ELIZABETH WARREN
MASSACHUSETTS

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
HEALTH, EDUCATION, LABOR, AND PENSIONS
ARMED SERVICES
SPECIAL COMMITTEE ON AGING

United States Senate

UNITED STATES SENATE
WASHINGTON, DC 20510–2105
P: 202–224–4543

2400 JFK FEDERAL BUILDING
15 NEW SUDBURY STREET
BOSTON, MA 02203
P: 617–565–3170

1550 MAIN STREET
SUITE 406
SPRINGFIELD, MA 01103
P: 413–788–2690

www.warren.senate.gov

January 21, 2020

Brian Moynihan
Chairman of the Board and Chief Executive Officer
Bank of America
100 North Tryon Street
Charlotte, NC 28255

Dear Mr. Moynihan:

I write to inquire about your plan to mitigate the risks that your banks and the financial industry face regarding the climate crisis. According to the Financial Stability Board, your institution is a global systemically important bank (G-SIB), under U.S. jurisdiction.[1] [2] This classification means that "distress or disorderly failure, because of [your] size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity."[3] Freddie Mac has stated that the climate crisis is "likely to destroy billions of dollars in property and to displace millions of people," which will produce "economic losses and social disruption… likely to be greater in total than those experienced in the housing crisis and Great Recession,"[4] and will undoubtedly have an effect on your bank and its investments. I write to ask for more information about the risks caused by the climate crisis on the financial industry and your institution's practices, including what steps, if any, your institution is taking to adapt to mitigate these risks.

On November 8, 2019, the Federal Reserve Bank of San Francisco (San Francisco Fed) held a conference on "The Economics of Climate Change," which focused on "[discussing] quantifying the climate risk faced by households, firms, and the financial system; measuring the economic costs and consequences of climate change; accounting for the effects of climate change on financial asset prices; and understanding the potential implications of climate change for monetary, supervisory, and trade policy."[5] In her speech at the conference, San Francisco Fed President and Chief Executive Officer Mary Daly stated, "The Federal Reserve's job is to promote a healthy, stable economy. This requires us to consider current and future risks –

[1] Financial Stability Board, "Global Systemically Important Financial Institutions (G-SIFIs)," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/.
[2] Congressional Research Service, "Systemically Important or 'Too Big to Fail' Financial Institutions, September 24, 2018, https://crsreports.congress.gov/product/pdf/R/R42150.
[3] Financial Stability Board, "Addressing SIFIs," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/.
[4] Freddie Mac, "Life's a Beach," April 26, 2016, http://www.freddiemac.com/research/insight/20160426_lifes_a_beach.page.
[5] Federal Reserve Bank of San Francisco, "The Economics of Climate Change," November 8, 2019, https://www.frbsf.org/economic-research/events/2019/november/economics-of-climate-change/.

whether we have a direct influence on them or not. Climate change is one of those risks."[6] Federal Reserve (Fed) Governor Lael Brainard also remarked, "Climate risks are projected to have profound effects on the U.S. economy and financial system," and that "Similar to other significant risks, such as cyberattacks, we want our financial system to be resilient to the effects of climate change."[7]

The San Francisco Fed conference echoed research published by the branch in 2019 describing the relationship between climate change and macroeconomic and financial stability. In October 2019, the San Francisco Fed published 18 papers by outside experts warning of the economic risks of the climate crisis, with a focus on climate change risks in low- and moderate-income communities. Reports describe the collection of research as "one of the most specific and dire accountings of the dangers posed to businesses and communities in the United States — a threat so significant that the nation's central bank seems increasingly compelled to address it."[8]

The warnings in the research published by the San Francisco Fed include the possibility of a significant decrease in home values, the end of lending by financial institutions to communities susceptible to flooding, and a loss of tax revenue for towns coming just as they need these funds to build sea walls and make other investments in resilient infrastructure.[9] According to Jesse Keenan, the editor of the San Francisco Fed's publication, "The private sector has always adapted—one either adapts to new markets, products, or services or they go out of business. But the current calculus is more than a function of market share. It is a function of where there will be a market at all."[10] As climate change continues to affect our economy, it is critical to understand your bank's adaptation and mitigation strategies.

One of the papers published by the San Francisco Fed analyzed the impact of climate change—in particular, the effects of sea level rise—on the real estate market.[11] The paper stated that researchers found "evidence that the [sea level rise] exposure discount is driven by sophisticated investors, [who] incorporate new information regarding climate change into their home buying decisions... [but found] little evidence of [sea level rise] exposure discounts among less sophisticated buyers... even though housing likely constitutes the majority of their

---

[6] Federal Reserve Bank of San Francisco, "Why Climate Change Matters to Us," Mary Daly, November 8, 2019, https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/.
[7] Board of Governors of the Federal Reserve System, "Why Climate Change Matters for Monetary Policy and Financial Stability," Lael Brainard, November 8, 2019, https://www.federalreserve.gov/newsevents/speech/brainard20191108a.htm.
[8] New York Times, "Bank Regulators Present a Dire Warning of Financial Risks from Climate Change," Christopher Flavelle, October 17, 2019, https://www.nytimes.com/2019/10/17/climate/federal-reserve-climate-financial-risk.html.
[9] *Id.*
[10] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Climate Adaptation and Community Development," Jesse Keenan, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/climate-adaptation-and-community-development/.
[11] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.

savings."[12] In other words, many buyers are not making fully informed decisions regarding their investments in their homes and property. These findings raise significant challenges for the banking sector, as "communities without substantial financial resources are both the ones most likely to need bank assistance and the most likely to be unaware of the risks they face."[13] Communities that rely on the property investment financing that your bank and other financial institutions provide, should have the most accurate accounting of climate risks–the lack of this information threatens sound lending practices.

One of the 18 published studies also analyzed the current accounting for flood risk assessments in the market.[14] The paper found that, "As the frequency and severity of floods in the U.S. continues to increase due to climate change, the shortcomings of our current tools will be increasingly insufficient to quantify flood risk. Financial institutions and property owners [have] no accurate, standardized way of measuring and understanding that [flood] risk and uncertainty."[15] It is critical that financial institutions accurately assess changes in flood risk and incorporate these estimates into their lending practices. Without strong action to address financing for areas most vulnerable to climate-induced sea-level rise, flood risk "may adversely impact the tax base of municipalities at the time when more tax revenue is needed for flood mitigation infrastructure" and "[at] some point in the next 20 to 30 years… there may be a threat to the availability of the 30-year mortgage in various vulnerable and highly exposed areas."[16] Miscalculating the riskiness of large swaths of loans could have a profound impact on the stability of your institution and the financial system at large.

The climate crisis demands that banks accurately estimate and mitigate risks to social and economic stability; it also presents mutually beneficial investment opportunities, particularly in climate-resilient urban infrastructure. Another study published by the San Francisco Fed explored how the private sector, and federal, state, and local governments must collaborate for communities to develop and finance climate resiliency and adaptation investments.[17] This research found that, "Even large, affluent cities do not currently have the financial capacity in place to fund all of their plans."[18] Therefore, there are significant opportunities for large financial institutions to invest in climate-resilient infrastructure and for banks to incentivize localities and other levels of government to move markets towards more sustainable long-term infrastructure

---

[12] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.
[13] *Id.*
[14] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Flood Risk and Structural Adaptation of Markets: An Outline for Action," Michael Berman, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/flood-risk-and-structural-adaptation-of-markets-an-outline-for-action/.
[15] *Id.*
[16] *Id.*
[17] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Hunting for Money: U.S. Cities Need a System for Financing Climate Resilience and Adaptation," John Cleveland, Jon Crowe, Lois DeBacker, Trine Munk, and Peter Plastrik, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/hunting-for-money-u-s-cities-need-a-system-for-financing-climate-resilience-and-adaptation/.
[18] *Id.*

and transportation planning and incorporate climate-related risks in jurisdictions that are not currently doing so. These actions are particularly important, given findings in another paper published by the San Francisco Fed that, "As the adverse impacts of climate change worsen, the effects on residents of local communities and the organizations that serve them will require changes to the way we plan and invest."[19]

While some central banks around the world are taking action to confront climate-related risks to the global financial system,[20] U.S. regulators continue to ignore the risks, despite the San Francisco Fed's groundbreaking work. For example, Fed Board of Governors Chairman Jay Powell recently wrote that "addressing climate change is a responsibility that Congress has entrusted to other agencies," although regulators have not yet included climate risks in their regulations of the financial sector and climate risks affect the financial system. Powell also wrote that the Fed evaluates the risks from climate change in terms of severe weather events that, in the "short term... 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," but the Fed does not evaluate climate change itself as a long-term systemic threat in the same way.[21]

As climate change continues to increase the frequency and severity of natural disasters, it stresses the financial system, including large institutions such as Bank of America.[22] [23] A 2018 report from the Intergovernmental Panel on Climate Change found that global warming due to human activity has already reached about 1 degree Celsius above pre-industrial levels, and is likely to reach 1.5 degrees in as little as 10 years at current rates.[24] The report found that on the world's current path, global temperatures are set to rise as much as 3.2 degrees Celsius above pre-industrial levels by 2100, and that drastic action is necessary in order to prevent the most

[19] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Investing in the Virtuous Cycle," Robert Freudenberg, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/investing-in-the-virtuous-cycle/.
[20] Insurance Journal, "Many Major Central Banks, Minus U.S. Fed, Taking Action on Climate Change Risks," Jill Ward, September 24, 2019, https://www.insurancejournal.com/news/international/2019/09/24/540932.htm.
[21] Letter from Board of Governors of the Federal Reserve System Chairman Jerome Powell to Senator Brian Schatz, April 18, 2019, https://www.schatz.senate.gov/imo/media/doc/Chair%20Powell%20to%20Sen.%20Schatz%204.18.19.pdf.
[22] Center for American Progress, "Climate Change Threatens the Stability of the Financial System," Gregg Gelzinis and Graham Steele, November 21, 2019, https://www.americanprogress.org/issues/economy/reports/2019/11/21/477190/climate-change-threatens-stability-financial-system/.
[23] Economist Intelligence Unit, "The cost of inaction: Recognising the value at risk from climate change," 2015, https://eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf.
[24] Intergovernmental Panel for Climate Change, "Summary for Policymakers: Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty," https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

catastrophic effects of the climate crisis, including significant changes to global food, energy, water, and security systems.[25]

The Trump administration has taken steps to exacerbate the climate crisis by rolling back rules on air pollution, emissions, fossil fuel extraction, and more.[26] According to government data, these changes may lead to thousands of more premature deaths across the United States.[27] Meanwhile, the dangers from climate change continue to grow.

To protect themselves and the economy from climate-driven catastrophes, large financial institutions must act quickly to address risks. In order to better understand whether your institution is taking steps to understand, estimate the financial risks from, adapt to, and mitigate the climate crisis, I ask that you respond in writing and answer the following questions no later than February 7, 2020.

1. Given the remarks of the President and Chief Executive Officer of the Federal Reserve Bank of San Francisco Mary Daly at the Federal Reserve Bank of San Francisco's November conference, does your institution agree with her remarks that the financial system and its regulators should be required to consider climate-related risks?

2. Does your institution formally assess the system risks that climate change could pose to your assets, investments, and the broader financial system?

    a. If so, what tools and models does your institution use to make these assessments?

    b. What specific changes in your holdings has your institution made as a result of these assessments?

    c. What have these assessments shown with regard to the valuation of any fossil fuel industry-related assets that your bank currently owns or manages, and what actions have you taken in response to these findings?

3. I am an original cosponsor of the *Climate Change Financial Risk Act of 2019*.[28] This bill would add new climate risk scenarios for bank stress tests that the Federal Reserve implemented after the 2008 financial crisis.[29] It would require the Federal Reserve, along with an advisory group of climate experts, to develop three stress test scenarios: one

---

[25] Washington Post, "In bleak report, U.N. says drastic action is only way to avoid worst effects of climate change," Brady Dennis, November 26, 2019, https://www.washingtonpost.com/climate-environment/2019/11/26/bleak-report-un-says-drastic-action-is-only-way-avoid-worst-impacts-climate-change/.
[26] New York Times, "95 Environmental Rules Being Rolled Back Under Trump," Nadja Popovich, Livia Albeck-Ripka, and Kendra Pierre-Louis, December 21, 2019, https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html.
[27] New York Times, "Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year," Lisa Friedman, August 21, 2018, https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html.
[28] Climate Change Financial Risk Act of 2019, S. 2903, https://www.congress.gov/bill/116th-congress/senate-bill/2903.
[29] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

assuming 1.5 degrees Celsius of warming above pre-industrial levels, one assuming 2 degrees of warming, and one assuming "business as usual" warming.[30] These tests will quantify how expected physical and transition risks will affect economic conditions, and will require financial institutions to define how they will adapt their practices to limit climate impacts. In response, the Federal Reserve will have the power to reject these plans and prohibit institutions from proceeding with capital distributions.

a. Do you support the Federal Reserve conducting stress tests to measure resilience to climate-related financial risks?

b. Please explain how implementation of this bill would affect your bank's current investments in the fossil fuel and other carbon-intensive industries.

c. If this bill were implemented, what would your bank have to change about your overall practices in order to ensure that the Fed does not "object to an unreasonable or ineffective climate risk capital plan"[31] and thus block your capital distributions?

