Life Insurance Stress Test 2022

Scenario Specification, Guidelines and Instructions

To be finalised in May 2022

DRAFT FOR FEEDBACK FROM PARTICIPATING FIRMS

January 2022

Note: The Bank may decide to delay or not to run the exercise depending on market conditions.

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Introduction

This document provides instructions for completing the PRA's Life Insurance Stress Test (LIST 2022).

The previous exercise was conducted in 2019, with the industry feedback published in June 2020[1].

For the 2022 exercise, we have made some notable changes as set out below.

We have changed the specification:

- using a staged approach for the scenario and setting out the permitted management actions at each stage is designed to achieve greater consistency, and more readily enable the PRA to identify differing approaches across firms.

We have redesigned the data reporting requirements:

- amount and granularity of data captured in the quantitative templates has been reduced.

We have added a request for additional qualitative details that inform our view of a firm's stress test governance and risk management:

- in addition to the quantitative templates, firms will be asked to provide a "Results and basis of preparation" (RBP) report. The RBP report will require firms to set out their governance process and quality assurance in completing this exercise, as well as to provide a narrative around the results, including the conclusions, limitations, data or modelling issues and firms' own approach to validation of the results.

For completeness, the overall structure of the documents provided is as follows:

- this document provides the instructions for completing the quantitative templates;
- the quantitative templates provide participants with the output that needs to be provided for each stage of the scenario; and
- the RBP provides participants with the qualitative information that firms will need to submit.

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[1] https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2020/insurance-stress-test-2019-feedback.pdf.

Objectives

The PRA has three objectives in conducting this exercise:

1. ***Assess sector resilience to severe but plausible adverse scenarios***: For life insurers, we are focussing on the consequences of severe disruption in financial markets, affecting both rates and market liquidity, followed by an additional longevity shock. For general insurers, we are focussing on natural catastrophes and cyber events.

2. ***Guide supervisory activity***: the process of stress testing yields valuable information about a firm's modelling and risk management capabilities. It might for example, highlight shortcomings in proxy modelling capability, or excessive reliance on liquidity in particular financial markets. We will follow up any such findings in our assessment of key risks at firms and in setting supervisory priorities and work plans.

3. ***Enhance the PRA's and firms' ability to respond to future shocks (support capacity building)***: The information we gather enhances the PRA's ability to run desk based analysis of new shocks and be better prepared to assess sector resilience and respond in the event of similar scenarios occurring. Aggregating responses to questions about management actions will allow the PRA to plan better to mitigate the collective, systemic impacts of such actions, and will support firms in understanding the potential market implications of their decisions.

The LIST 2022 results will guide supervisory activity and focus; it is not a pass/fail exercise.

Entities in scope

UK life insurers with significant annuity exposures will be requested to provide a separate submission for each of their solo UK legal entities with a significant annuity exposure. See **Annex 3** for entities in scope for this exercise.

Where firms have not received a request to participate, they do not need to submit a response. Should firms wish to be included in the exercise, they should contact their supervisor at the PRA, copying in IST.2022@bankofengland.co.uk.

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Structure of the life insurance stress test

This exercise consists of one scenario with four stages, designed to capture adverse economic, counterparty and longevity shocks. All four stages are designed to represent a set of events that could develop over a year, as such Stage 2 is assumed to occur after Stage 1; Stage 3 is assumed to occur after Stage 2; and Stage 4 is assumed to occur after Stage 3.

Stage 1: Initial Market Shock: This is designed to represent an initial market shock where the impact is assessed prior to any management actions in relation to new reinsurance agreements or external trading in financial investments, including derivatives. This stage covers adverse movements in interest rates, credit spreads, equities and option volatilities.

Stage 2: Developing Market Shock: This follows on from the initial market shock to capture a lagging shock to credit ratings, commercial property and residential property. Equity Release Mortgage (ERM) securitisations will need to be re-rated. The impact is assessed prior to any new reinsurance agreements or external trading in financial investments, including derivatives except interest rate and inflation swaps.

Stage 3: Protracted Market Shock: This is 12 months after the initial market shock. The impact is assessed after a limited range of management actions such as orderly implementation of external trading of liquid financial investments including derivatives, and ERM securitisations can be restructured.

Stage 4: Protracted Market & Longevity Shock: In the final stage, longevity expectations are assumed to increase. The impact is assessed after a limited range of management actions such as orderly implementation of external trading of liquid financial investments including derivatives, and ERM securitisations can be restructured.

This set up requires firms to consider the financial impact and their possible management responses at each stage as the scenario evolves without anticipating the subsequent evolution which in an actual event would be uncertain (ie firms must not assume perfect foresight).

