BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

JEROME H. POWELL
CHAIRMAN

April 18, 2019

The Honorable Brian Schatz
United States Senate
Washington, D.C. 20510

Dear Senator:

I am writing to respond to your letter dated January 25, 2019, in which you urge the Federal Reserve (Board) to prepare its supervised institutions for the risks associated with climate change and inquire how we are identifying and managing these risks in the U.S. financial system.

As I have commented previously, although addressing climate change is a responsibility that Congress has entrusted to other agencies, the Federal Reserve does use its authorities and tools to prepare financial institutions for severe weather events. Over the short term, these events have the potential to inflict serious damage on the lives of individuals and families, devastate local economies (including financial institutions), and even temporarily affect national economic output and employment. As such, these events may affect economic conditions, which we take into account in our assessment of the outlook for the economy. In response to your questions, I am including information that addresses how the Board considers severe weather events in its functions related to: monitoring financial stability, guidance to supervisors and financial institutions, the operational readiness of financial services provided by Reserve Banks, and our research.

*Financial Stability*

The Board's framework for monitoring the stability of the U.S. financial system distinguishes between shocks to and vulnerabilities of the financial system.[1] Shocks are typically

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[1] *See,* Board of Governors of the Federal Reserve System, *Financial Stability Report* (Washington: Board of Governors, November 2018), https://www.federalreserve.gov/publications/files/financial-stability-report- 201811.pdf.

surprises and are inherently difficult to predict. Vulnerabilities are the aspects of the financial system that are most likely to cause widespread problems should significant adverse shocks materialize. Thus, in our framework, severe weather events are treated as shocks to the system. For example, the possibility of large losses to property and casualty insurers from historically atypical timing, intensity, or frequency of hurricane damages represents one such potential shock. The corresponding vulnerabilities that would potentially be strained include the loss-absorbing capacity of affected insurers and their connections to the broader financial system.

The Board's framework provides a systematic way to assess financial stability; however, some potential risks do not fit neatly into that framework. Some potential risks are difficult to quantify and especially if they materialize over such a long horizon that methods beyond near-term analysis and monitoring are appropriate. Accordingly, we rely on ongoing research by academics, our staff, and other experts to improve our understanding and measurement of such longer-run or difficult-to-quantify risks.

*Supervision*

The Board has supervisory and regulatory authority over a variety of financial institutions and activities, with the goal of promoting a safe, sound, efficient, and accessible financial system that supports the growth and stability of the U.S. economy. In carrying out the responsibility to promote the safety and soundness of individual financial institutions supervised by the Board, we assess, among other things, supervised firms' ability to identify, measure, monitor, and control risks, including those related to severe weather events.

To that end, the Board issued supervisory guidance in 1996, to ensure that bank management takes into account all relevant risks in their underwriting and review practices. Our guidance with respect to credit underwriting and asset quality provides supervisors the flexibility necessary to address risks from severe weather events.[2] In addition, our guidance also specifically addresses lending to sectors where assessments of these risks are critical for due diligence and underwriting.[3]

Additionally, the Board is an active participant in the proceedings of the Financial Stability Board -- established after the financial crisis to strengthen financial systems and increase the stability of international financial markets -- which has undertaken relevant work in

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[2] *See, e.g.*, 12 C.F.R. Part 208, App. D-1 to Part 208 ("Interagency Guidelines Establishing Standards for Safety and Soundness"); Board of Governors of the Federal Reserve System, "SR 96-36: Guidance on Evaluating Activities Under the Responsibility of U.S. Branches, Agencies and Nonbank Subsidiaries of Foreign Banking Organizations (FBOs)" (Dec. 19, 1996), https://www.federalreserve.gov/boarddocs/srletters/1996/sr9636.htm; Federal Deposit Insurance Corporation, "Uniform Financial Institutions Rating System," 62 Fed. Reg. 752 (Jan. 6, 1997).

[3] *See, e.g.*, Board of Governors of the Federal Reserve System, "Commercial Bank Examination Manual," §§ 2142.1 ("Agricultural Credit Risk Management"), 2150.1 ("Energy Lending—Reserve-Based Loans") (rev. Oct. 2018), https://www.federalreserve.gov/publications/files/cbem.pdf.

this area. Of particular interest are efforts to promote enhanced risk management disclosure, particularly for financial institutions that engage in lending to clients in specific geographic areas or specific sectors of the economy.

