



Stress testing the UK banking system: guidance on the 2021 stress test for participants

i The Bank's approach to concurrent solvency stress testing aims to use periods when the economy is growing to build up banks' buffers of capital, ready to be drawn on to support the economy in a stress.



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1: Background

Once the economy enters a real stress, such as that driven by the Covid-19 (Covid) outbreak, the focus changes. At this point stress tests are used to assess whether the buffers of capital that banks have built up are large enough to deal with how the prevailing stress could unfold.

Following the Covid outbreak, the Bank cancelled the 2020 concurrent stress test and instead undertook desktop analysis of the resilience of the UK banking sector to the unfolding stress.

In December 2020, the Financial Policy Committee (FPC) judged that UK banks, in aggregate, have capital buffers that allow them to lend in and remain resilient to a wide range of possible outcomes for the UK and global economies. This judgement was based on analysis in a 'reverse stress test' exercise, conducted in August 2020, which calculated how severe the economic paths for the UK and global economies would need to be in order to deplete regulatory capital buffers by around 5 percentage points. The illustrative paths generated by that exercise were very severe, resulting in a cumulative loss of economic output associated with the Covid outbreak that was around twice as big as the Monetary Policy Committee's (MPC) August 2020 central projection, and accompanied by a significant rise in unemployment.

The aim of the 2021 solvency stress test will be to update and refine this assessment. It will test banks' end-2020 balance sheets to a scenario similar to that generated by the reverse stress test. The timetable for the 2021 solvency stress test will be staggered. Participating banks will be required to submit projections for credit impairments and credit risk-weighted assets in April, rather than the usual timing of June. This will help inform further desktop analysis by the Bank in the first half of the year. The additional stressed projections will be submitted in June, as usual, with bank-specific results published in 2021 Q4. To help facilitate this change to the usual timetable, and in recognition of ongoing operational challenges within participating banks, banks will not be requested to submit baseline projections and the ring-fenced subgroups of stress-test participants will not be included in the 2021 test. And while the qualitative review will continue to be an important component of the 2021 stress test, the scope of this year's exercise will be adapted accordingly.

2: Objectives of this guidance

This document provides participating banks with guidance for conducting their own analysis for the 2021 stress test.^[1] Detailed guidance related to the traded and pensions risk elements of the test are provided in the annexes.

The templates used for collecting data, along with the document setting out definitions of data items, have been provided to participating banks. The Key Elements, 'Stress testing the UK banking system: variable paths for the 2021 stress test' (hereafter 'Variable paths for the 2021 stress test') is also published separately.^[2] 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 stress scenario 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 2021 stress test

The 2021 stress test will cover the following banks and building societies (hereafter 'banks'):

1. Barclays, HSBC Holdings, Lloyds Banking Group, Nationwide, NatWest Group, Santander UK Group Holdings, Standard Chartered and Virgin Money UK.
2. Ring-fenced subgroups are not in scope for the 2021 SST. The Bank expects to include ring-fenced subgroups of stress test participants in the 2022 test.


Unless agreed otherwise with the Bank, these participants should complete all aspects of the 2021 stress test.

4: Scope of consolidation

All participating banks should provide results at their 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 V, 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, significant investments or minority interest capital deductions and risk weightings.

5: Definitions of capital and leverage ratios

Banks are expected to submit starting point capital positions and projected capital positions in the stress scenario. 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, Tier 1 and Total capital ratios as defined in the CRR;^[3] and
- End-point Tier 1 leverage ratio as per the UK leverage ratio framework as defined in the Leverage Ratio part of the [PRA Rulebook](#) .

Banks are required to apply International Financial Reporting Standard (IFRS) 9 in their starting position and throughout the projection period.

The Bank will collect both IFRS 9 transitional and non-transitional capital resources data for the 2021 stress test. Firms that apply transitional arrangements are required to adjust the calculations of regulatory capital/leverage which are directly affected by expected credit loss provisions, as prescribed by the CRR.^[4]

6: Submission

Submission instructions are outlined in the Operating Model for the Reporting of Stress-Test Data that was communicated to all banks in December 2020. These instructions need to be followed for both structured and unstructured data requests. The Bank has taken a staggered approach to stress testing this year and this is reflected in the submission timetable. The bank has requested that some data is submitted in April and the rest in June (see details in Table A). The data submitted in April will be used to support 'desk-based' stress testing and both the April and June submissions will be used to inform the Q4 stress-test results publication.

As previously discussed with firms, the following templates and worksheets should be submitted by the 26th April 2021.

Table A: Templates to be submitted in April

Template	Worksheet
001 Capital and other projections	Risk measures by portfolio Mortgage arrears and repo ELP Capital requirements Impairments and other losses Structured finance
071 IFRS 9 projections	IFRS 9 impact Risk measures by portfolio IFRS 9
060 Retail projections	Balance flow
079 Basis of Preparation and unstructured data Index	Projections_index
026 Reconciliations	Reconciliations

Worksheets: Risk measures by portfolio, Mortgage arrears and repo, ELP, Structured finance, IFRS 9 impact, Risk measures by portfolio IFRS 9 and Balance flow should be completed fully.

Worksheets: Capital requirements and Impairments and other losses should be completed for all level 1 and level 2 items relating to Retail mortgage credit risk, Retail excluding mortgage credit risk, Corporate, sovereign and financial institution credit risk and Structured finance risk. Worksheets: Projections_index and Reconciliations only need to be completed to accompany the other worksheets that you are reporting in April.

When submitting Capital and other projections, all other worksheets must be present in the template but with the data left blank.

In addition to these quantitative data to be submitted in April, answers to the qualitative questions are also requested.

Resubmissions of data submitted by firms in April will be permitted in the June submission. These can include material changes in the data since April, and smaller changes as a result of firms' internal consistency and completeness checks when submitting all projections data in June. Both types of changes should be accompanied by an explanation of what data have changed and why versus the April submission.

All other projections data requested (structured and unstructured) should be submitted to the Bank by 21 June 2021.

7: Publication of results

Individual firm-by-firm results from the stress test will be published in Q4 2021. As in previous years, the Bank is committed to disclosing as much information as necessary to explain the results of the stress test. This will include at least as much bank-specific information about the headline impact of the stress on capital adequacy as was in the 2019 stress-test results publication.

8: Time horizon and reference date

The 2021 stress test will cover a five-year horizon. Unless otherwise agreed, the reference date will be 31 December 2020. Exceptions include some traded risk elements (see Annex 1: Traded risk). Banks are expected to submit projections as at 31 December for each subsequent year-end unless agreed otherwise with the Bank.

9: Macroeconomic scenario

Banks should follow the guidance outlined in this section to assess the impact of the stressed scenario. 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:

1. Be able to explain the calibration of any key additional variables in both an absolute sense and relative to their previous stress-test submissions; and
2. 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, and should ensure that any correlation assumptions are consistent with the negative tail of potential outcomes. Banks are expected to deviate from purely statistical techniques if, for example, there is a lack of historical data that is relevant to conditions today or to account for specific 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 14).

10: Libor transition

As the Bank and other authorities have set out previously, panel bank LIBOR is expected to cease after 2021. LIBOR's administrator (ICE Benchmark Administration) is consulting on ceasing publication of all GBP, EUR, JPY and CHF LIBOR settings and two USD LIBOR tenors at the end of 2021, and ceasing the remaining USD LIBOR settings at end-June 2023.^[5] Separately US regulators and the FCA have made clear that use of USD LIBOR for new contracts should cease by the end of 2021.^[6] Reflecting this, the 2021 solvency stress test incorporates an orderly transition from LIBOR to alternative reference rates in line with these timelines. This applies to all LIBOR currencies, and includes new contracts linked to LIBOR, which firms enter into after the start date of the solvency stress test. For the avoidance of doubt, this does not apply to EURIBOR or HIBOR, which the Bank assumes continue over the full five-year projection period. This approach is intended to complement the Bank's ongoing interactions with participating banks on their preparations for LIBOR transition, and the data banks are providing through other channels.

By 'orderly transition', the Bank means that participating banks have: (1) stopped entering into all new LIBOR-linked contracts by end-2021; (2) as far as possible, moved their existing LIBOR-linked contracts (where these contracts extend beyond the proposed cessation dates) to alternative reference rates by mutual agreement with counterparties; and (3) incorporated ISDA or other robust fallbacks into contracts to transition those remaining when the relevant trigger events occur.

The Bank is explicitly **not** seeking to stress participating banks against disorderly LIBOR transition outcomes – for example, uncertainty on the legal position of remaining LIBOR-referencing contracts should LIBOR become unavailable, or extreme market illiquidity for LIBOR-linked contracts. Authorities have recognised that banks may have some exposures to LIBOR which do not have robust fallbacks and may be particularly difficult to renegotiate before the proposed cessation dates, and are actively working with market participants to identify and understand these. In line with the overall assumption of an orderly transition, for the purposes of the 2021 solvency stress test banks should make the simplifying assumption that all contracts not renegotiated before the proposed cessation dates can be transitioned through fallback arrangements.

Banks should develop projections for the transition of LIBOR-linked contracts (where these contracts extend beyond the proposed cessation dates) based on the principles set out in the box below. Banks' wider solvency stress test projections (for credit impairments, net interest income, traded risk, and other areas as appropriate) should reflect and align with these projections. Where appropriate, firms may make different assumptions by asset class or currency, given e.g. the different state of development for different markets linked to alternative reference rates.

This guidance represents a series of assumptions banks should adopt for the purposes of participating in the 2021 solvency stress test only. It does not represent a forecast from the Bank or any other authority of how market, legal or regulatory events will unfold, or how banks and wider markets will be affected by LIBOR transition. Firms should take advice and form their own views on these matters. Market-led targets, expectations, initiatives and developments are incorporated into this guidance for the purposes of the 2021 solvency stress test only and are not necessarily endorsed by the Bank, except where explicitly stated otherwise.

Box: Key principles for Libor transition

Market developments

1. Banks should assume that LIBOR ceases to be published from 4 January 2022 (i.e. it is published for the final time on 31 December 2021), except for the relevant tenors of USD LIBOR which should be assumed to cease from 3 July 2023, and that it is not declared 'unrepresentative' by any relevant authority before cessation. Banks may assume (as a simplifying assumption) that ISDA credit spreads are fixed [in Q1 2021, subject to public confirmation of the outcome of IBA's ongoing consultation]. The Bank's variable paths for GBP and USD LIBOR, and related swap curves, cease at end 2021 and Q2 2023 respectively in the stress scenario; banks should not assume in their scenario expansions that LIBOR continues beyond those dates.
2. Banks should assume that market developments take place over 2021 in line with the expectations and targets set out by the Bank, FCA and the Working Group on Sterling Risk-Free Reference Rates, and with expectations and targets set out by relevant overseas authorities or industry working groups.
3. Banks may make other assumptions around market developments/market-led initiatives where they see these as necessary to deliver an orderly LIBOR transition.
4. Banks should assume that fallback provisions are effective where appropriate, i.e. contracts which have not been renegotiated to refer directly to alternative reference rates, and which incorporate ISDA fallbacks or equivalent robust fallbacks, will transition to the relevant replacement rate when the relevant trigger events occur. (As per principle 3, banks may make their own assumptions around future developments on fallbacks. As per principle 5, banks should assume that contracts transition through renegotiation to refer directly to alternative reference rates, as far as possible.)

