SECTION 6
Climate-Related Financial Risks

- **Changing climate conditions present challenges to individual financial institutions and the broader financial system.**
- **In 2023, the number of billion-dollar climate events was the highest on record for a single year since 1980.**
- **While insurance policies may cover some or all of the loss associated with many severe climate and weather events, policies are becoming more expensive or unavailable.**

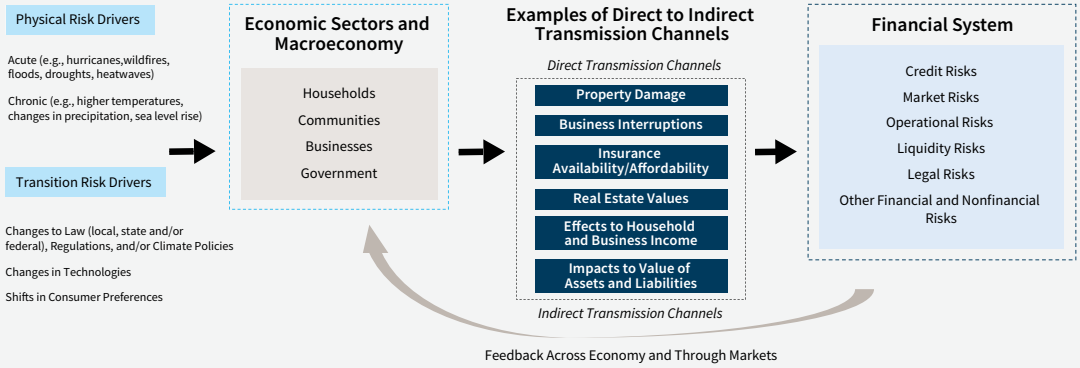
Changing climate conditions present challenges to individual banks and the financial system as a whole. Changes in climate conditions, including the increasing frequency and intensity of severe climate and weather events and other natural disasters, will likely result in growing economic and financial losses to many businesses, households, and governments.[71] Moreover, uncertainty about the severity and timing of these losses is a source of risk to the stability of the financial system. Climate-related financial risks, including both transition and physical risks, can spread to the banking system through many channels including through credit, market, and liquidity risks (see Box B for more information). This report focuses on physical risks to banks.

[71] Glenn D. Rudebusch, "Climate Change Is a Source of Financial Risk," Federal Reserve Bank of San Francisco, Economic Letter, February 8, 2021.

Box B: Transition and Physical Climate-Related Financial Risks to Banks

Climate-related financial risks can be grouped into two broad categories: physical risks and transition risks. Physical risks refer to the harm to people and property from acute, climate-related events such as hurricanes, wildfires, floods and heatwaves, and chronic shifts in climate, including higher average temperatures, changes in precipitation patterns, sea level rise, and ocean acidification. Transition risks generally refer to stresses to institutions or sectors arising from the shifts in policy, consumer and business sentiment, or technologies associated with the changes that would be part of a transition to a lower carbon economy.[1]

Physical and Transition Climate Risk Drivers – Examples of Transmission Channels and Impacts



Source: FDIC.
Note: Diagram intended to provide indicative examples and is not exhaustive.

Banks are likely to be affected by both the physical risks and transition risks associated with climate change. Weaknesses in how banks identify, measure, monitor, and control climate-related financial risks could adversely affect the safety and soundness of financial institutions.[2] Physical and transition risks associated with climate change could affect households, communities, businesses, and government—damaging property, impeding business activity, affecting income, and altering the value of assets and liabilities. These risks may be propagated throughout the economy and financial system. As a result, the financial sector may experience credit and market risks associated with loss of income, defaults, and changes in the value of assets; liquidity risks associated with changing demand for liquidity; operational risks associated with disruptions to infrastructure or other channels; or legal risks.[3]

[1] Principles for Climate-Related Financial Risk Management for Large Financial Institutions, 88 Fed. Reg., 74183–74189 (October 30, 2023). The Risk Review is a retrospective review of risks in 2023, and this section focuses solely on physical risk from severe climate and weather events that occurred in 2023.

[2] Principles for Climate-Related Financial Risk Management for Large Financial Institutions, 88 Fed. Reg., 74183–74189 (October 30, 2023).

[3] Financial Stability Oversight Council, "Report on Climate-Related Financial Risk 2021," October 21, 2021.

