Finance Watch

Making finance serve society

A safer use of climate scenario analysis by banks

Key recommendations for a robust assessment of climate-related financial risk

A Finance Watch Position Paper

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Introduction

In recent years, global regulatory and supervisory communities, as well as financial institutions, have reached a consensus that the current prudential frameworks, particularly risk management rules, do not adequately capture the impact of global warming and environmental degradation on financial exposures. Recognising this, efforts have been made to upgrade the prudential frameworks. In the European Union, the review of the prudential rulebook—Capital Requirements Regulation and Directive (CRR/CRD)—was completed in 2024 and resulted in multiple mandates given to the European Banking Authority (EBA) to develop implementing guidelines to address climate-related risks. Following the EBA guidelines on the management of ESG risks, finalised in January 2025, the EBA is now working on the guidelines on ESG scenario analysis to support the integration of ESG risks into financial institutions' risk management.

This position paper builds on Finance Watch's response to the EBA consultation[1] and aims to clarify the features of Climate Scenario Analysis (CSA). This paper examines the EBA propositions to assess and mitigate climate risks and proposes key recommendations to enhance this framework.

Key Takeaways

1. **Enhancing scenario accuracy through expert judgment**
   Climate scenarios are the core of the CSA exercise. They must be severe yet plausible. While they will be constructed using a quantitative approach, it is crucial to enhance them with expert judgment and qualitative insights to address any quantitative limitations.

2. **A clear framework for an impactful CSA exercise**
   Clarity is essential in the CSA exercise. This includes transparency and reporting, precise data requirements, use of alternative measures to compensate for scenario and modelling shortcomings (e.g. reverse stress tests or qualitative adjustments), conclusive results and risk mitigation actions.

3. **Quality assessment of the CSA exercise: A necessary condition to decide on risk mitigation**
   Assessing the quality of the CSA exercise is essential. In accordance with the precautionary principle, risk mitigation actions should be based on both the quality and the conclusions of the exercise, not only on the conclusions.

[1] Finance Watch, *Feedback to the EBA on requirements for ESG Scenario Analysis*, April 2025

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I. Developing accurate scenarios: Enhancements based on expert judgment

The challenge of modelling climate scenarios is high. Economists are facing challenges in integrating the severity of climate change impacts into economic models. Major climate risk factors, such as climate tipping points, extreme weather events, sea-level rise, ocean acidification, nature loss and business disruptions, are challenging to quantify and are consequently often excluded from climate scenarios. In addition, the use of quadratic damage functions and computable general equilibrium economic models, and the failure to capture the nonlinear aspects of climate change increase the imprecision of current climate scenarios. Nevertheless, international organisations, such as the Network for Greening the Financial System (NGFS), the International Energy Agency (IEA) and the Intergovernmental Panel on Climate Change (IPCC), have been working on building accurate scenarios and have made progress in modelling long-term dynamics. The NGFS also works on short-term scenarios to better fit into banks' risk management framework.

Consistency between short- and long-term scenarios. In its draft guidelines, the EBA divides the scenario analysis exercise into two approaches: Climate Stress Testing (CST) to test a bank's financial resilience and Climate Resilience Analysis (CRA) to challenge its business model. This design tries to fit climate risk into the current risk management framework by assessing its financial impact with a short-term view using stress tests and a longer-term approach using business model analysis. This will respond to the objective of making the exercise practical for banks. However, the EBA must maintain consistency between these two approaches because they are complementary. Therefore, the EBA guidelines should require that each scenario be built holistically— that is, using short-term dynamics (≤ 5Y) for the CST exercise and developing consistent long-term dynamics for the CRA exercise. The same baseline and adverse scenarios should be used in both exercises. The EBA should clarify this point **by aligning the terminology between the CST and CRA using the baseline/adverse terminology in the CRA exercise instead of the central/alternative terminology**.

Comparability. The EBA should propose several trajectories to be used by all institutions based on the IPCC, IEA or NGFS scenarios, which will drive institutions' work on scenarios. A common scenario framework is essential for the global consistency of the exercise. Moreover, supervisors should ensure that **banks with similar business models and exposures use similar scenarios for their CSA exercises**.