For the PRA, this approach provides a basis for assessing whether firms have been consistent in their approach and methodology, as well as the ability to assess the plausibility of individual firm management actions in light of the sector response. The management actions recognisable in the scenario, in particular in Stages 1 and 2 are restricted where the decision time, cost, time to implement or impact including on financial markets are most uncertain. This is also intended to improve consistency in the management actions recognised at each stage.

Although the four stages are loosely assumed to cover a one year period *shock*, for simplicity firms should assess the impact on both the asset and liability side as an instantaneous stress to their Solvency II year-end 2021 Balance Sheet.

The PRA will be maintaining a Q&A (See **Annex 1**) to provide firms with technical clarifications.

The PRA has designed these scenarios, including all parameters and calibrations, for the purpose of this stress testing exercise only. Firms should not interpret them as indicators of a PRA position on risk calibrations.

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Accounting and reporting

Accounting Basis

Firms are requested to provide a separate quantitative submission, on a Solvency II basis, for each UK solo legal entity within the scope of the exercise. Where firms are uncertain as to the scope of their submission, they should consult with and obtain the agreement of their PRA supervisor.

General description

The stress testing data templates have been developed in Microsoft Excel. Data requested in the finalised templates will be submitted to the PRA via the BEEDS portal (see section "Process and Feedback").

In the Excel version of the template provided with these instructions, the following data requests are included:

- firm info (basic information about the firm);
- summary (key metrics for each scenario);
- pre-stress Information including Balance Sheet, SCR, MCR, Own Funds, Reconciliation Reserve and MA calculation information;
- post-stress information for each stage of the scenario including post stress Balance Sheet, SCR, Own funds and reconciliation and MA calculation; and
- reinsurer information after Stage 4.

General basis of preparation

Unless otherwise stated, financial amounts should be stated in GBP millions. Other quantities should be given to the nearest whole number, and percentages to 1 decimal place.

The sign convention for the 2021 balance sheet and Capital worksheets should match the quantitative reporting templates (QRTs) as applicable.

Opening Balance Sheet, Capital Requirements, Own Funds and Reinsurance

Firms are required to provide their Balance Sheet as at year-end 2021, their Solvency Capital Requirement (SCR), their Minimum Capital Requirement (MCR), their available Own Funds to meet the SCR and MCR, and reinsurance exposure information. The LIST Template provides the necessary Solvency II QRT references, where relevant.

Production of the Balance Sheet, Capital Requirements and Own Funds following each scenario stage

Life Insurance firms are asked to stress their year-end 2021 balance sheet by applying the scenario stage instantaneous shocks specified. Firms may then apply management actions as permitted for the scenario stage before recalculating their balance sheet, own funds (basic, ancillary and eligible), SCR and MCR. The balance sheet following each stage of the scenario should reflect the recalculated TMTP using an approach already agreed with the PRA. Reinsurance exposure is only required after the longevity shock in Stage 4.

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The opening balance sheet including TMTP, own funds (basic, ancillary and eligible), SCR and MCR should be consistent with the year-end 2021 annual QRTs. The scenario stage stress balance sheet, own funds (basic, ancillary and eligible), SCR and MCR should be of a standard equivalent to that which is sufficient for external unaudited public disclosure, for example capital market forward-looking financial statements or perspective of the business model.

Management actions

Firms should disclose in the RBP report what management actions they have assumed at each stage of the scenario and how this would impact their Own Funds and their projected SCR.

The management actions that are anticipated being taken must be consistent with those that can be taken given the scenario narrative and that are consistent with the firm's normal risk management governance. The time horizons for recognised management actions allow for development, governance and orderly implementation allowing for market illiquidity:

- Stage 1 – One day
- Stage 2 – Within 1 month
- Stage 3 – Within 12 months
- Stage 4 – Within 12 months

Firms should set out the management actions they have assumed including lead time to deliver the implementation in the report part of the submission. Separately firms are requested to outline in the RBP report information on further management actions not included within the results that a firm could consider following the scenario.

Some firms may find that they have insufficient management actions to restore compliance with MA requirements post-stress notwithstanding Stage 1 permits MA matching tests not to be met without loss of MA. In this case, firms should seek to remove liabilities from the MA portfolio fund so that an MA compliant position can be achieved prior to determining the post-stress SCR. The balance sheet position should be shown post this action, but where this action is taken, firms should clearly set this out and provide details including quantitative information as to the impact of the action in the RBP report. The post-stress SCR should be based on the MA compliant position.

Where firms anticipate re-capitalisation plans, firms should provide this information, but should not assume new capital will be in place before year-end 2022 unless existing contractual arrangements allow for this. Details of any such contractual arrangements should be included in the RBP Report.

