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Federal Reserve Issues Instructions for its Pilot Climate Scenario Analysis Exercise

The Instructions Provide Details on How the Pilot Climate Scenario Analysis Exercise Will Be Conducted and the Information on Risk Management Practices That Will Be Gathered from Participants

SUMMARY

On January 17, 2023, the Board of Governors of the Federal Reserve System released detailed instructions for the six largest U.S. banks participating in its pilot climate scenario analysis exercise. The pilot exercise is geared towards learning about the climate risk management practices and challenges faced by large banks, with the goal of enhancing the ability of large banks and supervisors to identify, monitor and manage climate-related financial risks.

In the pilot exercise, participating banks will analyze the impact of specified climate scenarios on certain loan portfolios. Participants are required to submit completed data templates, supporting documentation and responses to qualitative questions to the Federal Reserve by July 31, 2023. The Federal Reserve anticipates publishing insights gained from the pilot exercise at an aggregate level around the end of 2023, including how lessons learned from the pilot exercise will help identify potential risks and promote effective risk management practices. The pilot exercise does not have capital consequences or supervisory implications for the participants and no firm-specific information will be released.

DISCUSSION

On September 29, 2022, the Federal Reserve announced that the six largest U.S. banks (*i.e.*, Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase, Morgan Stanley and Wells Fargo) will participate in its pilot climate scenario analysis exercise. In line with the prior announcement, on January 17, 2023, the Federal Reserve released participant instructions to provide details on (1) how the pilot exercise will be

conducted and (2) information on risk management practices that will be gathered over the course of the exercise. The Federal Reserve will allow participants to submit questions about the pilot exercise and, over the course of the pilot exercise, will make anonymized questions and generalized responses available to all participants and make FAQs available on its public website.

The pilot exercise comprises two independent modules: (1) a physical risk[1] module, and (2) a transition risk[2] module. The Federal Reserve leveraged existing work conducted by the Intergovernmental Panel on Climate Change ("IPCC") and the Network of Central Banks and Supervisors for Greening the Financial System ("NGFS") to prescribe specific forward-looking climate scenarios used in the modules. The pilot exercise focuses on the effect of the climate scenarios on certain loan portfolios. For each loan, participants will be required to report their estimates of certain traditional credit risk parameters, such as probability of default ("PD"), internal risk rating grade ("RRG") and loss given default ("LGD"), under the relevant climate scenarios. The pilot exercise does not require participants to review the effect of the climate scenarios on their trading books. For purposes of the pilot exercise, participants will assume that balance sheets remain static over the relevant projection horizon.

A. PHYSICAL RISK MODULE

The physical risk module focuses on estimating the effect of specified physical risk scenarios on residential real estate and commercial real estate loan portfolios over a one-year horizon in 2023. The physical risk scenarios incorporate a range of potential future physical shocks of different levels of severity for both a common shock and an idiosyncratic shock. The Federal Reserve set the broad parameters around the severity of physical hazards by bringing to the present potential future climate conditions along specific IPCC greenhouse gas concentration pathways—namely, the Representative Concentration Pathways ("RCP") and Shared Socioeconomic Pathways ("SSP")—from 2050 (when the effects of physical risk drivers are likely to be more severe). The physical risk scenarios also consider different degrees of risk mitigation related to insurance coverage.

The common shock scenario focuses on a participant's vulnerability to a severe hurricane that would result in both storm surge and precipitation-induced flooding in the Northeast region of the United States. The Federal Reserve selected the Northeast region because all participants have material commercial and residential real estate in this region and this is a region that could see an increase in the severity of shocks. For the idiosyncratic shock scenario, participants are required to select a hazard event and a geographic region other than the Northeast region based on materiality for their real estate portfolios. For each of the common shock and idiosyncratic shock scenarios, three iterations of the scenario are required, reflecting two different degrees of physical risk severity based on IPCC pathways and return period loss[3] and different insurance assumptions: (1) climate conditions broadly consistent with possible future climate conditions in 2050 as characterized by the SSP2-4.5 (or RCP 4.5) pathways with a 100-year return period loss, assuming insurance coverage; (2) climate conditions broadly consistent with possible future climate conditions in

2050 as characterized by the SSP5-8.5 (or RCP 8.5) pathways with a 200-year return period loss, assuming insurance coverage; and (3) climate conditions broadly consistent with possible future climate conditions in 2050 as characterized by the SSP5-8.5 (or RCP 8.5) pathways with a 200-year return period loss, assuming no insurance coverage.