Baseline scenario. According to scientists, the world is on track towards 3.2°C of warming by 2100.[2] Therefore, the baseline scenario must be aligned with the current policy trajectory and embed the climate change impacts of such a scenario.

[2] IPCC, *Climate change report*, 2023

Adverse scenarios. As global warming is an unprecedented event on a human scale, climate events of the next decades and their potential impact on financial institutions are radically uncertain. Thus, banks face significant challenges in building accurate adverse scenarios.[3] Nevertheless, in its draft guidelines, the EBA has attempted to provide a list of potential risk drivers to monitor, ensuring that all relevant risk factors related to climate change are considered by financial institutions. However, the EBA should explicitly state that this list may not be exhaustive and may be updated in the future, if necessary. The EBA rightfully advises banks to work on microeconomic and macroeconomic transmission channels. Moreover, climate change impacts every aspect of society and is likely to result in macroeconomic downturns and geopolitical tensions. Therefore, compound risk will need to be included in all adverse scenarios. Compound risk refers to multiple risks or hazards that occur simultaneously or sequentially, resulting in a combined impact that exceeds the sum of individual risks. Therefore, **the EBA should require that any adverse climate scenario include simultaneous stressed events (macroeconomic, geopolitical or pandemic)**.

Reverse stress tests. The EBA should mandate the implementation of Climate Reverse Stress Tests. A reverse stress test identifies the specific adverse scenarios or conditions under which a financial institution would face significant distress or failure in regulatory requirements. This tool could significantly **enhance financial institutions' comprehension of potential vulnerabilities within their portfolios**. Identifying the potential combinations of factors that could lead to regulatory failures facilitates the design of adverse scenarios. Moreover, reporting the magnitude of these shocks would provide valuable insights and enable a clearer understanding of potential future breaking points.

Adjustments to scenario limitations. The EBA and banks should understand the shortcomings of their assumptions and make adjustments to compensate for these limitations. They should ensure that all material climate-related and interconnected factors are integrated into economic shocks. They must also account for any current limitations identified by the organisation providing the scenario they use as a basis (e.g. missing tipping points, chronic physical risks or scenario modelling shortcomings). In addition, financial institutions will have to adjust their scenarios if they do not include compound risk or second-round effects. **Financial institutions will need to rely on expert judgment and a qualitative approach to address these potential quantitative limitations**. For example, banks could incorporate **a compensatory stress percentage into their economic stress factors** to improve adverse scenarios. Cooperation among all stakeholders will be primordial to enhance collective expertise on the relevant climate risk modelling shortcomings.

[3] Finance Watch, *"Bridging the gaps in climate scenarios"*, 24 March 2025

II. Conducting accurate and impactful CSA exercises

In its draft guidelines, the EBA focused on the climate part of ESG risks and introduced the CSA. Through this new approach, the EBA endeavoured to assess the financial materiality of climate risk within the ESG risk management framework. The EBA aims to reconcile, within the prudential framework, the feasibility and implementation constraints faced by banks with the accuracy and relevance of climate risk modelling.

Transparency. Given the complexity and nascent stage of this exercise, close cooperation among all stakeholders is required. To ensure comparability and understanding among them, **the assumptions and limitations of the CSA exercise have to be disclosed** by financial firms. This effort of transparency and documentation is essential.

Extend the time horizon. By allowing banks to focus on scenarios for up to 10 years (5 years in case of CST), the EBA answers banks' implementation concerns. However, this approach ignores most severe climate events, such as tipping points and physical risks from extreme weather events, sea-level rises, etc. These events will be irreversible and disruptive at the systemic level, which means that risk mitigation actions must be taken pre-emptively—that is, now. Therefore, it is essential to incorporate them into current risk management decisions, and increasing the time horizon of the exercise can be a viable option. **For the purposes of the CRA, the EBA needs to align its time horizon with transition planning, extending it to 2050, in accordance with the EU Climate Law**. The CRA exercise will then provide meaningful and useful insights for banks' transition plans.