Internal Models (IM)

Firms with an approved IM need only provide the IM SCR view based on their approved internal model as at year-end 2021. For firms in IMAP or undertaking major model changes during 2022, firms should discuss with the PRA on what additional alternative basis/bases they may be able to provide results and whether this would significantly impact the results, management actions and conclusions. For all other firms on the Standard Formula, including firms intending to make an IM application after 2022, the SCR should be based on the Standard Formula.

Firms with an approved IM may not make changes to their IM including calibrations, except the regular changes required to reflect the stressed initial financial conditions.

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Reporting of Ring Fenced Funds

The LIST quantitative template has been designed to understand the impact on the firm level solvency coverage with and without TMTP recalculated, SCR, MCR, the amount and quality of own funds and the amount and quality of eligible own funds under each stage of the scenario.

The balance sheet information should be split between; a) funds other than ring-fenced or mutual main funds (including any matching adjustment portfolio(s) that are part of those funds); b) the remaining ring-fenced funds (including any matching adjustment portfolio(s) that are part of those funds). This split is requested due to restrictions on the transferability of the own funds within ring-fenced funds. The RBP report is intended to be used by firms to provide more detail where firms have one or more ring-fenced funds so that the PRA can understand how these have impacted the firm level view and the anticipated strength of ring-fenced funds in stress.

Reporting of Reinsurance

The LIST quantitative template is designed to understand the impact on reinsurance counterparty exposure with information requested for the opening balance sheet and post scenario Stage 4, protracted market and longevity shock only.

Process and feedback

Submission of quantitative template

Participants will be expected to submit the qualitative templates via the BEEDS portal. All firms should ensure that they are able to log onto and use BEEDS. Please refer to the BEEDS User Guide on the Bank of England website for details.

Post feedback / consultation phase of the IST 2022 process, we will issue further guidance on firm-specific data templates submission.

Submission of Results and Basis of Preparation report

The RBP should be provided in either a Microsoft Word document or PDF. Additional supporting material (i.e. additional documentation or spreadsheets) can be submitted with appropriate cross-referencing to the main document.

Resubmissions

Firms should ensure that the quantitative and qualitative information provided is clear and sufficient. Where this is not the case, the PRA will ask for a resubmission to enable it to make an adequate assessment. Firms will need to provide a resubmission within 2 weeks of request.

Public Disclosure

The PRA will not publish any firm specific information as part of this exercise. Where there is a need to take firm specific supervisory action, the PRA will do so as part of our normal supervisory engagement with the firm.

The PRA intends to publish a Dear CEO letter containing our findings at an aggregate level, drawing attention to sectoral findings or learnings of interest at a market level.

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Queries

All queries should be submitted to **IST.2022@bankofengland.co.uk**, copying in the firm's PRA supervisor. Please ensure that the Firm Name and FRN number is included in the subject of the email.

Enclosures

a)	**LIST 2022 Template.xls**	Structured data template
b)	**RBP Report**	Results and Basis of Preparation report

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Section A – Life insurers scenario specification

1.1 Event definition and assumptions

The scenario will examine the impact of a severe financial market shock in three stages, followed by an additional longevity improvement shock in the fourth stage (**Figure 1**). The scenario as a whole is designed to represent a 1 year long scenario starting within the next 3 to 5 years, although stresses for all stages will be applied at time 0. The four stage design aims to improve comparability across firms by restricting the management actions that can be recognised post stress for each stage.

The split of the scenario into stages is designed to reflect lags in financial shocks and to separate out the impact of management actions and longevity shock. The scenario is primarily a capital stress, but also requires firms to consider uncertainty and range estimates when assessing their liquidity risk. The uncertainty and ranges should be explained and reported in the RBP report.

Figure 1: Life Insurance Stress Test (LIST) scenario

Stage 1: Initial Market Shock	Stage 2: Developing Market Shock	Stage 3: Protracted Market Shock	Stage 4: Protracted Market & Longevity Shock
No trading post stress	No trading post stress except swaps (MA tests can be met)	Trading post stress: Swaps and current liquid secondary markets	Trading post stress: Swaps and current liquid secondary markets
Stress: *Interest rates* *Credit spreads (no downgrades)* *Equities* *Option volatilities*	Stress: *As per Stage 1* *plus* *Credit spreads incl. downgrades* *Commercial property* *Residential property* *ERM securitisations re-rated* *Reinsurance downgrades*	Stress: *As per Stage 2* *plus* *ERM securitisations can be restructured*	Stress: *As per Stage 3* *plus* *ERM securitisations can be restructured* *plus* *Longevity stress*
Post TMTP recalculation impact	Post TMTP recalculation impact	Post TMTP recalculation impact	Post TMTP recalculation impact

Table 1 below provides a summary of the calibration for the scenario stages with all shocks applied at time 0, with the same shocks applying to all currencies.

The direction of the interest rate stress has been set as being the most onerous for insurers in terms of impact on the SCR coverage ratio.