Timing of contract transition

Position at proposed cessation dates

1. For solvency stress test purposes, banks should assume that as far as possible, LIBOR-linked contracts transition to alternative reference rates through renegotiation with relevant counterparties before the proposed cessation dates. Banks may assume that remaining LIBOR-linked contracts which are (or are projected to be) covered by ISDA or other robust fallback provisions transition in line with these fallback arrangements. For solvency stress test purposes, banks' timing profiles should align with the expectations and targets set out by the Bank, FCA and other relevant authorities (including overseas authorities), and with the targets set out by industry working groups such as the UK's Working Group on Sterling Risk-Free Reference Rates (RFRWG) or the US Alternative Reference Rates Committee. These include, but are not limited to, the latest priorities and milestones set out by the RFRWG and accompanying statement with the Bank and FCA on 11 January 2021.^[7]


Path to proposed cessation dates

1. Banks should develop appropriate timing profiles for the transition of their LIBOR-linked contracts up to the

proposed cessation dates. Banks should generally assume that contracts transition as early as possible. For 2021 solvency stress test purposes, banks' timing profiles should align with the expectations and targets set out by the Bank, FCA and other relevant authorities (including overseas authorities), and with the targets set out by the Working Group on Sterling Risk-Free Reference Rates. These include, but are not limited to, the Bank's statements in the May 2020 and August 2020 Financial Stability Reports, and the packages of documents published on 16 January 2020 and 11 January 2021.

2. Where banks assume different timing profiles for different asset classes, they should be able to justify why these differences are appropriate based on, for example, the state of development of different markets for alternative reference rates, and the actions and market developments banks have assumed. Banks should not use different timing profiles by asset class/portfolio in order to optimise their solvency stress test results. The Basis of Preparation requests information on banks' timing profiles and the narrative around these; it also requests a rough estimate of the impact of LIBOR transition on banks' financial position relative to a scenario where LIBOR continued through each year of the projection period.
3. Banks should, however, consider what challenges could arise or what other actions may be needed to ensure an orderly LIBOR transition in a stress scenario, and may adapt their transition profiles where necessary.

Pricing

1. Banks should make their own assumptions as to the pricing terms on which they would renegotiate existing contracts or enter into new contracts on alternative reference rates. These may reflect available benchmarks where relevant, including existing contracts in markets for alternative reference rates.
2. Banks' pricing assumptions should align with relevant [FCA conduct guidance](#) . Banks should not assume that they will profit from the transition of contracts except where there is strong evidence to support this assumption. In reviewing banks' submissions, the Bank will also be seeking to ensure that banks' projections are plausible when viewed at the aggregate system-wide level. The Basis of Preparation requests information on banks' pricing assumptions and the governance processes around these.
3. In line with the assumption of an orderly LIBOR transition, banks should assume that their renegotiation of LIBOR-linked contracts takes place in an orderly manner. Banks should not assume that they are required to offer counterparties incentives to transition which are inconsistent with this assumption.

11: Guidance on modelling risks and income

11.1: Balance sheet modelling

Banks are expected to report 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 stress scenario.

The macroeconomic scenarios begin in 2021 Q1. Banks should take the 2020 Q4 variables as given and not update them when more data for this period are published. 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 2020.
- There are assets for which a sale has been agreed at the end of 2020 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 2020 only, and for the bank to exclude the asset from the projections submitted as part of the detailed data templates. The same principles, in reverse, should be followed for asset purchases.

The 2021 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, in the stress scenario. Banks' submissions should reflect their corporate plans, including any cost or business changes. These should be adjusted appropriately to reflect changes in the expected performance and execution of these plans in the stress scenario, including business-as-usual management actions (also see Section 12).

Banks should clearly set out their assumptions for forecast balance sheet growth or contraction in the stress scenario. These assumptions should use the corporate plan as a starting point, adjusted for consistency with the macroeconomic scenario and variable paths for lending provided, and subject to the following guidance:

- Banks' stock of secured lending to UK individuals, consumer credit to UK individuals and lending to UK PNFCs should increase in each year of the stress projection by at least the growth rates provided by the Bank for these asset classes in the Variable paths for the 2021 stress test. The published growth rates assume there are no provisions or write-offs during the stress period. Similarly, banks should exclude the impact of provisions and write-offs in these calculations. Where the published growth rate is negative, banks' stock of lending may decrease by at most that amount over that period. When calculating the stock of lending to UK PNFCs in each year of the stress for the purposes of this section of the guidance, banks should exclude all government scheme loans written on or before 31 December 2020 and should exclude all Bounce Back Loans that are projected to be written after 31 December 2020, but may include other government scheme loans that are projected to be written after 31 December 2020. This treatment of government support schemes only applies to this aspect of the guidance and not the rest of the stress test.
- Banks should not assume a contraction in non-UK lending, except as a result of provisions and write-offs.
- Banks can report the impact of reducing UK and non-UK lending projections below the levels set out in this guidance as a potential strategic management action.
- If a bank is planning an asset sale in its corporate plan, then this asset sale may be included in the banks' stress submission as an exception to the guidance above, provided the bank has accounted for the feasibility, timing and price of the asset sale in the stress scenario.

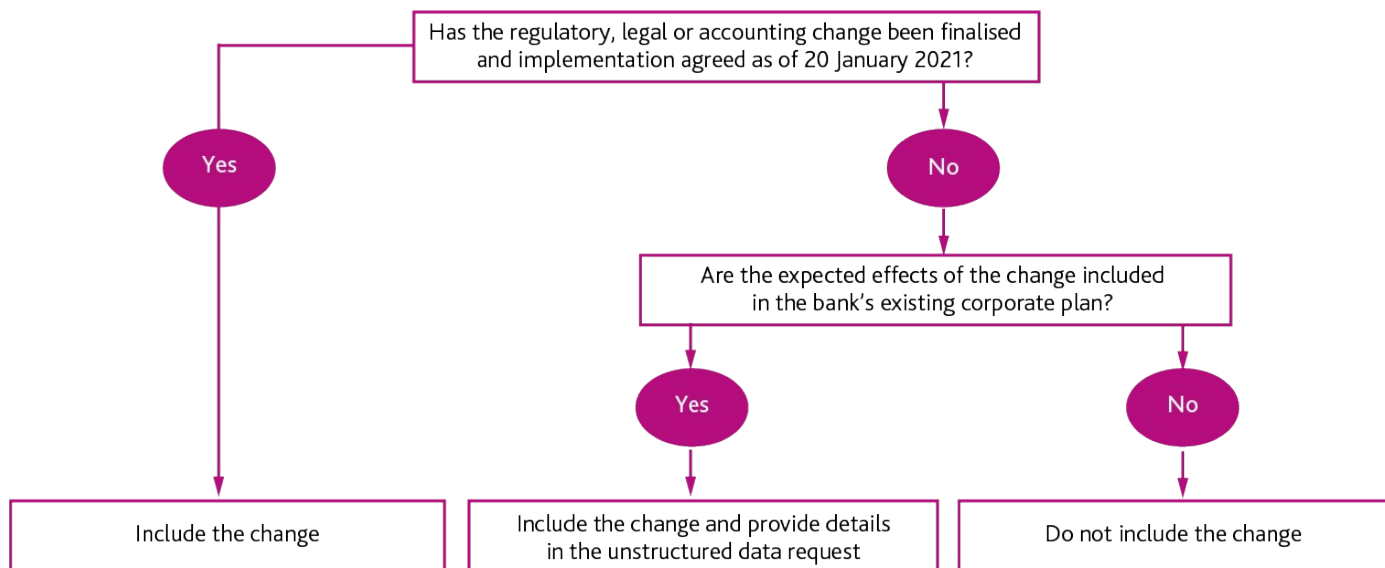
Banks should project the countercyclical capital buffer (CCyB) for all relevant jurisdictions in the stress. Banks should project CCyB rates based on statements provided in those jurisdictions, or with reference to the [Basel Committee's guidance](#)  for national authorities operating the CCyB.

Banks should assume that the UK CCyB rate is zero in the stress test, consistent with the hurdle rate framework and previous FPC statements on the nature of the buffer.

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 20 January 2021. 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.

Banks that have modelled the impacts of future regulatory, legal and accounting changes that are not finalised should clearly identify these as part of the unstructured data request, and should include details of the impact of the change and their rationale for including the change in their projections. Figure 1 summarises this overall approach.

Figure 1: Stylised guidance for including the effects of regulatory, legal and accounting changes in banks' submissions



Banks should include the effects of fiscal measures put in place by UK and global authorities in response to the Covid pandemic in their projections based on terms of these schemes as of 20 January 2021. This support includes tax and spending measures, loans and guarantees and employment support.

Banks that have modelled the impacts of further fiscal measures that have not been announced or finalised by that date should clearly identify these as part of the unstructured data request, and should include details of the impact and their rationale for inclusion in their projections.

11.2: Credit risk and IFRS 9

The 2018 stress test introduced two key methodological principles for IFRS 9 provisioning calculation:

1. Perfect foresight: for the purpose of provision calculation (both in assessing significant increase in credit risk and the calculation of expected credit loss) banks should assume that they are able to accurately predict the five years of economic and financial market data in the stress test from day one; and
2. Single scenario: for the purpose of provision calculation, banks should ascribe a 100% probability weight to the stress scenario.

These two principles are maintained for the 2021 stress-test exercise.

The stress scenario will need to be extended beyond the published five-year horizon for the purpose of modelling IFRS 9 provisions. Firms should use the following rules to do so:

All variables should return to the 2033 levels or quarterly growth rates specified in the variable path spreadsheet provided by the Bank of England;

The path between 2025 (the last data point in the Bank of England projections) and 2033 should be linear for each variable; and

Each variable should remain at the specified level or quarterly growth rate from 2033 onwards.

For variables not provided in the Bank's variable paths spreadsheet, firms should follow the normal guidelines on scenario expansions (see 9: Macroeconomic scenario).

Banks should not adjust Y0 dividend payments on the basis of perfect foresight.

