AFME Consultation Response

Bank of England consultation on stress testing the financial stability implications of climate change

18 March 2020

The Association for Financial Markets in Europe (AFME) welcomes the opportunity to contribute to Consultation on the Bank of England's proposals for stress testing the financial stability implications of climate change.

These first steps by the BoE to set out an approach to stress-test the implications of climate change are an important development in light of other European and international initiatives expected to do so due in April this year. AFME's members recognise the need to address the emerging risks of climate change and assess how that may impact their ability to finance the economy going forward. Nevertheless, it is important to also recognise that this has never been done before, and the process may need to be adapted to make it more feasible in the short term and enhance it in future. Here we would note more generally the challenge stress-tests present our members, given the last stress tests finished in 2019 and ICAAP/ILAAP, which are taking place this year (the scope of this exercise could be equated to several ICAAP scenarios).

Moreover, while firms are working to implement the supervisory expectations set out by the BoE in 2019, it should be recognised that they are in the very early stages of doing so. Firms may have pockets of skills assessing climate risk implications across their organisations; however, this is not yet at the stage of becoming an everyday aspect of credit granting or assessment process that is required to support the tests. Hence, as banks work to incorporate climate risk into everyday risk management processes matures, we consider the ability to perform granular, comprehensive stress-tests with robust results will increase. At this stage we would support a 'test and learn' philosophy which reflects the low level of understanding of climate risk which supervisors and firms alike are wanting to strengthen and deepen through pioneering exercises such as this.

In respect of the feasibility of the BES, we note that there are several significant challenges around data availability, granularity of the exercise, and timing that may render the exercise unviable unless addressed. For instance, one of the main concerns is the level of granularity requested on the corporate scope, as the data needed (assessment on each counterparty's mitigation and adaptation plans) does not fully exist (TCFD report, quoted by the BoE, is still clearly not mainstream or even standardized in terms of metrics and mostly only applied by large public companies). To make this a more feasible exercise, we recommend the BoE considers a less granular approach, undertaking a macro study (at sectoral level for example) as a first step to identify the sensitive areas, followed by a deep dive as a second step. Additionally, the BoE should consider undertaking the temperature alignment test as a completely separate exercise to the BES as the nature of the undertaking is very different. It may also be better to focus on transition risks for this first exercise, especially as assessing physical risk impact on corporate exposures will be a major challenge. To aid the BoE in making the exercise more feasible we set out a number of further detailed proposals in our answers to Qs 5, 6 and 10-12.

Regarding the macro-financial variables, while these are welcome it must be noted that the BoE and the BES provides, in a sense a territorial 'approach/solution' to a global problem. In light of the global physical and transitional risks, it should also account for climate transition macroeconomic implications to the financial

system. For instance, the secondary effects of the transition to the global economy. This transition away from fossil fuels will have significant impacts on the economies of different countries and further affect their trading relationships. Modelling such developments would be complex and should be factored into future exercises when the methodology is more advanced.

In terms of the robustness of the exercise, while we appreciate today's risks need to be captured, that there will be an inevitable change of businesses. Especially in respect of short dated instruments, it would be unrealistic to assume that balance sheets will remain static over a 30-year horizon (over this time these types of models will be incorporated into PD/LGDs in any case). New sources of risk and exposures will emerge on balance sheets and we must ensure that they won't fail to be captured. It will also be challenging to have confidence in the integrity of the results which come out of translating physical and transition risk to macro financial variables. In addition, it must be noted that the transition to a low carbon economy does not necessarily completely de-risk banks since physical risks may still remain. Hence at this stage, if some of the questions of the exercise scope are addressed, the results may be robust enough to *inform* policy, we do not think they should *drive* policy.

Finally, we would highlight the importance of international dialogue and coordination, given that the impact of climate change is an international phenomenon. Indeed, considering the growing number of supervisory initiatives linked to climate change , in particular, the EBA, ECB, ACPR, PRA and recently announced Australian stress tests, we think there is value in prudential authorities over time aligning their objectives, methodologies, terminologies, selected scenarios and setting common definitions. This should aid comparability for banks operating across multiple jurisdictions. Moreover, a consistent common calendar should be established and the NGFS has, in our view, a central role to play in this coordination.

QUESTIONS

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?***

Not at this stage.