The credit rating downgrade stress should be applied pro-rata to each individual exposure and counterparty except for ERM and sovereign governments.

The 30% 1CQS downgrade shock is a simplification that has been calibrated taking into account downgrades greater than 1CQS including defaults.

The longevity stress reflects 3 to 5 years of future adverse longevity experience, people living longer, resulting in a step change to expected future longevity improvement. The longevity shock applies to all longevity exposure liabilities including defined benefit pension schemes. The longevity shock is represented as a shock to longevity base tables for ease and consistency of application of the stress by firms.

The subsequent sections provide further details on the assumptions and credit for management actions firms can take at each stage of the scenario.

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Table 1: LIST Scenario Calibration Summary

Risk factor	LIST 2022	
	Initial market shock (Stage 1)	Developing market shock onwards (Stages 2 – 4)
Interest rates (real and nominal)	-50bps	-50bps
Interest rates - Ultimate forward rate	None	None
Interest and inflation rate option implied volatilities	+700bps[1]	+700bps[1]
Equities	-33%	-33%
Equities option implied volatilities	+700bps[1]	+700bps[1]
Property commercial and residential	N/A	-33%
Property optional implied volatilities	N/A	None
Corporate credit spread stress and downgrades		
Downgrades	No downgrades	30% 1CQS
AAA	+115bps	Non-downgraded assets: +100bps Downgraded assets: +145bps
AA	+160bps	Non-downgraded assets: +130bps Downgraded assets: +230bps
A	+225bps	Non-downgraded assets: +200bps Downgraded assets: +295bps
BBB	+325bps	Non-downgraded assets: +240bps Downgraded assets: +520bps
BB and lower	+400bps	Non-downgraded assets: +360bps Downgraded assets: +520bps
Sovereign credit ratings	No downgrades	
Reinsurance and other counterparties credit ratings	No downgrades	30% 1CQS[2]
ERM mortgages	Revalued based on shock and firm's own SII valuation approach agreed with auditors	
Fundamental spread	No change to standard calculations[3]	
VA	Increased – No change to standard calculations	
Symmetric adjustment to the equity capital charge	No change to standard calculations[4]	
Minimum deferment rate for EVT	No change	
Longevity shock	N/A	Stages 2 and 3: N/A Stage 4: 7.5% base table stress

1.2 Stage 1 – Initial Market Shock

This is an initial severe economic and financial market shock where the impact is assessed prior to any management actions in relation to new reinsurance agreements or external trading in financial investments including derivatives. The limitation on trading management actions is to achieve

[1] Increase in log-normal implied volatilities, firms can covert this to an equivalent increase in implied volatilities for derivatives priced relative another volatility distribution.

[2] For firms not using credit rating for the counterparty risk exposure another approach agreed with the PRA can be applied.

[3] Some simplifications taking into account materiality.

[4] Some simplifications taking into account materiality.

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greater consistency of results between firms and so that the scenario as a whole shows the full impact journey.

1.2.1 Assumptions

Firms will be provided with the following assumptions:

1. a parallel shift in real and nominal risk free interest yield curves;
2. a parallel increase in corporate bond spreads according to credit rating. There are no credit rating downgrades for this stage;
3. a fall in equities asset values;
4. an increase in option implied volatilities for equities, interest and inflation (specified as an increase in log-normal implied volatilities); and
5. Solvency II technical information and symmetric adjustment to the equity capital charge for at least GBP, EUR and USD.

1.2.2 Requirements & restrictions

In assessing the financial consequences of this scenario stage firms should take account of the following:

1. firms are to assume that no external trading of financial investments including derivatives or new reinsurance agreements takes place after the shock;
2. firms are to assume that only exposures with daily collateralisation are re-collateralised following the shock. Firms are to assess on the same basis whether they have adequate eligible collateral to satisfy their collateralisation calls following the shock and management actions;
3. firms are permitted to assume they can draw on pre-arranged external liquidity facilities. If a firm has insufficient amount and quality of capital to meet their own daily margin or collateral calls then they may also assume they can make additional drawing of cash to avoid the failure of those arrangements, but should assess this shortfall; and
4. firms are permitted to assume they can internally move financial investments within a ring-fenced fund but not between ring-fenced funds or between shareholder and ring-fenced funds. For this purpose an MA fund is not considered to be a ring-fenced fund in its own right. Firms may assume they can add cash to the MA fund by drawing on pre-arranged external liquidity facilities. If an MA fund has insufficient component A and B assets to cover the best estimate liability after drawing on available MA eligible assets then it may after that assume it can make additional drawing of cash, but should assess this shortfall. It is accepted that an MA fund may be in breach of the MA matching tests without loss of MA provided component A and B assets are greater than or equal to the best estimate liability. The permitted approach to add cash should in most cases allow this last condition to be satisfied without removing liabilities from the MA fund.