The Board also ensures that financial institutions that are core clearing and settlement organizations, or play significant roles in critical financial markets maintain sound practices to ensure that they can recover and resume their activities supporting these markets following a severe weather event.[4] In addition, the Board has provided guidance to banking institutions directly affected by an event that results in a Presidential declaration of a major disaster.[5] The supervisory approach described in the guidance provides examiners flexibility to conduct supervisory activities and formulate supervisory responses that take into account the issues confronting institutions.

*Payment Systems and Financial Market Infrastructure*

The Board also has responsibilities for the supervision and oversight of certain financial market utilities (FMUs), including payment systems, central securities depositories/securities settlement systems, and central counterparties. As part of its oversight of the payment system, the Board expects FMUs to be well risk-managed and adequately prepared for potential disruptions to its critical operations and services, including those that could be caused by severe weather events. The Board has adopted risk management expectations applicable to private sector and Reserve Bank-operated systems based on the internationally agreed Principles for Financial Market Infrastructures (PFMI).[6] Therein, FMUs are expected to have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks. Accordingly, an FMU should have risk-management policies, procedures, and systems that enable the FMU to identify, measure, monitor, and manage the risks. In addition, an FMU is expected to identify the plausible sources of operational risk, both internal and external, and to mitigate their impact through the use of appropriate systems, policies, procedures, and controls that are reviewed, audited, and tested periodically and after major changes.

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[4] Board of Governors of the Federal Reserve System, "SR 03-9: Interagency Paper on Sound Practices to Strengthen the Resilience of the U.S. Financial System" (May 28, 2003), https://www.federalreserve.gov/boarddocs/srletters/2003/sr0309.htm.

[5] Board of Governors of the Federal Reserve System, "SR 17-14: Interagency Supervisory Examiner Guidance for Institutions Affected by a Major Disaster" (Dec. 15, 2017), https://www.federalreserve.gov/supervisionreg/srletters/sr1714.pdf.

[6] Committee on Payment and Settlement Systems and International Organization of Securities Commissions, "Principles for Financial Market Infrastructure" (Apr. 2012), https://www.bis.org/cpmi/publ/d101a.pdf. The risk-management and transparency standards in the Federal Reserve's Regulation HH and part I of the Federal Reserve Policy on Payment System Risk are based on and generally consistent with these international standards. *See,* 12 C.F.R. Part 234; Board of Governors of the Federal Reserve System, "Federal Reserve Policy on Payment System Risk" (Sep. 15, 2017), https://www.federalreserve.gov/paymentsystems/files/psr_policy.pdf.

With regard to the Federal Reserve System itself, we regularly test our business continuity plans. These plans address a variety of extreme events, including wide-scale or major disruptions, and aim to limit interruptions of services provided by the Reserve Banks. For instance, there are a number of procedures in place to ensure the resilience of the Fedwire services. The 12 Reserve Banks routinely test Fedwire business continuity procedures across a variety of contingency situations to ensure timely resumption of operations in the event of a local, regional or wide-scale disruption. Furthermore, Fedwire applications and associated recovery procedures are regularly enhanced and tested to address various risk scenarios.

Additionally, the Reserve Banks ensure they are prepared to meet the demand of an increased need for cash related to any disruptive event, including a severe weather event. Preparations include regularly assessing and testing business continuity plans.

*Research*

The Board conducts an active research program on a broad array of topics in the fields of economics and finance. As part of this broader research mission, research staff write working papers and publish articles in peer-reviewed journals. This research includes studies on a number of topics that pertain to modeling the economic effects of severe weather events; modeling uncertainty and risks from such events in financial markets; estimating the effects of these events on consumer and business activity, as well as on local and aggregate real estate markets. Additionally, outside researchers are regularly invited to present to staff economic and financial research on numerous topics, including research related to severe weather events.

Thank you for sharing your concerns on this important issue. I hope that you find this information helpful.

Sincerely,

Jerome H. Powell