Information regarding the capital transitional arrangements for IFRS 9 can be found in Section 5 of this document. While there is no mechanical link between the stress test results and the setting of capital buffers or other regulatory response, committees will consider each bank's capital low point against a reference point determined in the same way as the hurdle rates used in the 2019 stress test. The Bank is interested to learn more about the impact of IFRS 9 in stress and is continuing to explore long-term approaches for incorporating IFRS 9 into the bank capital framework.

The 2021 scenario includes variable paths for leveraged loans. The traded risk and structured finance sections of this document (Sections 11.5 and 11.6) provide guidance on how those paths should be used in the stress test. In general, methodologies applied to leveraged loans should be consistent across the exposures in the hold book and traded book. In practice, this means banks must take account of the following developments in the market:

- High leverage and add-backs.
- Covenant lite lending and documentation weaknesses.
- Fewer subordinated credit instruments in the borrower's capital structure which can absorb losses before loans (ie a higher share of loan only transaction).

Banks will be expected to explain as part of the Basis of Preparation how they have made these shocks consistent with one another and where there are differences in approach.

11.3: General credit risk

Banks should use their own stress-testing methodologies to translate the macroeconomic scenarios provided into projections for impairments and 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 9.

When modelling the impact of any change in interest rates on impairments, banks should take into account a borrower's total borrowing exposure. For example, banks might consider whether borrowers exposed to interest rate risk on secured mortgage debt would default on unsecured or other debt as a result of any rise in interest rates. Banks' unstructured submissions should explain how borrowers' cross-product holdings have been captured.

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:

1. Banks should not assume changes to their approach to calculating credit risk capital requirements after the scenario start point, whether anticipated or realised (eg adoption of, or changes to, IRB models) unless by prior agreement with the Bank; and
2. 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 where requested in the unstructured data request (see Section 14):

- 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; and
- Assumptions affecting banks' forbearance practices or provisioning model assumptions that have been included within their projections.

11.4: Aggregate retail deposits path

The Bank has provided a variable path for UK aggregate retail deposits. Banks are required to provide a clear rationale if

their market share of retail deposits changes in the stress. Banks should also provide additional commentary through the Basis of Preparation highlighting the impact any change in market share would have on the balance sheet. Banks should calculate their market share in each year of the stress for UK retail deposits by dividing their own stock of retail deposits by the overall stock of retail deposits as implied by the published growth rate. The overall stock of retail deposits implied by the published growth reflects retail deposits in the United Kingdom only.

11.5: Traded risk

This section provides banks with summary guidance for calculating stressed losses, income statement projections and RWAs for fair-value positions that are the subject of the traded risk methodology. For the 2021 stress test, there are significant changes to the traded risk methodology as compared to previous years. Shocks to financial variables in this year's scenario are generally less sharp and severe than in previous years, although there are still some significant moves over longer timeframes. Therefore, no specific traded risk scenario has been produced, though the Variable paths for 2021 stress test has been augmented to include some of the variables that have previously appeared in the traded risk scenario.^[8] More detailed guidance is provided in Annex 1: Traded risk.

The approach covers all fair value positions on the group balance sheet, excluding securitisation positions and covered bonds. In so doing it extends beyond regulatory Trading Book positions to include other fair-valued instruments such as those in the Liquid Asset Buffer.

Banks are expected to assess the impact on both fair and prudent value under stress due to: market risk exposures arising in both the Trading and Banking Books; the default of vulnerable counterparties; changes to valuation adjustments such as the increase in credit valuation adjustment (CVA) due to the deterioration in the creditworthiness of counterparties; and regulatory adjustments under stress such as the impact on the prudent valuation adjustment (PVA).

In addition, banks are expected to assess the franchise impacts on revenues and costs for their investment banking activities (a principal source of trading income). Banks should also assess the impact on capital requirements by projecting their RWAs for market risk, CVA risk and counterparty credit risk. Notwithstanding Section 11.1, banks are expected to include the impact of regulatory changes (eg standard approach for counterparty credit risk (SA-CCR)) where the terms are largely known and the effects are included in their corporate plan, but are not allowed to include benefits from models that have not been approved before 20 January 2021 except by prior agreement with the Bank.

The 2021 scenario includes variable paths for leveraged loan prices. These paths should be applied to all leveraged loan exposures in banks' underwriting pipelines.^[9] Banks should adjust the paths provided according to the characteristics of borrowers, for example by making reasonable adjustments to the paths to account for differences in the country, sector and credit ratings of their exposures. In addition, stress-testing methodologies applied to leveraged loans in the hold book and for indirect exposures to leveraged loans should be made consistent with these price paths. See 11.6 for further guidance on securitisations of loans and bonds. Banks will be expected to explain all judgements and methodologies used for these exposures as part of the Basis of Preparation.

Table B: High-level summary of key changes

Area	Sub area	Key changes
Market risk losses	Liquids	Liquid losses are zero this year; no modelling is required
	Structural liquids	Structural Liquid losses are zero this year; no modelling is required
Counterparty default losses	Collateralised	Exposure for collateralised counterparties should not be stressed and should be held constant at the current exposure
X-valuation adjustment (XVA) losses		Banks should model only the impact of credit and funding spread moves and not other financial variables
RWAs	Market risk	Banks should keep RWAs constant except for changes due to changes in levels of business activity (eg due to planned strategic changes or business as usual (BAU) management actions in response to the scenario)
	CVA	Banks should model the impact in credit and funding spreads changes and changes in levels of business activity
	Collateralised counterparties	Collateralised counterparty exposures used to calculate RWAs should be kept constant instead of being recalculated under the scenario, although banks may still take into account changes to levels of business activity

11.6: Structured finance

For the purpose of the 2021 stress test, structured finance (covering trading book and non-trading book assets) includes the following assets:

- Exposures to third-party cash or synthetic securitisations, including liquidity lines for securitisation transactions, as specified in Chapter 5 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 (VaR); and derivatives related to eligible assets that are not capitalised under the relevant securitisation or covered bond framework of 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 (RCV), which should be gross of impairment provision. For fair value through other comprehensive income (FVOCI), RCV should be net of OCI reserve balance. For fair value through profit or loss (FVTPL) assets, RCV should be net of market value movements;
- Incremental market value movements (ie the annual change in market value) for FVOCI and FVTPL assets;
- Annual impairment charges taking into account the impact of credit enhancements and other structural features;
- OCI reserve balances (ie the balance sheet value of OCI reserves), which should be consistent with projected market value movements and impairment charges;
- Regulatory expected losses for assets whose risk weights are calculated using the IRB approach, over the full economic life of the asset (re-estimated at the end of each projection year); and
- RWAs should be calculated after impairment charges and market value movements have been estimated.

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 9. 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 14):

- 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; and
- Any choices regarding asset prepayment rate assumptions, default rate assumptions and other cash flow related assumptions.

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.

11.7: Interest income and interest expense

Banks will be expected to demonstrate that they have considered the impact of the interest rate and economic environments set out in the Key elements document on projected net interest income.

Banks are expected to explicitly consider the following for each material currency:

- Any changes to asset mix and pricing, particularly in areas not constrained by lending guidance (see Section 11.1: Balance sheet modelling);
- Any changes to funding mix and pricing, including liabilities issued to meet minimum requirements for own funds and eligible liabilities (MREL);
- Key product balance, interest rate and margin movements relative to the start point and to previous stress tests;
- Structural hedging programmes; and
- Foreign exchange movements.

The data submitted should be consistent with that supplied for other workstreams. The start point (Year 0) should be comparable with published report and accounts, other regulatory returns (for example financial reporting (FINREP)) and the banks' own corporate plans as appropriate.

Banks should also provide a high-level comparison between GBP interest income and expense and UK interest income and expense, commenting on any material differences.

Banks should separately assess the impact of their liquidity position under the stress scenario. Specifically, banks should explain if movements in their liquidity position (assets as well as projected outflows and inflows) are a result of the stress or due to any management actions taken.

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, Term Funding 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 the stress scenario, should calculate the marginal effect on funding costs and interest expenses of using these facilities compared with wholesale market funding. This should be identified separately as a strategic management action (see 12: Management actions and mandatory distribution restrictions).

11.8: Other income and costs

Banks are expected to model the impact of the stress scenario on their 'other income', such as income from fees and commissions on both retail and wholesale products, and how this relates to the variable paths 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 12: Management actions and mandatory distribution restrictions). 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.

11.9: 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.

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 should project known misconduct costs only, and not include any provisions for unknown misconduct risks. 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 C 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 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.

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

Table C: Guidance for estimating stressed projections of misconduct costs[10]

Existing treatment of the known misconduct issue	Approach to modelling stressed future known misconduct costs
An accounting provision has been raised. There is a high degree of certainty over the eventual cost.	The stressed projection will equal the existing IAS 37 provisions.
An accounting provision has been raised. There is not a high degree of certainty over the eventual settlement cost. While the IAS 37 provision strikes a balance between potential upside and downside, the likelihood of adverse outcomes exceeding existing provisions is greater than remote.	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%) of settling at or below their stressed projection.
An accounting provision has not been raised. While there is some uncertainty around the settlement cost, there is sufficient evidence to determine a range of settlement outcomes and the possibility of a significant settlement cost is greater than remote.	A stressed projection should be determined by evaluating a range of settlement outcomes and assigning probabilities to these outcomes.
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 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.

11.10: Pension risk

Banks are expected to apply a stress across all balance sheet assets and liabilities. This includes banks' pension schemes. Banks should 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 OCI 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. For further details on the assumptions used in the PRA model, please see Annex 2: Pensions risk.



11.11: Foreign Exchange Rate Movements (SFX)

Banks should assess the impact of FX rate movements in the scenario on both their projected profit/loss and their Structural Foreign Exchange (SFX) positions.

Banks should describe the impact of FX rate changes on projected profit/loss including the impact of any hedging decisions.

Banks should apply their existing management policies. They should describe the impact in their results of FX rate changes on their SFX positions and how SFX management policies have been applied.

Banks may propose a deviation from their SFX management policies as a strategic management action (please refer to guidance in Section 12). They should consider any second order impacts, eg whether Pillar 1 RWAs are required where the action deviates from the conditions of their current SFX permission.

11.12: Contingent leverage risks to the leverage ratio

Firms should consider contingent leverage risks in transactions and trade structures that receive a lower leverage ratio exposure measure value^[11] (for the purposes of the leverage ratio) than economic substitutes (such as cash repo).

Examples of such transactions and trade structures include but are not limited to: agency models to transact in derivatives and security financing transactions (SFTs); collateral swap trades; SFT netting packages; synthetic forms of financing, such as total return swaps; or, unsecured borrowing or lending of securities.