1.2.3 Solvency II technical information and symmetric adjustment to the equity capital charge information

The PRA will provide Solvency II technical information and symmetric adjustment to the equity capital charge for at least GBP, EUR and USD. The basic (nominal) risk-free rates will reflect a stress of -0.5% up to the Last Liquid Point (LLP) with the ultimate forward rates unchanged. The risk free rates with volatility adjustment will additionally be stressed to reflect the spread stress, but with no changes to the assumed volatility adjustment portfolios. Inflation expectations are assumed to remain unchanged in the scenario.

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The fundamental spread parameters will be updated to reflect the basic risk-free rates stress.

For assets other than central government and central bank bonds, there will be no change to the underlying probabilities of default or long-term average of spreads.

The symmetric adjustment to the equity capital charge will be updated to reflect the immediate equity price shock.

1.3 Stage 2 – Developing Market Shock

The developing market shock follows on from the initial market shock to capture a lagging shock to credit ratings, and commercial and residential property. Similarly to the initial market shock the impact is assessed prior to any management actions in relation to new reinsurance agreements or external trading in financial investments including derivatives except interest rate and inflation swaps. The limitation on trading management actions is to achieve greater consistency of results between firms and so that the scenario as a whole shows the full impact journey. The management action to permit trade in interest rate and inflation swaps post shock is intended to ensure that firms can re-establish full compliance with MA matching tests and level of matching to the firm's normal risk management tolerance.

1.3.1 Assumptions

Firms will be provided with the following additional assumptions:

1. a parallel increase in corporate bond spreads, the stress is set out based on credit rating prior to any downgrades;
2. a proportionate credit ratings downgrade for each exposure (including reinsurance and other counterparties) by 1CQS (excluding ERM securitisations) with an additional parallel increase in corporate bond spreads for the downgrading proportion. This additional stress is set out based on the credit rating prior to downgrade;
3. a fall in commercial and residential property asset values;
4. Solvency II technical information and symmetric adjustment to the equity capital charge for GBP, EUR and USD; and
5. Solvency II technical information: volatility adjustment for at least GBP, EUR and USD. Other than volatility adjustment there is no change to the technical information compared to Stage 1.

1.3.2 Requirements & restrictions

In assessing the financial consequences of this scenario stage firms should take into account of the following:

1. firms are permitted to assume they can internally move financial investments within a ring-fence fund but not between ring-fenced funds or between shareholder and ring-fenced funds. For this purpose an MA fund is not considered to be a ring-fenced fund in its own right. Firms may assume they can add cash to the MA fund by drawing on pre-arranged external liquidity facilities. If an MA fund has insufficient component A and B assets to cover the best estimate liability after drawing in available MA compliant assets then it may after that assume it can make additional drawing of cash, but should assess this shortfall. A firm may additionally use swaps to restore the MA tests to within normal operational tolerances post stress;
2. firms will be expected to re-assess their internally rated ERM securitisation notes post shock;

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3. firms are to assume that only exposures where settlement of collateralisation is required within three months are re-collateralised following the shock. Firms are to assess on the same basis whether they have adequate eligible collateral to satisfy their collateralisation calls following the shock and management actions;
4. firms are to assess on the same basis whether they have adequate eligible collateral to satisfy their collateralisation calls following the shock and whether they have adequate expected liquidity without trading to meet cash flows due within three months (excluding unit linked business); and
5. firms are permitted to assume they can draw on pre-arranged external liquidity facilities. If a firm has insufficient amount and quality of capital to meet their own daily margin call then they may also assume they can make additional drawing of cash to avoid the failure of those arrangements, but should assess this shortfall.

1.3.3 Solvency II technical information and symmetric adjustment to the equity capital charge information

The risk free rates with volatility adjustment will be stressed to reflect the Stage 2 spread stress but with no changes to the assumed volatility adjustment portfolios. This will be provided for at least GBP, EUR and USD. All other SII technical information and symmetric adjustment to the equity capital charge information will remain unchanged from Stage 1.

1.4 Stage 3 – Protracted Market Shock

The protracted market shock follows on from the developing market shock and is 12 months after the initial market shock. In this stage firms can reflect the orderly implementation of external trading of financial investments including derivatives where currently liquid secondary markets already exist. For the orderly implementation firms can assume this can be carried out over up to 12 months without incurring high trading costs (eg high bid/offer) or trade distorting prices relative to the underlying market shock. Firms should not assume any additional reinsurance is purchased.

