

A response to the Bank of England's discussion paper on

The 2021 biennial exploratory scenario on the
financial risks from climate change

March 2020

Introduction

UK Finance is the collective voice for the banking and finance industry. Representing more than 250 firms, we act to enhance competitiveness, support customers and facilitate innovation.

We are pleased to respond to the Bank of England's (the Bank) [Discussion Paper](#) on the 2021 biennial exploratory scenario on the financial risks from climate change.

Our members recognise the possible impacts of both climate-related transition risk and physical risk on their activities as well as on financial stability and more broadly on the longer-term sustainability of the global economy.

Central bankers, regulators and supervisors, as well as the financial services firms they oversee, should be under no illusion that they alone can solve the climate change problem. Banks are committed to working alongside other players, including governments, as a co-ordinated range of initiatives, including fiscal incentives or disincentives are developed to support of net-zero targets.

Whilst the BES exercise will affect only a small number of our members many of them have been involved in contributing to this response. They recognise the issues and challenges it raises may start to be addressed, in a proportionate way, in their Individual Capital Adequacy Assessment Process (ICAAP). UK Finance looks forward to working with regulators as techniques to better understand the impacts of climate change on our members' business models and counterparties evolve.

The key messages arising from our review of the Discussion Paper are highlighted below.

Key messages

We support the ambition of the Bank's BES....

Our members strongly support the Bank's pioneering role in climate stress testing. They recognise that climate change will result in significant risks and opportunities for the banks and may present a material threat to financial stability. However, they believe that the granularity of information request may be unrealistic and subtract from the key insights that the BES is targeted to draw out.

...but the timing is currently difficult

Our members recognise the strategic importance of understanding and sizing climate change risk in their portfolios. However, COVID-19 represents a more immediate threat to banks, financial stability and economic growth. The climate stress test will require a significant investment of resource to develop the new methodologies and data required. Further, we are mindful that commercial customers will be prioritising the immediate and medium-term challenges of their COVID-19 response over responding to data requests from banks and their longer-term climate strategy development work.

The launch of the Climate Change BES should be delayed and reinitiated once the situation with COVID-19 is more certain. This would not preclude banks from continuing to progress their climate change risk agendas, and preparing for the stress test, but in a way that is consistent with the resourcing and economic challenges expected over the next six to nine months.

The industry and Bank should; work together to ensure the BES achieves its objectives

Industry and regulator should learn together. We recommend that this is done within a working group during Q2 and Q3. Its scope of work could cover, for example: scenario design and expansion; extent of data provided in the scenarios (e.g., hazard data granularity, region/country coverage); overall scope and focus of counterparty analysis, identification of data sources and the pooling of resources where appropriate for data collection; discussion of methodology and assumptions; reporting templates and timelines. This would greatly support the banks' preparedness for implementing the stress test and therefore the chance of generating useful, insightful and consistent outputs.

Counterparty level analysis should be focussed

We fully agree that counterparty level analysis is required. Based on our understanding of emissions data, it will only be possible to carry out meaningful counterparty analysis on listed companies. For companies that are not listed some approximations are inevitable. This should be recognised in the structure of the BES with much fewer firms being subject to individual deep-dive analysis.

We believe the outputs of the stress test would be more relevant if the counterparty assessment were based on risk exposure rather than a percentage of counterparties target. This could be achieved by selecting key sectors (for instance, automotive, extractive industries, energy, building and construction) most exposed to climate risk using existing research and then carrying out a bottom up, deep-dive counterparty level analysis of the key counterparties in this cross-sector

target group. Recognising that there is insufficient data for all but our listed counterparties a simplified top down, commonly agreed approach would then be applied to the rest of a bank's counterparties. This would result in focussed analysis on the highest risk sectors whilst still generating a comprehensive balance sheet coverage.

The counterparty assessment should be limited to corporate, non-SME counterparties.

Given the early stages of assessing climate risk within banks and non-bank financial institutions (as evidenced by this exercise), including them in this initial exercise may produce inconsistent results so financial institutions should also be excluded from the scope of this first stress test.

Assessing the 'temperature alignment' of current portfolios will be challenging

We do not feel that the assessment of temperature alignment is currently well enough understood in either industry or academia for the BES banks to be confident of the outputs. In our view the effort required to perform the analysis will greatly outweigh the additional insight that it will provide. Current underlying methodologies were developed for portfolio managers, where data for listed companies is readily available. Banks have a much greater diversity of asset classes. Most approaches currently more closely resemble 'climate scores' expressed in degrees rather than genuine alignment methodologies. We suggest the temperature alignment requirement be removed from the BES and re-visited as methodologies mature.