The default of counterparties or broader market conditions, amongst other factors, may limit the extent to which firms can use these transactions or trade structures. Firms should consider the extent to which they would need to, and be able to, continue to participate in these trades and the extent to which they would need to use transactions or structures that receive a higher leverage ratio exposure measure instead. Firms should consider the impact this might have on their leverage ratio and other regulatory measures (such as liquidity or risk-weighted metrics) as relevant.

Exposure to transactions or trade structures with a larger impact on the leverage ratio exposure measure may arise from a variety of reasons, including contractual obligations, franchise considerations, liquidity management, or other commercial reasons. To the extent that firms would not continue to participate in such trades, firms should consider what implications this might have for their revenues. Firms should pay particular consideration to the following risks and assumptions that could affect their leverage ratios in the stress:

1. Contractual obligations: a client may withdraw or default from one leg of a transaction that is, for example, netted or internalised for the purposes of the leverage ratio. If the firm cannot replace this leg, this may result in an increase in the leverage ratio exposure measure (or other regulatory metrics may be affected).
2. Franchise risk: firms, especially prime brokers, often offer their service to maintain a franchise value with their clients in addition to the revenues generated directly by the business activity. As such, a firm may roll over funding transactions at a customer's request even in circumstances where doing so might be detrimental to the firm's leverage ratio position.
3. Internalisation: if a firm, usually a prime broker, has two clients that are taking opposite credit derivative positions on the same asset (one long, the other short), the firm may under certain circumstances internally net these positions. A contingent leverage ratio risk arises if one client wishes to withdraw from their transaction. In this case the firm would need to include the effective notional amount of the credit derivative written by the firm in its leverage ratio exposure measure or borrow the asset.
4. Liquidity management: firms should consider the extent to which they may be able to maintain their funding without having to replace their transactions or trade structures with others that receive a higher leverage ratio exposure measure value, such as secured borrowing.

The Bank expects firms to reflect these contingent leverage risks in their stress considerations and demonstrate that they have sufficient capital to cover these risks where necessary. The PRA has published a consultation on proposals to ensure such considerations are also considered in the internal capital adequacy process.

11.13: 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. To help inform this decision, it is important to isolate the ‘UK impact’ of the stress scenario.

As in 2019, 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. The Basis of Preparation (see Section 14) requests supporting information which banks should supply, including on the methodology adopted for splitting these items and the main judgments and uncertainties around this.

12: Management actions and mandatory distribution restrictions

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 be 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 strategic management actions that they could take in the stress, along with the triggers for taking each action. They should clearly indicate which actions they would choose to enact based on their projections, and provide their capital ratios in each year of the stress pre and post-strategic management actions.
- 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 description of all material business-as-usual actions should be submitted alongside banks’ projections (also see Section 14).

Banks should ensure that the strategic management actions they propose:

- Are consistent with this 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; and
- Are part of, or consistent with, the bank’s recovery plan. A bank’s recovery plan details the range of actions it could take in a stress. The Bank will ordinarily only accept actions that meet its expectations set out in the Supervisory Statement on [recovery planning](#), to reflect the strong link between banks’ strategic management actions and their recovery plans.

The Bank will assess whether the strategic 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 including the impact on their franchise and their reputation with counterparties, investors and customers. Banks should also provide a quantitative assessment of the impact of actions across the balance sheet, revenues/costs, capital position and any other associated material impacts.

Banks should take into account the time necessary for full implementation of a management action (due to the 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).

The following areas of specific guidance should be noted:

- In the 2021 stress test, banks should include ordinary dividend payments that they project their boards would approve in the stress scenario, supported by a qualitative explanation for the approach taken with reference to payout policies or historical precedent.
- Asset disposals that have not been publicly announced prior to 2021 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; and are plausible in the context of other continuing or past cost-cutting programmes.
- 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 11.1.

Where a bank does not meet its combined buffer in the stress before strategic management actions, it should not include mandatory restrictions in its projections. Where a bank does not meet its combined buffer after strategic management actions, mandatory restrictions on distributions should be modelled and submitted in the management actions template (and clearly labelled as mandatory).

13: Other capital actions

Banks should model their Tier 1 and Total Capital positions and their MREL resources. This will include assumptions for the issuance, redemption, amortisation and maturity of additional Tier 1 and Tier 2 capital instruments and MREL-eligible liabilities. In the stress, banks should consider the impact of the scenario on the feasibility, timing and pricing of any issuances and redemptions.

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 instruments 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.

14: Basis of Preparation

In December 2020, participating banks received a Basis of Preparation request. This includes the following key requests:

- Details of how the stress scenario has 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 selected risk drivers, portfolios and other key items, including retail and commercial portfolios, pension schemes, tax rates, deferred tax assets, dividends and management actions;
- Methods and governance arrangements related to the extrapolation of scenario variables and risk factor shocks; and
- An assessment of the key sensitivities of the results, including the impact of limitations to data availability, 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.

The request was updated in January 2021 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.

The 2021 Basis of Preparation contains 251 questions compared to 249 in 2020 and 281 in 2019. The small increase in



questions is due to the addition of 5 questions relating to Covid, including the risks associated with structural changes in the economy. The Bank remains committed to ensure that such requests do not exceed what is necessary.

15: Qualitative review

A key objective of the Bank's stress-testing framework is to support a continued improvement in banks' own risk management and capital planning capabilities. As part of the annual stress test, the Bank conducts a review of participants' stress-testing practices. The findings of that qualitative review are then fed back to firms. The Bank expects participants to demonstrate sustained improvements in their capabilities over time, in particular in any areas of weakness identified in the qualitative review.

In 2021 the Bank will carry out a Delivery Assessment with an additional review of firms' progress against feedback from the 2019 qualitative review.

The two components of the 2021 qualitative review will be:

1. **Delivery Assessment:** an assessment of submission quality (focused on errors and resubmissions and explanations provided for the stress results) across the different risk areas.
2. **Review of firm progress:** addressing Bank feedback from the 2019 qualitative review.

The Delivery Assessment will be carried out in July and August 2021 after all the projection templates have been submitted.

The findings from the qualitative review influence the intensity and focus of supervision of individual banks. Consistent with PRA requirements and expectations,^[12] the findings could inform supervisory feedback on how PRA expectations on stress testing should be reflected in the responsibilities and remuneration of relevant individuals performing Senior Management Functions under the Senior Managers and Certification Regime. The qualitative review could also be used to inform the Bank's broader assessment of participating banks' risk management and governance assessments for the purpose of setting the PRA buffer.

Annexes

Annex 1: Traded risk

A1: Overview

A1.1: Introduction

This annex describes the approach that banks are expected to take in the execution of the 2021 stress test with respect to fair valued and Trading Book positions as defined in the Position scope Section A2.1.[13] More specifically, this annex: Describes the overall approach that banks should adopt in the execution of the traded risk stress test; Outlines how the stress scenario should be translated into specific loss numbers[14] and financial and regulatory metrics reported via the templates; and Defines certain terms and concepts that are used in the templates in the context of the methodology that should be applied.

This annex does not outline the stress scenario itself, as it is described in the Key elements and the Variable paths for the 2021 stress-test scenario.

The traded risk stress-test methodology outlined in this annex expects banks to exercise judgement in the application of the method to their exposures. For example, banks may exercise judgement on the likely time period over which a material, illiquid trading position could be liquidated or hedged under the stress scenario. Banks are expected to explain the judgements that they have made as part of the unstructured data request.

A1.2: Key design features

The Bank's approach to stress testing traded risk is different to the approach taken in previous stress tests. The stress scenario for the 2021 stress test does not incorporate any short sharp shocks to financial variables, though there are significant changes to financial variables over time. In 2021 there will be no separate traded risk scenario. Instead, the Variable paths for the 2021 scenario has been augmented with some variables previously included in the traded risk scenario. As a result of this change to the scenario, changes to the methodologies have been made. Banks are not expected to calculate market risk losses on liquid or structural liquid positions and are also not expected to model changes in collateralised exposures of counterparties due to moves in market variables either for default or for RWAs. Simplifications have also been made to XVA.

The Bank's approach continues to recognise the importance of market and position liquidity when assessing loss projections under a stress scenario. Banks are expected to apply risk factor shocks to illiquid positions which are those positions that could not be liquidated within two weeks. Whilst banks are not expected to model changes in exposure to collateralised counterparties they are still required to identify and default counterparties that are particularly vulnerable to the stress scenario. The overall approach to ranking and defaulting counterparties is similar to previous years.

A2: Preliminaries

This section sets out the scope of application and how the different components of the stress test fit together, and outlines several general features of the stress test.

A2.1: Position scope

Broadly, the scope of positions to which the traded risk stress test is applied is: all Fair Value Through Profit and Loss ('FVTPL')[15] and Fair Value Through Other Comprehensive Income ('FVOCI') accounted positions. The assets to which the stress is applied can be broken down into several parts as follows: All positions that fall within the perimeter of the regulatory Trading Book; All other fair valued items outside the perimeter of the regulatory Trading Book, including: The FVOCI part of the regulatory Banking Book, which includes banks' Liquid Asset Buffers (LABs), and associated hedge positions; The Fair Value Option (FVO) part of the regulatory Banking Book and associated hedge positions; and Other financial assets mandatorily accounted as FVTPL that are not included in the regulatory Trading Book perimeter, such as underwriting positions and associated hedge positions.

Exceptions to the scope of the traded risk stress are as follows: Where a position has a prudential filter that eliminates the impact of changes in its value from capital, then such positions should be omitted in line with the filtering applied in the capital treatment unless explicitly noted otherwise. Securitisation positions (per the CRR Chapter 5 definition) and covered bonds are excluded from the traded risk stress test. These are captured as part of the credit stress test but any non-Chapter 5 hedges to these positions should be included. For example, a Collateralised Loan Obligation (CLO) hedged with an untranchised index Credit Default Swap (CDS) would result in the inclusion of losses from the CLO in the credit stress test and the gains from the CDS hedge in the traded risk stress test. Securities financing transactions held at amortised cost in the Banking Book should be included for the purpose of calculating counterparty default losses. This includes all collateral types, even Chapter 5 securities. For clarity, all other types of amortised cost lending are excluded, as they will be captured via the Banking Book stress test. Hedges to amortised cost loans are excluded.

A2.2: Components of the stress test

The traded risk stress test will have an impact on both capital resources (which would be depleted in the event of losses being incurred) and capital requirements (which may increase in response to rises in market volatility and counterparty default risk).