1.4.1 Assumptions

Firms will be provided with the additional assumption:

1. Solvency II technical information: symmetric adjustment to the equity capital charge.

1.4.2 Requirements & restrictions

In assessing the financial consequences of this scenario stage firms should take into account of the following:

1. firms are permitted to assume they can internally move financial investments within a ring-fence fund but not between ring-fenced funds or between shareholder and ring-fenced funds. For this purpose an MA fund is not considered to be a ring-fenced fund in its own right;
2. firms are permitted to restructure and re-credit rate internal ERM securitisation notes between Stages 2 and 3;
3. only exposures where settlement of collateralisation is required within twelve months are re-collateralised. Firms are to assess on the same basis whether they have adequate eligible collateral to satisfy their collateralisation calls following the shock and management actions;
4. if a counterparty has the legal right to challenge an aspect of the basis for the re-collateralisation, for example a change in longevity assumptions, then firms are to assume

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the counterparty exercises that right and that aspect of the calculation of collateral requirement is not changed;

5. external trading of financial investments is permitted, including derivatives where currently liquid secondary markets already exist;
6. firms are to assess on the same basis whether they have adequate eligible collateral to satisfy their collateralisation calls following the shock and trading. Firms are permitted to assume they can continue to draw on pre-arranged external liquidity facilities if required but not beyond this; and
7. firms are expected to reassess the options available to them to implement between stage 2 and 3 in light of (a) the additional time elapsed; and (b) the ability to consider carrying out management actions.

1.4.3 Solvency II technical information and symmetric adjustment to the equity capital charge information

Stage 3 is intended to represent the economic conditions and asset prices remaining at the stressed level for 12 months. If this length of stress occurred in practice some of the SII technical information, for example long-term average spreads would change. The PRA intends to apply some simplifications taking into account materiality so that most or all of the SII technical information and symmetric adjustment to the equity capital charge will remain unchanged from Stage 2.

1.5 Stage 4 – Protracted Market Shock and longevity shock

The protracted market and longevity shock follows on from the developing market shock and is 12 months after the initial market shock. The scenario assumes that in the 3 to 5 years period preceding the start of the scenario there has been persistent adverse longevity experience that firms have not reflected as a change to longevity improvement trend assumptions. This last stage of this scenario reflects the history of periodic implementation of material step changes to longevity improvement trend assumptions.

In this stage firms can reflect the orderly implementation of external trading of financial investments including derivatives where currently liquid secondary markets already exist. For the orderly implementation firms can assume this can be carried out over up to 12 months without incurring high trading costs (eg high bid/offer) or trade distorting prices relative to the underlying market shock. Firms should not assume any additional reinsurance is purchased.

There will be no further changes to the requirements and restrictions as set out in Stage 3, except that firms can assume that this Stage follows on from Stage 2.

1.6 Other information on the scenario

For ERM securitisations notes, firms are expected to recalculate the EVT in the stress stages. The PRA is only setting the instantaneous residential property shock to be applied by firms within their ERM revaluation for the Solvency II balance sheet. Firms should explain their ERM revaluation in the RBP report.

For defined benefit pension funds firms should calculate the impact from the scenario stages consistently with how they normally would for Solvency II reporting. Firms should explain in the RBP report how they have applied the scenario stages to defined benefit pension funds.

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Annex 1 Q&A for life insurance participants

The purpose of this Q&A section is to provide additional technical clarifications.

Scenario narrative

1: What does a firm do if it does not have adequate assets required to meet the collateralisation call?

A firm should identify this issue and provide an analysis of the shortfall and identify management actions it generally aims to take in the RBP report. A firm should assume for the purposes of the stress that the contractual collateralisation requirements can if necessary be met for Stages 1 and 2 by calling on additional liquidity facilities beyond the firm's own current facility if theirs is insufficient. For Stages 3 and 4 firms should assume the management actions they would plan to take within 12 months of the initial market shock and as a minimum trade assets so that they at most call on their own current facility.

2: Can a firm use the additional liquidity facilities specified to put cash into the MA fund for Stages 1 and 2 rather remove liabilities?

Yes it can, however, it should explain why this was necessary and consistent with its risk management of the MA fund. If a firm assumes drawing on additional liquidity facilities beyond the firm's own current facility it should explain why it was necessary.

3: Why does a firm not need to assume for Stage 4 the assets held after trading for Stage 3?

The purpose of scenario Stages 3 and 4 is to allow the longevity impact to be separated. Stages 3 and 4 can therefore be seen as alternative ends after one year as a single step after Stage 2. This approach avoids a firm having to assume additional trading costs by splitting out the longevity stress impact.

4: Why can't a firm assume that it sells illiquid assets or puts in place additional reinsurance?

The prices on which illiquid assets could be traded in stress has greater uncertainty than more liquid assets. There may be restricted availability of reinsurance and uncertain cost in the stress. Similarly the price and availability. The scenario is testing the resilience of firms without assuming these management actions, this will also achieve greater consistency of results between firms.

