

THE SHIFT PROJECT
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Request for comments :

[BIS - The role of climate scenario analysis in strengthening the management and supervision of climate-related financial risks – 16 April 2024](#)

General comment :

This answer to BIS request for comments ([BIS - The role of climate scenario analysis in strengthening the management and supervision of climate-related financial risks – 16 April 2024](#)) is focused on physical risks and scenarios.

The main reason is that the global P&C insurance market has been in crisis since the end of 2022. This worldwide crisis was due to a global reinsurance market failure : climate extreme events coverage by reinsurers downsized suddenly 01/01/2024. This historical event should be called the 2022 Great Reinsurance Crisis (GRC).

Several analyses of the 2022 GRC and of climate change physical risks impacts on the financial system have been published since this event :

[Lepetit M. \(2023 a\) – Catastrophe of catastrophes : 2022 Reinsurance year zero – Crisis in the catastrophe insurance market – May 2023](#)

[Lepetit M. \(2023 b\) – Alea jacta non est ! Our response to ECB & EIOPA on climate change & insurability – June 2023](#)

[Lepetit M. & als \(2024 a\) - Shall we ? / Might we ? / Will we ? / Can we ? / Would we ? / May we ? / Could we ? - ... get +3°C in 2100 ? – Comments on EIOPA December 2023 consultation paper - March 2024](#)

[Lepetit M. \(2024 b\) – Changing Climate 1983 – “E pur, si muore” – mai 2024](#)

[Lepetit \(2024 c\) - Crise structurelle du secteur de la réassurance face au changement climatique? dans « Assurance & post-croissance » \(p 33-35\) - Juin 2024](#)

The BIS discussion paper states that “(...) *long-term scenarios can be employed to study (...) the potential discontinued availability of insurance to absorb tail risks. (..)*”

One could say that the issue of insurance availability is not long-term. Reinsurance availability is now a worldwide short-term issue.

One can say that the issue of insurance availability to absorb tail risks is “potential” indeed. What is no longer a “potential” issue is the capacity of some insurers, worldwide, to absorb climate change tail risks, due to reinsurance unavailability.

With the 2022 GRC, mutualization of risks, a key component of insurance, was weakened at its very core. Insurance without reinsurance is impossible. As climate change is a systemic risk, other “surprises” at the heart of finance – such as the 2022 reinsurance disruption- could happen sooner or later.

For the banking system, there is yet no symptom of the impact of physical risks on the mortgage finance markets. Yet the housing markets will be impacted, sooner or later.

The 2022 GRC, a major historical and systemic event for finance, with its potential consequences on the banking system through residential mortgage, is at the heart of this contribution.

Finance supervisory bodies should acknowledge, analyse and understand the 2022 GRC as a systemic crisis of risks mutualization. It is only under this condition that supervisors could then soundly work on climate scenarios for the financial system.

Q1. How does the role of CSA vary based on the objectives listed above, and are there other prudential objectives where CSA could be relevant?

The 2022 GRC was a polycrisis, triggered by (1) energy (via energy price inflation) and (2) climate change growing impacts on reinsurance. The 2008 Great Financial Crisis (GFC) was a polycrisis triggered by (1) energy (via energy price inflation) and (2) US mortgage unsound financing (monetary policy refinancing & securitization deregulation).

The national and regional housing markets will be impacted, sooner or later by climate change ([The Economist - Global warming is coming for your home– April 2024](#)).

Trying to design this housing market crisis with the help of scenarios is a key challenge in coming years for regulatory bodies.

Q2. What are the key challenges in the application of CSA and how can they be overcome?

One of the most important challenges of climate scenario design has been a long-time underestimation of risks (the “damage function” in modelling), due to misunderstanding of climate change impacts on the economy. See :

[Hallegatte S. & Théry D. - Les impacts économiques futurs du changement climatique sont-ils sous-estimés ? - Revue d'économie politique, Vol. 117, No. 4, pp. 507-522 - 2007](#)

[Lepetit M. \(2024 b\) – Changing Climate 1983 – “E pur, si muore” – mai 2024](#)

Fortunately, very recently, NGFS has been brilliant in updating – and upgrading- in its scenarios the damage function of climate change.