Importance of a static balance sheet. Both static and dynamic balance sheet assumptions should be used. A static balance sheet enables the identification of vulnerabilities in banks' current positions, thereby enhancing their understanding of the situation. **A static balance sheet approach should be mandatory and required by the EBA for both the CST and CRA**. A dynamic balance sheet can be used as a complement to allow for flexibility on possible future actions, but **banks should maintain the consistency of the modelled balance sheet adjustments with their transition plans.** Moreover, they must ensure that their model embeds macro-dimension risks arising from the dynamic balance sheet scenario, such as a sharp fall in prices coming from similar behaviours across financial institutions in the case of market stress.

Data availability and data quality. High data granularity is a key factor in CSA success. For both the CST and CRA, financial institutions must understand their counterparties' sensitivity to each climate risk driver. This means having clear and up-to-date insights on counterparties' business models, geographical presence and supply chain dependencies. In its draft guidelines, the EBA has not yet defined the minimum requirements for high and low granularity. Notably, the EBA appears to agree with the use of a lower granularity in the CRA exercise, although understanding

counterparties' business models is a prerequisite for this exercise. **Finance Watch urges the EBA to specify both high and low granularity requirements**.
Furthermore, banks may face difficulties obtaining granular data on certain counterparties. To compensate for missing data, financial firms may use sectoral and geographical proxies. Supervisors and banks should closely monitor the use of proxies because **excessive use of proxies can lead to an underestimation of risk**. As shown in the EBA report on data availability,[4] the lack of standardised and comparable proxies, associated with their extensive use due to a lack of counterparty data, will **undermine the transparency and accuracy of the exercise**. For example, a counterparty's carbon price sensitivity may be driven by scope 3 emissions, which typically account for the majority of its emissions. Unfortunately, data on scope 3 are the most difficult to obtain, and this information is often based on the use of proxies in current scenario analysis exercises. This leads to a high dispersion of the results across financial actors.[5]

Modelling assumptions. Banks must compute the impact of climate scenarios on their balance sheets. In the CRA exercise, financial institutions will need to translate scenarios into customer behaviours, economic returns and investment dynamics. In the CST exercise, they will need to translate scenarios into stressed risk metrics, such as probability of default (PD) and loss given default (LGD) for credit risk and price and volatility for market risk. Given the unprecedented nature of global warming, it may be inaccurate to rely on the actual relationship between economic features and banks' metrics to calibrate, train or backtest their models.

Adjustments for data and model limitations. If the limitations listed above (i.e. shorter time horizons, data availability, data quality and modelling assumptions) persist, banks will need to adjust their results accordingly. These adjustments should be based on expert judgment and a qualitative approach to address model shortcomings. For example, they may take the form of **an adjustment factor (margin of conservatism) directly applied to stressed risk metrics**. They should be disclosed and documented to enable the EBA to conduct a consistency check across all financial institutions.

Proportionality. The EBA proposes applying the proportionality principle to banks when conducting CSA. However, it should be noted that proportionality is intrinsic to this type of exercise, following the proportionality provisions of the CRD. Nevertheless, **the resilience of small and non-complex credit institutions could be the most exposed to climate risk, as their business models are generally less diversified in terms of sector and geographical region**.

CSA conclusions and mitigation actions. Mitigation actions should be coherent and complementary between CST and CRA. **CST should assess short-term financial risk and rely on direct and concrete prudential action, such as capital add-ons**. Conversely, the CRA's conclusions about banks' business model resilience should translate

[4] EBA, *Report on data availability and feasibility*, February 2025
[5] ECB, *2022 climate risk stress test*, July 2022

into and be consistent with short-term actions, which should contribute to the business model and system-wide resilience in the long term. In other words, mitigating major climate-related risks in the long term requires timely real economy-focused actions now. Due to the systemic and irreversible nature of climate change, individual banks will not be in a position to hedge away the risks or rebalance their portfolios because climate-related disruptions will affect the whole economy. Thus, **risk mitigation actions based on CRA results should be linked to banks' transition plans, implement a precautionary approach and focus on real-world decarbonisation.**[6] Engagement with counterparties to facilitate the required transformations of their business operations should be prioritised. If engagement actions do not yield the desired results, banks may need to develop portfolio reallocation or divestment plans. More **importantly, mitigation actions should rely on both the conclusions and the quality of the exercise.** Banks cannot rely only on the conclusions of the CSA in its current form, as the exercise is subject to significant limitations, model flaws and extensive reliance on proxy data.