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

We consider the most credible timeline pathway extends until 2050 and hence the proposed time horizon to assess the impact beyond 2050- 2080 should not be incorporated or compressed. It is unsure how much physical risk will manifest itself by 2050, hence from a macro perspective it may be better to carve physical risk out from the exercise. We suggest it may be better to revisit the scope of the physical stress test once the variables are ready and discuss with the BoE the most appropriate proxies and methodologies to best assess physical risk over 30- year horizon. An alternative approach, for example, could be to identify stranded assets linked to a loan book - i.e. a static identification of physical risk. Indeed, one potential aim we understand the BoE is looking to achieve is an estimation of what an unexpected rapid physical risk event would mean at a certain point in time; therefore, the time period is less relevant. In the case of a 'no transition' scenario banks should identify exposures subject to flooding/bushfires/extreme weather.

Another alternative suggestion would be to use a use a dynamic approach on exposures where business changes have already been agreed (similar to ECB's discretion to apply a dynamic approach to firms with approved capital plans). As proposed by the BoE, the results of the tests are unlikely to be of use to management given changes to the portfolio that would occur over the extended horizon (30-year business plans do not exist), hence no benefit can be derived for management discussion, let alone management actions. For example, some banks may have made recent business decisions and commitments to move away from investing in carbon intensive industries or coal, but these may not be reflected in the data point (e.g. Dec 2019) for the purpose of the BES. We would note December 2019 would be seen as a baseline where upon future improvements can be measured.

Questions on Chapter 3: Scenario narratives

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

It would be helpful to integrate the key assumptions by insurance firms as these would influence the banks' approach. The scenarios do not factor changes to insurance terms which could result in an overly optimistic outcome of the scenarios.

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 believe the scenarios are appropriate. However, the late policy action scenario assumes that the <2C climate target is met, but studies suggest that bold policy action is imminently required. The BoE 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 of 66% is ~600Gt of CO2, whilst anthropogenic emissions are ~49Gt/year; this implies a window of about 13 years. The BoE may therefore want to reconsider how the rapid scenario looks and its feasibility – in a delayed and rapid transition scenario where the transition starts at a later date, technological solutions may be more advanced and so will play a larger part than policy options in aiding a transition and should reflect this.

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?***

Generally, as per regular stress testing, firms would request the BoE supplies the greatest level and depth of detail possible on the assumptions in the scenarios with regard to the transition and physical variables, in order to determine if risks are adequately captured. For instance - will there be any additional guidance on sector specific policies to reach climate targets beside carbon taxes? We would also note legal liabilities are not really addressed—these may rise in the "No additional policy action scenario". In this respect we think it would be useful to set up a working group to discuss the overall design of the BES – scenarios, assumptions, scope, methodology etc. For instance, we would support a working group before the BES submission and then again as a follow-on after the results get 'published' to work through the findings.

Regarding transition variables, if a carbon tax on producers is assumed, then price-demand elasticities would be helpful for understanding how the tax burden is shared between suppliers and consumers. In fact, price-

demand elasticities would embody assumed changes in consumer preferences for lower-emission products. Note that the elasticities would need to change through the horizon as consumer preferences evolve.

Separately, supply cost curves could be more challenging due to the inherent uncertainty around efficiency gains, and more specifically, technological evolution. A possibility is to assume that price projections reflect a general equilibrium.

To derive maximum value from the exercise, the BoE should also provide more guidance on the translation from climate to socio-economic impacts that can be used for stress testing. Otherwise, the exercise will not have any benefit if each firm interprets the scenarios in their own way, and without the necessary expertise in doing so. One suggestion would be for the BoE to provide the conversion factors into economic data that can be used by the banks to model against their exposures (i.e. remove one layer of model risk associated with the bank-specific conversions).

Scenarios need to remain plausible and severe (i.e. remove catastrophic climate change events) if this is to remain of value to banks' internal business planning. Firms should be expected to remain as going-concerns over the duration of the scenarios. Hence these need to be tailored to remain under the current "severe but plausible" criteria.

Finally, we note variables related to sovereigns are important and will be challenging.