The impact of the traded risk stress test on capital resources is calculated to take into account the separate impacts arising from: Market risk losses (described in Section A3) arising in the Trading Book due to adverse moves in risk factors (market prices and rates) and issuer default; Counterparty credit risk default losses (described in Section A4); Changes in various valuation adjustments (described in Section A5) such as to the funding valuation adjustment (FVA), and credit valuation adjustment (CVA), which are collectively categorised under the banner of XVA losses; Regulatory adjustments due to stressed prudent valuation adjustment (PVA) changes (described in Section A6); Other Fair Valued Items losses on FVOCI, FVO and non-trading book FVTPL positions (described in Section A7); and Revenue and cost changes in the bank's investment banking business (described in Section A8).

The impact of the traded risk stress test on capital requirements is calculated as the sum of the separate impacts from:

- Market risk and CVA RWAs (described in Section A9); and
- Counterparty credit risk RWAs (described in Section A9).

The overall impact on a bank's capital ratios will reflect the impact of the traded risk stress test on both capital resources and capital requirements.

A2.3: Effective date

The stress test should be applied to banks' fair value positions as of a specified effective date. The effective date for running the stress test is different for different components of the traded risk stress test (and hence for the corresponding templates), as indicated in Table 1.

Table 1: Effective dates for the 2021 ACS traded risk stress

Template	Position scope	Effective date
Market Risk Stressed Profit and Loss projections	All Trading Book	29 January 2021
Counterparty Credit Risk Losses projections	All Trading Book and Banking Book	29 January 2021
Stressed XVA projections	All Trading Book and Banking	29 January 2021
Stressed PVA projections	All Trading Book and fair valued Banking Book	31 December 2020
Other Fair Valued Items projections	Fair valued Banking Book	31 December 2020
Revenues and Costs for Investment Banking Divisions projections	All Investment Banking activities	31 December 2020
Market Risk and CVA RWA template and Counterparty Credit Risk RWAs template	All positions within the scope of the market risk, CVA risk and counterparty credit risk RWA requirements	31 December 2020

An effective date of 29 January 2021 was chosen for market risk, counterparty credit risk and XVA exposures because banks typically reduce their traded positions at year end. Using 29 January 2021 as the effective date instead of 31 December 2020 is more likely to provide a representative view of banks' traded risk positions.

A2.4: Reporting currency

For traded risk positions that would generate P&L under the stress scenario in currencies other than banks' reporting currency, such P&L should be translated into the bank's reporting currency via FX spot rates that are consistent with the stress scenario.

A2.5: Loss allocation and relationship to management actions

The stress-test horizon is five years and, in line with this, banks should model the stress impact on the fair value positions that are outside of the regulatory Trading Book, the impact on PVA for positions held in the Banking Book and the impact on investment banking revenues and costs for each year of the stress scenario. Further details on this are provided in the relevant sections of this annex.

In relation to market risk, counterparty credit defaults, XVA movements and PVA movements on Trading Book positions, banks should assume that all losses are incurred in the first year of the stress. This is because losses on trading

activities would typically be concentrated in the early part of a stress scenario, since market prices tend to reflect worsening conditions relatively quickly. The allocation of losses over the five years of the ACS stress scenario is summarised in Table 2.

Table 2: Allocation of losses in the 2021 ACS traded risk stress

Losses	2021	2022	2023	2024	2025
Market risk	100%	0%	0%	0%	0%
Counterparty credit risk losses	100%	0%	0%	0%	0%
Stressed XVA	100%	0%	0%	0%	0%
Stressed PVA (Trading Book)	100%	0%	0%	0%	0%
Stressed PVA (Banking Book)	Gains/losses on these positions to be calculated in each year of the stress scenario.				
Other Fair Valued Items	Gains/losses on these positions to be calculated in each year of the stress scenario.				
Revenues and Costs	Gains/losses on these positions to be calculated in each year of the stress scenario.				

Consistent with the overall stress-test results only being collected at an annual frequency, traded risk projections are also annual. However, the intra-year distribution may impact the timing of any assumed management actions, and as a point of reference banks should equally distribute the full year losses across the four quarters and take this as a floor to possible actions. Banks should then motivate their actions by reference to the liquidity horizon of the positions, and the evolution of the underlying market as represented in the scenario, subject to this floor.

For example, uncollateralised counterparty losses are subject to one-year shocks because it is expected these defaults will not occur immediately but only on a lag in quarter four. Losses on bond holdings in the Liquid Asset Buffer may occur during the scenario but the extent of bond sales will be motivated by the information available up to the point of sale and not with foresight of future interest rate movements. As a result, the losses incurred in the first year of the stress event may be weighted towards the latter end of the first year of the stress rather than being equally distributed across the quarters. The timing of any management actions that are necessitated by these losses are therefore expected to be late in the first year. An action should not be motivated by an allocation of losses to quarter one that is larger than would occur under an equal-quarters loss allocation. This applies to both business-as-usual and strategic management actions.

Section 12 provides guidance on the difference between strategic and business-as-usual management actions. Traded risk projections should only include business-as-usual management actions and these should be motivated by precise policies and procedures that support the business-as-usual actions eg to stay within limits, to meet enforced limit reductions under stress or in response to activated stop-loss triggers. Traded risk strategic management actions should

be recorded alongside banks' other strategic management actions.

A3: Market risk stress

A3.1: Position types

Banks' Trading Books comprise trading positions of varying liquidity. As was apparent in the global financial crisis, the most illiquid positions can inflict the greatest damage to banks' P&L and capital resources. For this reason, banks are expected to clearly identify illiquid positions and distinguish them from liquid positions. For the purpose of the traded risk stress test, banks are requested to classify Trading Book positions into three categories: **Liquid positions** are defined to be those which would take two weeks or less to liquidate or hedge under the stress scenario; **Illiquid positions** are defined to be those that would take more than two weeks to liquidate or hedge under the stress scenario. This longer liquidation period may arise due to the bespoke features outlined in Section A3.6; and **Structural Liquids** is a further designated position type that is intended to capture positions which, although possibly reduced or neutralised when an adverse stress scenario has its initial impact, may need to be subsequently reopened in order to preserve a bank's ability to provide financial products in a particular market, for example market-making positions. By virtue of reopening such a position, a bank exposes itself to further losses associated with further adverse market movements. For the 2021 stress test, losses should only be calculated for illiquid positions.

A3.2: Assessment of position liquidity

Banks are expected to make their own assessments of the liquidity horizons of their positions. More specifically, banks should judge how quickly they would be able to exit positions in view of likely market trade volumes under the stress scenario. The Bank will assess banks' judgements regarding the liquidity of their traded positions.

A3.3: Calibration of risk factor shocks

The risk factor shocks provided by the Bank do not include all risk factors to which banks are exposed, and so banks are expected to identify other risk factors that would contribute to their P&L under the stress scenario and to calibrate shocks for these risk factors. These risk factors should be identified based on banks' understanding of the material risk factors that would be expected to drive P&L under the stress scenario. Further, these additional risk factor shocks should be calibrated with reference to the risk factor shocks and scenario narrative that have been provided by the Bank. Whether market risk factor shocks are provided by the Bank or identified and calibrated by banks themselves, banks should apply the shocks appropriate to the liquidity of each position. The Bank will assess the appropriateness of the shocks that banks apply to their traded positions.

When applying risk factor shocks to any part of their portfolios, banks should consider whether the resulting losses are realistic. Where the profit or loss is material and unrealistic banks should highlight this and provide a realistic assessment of stress results (eg where the size of a position under stress would exceed limits and necessarily be reduced or hedged).

The remaining parts of this section describe the approach that banks are expected to take in the calculation of loss per position type in greater detail.

A3.4: Liquids stress

There are less sharp and severe shocks to liquid positions in the 2021 scenario than in previous years. Having identified liquid positions banks should not apply any stress to them. Banks should record neither profits nor losses for these positions.

A3.5: Structural liquids stress

As there are less sharp and severe shocks to market variables no losses for Structural Liquids positions should be recorded for the 2021 stress test.

A3.6: Illiquids stress

The loss sustained by each portfolio of illiquid positions should be identified separately and reported in the market risk template. Banks should clearly articulate their approach to the identification of illiquid portfolios. As noted in Section A3.1, a position is designated as illiquid if it is likely to take more than two weeks to liquidate or hedge under the stress scenario. For guidance purposes, examples of illiquid positions are provided as follows:

- Positions that would take longer than two weeks to liquidate or hedge, whether complex or not. This could, for example, include a corporate bond held in large size relative to the amount of the bond in issue;
- Positions for which there are only thin or one-way hedging markets available, and so the ability to ascribe a liquidity horizon to the position may be compromised;
- Positions that are difficult to value and consequently may have significant non-modelled characteristics that are not captured in the stressed value such as legal enforceability risk and rating downgrade contingencies; and
- Positions for which values may be modelled, but with significant uncertainty.

Banks should articulate their approach when calculating the Illiquids stress-test loss in sufficient detail to put the Bank in a position to understand, in respect of each illiquid portfolio: the nature of the positions that comprise the portfolio; the risk factors that drive portfolio P&L; the risk factor shocks utilised (and how they were calibrated to be consistent with the scenario); the details of the stress loss calculation applied; the loss outcome itself; and which trading desk manages the portfolio. In identifying the risk factors that drive P&L of illiquid portfolios and in calibrating the corresponding risk factor shocks, banks should take due account of: The risk factor shocks and scenario narrative published by the Bank;^[16] and The market structure and dynamics for the products that comprise the illiquid positions. Banks are expected to take into account that illiquid product valuations are heavily influenced by other broker-dealer activity.

Banks should review their results for material artefacts, disclose any that are identified and apply appropriate adjustments.

The Bank does not typically expect banks to generate large gains from illiquids in the stress.

A3.7: Issuer default

The market risk template includes a tab relating to 'Issuer Default' losses. Such losses would be associated with those counterparties identified as defaulting in the counterparty credit risk stress described in Section A4.^[17] That is, if a counterparty were to default under the counterparty credit risk stress, then any issuer exposure to that name arising in the Trading Book (from bonds, equities, traded loans, and derivatives where the defaulting counterparty is referenced as an issuer, eg CDSs) should also be assumed to default and be reported in the 'Market Risk Stressed Profit and Loss' template.

A4: Counterparty risk default stress

This section discusses counterparty default loss, which comprises two parts: portfolio-wide default losses across particular cohorts of clients, and additional losses arising from the default of specifically named, large counterparties that are deemed to be vulnerable to default under the stress scenario. The Bank will carefully assess the appropriateness of banks' choices as to which counterparties to default under the stress scenario (both in terms of the cohorts and specific names).

A4.1: Definition of vulnerable counterparties

The selection of vulnerable counterparties requires expert judgement regarding the creditworthiness of counterparties, and banks are expected to consider multiple factors in making this determination. For example, banks should consider both the current creditworthiness of counterparties, and how that creditworthiness might deteriorate under the stress scenario. Banks should also consider the nature of the exposure and, in particular, whether it exhibits wrong-way risk. Therefore, the selection of vulnerable counterparties should not be based solely on simple application of measures such as banking book probability of defaults (PDs) (or external ratings), but should also take into account idiosyncratic credit factors arising from the stress scenario itself.

