

Life Insurance Stress Test 2019: What does it mean for UK life insurers?

Neil Christy, FIA
Emma Hutchinson, FIA
Amy Nicholson, FIA
Sihong Zhu, FIA



On 17 June 2020, the Prudential Regulation Authority (PRA) published its feedback to general and life insurers following their participation in the Insurance Stress Test (IST) 2019 exercise, and the more recent (April 2020) stress test exercise specific to COVID-19. In this paper, we summarise the key feedback from the PRA and discuss what implications we expect this feedback will have for life insurers in the United Kingdom over the course of 2020, and beyond.

Background

IST 2019 was the third IST conducted by the PRA since the introduction of Solvency II (SII). However, IST 2019 was the first in which UK life insurers participated (the first two tests being restricted to general insurers) and only life insurers with significant annuity exposures were invited to participate.

IST 2019 for life insurers was published in June 2019 and consisted of three sections, as set out below.

Section	High-level description
A	Specified one economic scenario to be applied to the asset side of the SII balance sheet of participants
B	Specified three life insurance-specific scenarios
C	Specified three climate change scenarios

More details on the above scenarios are provided later in this paper. Sections A and B above were core stress scenarios, designed to test firms' resilience, whilst Section C was for an exploratory purpose only, designed to capture information on how different firms are managing difficult-to-assess risks. All scenarios were to be applied to insurers' year-end 2018 balance sheets on a best endeavours basis.

The final deadline for submission was 30 September 2019 for Sections A and B and 31 October 2019 for Section C.

COVID-19 STRESSES

Following the spread and outbreak of COVID-19 in the UK in early 2020, the PRA decided in April 2020 to request further stress testing by insurers in order to assess the resilience of the insurance sector, as a whole, to the additional risks presented by COVID-19.

The detailed specification of the COVID-19 stresses was not made public by the PRA. However, we understand that the COVID-19 stresses were based on the illustrative scenario outlined in the [May 2020 Monetary Policy Report \(MPR\)](#) alongside further severe asset and insurance shocks.

Key PRA feedback

The PRA's feedback letter covers its conclusions on the analysis carried out for both IST 2019 and the COVID-19 stresses. The feedback was structured, in our view, to prioritise the assessment of the COVID-19 stresses.

In May 2019, the PRA released a [statement](#) announcing that the results of the IST 2019 would not be published, and that the focus would instead be on the COVID-19 stresses. The feedback subsequently published in June on life insurers in respect of the IST 2019 primarily focusses on the learning points from the submission process rather than the actual results of the stresses.

COVID-19 FEEDBACK

Although the detailed specification of the COVID-19 stresses is not publicly available, for UK life insurers, we understand that the stresses covered a range of insurance-focused asset and liability shocks. In particular, in addition to usual stresses like a decline in asset price, a 50% downgrade of the credit portfolio by one credit quality step (i.e., three notches) was tested. This credit downgrade scenario is broadly equivalent to the worst one-year experience felt during the Great Depression in 1932 (and on balance is more severe, as it allows for extra defaults).

The stresses were applied instantaneously to insurers' balance sheets as a "stress-on-stress," i.e., they were applied in addition to the changes that had already been experienced in the financial markets during Q1 2020. Insurers were instructed not to allow for management actions which they would not have time to apply in reality.

The PRA's conclusion for the COVID-19 stresses was that the insurance sector, particularly the life insurance sector, was resilient to downside stresses. However, no quantitative information was published to support the PRA's conclusion.

More detailed feedback can be found in Annex 1 of the PRA letter.

IST 2019 FEEDBACK

The IST 2019 scenarios specific to life insurers cover Sections A and B, i.e., the core stress scenarios, and are summarised below.

Scenario	Section	High-level description
1	A	One economic scenario to be applied to the asset side of the SII balance sheet of participants
2	B	Scenario 1 + fundamental spread increase
3	B	Scenario 1 + 15% fall in the base mortality table
4	B	Scenario 1 + X% fall in the base mortality table (reverse stress scenario)

For insurers holding certain types of assets, such as equity release mortgages, we understand that more technical information might have been requested by the PRA. Full details on the above scenarios can be found in the PRA's [specification](#) document.

Unlike the feedback given to the general insurance sector, for the life insurance sector the PRA did not release any quantitative analysis, as the PRA found that the quality of results submitted by firms varied over a large range, and hence would not yield a meaningful comparison.

Key issues identified by the PRA from analysing submitted results related to a large number of approximations and simplifications (although allowed to some extent by the PRA's instructions) made in producing the technical information, which affected the PRA's evaluation of material balance sheet items including, but not limited to, estimates of the post-stressed value of the:

- Matching Adjustment (MA)
- Solvency Capital Requirement (SCR)
- Risk Margin (RM)
- Transitional Measures on Technical Provisions (TMTP)

The quality of the submitted results was further affected by a lack of supporting evidence and validation from some firms.

The PRA's feedback also highlighted gaps in firms' understanding of reinsurance counterparty risk management. Many firms, which relied heavily on the robustness of their reinsurance arrangements, argued, in the PRA's view unjustifiably, that reinsurers would be resilient to downside risk.

