Institute and Faculty of Actuaries

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THE 2021 BIENNIAL EXPLORATORY SCENARIO ON THE FINANCIAL RISKS FROM CLIMATE CHANGE

The Institute and Faculty of Actuaries (IFoA) is a royal chartered, not-for-profit, professional body. We represent and regulate over 32,000 actuaries worldwide, and oversee their education at all stages of qualification and development throughout their careers.

Key points

The IFoA welcomes the Bank of England's (the Bank) plans to carry out the climate stress testing exercise to test the largest banks' and insurers' resilience to climate-related risks.

As the stress test is the first of its kind, it will be a complex and novel exercise for participants. It is unlikely that any firms are currently climate modelling to the level proposed or would have the capacity to do so within the time frames. We are also concerned that the data required for firms to complete the exercise will not be readily available or without significant limitations in the data capture. The quality of data will directly impact the insights available from the exercise. To overcome this, we encourage the Bank to consider the use of suitable proxies by participants.

While the proposed approach may be suitable for banks and life insurers, we are concerned this is not the case for general insurers (GI). GIs are unlikely to be modelling to the extended time-horizons proposed. Further, we consider the approach of assuming any management action from the previous reporting point are irrelevant to be problematic for the GI market. Using the 2020 balance sheet at 2050 does not allow for the nuance that although insurers can have a number of poor years, poor performance for 5 years would not be tolerated and management action would be taken.

Despite the Bank defining a number of assumptions within the scenarios, there will be a requirement to interpret and assume a significant amount. For example, where a GI has withdrawn support, the risk that a large portion of the market becomes uninsured could emerge. Participants will need to make assumptions about how much of the market still exists in the companies' space, and about the extent to which the government needs to step in because insurers are no longer providing it. It would be helpful for the Bank to provide greater guidance within scenario specification about the assumptions being made. This will minimise the impact assumptions will have on the degree of inconsistency of participants carrying out the exercise.

In regards to the specific scenarios provided, we do not think they provide for all possible situations, particularly one where all the possible transitional risk and physical risk of climate change is experienced, The Bank could provide further clarity as to how it has chosen the selected scenarios.

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1. The IFoA welcomes the opportunity to respond to the Bank's Discussion Paper (DP) on the 2021 biennial exploratory scenario (2021 BES) on the financial risks from climate change.

2. The DP is helpful in setting out the Bank's proposed approach for carrying out the climate stress test exercise. We acknowledge that conducting a climate stress test poses distinct challenges compared to conventional macrofinancial or insurance stress tests and that the 2021 BES is a novel and complex exercise. We have a number of points of constructive feedback which we have included as general comments or in response to specific questions within the DP. We hope the Bank finds these helpful in informing its work.

General comments

3. The charts in figure 3.1., which illustrate the variable pathways in each scenario, are ambiguous. It appears that end temperature is barely affected by whether early policy action or late policy action is taken. Not only is this inconsistent with the current scientific position, it could lead to misinformed decision making and reinforce views which are not based in scientific evidence.

4. When carrying out assessments on exposure to climate-related risk, the projection will be in line with the risk over a long term time horizon of 30+ years. While the DP proposed that a static balance sheet should be used for the assessment, efforts to understand dynamic management actions and evolving macro-economic assumptions introduce significant disconnect. The two are inconsistent with each other.

5. We also note a number of additional difficulties with the static balance sheet approach. When completing the exercise, participants will need to make assumptions about the points when government would be required to step in, or when consumers are without risks. If a large portion of the market becomes uninsurable then the market for GIs to write policies won't exist. The Bank should be seeking an assessment of when business lines within certain sectors become uninsurable and the impact this will have on the sustainability of business models. This may also apply to the banking sector and impact strategic decisions, including a move away from coal investments or lending to certain sectors.

6. Despite the Bank defining a number of assumptions within the scenarios, there will still be a requirement to interpret and assume a significant amount. All of these assumptions are reliant on further assumptions being made. As such, we would express a preference for a strongly defined framework rather than a prescribed scenario.

7. The European Insurance and Occupational Pensions Authority (EIOPA) is set to include climate change and sustainability risks in its 2020 stress test for insurers. We note that a number of insurers that are participants in the Bank's stress test exercise will also have to complete EIOPA's stress test exercise. We encourage the Bank to consider the lessons learnt following the completion of EIOPA's 2020 stress test for insurers.