Sincerely,

Elizabeth Warren
United States Senator

[30] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.
[31] *Id.*

ELIZABETH WARREN
MASSACHUSETTS

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
HEALTH, EDUCATION, LABOR, AND PENSIONS
ARMED SERVICES
SPECIAL COMMITTEE ON AGING

United States Senate

UNITED STATES SENATE
WASHINGTON, DC 20510–2105
P: 202–224–4543

2400 JFK FEDERAL BUILDING
15 NEW SUDBURY STREET
BOSTON, MA 02203
P: 617–565–3170

1550 MAIN STREET
SUITE 406
SPRINGFIELD, MA 01103
P: 413–788–2690

www.warren.senate.gov

January 21, 2020

Thomas Gibbons
Interim Chief Executive Officer
Bank of New York Mellon
240 Greenwich Street
New York, NY 10286

Dear Mr. Gibbons:

I write to inquire about your plan to mitigate the risks that your banks and the financial industry face regarding the climate crisis. According to the Financial Stability Board, your institution is a global systemically important bank (G-SIB), under U.S. jurisdiction.[1] [2] This classification means that "distress or disorderly failure, because of [your] size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity."[3] Freddie Mac has stated that the climate crisis is "likely to destroy billions of dollars in property and to displace millions of people," which will produce "economic losses and social disruption… likely to be greater in total than those experienced in the housing crisis and Great Recession,"[4] and will undoubtedly have an effect on your bank and its investments. I write to ask for more information about the risks caused by the climate crisis on the financial industry and your institution's practices, including what steps, if any, your institution is taking to adapt to mitigate these risks.

On November 8, 2019, the Federal Reserve Bank of San Francisco (San Francisco Fed) held a conference on "The Economics of Climate Change," which focused on "[discussing] quantifying the climate risk faced by households, firms, and the financial system; measuring the economic costs and consequences of climate change; accounting for the effects of climate change on financial asset prices; and understanding the potential implications of climate change for monetary, supervisory, and trade policy."[5] In her speech at the conference, San Francisco Fed President and Chief Executive Officer Mary Daly stated, "The Federal Reserve's job is to promote a healthy, stable economy. This requires us to consider current and future risks –

---

[1] Financial Stability Board, "Global Systemically Important Financial Institutions (G-SIFIs)," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/.

[2] Congressional Research Service, "Systemically Important or 'Too Big to Fail' Financial Institutions, September 24, 2018, https://crsreports.congress.gov/product/pdf/R/R42150.

[3] Financial Stability Board, "Addressing SIFIs," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/.

[4] Freddie Mac, "Life's a Beach," April 26, 2016, http://www.freddiemac.com/research/insight/20160426_lifes_a_beach.page.

[5] Federal Reserve Bank of San Francisco, "The Economics of Climate Change," November 8, 2019, https://www.frbsf.org/economic-research/events/2019/november/economics-of-climate-change/.

whether we have a direct influence on them or not. Climate change is one of those risks."[6] Federal Reserve (Fed) Governor Lael Brainard also remarked, "Climate risks are projected to have profound effects on the U.S. economy and financial system," and that "Similar to other significant risks, such as cyberattacks, we want our financial system to be resilient to the effects of climate change."[7]

The San Francisco Fed conference echoed research published by the branch in 2019 describing the relationship between climate change and macroeconomic and financial stability. In October 2019, the San Francisco Fed published 18 papers by outside experts warning of the economic risks of the climate crisis, with a focus on climate change risks in low- and moderate-income communities. Reports describe the collection of research as "one of the most specific and dire accountings of the dangers posed to businesses and communities in the United States — a threat so significant that the nation's central bank seems increasingly compelled to address it."[8]

The warnings in the research published by the San Francisco Fed include the possibility of a significant decrease in home values, the end of lending by financial institutions to communities susceptible to flooding, and a loss of tax revenue for towns coming just as they need these funds to build sea walls and make other investments in resilient infrastructure.[9] According to Jesse Keenan, the editor of the San Francisco Fed's publication, "The private sector has always adapted—one either adapts to new markets, products, or services or they go out of business. But the current calculus is more than a function of market share. It is a function of where there will be a market at all."[10] As climate change continues to affect our economy, it is critical to understand your bank's adaptation and mitigation strategies.

One of the papers published by the San Francisco Fed analyzed the impact of climate change—in particular, the effects of sea level rise—on the real estate market.[11] The paper stated that researchers found "evidence that the [sea level rise] exposure discount is driven by sophisticated investors, [who] incorporate new information regarding climate change into their home buying decisions… [but found] little evidence of [sea level rise] exposure discounts among less sophisticated buyers… even though housing likely constitutes the majority of their

---

[6] Federal Reserve Bank of San Francisco, "Why Climate Change Matters to Us," Mary Daly, November 8, 2019, https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/.

[7] Board of Governors of the Federal Reserve System, "Why Climate Change Matters for Monetary Policy and Financial Stability," Lael Brainard, November 8, 2019, https://www.federalreserve.gov/newsevents/speech/brainard20191108a.htm.

[8] New York Times, "Bank Regulators Present a Dire Warning of Financial Risks from Climate Change," Christopher Flavelle, October 17, 2019, https://www.nytimes.com/2019/10/17/climate/federal-reserve-climate-financial-risk.html.

[9] *Id.*

[10] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Climate Adaptation and Community Development," Jesse Keenan, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/climate-adaptation-and-community-development/.

[11] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.

savings."[12] In other words, many buyers are not making fully informed decisions regarding their investments in their homes and property. These findings raise significant challenges for the banking sector, as "communities without substantial financial resources are both the ones most likely to need bank assistance and the most likely to be unaware of the risks they face."[13] Communities that rely on the property investment financing that your bank and other financial institutions provide, should have the most accurate accounting of climate risks–the lack of this information threatens sound lending practices.

One of the 18 published studies also analyzed the current accounting for flood risk assessments in the market.[14] The paper found that, "As the frequency and severity of floods in the U.S. continues to increase due to climate change, the shortcomings of our current tools will be increasingly insufficient to quantify flood risk. Financial institutions and property owners [have] no accurate, standardized way of measuring and understanding that [flood] risk and uncertainty."[15] It is critical that financial institutions accurately assess changes in flood risk and incorporate these estimates into their lending practices. Without strong action to address financing for areas most vulnerable to climate-induced sea-level rise, flood risk "may adversely impact the tax base of municipalities at the time when more tax revenue is needed for flood mitigation infrastructure" and "[at] some point in the next 20 to 30 years… there may be a threat to the availability of the 30-year mortgage in various vulnerable and highly exposed areas."[16] Miscalculating the riskiness of large swaths of loans could have a profound impact on the stability of your institution and the financial system at large.

The climate crisis demands that banks accurately estimate and mitigate risks to social and economic stability; it also presents mutually beneficial investment opportunities, particularly in climate-resilient urban infrastructure. Another study published by the San Francisco Fed explored how the private sector, and federal, state, and local governments must collaborate for communities to develop and finance climate resiliency and adaptation investments.[17] This research found that, "Even large, affluent cities do not currently have the financial capacity in place to fund all of their plans."[18] Therefore, there are significant opportunities for large financial institutions to invest in climate-resilient infrastructure and for banks to incentivize localities and other levels of government to move markets towards more sustainable long-term infrastructure

---

[12] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.
[13] *Id.*
[14] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Flood Risk and Structural Adaptation of Markets: An Outline for Action," Michael Berman, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/flood-risk-and-structural-adaptation-of-markets-an-outline-for-action/.
[15] *Id.*
[16] *Id.*
[17] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Hunting for Money: U.S. Cities Need a System for Financing Climate Resilience and Adaptation," John Cleveland, Jon Crowe, Lois DeBacker, Trine Munk, and Peter Plastrik, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/hunting-for-money-u-s-cities-need-a-system-for-financing-climate-resilience-and-adaptation/.
[18] *Id.*

and transportation planning and incorporate climate-related risks in jurisdictions that are not currently doing so. These actions are particularly important, given findings in another paper published by the San Francisco Fed that, "As the adverse impacts of climate change worsen, the effects on residents of local communities and the organizations that serve them will require changes to the way we plan and invest."[19]

While some central banks around the world are taking action to confront climate-related risks to the global financial system,[20] U.S. regulators continue to ignore the risks, despite the San Francisco Fed's groundbreaking work. For example, Fed Board of Governors Chairman Jay Powell recently wrote that "addressing climate change is a responsibility that Congress has entrusted to other agencies," although regulators have not yet included climate risks in their regulations of the financial sector and climate risks affect the financial system. Powell also wrote that the Fed evaluates the risks from climate change in terms of severe weather events that, in the "short term... 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," but the Fed does not evaluate climate change itself as a long-term systemic threat in the same way.[21]

As climate change continues to increase the frequency and severity of natural disasters, it stresses the financial system, including large institutions such as Bank of New York Mellon.[22] [23] A 2018 report from the Intergovernmental Panel on Climate Change found that global warming due to human activity has already reached about 1 degree Celsius above pre-industrial levels, and is likely to reach 1.5 degrees in as little as 10 years at current rates.[24] The report found that on the world's current path, global temperatures are set to rise as much as 3.2 degrees Celsius above pre-industrial levels by 2100, and that drastic action is necessary in order to prevent the most

---

[19] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Investing in the Virtuous Cycle," Robert Freudenberg, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/investing-in-the-virtuous-cycle/.

[20] Insurance Journal, "Many Major Central Banks, Minus U.S. Fed, Taking Action on Climate Change Risks," Jill Ward, September 24, 2019, https://www.insurancejournal.com/news/international/2019/09/24/540932.htm.

[21] Letter from Board of Governors of the Federal Reserve System Chairman Jerome Powell to Senator Brian Schatz, April 18, 2019, https://www.schatz.senate.gov/imo/media/doc/Chair%20Powell%20to%20Sen.%20Schatz%204.18.19.pdf.

[22] Center for American Progress, "Climate Change Threatens the Stability of the Financial System," Gregg Gelzinis and Graham Steele, November 21, 2019, https://www.americanprogress.org/issues/economy/reports/2019/11/21/477190/climate-change-threatens-stability-financial-system/.

[23] Economist Intelligence Unit, "The cost of inaction: Recognising the value at risk from climate change," 2015, https://eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf.

[24] Intergovernmental Panel for Climate Change, "Summary for Policymakers: Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty," https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

catastrophic effects of the climate crisis, including significant changes to global food, energy, water, and security systems.[25]

The Trump administration has taken steps to exacerbate the climate crisis by rolling back rules on air pollution, emissions, fossil fuel extraction, and more.[26] According to government data, these changes may lead to thousands of more premature deaths across the United States.[27] Meanwhile, the dangers from climate change continue to grow.

To protect themselves and the economy from climate-driven catastrophes, large financial institutions must act quickly to address risks. In order to better understand whether your institution is taking steps to understand, estimate the financial risks from, adapt to, and mitigate the climate crisis, I ask that you respond in writing and answer the following questions no later than February 7, 2020.

1. Given the remarks of the President and Chief Executive Officer of the Federal Reserve Bank of San Francisco Mary Daly at the Federal Reserve Bank of San Francisco's November conference, does your institution agree with her remarks that the financial system and its regulators should be required to consider climate-related risks?

2. Does your institution formally assess the system risks that climate change could pose to your assets, investments, and the broader financial system?

    a. If so, what tools and models does your institution use to make these assessments?

    b. What specific changes in your holdings has your institution made as a result of these assessments?

    c. What have these assessments shown with regard to the valuation of any fossil fuel industry-related assets that your bank currently owns or manages, and what actions have you taken in response to these findings?

3. I am an original cosponsor of the *Climate Change Financial Risk Act of 2019*.[28] This bill would add new climate risk scenarios for bank stress tests that the Federal Reserve implemented after the 2008 financial crisis.[29] It would require the Federal Reserve, along with an advisory group of climate experts, to develop three stress test scenarios: one

[25] Washington Post, "In bleak report, U.N. says drastic action is only way to avoid worst effects of climate change," Brady Dennis, November 26, 2019, https://www.washingtonpost.com/climate-environment/2019/11/26/bleak-report-un-says-drastic-action-is-only-way-avoid-worst-impacts-climate-change/.
[26] New York Times, "95 Environmental Rules Being Rolled Back Under Trump," Nadja Popovich, Livia Albeck-Ripka, and Kendra Pierre-Louis, December 21, 2019, https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html.
[27] New York Times, "Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year," Lisa Friedman, August 21, 2018, https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html.
[28] Climate Change Financial Risk Act of 2019, S. 2903, https://www.congress.gov/bill/116th-congress/senate-bill/2903.
[29] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

assuming 1.5 degrees Celsius of warming above pre-industrial levels, one assuming 2 degrees of warming, and one assuming "business as usual" warming.[30] These tests will quantify how expected physical and transition risks will affect economic conditions, and will require financial institutions to define how they will adapt their practices to limit climate impacts. In response, the Federal Reserve will have the power to reject these plans and prohibit institutions from proceeding with capital distributions.

a. Do you support the Federal Reserve conducting stress tests to measure resilience to climate-related financial risks?

b. Please explain how implementation of this bill would affect your bank's current investments in the fossil fuel and other carbon-intensive industries.

c. If this bill were implemented, what would your bank have to change about your overall practices in order to ensure that the Fed does not "object to an unreasonable or ineffective climate risk capital plan"[31] and thus block your capital distributions?