The PRA viewed the first IST for life insurers as a valuable exercise for both insurers and the regulator to inform how future ISTs (and similar types of exercises) could be improved.

Annex 3 of the PRA's feedback letter provides more details on the IST 2019 feedback for life insurers.

¹ Physical risk refers to the risks that emerge as the environment changes and as demographic experience responds to the changing conditions. Transition risk refers to the risks emerging as governments and society more widely move towards a lower carbon economy.

² PRA-regulated firms were expected to have an initial plan in place to address the expectations of SS 3/19 by Tuesday 15 October 2019. On 1 July 2020, Sam Woods, CEO of the PRA, released a "Dear CEO" letter following up on the expectations set out in SS 3/19 and providing thematic feedback from the PRA's review of firms' SS 3/19 plans.

CLIMATE CHANGE SCENARIOS FEEDBACK

Section C of IST 2019 covered climate change scenarios, which are the first climate change-focussed scenarios instructed by the PRA as part of its IST exercises and, for some insurers, the first ever climate change stresses conducted by the firm. The PRA highlighted that this exercise was only investigatory, which distinguished it from Sections A and B.

For life insurers, this part of IST 2019 only allowed for stresses to assets held by life insurers, but covered both transition risk and physical risk.¹ By contrast, general insurers were also requested to assess the impact of stresses to liabilities. The scenarios covered:

- A medium-term disorderly transition scenario that results in achieving a temperature increase being kept below 2 degrees Celsius
- A long-term orderly transition scenario that results in achieving a temperature increase being kept below 2 C
- A long-term scenario with no transition that eventually results in a temperature increase in excess of 4 C

In the feedback, although only high-level qualitative information was provided, the PRA highlighted its observations of uneven gaps in insurers' capabilities to evaluate climate change risks in the UK, covering both the data and tools available to insurers, and the required processes to perform stress testing. For example, some insurers found it challenging to directly map individual assets on the balance sheet to the sectors set out in the stress specification, and hence it was not possible to assess sectoral exposure appropriately. The PRA highlighted that climate risk assessment requires cross-functional engagement within firms and expressed concern over the fact that, in some cases, the submissions were poorer than the plans supplied by the same firms for SS 3/19,² indicating a lack of uniform embedding across firms. Lack of climate-related reporting was another PRA observation, which perhaps the recently released [Climate Financial Risk Forum \(CFRF\) guide](#), which provides guidance on climate disclosures, will help to address.

The experience from this exercise and lessons learned will be carried forward by the PRA to inform the design and specification of the forthcoming climate [Biennial Exploratory Scenario \(BES\) in 2021](#).

Further details on the climate change scenario feedback are provided in Annex 4 of the PRA's feedback letter.

Milliman insight

ACTION PLAN

The first obvious implication for life insurers of IST 2019 may involve individual firms coming up with action plans to address areas of weakness identified during the exercise. The PRA has made that clear that it is keen to take these findings forward and engage with firms on their proposed action plans. The PRA also encouraged insurers which did not participate in IST 2019 to consider any part of the feedback that could apply to their circumstances too.

Insurers should open up a dialogue with their supervisory teams as soon as possible in order to understand supervisors' expectations on setting a timetable for proposing action plans and addressing observed issues. The PRA appreciates the potential impact of COVID-19 on firms' ability to execute their proposed action plans.

In our view, the action plan proposed by individual firms should cover at least the following areas:

Data

Participants in IST 2019 should have already generated a fair understanding of what data is required, and how granular it needs to be, for completing ISTs. This can be used to compare with what is currently in possession by the firm and to consider to what extent additional data needs to be gathered for assets, as well as the means of collecting this data.

This is particularly relevant to the climate change scenarios for which insurers are required to assign individual assets to main sectors of the economy, and for some cases to subsegments of each individual sector. This is further discussed under the Climate Risk Management section below. Additional information may also be required where insurers invest in collective investment schemes, which in turn invest in certain assets, for example infrastructure loans.

The PRA is also keen to improve the underlying data quality of the technical information submitted for ISTs in the future, which would mean more time and effort for insurers completing similar exercises going forward unless processes are improved.

Tools

This should cover both tools that would be used to get access to or extract required data for the exercise, and modelling tools to produce an estimate of the stress results by using relevant data.

This means that new data tools may need to be built by insurers to collect additional information which they identify as a gap. Existing modelling tools may need to be enhanced to handle additional information, and/or to handle extreme stresses (or stress-on-stress), for instance by proxies.

Alongside building data tools, insurers should consider developing technical methodologies for nonconventional assets, if applicable, where mapping to a particular economy sector could be less obvious, or it is more difficult to evaluate the true asset risk by using a simple sector mapping process.

Processes

Given IST 2019 was the first IST in which UK life insurers participated, a steeper learning curve would be expected for them. This will include, for example, a clearer understanding of the expectations of regulators, and what external and internal processes need to be involved in an IST.