A4.2: Portfolio default losses

Regarding portfolio losses, banks are expected to: Stress significant cohorts as specified in the scenario. The significance of a cohort should be judged in terms of both the materiality and the vulnerability of the exposure under the stress scenario; and Estimate a cohort default loss that would arise from a portion of this portfolio defaulting at the end of the first year of the stress scenario, and with no further losses beyond the one-year point. Banks should estimate this cohort default loss as follows: Calculate the stressed exposures of the uncollateralised counterparties in the cohort by applying one-year market risk factor shocks. For collateralised counterparties, the stressed exposure should equal the current exposure on the effective date. Calculate the stressed expected loss, using market-implied stressed PD and loss given default (LGD) rather than those used to project impairments in the Banking Book. Using the stressed PD implied from the cohort's stressed expected loss, estimate the proportion of pre-stress CVA that relates to the defaulted portion of the overall cohort and deduct this from the stressed expected loss to arrive at the cohort default loss.

A4.3: Specific name default losses

Banks are also expected to default a number of specifically named, vulnerable counterparties under the stress scenario. Details of the minimum number of counterparties that banks should default will be provided as part of the stress scenario. The approach to determining the default loss varies according to whether a bank's exposures to a counterparty are collateralised or uncollateralised.

For uncollateralised counterparty losses, banks should: Estimate stressed current exposure by applying one-year market risk factor shocks and assuming the default occurs at the end of the one-year period (and with no additional losses beyond the one-year point); Identify and rank their top exposures by stressed current exposure; Identify and default vulnerable counterparties from these rankings according to the minimum numbers set out in the scenario. A bank should default more than the minimum number of counterparties if it deems that more than the minimum number are likely to default under the scenario; and For calculating default losses, use the severity rate from the Banking Book analysis to inform their choice of LGD, with appropriate consideration of the specific name being defaulted.

For collateralised counterparty losses, banks should: Not stress collateralised exposures but use current exposure at the effective date; Rank the top exposures by current exposure (net of collateral); Identify and default vulnerable counterparties from these rankings according to the minimum numbers set out in the scenario. Use the severity rate from their Banking Book analysis to inform their choice of LGD, with appropriate consideration of the specific name being defaulted; and Take into account the cost of liquidating illiquid collateral and replacing illiquid hedges. Where a counterparty is treated as having defaulted, no additional impact on the market due to the default of that name needs to be modelled, and the pre-stress CVA should be deducted from the default loss. For all counterparties chosen to default, banks should consider the impact on other templates consistent with guidance in Section A3.7 and Section A7.1.

A5: Stressed XVA

Banks' fair value positions are subject to various types of valuation adjustment. It is likely that these valuation adjustments will be impacted by the stress scenario, and so the following sections provide guidance to banks on how these adjustments should be modified under the stress scenario. For this year's stress test, banks are asked to consider only the impact of credit spreads and funding spreads on CVA, FVA, DVA and associated hedges and not other market moves.

A5.1: Credit valuation adjustment (CVA)

In their trading activities banks enter into derivative contracts with counterparties. If a derivative contract gives rise to credit exposure for a bank – in other words, the contract has produced or may produce a mark-to-market profit for the bank – then there is a risk that the counterparty will default and fail to pay what is owed under the contract. The CVA measures the negative adjustment to the contract's value today in order to take account of this risk of default by the counterparty. Under the scenario, credit quality will deteriorate for some counterparties and credit spreads will widen and so the CVA should be modified to reflect this. CVA should be reported in three traded risk templates, with consistency between the entries: The 'Counterparty Credit Risk Losses' template should show CVA before and after the application of the risk factor shocks and exclusive and inclusive of all associated hedges (credit and market risk hedges); The 'Stressed XVA projections' template should report the change in the CVA under the stress both with and without associated hedges; and The 'Stressed PVA projections' template should report the CVA as a related fair value adjustment on the 'Totals' and 'Unearned Credit Spreads' tabs.

Banks are asked to note the following when calculating the CVA impact: When calculating the adjustment to CVA to reflect the impact of the stress scenario, banks should maintain consistency with the calculation of CVA in their accounts. Specifically, banks should use either market-implied or actual measures of PD and LGD, in line with their accounting CVA; Shocks to the credit spread and funding spread risk factors that drive CVA should be calibrated to a one-year liquidity horizon for both CVA and the associated credit risk hedges in place at the effective date, regardless of the frequency of hedge-adjustment used by the CVA hedging desk; For collateralised counterparties, banks should assume the counterparty continues to post additional margin; Banks should pay particular attention to the more complex CVA risks, such as index/single-name proxy basis. Further to this, in specifying the credit-spread shocks for individual counterparts, banks should conservatively explore how proxy hedges may react differently from the underlying credit and how the maturity of hedges may differ from the underlying exposures; Banks should decompose the aggregate CVA loss in their accompanying submissions so that the incremental contributions of these bespoke illiquid CVA risk factor shocks are apparent; and Banks should provide detailed commentary on the resulting CVA adjustment to support the calculations that they have made.

A5.2: Debit valuation adjustment (DVA)

In symmetry with CVA, which adjusts valuations to account for the risk of counterparty default, the DVA adjusts valuations to reflect variations in a bank's own credit quality.

The approach that banks are expected to follow in respect of DVA under the stress test requires that any impact of DVA is not recognised in the ultimate bottom line loss reported in traded risk templates. This is because regulatory capital treatment assumes that any DVA benefit cannot be realised and so any impact of DVA is not recognised in the calculation of regulatory capital resources. Nonetheless, because of the complications of how DVA is related to and managed alongside FVA and particularly in circumstances where a bank is hedging its DVA, banks are asked to report DVA gross in the XVA template and show the explicit deduction taken to remove the DVA in the bottom line loss number. Hedges are also separately included.

A5.3: Funding valuation adjustment (FVA)

The stress scenario will impact a bank's own cost of funding and should induce a funding loss, to the extent that funding costs are partly or wholly reflected in the bank's mark-to-market accounting. Banks should ensure that this funding loss is included in the XVA template. To determine the loss, banks should estimate their stressed funding curve in line with the overall narrative and severity of the macroeconomic scenario, and with the price paths provided in the scenario. This stressed funding curve should then be used to determine any fair values that are a function of it, in line with banks' existing valuation methodologies.

To the extent that there is also a PVA against funding costs (specifically, the Investment and Funding Cost component of PVA), then there may be additional capital erosion due to changes in PVA under the stress scenario. This additional PVA amount should be calculated according to banks' existing methodologies and reported in the Stressed PVA template. Further details are provided in Section A6.

A6: Stressed prudent valuation adjustment (PVA)

The scope of the traded risk stress test is fair-valued positions. However, accounting fair value may fall short of what would be considered prudent in the context of regulatory capital resources. For example, when valuation of a security is subject to a large degree of uncertainty – perhaps because liquidity in the market for the security is thin – fair value would require the security to be marked within the range of possible prices for the security, whereas prudence would require the security to be marked at a lower (upper) estimate of price if the position were long (short).

As in the 2019 stress test, the scope of PVA stress includes all components of PVA as set out in the CRR, namely Market Price Uncertainty Additional Value Adjustment (AVA), Close-Out Cost Uncertainty AVA, Model Risk AVA, Concentrated Position AVA, Unearned Credit Spreads AVA, Investing and Funding Cost AVA Future Administration Cost AVA, Early Termination AVA and Operational Risk AVA. It also includes the accounting bid/offer reserve stress.

Banks should project each component of PVA consistently with the scenario and where necessary maintain consistency with accounting fair value adjustment projections already reported in other templates eg for CVA, FVA. Projections for accounting fair value adjustments related to components of PVA should also be reported on the PVA template.

For Trading Book related losses or deductions (ie increases in fair value adjustments or PVA in relation to FVTPL Trading Book positions), the resulting losses or deductions should be allocated to year one with no recovery assumed in subsequent years.

For Banking Book related losses or deductions (ie PVA in relation to FVOCI or FVO positions), the resulting losses or deductions should be projected over the scenario horizon in accordance with conditions implied by the macroeconomic scenarios.

A6.1: PVA projections under stress

PVA is motivated by the concept that there is often a range of values when estimating the fair value of a position. This valuation uncertainty range may change when market conditions change. Therefore, when projecting PVA, banks should apply this principle and design their methodology to capture the changes in valuation uncertainty in the market as implied from the scenario.

We expect that banks will utilise their existing PVA framework to project future PVA in stress. Therefore, the level of granularity of the analysis will be the same as for PVA that is calculated in the ordinary course of business.

For example, when projecting Market Price Uncertainty and Close-Out Uncertainty AVAs for interest rate swaps, banks should take into account whether a sharp rise in an interest rate curve may lead to increased valuation uncertainty in the market price and bid-offer spread for this product.

As another example, when projecting Concentrated Position AVA in stress, banks should incorporate the liquidity horizon assessment described in Section A3 so as to identify any concentrated positions that might arise due to a change in market liquidity under the stressed scenario.

A6.2: Fair value adjustment projections under stress

Several accounting fair value adjustments are reported in the PVA template, including the bid offer reserve, which was previously reported in the market risk stress losses template. This is necessary whenever PVAs rely on accounting fair value adjustments as a starting point. Where such adjustments are also captured in the XVA template over the same projection horizon the reported values should be consistent.

Banks should also utilise their existing fair value adjustments framework as much as possible to project future fair value adjustments in stress. The level of granularity of the analysis, where applicable, should be the same as for fair value adjustments that are calculated in the ordinary course of business.

For the bid-offer reserve stress, banks should assess the impact on bid-offer spreads arising from the scenario, applying

the level of granularity that they would apply to their own internal analysis and using their own netting method.

For XVA, the detailed changes should be captured in the XVA template but a high-level summary should also be recorded in the PVA template to allow holistic analysis on Unearned Credit Spread PVA and Investing and Funding Cost PVA. Specifically, the approach for stressing funding costs should be identical to that laid out in Section A5.3 and banks should use the same stressed funding curve.

A7: Other Fair Valued Items (OFVI)

The 'Other Fair Valued Items projections' template is intended to capture positions measured at fair value which reside outside of the regulatory Trading Book (OFVI positions). It is intended to be a comprehensive balancing item to capture a wide variety of fair valued items whose impact on capital resources would otherwise not be captured in other traded risk templates.

A7.1: OFVI projection assumptions

Losses for OFVI positions under the stress scenario should be calculated with respect to each year of the scenario. Banks only need to provide annual losses for the 2021 stress test; there is no need to break down losses during the first year into first month and quarterly losses.