Sincerely,

Elizabeth Warren
United States Senator

[30] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

[31] *Id.*

ELIZABETH WARREN
MASSACHUSETTS

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
HEALTH, EDUCATION, LABOR, AND PENSIONS
ARMED SERVICES
SPECIAL COMMITTEE ON AGING

United States Senate

UNITED STATES SENATE
WASHINGTON, DC 20510-2105
P: 202-224-4543

2400 JFK FEDERAL BUILDING
15 NEW SUDBURY STREET
BOSTON, MA 02203
P: 617-565-3170

1550 MAIN STREET
SUITE 406
SPRINGFIELD, MA 01103
P: 413-788-2690

www.warren.senate.gov

January 21, 2020

Michael Corbat
Chief Executive Officer
Citigroup
338 Greenwich Street
New York, NY 10013

Dear Mr. Corbat:

I write to inquire about your plan to mitigate the risks that your banks and the financial industry face regarding the climate crisis. According to the Financial Stability Board, your institution is a global systemically important bank (G-SIB), under U.S. jurisdiction.[1] [2] This classification means that "distress or disorderly failure, because of [your] size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity."[3] Freddie Mac has stated that the climate crisis is "likely to destroy billions of dollars in property and to displace millions of people," which will produce "economic losses and social disruption… likely to be greater in total than those experienced in the housing crisis and Great Recession,"[4] and will undoubtedly have an effect on your bank and its investments. I write to ask for more information about the risks caused by the climate crisis on the financial industry and your institution's practices, including what steps, if any, your institution is taking to adapt to mitigate these risks.

On November 8, 2019, the Federal Reserve Bank of San Francisco (San Francisco Fed) held a conference on "The Economics of Climate Change," which focused on "[discussing] quantifying the climate risk faced by households, firms, and the financial system; measuring the economic costs and consequences of climate change; accounting for the effects of climate change on financial asset prices; and understanding the potential implications of climate change for monetary, supervisory, and trade policy."[5] In her speech at the conference, San Francisco Fed President and Chief Executive Officer Mary Daly stated, "The Federal Reserve's job is to promote a healthy, stable economy. This requires us to consider current and future risks –

---

[1] Financial Stability Board, "Global Systemically Important Financial Institutions (G-SIFIs)," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/.
[2] Congressional Research Service, "Systemically Important or 'Too Big to Fail' Financial Institutions, September 24, 2018, https://crsreports.congress.gov/product/pdf/R/R42150.
[3] Financial Stability Board, "Addressing SIFIs," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/.
[4] Freddie Mac, "Life's a Beach," April 26, 2016, http://www.freddiemac.com/research/insight/20160426_lifes_a_beach.page.
[5] Federal Reserve Bank of San Francisco, "The Economics of Climate Change," November 8, 2019, https://www.frbsf.org/economic-research/events/2019/november/economics-of-climate-change/.

whether we have a direct influence on them or not. Climate change is one of those risks."[6] Federal Reserve (Fed) Governor Lael Brainard also remarked, "Climate risks are projected to have profound effects on the U.S. economy and financial system," and that "Similar to other significant risks, such as cyberattacks, we want our financial system to be resilient to the effects of climate change."[7]

The San Francisco Fed conference echoed research published by the branch in 2019 describing the relationship between climate change and macroeconomic and financial stability. In October 2019, the San Francisco Fed published 18 papers by outside experts warning of the economic risks of the climate crisis, with a focus on climate change risks in low- and moderate-income communities. Reports describe the collection of research as "one of the most specific and dire accountings of the dangers posed to businesses and communities in the United States — a threat so significant that the nation's central bank seems increasingly compelled to address it."[8]

The warnings in the research published by the San Francisco Fed include the possibility of a significant decrease in home values, the end of lending by financial institutions to communities susceptible to flooding, and a loss of tax revenue for towns coming just as they need these funds to build sea walls and make other investments in resilient infrastructure.[9] According to Jesse Keenan, the editor of the San Francisco Fed's publication, "The private sector has always adapted—one either adapts to new markets, products, or services or they go out of business. But the current calculus is more than a function of market share. It is a function of where there will be a market at all."[10] As climate change continues to affect our economy, it is critical to understand your bank's adaptation and mitigation strategies.

One of the papers published by the San Francisco Fed analyzed the impact of climate change—in particular, the effects of sea level rise—on the real estate market.[11] The paper stated that researchers found "evidence that the [sea level rise] exposure discount is driven by sophisticated investors, [who] incorporate new information regarding climate change into their home buying decisions… [but found] little evidence of [sea level rise] exposure discounts among less sophisticated buyers… even though housing likely constitutes the majority of their

---

[6] Federal Reserve Bank of San Francisco, "Why Climate Change Matters to Us," Mary Daly, November 8, 2019, https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/.
[7] Board of Governors of the Federal Reserve System, "Why Climate Change Matters for Monetary Policy and Financial Stability," Lael Brainard, November 8, 2019, https://www.federalreserve.gov/newsevents/speech/brainard20191108a.htm.
[8] New York Times, "Bank Regulators Present a Dire Warning of Financial Risks from Climate Change," Christopher Flavelle, October 17, 2019, https://www.nytimes.com/2019/10/17/climate/federal-reserve-climate-financial-risk.html.
[9] *Id.*
[10] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Climate Adaptation and Community Development," Jesse Keenan, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/climate-adaptation-and-community-development/.
[11] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.

savings."[12] In other words, many buyers are not making fully informed decisions regarding their investments in their homes and property. These findings raise significant challenges for the banking sector, as "communities without substantial financial resources are both the ones most likely to need bank assistance and the most likely to be unaware of the risks they face."[13] Communities that rely on the property investment financing that your bank and other financial institutions provide, should have the most accurate accounting of climate risks–the lack of this information threatens sound lending practices.

One of the 18 published studies also analyzed the current accounting for flood risk assessments in the market.[14] The paper found that, "As the frequency and severity of floods in the U.S. continues to increase due to climate change, the shortcomings of our current tools will be increasingly insufficient to quantify flood risk. Financial institutions and property owners [have] no accurate, standardized way of measuring and understanding that [flood] risk and uncertainty."[15] It is critical that financial institutions accurately assess changes in flood risk and incorporate these estimates into their lending practices. Without strong action to address financing for areas most vulnerable to climate-induced sea-level rise, flood risk "may adversely impact the tax base of municipalities at the time when more tax revenue is needed for flood mitigation infrastructure" and "[at] some point in the next 20 to 30 years… there may be a threat to the availability of the 30-year mortgage in various vulnerable and highly exposed areas."[16] Miscalculating the riskiness of large swaths of loans could have a profound impact on the stability of your institution and the financial system at large.

The climate crisis demands that banks accurately estimate and mitigate risks to social and economic stability; it also presents mutually beneficial investment opportunities, particularly in climate-resilient urban infrastructure. Another study published by the San Francisco Fed explored how the private sector, and federal, state, and local governments must collaborate for communities to develop and finance climate resiliency and adaptation investments.[17] This research found that, "Even large, affluent cities do not currently have the financial capacity in place to fund all of their plans."[18] Therefore, there are significant opportunities for large financial institutions to invest in climate-resilient infrastructure and for banks to incentivize localities and other levels of government to move markets towards more sustainable long-term infrastructure

[12] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.
[13] *Id.*
[14] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Flood Risk and Structural Adaptation of Markets: An Outline for Action," Michael Berman, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/flood-risk-and-structural-adaptation-of-markets-an-outline-for-action/.
[15] *Id.*
[16] *Id.*
[17] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Hunting for Money: U.S. Cities Need a System for Financing Climate Resilience and Adaptation," John Cleveland, Jon Crowe, Lois DeBacker, Trine Munk, and Peter Plastrik, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/hunting-for-money-u-s-cities-need-a-system-for-financing-climate-resilience-and-adaptation/.
[18] *Id.*

and transportation planning and incorporate climate-related risks in jurisdictions that are not currently doing so. These actions are particularly important, given findings in another paper published by the San Francisco Fed that, "As the adverse impacts of climate change worsen, the effects on residents of local communities and the organizations that serve them will require changes to the way we plan and invest."[19]

While some central banks around the world are taking action to confront climate-related risks to the global financial system,[20] U.S. regulators continue to ignore the risks, despite the San Francisco Fed's groundbreaking work. For example, Fed Board of Governors Chairman Jay Powell recently wrote that "addressing climate change is a responsibility that Congress has entrusted to other agencies," although regulators have not yet included climate risks in their regulations of the financial sector and climate risks affect the financial system. Powell also wrote that the Fed evaluates the risks from climate change in terms of severe weather events that, in the "short term... 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," but the Fed does not evaluate climate change itself as a long-term systemic threat in the same way.[21]

As climate change continues to increase the frequency and severity of natural disasters, it stresses the financial system, including large institutions such as Citigroup.[22] [23] A 2018 report from the Intergovernmental Panel on Climate Change found that global warming due to human activity has already reached about 1 degree Celsius above pre-industrial levels, and is likely to reach 1.5 degrees in as little as 10 years at current rates.[24] The report found that on the world's current path, global temperatures are set to rise as much as 3.2 degrees Celsius above pre-industrial levels by 2100, and that drastic action is necessary in order to prevent the most

---

[19] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Investing in the Virtuous Cycle," Robert Freudenberg, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/investing-in-the-virtuous-cycle/.

[20] Insurance Journal, "Many Major Central Banks, Minus U.S. Fed, Taking Action on Climate Change Risks," Jill Ward, September 24, 2019, https://www.insurancejournal.com/news/international/2019/09/24/540932.htm.

[21] Letter from Board of Governors of the Federal Reserve System Chairman Jerome Powell to Senator Brian Schatz, April 18, 2019, https://www.schatz.senate.gov/imo/media/doc/Chair%20Powell%20to%20Sen.%20Schatz%204.18.19.pdf.

[22] Center for American Progress, "Climate Change Threatens the Stability of the Financial System," Gregg Gelzinis and Graham Steele, November 21, 2019, https://www.americanprogress.org/issues/economy/reports/2019/11/21/477190/climate-change-threatens-stability-financial-system/.

[23] Economist Intelligence Unit, "The cost of inaction: Recognising the value at risk from climate change," 2015, https://eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf.

[24] Intergovernmental Panel for Climate Change, "Summary for Policymakers: Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty," https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

catastrophic effects of the climate crisis, including significant changes to global food, energy, water, and security systems.[25]

The Trump administration has taken steps to exacerbate the climate crisis by rolling back rules on air pollution, emissions, fossil fuel extraction, and more.[26] According to government data, these changes may lead to thousands of more premature deaths across the United States.[27] Meanwhile, the dangers from climate change continue to grow.

To protect themselves and the economy from climate-driven catastrophes, large financial institutions must act quickly to address risks. In order to better understand whether your institution is taking steps to understand, estimate the financial risks from, adapt to, and mitigate the climate crisis, I ask that you respond in writing and answer the following questions no later than February 7, 2020.

1. Given the remarks of the President and Chief Executive Officer of the Federal Reserve Bank of San Francisco Mary Daly at the Federal Reserve Bank of San Francisco's November conference, does your institution agree with her remarks that the financial system and its regulators should be required to consider climate-related risks?

2. Does your institution formally assess the system risks that climate change could pose to your assets, investments, and the broader financial system?

    a. If so, what tools and models does your institution use to make these assessments?

    b. What specific changes in your holdings has your institution made as a result of these assessments?

    c. What have these assessments shown with regard to the valuation of any fossil fuel industry-related assets that your bank currently owns or manages, and what actions have you taken in response to these findings?

3. I am an original cosponsor of the *Climate Change Financial Risk Act of 2019*.[28] This bill would add new climate risk scenarios for bank stress tests that the Federal Reserve implemented after the 2008 financial crisis.[29] It would require the Federal Reserve, along with an advisory group of climate experts, to develop three stress test scenarios: one

[25] Washington Post, "In bleak report, U.N. says drastic action is only way to avoid worst effects of climate change," Brady Dennis, November 26, 2019, https://www.washingtonpost.com/climate-environment/2019/11/26/bleak-report-un-says-drastic-action-is-only-way-avoid-worst-impacts-climate-change/.
[26] New York Times, "95 Environmental Rules Being Rolled Back Under Trump," Nadja Popovich, Livia Albeck-Ripka, and Kendra Pierre-Louis, December 21, 2019, https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html.
[27] New York Times, "Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year," Lisa Friedman, August 21, 2018, https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html.
[28] Climate Change Financial Risk Act of 2019, S. 2903, https://www.congress.gov/bill/116th-congress/senate-bill/2903.
[29] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

assuming 1.5 degrees Celsius of warming above pre-industrial levels, one assuming 2 degrees of warming, and one assuming "business as usual" warming.[30] These tests will quantify how expected physical and transition risks will affect economic conditions, and will require financial institutions to define how they will adapt their practices to limit climate impacts. In response, the Federal Reserve will have the power to reject these plans and prohibit institutions from proceeding with capital distributions.

a. Do you support the Federal Reserve conducting stress tests to measure resilience to climate-related financial risks?

b. Please explain how implementation of this bill would affect your bank's current investments in the fossil fuel and other carbon-intensive industries.

c. If this bill were implemented, what would your bank have to change about your overall practices in order to ensure that the Fed does not "object to an unreasonable or ineffective climate risk capital plan"[31] and thus block your capital distributions?