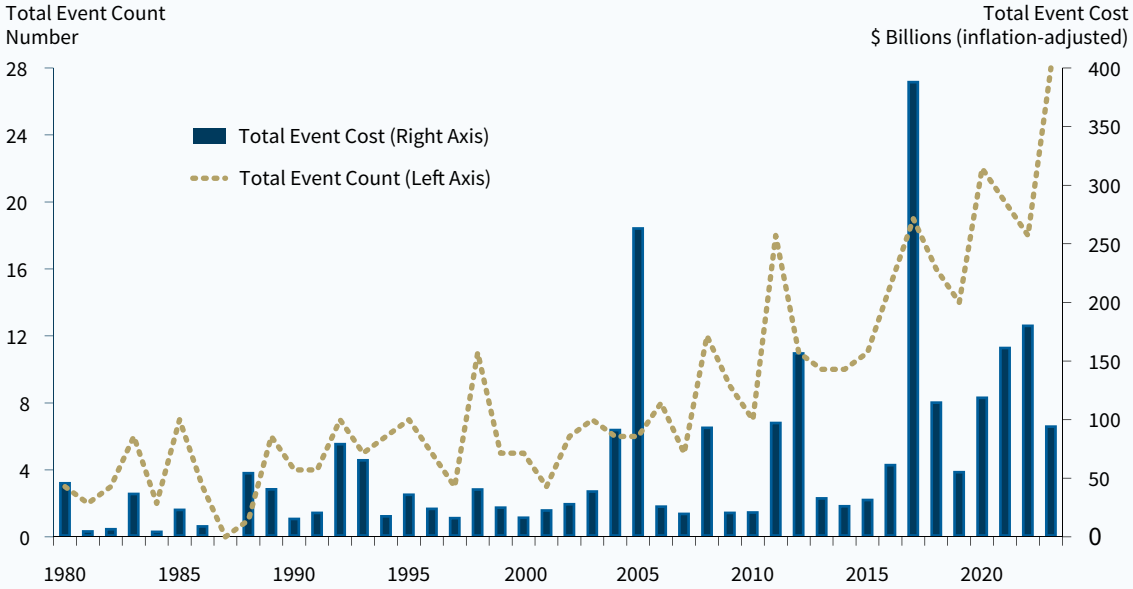
The number of severe climate and weather-related events, defined as events with estimated inflation-adjusted damages of $1 billion or more, reached a new high in 2023. There were 28 weather and climate-related events exceeding $1 billion each during 2023, the highest number of these events on record.[72] The number of weather and climate-related events over $1 billion has consistently trended up since the National Oceanic and Atmospheric Administration (NOAA) started tracking these data in 1980 (Chart 47). Although the number of these events reached a record high, the total event cost incurred in 2023 was $92.9 billion, down considerably from nearly $180 billion in 2022.[73] Since 1980, there have been 376 severe climate and weather events costing more than $2.6 trillion in total.

Severe storms, drought, and wildfires accounted for the vast majority of significant climate events in 2023. A record number of severe storms (19) crossed the $1 billion damage threshold in 2023. These severe storms included hundreds of tornadoes, hailstorms, and storms with high winds. The most expensive severe storm in 2023, which occurred in March, affected seven southern and eastern states as high winds and tornadoes caused $6 billion in damages to homes, vehicles, businesses, and infrastructure.[74]

Drought conditions affected numerous southern and midwestern states in 2023, damaging field crops from lack of rainfall and forcing some ranchers to sell off livestock early due to high feeding costs.[75] For the second straight year, portions of the Mississippi

CHART 47

The Number of Billion-Dollar Disaster Events Reported in 2023 Reached an All-Time High



Source: National Oceanic and Atmospheric Administration - National Centers for Environmental Information.
Note: Natural disasters include droughts, floods, freezings, severe storms, tropical cyclones, wildfires, and winter storms that caused at least $1 billion in damages. Data are annual through 2023.

[72] NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters. https://www.ncei.noaa.gov/access/billions/, DOI: 10.25921/stkw-7w73.

[73] The primary reason that the costs incurred from severe climate and weather events were lower in 2023 is that the United States was spared a major hurricane affecting a major metropolitan area. Still, NOAA has stated that the total cost figure for 2023 may rise by several billion once the agency has fully accounted for the costs of a major storm and flooding event that occurred in December 2023. See Adam B. Smith, "2023: A Historic Year of U.S. Billion-Dollar Weather and Climate Disasters," NOAA, January 8, 2024.

[74] Texas, Alabama, Mississippi, Tennessee, Kentucky, Indiana, and Ohio.

[75] Texas, Louisiana, Oklahoma, Kansas, Illinois, Missouri, and Nebraska.

River experienced low water levels, affecting river commerce.[76] In addition, the Colorado River Basin has reported successive years of low water levels because of ongoing drought conditions.

In August of 2023, devastating wildfires encompassed the island of Maui, Hawaii, and destroyed the historic town of Lahaina. High winds from Hurricane Dora that hit the island concurrently exacerbated the wildfire, known as the Maui firestorm, which ultimately destroyed nearly 3,000 structures in a 4.5 square kilometer area. The Maui firestorm caused an estimated $5.6 billion in damages and was the deadliest U.S. wildfire in more than a century with more than 100 fatalities.[77]

Some climate-related events caused adverse effects in regions that have not traditionally been exposed to such events, and the damage extended far beyond the event's initial site. For example, the 2023 Canadian wildfires saw smoke and air pollution drift hundreds of miles outside of the fire perimeter, blanketing much of the central and eastern United States.[78] Despite not reaching NOAA's billion-dollar threshold, the widespread nature of this and other events underscores the uncertainty associated with climate change.