The common and idiosyncratic shocks are required to be applied on January 1, 2023, to the relevant loan portfolios held by the participants on December 31, 2022. For either shock, participants are required to assume that no government aid is provided. For each of the six scenario iterations, participants are required to provide loan-level projections for select risk parameters, as appropriate—*i.e.*, PD and LGD for both residential and commercial real estate portfolios and RRG for commercial real estate portfolios only—on a one-year projection horizon after the shock is realized. In addition to the direct impact of the physical shocks on credit risk, participants are encouraged, but not required, to incorporate indirect effects of the physical shocks where possible, such as impacts on the local economy, infrastructure, municipal debt and supply chains, and describe these effects qualitatively.

B. TRANSITION RISK MODULE

The transition risk module focuses on estimating the effect of specific scenarios on corporate loans and commercial real estate loans over a 10-year horizon from 2023-32. The transition risk scenarios are based on two NGFS scenario narratives: (1) a current policies scenario, which assumes that all countries or regional groups preserve currently implemented policies and adopt no new policies, including those already announced, to abate emissions; and (2) a net zero 2050 scenario, which assumes that stringent climate policies are introduced immediately and carbon prices will increase over the time horizon of the exercise.

The transition risk scenarios are required to be applied to the relevant loan portfolios held by the participants on December 31, 2022. For each of the scenarios, participants are required to provide loan-level projections for select obligor- or facility-specific risk parameters, as appropriate—*i.e.*, PD, RRG and LGD—for each year in the 10-year projection horizon, assuming a static balance sheet approach.

Participants may incorporate information about an obligor's transition capacity in projecting the impact of scenarios on obligor- or facility-specific risk parameters. An obligor's transition capacity may be sourced from publicly available information (such as an obligor's climate transition plan) or from participants' internal risk management processes (such as due diligence performed by credit officers). Participants that incorporate obligors' transition capacity into their measurements must document the source and assumptions related to an obligor's transition capacity, demonstrate a robust process for evaluating the credibility of the assumptions, and identify and quantify the effect of those assumptions.

C. QUALITATIVE QUESTIONS

Participants are also required to respond to qualitative questions as part of the pilot exercise. The qualitative questions focus on four primary areas: (1) participant's current governance and risk management

practices with respect to managing climate-related financial risks; (2) measurement methodologies used in estimating results for each climate scenario within the physical and transition risk modules; (3) a narrative description of the results under each climate scenario; and (4) lessons learned from the pilot exercise and the participant's forward-looking plans or strategies to manage and oversee climate-related financial risks.

D. CONFIDENTIALITY

In general, information submitted to the Federal Reserve as part of the pilot exercise will be protected from disclosure pursuant to the confidential supervisory information exemption under the Freedom of Information Act ("FOIA"). Such information may also be protected by the confidential commercial or financial information exemption under the FOIA.

IMPLICATIONS

Climate scenario analysis has emerged as a risk management and supervisory tool for financial institutions and regulators around the world to analyze climate-related financial risks. The Federal Reserve's pilot exercise represents an important step to enhance the ability of both large banks and supervisors to utilize scenario analysis to understand climate-related financial risks and financial institutions' climate risk management practices and challenges. Financial institutions conducting scenario analysis or those considering incorporating scenario analysis into their risk management tools should review key design elements of the pilot exercise, monitor future guidance from the pilot exercise and consider incorporating relevant design elements and lessons learned from the exercise into their own climate scenario analysis.

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ENDNOTES

1 Physical risks represent the harm to people and property that may result from climate-related events, including acute, climate-related disasters (such as hurricanes, wildfires, floods, heatwaves, and droughts) and longer-term chronic shifts in climate (such as higher average temperatures, changes in precipitation patterns, sea-level rise and ocean acidification).

2 Transitional risks represent stresses that may result from the transition to a lower carbon economy.

3 For example, a 100-year return period loss refers to a loss that has a one percent chance (one in 100 years) of being equaled or exceeded in a given year.

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