Sincerely,

Elizabeth Warren
United States Senator

[30] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.
[31] *Id.*

ELIZABETH WARREN
MASSACHUSETTS

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
HEALTH, EDUCATION, LABOR, AND PENSIONS
ARMED SERVICES
SPECIAL COMMITTEE ON AGING

United States Senate

UNITED STATES SENATE
WASHINGTON, DC 20510–2105
P: 202–224–4543

2400 JFK FEDERAL BUILDING
15 NEW SUDBURY STREET
BOSTON, MA 02203
P: 617–565–3170

1550 MAIN STREET
SUITE 406
SPRINGFIELD, MA 01103
P: 413–788–2690

www.warren.senate.gov

January 21, 2020

David Solomon
Chairman of the Board and Chief Executive Officer
Goldman Sachs
200 West Street
New York, NY 10282

Dear Mr. Solomon:

I write to inquire about your plan to mitigate the risks that your banks and the financial industry face regarding the climate crisis. According to the Financial Stability Board, your institution is a global systemically important bank (G-SIB), under U.S. jurisdiction.[1] [2] This classification means that "distress or disorderly failure, because of [your] size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity."[3] Freddie Mac has stated that the climate crisis is "likely to destroy billions of dollars in property and to displace millions of people," which will produce "economic losses and social disruption… likely to be greater in total than those experienced in the housing crisis and Great Recession,"[4] and will undoubtedly have an effect on your bank and its investments. I write to ask for more information about the risks caused by the climate crisis on the financial industry and your institution's practices, including what steps, if any, your institution is taking to adapt to mitigate these risks.

On November 8, 2019, the Federal Reserve Bank of San Francisco (San Francisco Fed) held a conference on "The Economics of Climate Change," which focused on "[discussing] quantifying the climate risk faced by households, firms, and the financial system; measuring the economic costs and consequences of climate change; accounting for the effects of climate change on financial asset prices; and understanding the potential implications of climate change for monetary, supervisory, and trade policy."[5] In her speech at the conference, San Francisco Fed President and Chief Executive Officer Mary Daly stated, "The Federal Reserve's job is to promote a healthy, stable economy. This requires us to consider current and future risks –

---

[1] Financial Stability Board, "Global Systemically Important Financial Institutions (G-SIFIs)," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/.
[2] Congressional Research Service, "Systemically Important or 'Too Big to Fail' Financial Institutions, September 24, 2018, https://crsreports.congress.gov/product/pdf/R/R42150.
[3] Financial Stability Board, "Addressing SIFIs," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/.
[4] Freddie Mac, "Life's a Beach," April 26, 2016, http://www.freddiemac.com/research/insight/20160426_lifes_a_beach.page.
[5] Federal Reserve Bank of San Francisco, "The Economics of Climate Change," November 8, 2019, https://www.frbsf.org/economic-research/events/2019/november/economics-of-climate-change/.

whether we have a direct influence on them or not. Climate change is one of those risks."[6] Federal Reserve (Fed) Governor Lael Brainard also remarked, "Climate risks are projected to have profound effects on the U.S. economy and financial system," and that "Similar to other significant risks, such as cyberattacks, we want our financial system to be resilient to the effects of climate change."[7]

The San Francisco Fed conference echoed research published by the branch in 2019 describing the relationship between climate change and macroeconomic and financial stability. In October 2019, the San Francisco Fed published 18 papers by outside experts warning of the economic risks of the climate crisis, with a focus on climate change risks in low- and moderate-income communities. Reports describe the collection of research as "one of the most specific and dire accountings of the dangers posed to businesses and communities in the United States — a threat so significant that the nation's central bank seems increasingly compelled to address it."[8]

The warnings in the research published by the San Francisco Fed include the possibility of a significant decrease in home values, the end of lending by financial institutions to communities susceptible to flooding, and a loss of tax revenue for towns coming just as they need these funds to build sea walls and make other investments in resilient infrastructure.[9] According to Jesse Keenan, the editor of the San Francisco Fed's publication, "The private sector has always adapted—one either adapts to new markets, products, or services or they go out of business. But the current calculus is more than a function of market share. It is a function of where there will be a market at all."[10] As climate change continues to affect our economy, it is critical to understand your bank's adaptation and mitigation strategies.

One of the papers published by the San Francisco Fed analyzed the impact of climate change—in particular, the effects of sea level rise—on the real estate market.[11] The paper stated that researchers found "evidence that the [sea level rise] exposure discount is driven by sophisticated investors, [who] incorporate new information regarding climate change into their home buying decisions… [but found] little evidence of [sea level rise] exposure discounts among less sophisticated buyers… even though housing likely constitutes the majority of their

---

[6] Federal Reserve Bank of San Francisco, "Why Climate Change Matters to Us," Mary Daly, November 8, 2019, https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/.

[7] Board of Governors of the Federal Reserve System, "Why Climate Change Matters for Monetary Policy and Financial Stability," Lael Brainard, November 8, 2019, https://www.federalreserve.gov/newsevents/speech/brainard20191108a.htm.

[8] New York Times, "Bank Regulators Present a Dire Warning of Financial Risks from Climate Change," Christopher Flavelle, October 17, 2019, https://www.nytimes.com/2019/10/17/climate/federal-reserve-climate-financial-risk.html.

[9] *Id.*

[10] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Climate Adaptation and Community Development," Jesse Keenan, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/climate-adaptation-and-community-development/.

[11] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.

savings."[12] In other words, many buyers are not making fully informed decisions regarding their investments in their homes and property. These findings raise significant challenges for the banking sector, as "communities without substantial financial resources are both the ones most likely to need bank assistance and the most likely to be unaware of the risks they face."[13] Communities that rely on the property investment financing that your bank and other financial institutions provide, should have the most accurate accounting of climate risks–the lack of this information threatens sound lending practices.

One of the 18 published studies also analyzed the current accounting for flood risk assessments in the market.[14] The paper found that, "As the frequency and severity of floods in the U.S. continues to increase due to climate change, the shortcomings of our current tools will be increasingly insufficient to quantify flood risk. Financial institutions and property owners [have] no accurate, standardized way of measuring and understanding that [flood] risk and uncertainty."[15] It is critical that financial institutions accurately assess changes in flood risk and incorporate these estimates into their lending practices. Without strong action to address financing for areas most vulnerable to climate-induced sea-level rise, flood risk "may adversely impact the tax base of municipalities at the time when more tax revenue is needed for flood mitigation infrastructure" and "[at] some point in the next 20 to 30 years... there may be a threat to the availability of the 30-year mortgage in various vulnerable and highly exposed areas."[16] Miscalculating the riskiness of large swaths of loans could have a profound impact on the stability of your institution and the financial system at large.

The climate crisis demands that banks accurately estimate and mitigate risks to social and economic stability; it also presents mutually beneficial investment opportunities, particularly in climate-resilient urban infrastructure. Another study published by the San Francisco Fed explored how the private sector, and federal, state, and local governments must collaborate for communities to develop and finance climate resiliency and adaptation investments.[17] This research found that, "Even large, affluent cities do not currently have the financial capacity in place to fund all of their plans."[18] Therefore, there are significant opportunities for large financial institutions to invest in climate-resilient infrastructure and for banks to incentivize localities and other levels of government to move markets towards more sustainable long-term infrastructure

---

[12] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.
[13] *Id.*
[14] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Flood Risk and Structural Adaptation of Markets: An Outline for Action," Michael Berman, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/flood-risk-and-structural-adaptation-of-markets-an-outline-for-action/.
[15] *Id.*
[16] *Id.*
[17] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Hunting for Money: U.S. Cities Need a System for Financing Climate Resilience and Adaptation," John Cleveland, Jon Crowe, Lois DeBacker, Trine Munk, and Peter Plastrik, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/hunting-for-money-u-s-cities-need-a-system-for-financing-climate-resilience-and-adaptation/.
[18] *Id.*

and transportation planning and incorporate climate-related risks in jurisdictions that are not currently doing so. These actions are particularly important, given findings in another paper published by the San Francisco Fed that, "As the adverse impacts of climate change worsen, the effects on residents of local communities and the organizations that serve them will require changes to the way we plan and invest."[19]

While some central banks around the world are taking action to confront climate-related risks to the global financial system,[20] U.S. regulators continue to ignore the risks, despite the San Francisco Fed's groundbreaking work. For example, Fed Board of Governors Chairman Jay Powell recently wrote that "addressing climate change is a responsibility that Congress has entrusted to other agencies," although regulators have not yet included climate risks in their regulations of the financial sector and climate risks affect the financial system. Powell also wrote that the Fed evaluates the risks from climate change in terms of severe weather events that, in the "short term… 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," but the Fed does not evaluate climate change itself as a long-term systemic threat in the same way.[21]

As climate change continues to increase the frequency and severity of natural disasters, it stresses the financial system, including large institutions such as Goldman Sachs.[22] [23] A 2018 report from the Intergovernmental Panel on Climate Change found that global warming due to human activity has already reached about 1 degree Celsius above pre-industrial levels, and is likely to reach 1.5 degrees in as little as 10 years at current rates.[24] The report found that on the world's current path, global temperatures are set to rise as much as 3.2 degrees Celsius above pre-industrial levels by 2100, and that drastic action is necessary in order to prevent the most

[19] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Investing in the Virtuous Cycle," Robert Freudenberg, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/investing-in-the-virtuous-cycle/.
[20] Insurance Journal, "Many Major Central Banks, Minus U.S. Fed, Taking Action on Climate Change Risks," Jill Ward, September 24, 2019, https://www.insurancejournal.com/news/international/2019/09/24/540932.htm.
[21] Letter from Board of Governors of the Federal Reserve System Chairman Jerome Powell to Senator Brian Schatz, April 18, 2019, https://www.schatz.senate.gov/imo/media/doc/Chair%20Powell%20to%20Sen.%20Schatz%204.18.19.pdf.
[22] Center for American Progress, "Climate Change Threatens the Stability of the Financial System," Gregg Gelzinis and Graham Steele, November 21, 2019, https://www.americanprogress.org/issues/economy/reports/2019/11/21/477190/climate-change-threatens-stability-financial-system/.
[23] Economist Intelligence Unit, "The cost of inaction: Recognising the value at risk from climate change," 2015, https://eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf.
[24] Intergovernmental Panel for Climate Change, "Summary for Policymakers: Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty," https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

catastrophic effects of the climate crisis, including significant changes to global food, energy, water, and security systems.[25]

The Trump administration has taken steps to exacerbate the climate crisis by rolling back rules on air pollution, emissions, fossil fuel extraction, and more.[26] According to government data, these changes may lead to thousands of more premature deaths across the United States.[27] Meanwhile, the dangers from climate change continue to grow.

To protect themselves and the economy from climate-driven catastrophes, large financial institutions must act quickly to address risks. In order to better understand whether your institution is taking steps to understand, estimate the financial risks from, adapt to, and mitigate the climate crisis, I ask that you respond in writing and answer the following questions no later than February 7, 2020.

1. Given the remarks of the President and Chief Executive Officer of the Federal Reserve Bank of San Francisco Mary Daly at the Federal Reserve Bank of San Francisco's November conference, does your institution agree with her remarks that the financial system and its regulators should be required to consider climate-related risks?

2. Does your institution formally assess the system risks that climate change could pose to your assets, investments, and the broader financial system?

    a. If so, what tools and models does your institution use to make these assessments?

    b. What specific changes in your holdings has your institution made as a result of these assessments?

    c. What have these assessments shown with regard to the valuation of any fossil fuel industry-related assets that your bank currently owns or manages, and what actions have you taken in response to these findings?

3. I am an original cosponsor of the *Climate Change Financial Risk Act of 2019*.[28] This bill would add new climate risk scenarios for bank stress tests that the Federal Reserve implemented after the 2008 financial crisis.[29] It would require the Federal Reserve, along with an advisory group of climate experts, to develop three stress test scenarios: one

[25] Washington Post, "In bleak report, U.N. says drastic action is only way to avoid worst effects of climate change," Brady Dennis, November 26, 2019, https://www.washingtonpost.com/climate-environment/2019/11/26/bleak-report-un-says-drastic-action-is-only-way-avoid-worst-impacts-climate-change/.
[26] New York Times, "95 Environmental Rules Being Rolled Back Under Trump," Nadja Popovich, Livia Albeck-Ripka, and Kendra Pierre-Louis, December 21, 2019, https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html.
[27] New York Times, "Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year," Lisa Friedman, August 21, 2018, https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html.
[28] Climate Change Financial Risk Act of 2019, S. 2903, https://www.congress.gov/bill/116th-congress/senate-bill/2903.
[29] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

assuming 1.5 degrees Celsius of warming above pre-industrial levels, one assuming 2 degrees of warming, and one assuming "business as usual" warming.[30] These tests will quantify how expected physical and transition risks will affect economic conditions, and will require financial institutions to define how they will adapt their practices to limit climate impacts. In response, the Federal Reserve will have the power to reject these plans and prohibit institutions from proceeding with capital distributions.

a. Do you support the Federal Reserve conducting stress tests to measure resilience to climate-related financial risks?

b. Please explain how implementation of this bill would affect your bank's current investments in the fossil fuel and other carbon-intensive industries.

c. If this bill were implemented, what would your bank have to change about your overall practices in order to ensure that the Fed does not "object to an unreasonable or ineffective climate risk capital plan"[31] and thus block your capital distributions?