Capital metrics should not be reported

The Bank has been clear in our discussions that the BES is not designed to assess the adequacy of regulatory capital over the extended time frame the scenario addresses. We support this and request that the requirement to report on capital metrics is removed in this first round. A significant amount of additional analysis will be required to generate capital impacts even though they would only be at a high level. Furthermore, interpreting those metrics with a fixed balance sheet assumption would be very difficult.

Although we recognise that brown/green penalty/supporting factors are likely to be introduced as analysis matures, we have no expectation that the results of the BES will be used to establish these.

December 2019 balance sheet

We propose that the analysis is carried out on end of December 2019 balance sheet rather than as at end-June 2020. This earlier date will make minimal impact on the results but will allow banks additional time to analyse the data and prepare for BES. In addition, it will make results more readily comparable with ACS, which was suggested as a comparison point.

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

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

We agree that is important to stress test both the insurance and banking sectors together because of their interdependencies.

Asset managers and pension funds are also important components of the financial system. But we do not see merit in their being included in the 2020 BES. This would further complicate an already complex exercise. As we view climate change stress testing to be an iterative process and as the impacts of climate change on their portfolios will be indirect, a first approximation of the possible reductions in the market price of and returns on their holdings could be estimated by the impact of climate change on insurers' portfolios.

It would be helpful if the Bank integrated the key assumptions about insurance firms underwriting appetite and behaviour as these will influence banks' approaches.

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

The simplifying assumption, that more material risks expected to crystallise in the period between 2050 and 2080 actually occur by 2050, is a helpful one. It somewhat mitigates the challenge of projecting forward static balance sheets well beyond the typical business-as-usual planning horizon and the Annual Cyclical Scenario (ACS) Stress Test. Our understanding is that the Representative Concentration Pathways (RCP) diverge substantially after 2040 so management decisions will depend to a large extent on cumulative emissions up to the year 2040. Bringing forward the climate impacts implies expected emission trends before 2040 have less importance in determining how firms transition through 2050.

If management actions are locked in by the static balance sheet assumption the implication is that there is limited ability to manage against evolving physical conditions resulting in the BES impacts being significantly overestimated. We look forward to discussing how to incorporate reasonable management actions, including commitments in relation to exiting carbon intensive lending activities for instance thermal coal, whilst recognising that comparability across firms could be compromised.

Questions on Chapter 3: Scenario narratives

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

We believe that the range of scenarios suggested is adequate for the purposes of this first climate change 'test and learn' exercise. The objective of future climate change stress tests should be to identify and promote wider discussion about the complex interaction between the possible multiple societal and geopolitical responses to the impacts of climate change. Such second-round effects are too complex for this exercise.

There is value in continuing to use these core scenarios in further stress tests, with future improvement being focused on a narrowing the 'fan chart of uncertainty' by investigating further the range of feedback loops and path dependencies that this first stress test will highlight.

We encourage the Bank to engage with other central banks and regulators in order that they too use these three core scenarios. This will reduce the analytical burden on banks and their supervisors and will enable better cross-jurisdictional debate about potential climate change mitigating actions, as all parties will be forming opinions and making judgements about effective responses based on a common starting point.

We support the Bank's expectation that it will build on the Network for Greening the Financial System's scenario framework and that it intends to leverage the reference scenarios that the Network is planning to publish later this year. If these are released before the publication of the final BES requirements and detailed scenarios, we strongly urge the Bank to align its own scenarios with them.

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

We broadly agree that the right balance for scenario timeframes has been struck. But we are concerned that modelling over this time period may smooth out shorter term volatility – especially that driven by the late policy action scenario. This scenario assumes that although the policy action is delayed the <2C climate target is still met. However, research suggests that bold policy action is imminently required. The Bank of England should consider bringing forward the assumption of policy delay. For example, based on the IPCC (2014 summary for policymakers), the remaining carbon budget for a <2C world with a probability 66% is ~600Gt of CO₂, whilst anthropogenic emissions are ~49 Gt/year; this implies a window of about 12 years. Therefore, the assumption of delaying required action by 10 years would require either an almost a full halt on global economy, which would be irrational from a policymaker's perspective and highly impactful from a stress exercise perspective or require technological solutions which do not exist at the moment. Both of those options are too risky to rely on.

We would welcome further clarity from the Bank on its expectations around how or if late policy implementation impacts will be captured through scenario expansion.

Questions on Chapter 4: Scenario specification

5. 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?