5: *Why are firms required to assess their liquidity position and quality of assets available for collateralisation?*

The scenario is looking to identify whether firms would need to trade assets or call on their liquidity facilities in stress to satisfy their collateralisation requirements. The scenario is providing an assessment relative to GENPRU 1.2.26 which sets out that a firm must at all times maintain overall financial resources, including capital resources and liquidity resources, which are adequate, both as to amount and quality, to ensure that there is no significant risk that its liabilities cannot be met as they fall due.

Additional scenario information

6: Will the PRA provide guidance on the Solvency II balance sheet valuation of equity release mortgages in stress?

No, the SII valuation of equity release mortgages is an area subject to external audit so not an area where the PRA provides guidance. The PRA would like to understand how firms would expect to

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value the equity release mortgages in the specified stress. Firms should provide details of their equity release mortgages valuation method including a summary of key assumptions made for each stage and the equity release mortgage shock applied.

7: According to your instructions the trading management actions mean the stresses for each scenario stage can be applied to the year end 2021 balance sheet independently. Is this correct?

We believe this is correct as any internal asset movements for Stages 1 and 2, and additional swaps for stage two are reversible. The results of scenario stages one and two may inform the management actions that a firm recognises in Stages 3 and 4.

Accounting and modelling issues

8: Can a firm use proxy models or other simplifications in carrying out their calculations in order to reduce the overall burden of the exercise?

The PRA expects that firms will submit results that will go through the level of governance and quality assurance that would be employed in reporting other unaudited public or private external disclosures, for example capital market forward-looking financial statements or perspective of the business model. For instance, proxy models could be used for the exercise but firms would need to satisfy themselves and the SMF holder signing the results off that the results are credible and appropriate for the tail of the distribution being considered. Use of simplifications may not be appropriate if this would hamper the ability of the firm to provide adequate insights in the RBP report.

9: How should firms treat ERMs and lifetime mortgages in the stresses?

The PRA expects the firm to use the valuation approach they have agreed with their auditors for IFRS purposes and apply this for the scenario stresses.

Firms should provide a summary of their valuation approach and key assumptions that they have applied for each scenario stage together with the ERM valuation shock applied.

Management actions

10: Can a firm assume management actions that are part of their approved internal model for the calculation of SCR?

Yes, firms can take into account those management actions that have been agreed as part of their approved internal model.

11: What actions is a firm allowed to take to continue to meet Matching Adjustment tests during the stress scenario?

The instructions set out a range of management actions permitted which limit the likelihood that liabilities would need to be removed from a MA fund. An aim of the scenario is to identify the resilience of firms' solvency and MA funds with the permitted management actions and the extent that firms would need to use those actions.

Firms should outline the management actions they have assumed to have taken in the RBP report. They should also outline additional management actions beyond those permitted and which they would consider taking.

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Annex 2 Responses to firm feedback from the first part of request for technical input (life insurance)

Questions / issue raised		PRA response
1.	What is the reason for using a four-stage structure of the scenario	The four stages of the life scenario are time zero stresses. The periods indicated for each stage are not roll-forward periods for modelling but periods designed to explore the different impacts of management actions. The structure makes it possible to separate out the impact of each stage's stress on a firm and the impact of taking management actions in mitigation. The restrictions on management actions at each stage will also help to ensure consistency in the outputs from firms.
2.	The restrictions on asset trading, particularly equities, centrally cleared derivatives and some types of bonds in the first two stages go on for too long and may not be plausible. They would add significant burden to the modelling process under the exercise.	The PRA has taken this into consideration and has removed restrictions on replacement of short term hedges in the first 2 stages of the scenario. Stages 3 and 4 continue to not have this restriction. The purpose of Stages 1 and 2 is to assess the impact after the shock but prior to certain management actions such as external asset trading. The time period permits some other management action to be recognised.
3.	Are all internal movements of assets disallowed during the scenario?	Firms can move assets into and out of their matching adjustment portfolios following each of the stages of the scenario. Restrictions will only apply on asset movements into and out of a ring-fenced fund where a matching adjustment portfolio is not itself a ring-fenced fund in its own right.
4.	An instantaneous longevity shock would not be plausible. The PRA could consider a scenario such as a cure for cancer for Stage 4.	The longevity shock in stage 4 represents a stepped change to longevity improvement trend rates the type of which have occurred in the past. The scenario is based on 3-5 years of adverse longevity experience prior to the stage of the scenario.
5.	In reality, firms would adjust their longevity trend assumptions rather than making a percentage adjustment to mortality tables as the PRA proposes to do in its specification for Stage 4.	We agree. The PRA is taking a practical approach for consistency since firms specify their trend assumptions in different ways. The adjustment to mortality tables is intended to produce a similar impact to a change to trend assumptions.
6.	Can firms use simplifications in carrying out their calculations in order to reduce the overall burden of the exercise?	The PRA expects that firms will submit results that will go through, at the least, the level of governance and quality assurance that would be employed when firms prepare unaudited public or private external disclosures, for example capital market forward-looking financial statements or perspective of the business model. For instance, proxy models could be used for the exercise but firms would need to satisfy themselves and the SMF holder signing the results off that the results are credible and appropriate for the tail of the distribution being considered. Use of simplifications may not be appropriate if this would hamper the ability of the firm to provide adequate insights in the RBP report.