Sincerely,

Elizabeth Warren
United States Senator

[30] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

[31] *Id.*

ELIZABETH WARREN
MASSACHUSETTS

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
HEALTH, EDUCATION, LABOR, AND PENSIONS
ARMED SERVICES
SPECIAL COMMITTEE ON AGING

United States Senate

UNITED STATES SENATE
WASHINGTON, DC 20510–2105
P: 202–224–4543

2400 JFK FEDERAL BUILDING
15 NEW SUDBURY STREET
BOSTON, MA 02203
P: 617–565–3170

1550 MAIN STREET
SUITE 406
SPRINGFIELD, MA 01103
P: 413–788–2690

www.warren.senate.gov

January 21, 2020

Jamie Dimon
Chairman of the Board and Chief Executive Officer
JPMorgan Chase & Co.
383 Madison Avenue
New York, NY 10179

Dear Mr. Dimon:

I write to inquire about your plan to mitigate the risks that your banks and the financial industry face regarding the climate crisis. According to the Financial Stability Board, your institution is a global systemically important bank (G-SIB), under U.S. jurisdiction.[1 2] This classification means that "distress or disorderly failure, because of [your] size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity."[3] Freddie Mac has stated that the climate crisis is "likely to destroy billions of dollars in property and to displace millions of people," which will produce "economic losses and social disruption… likely to be greater in total than those experienced in the housing crisis and Great Recession,"[4] and will undoubtedly have an effect on your bank and its investments. I write to ask for more information about the risks caused by the climate crisis on the financial industry and your institution's practices, including what steps, if any, your institution is taking to adapt to mitigate these risks.

On November 8, 2019, the Federal Reserve Bank of San Francisco (San Francisco Fed) held a conference on "The Economics of Climate Change," which focused on "[discussing] quantifying the climate risk faced by households, firms, and the financial system; measuring the economic costs and consequences of climate change; accounting for the effects of climate change on financial asset prices; and understanding the potential implications of climate change for monetary, supervisory, and trade policy."[5] In her speech at the conference, San Francisco Fed President and Chief Executive Officer Mary Daly stated, "The Federal Reserve's job is to promote a healthy, stable economy. This requires us to consider current and future risks –

---

[1] Financial Stability Board, "Global Systemically Important Financial Institutions (G-SIFIs)," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/.
[2] Congressional Research Service, "Systemically Important or 'Too Big to Fail' Financial Institutions, September 24, 2018, https://crsreports.congress.gov/product/pdf/R/R42150.
[3] Financial Stability Board, "Addressing SIFIs," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/.
[4] Freddie Mac, "Life's a Beach," April 26, 2016, http://www.freddiemac.com/research/insight/20160426_lifes_a_beach.page.
[5] Federal Reserve Bank of San Francisco, "The Economics of Climate Change," November 8, 2019, https://www.frbsf.org/economic-research/events/2019/november/economics-of-climate-change/.

whether we have a direct influence on them or not. Climate change is one of those risks."[6] Federal Reserve (Fed) Governor Lael Brainard also remarked, "Climate risks are projected to have profound effects on the U.S. economy and financial system," and that "Similar to other significant risks, such as cyberattacks, we want our financial system to be resilient to the effects of climate change."[7]

The San Francisco Fed conference echoed research published by the branch in 2019 describing the relationship between climate change and macroeconomic and financial stability. In October 2019, the San Francisco Fed published 18 papers by outside experts warning of the economic risks of the climate crisis, with a focus on climate change risks in low- and moderate-income communities. Reports describe the collection of research as "one of the most specific and dire accountings of the dangers posed to businesses and communities in the United States — a threat so significant that the nation's central bank seems increasingly compelled to address it."[8]

The warnings in the research published by the San Francisco Fed include the possibility of a significant decrease in home values, the end of lending by financial institutions to communities susceptible to flooding, and a loss of tax revenue for towns coming just as they need these funds to build sea walls and make other investments in resilient infrastructure.[9] According to Jesse Keenan, the editor of the San Francisco Fed's publication, "The private sector has always adapted—one either adapts to new markets, products, or services or they go out of business. But the current calculus is more than a function of market share. It is a function of where there will be a market at all."[10] As climate change continues to affect our economy, it is critical to understand your bank's adaptation and mitigation strategies.

One of the papers published by the San Francisco Fed analyzed the impact of climate change—in particular, the effects of sea level rise—on the real estate market.[11] The paper stated that researchers found "evidence that the [sea level rise] exposure discount is driven by sophisticated investors, [who] incorporate new information regarding climate change into their home buying decisions… [but found] little evidence of [sea level rise] exposure discounts among less sophisticated buyers… even though housing likely constitutes the majority of their

---

[6] Federal Reserve Bank of San Francisco, "Why Climate Change Matters to Us," Mary Daly, November 8, 2019, https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/.

[7] Board of Governors of the Federal Reserve System, "Why Climate Change Matters for Monetary Policy and Financial Stability," Lael Brainard, November 8, 2019, https://www.federalreserve.gov/newsevents/speech/brainard20191108a.htm.

[8] New York Times, "Bank Regulators Present a Dire Warning of Financial Risks from Climate Change," Christopher Flavelle, October 17, 2019, https://www.nytimes.com/2019/10/17/climate/federal-reserve-climate-financial-risk.html.

[9] *Id.*

[10] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Climate Adaptation and Community Development," Jesse Keenan, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/climate-adaptation-and-community-development/.

[11] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.

savings."[12] In other words, many buyers are not making fully informed decisions regarding their investments in their homes and property. These findings raise significant challenges for the banking sector, as "communities without substantial financial resources are both the ones most likely to need bank assistance and the most likely to be unaware of the risks they face."[13] Communities that rely on the property investment financing that your bank and other financial institutions provide, should have the most accurate accounting of climate risks–the lack of this information threatens sound lending practices.

One of the 18 published studies also analyzed the current accounting for flood risk assessments in the market.[14] The paper found that, "As the frequency and severity of floods in the U.S. continues to increase due to climate change, the shortcomings of our current tools will be increasingly insufficient to quantify flood risk. Financial institutions and property owners [have] no accurate, standardized way of measuring and understanding that [flood] risk and uncertainty."[15] It is critical that financial institutions accurately assess changes in flood risk and incorporate these estimates into their lending practices. Without strong action to address financing for areas most vulnerable to climate-induced sea-level rise, flood risk "may adversely impact the tax base of municipalities at the time when more tax revenue is needed for flood mitigation infrastructure" and "[at] some point in the next 20 to 30 years… there may be a threat to the availability of the 30-year mortgage in various vulnerable and highly exposed areas."[16] Miscalculating the riskiness of large swaths of loans could have a profound impact on the stability of your institution and the financial system at large.

The climate crisis demands that banks accurately estimate and mitigate risks to social and economic stability; it also presents mutually beneficial investment opportunities, particularly in climate-resilient urban infrastructure. Another study published by the San Francisco Fed explored how the private sector, and federal, state, and local governments must collaborate for communities to develop and finance climate resiliency and adaptation investments.[17] This research found that, "Even large, affluent cities do not currently have the financial capacity in place to fund all of their plans."[18] Therefore, there are significant opportunities for large financial institutions to invest in climate-resilient infrastructure and for banks to incentivize localities and other levels of government to move markets towards more sustainable long-term infrastructure

---

[12] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.
[13] *Id.*
[14] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Flood Risk and Structural Adaptation of Markets: An Outline for Action," Michael Berman, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/flood-risk-and-structural-adaptation-of-markets-an-outline-for-action/.
[15] *Id.*
[16] *Id.*
[17] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Hunting for Money: U.S. Cities Need a System for Financing Climate Resilience and Adaptation," John Cleveland, Jon Crowe, Lois DeBacker, Trine Munk, and Peter Plastrik, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/hunting-for-money-u-s-cities-need-a-system-for-financing-climate-resilience-and-adaptation/.
[18] *Id.*

and transportation planning and incorporate climate-related risks in jurisdictions that are not currently doing so. These actions are particularly important, given findings in another paper published by the San Francisco Fed that, "As the adverse impacts of climate change worsen, the effects on residents of local communities and the organizations that serve them will require changes to the way we plan and invest."[19]

While some central banks around the world are taking action to confront climate-related risks to the global financial system,[20] U.S. regulators continue to ignore the risks, despite the San Francisco Fed's groundbreaking work. For example, Fed Board of Governors Chairman Jay Powell recently wrote that "addressing climate change is a responsibility that Congress has entrusted to other agencies," although regulators have not yet included climate risks in their regulations of the financial sector and climate risks affect the financial system. Powell also wrote that the Fed evaluates the risks from climate change in terms of severe weather events that, in the "short term... 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," but the Fed does not evaluate climate change itself as a long-term systemic threat in the same way.[21]

As climate change continues to increase the frequency and severity of natural disasters, it stresses the financial system, including large institutions such as JPMorgan Chase.[22] [23] A 2018 report from the Intergovernmental Panel on Climate Change found that global warming due to human activity has already reached about 1 degree Celsius above pre-industrial levels, and is likely to reach 1.5 degrees in as little as 10 years at current rates.[24] The report found that on the world's current path, global temperatures are set to rise as much as 3.2 degrees Celsius above pre-industrial levels by 2100, and that drastic action is necessary in order to prevent the most

---

[19] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Investing in the Virtuous Cycle," Robert Freudenberg, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/investing-in-the-virtuous-cycle/.

[20] Insurance Journal, "Many Major Central Banks, Minus U.S. Fed, Taking Action on Climate Change Risks," Jill Ward, September 24, 2019, https://www.insurancejournal.com/news/international/2019/09/24/540932.htm.

[21] Letter from Board of Governors of the Federal Reserve System Chairman Jerome Powell to Senator Brian Schatz, April 18, 2019, https://www.schatz.senate.gov/imo/media/doc/Chair%20Powell%20to%20Sen.%20Schatz%204.18.19.pdf.

[22] Center for American Progress, "Climate Change Threatens the Stability of the Financial System," Gregg Gelzinis and Graham Steele, November 21, 2019, https://www.americanprogress.org/issues/economy/reports/2019/11/21/477190/climate-change-threatens-stability-financial-system/.

[23] Economist Intelligence Unit, "The cost of inaction: Recognising the value at risk from climate change," 2015, https://eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf.

[24] Intergovernmental Panel for Climate Change, "Summary for Policymakers: Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty," https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

catastrophic effects of the climate crisis, including significant changes to global food, energy, water, and security systems.[25]

The Trump administration has taken steps to exacerbate the climate crisis by rolling back rules on air pollution, emissions, fossil fuel extraction, and more.[26] According to government data, these changes may lead to thousands of more premature deaths across the United States.[27] Meanwhile, the dangers from climate change continue to grow.

To protect themselves and the economy from climate-driven catastrophes, large financial institutions must act quickly to address risks. In order to better understand whether your institution is taking steps to understand, estimate the financial risks from, adapt to, and mitigate the climate crisis, I ask that you respond in writing and answer the following questions no later than February 7, 2020.

1. Given the remarks of the President and Chief Executive Officer of the Federal Reserve Bank of San Francisco Mary Daly at the Federal Reserve Bank of San Francisco's November conference, does your institution agree with her remarks that the financial system and its regulators should be required to consider climate-related risks?

2. Does your institution formally assess the system risks that climate change could pose to your assets, investments, and the broader financial system?

    a. If so, what tools and models does your institution use to make these assessments?

    b. What specific changes in your holdings has your institution made as a result of these assessments?

    c. What have these assessments shown with regard to the valuation of any fossil fuel industry-related assets that your bank currently owns or manages, and what actions have you taken in response to these findings?

3. I am an original cosponsor of the *Climate Change Financial Risk Act of 2019*.[28] This bill would add new climate risk scenarios for bank stress tests that the Federal Reserve implemented after the 2008 financial crisis.[29] It would require the Federal Reserve, along with an advisory group of climate experts, to develop three stress test scenarios: one

---

[25] Washington Post, "In bleak report, U.N. says drastic action is only way to avoid worst effects of climate change," Brady Dennis, November 26, 2019, https://www.washingtonpost.com/climate-environment/2019/11/26/bleak-report-un-says-drastic-action-is-only-way-avoid-worst-impacts-climate-change/.
[26] New York Times, "95 Environmental Rules Being Rolled Back Under Trump," Nadja Popovich, Livia Albeck-Ripka, and Kendra Pierre-Louis, December 21, 2019, https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html.
[27] New York Times, "Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year," Lisa Friedman, August 21, 2018, https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html.
[28] Climate Change Financial Risk Act of 2019, S. 2903, https://www.congress.gov/bill/116th-congress/senate-bill/2903.
[29] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

assuming 1.5 degrees Celsius of warming above pre-industrial levels, one assuming 2 degrees of warming, and one assuming "business as usual" warming.[30] These tests will quantify how expected physical and transition risks will affect economic conditions, and will require financial institutions to define how they will adapt their practices to limit climate impacts. In response, the Federal Reserve will have the power to reject these plans and prohibit institutions from proceeding with capital distributions.

a. Do you support the Federal Reserve conducting stress tests to measure resilience to climate-related financial risks?

b. Please explain how implementation of this bill would affect your bank's current investments in the fossil fuel and other carbon-intensive industries.

c. If this bill were implemented, what would your bank have to change about your overall practices in order to ensure that the Fed does not "object to an unreasonable or ineffective climate risk capital plan"[31] and thus block your capital distributions?