We look forward to the Bank's expected consultation on the draft scenarios but confirm that the indicative scenario transition and physical variables provide in Table 4.A appear to be comprehensive. We welcome the commitment that physical variables will be based on external research and be specified with a high degree of geographic granularity. Common sources for data will assist our members and ensure a consistency of assumptions. Similarly, where there are data gaps the Bank should propose granular assumptions which will help members and simplify their efforts.

The scenarios should be severe but plausible if they are to contribute to achieving the BES's objectives.

But there will remain much work for our members to do in understanding the socio-economic impacts of climate change, as well as technological and climate policy evolution and their impact on emission producing industrial activity.

It would be helpful if the Bank provided more guidance on the translation from climate to socio-economic impacts that can be used for stress testing. Without a common view each firm will interpret the scenarios in their own way, perhaps without the necessary expertise to do so making

the results incomparable and devaluing the exercise at this early stage of climate change modelling. The level of uncertainty at each stage of the Integrated Asset Modelling (IAM) process is significant. There will be a multiplicity of different approaches and consequent difficulty in interpretation of the aggregate results.

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

We should ensure that the risks associated with stranded assets are not double counted in the capital framework. We should also recognise that the exposure that banks have to stranded assets is materially different to asset management firms or insurers. Banks are typically exposed where credit traded products act as collateral for debt financing exposures in the event of counterparty default. For the exposure that banks have to counterparties who hold potential stranded assets, these are accounted for in the LGD assessment for the counterparty. There should not be an additional capital requirement for stranded assets. This would result in double counting.

It would be helpful to develop a common methodology to assess stranded-asset value decreases.

7. Are there particular external sources to calibrate physical and transition risk impacts that the Bank should consider when calibrating the scenario variables?

The Bank could consider IPCC RCP pathways for specifying magnitudes for physical risks and IEA for transition risks and to develop the 2050 to 2080 assumptions. As we proposed above, the BoE should consider prescribing that the same set of calibration assumptions are used across financial institutions to enable comparability and for useful conclusions to be drawn.

8. Are there particular external sources or approaches that the Bank should consider when relating long-term macro financial variables to climate variables?

Our members only know about three attempts to create climate macroeconomic scenarios: DNB modelled several transition effects, Moody's Analytics modelled chronic physical effects and the National Institute of Economic and Social Research is working on comprehensive (transition and physical) climate macro scenarios.

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

Questions on Chapter 5: Modelling approaches

10. 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?

The infrastructure and techniques for normal macroeconomic stress tests have evolved over the last decade and are still being refined and enhanced. The climate change BES envisages an entirely new methodology and at a scale far beyond the normal stress test by requiring three scenarios for thirty years compared to the ACS one scenario with a five-year time horizon. The

timeline for completion will be very challenging and we look forward to working with the Bank to ensure the information gathered by the BES is both usable and methodologically feasible.

We expect that many modelling and data gaps will emerge as banks develop their climate stress test modelling capability. These gaps will include the current lack of comparable climate change related disclosure from their counterparties on which our members will base their own analysis. In filling these data gaps and modelling shortcomings, the focus should be on data costs and the accessibility of proper data from the industry sector concerned.

We believe at this early stage of climate risk modelling the key benefit of this BES will be a better understanding of data gaps and modelling limitations and the nature of climate related information which participants already collect. This is likely to confirm the need for better climate data collection and reporting by our counterparties, which we would strongly support and encourage. This could be by collective agreement about what data points banks should request when extending credit, as well as encouraging the Department for Business, Energy and Industrial Strategy (BEIS) to publish a consolidated UK companies' emissions and climate strategy dataset, for those businesses with more than 250 employees, based on its request for emissions and energy efficiency data.

Our counterparties currently have very different standards of climate change disclosures, for instance in relation to CO₂ emissions. Data availability that relates to physical risk impacts is currently poor, raising the question of how these risks can be modelled. The Bank should consider overall access and availability of relevant data and avoid too much granularity in the requested results. Moreover, the methodology used should be consistent between all banks participating in the exercise, in order to ensure results are comparable. UK Finance stands ready to engage with its members and the Bank to ensure this is the case.

Our members' judgement of a company's ability to mitigate transition risk will be informed by a set of indicators describing key elements of its transition plan including, change-management track record, green capex plans, governance support, impact of expected policy change and the planned strategy's credibility. So, translating company mitigation and adaptation plans into quantitative assessment maybe challenging.

