



On May 9, 2024, the FRB released the summary results of the FRB climate scenario analysis (CSA) pilot.¹ The initiative aimed to gain insights into climate risk management practices and challenges. The published summary points out key data and modeling issues when dealing with the physical and transition risk modules.

5 insights you should know

Data gaps in the physical risk module restricted the quantification methods: Banks need specific details on building characteristics such as size, number of floors, or energy usage, along with information on hazard insurance coverage and insured amounts, in order to evaluate the damage caused by physical risk hazards like hurricanes, floods, or droughts, and to calculate losses resulting from repayment challenges and loan defaults in the residential real estate and commercial real estate sectors. Further, banks will need to maintain this data quality once the data gap is filled.

Availability of obligors' transition plans and greenhouse gas (GHG) emissions posed the biggest data challenge in the transition risk module: Most banks used external databases or vendors for information on GHG emissions, while for information on corporate transition some banks undertook an in-depth review of existing disclosures and actively engaged with their obligors. To comprehend how obligors manage transition risks, information on their net zero targets and the reliability of these targets is required.

The 10-year modeling horizon and the static balance sheet assumption of the transition risk module did not reflect accurately the potential of the Net Zero 2050 scenario: While the primary difference between the Current Policies and Net Zero 2050 scenarios employed from the Network of Greening the Financial System (NGFS) is carbon pricing, the difference is too small to substantially affect the results for the given modeling horizon. The static balance sheet assumption further overlaid the benefits of the decarbonization efforts.

Approaches to physical risk modeling varied widely among the participating banks: Half of the banks in the pilot depended on vendor solutions, while the rest used historical events and internally developed models as their basis. While the FRB CSA methodology solely mandated the calculation of direct impacts, some banks went further by considering indirect effects by modifying macroeconomic variables or projecting increased costs of raw materials, which would lead to higher expenses for building repairs.

Transition risk modeling practices relied on existing credit risk models: The level of detail in estimates and calculation methods relied on a bank's previous participation in regulatory climate scenario analysis exercises in other countries and the internal models and methods used. Rather than developing new models, banks adjusted inputs to their current models to capture climate risks. To integrate obligors' transition plans, some banks have analyzed companies in climate-sensitive sectors in detail and adjusted results for this analysis.

5 considerations to evaluate

1

How can banks leverage public and private partnerships to fill critical data gaps around insurance coverage and building characteristics? To maintain current insurance data and gather missing building information, it's crucial for banks to determine whether they may need to modify their internal credit processes and require borrowers to provide missing and updated data regularly. Active engagement with borrowers and internal alignment across businesses and control functions is crucial to keep data up to date. Partnering with insurance companies could be another solution for keeping data up to date and filling in missing information on the real estate portfolios.

2

Will regulatory climate disclosure rules (e.g., Securities and Exchange Commission climate disclosures rule²) be the solution to data-related gaps on corporate transition plans or will banks need to build additional capabilities? The standardization of disclosure requirements and reporting on transition plans (if a company has defined one) simplifies the process for banks to gather the information. However, to verify the credibility of an organization's transition plans, it's necessary to develop specific expertise within banks to assess and process the information received. Additionally, processes to track progress of and changes made by companies on their net zero will need to be established or refined.

3

How can banks design climate scenario analysis exercises that yield meaningful insights while balancing standardization and customization? Although regulatory exercises typically dictate the climate scenarios, modeling timeframe, and balance sheet assumptions, the selection of climate scenarios and modeling horizons are critical factors for a bank's internal climate scenario analysis. These choices can significantly influence results and should be made with the bank's risk and exposure profile in mind. Decisions concerning balance sheet dynamics should be consistent with the bank's strategy and capital planning assumptions.

4

Should banks invest in building internal capabilities to model the direct and indirect impacts of physical risks, or continue to rely heavily on third-party vendors and models? Most banks relied extensively on vendor models and data to assess physical risks, but this often resulted in estimates with little or no transparency that were difficult to validate or customize. Developing internal catastrophe modeling capabilities, as well as the expertise to quantify indirect and macroeconomic impacts, could enhance banks' ability to measure and manage location-specific physical risks. However, this will require significant investment.

5

Is it necessary to adjust existing credit risk models to accurately quantify the impacts of climate transition risks? Although most banks continue to rely on their existing credit models to assess the impact of transition risks on their portfolio, the unique characteristics of climate risks might be better represented if models are further tailored to climate specific impacts. Investment in the sector models can facilitate not just a more effective evaluation, but also help banks to engage clients and support their transition process.



Endnotes

¹ Federal Reserve Board of Governors (FRB), "[Pilot Climate Scenario Analysis Exercise: Summary of Participants' Risk-Management Practices and Estimates](#)," May 2024.

² US Securities and Exchange Commission (SEC), "[The Enhancement and Standardization of Climate-Related Disclosures for Investors](#)," April 12, 2024.

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