Sincerely,

Elizabeth Warren
United States Senator

[30] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.
[31] *Id.*

ELIZABETH WARREN
MASSACHUSETTS

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
HEALTH, EDUCATION, LABOR, AND PENSIONS
ARMED SERVICES
SPECIAL COMMITTEE ON AGING

United States Senate

UNITED STATES SENATE
WASHINGTON, DC 20510-2105
P: 202-224-4543

2400 JFK FEDERAL BUILDING
15 NEW SUDBURY STREET
BOSTON, MA 02203
P: 617-565-3170

1550 MAIN STREET
SUITE 406
SPRINGFIELD, MA 01103
P: 413-788-2690

www.warren.senate.gov

January 21, 2020

James Gorman
Chairman of the Board and Chief Executive Officer
Morgan Stanley & Co.
1585 Broadway Avenue
New York, NY 10036

Dear Mr. Gorman:

I write to inquire about your plan to mitigate the risks that your banks and the financial industry face regarding the climate crisis. According to the Financial Stability Board, your institution is a global systemically important bank (G-SIB), under U.S. jurisdiction.[1] [2] This classification means that "distress or disorderly failure, because of [your] size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity."[3] Freddie Mac has stated that the climate crisis is "likely to destroy billions of dollars in property and to displace millions of people," which will produce "economic losses and social disruption… likely to be greater in total than those experienced in the housing crisis and Great Recession,"[4] and will undoubtedly have an effect on your bank and its investments. I write to ask for more information about the risks caused by the climate crisis on the financial industry and your institution's practices, including what steps, if any, your institution is taking to adapt to mitigate these risks.

On November 8, 2019, the Federal Reserve Bank of San Francisco (San Francisco Fed) held a conference on "The Economics of Climate Change," which focused on "[discussing] quantifying the climate risk faced by households, firms, and the financial system; measuring the economic costs and consequences of climate change; accounting for the effects of climate change on financial asset prices; and understanding the potential implications of climate change for monetary, supervisory, and trade policy."[5] In her speech at the conference, San Francisco Fed President and Chief Executive Officer Mary Daly stated, "The Federal Reserve's job is to promote a healthy, stable economy. This requires us to consider current and future risks –

---

[1] Financial Stability Board, "Global Systemically Important Financial Institutions (G-SIFIs)," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/.
[2] Congressional Research Service, "Systemically Important or 'Too Big to Fail' Financial Institutions, September 24, 2018, https://crsreports.congress.gov/product/pdf/R/R42150.
[3] Financial Stability Board, "Addressing SIFIs," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/.
[4] Freddie Mac, "Life's a Beach," April 26, 2016, http://www.freddiemac.com/research/insight/20160426_lifes_a_beach.page.
[5] Federal Reserve Bank of San Francisco, "The Economics of Climate Change," November 8, 2019, https://www.frbsf.org/economic-research/events/2019/november/economics-of-climate-change/.

whether we have a direct influence on them or not. Climate change is one of those risks."[6] Federal Reserve (Fed) Governor Lael Brainard also remarked, "Climate risks are projected to have profound effects on the U.S. economy and financial system," and that "Similar to other significant risks, such as cyberattacks, we want our financial system to be resilient to the effects of climate change."[7]

The San Francisco Fed conference echoed research published by the branch in 2019 describing the relationship between climate change and macroeconomic and financial stability. In October 2019, the San Francisco Fed published 18 papers by outside experts warning of the economic risks of the climate crisis, with a focus on climate change risks in low- and moderate-income communities. Reports describe the collection of research as "one of the most specific and dire accountings of the dangers posed to businesses and communities in the United States — a threat so significant that the nation's central bank seems increasingly compelled to address it."[8]

The warnings in the research published by the San Francisco Fed include the possibility of a significant decrease in home values, the end of lending by financial institutions to communities susceptible to flooding, and a loss of tax revenue for towns coming just as they need these funds to build sea walls and make other investments in resilient infrastructure.[9] According to Jesse Keenan, the editor of the San Francisco Fed's publication, "The private sector has always adapted—one either adapts to new markets, products, or services or they go out of business. But the current calculus is more than a function of market share. It is a function of where there will be a market at all."[10] As climate change continues to affect our economy, it is critical to understand your bank's adaptation and mitigation strategies.

One of the papers published by the San Francisco Fed analyzed the impact of climate change—in particular, the effects of sea level rise—on the real estate market.[11] The paper stated that researchers found "evidence that the [sea level rise] exposure discount is driven by sophisticated investors, [who] incorporate new information regarding climate change into their home buying decisions... [but found] little evidence of [sea level rise] exposure discounts among less sophisticated buyers... even though housing likely constitutes the majority of their

---

[6] Federal Reserve Bank of San Francisco, "Why Climate Change Matters to Us," Mary Daly, November 8, 2019, https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/.

[7] Board of Governors of the Federal Reserve System, "Why Climate Change Matters for Monetary Policy and Financial Stability," Lael Brainard, November 8, 2019, https://www.federalreserve.gov/newsevents/speech/brainard20191108a.htm.

[8] New York Times, "Bank Regulators Present a Dire Warning of Financial Risks from Climate Change," Christopher Flavelle, October 17, 2019, https://www.nytimes.com/2019/10/17/climate/federal-reserve-climate-financial-risk.html.

[9] *Id.*

[10] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Climate Adaptation and Community Development," Jesse Keenan, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/climate-adaptation-and-community-development/.

[11] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.

savings."[12] In other words, many buyers are not making fully informed decisions regarding their investments in their homes and property. These findings raise significant challenges for the banking sector, as "communities without substantial financial resources are both the ones most likely to need bank assistance and the most likely to be unaware of the risks they face."[13] Communities that rely on the property investment financing that your bank and other financial institutions provide, should have the most accurate accounting of climate risks–the lack of this information threatens sound lending practices.

One of the 18 published studies also analyzed the current accounting for flood risk assessments in the market.[14] The paper found that, "As the frequency and severity of floods in the U.S. continues to increase due to climate change, the shortcomings of our current tools will be increasingly insufficient to quantify flood risk. Financial institutions and property owners [have] no accurate, standardized way of measuring and understanding that [flood] risk and uncertainty."[15] It is critical that financial institutions accurately assess changes in flood risk and incorporate these estimates into their lending practices. Without strong action to address financing for areas most vulnerable to climate-induced sea-level rise, flood risk "may adversely impact the tax base of municipalities at the time when more tax revenue is needed for flood mitigation infrastructure" and "[at] some point in the next 20 to 30 years… there may be a threat to the availability of the 30-year mortgage in various vulnerable and highly exposed areas."[16] Miscalculating the riskiness of large swaths of loans could have a profound impact on the stability of your institution and the financial system at large.

The climate crisis demands that banks accurately estimate and mitigate risks to social and economic stability; it also presents mutually beneficial investment opportunities, particularly in climate-resilient urban infrastructure. Another study published by the San Francisco Fed explored how the private sector, and federal, state, and local governments must collaborate for communities to develop and finance climate resiliency and adaptation investments.[17] This research found that, "Even large, affluent cities do not currently have the financial capacity in place to fund all of their plans."[18] Therefore, there are significant opportunities for large financial institutions to invest in climate-resilient infrastructure and for banks to incentivize localities and other levels of government to move markets towards more sustainable long-term infrastructure

---

[12] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.
[13] *Id.*
[14] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Flood Risk and Structural Adaptation of Markets: An Outline for Action," Michael Berman, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/flood-risk-and-structural-adaptation-of-markets-an-outline-for-action/.
[15] *Id.*
[16] *Id.*
[17] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Hunting for Money: U.S. Cities Need a System for Financing Climate Resilience and Adaptation," John Cleveland, Jon Crowe, Lois DeBacker, Trine Munk, and Peter Plastrik, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/hunting-for-money-u-s-cities-need-a-system-for-financing-climate-resilience-and-adaptation/.
[18] *Id.*

and transportation planning and incorporate climate-related risks in jurisdictions that are not currently doing so. These actions are particularly important, given findings in another paper published by the San Francisco Fed that, "As the adverse impacts of climate change worsen, the effects on residents of local communities and the organizations that serve them will require changes to the way we plan and invest."[19]

While some central banks around the world are taking action to confront climate-related risks to the global financial system,[20] U.S. regulators continue to ignore the risks, despite the San Francisco Fed's groundbreaking work. For example, Fed Board of Governors Chairman Jay Powell recently wrote that "addressing climate change is a responsibility that Congress has entrusted to other agencies," although regulators have not yet included climate risks in their regulations of the financial sector and climate risks affect the financial system. Powell also wrote that the Fed evaluates the risks from climate change in terms of severe weather events that, in the "short term… 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," but the Fed does not evaluate climate change itself as a long-term systemic threat in the same way.[21]

As climate change continues to increase the frequency and severity of natural disasters, it stresses the financial system, including large institutions such as Morgan Stanley.[22] [23] A 2018 report from the Intergovernmental Panel on Climate Change found that global warming due to human activity has already reached about 1 degree Celsius above pre-industrial levels, and is likely to reach 1.5 degrees in as little as 10 years at current rates.[24] The report found that on the world's current path, global temperatures are set to rise as much as 3.2 degrees Celsius above pre-industrial levels by 2100, and that drastic action is necessary in order to prevent the most

[19] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Investing in the Virtuous Cycle," Robert Freudenberg, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/investing-in-the-virtuous-cycle/.
[20] Insurance Journal, "Many Major Central Banks, Minus U.S. Fed, Taking Action on Climate Change Risks," Jill Ward, September 24, 2019, https://www.insurancejournal.com/news/international/2019/09/24/540932.htm.
[21] Letter from Board of Governors of the Federal Reserve System Chairman Jerome Powell to Senator Brian Schatz, April 18, 2019, https://www.schatz.senate.gov/imo/media/doc/Chair%20Powell%20to%20Sen.%20Schatz%204.18.19.pdf.
[22] Center for American Progress, "Climate Change Threatens the Stability of the Financial System," Gregg Gelzinis and Graham Steele, November 21, 2019, https://www.americanprogress.org/issues/economy/reports/2019/11/21/477190/climate-change-threatens-stability-financial-system/.
[23] Economist Intelligence Unit, "The cost of inaction: Recognising the value at risk from climate change," 2015, https://eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf.
[24] Intergovernmental Panel for Climate Change, "Summary for Policymakers: Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty," https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

catastrophic effects of the climate crisis, including significant changes to global food, energy, water, and security systems.[25]

The Trump administration has taken steps to exacerbate the climate crisis by rolling back rules on air pollution, emissions, fossil fuel extraction, and more.[26] According to government data, these changes may lead to thousands of more premature deaths across the United States.[27] Meanwhile, the dangers from climate change continue to grow.

To protect themselves and the economy from climate-driven catastrophes, large financial institutions must act quickly to address risks. In order to better understand whether your institution is taking steps to understand, estimate the financial risks from, adapt to, and mitigate the climate crisis, I ask that you respond in writing and answer the following questions no later than February 7, 2020.

1. Given the remarks of the President and Chief Executive Officer of the Federal Reserve Bank of San Francisco Mary Daly at the Federal Reserve Bank of San Francisco's November conference, does your institution agree with her remarks that the financial system and its regulators should be required to consider climate-related risks?

2. Does your institution formally assess the system risks that climate change could pose to your assets, investments, and the broader financial system?

    a. If so, what tools and models does your institution use to make these assessments?

    b. What specific changes in your holdings has your institution made as a result of these assessments?

    c. What have these assessments shown with regard to the valuation of any fossil fuel industry-related assets that your bank currently owns or manages, and what actions have you taken in response to these findings?

3. I am an original cosponsor of the *Climate Change Financial Risk Act of 2019*.[28] This bill would add new climate risk scenarios for bank stress tests that the Federal Reserve implemented after the 2008 financial crisis.[29] It would require the Federal Reserve, along with an advisory group of climate experts, to develop three stress test scenarios: one

[25] Washington Post, "In bleak report, U.N. says drastic action is only way to avoid worst effects of climate change," Brady Dennis, November 26, 2019, https://www.washingtonpost.com/climate-environment/2019/11/26/bleak-report-un-says-drastic-action-is-only-way-avoid-worst-impacts-climate-change/.
[26] New York Times, "95 Environmental Rules Being Rolled Back Under Trump," Nadja Popovich, Livia Albeck-Ripka, and Kendra Pierre-Louis, December 21, 2019, https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html.
[27] New York Times, "Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year," Lisa Friedman, August 21, 2018, https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html.
[28] Climate Change Financial Risk Act of 2019, S. 2903, https://www.congress.gov/bill/116th-congress/senate-bill/2903.
[29] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

assuming 1.5 degrees Celsius of warming above pre-industrial levels, one assuming 2 degrees of warming, and one assuming "business as usual" warming.[30] These tests will quantify how expected physical and transition risks will affect economic conditions, and will require financial institutions to define how they will adapt their practices to limit climate impacts. In response, the Federal Reserve will have the power to reject these plans and prohibit institutions from proceeding with capital distributions.

a. Do you support the Federal Reserve conducting stress tests to measure resilience to climate-related financial risks?

b. Please explain how implementation of this bill would affect your bank's current investments in the fossil fuel and other carbon-intensive industries.

c. If this bill were implemented, what would your bank have to change about your overall practices in order to ensure that the Fed does not "object to an unreasonable or ineffective climate risk capital plan"[31] and thus block your capital distributions?