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

Supplying rough probabilities of occurrence by hazard type would be ideal. However, the impact of physical risk on company balance sheets would be absorbed by their profits and if insufficient, by increased leverage, which over time impacts borrowing costs. Adding physical risk to counterparty financial analysis therefore suggests that banks and insurers have visibility of the value of companies' real assets. There are sophisticated models provided privately by firms specializing in catastrophe risk which produce this information. However, the likelihood is that hiring those services are too expensive for the average firm. If this approach of quantifying physical risk at a counterparty level is followed in the BES, a possibility is to consider how estimates of real asset values can be assumed, perhaps by a combination of sector type and firm size.

A method to incorporate stranded assets into credit stress is to impact the assumption of Loss-Given-Default. For the Oil and Gas industry this is a function of commercial reserves stranded by evolving market prices as compared to production costs. For other industries, similar dynamics would be in play, whereby sector-average profit margins decline to zero over time due to shifting market preferences for their goods and services.

For equities, stranded assets impact enterprise value, which is market capitalization plus net debt. Indeed, in this respect it should be noted the impact of stranded assets is fundamentally different between banks: banks have different exposure profiles to stranded assets, which typically are exposed through debt exposures. Other financial institutions such as asset managers and insurers have longer dated exposures that relate to equity exposures which experience different sensitivities to the stranded asset question.

Another point to note regards the format in which banks should represent the analysis e.g. profit deviation by business line/sectors, capital, more qualitative in the longer end of the analysis etc. Guidance from the BoE

would be welcomed as this should help facilitate discussions around interactions between physical and transition. There should also be a consistent set of definitions which can be applied straightforwardly.

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

Generally, no modelling techniques are going to bring about the perfect outcome and we expect the BoE and NGFS is widely considering many sources. It may be better to review this with industry when that becomes available to see if all available sources are taken into account. At this stage we note the BoE may want to consider RCP pathways and MET office climate projections for specifying magnitudes for physical risks and IEA (sustainable development scenario) for transition risks. The IEA brings forth energy demand variables by 5 years to define a scenario of sudden policy action, which causes the transition path to steepen. Furthermore, as mentioned above, the BoE should consider prescribing the same set of assumptions are used across financial institutions to enable comparability and utilisable conclusions. While this initial exercise may be an opportunity to experiment with different sources, ideally over time stress-testing authorities would internationally align the use of a common set of available external sources to support comparability of test outcomes. We would also emphasise the importance of considering the usability of these external sources for banks (as opposed to asset managers for example).

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

We would refer here to our general comments in question 7. We are only aware of three attempts to model macro scenarios: DNB modelled several transition effects (with support from NIESR); Moody's analytics modelled chronic physical effects; NIESR has worked on comprehensive climate scenarios (physical and transition).

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

N/A

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?***

As an overall comment, the requirement to assess 80% of participants nominal exposure to corporates will be the most challenging aspect of this exercise for the reasons set out below.

- **Data:** The pricing of external data may be a barrier in the ability to accurately model scenarios and the industry has very different standards in terms of disclosures, such as CO2 emissions. Data availability that relates to physical risks impact is currently poor, raising the question of how to model physical risks. We recommend that the BoE reconsiders overall access and availability to data and avoid too much granularity in the result set. Moreover, the methodology used should be consistent among all banks participating in the exercise, in order to obtain comparable results.

- **Materiality:** There appears to be no threshold for the size of holding or counterparty exposure to be modelled – we propose below some ways in which this could be done. Additionally, the level of engagement with counterparties which is envisaged is very ambitious, we would urge the BoE to clarify if counterparties will be expected to engage with all banks, regardless of the size of the securities holding of or lending by the bank in question.
- **Transition risk**: the judgement about a company's ability to transition would be informed by a set of indicators describing various aspects of its transition plan including, track record, green capex, governance support, policy impact and the strategy's credibility. Translation of the judgments about company mitigation and adaptation plan into quantitative assessment maybe challenging.
- **Physical risk:** the various factors to consider would be the company's geographical, asset and business diversification, the adequacy of resiliency plans, and a forward-looking view of exposure to acute and chronic weather events based on varying temperature scenarios. Ideally, locational hazard occurrence probabilities and supply chain considerations should be quantified, although as mentioned above, the pricing of external data could be prohibitive for some financial institutions.