Factors our members anticipate considering to assess physical risk include the company's geographical, asset and business diversification, the adequacy of resiliency plans, and a forward-looking view of its exposure to acute and chronic physical effects based on varying temperature scenarios. Ideally, locational hazard occurrence probabilities and supply chain considerations would be quantified, although the pricing of such external data could be prohibitive for some financial institutions.

We suggest that the Bank utilises IPCC data to develop the 2050-2080 assumptions.

11. 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?

The methodology of mapping IAM outputs into financial risk metrics of individual companies, as the Bank proposes BES banks do for 80% of their counterparties, is embryonic. Expecting banks to independently address this at such scale and to such a timeline is unrealistic. Our members will be seriously challenged in meeting this 80% requirement. Some of the BES banks have many thousands of counterparties and it is unlikely that they will be able to undertake a thorough analysis of all of them in the short period up to the submission of the results by the end of the year, as is currently proposed.

We recommend that the scope of the counterparty level analysis is guided by the concept of materiality. In our view this materiality requirement should focus on not *'what % of counterparties should be covered'* but instead *'where should we target our efforts to generate most value from the BES for the Bank and participating banks'*. The scale of the engagement with counterparties which is envisaged is also very ambitious, so we recommend an alternative, three-tiered approach.

1. Deep-dive bespoke counterparty level analysis for X counterparties in Y sectors. X and Y should be decided collaboratively between the BES banks and the Bank to ensure the right balance between depth of analysis, risks covered and feasibility. Our members would engage individually with their counterparties within this group.
2. Simplified counterparty analysis for as much of the book as banks feel they have appropriate data. The main focus in this group for banks is to start building scale into their modelling and explore data gaps. The methodology would ideally be developed in collaboration between the banks and the Bank. It might be fruitful also to engage with academics, consultants and data providers in this discussion.
3. Top down sector/geography approach for the rest, being the low risk/low materiality sectors.

This approach still ensures full balance sheet coverage and encourages banks to understand climate risk in detail for their most material exposures.

Recognising the paucity of data, it will also be helpful to confirm that commercial lending to SMEs would be excluded from the scope of the counterparty level analysis. We also assume that 'counterparties' means corporate counterparties, not bank or non-bank financial institution counterparties and would appreciate the Bank's confirmation of this.

Our members are considering working collectively to produce a common template of focussed sector by sector questions to share with their key counterparties. This would avoid the same exercise being repeatedly undertaken with each of their counterparties, many of whom are likely to be customers of more than one of the BES banks.

12. 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?

Broadly we agree that the five-year reporting period balances the Bank's aim for greater granularity with what is achievable.

For modelling purposes there should be a differentiation between credit and market risk. Credit risks can be better modelled through a bottom-up approach as company financials are visible and understandable. But we do not believe that the industry is yet ready to properly capture climate change related market risk. This is due to the impact of asset pricing and asset shocks and the need to adapt a top-down macro approach, which renders a bottom up exercise problematic.

At this early stage in climate risk stress testing we recommend that the BES focuses only on the banking book. To include market risks in an accurate manner, we would require the Bank to provide a much more granular approach to its thinking around changing composition of trading books, particularly energy and commodities in the transition scenarios. Analysis of trading book impacts can be undertaken later as expertise develops.

13. What are insurers' views on how to assess underwriting portfolio liabilities to key territories/perils? The Bank welcomes insurers' views on key territories/perils to be explored.

Questions on Chapter 6: Firm submissions

14. 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?

We propose that banks use the end December 2019 balance sheet for the analysis. It will make minimal difference to the results, especially considering the long-term horizon of the BES, and at the same time would allow banks more time to analyse the data in preparation to the BES. Also, this would make comparing the BES and ACS results more comparable.

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

We expect that the outputs of the climate change BES stress test will provide a good first iteration of the impacts of physical and transitional climate change risks on the safety and soundness of individual banks and the UK financial system. But it will undoubtedly highlight the multiple, complex and non-linear ways in which natural, economic, societal and technological factors interact in the face of climate change. The results should be viewed as a tool for exploration rather than a prudential supervisory mechanism. Our members would be surprised if supervisors deployed any of their supervisor tools as a result of this BES, but would appreciate confirmation that this will not be the case.

Our members would also appreciate discussion about the format in which they could present their analysis. More qualitative description at the longer end of the timeline would also facilitate discussions around interactions between physical and transition risks. There should also be a consistent set of definitions to use in this dialogue which can be applied straightforwardly, and we look forward to working together to develop these.

16. Do participants have access to data and tools to enable them to estimate the temperature alignment of their current asset holdings? Which asset classes should be included in this calculation?