Sincerely,

Elizabeth Warren
United States Senator

[30] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.
[31] *Id.*

ELIZABETH WARREN
MASSACHUSETTS

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
HEALTH, EDUCATION, LABOR, AND PENSIONS
ARMED SERVICES
SPECIAL COMMITTEE ON AGING

United States Senate

UNITED STATES SENATE
WASHINGTON, DC 20510–2105
P: 202–224–4543

2400 JFK FEDERAL BUILDING
15 NEW SUDBURY STREET
BOSTON, MA 02203
P: 617–565–3170

1550 MAIN STREET
SUITE 406
SPRINGFIELD, MA 01103
P: 413–788–2690

www.warren.senate.gov

January 21, 2020

Ronald O'Hanley
President and Chief Executive Officer
State Street Corporation
One Lincoln Street
Boston, MA 02111

Dear Mr. O'Hanley:

I write to inquire about your plan to mitigate the risks that your banks and the financial industry face regarding the climate crisis. According to the Financial Stability Board, your institution is a global systemically important bank (G-SIB), under U.S. jurisdiction.[1] [2] This classification means that "distress or disorderly failure, because of [your] size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity."[3] Freddie Mac has stated that the climate crisis is "likely to destroy billions of dollars in property and to displace millions of people," which will produce "economic losses and social disruption… likely to be greater in total than those experienced in the housing crisis and Great Recession,"[4] and will undoubtedly have an effect on your bank and its investments. I write to ask for more information about the risks caused by the climate crisis on the financial industry and your institution's practices, including what steps, if any, your institution is taking to adapt to mitigate these risks.

On November 8, 2019, the Federal Reserve Bank of San Francisco (San Francisco Fed) held a conference on "The Economics of Climate Change," which focused on "[discussing] quantifying the climate risk faced by households, firms, and the financial system; measuring the economic costs and consequences of climate change; accounting for the effects of climate change on financial asset prices; and understanding the potential implications of climate change for monetary, supervisory, and trade policy."[5] In her speech at the conference, San Francisco Fed President and Chief Executive Officer Mary Daly stated, "The Federal Reserve's job is to promote a healthy, stable economy. This requires us to consider current and future risks –

[1] Financial Stability Board, "Global Systemically Important Financial Institutions (G-SIFIs)," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/.
[2] Congressional Research Service, "Systemically Important or 'Too Big to Fail' Financial Institutions, September 24, 2018, https://crsreports.congress.gov/product/pdf/R/R42150.
[3] Financial Stability Board, "Addressing SIFIs," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/.
[4] Freddie Mac, "Life's a Beach," April 26, 2016, http://www.freddiemac.com/research/insight/20160426_lifes_a_beach.page.
[5] Federal Reserve Bank of San Francisco, "The Economics of Climate Change," November 8, 2019, https://www.frbsf.org/economic-research/events/2019/november/economics-of-climate-change/.

whether we have a direct influence on them or not. Climate change is one of those risks."[6] Federal Reserve (Fed) Governor Lael Brainard also remarked, "Climate risks are projected to have profound effects on the U.S. economy and financial system," and that "Similar to other significant risks, such as cyberattacks, we want our financial system to be resilient to the effects of climate change."[7]

The San Francisco Fed conference echoed research published by the branch in 2019 describing the relationship between climate change and macroeconomic and financial stability. In October 2019, the San Francisco Fed published 18 papers by outside experts warning of the economic risks of the climate crisis, with a focus on climate change risks in low- and moderate-income communities. Reports describe the collection of research as "one of the most specific and dire accountings of the dangers posed to businesses and communities in the United States — a threat so significant that the nation's central bank seems increasingly compelled to address it."[8]

The warnings in the research published by the San Francisco Fed include the possibility of a significant decrease in home values, the end of lending by financial institutions to communities susceptible to flooding, and a loss of tax revenue for towns coming just as they need these funds to build sea walls and make other investments in resilient infrastructure.[9] According to Jesse Keenan, the editor of the San Francisco Fed's publication, "The private sector has always adapted—one either adapts to new markets, products, or services or they go out of business. But the current calculus is more than a function of market share. It is a function of where there will be a market at all."[10] As climate change continues to affect our economy, it is critical to understand your bank's adaptation and mitigation strategies.

One of the papers published by the San Francisco Fed analyzed the impact of climate change—in particular, the effects of sea level rise—on the real estate market.[11] The paper stated that researchers found "evidence that the [sea level rise] exposure discount is driven by sophisticated investors, [who] incorporate new information regarding climate change into their home buying decisions… [but found] little evidence of [sea level rise] exposure discounts among less sophisticated buyers… even though housing likely constitutes the majority of their

---

[6] Federal Reserve Bank of San Francisco, "Why Climate Change Matters to Us," Mary Daly, November 8, 2019, https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/.

[7] Board of Governors of the Federal Reserve System, "Why Climate Change Matters for Monetary Policy and Financial Stability," Lael Brainard, November 8, 2019, https://www.federalreserve.gov/newsevents/speech/brainard20191108a.htm.

[8] New York Times, "Bank Regulators Present a Dire Warning of Financial Risks from Climate Change," Christopher Flavelle, October 17, 2019, https://www.nytimes.com/2019/10/17/climate/federal-reserve-climate-financial-risk.html.

[9] *Id.*

[10] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Climate Adaptation and Community Development," Jesse Keenan, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/climate-adaptation-and-community-development/.

[11] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.

savings."[12] In other words, many buyers are not making fully informed decisions regarding their investments in their homes and property. These findings raise significant challenges for the banking sector, as "communities without substantial financial resources are both the ones most likely to need bank assistance and the most likely to be unaware of the risks they face."[13] Communities that rely on the property investment financing that your bank and other financial institutions provide, should have the most accurate accounting of climate risks–the lack of this information threatens sound lending practices.

One of the 18 published studies also analyzed the current accounting for flood risk assessments in the market.[14] The paper found that, "As the frequency and severity of floods in the U.S. continues to increase due to climate change, the shortcomings of our current tools will be increasingly insufficient to quantify flood risk. Financial institutions and property owners [have] no accurate, standardized way of measuring and understanding that [flood] risk and uncertainty."[15] It is critical that financial institutions accurately assess changes in flood risk and incorporate these estimates into their lending practices. Without strong action to address financing for areas most vulnerable to climate-induced sea-level rise, flood risk "may adversely impact the tax base of municipalities at the time when more tax revenue is needed for flood mitigation infrastructure" and "[at] some point in the next 20 to 30 years… there may be a threat to the availability of the 30-year mortgage in various vulnerable and highly exposed areas."[16] Miscalculating the riskiness of large swaths of loans could have a profound impact on the stability of your institution and the financial system at large.

The climate crisis demands that banks accurately estimate and mitigate risks to social and economic stability; it also presents mutually beneficial investment opportunities, particularly in climate-resilient urban infrastructure. Another study published by the San Francisco Fed explored how the private sector, and federal, state, and local governments must collaborate for communities to develop and finance climate resiliency and adaptation investments.[17] This research found that, "Even large, affluent cities do not currently have the financial capacity in place to fund all of their plans."[18] Therefore, there are significant opportunities for large financial institutions to invest in climate-resilient infrastructure and for banks to incentivize localities and other levels of government to move markets towards more sustainable long-term infrastructure

---

[12] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.

[13] *Id.*

[14] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Flood Risk and Structural Adaptation of Markets: An Outline for Action," Michael Berman, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/flood-risk-and-structural-adaptation-of-markets-an-outline-for-action/.

[15] *Id.*

[16] *Id.*

[17] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Hunting for Money: U.S. Cities Need a System for Financing Climate Resilience and Adaptation," John Cleveland, Jon Crowe, Lois DeBacker, Trine Munk, and Peter Plastrik, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/hunting-for-money-u-s-cities-need-a-system-for-financing-climate-resilience-and-adaptation/.

[18] *Id.*

and transportation planning and incorporate climate-related risks in jurisdictions that are not currently doing so. These actions are particularly important, given findings in another paper published by the San Francisco Fed that, "As the adverse impacts of climate change worsen, the effects on residents of local communities and the organizations that serve them will require changes to the way we plan and invest."[19]

While some central banks around the world are taking action to confront climate-related risks to the global financial system,[20] U.S. regulators continue to ignore the risks, despite the San Francisco Fed's groundbreaking work. For example, Fed Board of Governors Chairman Jay Powell recently wrote that "addressing climate change is a responsibility that Congress has entrusted to other agencies," although regulators have not yet included climate risks in their regulations of the financial sector and climate risks affect the financial system. Powell also wrote that the Fed evaluates the risks from climate change in terms of severe weather events that, in the "short term... 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," but the Fed does not evaluate climate change itself as a long-term systemic threat in the same way.[21]

As climate change continues to increase the frequency and severity of natural disasters, it stresses the financial system, including large institutions such as State Street.[22] [23] A 2018 report from the Intergovernmental Panel on Climate Change found that global warming due to human activity has already reached about 1 degree Celsius above pre-industrial levels, and is likely to reach 1.5 degrees in as little as 10 years at current rates.[24] The report found that on the world's current path, global temperatures are set to rise as much as 3.2 degrees Celsius above pre-industrial levels by 2100, and that drastic action is necessary in order to prevent the most

---

[19] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Investing in the Virtuous Cycle," Robert Freudenberg, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/investing-in-the-virtuous-cycle/.

[20] Insurance Journal, "Many Major Central Banks, Minus U.S. Fed, Taking Action on Climate Change Risks," Jill Ward, September 24, 2019, https://www.insurancejournal.com/news/international/2019/09/24/540932.htm.

[21] Letter from Board of Governors of the Federal Reserve System Chairman Jerome Powell to Senator Brian Schatz, April 18, 2019, https://www.schatz.senate.gov/imo/media/doc/Chair%20Powell%20to%20Sen.%20Schatz%204.18.19.pdf.

[22] Center for American Progress, "Climate Change Threatens the Stability of the Financial System," Gregg Gelzinis and Graham Steele, November 21, 2019, https://www.americanprogress.org/issues/economy/reports/2019/11/21/477190/climate-change-threatens-stability-financial-system/.

[23] Economist Intelligence Unit, "The cost of inaction: Recognising the value at risk from climate change," 2015, https://eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf.

[24] Intergovernmental Panel for Climate Change, "Summary for Policymakers: Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty," https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

catastrophic effects of the climate crisis, including significant changes to global food, energy, water, and security systems.[25]

The Trump administration has taken steps to exacerbate the climate crisis by rolling back rules on air pollution, emissions, fossil fuel extraction, and more.[26] According to government data, these changes may lead to thousands of more premature deaths across the United States.[27] Meanwhile, the dangers from climate change continue to grow.

To protect themselves and the economy from climate-driven catastrophes, large financial institutions must act quickly to address risks. In order to better understand whether your institution is taking steps to understand, estimate the financial risks from, adapt to, and mitigate the climate crisis, I ask that you respond in writing and answer the following questions no later than February 7, 2020.

1. Given the remarks of the President and Chief Executive Officer of the Federal Reserve Bank of San Francisco Mary Daly at the Federal Reserve Bank of San Francisco's November conference, does your institution agree with her remarks that the financial system and its regulators should be required to consider climate-related risks?

2. Does your institution formally assess the system risks that climate change could pose to your assets, investments, and the broader financial system?

    a. If so, what tools and models does your institution use to make these assessments?

    b. What specific changes in your holdings has your institution made as a result of these assessments?

    c. What have these assessments shown with regard to the valuation of any fossil fuel industry-related assets that your bank currently owns or manages, and what actions have you taken in response to these findings?

3. I am an original cosponsor of the *Climate Change Financial Risk Act of 2019*.[28] This bill would add new climate risk scenarios for bank stress tests that the Federal Reserve implemented after the 2008 financial crisis.[29] It would require the Federal Reserve, along with an advisory group of climate experts, to develop three stress test scenarios: one

[25] Washington Post, "In bleak report, U.N. says drastic action is only way to avoid worst effects of climate change," Brady Dennis, November 26, 2019, https://www.washingtonpost.com/climate-environment/2019/11/26/bleak-report-un-says-drastic-action-is-only-way-avoid-worst-impacts-climate-change/.
[26] New York Times, "95 Environmental Rules Being Rolled Back Under Trump," Nadja Popovich, Livia Albeck-Ripka, and Kendra Pierre-Louis, December 21, 2019, https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html.
[27] New York Times, "Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year," Lisa Friedman, August 21, 2018, https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html.
[28] Climate Change Financial Risk Act of 2019, S. 2903, https://www.congress.gov/bill/116th-congress/senate-bill/2903.
[29] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

assuming 1.5 degrees Celsius of warming above pre-industrial levels, one assuming 2 degrees of warming, and one assuming "business as usual" warming.[30] These tests will quantify how expected physical and transition risks will affect economic conditions, and will require financial institutions to define how they will adapt their practices to limit climate impacts. In response, the Federal Reserve will have the power to reject these plans and prohibit institutions from proceeding with capital distributions.

a. Do you support the Federal Reserve conducting stress tests to measure resilience to climate-related financial risks?

b. Please explain how implementation of this bill would affect your bank's current investments in the fossil fuel and other carbon-intensive industries.

c. If this bill were implemented, what would your bank have to change about your overall practices in order to ensure that the Fed does not "object to an unreasonable or ineffective climate risk capital plan"[31] and thus block your capital distributions?

Sincerely,

Elizabeth Warren
United States Senator

[30] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.
[31] *Id.*

ELIZABETH WARREN
MASSACHUSETTS

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
HEALTH, EDUCATION, LABOR, AND PENSIONS
ARMED SERVICES
SPECIAL COMMITTEE ON AGING

United States Senate

UNITED STATES SENATE
WASHINGTON, DC 20510-2105
P: 202-224-4543

2400 JFK FEDERAL BUILDING
15 NEW SUDBURY STREET
BOSTON, MA 02203
P: 617-565-3170

1550 MAIN STREET
SUITE 406
SPRINGFIELD, MA 01103
P: 413-788-2690

www.warren.senate.gov

January 21, 2020

Charles Scharf
Chief Executive Officer and President
Wells Fargo
420 Montgomery Street
San Francisco, CA 94104

Dear Mr. Scharf:

I write to inquire about your plan to mitigate the risks that your banks and the financial industry face regarding the climate crisis. According to the Financial Stability Board, your institution is a global systemically important bank (G-SIB), under U.S. jurisdiction.[1] [2] This classification means that "distress or disorderly failure, because of [your] size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity."[3] Freddie Mac has stated that the climate crisis is "likely to destroy billions of dollars in property and to displace millions of people," which will produce "economic losses and social disruption… likely to be greater in total than those experienced in the housing crisis and Great Recession,"[4] and will undoubtedly have an effect on your bank and its investments. I write to ask for more information about the risks caused by the climate crisis on the financial industry and your institution's practices, including what steps, if any, your institution is taking to adapt to mitigate these risks.