Questions on Chapter 2: The key features of the 2021 BES

Are there areas of the financial system that should be represented in the 2021 BES that are not captured by the proposed participation?

8. We would encourage the Bank to provide clarity about the scope of their testing and how reinsurers will be provided for in the exercise. The UK reinsurance market operates globally, where the insured or the reinsurer are potentially based outside the UK. We are concerned that the questions did not

reflect this international understanding. This would be resolved if the Bank were able to provide greater clarity around whether a primary reinsurer would be covered.

9. Many insurers participating in the exercise will offer savings products and retirement vehicles, such as equity release, which are likely to be impacted by climate-related shocks. This is also true of mortgage products offered by banks. Therefore, while an examination of these does not fall within the Bank's remit, we would encourage the Bank to consider ways in which these products can be accounted for through the exercise.

10. We also note that much of the activity in the shadow banking system does not fall within the Bank's remit. However, the ability of this sector to understand and respond to climate shocks will have an impact on the ability of the wider financial sector to do so.

Do firms envisage any challenges with modelling the no additional policy action scenario spanning 2050-80?

11. We agree with the Bank's view that 2050 is a good starting point for modelling the no additional policy action scenario. We note that many Life Insurers already make projections which can be 60 years down the line. However we do note that modelling the physical impacts beyond 2080, for the no action scenario where physical impacts emerge more significantly in the second half of the century, is likely to involve too much uncertainty.

12. For GIs, we note it is unlikely that they will be modelling this far out. GIs will not be likely to write policies for a portfolio 2050-51 if it had been performing badly for years. Rather, it is expected that they would walk away from an unprofitable portfolio. The real risk then becomes the uninsured portion of the market. To be able to successfully model this, assumptions need to be made about how much of the market still exists in the companies' space, and about the extent to which the government needs to step in because insurers are no longer providing it, either because they have determined it to be unprofitable and/or inconsistent with their risk appetite.

Questions on Chapter 3: Scenario narratives

Are there any other scenarios that the Bank should be testing as part of the 2021 BES?

13. The Bank should allow for situations where the UK government acts, but other governments do not. This would lead to a scenario where the physical risk may be in international locations, but the transition risks would be in the geographic location of the employer. Consistency in approach across all markets is not necessarily likely for insurers that operate and provide insurance to international clients. Given these gaps, we do not think it appropriate to say that the scenarios capture prudent estimates. The most prudent stance would be to ensure there is a scenario in which all the transitional risk and all the physical risk is experienced.

14. We also note that the Scenario Specification would build on the Network for Greening the Financial System's reference scenarios. However, figure 3.2 provides the framework of representative scenarios from the NGFS Comprehensive Report 'A call for action: Climate change as a source of financial risk'. There are four blocks/representative scenarios provided in this figure. If the Bank chooses not to use the four representative scenarios as a basis, it would be helpful to identify which scenarios the specification scenarios map to and which ones they have chosen and why.

Do the scenario time frames strike the right balance between allowing a full assessment of these risks while also being tractable for firms' modelling?

15. Given the proposed static balance sheet approach, we do not anticipate there will be an issue with this. However, the Bank may wish to consider whether it is appropriate to increase the intervals to 10 rather than 5 years. It is unlikely that much loss of information will result from reducing the number of projections firms are required to submit and it will make the exercise less onerous.

Questions on Chapter 4: Scenario specification

Does the scenario specification adequately capture the risks in each scenario? Are there additional risk channels or scenario variables that should be considered as part of the BES?

16. Relating to GIs, there is the possibility that properties that are exposed to higher physical risk will become unaffordable to insure. Participants will need to make assumptions about whether these will be taken out of the commercial market and put into government run insurance products, or whether large insurers will experience pressure to find a way to insure these products. We encourage the Bank to provide greater guidance within the scenario specification about the assumptions being made. This will minimise the impact assumptions will have on the degree of inconsistency of participants carrying out the exercise.

17. We note that emerging green technologies are likely to be high risk until greater certainty about the viability of new technologies is achieved. Allowing for these technologies within the scenarios will ensure greater consideration of them and of opportunities to ensure they are reasonably affordable.

18. Paragraph 4.2 of the DP advises the variables proposed by the Bank will not layer on additional macroeconomic shock that is unrelated to climate change. We agree that it is appropriate to do so as the absence of quality data is likely to make it too challenging to model these secondary shocks.