In constructing the stress scenario to be applied to the OFVI positions, banks are expected to refer to the macroeconomic scenario, published in the Key elements and Variable paths for the 2021 stress test, which provide full paths for a small number of the market risk factors relevant to OFVI positions.

Banks are expected to infer from these parts of the Bank's stress scenario the complete scenario horizon that should be applied to OFVI positions.

For all OFVI positions except the Liquid Asset Buffer, the balance sheet size should be held constant with no ageing or changing of positions. Where banks have in place written procedures requiring the sell down of foreign currency gains or losses from OFVI positions, then banks should follow these procedures in their stress-test calculation. This is the only type of rehedging permitted in stress testing OFVI positions that are not part of the Liquid Asset Buffer.

Different treatment of Liquid Asset Buffer positions is permitted and should be considered in two stages: At each period end banks should revalue the positions they held as at 31 December 2020, and thereby produce gain or loss projections under the scenario. In calculating the valuations for each period, banks should not age nor change any of the positions. For instance, if a bank holds a ten-year gilt this position should be revalued each year end as a ten-year gilt; it should not be revalued in year one of the stress scenario as a nine-year gilt. This will be reported in the pre-management action area of the template. The buffer may be adjusted in accordance with justifiable business-as-usual management actions. Where an action applies, the bank should report the adjusted gains or losses in the post management action area of the template.

Admissible changes to the buffer under a business-as-usual management action must be fully supported by appropriate policies and procedures and evidence of how these are invoked eg with regard to monetisation of the buffer or investment changes due to stop-loss triggers. Actions meeting the definition of a Strategic Management Action, as set out in Section 12 of this document, must not be included. Unstructured information concerning the business-as-usual management action must also be provided in the unstructured data submission, as detailed in the Basis of Preparation.

Note the following points of clarification regarding the treatment of the default risk of OFVI positions: The 'Counterparty Credit Risk Losses' template only covers derivative and Security Financing Transaction counterparty defaults, and excludes both unsecured lending and issuer defaults on bond and equity holdings. Positions where the loan is designated at fair value under FVO are also excluded. No default losses should therefore be reported in the Counterparty Credit Risk Losses template for OFVI assets. These should instead be reported in the 'Issuer Default Loss' tab of the 'Other Fair Valued Items'; However, counterparty default losses on derivative hedges to OFVI items should be reported in the Counterparty Credit Risk Losses template, as this template covers all Trading Book and Banking Book derivatives; and Unlike market risk losses on OFVI positions, which are allocated across the full five years of the stress scenario,

default losses for OFVI positions should be allocated to year one of the stress scenario.

For private equity investments in OFVI, banks should as a starting point consider the methodologies used in their current valuation approach, for example their pre-existing choices of comparable assets (eg listed securities), and any adjustments already taken into account for the difference between the position held and a comparable listed asset. Application of the stress scenario may require approximations such as the use of betas to simplify one or more of the steps in the valuation approach, when applied under the stress scenario. Where these approximations are employed, they should be calibrated to relevant historical reference periods. Banks' methodology should also consider any impairments under the stress scenario.

A7.2: Additional note for underwriting commitments

Banks should use the 'non-trading book positions mandatorily at fair value through profit or loss' template category to capture any other in scope fair valued items that have not been otherwise captured.

Underwriting commitments in the firm's pipeline, including those in the process of syndication, should be included in scope. This includes equity, bond, loan and securitisation pipelines that are FVTPL, as well as all FVTPL hedges against these commitments. An example of equity commitment risk would be the underwriting of rights issues. The securitisation pipeline refers to whole loans warehousing, gestation repo, or other pre-issuance activity where the associated exposure is FVTPL and not subject to amortised cost accounting; if accounted for at amortised cost, then the exposures should be excluded.

In this context, loan commitments refer to conditional agreements to proceed to full loan documentation, where the commitment has a fair value, but is not yet fully documented or funded.

The loan underwriting syndication timeline in particular is often complex and proceeds through various documentary stages that are often completed before the recognition of a credit agreement and the resulting recognition of credit RWA.

Banks should rely on their internal risk management definitions to determine the moment when they consider themselves to be 'on risk', which may be synonymous with the recognition of an accounting fair value for the commitment or the existence of a signed legal agreement (at least signed by the bank), and is also likely to be before the recognition of any RWA. Banks do not have to include unsigned or soft commitments unless they believe there is a necessary franchise reason to honour these commitments.

When projecting the loss for underwriting positions, banks should follow the same principles outlined in A7.1 to construct shocks to valuation inputs such as credit spreads and equity prices, taking account of any contractual mitigants such as flex and fees. Each commitment should be assessed individually to take into account its size and idiosyncratic risk particularly where the commitment amount is large. The balance sheet for the positions should be held constant. For banks that have fair value hedges to their commitment positions, these positions should be stressed separately in accordance with the scenario and should not a priori be assumed to be fully effective unless the scenario allows for this.

T8: Revenue and cost projections

Banks should provide stress scenario revenue and cost projections for IFRS 8 operating segments that include investment banking activities such as trading and capital markets activity, and also for non-core segments if relevant. This is in the form of FINREP compliant income statements for each year of the scenario. Investment banking activity is defined as one or more of the following items: Markets cash and derivatives trading activity including for example products such as FX, Rates, Credit, Equities, Commodities and Prime Finance; Capital Markets activity such as Advisory, Debt Capital Markets, Equity Capital Markets, and Syndicate desks; and Banking book activity that is readily identifiable inside the bank as supporting Markets and Capital Markets activity, and which is internally managed alongside it with this exclusive aim eg a dedicated relationship lending book for large corporate or institutional clients. If there is no such clear segregation then this activity can be omitted.

Reconciliations are required between the income in the segments reported in the traded risk templates and income information supplied in other non-traded risk templates eg group capital and income statement templates. Where material

fair-valued income is captured in segments not in traded risk templates, the balancing items need to be reported in the reconciliation section of the revenue and costs template so that the fair value percentage coverage of the revenue and costs template is evident.

The traded risk templates capture separate income statement information at a deeper level of granularity than these segments, narrowing in on the investment banking activities in isolation and requesting product and geographical level splits of the FINREP income statement for these on a standalone basis to the extent they can be built. This is consistent with the need to challenge the underlying, bottom-up assumptions that have been used to build the stressed projections. Banks are expected to present the top level segment and these more granular views and to assign direct and indirect costs at a level that is consistent with their business as usual processes.

The income and expense projections should reflect the plausible execution of a bank's business plan under both the stress scenario. The projections should also be consistent with the assumptions made for RWAs in the stress.

Banks should assess and model the impact of the scenario on trading and capital markets activity separately, which may for example lead to specific regional assumptions about decreasing market volumes, and constraints on the amount of revenue that can realistically be earned from the high volatility trading environment during the early onset of the stress. Simplistic forecasts that are not motivated in line with the scenario or are built without detailed supporting evidence should not be used. This includes cases where the projections return to the pre-stress base case rapidly after the initial stress has passed.

In particular, banks should not assume a year one increase in revenues, above the year zero starting point, as was observed in some business lines in the years following the Lehman default, and the bid/offer widening assumptions used to calculate the bid/offer stress in Section A6.2 do not apply. Banks should also justify the use of any caps or floors in their approach eg in maintaining certain revenues flat at year zero levels with no modelled decreases below this level. Banks should not assume reduced competition in the investment banking sector as a consequence of the stress scenario.

A9: Risk-weighted assets (RWA) projections

Banks should submit more granular information on their starting traded risk^[18] RWAs (ie as at the effective date defined in Section A2.3) and projected traded risk RWAs under the stress scenario for each year-end date over the time horizon via the following two structured data templates: Market Risk and CVA RWA; and Counterparty Credit Risk RWA.

This information is used to supplement the projected traded risk RWAs provided in the capital projections template.

The Market Risk and CVA RWA template captures starting and projected components of capital requirements for both market risk and CVA risk, while the Counterparty Credit Risk RWA template captures a breakdown of starting and projected capital requirements for counterparty default risk by counterparty group and exposure type. Other traded risk related components of RWA (such as settlement risk and large exposures) are not captured in the traded risk templates, but are captured in the capital projections template.

A9.1: General guidance

The starting values as at the effective date should reflect reported year-end values corresponding to the prescribed time period of the stress test. In addition: For Market Risk RWAs banks should not model the impact of the changes in financial variables but use the exposure at the effective date before adjusting for other impacts such as those below. For CVA banks should model the impact of Credit Spreads but not other financial variables before adjusting for other impacts such as those below. For collateralised counterparty RWAs banks should not model any change in exposure due to changes in financial variables however they should model the impact of counterparty downgrades and those factors below. For uncollateralised counterparty RWAs banks should model the exposure changes caused by changes to financial variables. They should also model the impact of counterparty downgrades and those factors below. For the stress scenario, should reflect a plausible execution of a bank's business plan under the stress scenario (including the bank's ability to execute its business plans). Otherwise, the projections should reflect a plausible variation to the bank's business plan, where these variations are clearly identified and where they have been appropriately assessed for inclusion

against the BAU management action criteria in Section 12. For the stress scenario, should be consistent with balance sheet, income and expense growth assumptions. Specifically, an increase in projected balance sheet size as a result of increased trading business is expected to result in an increase in projected traded risk RWAs. Similarly, a bank's plans to increase traded risk appetite should be reflected in an increase in projected traded risk RWAs. Notwithstanding Section 11.1, banks are expected to include the impact of regulatory changes (eg SA-CCR) where the terms are largely known and the effects are included in their corporate plan, but are not allowed to include benefits from models that have not been approved before 20 January 2021 except by prior agreement with the Bank.

A9.2: Specific guidance

Further details of the methodology that banks are expected to apply in the production of RWA projections under the stress scenario are provided in Table 3:

Table 3 RWA Projections Methodology

Risk type	Capital component	Expectations regarding RWA projections
Market risk	Standardised approach	RWAs calculated under standard rules approaches are expected to increase in line with projected growth in business.
	Value-at-Risk (VaR) and Stressed VaR (SVaR)	Projected combined (VaR and SVaR) capital components should change in line with projected growth in the business.
	Risk Not in VaR (RNIV)	Banks should project RNIVs in line with any changes to the business volumes.
	Incremental Risk Charge (IRC)	Banks should project IRC in line with any changes to the business volumes.
	Comprehensive risk measure (CRM)	There is no expectation that modelled CRM-derived RWAs should increase as a result of the stress scenario if the standardised credit risk floor is binding.
	Trading Book securitisations	RWAs related to securitisations held in the trading book are considered as part of the structured finance stress test, not the traded risk RWA stress test. If the market risk RWA submission includes trading book securitisations, this should be made clear and quantified in order to avoid double counting.