On November 8, 2019, the Federal Reserve Bank of San Francisco (San Francisco Fed) held a conference on "The Economics of Climate Change," which focused on "[discussing] quantifying the climate risk faced by households, firms, and the financial system; measuring the economic costs and consequences of climate change; accounting for the effects of climate change on financial asset prices; and understanding the potential implications of climate change for monetary, supervisory, and trade policy."[5] In her speech at the conference, San Francisco Fed President and Chief Executive Officer Mary Daly stated, "The Federal Reserve's job is to promote a healthy, stable economy. This requires us to consider current and future risks –

---

[1] Financial Stability Board, "Global Systemically Important Financial Institutions (G-SIFIs)," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/.
[2] Congressional Research Service, "Systemically Important or 'Too Big to Fail' Financial Institutions, September 24, 2018, https://crsreports.congress.gov/product/pdf/R/R42150.
[3] Financial Stability Board, "Addressing SIFIs," Accessed December 17, 2019, https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/.
[4] Freddie Mac, "Life's a Beach," April 26, 2016, http://www.freddiemac.com/research/insight/20160426_lifes_a_beach.page.
[5] Federal Reserve Bank of San Francisco, "The Economics of Climate Change," November 8, 2019, https://www.frbsf.org/economic-research/events/2019/november/economics-of-climate-change/.

whether we have a direct influence on them or not. Climate change is one of those risks."[6] Federal Reserve (Fed) Governor Lael Brainard also remarked, "Climate risks are projected to have profound effects on the U.S. economy and financial system," and that "Similar to other significant risks, such as cyberattacks, we want our financial system to be resilient to the effects of climate change."[7]

The San Francisco Fed conference echoed research published by the branch in 2019 describing the relationship between climate change and macroeconomic and financial stability. In October 2019, the San Francisco Fed published 18 papers by outside experts warning of the economic risks of the climate crisis, with a focus on climate change risks in low- and moderate-income communities. Reports describe the collection of research as "one of the most specific and dire accountings of the dangers posed to businesses and communities in the United States — a threat so significant that the nation's central bank seems increasingly compelled to address it."[8]

The warnings in the research published by the San Francisco Fed include the possibility of a significant decrease in home values, the end of lending by financial institutions to communities susceptible to flooding, and a loss of tax revenue for towns coming just as they need these funds to build sea walls and make other investments in resilient infrastructure.[9] According to Jesse Keenan, the editor of the San Francisco Fed's publication, "The private sector has always adapted—one either adapts to new markets, products, or services or they go out of business. But the current calculus is more than a function of market share. It is a function of where there will be a market at all."[10] As climate change continues to affect our economy, it is critical to understand your bank's adaptation and mitigation strategies.

One of the papers published by the San Francisco Fed analyzed the impact of climate change—in particular, the effects of sea level rise—on the real estate market.[11] The paper stated that researchers found "evidence that the [sea level rise] exposure discount is driven by sophisticated investors, [who] incorporate new information regarding climate change into their home buying decisions… [but found] little evidence of [sea level rise] exposure discounts among less sophisticated buyers… even though housing likely constitutes the majority of their

---

[6] Federal Reserve Bank of San Francisco, "Why Climate Change Matters to Us," Mary Daly, November 8, 2019, https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/.
[7] Board of Governors of the Federal Reserve System, "Why Climate Change Matters for Monetary Policy and Financial Stability," Lael Brainard, November 8, 2019, https://www.federalreserve.gov/newsevents/speech/brainard20191108a.htm.
[8] New York Times, "Bank Regulators Present a Dire Warning of Financial Risks from Climate Change," Christopher Flavelle, October 17, 2019, https://www.nytimes.com/2019/10/17/climate/federal-reserve-climate-financial-risk.html.
[9] *Id.*
[10] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Climate Adaptation and Community Development," Jesse Keenan, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/climate-adaptation-and-community-development/.
[11] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.

savings."[12] In other words, many buyers are not making fully informed decisions regarding their investments in their homes and property. These findings raise significant challenges for the banking sector, as "communities without substantial financial resources are both the ones most likely to need bank assistance and the most likely to be unaware of the risks they face."[13] Communities that rely on the property investment financing that your bank and other financial institutions provide, should have the most accurate accounting of climate risks–the lack of this information threatens sound lending practices.

One of the 18 published studies also analyzed the current accounting for flood risk assessments in the market.[14] The paper found that, "As the frequency and severity of floods in the U.S. continues to increase due to climate change, the shortcomings of our current tools will be increasingly insufficient to quantify flood risk. Financial institutions and property owners [have] no accurate, standardized way of measuring and understanding that [flood] risk and uncertainty."[15] It is critical that financial institutions accurately assess changes in flood risk and incorporate these estimates into their lending practices. Without strong action to address financing for areas most vulnerable to climate-induced sea-level rise, flood risk "may adversely impact the tax base of municipalities at the time when more tax revenue is needed for flood mitigation infrastructure" and "[at] some point in the next 20 to 30 years… there may be a threat to the availability of the 30-year mortgage in various vulnerable and highly exposed areas."[16] Miscalculating the riskiness of large swaths of loans could have a profound impact on the stability of your institution and the financial system at large.

The climate crisis demands that banks accurately estimate and mitigate risks to social and economic stability; it also presents mutually beneficial investment opportunities, particularly in climate-resilient urban infrastructure. Another study published by the San Francisco Fed explored how the private sector, and federal, state, and local governments must collaborate for communities to develop and finance climate resiliency and adaptation investments.[17] This research found that, "Even large, affluent cities do not currently have the financial capacity in place to fund all of their plans."[18] Therefore, there are significant opportunities for large financial institutions to invest in climate-resilient infrastructure and for banks to incentivize localities and other levels of government to move markets towards more sustainable long-term infrastructure

---

[12] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Real Estate as a Tool for Adaptive Banking," Asaf Bernstein, Matthew Gustafson, and Ryan Lewis, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/real-estate-as-a-tool-for-adaptive-banking/.
[13] *Id.*
[14] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Flood Risk and Structural Adaptation of Markets: An Outline for Action," Michael Berman, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/flood-risk-and-structural-adaptation-of-markets-an-outline-for-action/.
[15] *Id.*
[16] *Id.*
[17] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Hunting for Money: U.S. Cities Need a System for Financing Climate Resilience and Adaptation," John Cleveland, Jon Crowe, Lois DeBacker, Trine Munk, and Peter Plastrik, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/hunting-for-money-u-s-cities-need-a-system-for-financing-climate-resilience-and-adaptation/.
[18] *Id.*

and transportation planning and incorporate climate-related risks in jurisdictions that are not currently doing so. These actions are particularly important, given findings in another paper published by the San Francisco Fed that, "As the adverse impacts of climate change worsen, the effects on residents of local communities and the organizations that serve them will require changes to the way we plan and invest."[19]

While some central banks around the world are taking action to confront climate-related risks to the global financial system,[20] U.S. regulators continue to ignore the risks, despite the San Francisco Fed's groundbreaking work. For example, Fed Board of Governors Chairman Jay Powell recently wrote that "addressing climate change is a responsibility that Congress has entrusted to other agencies," although regulators have not yet included climate risks in their regulations of the financial sector and climate risks affect the financial system. Powell also wrote that the Fed evaluates the risks from climate change in terms of severe weather events that, in the "short term… 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," but the Fed does not evaluate climate change itself as a long-term systemic threat in the same way.[21]

As climate change continues to increase the frequency and severity of natural disasters, it stresses the financial system, including large institutions such as Wells Fargo.[22] [23] A 2018 report from the Intergovernmental Panel on Climate Change found that global warming due to human activity has already reached about 1 degree Celsius above pre-industrial levels, and is likely to reach 1.5 degrees in as little as 10 years at current rates.[24] The report found that on the world's current path, global temperatures are set to rise as much as 3.2 degrees Celsius above pre-industrial levels by 2100, and that drastic action is necessary in order to prevent the most

---

[19] Federal Reserve Bank of San Francisco, "Community Development Innovation Review: Investing in the Virtuous Cycle," Robert Freudenberg, October 17, 2019, https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/investing-in-the-virtuous-cycle/.

[20] Insurance Journal, "Many Major Central Banks, Minus U.S. Fed, Taking Action on Climate Change Risks," Jill Ward, September 24, 2019, https://www.insurancejournal.com/news/international/2019/09/24/540932.htm.

[21] Letter from Board of Governors of the Federal Reserve System Chairman Jerome Powell to Senator Brian Schatz, April 18, 2019, https://www.schatz.senate.gov/imo/media/doc/Chair%20Powell%20to%20Sen.%20Schatz%204.18.19.pdf.

[22] Center for American Progress, "Climate Change Threatens the Stability of the Financial System," Gregg Gelzinis and Graham Steele, November 21, 2019, https://www.americanprogress.org/issues/economy/reports/2019/11/21/477190/climate-change-threatens-stability-financial-system/.

[23] Economist Intelligence Unit, "The cost of inaction: Recognising the value at risk from climate change," 2015, https://eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf.

[24] Intergovernmental Panel for Climate Change, "Summary for Policymakers: Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty," https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf.

catastrophic effects of the climate crisis, including significant changes to global food, energy, water, and security systems.[25]

The Trump administration has taken steps to exacerbate the climate crisis by rolling back rules on air pollution, emissions, fossil fuel extraction, and more.[26] According to government data, these changes may lead to thousands of more premature deaths across the United States.[27] Meanwhile, the dangers from climate change continue to grow.

To protect themselves and the economy from climate-driven catastrophes, large financial institutions must act quickly to address risks. In order to better understand whether your institution is taking steps to understand, estimate the financial risks from, adapt to, and mitigate the climate crisis, I ask that you respond in writing and answer the following questions no later than February 7, 2020.

1. Given the remarks of the President and Chief Executive Officer of the Federal Reserve Bank of San Francisco Mary Daly at the Federal Reserve Bank of San Francisco's November conference, does your institution agree with her remarks that the financial system and its regulators should be required to consider climate-related risks?

2. Does your institution formally assess the system risks that climate change could pose to your assets, investments, and the broader financial system?

    a. If so, what tools and models does your institution use to make these assessments?

    b. What specific changes in your holdings has your institution made as a result of these assessments?

    c. What have these assessments shown with regard to the valuation of any fossil fuel industry-related assets that your bank currently owns or manages, and what actions have you taken in response to these findings?

3. I am an original cosponsor of the *Climate Change Financial Risk Act of 2019*.[28] This bill would add new climate risk scenarios for bank stress tests that the Federal Reserve implemented after the 2008 financial crisis.[29] It would require the Federal Reserve, along with an advisory group of climate experts, to develop three stress test scenarios: one

[25] Washington Post, "In bleak report, U.N. says drastic action is only way to avoid worst effects of climate change," Brady Dennis, November 26, 2019, https://www.washingtonpost.com/climate-environment/2019/11/26/bleak-report-un-says-drastic-action-is-only-way-avoid-worst-impacts-climate-change/.
[26] New York Times, "95 Environmental Rules Being Rolled Back Under Trump," Nadja Popovich, Livia Albeck-Ripka, and Kendra Pierre-Louis, December 21, 2019, https://www.nytimes.com/interactive/2019/climate/trump-environment-rollbacks.html.
[27] New York Times, "Cost of New E.P.A. Coal Rules: Up to 1,400 More Deaths a Year," Lisa Friedman, August 21, 2018, https://www.nytimes.com/2018/08/21/climate/epa-coal-pollution-deaths.html.
[28] Climate Change Financial Risk Act of 2019, S. 2903, https://www.congress.gov/bill/116th-congress/senate-bill/2903.
[29] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.

assuming 1.5 degrees Celsius of warming above pre-industrial levels, one assuming 2 degrees of warming, and one assuming "business as usual" warming.[30] These tests will quantify how expected physical and transition risks will affect economic conditions, and will require financial institutions to define how they will adapt their practices to limit climate impacts. In response, the Federal Reserve will have the power to reject these plans and prohibit institutions from proceeding with capital distributions.

a. Do you support the Federal Reserve conducting stress tests to measure resilience to climate-related financial risks?

b. Please explain how implementation of this bill would affect your bank's current investments in the fossil fuel and other carbon-intensive industries.

c. If this bill were implemented, what would your bank have to change about your overall practices in order to ensure that the Fed does not "object to an unreasonable or ineffective climate risk capital plan"[31] and thus block your capital distributions?

Sincerely,

Elizabeth Warren

Elizabeth Warren
United States Senator

---

[30] Office of Senator Schatz, "Schatz Introduces New Legislation to Ensure U.S. Financial System is Prepared for Climate Change," November 20, 2019, https://www.schatz.senate.gov/press-releases/schatz-introduces-new-legislation-to-ensure-us-financial-system-is-prepared-for-climate-change.
[31] *Id.*