III. Assessing CSA exercise quality for relevant risk management

The EBA's work on CSA is a step forward in advancing CSA as a risk management and supervisory tool, but it has limitations. Aside from monitoring only the climate-related aspects of ESG risks, current scenarios fail to account for some major impacts of climate change. Even the NGFS is cautious about the quality of its work.[7] As the EBA proposes, banks will need to overcome the limitations of their current approach with a qualitative approach. **This underscores the need for a quality check of the CSA exercise.**

First, the EBA will need to clarify that the entire CSA exercise (CST and CRA) will be part of the ICAAP/ILAAP framework, especially if it falls under the reporting obligations and quality assurance information requested in the EBA guidelines on ICAAP/ILAAP.[8] Given the complexity and early development stage of CSA exercises, banks must closely monitor their risk management process associated with CSA. Financial institutions will be accountable for the quality of their exercise. They may need to deepen their expertise in climate change dynamics and modelling and collaborate with academics and among industry players themselves.

Second, at the supervisory level, it will be necessary to clarify the monitoring and validation of financial institutions' ESG risk management frameworks. CSA exercise is challenging for banks as it requires high expertise (a clear understanding of assumptions and shortcomings), accurate scenario conception and high-quality and granular data. A clear and complete overview of banks' CSA exercise will be provided through internal disclosures and reviewed during the Supervisory Review and Evaluation Process (SREP).

[6] Finance Watch, "*The Problem Lies in the Net: Making Finance contribute to a Net Zero Economy*", 30 juin 2022
[7] NGFS, *Guidance on climate scenarios*, January 2024
[8] EBA, *Guidelines on ICAAP and ILAAP information collected for SREP purposes*, November 2016, Section 4 and 8

Therefore, **clear and robust monitoring must be implemented by the supervisors to assess the quality of CSA exercise.** Possible designs and elements of this framework are presented in the Appendix.

Finally, it is essential to bear in mind that CSA exercise is nascent and complex and will require close cooperation among all stakeholders. More work will be needed to improve scenario accuracy, such as enhancements to short-term and long-term modelling, the integration of missing climate events and improvements to economic modelling from international organisations, academics, scientists and financial institutions. Financial institutions should continue to work on addressing implementation limitations, focusing on data availability and quality, model validation and qualitative expertise. Competent authorities will have to enhance the consistency, accuracy and efficiency of CSA's framework based on financial institutions and their own feedback from this exercise.

Conclusion

Finance Watch supports the EBA's efforts to improve climate risk assessment by extending the time horizon, considering transmission channels and requesting transparency and disclosure. Finance Watch stresses that the quality of the assessment is crucial for validating its conclusions and urges supervisors to ensure rigorous review. Finance Watch also recommends precautionary measures, such as increasing capital requirements for banks that fail quality checks to enhance their resilience to climate events and to maintain confidence in the financial sector.

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Appendix

A clear review and validation of the CSA exercise by the supervisors: Key elements

- **Clear governance:** CSA processes ownership within the institution
- **Clear framework:** Assumptions and limitations are reviewed and understood by senior management
- **Adverse scenario design:**
    - Severe but plausible
    - Coverage of tail risk
    - Coverage of all material risk drivers, transmission channels and intertwined factors
    - Integration of compound risk—that is, the simultaneous occurrence of climate-related events and macroeconomic shocks
- **Model validation:** Validation of the model using a qualitative approach with peer review
- **Data availability:** High granular data on counterparty climate sensitivity (% of non-proxy data)
- **Data quality:** Relevant and up-to-date data (update frequency check)
- **Quality of the adjustment:**
    - Adverse scenario limitations (missing risk factors, chronic physical risk and tipping points)
    - Model shortcomings (data quality and model accuracy)
- **Independent review:** Internal or external audit
- **Periodic scenario update:** Frequent review to account for new risks or environmental changes
- **Transparency and disclosure:** Reporting of assumptions, shortcomings and mitigation actions
- **Comparison across similar institutions:** Consistency and coherence of data, use of proxies and scenarios across similar financial institutions (consistency KPI)