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Questions / issue raised		PRA response
7.	What actions is a firm allowed to take to continue to meet Matching Adjustment tests during the stress scenario? Allowing the MA to vary and absorb the entire stress impact without balance sheet implications does not seem plausible.	The detailed instructions set out a range of management actions permitted which limit the likelihood that liabilities would need to be removed from an MA fund. An aim of the scenario is to identify the resilience of firms' solvency and MA funds with the permitted management actions and the extent that firms would need to use those actions. Firms should outline the management actions they have assumed to have taken in the RBP report. They should also outline additional management actions they beyond those permitted they would consider taking.
8.	Will there be guidance on how firms should treat ERMs and lifetime mortgages in the stresses? Leaving their valuation to firms' discretion may affect comparability of results.	The PRA expects the firm to use the valuation approach they have agreed with their auditors for IFRS purposes and apply this for the scenario stresses. Firms should provide a summary of their valuation approach and key assumptions that they have applied for each scenario stage together with the ERM valuation shock applied.
9.	The shock to option-implied volatilities mentioned in the initial market shock in Stage 1 includes inflation volatilities. Firms would therefore need to assume whether a mark to model approach to inflation volatilities react in parallel with the scenario or whether only market instruments react. Can the PRA provide more clarity?	The focus of the scenario is on option instruments and where the market prices of those instruments are used in models, for example a market consistent calibration of an economic scenario generator. The PRA would like to understand where firms apply inflation volatilities that are not based on traded market prices and the materiality of assumptions.
10.	What will be the format of the RBP report	Firms should adopt the structure recommended in our document setting out the requirements for the RBP report (see page 9).
11.	Will firms have the chance to run their RBP reports past the PRA towards the end of the submission window to check whether it meets the PRA's expectations?	No. The PRA will not review RBP reports before submission. However, dialogue channels will remain open during the period before and during the submission window in order to discuss any queries. The PRA is also planning to maintain a Q&A log covering questions received from firms during the exercise period for all firms to be able to refer to.
12.	How will the PRA take into account that firms have different management action capabilities	The PRA aims to ensure consistency of outputs from firms by restricting certain management actions that can be taken at each stage. Differences in management action capabilities will be picked up through the RBP report which will give firms the opportunity to set out management actions they have not recognised in their outputs or other actions they would take beyond those permitted within the scenario as well as the impact they expect these would have.
13.	Will the results of this exercise be used to inform the outcomes of the Solvency II Review?	No, the results of the IST 2022 are not intended to inform the Solvency II Review Project. The two are separate and independent. IST 2022 will be carried out on the basis of Solvency II as it applied at year end 2021.

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Annex 3 Institutions invited to take part

Large UK life insurers

- Aviva International Insurance Limited
- Aviva Life & Pensions UK Limited
- Canada Life Limited
- Just Retirement Limited
- Legal & General Assurance Society Limited
- Liverpool Victoria Financial Services Limited
- The National Farmers Union Mutual Insurance Society Limited
- Partnership Life Assurance Company Limited
- Pension Insurance Corporation plc
- Phoenix Life Assurance Limited
- Phoenix Life Limited
- The Prudential Assurance Company Limited
- ReAssure Limited
- Rothesay Life plc
- The Royal London Mutual Insurance Society Limited
- Scottish Widows Limited
- Standard Life Assurance Limited

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Annex 4 Abbreviations used

CQS	Credit Quality Step
ERM	Equity Release Mortgages
EUR	Euro
EVT	Effective Value Test
FRN	Firm Reference Number
GBP	Great Britain Pound
IM	Internal Model
IMAP	Internal Model Approval Process
IST	Insurance Stress Test
LEI	Legal Entity Identifier
LIST	Life Insurance Stress Test
LLP	Last Liquid Point
MA	Matching Adjustment
MCR	Minimum Capital Requirement
OF	Own Funds
PRA	Prudential Regulatory Authority
QRT	Quantitative Reporting Templates
RBP	Results and Basis of Preparation Report
SCR	Solvency Capital Requirement
SMF	Senior Management Function
SII	Solvency II
TMTP	Transitional Measures on Technical Provisions
TP	Technical Provisions
VA	Volatility Adjustment
USD	United States Dollar

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