To address the materiality concerns set out above, we propose that the BoE considers a threshold for the counterparty modelling – for instance the top 3-5 counterparties by size and risk for the 10-15 most materially affected sectors (agriculture, construction, etc)/ or alternatively 80% of global listed companies in the most carbon intensive sectors. This would make the exercise more manageable in the first instance and in future stress-tests the scope could be broadened or adjusted.

We note that the BoE is potentially looking at applying top 50 exposures as an approach. AFME would be concerned that this would lead to an identification of insurance/financial counterparties, whereas the exercise is concerned with climate change sensitivities. We support the idea to have a threshold, but this should be focused on the top counterparties in the most impacted industry/climate intensive sectors (if this needs to be broad then this should be one per sector). Moreover, members do not think financial institutions should be included in the counterparty level assessments, whether adopting the "80%" or the top 50 approach. We propose to concentrate on high risk sectors (high carbon intensity) and listed companies, since GHG emission data is more readily found for listed companies versus unlisted.

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?

As set out in the DP, this aspect of the BES will be extremely challenging if not impossible given scarcity of data, particularly for SMEs. Participants may be able to assess 80% of their corporate counterparties, but only in sectors most susceptible to climate risks or a broader but smaller number of counterparties.; For example, this could be judged by their carbon intensity, or the exercise could focus on at least the 8 most impacted sectors covering 95% of carbon emissions as set out in the March 2020 Final Report on the EU Taxonomy by the European Commission's Technical Expert Group[1] : (Agriculture, forestry and fishing; Manufacturing; Electricity, gas, steam and air conditioning supply; Water, sewerage, waste and remediation; Transportation and storage; Information and Communication Technologies (ICT); Buildings (Construction and real estate activities, with application to other sectors where appropriate. Setting a pre-agreed set of sub-sectors in this

[1] https://ec.europa.eu/knowledge4policy/publication/sustainable-finance-teg-final-report-eu-taxonomy_en

way would mean it could then be consistently applied across firms. Another source could be the 2 degrees Investing Initiative.

Again, sourcing the required data can be an issue due to the cost; most importantly, data relating to CO2 emissions. We also note the BoE suggests that the CDP database is used as a source of GHG emission data; however, this only contains around 5500 companies – hence restrictive for analysis (e.g. SMEs) compared to other providers, and even the data that is provided could be too generic for this exercise. We support that in cases of data gaps, banks should be allowed to make their own assumptions to bridge these gap deficiencies. Furthermore, for the purposes of performing analysis of corporates, the feasibility and accuracy of the stress-testing exercise depends partly on the quality of corporate disclosures and their adherence to the TCFD Recommendations. Adherence to these is only an expectation of the UK government, and not a mandatory legal requirement, that listed companies and large asset owners disclose in line with TCFD recommendations by 2022 (per the government's Green Finance Strategy Report of July 2019) which post-dates the BES 2021 exercise. Indeed, in the recently launched FCA consultation (CP 20/03) the scope only requires premium listed companies to report on a comply and explain basis from 1 Jan 2021, meaning that the first reports to have to be issued in compliance with the proposed rule would be published in 2022. This will therefore not cover smaller companies and the premium listed companies that do not currently comply on a voluntary basis as it comes after the expected data point of Dec 2019.

Overall, it's important that the stress tests for banks do not front run the data needed to make this exercise worthwhile. Members would be happy to consider this issue further and provide suggestions as a subsequent follow-up to this consultation response – for instance as part of our proposed BES working group (See response to Q5).

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?***

We don't think it is necessary to cover market risk in the scope of this exercise as the main impacts from climate change are expected to be seen in the banking book, and we believe efforts should focus on assessing this in the first instance. For example, when applying transition risk to market risk exposures, a sudden drop of fair values due to climate change is not very likely to occur because markets will anticipate the changes related to climate policies/transition factors and the related risk will be hedged.

Nonetheless, if modelling of market risk is to be retained, the BoE needs to take a much more granular approach to its thinking around the changing composition of trading books, particularly energy and commodities in the transition scenarios. Ideally, the BoE should consider applying physical shock on day 1 of the exercise to the trading book with pre-defined shock values and variables, rather than at every interval of the exercise. This would make it more manageable, although it is noted that such an exercise may not add value to the existing annual ICAAP exercise.