Banks would find it very difficult to estimate temperature alignment of their portfolios at this stage due to both limited data and lack of suitable methodology. Therefore, we recommend that this exercise is not included in this first climate change stress test.

In the case of mortgages there are significant data gaps as not all UK properties are covered by Energy Performance Certificates (EPCs). So instead broad assumptions would have to be applied.

BES banks will have to either buy-in the data and/or gather it directly. It is questionable whether mid/small corporate counterparties will actually have this data, and as we note above, they may be less relevant, as the results of their actions may be less impactful on climate change than larger counterparties. So, we recommend that SMEs are excluded from the BES exercise allowing it to focus on the most impactful industry sectors.

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

We support the use of five-year intervals as a pragmatic approach.

We believe that relaxing the fixed balance sheet assumption in the second part of the exercise would cause quite divergent results; especially in the further out five-year intervals of the analysis horizon, as different firms will adopt different approaches, for instance in relation to evolving risk appetite and their differing dialogues with counterparties about their transition plans. In addition, during these five-year intervals, there may be important policy changes that potentially fail to be captured, therefore, creating uncertainties over subsequent five-year intervals which would be reiterated in subsequent exercises.

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

It would be helpful to understand the extent to which macroeconomic impacts lead to feedback effects on asset values.

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

Although UK Finance represents credit institutions, not insurers, we believe that capital metrics should be excluded from the output

Scenario definition

We would appreciate an ongoing dialogue on scenario definition so BES banks can work together in the run up to the formal launch of the BES. In this section of our response we raise some more specific questions about the BES scenario publication and other issues.

Overarching questions

- Could the Bank provide more detail on how macro financial variables will be derived ahead of BES publication in Q3 2020? Most are not standard outputs of IAM/climate models, there is no consensus on how these should be computed, and participants need to ensure their own modelling approaches are broadly aligned. This would be appropriate for regions where banks are expected to apply their own extensions although for the major economies, we are assuming the Bank will provide the granular financial variables based on a methodology we agree together.
- Will the Bank update the tables in Annex 2 on sources of information for transition and physical risk assessment, or provide any further guidance on how it expects participants to model various climate risk channels?

BES scenario publication

- We would appreciate the Bank clarifying the publication schedule for all scenario outputs - will all BES climate risk variables from Table 4.A be published as part of the NGFS scenarios in April, or will some only be available in Q3 2020 when the macro financial variables are released?
- Similarly, we would appreciate clarification of publication schedule for variable names and granularity levels. For instance, what is the Bank's view on 'major economies' for BES, and at what regional level will key variables such as house prices and unemployment rates be published?
- Will the Bank publish details on its view of transition and physical risks included under the baseline scenario of its 2020 Annual Cyclical Scenario stress test, which is currently proposed as the 'modelling baseline' against which changes in impairment will be compared? If not, how does it expect participants to address this?

Physical risk

- Freeze risk should be removed from the physical risk scenario definition/modelling requirements, or more justification provided for its inclusion given the small expected damages (or even a fall in damages) under climate scenarios based on current literature.
- We would appreciate the Bank clarifying in what format physical risk scenario data will be published to help participants align modelling approaches ahead of BES publication. Granular assumptions should be provided by the Bank in order to ensure common

approaches are adopted, for example at postcode level if it is the Bank's intention to model at this level. We suggest a Bank/industry working group could support this process. In particular, will full high-resolution hazard maps be published, or will impacts be shown relative to baseline, with participants required to define their own baseline for each hazard? Will the data be provided for a full range of return periods and sub-perils (i.e. surface water, river, coastal for floods)? How will it be ensured that these scenarios can be integrated into the range of flood models that are available for the UK?

- What assumptions will/should be made around adaptation at the societal (e.g. flood defences) or property level?

Transition risk

- Could the Bank clarify how BES will capture policy risk? Will reported carbon prices be the only policy channel, or will the BES specify how the Bank expects the UK and other major economy climate policies to evolve in a more granular fashion (for instance, minimum EPC standards, policies targeted at retrofitting existing properties, or ICE vehicle sales bans being brought forward)?

Scenario expansion in other regions

- We believe there are low learning benefits for the Bank in having participants approach scenario expansion independently with an attendant potentially high risk if expanded scenario variables are very different for the same region between participants, even before the effects on their lending/trading books are considered.
- The Bank could lead a working group on scenario expansion that provides guidance to participants on how they should approach this to ensure that approaches are broadly aligned. UK Finance would be pleased to assist with this.

Responsible Executive

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