Are there alternative approaches to capturing the interactions between physical and transition risks, including capturing the impact of stranded assets?

19. As stated above, there could reasonably be a scenario in which the full extent of physical risk and the full extent of transition risk are experienced. Considering this scenario would capture the interaction of where they are both experienced at the same time. As both risks are being realised at the same time, the exposure to risk doubles.

20. It is possible to understand the physical impacts on investment through consideration of a company's real asset portfolio. However, we note that this can be a significant data exercise. While databases exist, they are expensive and often have limitations in the data capture. Possible solutions to address this are discussed in our response to question 11 below.

For life insurer liabilities, are there further risks beyond longevity that should be specified as part of the BES?

21. Longevity is the key risk. However modelling longevity can be very difficult and there can be significant sensitivity of the results. We note that while there are risk factors for longevity that could be considered, including morbidity, finding supporting data for this will be very challenging. Secondary shocks, including social and political risks, are likely to have a distributional impact which could impact upon demand for insurance, but similarly the absence of quality data is likely to make this too challenging to model. As such, we would caution against further risks beyond longevity being specified as part of the BES.

Questions on Chapter 5: Modelling approaches

Are there data gaps or modelling deficiencies that would impede participants' ability to model the scenarios? How would participants reflect judgements about companies' current mitigation and adaptation plans in their quantitative assessment?

22. It is unclear whether international physical exposures, which come through the London market, are to be included in participants' modelling. We ask the Bank to provide clarity on this point.

23. We are concerned that participants are unlikely to make and reflect judgements about companies' current mitigation and adaptation plans in their quantitative assessment in a consistent way. Lots of judgement will need to be applied, and assumptions need to be taken, at different levels. It would be helpful for the Bank to provide additional guidance about this from the outset to ensure greater consistency between participants' assessment.

Would participants be able to assess 80% of their corporate counterparties at counterparty level, leveraging the tools set out in Annex 2 and expert judgement?

24. As this stress test is the first of its kind, it is unlikely that any firms are currently climate modelling to the level that the discussion paper (DP) is proposing, nor would have the capacity to do so within the time frames.

25. It is also a significant data exercise. Company balance sheets will need to be assessed in order to model 80% of corporate counterparties at counterparty level. This data is not always available to insurance companies. Similarly the data on the real asset portfolio of a company to be able to understand physical impacts on investments can be difficult to obtain. As identified above, where databases exist they are generally expensive and often with limitations in the data capture. Where new data is used, or there are new uses of data, to perform the exercise, it will be important to ensure participants understand the limitation of data, especially with regard to the data quality assessment and data flows. The quality of data will directly impact the quality and insights available from the exercise.

26. A possible solution for refining the approach would be to focus on full corporate modelling for the largest exposures by risk and to use these as a proxy for similar companies with a similar profile. For transition risk this would be based on the carbon footprint of the company. Data to complete the exercise is available through providers such as TruCost. However, we do acknowledge there are limitations in the coverage of the data as it is dependent on companies' disclosures. While the ambition should be to include scope 3 analysis, the quality of scope 3 disclosure is particularly poor. By necessity, the majority of analysis will have to be on scope 1 and scope 2 disclosures.

27. We would also like to clarify whether reinsurers are included within the definition of corporate counterparties. Although they are not mentioned, we think they should be for GI.

Does the proposed approach to modelling future risks at each reporting point work for both the modelling of credit and market risk? Does the reporting framework, in particular the frequency of five-yearly reporting points, adequately capture the evolution of risks over time? Might more frequent reporting be useful for some parts of the scenarios, for example, during the transition in the late policy action scenario?

28. We are concerned about the application of the proposed approach, and the assumption that any management actions from the previous reporting point are irrelevant for the GI market. A GI product could withstand 1 or 2 years of poor performance, however any more than this would not receive shareholder support and the product would be withdrawn. Using the 2020 balance sheet at 2050 does not allow for the nuance that although insurers can have a number of poor years, poor performance for 5 years would not be tolerated and management action would be taken.

Questions on Chapter 6: Firm submissions

Given the suggested timetable for the BES, is 30 June 2020 the latest cut of balance sheet data that firms can submit? Is three to four months sufficient time for participants to the run the BES?

29. We are concerned that the three to four month time frame will not be sufficient for participants to assess 80% of their corporate counterparties at a suitable level of quality. This level of modelling is quite bespoke and would not be business as usual for many firms. Firms need time to understand what the scenarios are asking for and build appropriate processes.