Credit risks appear to be, overall, in a better position to be modelled through a bottom-up approach as company financials are visible. Nevertheless, market risks appear to be more problematic as sudden asset

repricing is more relevant and the associated formulation of asset shocks based on a top-down macro approach is challenging. This is largely owing to the fact that macro-financial shocks and their economic transmission over the 30-year timeframe of this exercise is inherently blurred by uncertainty. Due to these reasons, modelling the late transition scenario is particularly challenging as it represents an abrupt break in trends.

We agree that the frequency of reporting should be commensurate with increasing risks, either because transition is assumed to be triggered by late policy action, or because physical risks are set to increase over time.

We would question the robustness of stressing market risk positions on a static balance sheet as of mid-2020 over a 30-year horizon especially given the liquidity and turnover of some underlying assets such as government bonds.

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.***

N/A

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?***

This will be an extremely challenging exercise for banks to complete within 4 months. Ultimately it will depend on the level of detail provided by the BoE, which in large part will determine the extent to which participants need to work the required assumptions and modelling to run the stress exercise. As mentioned previously, certain aspects may be easier to fulfil than others (credit v. market risks), and therefore a more realistic approach might be to target identified at-risk sectors or geographies on a more granular level at this juncture rather than undertake a comprehensive stress-testing exercise in 2021. We would also note this is referred to as the biennial test, but the last testing was conducted during the last 12 months and this one co-exists with other stress tests that also raises the question of participant's resources and execution.

With regard to corporate disclosure we would also highlight that it is intended that the TCFD recommendations are adopted in companies publicly available annual financial reports. In light of this, we suggest the BoE review the 30 June 2020 as the envisaged balance sheet date. It would make more sense to adopt 31 December 2019 as the balance sheet date as this would allow sufficient time to incorporate TCFD disclosures in the publication of annual financial reports in the stress test. Moreover, it would be operationally simpler, improve comparability of stress test results (it is on the same balance sheet as ASC as suggested by the BoE) and increase robustness as the information would have been audited.(NB there is a period of 6 months after the end of the relevant accounting reference period until UK public companies are required to file their accounts with the Registrar of Companies (9 months for private companies).)

We would also note that, at the time of submitting this response, our members are facing increased work and resource challenges in the face of Covid 19. It is hard to know at this stage how long this would persist, but this might need to be taken into account in due course when considering the balance sheet date, scale of the planned exercise, and/or the timeline for its completion.

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

The high uncertainty of climate effects and financial repercussions suggests great difficulty in judging the success of the BES. However, the more tightly defined the set of assumptions is, the more comparable the results across financial institutions will be, thereby increasing the value of the exercise's relative assessment across financial institutions. Furthermore, we see a large benefit in narrowing the scope as we have set out in answers to the other questions, which would enhance the quality of the output and consequently the robustness of the BES. It would also facilitate a more productive and practical discussion of methodologies.

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?***

Not at this stage. To do so currently would be a complex, large project in itself, requiring very advanced analytical tools and assumptions which are not immediately at banks' disposal. Indeed, the objectives/outcomes of such an alignment measure project (aiming at assessing if banks' activities are in line with Paris agreement targets) are quite different from stress testing exercise ones (aiming at measuring financial institutions vulnerability in specific scenarios, that could be climate-related). It would essentially be a separate exercise, not linked to the static balance sheet of a bank. Therefore, we suggest removing the portfolio temperature alignment requirement from the exercise at this stage and potentially doing it as a follow up exercise but with a clearer understanding of what portfolio alignment for a bank is designed to achieve, rather than being a proxy for stress testing of a bank's exposure profile.

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

The incremental physical risks are difficult to assess in such short intervals, unless the financial institutions have access to sophisticated data modelling. We would like to ask that the analysis is undertaking in 10-year steps. The primary objective would still be achieved but the amount of work and reporting would be diminished enabling enhanced focus on assumptions and methodologies. The BoE could otherwise consider aligning the time periods/intervals with COP emission reduction goals (i.e. 5, 5, 10, 10-year intervals).

We would also note that relaxing the fixed balance sheet assumption in the second part of the exercise would cause quite divergent results; especially in the farther five-year intervals of the analysis horizon.

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?***

The extent to which macroeconomic impacts lead to feedback effects on asset values. Temperature alignment may also be better as a second-round special focus exercise.

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

N/A

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About AFME

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