While insurance policies may cover some or all of the loss associated with many severe climate and weather events, policies are becoming more expensive or unavailable. Insurers play an important role in the financial system by absorbing losses stemming from physical risks.[79] However, the insurance industry has experienced poor financial performance in recent years due to unexpectedly high inflation, a shift of exposures to higher risk areas, and rising reinsurance costs. In addition, the insurance industry is incurring rapidly rising losses from more frequent and severe weather events.[80] In the face of these growing challenges, many private insurance companies have reassessed their typical operating models. Some insurers have sought to raise prices on premiums, reducing insurance affordability for homeowners. While some insurance companies have increased their rates, others have declined to offer new policies.[81] For example, in 2023, two large homeowner insurance companies announced that they would pause issuing new policies in California, citing rising exposure to catastrophes as the primary reason.[82] American International Group also reduced property insurance coverage to homes along the East Coast at risk of flooding and those in the western United States at risk of burning.[83]

When insurance becomes unavailable or too costly, some homeowners choose to go without it.[84] According to reports, more than 12 percent of homeowners nationwide have chosen to forgo home insurance.[85] A lack of insurance makes the recovery from natural disasters more difficult for affected individuals and communities. If the area damaged from a natural disaster is sufficiently large, there could also be macroeconomic effects that negatively affect financial institutions exposed to a substantial number of affected properties.[86] According to the Financial Stability Oversight Council, increasing climate-related losses and decreasing insurance coverage for these losses could increase financial institution exposure to disaster risk and may have financial stability implications.[87]

[76] Brian K. Sullivan, "America's Most Crucial Waterway Is Drying Out," Bloomberg, July 14, 2023.

[77] Rachel Treisman, "Maui's Wildfires Are Among the Deadliest on Record in the U.S. Here Are Some Others," National Public Radio, August 15, 2023.

[78] Xudong An, Stuart A. Gabriel, and Nitzan Tzur-Ilan, "Extreme Wildfires, Distant Air Pollution, and Household Financial Health," (Working Paper no. 24-1, Federal Reserve Bank of Philadelphia, January 2024).

[79] Financial Stability Oversight Council, Annual Report 2023, December 14, 2023.

[80] Arthur Fliegelman, "Wind, Fire, Water, Hail: What Is Going on in the Property Insurance Market and Why Does It Matter?," Office of Financial Research, December 14, 2023.

[81] Alice C. Hill, "Climate Change and U.S. Property Insurance: A Stormy Mix," Council on Foreign Relations, August 17, 2023.

[82] Emily DeLetter, "Allstate No Longer Offering New Policies in California due to Wildfires, Other Costs," *USA Today*, June 5, 2023; and State Farm, "State Farm General Insurance Company: California New Business Update," press release, May 26, 2023.

[83] Jean Eaglesham, "Home Insurers Curb New Policies in Risky Areas Nationally," *Wall Street Journal*, June 8, 2023.

[84] In addition to home insurance, auto policies are becoming increasingly expensive or harder to obtain in many areas facing rising losses due to severe climate-related events. See Jean Eaglesham, "Buying Home and Auto Insurance is Becoming Impossible," *Wall Street Journal*, January 8, 2024.

[85] Insurance Information Institute, "Homeowners Perceptions of Weather Risks: 2023Q2 Consumer Survey," June 2023.

[86] Fliegelman, "Wind, Fire, Water, Hail: What Is Going on in the Property Insurance Market and Why Does It Matter?"

[87] Financial Stability Oversight Council, Annual Report 2023.

It is also important for the federal banking agencies to promote consistency in climate–related financial risk management. After previously issuing separate proposals, the FDIC, the Board of Governors of the Federal Reserve System, and the Office of the Comptroller of the Currency (OCC) (the agencies) jointly developed final principles for climate-related financial risk management for large financial institutions, which were issued as guidance in October 2023.[88] Although all financial institutions, regardless of size, may have material exposures to climate-related financial risks, the principles are intended to support efforts by the largest financial institutions (those with more than $100 billion in total consolidated assets) to focus on key aspects of climate-related financial risk management. Importantly, the agencies recognize that both the effects of climate change and the actions that financial institutions may take to manage climate-related financial risks could disproportionately affect low- and moderate-income consumers and other underserved consumers and communities. The agencies expect financial institutions to manage climate-related financial risks in a manner that will allow them to continue to prudently meet the financial services needs of their communities, including low- and moderate-income consumers and other underserved consumers and communities, and to ensure compliance with fair housing and fair lending laws.

Going forward, the FDIC will continue to engage with other regulators and the industry on how best to address climate–related financial risk.

[88] Principles for Climate-Related Financial Risk Management for Large Financial Institutions.