Risk type	Capital component	Expectations regarding RWA projections
CVA risk	Overall	<p>CVA RWAs should be modelled to include the impact of changes in credit spreads but not any changes in other financial variables</p> <p>In respect of defaulted counterparties, there should be no corresponding reduction in CVA RWAs submitted in the 'Market Risk and CVA RWA' templates, as it should be assumed that the defaulted positions are replaced on a like-for-like basis. In respect of a highly material counterparty default (for example, the assumed default of a large uncollateralised counterparty), the potential decrease in CVA should be captured as a strategic management action, but not reflected on the 'Market Risk and CVA RWA' template.</p> <p>The high-level expectation is that the bank maintains its current hedging policies when projecting CVA risk capital requirements. Changes to the way CVA risk is managed under stressed conditions may be considered under strategic management actions, but should not be reflected as part of the 'Market Risk and CVA RWA' template submission.</p>
	Standardised method	<p>Increases in RWAs due to downward credit migration are expected to be reflected in the weights used to calculate CVA RWAs using the standardised method.</p>
	Advanced method	<p>Where the scenario has an impact on credit spreads, this impact should be reflected in a change in the level of CVA RWAs.</p>

Risk type	Capital component	Expectations regarding RWA projections
Counterparty credit risk	Overall	<p>Where the bank has assumed a counterparty defaults, no corresponding reduction in CCR RWAs submitted in the 'Counterparty Credit Risk.</p> <p>RWAs' template is expected as it is assumed that the defaulted positions are replaced on a like-for-like basis for the purposes of projections. Where the impact is significant and counterparty specific (eg the assumed default of a large uncollateralised counterparty), the potential decrease in RWAs may be addressed as a strategic management action.</p> <p>For the avoidance of doubt, securities financing transactions are considered to be: repurchase transactions, securities or commodities lending or borrowing transactions; margin lending transactions.</p>
	Collateralised counterparties	<p>Exposures should not change due to changes in financial variables in the scenario.</p> <p>For the purpose of RWA calculation, it is assumed that margin agreements with non-defaulting counterparties will perform and collateral is received accordingly. It is also assumed that extended margin period of risk criteria, beyond those already identified, are not triggered.</p> <p>Risk weights are expected to be adjusted in line with the credit risk RWA calculation.</p>
	Uncollateralised counterparties	<p>For exposures calculated using the counterparty credit risk mark-to-market (MtM) method, projected increases in position MtM should be incorporated into the exposure.</p> <p>For exposures calculated using the IMM method, projected increases in position MtM should be incorporated into the exposure.</p> <p>Since IMM exposure is a function of market volatility, exposures are expected to increase if sustained market volatilities in the scenario are larger under the scenario than those used to calibrate the risk measures used for regulatory purposes.</p> <p>Risk weights are expected to be adjusted in line with the credit risk RWA calculation.</p>
	Treatment of unilateral accounting CVA under CRR Article 273(6)	<p>Projected accounting unilateral CVA (as defined in CRR Article 273, paragraph 6) that is deducted from exposures, should be consistent with the projected accounting unilateral CVA losses as at the end-of-year reporting dates and correspond to accounting unilateral CVA utilised for exposure at default (EAD) offset.</p> <p>The Bank permits banks that calculate counterparty level projected accounting unilateral CVAs to reduce EAD for the calculation of projected RWAs under the scenarios.</p> <p>Increased projected CVAs can provide RWA relief, if the bank calculates projected accounting CVA on a counterparty-specific basis. Otherwise, for the purposes of the RWA projection, the RWA mitigating impact of increased projected accounting CVA would not be expected to be reflected in the projected RWAs.</p>



Annex 2: Pensions risk

Further to Section 11.10: Pension risk, pensions projections in the stress test may require additional information that is not in the published stress scenario. In order to help firms assess proportionality, we are here making available the assumptions used in the PRA model.

We understand that firms may have their own methodology in place, and may use their own consistent assumptions. In order to help our analysis, we expect any material differences between firms' methodologies and the assumptions outlined below to be explained and justified in the unstructured data request.

- Discount rate changes:** We decompose the starting discount rate into 'risk free' and 'credit spread' components. We assume the 'risk-free' curve is the gilt curve in the scenario (available up to 20 years). For many firms, the 20-year point is suitable; for slightly longer terms, we will extrapolate using an estimate of the forward rate at 20 years. For the 'credit spread' component, we use the methodology described below.
- Real yields:** We use the real yields provided in the main scenario.
- UK and US credit spreads:** Spreads are provided for investment grade and non-investment grade bonds. We assume the spreads on corporate bonds (including the IAS discount rate) increase pro rata^[19] – ie by $I(t) / I(0)$ where $I(t)$ is the spread Index at time t . We assume that the change in credit spreads applies across the yield curve for that rating category of bond. When valuing corporate bond assets we ignore the impact of default and downgrades – ie the change in value can be based on the changing risk-free rate and credit spread only. We do not value bonds individually and use representative bonds in each of the rating buckets.
- Funding projections and recovery plans:** For UK schemes we project the funding basis on the assumption of regular triennial valuations. Recovery plans are assumed to start between 9 and 15 months after the valuation date (for convenience in aligning with calendar years) and be *no weaker* than the existing plan. By 'no weaker' we mean:
 - If the position is 'behind' previous recovery plan path, no reduction in contributions, no additional allowance for outperformance, no extension beyond a further three years, no additional 'back-end loading'.
 - If the position is 'ahead' of previous recovery plan path, a bringing forward of the end date rather than a reduction in contributions.
- UK and US equity assets:** Equity assets are assumed to move with the equity returns provided in the scenario, ignoring basis risk between specific stocks and the relevant index. The index supplied is an equity price index only, ie does not include dividends. The gross dividend yield at time zero on the relevant index is assumed to remain constant throughout the projection period.
- Euro, Asian and other overseas assets:** For material holdings, movements in equity prices or credit spreads can be estimated using a combination of:
 - UK and US equity paths; and/or
 - A comparison of the overseas GDP paths in the scenario with UK / US GDP paths.

Where there is no appropriate GDP index, or the holding is not material, the remaining assets are assumed to be invested in the relevant UK index and to be denominated in sterling.

- Property assets:** The property index is assumed not to include rental income. A rental yield of 5% is assumed to be applicable throughout the projection.
- Alternative assets:** Hedge funds, private equity and other alternative assets without an index are assumed to be invested in equities.



Glossary

- ACS** — annual cyclical scenario.
- AVA** — additional valuation adjustment.
- CCR** — counterparty credit risk.
- CCyB** — countercyclical capital buffer.
- CDS** — credit default swap.
- CET1** — common equity Tier 1.
- CLO** — collateralised loan obligation.
- CRD IV** — Capital Requirements Directive IV.
- CRM** — comprehensive risk measure.
- CRR** — Capital Requirements Regulation.
- CVA** — credit valuation adjustment.
- DVA** — debit valuation adjustment.
- EAD** — exposure at default.
- EURIBOR** — Euro Inter-bank Offered Rate.
- FCCM** — Financial Collateral Comprehensive Method.
- FINREP** — financial reporting.
- FPC** — Financial Policy Committee.
- FVA** — funding valuation adjustment.
- FVO** — fair value option.
- FVOCI** — fair value through other comprehensive income.
- FVTPL** — fair value through profit and loss.
- FX** — foreign exchange.
- GDP** — gross domestic product.
- HIBOR** — Hong Kong Inter-bank Offered Rate.
- IAS** — International Accounting Standards.
- IFRS** — International Financial Reporting Standard.
- IMM** — internal model method.
- IRB** — internal ratings based.
- IRC** — incremental risk charge.
- ISDA** — International Swaps and Derivatives Association.



Libor — London Inter-bank Offered Rate.

LGD — loss given default.

MDA — Maximum Distributable Amount.

MREL — minimum requirement for own funds and eligible liabilities.

MtM — mark-to-market.

NII — net interest income.

OCI — other comprehensive income.

OFVI — other fair valued items.

P&L — profit and loss.

PD — probability of default.

PRA — Prudential Regulation Authority.

PRC — Prudential Regulation Committee.

PVA — prudent valuation adjustment.

RCV — regulatory carry value.

RNIV — risks not in VaR.

RWA — risk-weighted asset.

SA-CCR — standard approach to counterparty credit risk

SFT — security financing transaction






SFX — Structural Foreign Exchange.

STDF — stress-testing data framework.

SVaR — stressed Value-at-Risk.

VaR — Value-at-Risk.

XVA — X-valuation adjustment.

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1. The term ‘banks’ is used throughout this document to refer to banks and building societies.
 2. See [Variable paths for 2021 stress test](#) .
 3. See [PRA Rulebook](#) .
 4. Please see Article 473a of the Capital Requirements Regulation.
 5. See [ICE LIBOR® Consultation on Potential Cessation](#) .
 6. See [Agencies issue statement on LIBOR transition](#)  and [FCA response to IBA’s proposed consultation on intention to cease US\\$ LIBOR](#) .
 7. See [The final countdown: completing sterling LIBOR transition by end-2021](#).



8. See [Variable paths for 2021 stress test](#)
9. For the purposes of the stress test, banks should define leveraged loans as all types of loan or credit exposure where the borrower is majority-owned by a financial sponsor and/or the borrower's original post-financing leverage exceeds a total debt to EBITDA ratio of four times. Loans to small and medium-sized enterprises as defined by 2003/361/EC are not expected to be covered by the 'leveraged lending without financial sponsor ownership' leveraged lending class definition.
10. 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'.
11. Please consider the leverage exposure measure excluding central bank reserves, in line with the [PRA's Policy Statement PS21/17](#) .
12. See for example Allocation of Responsibilities and Remuneration Parts of the [PRA Rulebook](#) and [SS28/15](#)
13. Throughout this annex the term 'traded risk stress test' refers to the part of the Bank's 2021 stress test that captures traded risk positions; similarly, 'market risk stress test' (or similar) refers to a particular component (or components) of the traded risk stress test.
14. The outcome of the traded risk stress test or of a particular component of the stress test is often referred to as a loss. However, it is recognised that the outcome of some components of the stress test may, in fact, result in profits.
15. Including positions accounted for under the Fair Value Option (FVO).
16. As described in the documents 'Key elements of the 2021 stress test', and 'Variable paths for the 2021 stress test'.
17. Counterparty credit default losses should be reported via the 'Counterparty Credit Risk Losses' template.
18. Traded risk RWAs are taken to be: Market Risk, CVA Risk and Counterparty Credit Risk RWAs.
19. The starting credit spread plus the starting risk free rate used in bullet point (a) should add up to the discount rate at 31 December 2020.