Would the proposed outputs accurately capture the climate-related financial risks faced by participants and achieve the objectives of the BES?

30. Paragraph 6.9 identifies that climate-financial risk analysis requires more granular geographic and sectoral information than in traditional stress tests. For exposures to the most at-risk sectors and regions, the Bank would ask for greater detail for their top 50 counterparties by size and risk exposure. Participants would submit detailed breakdowns of their modelling and assumptions. Participants would set out the judgements underpinning their results. This would include the level of adaptability that they have assumed of their counterparties/material exposures.

31. We consider this concept of top 50 to be more useful than that of 'counterparty-level assessment which should aim to cover 80% of participants' nominal exposure to corporates and be focused on their assets exposed to the risks'. As stated, we are concerned about the practicality of this target, and of the large range of assumptions that will need to be made to reach it. The greater the number of assumptions that needs to be made by carrying out the stress test, the more likely that there will be a greater degree of inconsistency between these assumptions. While the resources required to meet this target would still be significant, aiming for detailed information on the top 50 counterparties instead feels like a step in the right direction.

32. We would raise one more objective to the Bank's assessment that the approach is a prudent one. Paragraph 6.2. identified that capital ratio and solvency capital requirements will not change. If a prudent approach were taken, there would be a reasonable expectation that these requirements and margins would be higher.

Do five-year reporting intervals pose challenges to participants that are not reflected in this discussion paper?

33. We anticipate that there may be inconsistency amongst how participants allow for successive poor experience and for management actions taken in responses. This will largely come down to expert judgement so it will be important for the Bank to consider how this will impact and be reflected in participants' assessment.

34. Specifically for life insurers, we anticipate some difficulty here as there will be a requirement to create a financial projection beyond the shock of a specific interval. If a life insurers assets are severely impacted by the shock, consideration will be need to be given to the management of liabilities at the same point in time.

35. The benefit of five-year reporting intervals was not identifiable from the DP. It is not clear how the results will be used, particularly as each reporting point is a snapshot of risks and losses and any assumed management actions are irrelevant for the next period. We would encourage the Bank to provide greater clarity on why it has selected this frequency for reporting intervals or, as identified above, we encourage the Bank to consider whether it is appropriate to reduce the number of projections firms are required to submit by increasing the intervals to 10 years.

Are there additional changes that should be modelled in the second round that would allow the Bank to better understand systemic climate-related risks?

36. We are concerned about the level of assumption participants will have to make about the portion of the market that may become uninsurable at reasonable market prices. Whether these portions are simply removed from the commercial market or whether insurers needs to find a way to insure them will have an impact upon assessments. If the Bank does not provide greater guidance within the scenario specification about the assumptions to be made, as we have suggested, it would be helpful to understand the assumptions around how this eventuates in the second round.

Would life insurers prefer to provide Solvency Capital Requirement and percentage capital coverage as part of the scenario outputs?

37. Paragraph 6.6 of the DP identifies risk margin as one of the high-level result metrics for non-life insurers. Insurers operate in a regulatory environment that includes the risk margin and SCR (Solvency II). To assess overall solvency under the current regulatory framework, participants should consider an overall balance sheet which demonstrates how "stressed" assets compare to "stressed" risk margin, SCR and best estimate.

38. As the risk margin is a derivative of Solvency Capital Requirement (SCR), there would be merit in asking insurers to provide SCR and percentage capital coverage as part of the scenario outputs. Disclosing risk margin and SCR would provide firms additional insight when assessing how their balance sheets overall may look.

39. We anticipate the risk margin would primarily be impacted by longevity/mortality changes Since the risk that these may differ from best estimate would increase under the proposed scenarios, we would expect the risk margin to increase under a longevity stress (for example). It would be useful to understand the extent of this increase. The scenarios will require participants to vary definitions of a 1-in-200 scenario. It would be useful to gain insight through the exercise as to how the definitions differ from what we consider a 1-in-200 today and how this feeds through to SCR, and the resulting changes in Solvency II surplus.

40. We appreciate there would be significant work involved in assessing and disclosing these metrics. As such, we would encourage the Bank to ensure that participants are given adequate time and guidance to do so.

Should you want to discuss any of the points raised please contact Faye Alessandrello, Policy Manager (faye.alessandrello@actuaries.org.uk) in the first instance.

Yours sincerely,

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