Q3. What are the key areas where CSA methodologies and capabilities need to be further developed to be useful and relevant for the different objectives listed in this paper?

A deep change in house valuation seem inevitable, for many geographies, worldwide. The only question is when ? It has been said ([Waller Ch. \(Member of the Board of Governors of the Federal Reserve System \) - Climate change and financial stability – May 2023](#)) that the example of Detroit housing market collapse had no impact on the US financial system stability.

BIS and its experts should work on this example and others of the same kind (such as wartime events ?). It should analyse the shortcomings and inappropriateness of Detroit case. It should analyse the consequences and risk propagation channels of housing market disruptions on global financial resilience. This would help to design more accurate climate scenarios.

Q4. Are the key features listed above appropriately calibrated for a range of CSA exercises, and should other features be considered?

We doubt that “*transmission channels of climate-related financial risks are increasingly understood*”. The 2022 GRC was not anticipated, nor even imagined.

As physical risk has long been underestimated, indirect impacts of climate change and systemic risk (“electrical grid reliability” etc ...) should be more thoroughly studied.

Today, the list of challenges is large for climate scenarios :

- How can they take into account national interference in key markets ? (e.g. Wallonia (Belgium) and its housing insurance market, post July 2021 catastrophic flood)
- How can they take into account mismanagement of regulation (see for instance Florida mortgage and insurance market : [Sastry & als - When Insurers Exit: Climate Losses, Fragile Insurers, and Mortgage Markets Dec 2023](#))
- How can they take into account collective answers to these challenges ? (e.g. a new national public-private partnership ; or the launch of a pool of insurers ?)
- How can they take into account systemic risks on business – and especially small businesses- with growing impact of climate catastrophic events on GDP through business interruption ?

Q5. How does the design of CSA exercises vary depending on the objectives? Please elaborate on the main usage-specific considerations for each of the different objectives.

Q6. What additional usage-specific considerations are relevant for each of the different objectives of CSA listed in this paper and why?

As the risks will rise for many component and infrastructures of national, international or even regional socioeconomic systems (food ; health ; energy ; transport ; drugs ; water etc ...), there will be more and more political monitoring of these risks through stress testing of these sub-systems. Scenario design for such stress tests will be used in many industries, and the finance industry should work in close cooperation with all these scenario designers.

Q7. Which scenario and scenario features are used for the different objectives listed (ie internally developed, those from scenario builders or a combination of the two)?

The 2022 GRC shows that climate scenarios must take into account some specific features of financial institution that are stress tested : local or global ; mutual or private companies ; bancassurance etc ...

Q8. What features and measures could be adopted in the future to enhance the utility of currently available scenarios (eg NGFS, IEA, IPCC)?

For instance, the “dynamic balance sheet assumption” must be reconsidered in the light of what happened during the 2022 GRC, as no insurer has been able to quit its market after the crisis. And contrary to common opinion, many insurers were unable – due to regulation or political considerations- to rise as fast as required their insurance premium prices.

Q9. What alternative or novel approaches could supervisors consider for CSA and how might these be used for prudential purposes?

For a long time, a catastrophe has been triggering a rise in GDP, due to reconstruction. In a few years from now, this paradigm will be reconsidered.

Supervisors should start to base their modelling and their scenarios on physical characteristics of socioeconomic reality, instead of the usual “financial” ones (price ; salaries etc ...). In a not-so-distant future, physical constraints on energy will be key : (1) as input resources – oil & gas availability ; or (2) as output carbon dioxide emission. Impact of climate change should be considered according to the same pattern in next generation scenarios.

Q10. How could the effectiveness and efficiency of supervisory exercises be improved?

The Shift Project would be honored to work with the BIS and regulatory bodies on this issue.