2015/approach.pdf).



- Business-as-usual management actions represent any other actions that the banks could and would take in response to the stress scenario. These actions would be in the control of the bank and would be a natural response to weakening economic conditions. A qualitative listing of all material business-as-usual actions should be submitted alongside banks' projections (also see the unstructured data request).

Banks should ensure that the strategic management actions they propose:

- Are consistent with a market-wide stress. For example, attempts to raise capital in a stress scenario are unlikely to be permitted.
- Have a material benefit to the bank's capital position and can be executed, in practice, with no material impediments envisaged. For example, the sale of a business unit may not be executable in the stress scenario or may not yield the full capital benefit the bank expects.
- Are part of, or consistent with, the bank's recovery plan.

The Bank will assess whether the management actions proposed by banks are realistic actions that a bank could and would take in the stress scenario. For these purposes, banks should provide: a detailed qualitative assessment of the main risks to executing a management action; a numerical trigger for authorising each action; and an accompanying explanation for why the numerical trigger has been selected. Banks should also provide a quantitative assessment of the impact of actions across the balance sheet and capital position.

Banks should take into account the time necessary for full implementation of a management action (due to normal governance process of identifying an issue, deciding an action and implementing an action), and the time it takes for the action to take effect (such as the lag between changing lending standards and observed changes in arrears). Banks should also consider how modelled actions would be perceived by market participants. Actions that are likely to evoke a negative market reaction — such as ceasing discretionary coupons on preference shares — are unlikely to be permitted unless supported by conclusive evidence to the contrary.

The following areas of specific guidance should be noted:

- Under stress, banks should model ordinary dividend payments as moving in line with their publicly quantified payout ratio range. Where a public payout range does not exist, then stressed annual ordinary dividend payments should be fixed at the level projected in the 2016 baseline scenario. Any further reductions in the payment of ordinary dividends should be classified as a strategic management

action and should be: consistent with banks' payout policies; in line with historical precedent; and supported by a qualitative explanation for the approach taken.

- Asset disposals that have not been publicly announced prior to 2016 will generally only be considered if they have been included in banks' recovery plans with sufficient details on the technicalities of the sale and an analysis of the plausibility of the sale under stress together with appropriate haircuts.
- When proposing strategic cost cuts, banks should take into consideration whether these: would be damaging to the bank's franchise; result in offsetting reductions in income or lead to additional risk for the business; are plausible in the context of other continuing or past cost-cutting programmes.
- Banks should categorise any regulatory reductions in distributions, remuneration or Additional Tier 1 (AT1) coupon payments resulting from the use of their CRD IV buffers as strategic management actions (see Section 12).
- Banks should ensure that any proposed actions that might lead to a reduction in lending in the stress scenario are in line with the guidance outlined in Section 10.1.

## 12 Capital actions

Where a bank does not meet its combined buffer in the stress before strategic management actions, it should not model any reduction in distributions that would ordinarily be required to comply with the Maximum Distributable Amount (MDA). Restrictions on distributions up to the MDA should only be modelled where a bank does not meet its combined buffer after strategic management actions, and the restrictions should be submitted separately as further strategic management actions.

Banks should model their Tier 1 and Total Capital positions. This will include assumptions for the issuance, redemption, amortisation and maturity of AT1 and Tier 2 capital instruments. In the baseline banks should set out the assumptions they make in this regard. In the stress scenario banks should consider whether it would be possible to issue AT1 and Tier 2 capital instruments. Factors that the Bank may take into account when assessing whether such issuances are possible include: whether a bank is within or approaching its CRD IV buffers; and whether the issuance is consistent with the stress scenario.

Banks should also consider whether they would be able to undertake other capital management exercises that rely on third parties, including capital injections from parent institutions. Written justification must be provided by banks

to support the inclusion of any of these capital actions as part of their submissions for the stress scenario. The Bank's default position is that such exercises are unlikely to be realistic in the stress scenario.

Banks should not model the impact of any contingent capital instrument being triggered as part of their pre-management action submission. Banks should supply the impact of a trigger event as part of the management actions template; this should be supplied regardless of whether the banks model a trigger event to have occurred in their projections.

### 13 Basis of Preparation

In January 2016, participating banks received a Basis of Preparation request. This includes the following key requests:

- Methods and governance arrangements related to the extrapolation of scenario variables and risk factor shocks.
- An assessment of the key sensitivities of the results, including the impact of data availability limitations, an assessment of the variables to which the results are most sensitive and details of the impact of foreign exchange rate movements over the stress horizon.
- Details of how the baseline and stress scenarios have been translated into impacts on the income statement and balance sheet, including details of the assumptions made in applying methodologies and any deviations from the methodologies and frameworks that were provided.
- Specific details for identified portfolios, including selected retail and commercial portfolios, pension schemes, tax rates, deferred tax assets, dividends and management actions.

The request was updated in March 2016 to ask banks for further scenario specific information in relation to their results. Banks should refer to this request for the specific documentation and data required.

### 14 Qualitative review

A key objective of the Bank's stress-testing framework is to contribute to an improvement in banks' risk and capital management practices. The Bank highlighted in the 2015 annual stress-test results publication<sup>(1)</sup> areas where banks have strengthened their stress-testing framework, as well as areas where the Bank expects further improvements to be made. In 2015, the Bank will again undertake a qualitative assessment covering key aspects of banks' approach to stress testing.

This year, particular focus will be on the effectiveness of banks' stress-testing control frameworks to further encourage banks to strengthen their stress-testing frameworks and internal controls to ensure that the results and supporting information provided to governance bodies are of high quality. The scope of the Bank's review of banks' stress-testing control frameworks will include relevant policies and procedures, internal review and challenge process, change controls, independent model review and the role of Internal Audit. In addition, similar to previous years, Bank staff will continue to evaluate the quality of stress-test results delivery, which will be assessed based on the quality of stress-test data submissions, methodology used for deriving stress-test results, appropriate use of judgement, supporting documentation and engagement with Bank staff.

(1) [www.bankofengland.co.uk/financialstability/Documents/fpc/results011215.pdf](http://www.bankofengland.co.uk/financialstability/Documents/fpc/results011215.pdf).