As mentioned in the Data section above, the PRA expects life insurers to be more involved in ISTs going forward, and that a more rigorous approach should be taken to ensure a better quality of submitted information. This could mean more collaboration across different departments or functions within life insurers in completing these exercises, with firms potentially relying on the first line to generate the required information, and this information being validated by the second line; or perhaps performing additional reasonableness checks against the results.

The PRA also hinted that additional reporting requirements and a more "back-and-forth" approach might be expected for the next IST, possibly involving a second round of submissions by firms.

The next IST is not expected until mid-2022, following the PRA cancelling the 2021 exercise, and thus this should give additional time for firms to address these issues.

Others

As part of the action plan, insurers should also consider whether they have the right expertise in the firm to support the company in achieving the proposed actions and goals, as well as the number of resources available.

The PRA also highlighted in the feedback that if its findings were considered relevant to a firm's process of setting relevant risk management objectives, and/or assessing and monitoring risk sensitivities, the boards of these firms should consider how the feedback should be incorporated to improve risk management frameworks.

CLIMATE RISK MANAGEMENT

Understanding and assessing climate change risk is not only about managing the asset-side risk of existing investment portfolios, but is also extremely relevant to investing in new asset (class) opportunities. As set out in the Supervisory Statement (SS) 1/20: Prudent Person Principle, insurers must not invest in assets the risks of which they are not able to properly identify, measure, monitor, manage, control or report. Milliman has published a summary of the PRA's expectations, which is available [on the Milliman website](#).

From our experience, many insurers are still at an early stage of gaining awareness and building up their own understanding of how climate change risk could impact their assets and liabilities, and ultimately their long-term financial sustainability. The evaluation of the impact of climate change risk on assets and liabilities is fairly complex and requires specific expertise. The PRA's findings from IST 2019 confirms our view.

Further, we note that the IST 2019 findings relating to climate risk management echo the PRA's findings on scenario analysis from SS 3/19 that firms still have a long way to go in this area. This was highlighted in Sam Wood's "Dear CEO" letter mentioned earlier in this paper, which states that firms must embed their climate risk approaches (including scenario analysis) by the end of 2021. Thus, in summary, there is much to do in a short space of time.

In our view, insurers should not expect themselves to understand every single aspect of climate change risk and to be able to comprehensively model and quantify it on day 1. Instead, it should be a reasonably smooth learning process for them to gradually improve their capabilities in handling climate change risk. However, insurers should aim to start exploring the physical risk and transition risk embedded within their asset portfolio. To be able to do that, generating an understanding of sectoral exposures within the portfolio is absolutely fundamental.

As discussed above, insurers may just realise that certain data or information is not currently in possession by the company, or is challenging to get access to in a short timeframe. However, data availability is considered a key first step for insurers to improve their climate risk management. And once insurers have a better understanding of how their portfolios are split between vulnerable sectors, they can start to look at understanding the climate change risk factors which in turn drive the movement of the value of their portfolios, as well as setting risk management targets and formalising risk metrics for monitoring purpose.

The Milliman paper: [Risk metrics for climate change](#) discusses our approach to climate risk management, and how we can support insurers in achieving these objectives.

As part of developing their own tools and process within the climate risk domain, insurers should be able to benefit from keeping a dialogue open with their supervisors in order to

understand key regulatory considerations, and good market practices in developing and/or establishing consistent treatment with peers.

For smaller insurers, which did not participate in IST 2019, they might find it useful to spend some time running the IST 2019 climate change scenarios to better understand their own capabilities of keeping pace with the regulator's expectations in managing climate change risk.

The next immediate industry-wide climate change stress test in the UK is BES in 2021 and, as explained above, by then insurers would be expected to have taken significant steps forward in their capabilities in understanding and managing climate change risk.

Conclusion

As set out above, the PRA's feedback on IST 2019 and the more recent COVID-19 stress testing presents valuable learning and improvement opportunities for the life insurance industry, including those firms that did not participate in both exercises. Insurers that take early action in response to this feedback will be better placed to meet regulatory expectations for similar exercises in 2021 and beyond and to improve their resilience to extreme and evolving scenarios.

Milliman consultants have considerable experience helping a wide variety of firms to develop their stress and scenario testing frameworks and improve their resilience in the face of unprecedented conditions.³ We are therefore well placed to benchmark firms' approaches against the rest of the industry, and provide further insight and advice on any of the content of this paper in a way that is tailored to clients' individual circumstances and needs.

If you have any questions or comments on this paper please contact the authors or your usual Milliman consultant.

CONTACT

Neil Christy
neil.christy@milliman.com

Emma Hutchinson
emma.hutchinson@milliman.com

Amy Nicholson
amy.nicholson@milliman.com

Sihong Zhu
sihong.zhu@milliman.com

³ See some of our publications on stress and scenario testing frameworks, climate change and COVID-19:

<https://uk.milliman.com/en-GB/insight/recommendations-for-developing-a-stress-and-scenario-testing-framework>

<https://www.milliman.com/en/insight/financial-risks-arising-from-climate-change>

<https://uk.milliman.com/en-gb/insight/Coronavirus-Staying-ahead-of-the-risks>

<https://uk.milliman.com/en-gb/insight/Coronavirus-Staying-ahead-of-the-risk-part-2>