

## **Recommendations for Supervisory Guidance from Bank Regulators**

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The following are recommendations from a coalition of financial reform and environmental groups, with American for Financial Reform Education Fund leading the drafting.

This document outlines key elements that federal bank regulators—including the Federal Reserve Board, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the National Credit Union Administration—can and should incorporate into public supervisory guidance for banks on assessing and addressing the risks faced by banks from climate change.

Addressing the climate risk faced by banks fits squarely within the existing statutory mandates of these regulators. This document describes how climate risk maps onto traditional categories of risk that banks and bank regulators have historically used to assess and manage risk. The coalition has consulted with a wide range of experts, including seven legal academics with expertise in bank regulation and supervision.

The document thus reflects a conservative approach that is well within existing statutory authority. Its recommendations represent a minimal first step in assessing climate-related risk to banks and to the financial system. Without taking the first step of incorporating climate risk into bank supervision, regulators may lack the data to understand, let alone mitigate, potentially large risks.

# Bank Supervision and Climate Risk

**Forms of Climate Risk:** Bank supervisors and examiners should consider how banks under their jurisdiction face the two standard forms of climate risk:

- **Physical risk:** bank balance sheets and operations may have risk exposure to physical damage or decreased productivity from climate change.
  - Damages may result from increased frequency, intensity, and duration of:
    - hurricanes and extreme storms;
    - coastal flooding and sea level rise, as well as inland flooding;
    - drought/water shortage;
    - extreme temperatures; and
    - wildfires.
  - Real estate, tourism, insurance, carbon-intensive energy and power, and agricultural/food/forestry assets may have particular exposures.
  - Banks may also suffer losses because they or their borrowers are:
    - dependent on infrastructure that is vulnerable to increasing climate risk (*e.g.*, the power grid, telecommunications, water utilities); and
    - subject to supply chain disruptions.
- **Transition risk:** banks may suffer losses as economies shift to become less carbon intensive and more climate resilient.
  - As renewable energy and other zero-carbon technologies become increasingly affordable and reliable, and new international agreements, governmental policies, corporate commitments, and investor and public demands accelerate adoption of these technologies, banks with significant fossil fuel assets are at risk of rapid asset value deflation while fossil fuel borrowers increasingly default on their loans.
  - In particular, new investments in expanding production of fossil fuels are unlikely to pay off if governments meet their climate policy targets. Loans and investments with long maturities have more exposure to transition risk.
  - This “stranded asset” problem is one of the key manifestations of transition risk, but it is not the only problem.
  - Correlated losses/potential fire sale externalities may arise if many financial institutions and institutional investors try to sell the same asset classes at the same time in response to policy developments, technological breakthroughs, or public or internal pressure.
  - Financial institutions need to consider global policy and regulatory realities and trends in assessing and mitigation of transition risk. This is particularly true for banks with international exposures or subject to other regulatory jurisdictions around the world.

**Mapping Climate Risk onto Traditional Categories of Financial Risk** Bank supervisors and examiners need to understand how risks from climate change impact financial institutions along traditional categories of financial risk:

- **Credit risk:** Supervisors and examiners should consider:
  - *Physical risk:* How are borrowers, counterparties, and investments subject to climate related losses from storms, flooding, wildfires, etc.?
  - *Transition risk:*
    - Are borrowers or counterparties suffering higher probabilities of default and losses-given-default as markets transition away from carbon?
    - What is the stranded asset value at risk that a financial institution faces?
      - What are the plans for reducing this risk in an orderly fashion?
      - Is there fire sale risk?
  - *Credit committee:* Does the bank's credit committee factor in climate-related risks in its decisions?
    - Is the bank's credit committee considering climate-related risks in decisions to make new loans, particularly to the borrowers and projects with the highest degree of physical and transition risk, including for oil, gas, and coal projects and including for overseas projects? How does the bank evaluate climate-related risks in loan underwriting, particularly for longer-term loans?
    - How does the bank treat mitigation by borrowers of climate-related risks in loan underwriting and pricing decisions?
    - Is the bank's credit committee considering climate-related risks in decisions to waive loan covenants, restructure loans, or take other actions with respect to outstanding credit and exposures?
    - How does the bank's loan documentation mitigate climate-related risks?
  - To what extent have climate-related risks led to asset impairment?
  - How does the bank hedge climate-related credit risk?
- **Market risk:**
  - *Physical risk:* What losses will a financial firm face as commodity markets and individual securities and commodities investments face potential losses because of climate-related disruptions?
  - *Transition risk:* What losses will a financial firm be exposed from price changes in commodities markets and individual securities and commodities investments that occur when carbon intensive assets are repriced—whether from government interventions or from market changes?
  - Does the firm use Value-at-Risk models to assess this risk? What are the assumptions embedded in, and limitations of, these models? What is the tail risk?
  - Does the firm base its physical climate risk projections on historical data alone? How do its climate forecasting tools model the changing frequency and loss severity of future climate-related disasters?

- How does the firm hedge climate-related market risk?
- What risks does the bank face in terms of cost of capital increasing because investors and bondholders are looking for banks with lower climate risk and lower financing of carbon emissions? (*This could also be classified as “reputational risk.”*)
- **Liquidity risk:** Does a financial firm face enhanced liquidity risk because:
  - long term assets may suffer physical and transition risk-related losses;
  - exposure increases to assets that may become difficult to sell due to policy or technological developments; or
  - sources of short term financing may be disrupted due to climate risk?
- **Operational risk:** Supervisors and examiners should consider how physical risk affects a financial institution’s operations. They should ask:
  - Are the firm’s headquarters and its major operational centers subject to increased risk of catastrophic storms, flooding, and wildfires? How could these events affect operations, particularly timely transaction capabilities?
  - How is the infrastructure on which the firm relies subject to these risks? Is the firm subject to operational losses because of climate-related threats to:
    - exchanges and market utilities; and
    - electrical and water supply?
  - How has the firm modeled the climate-related aspects of operational risk? What are the limitations of that modeling?
  - What contingency plans does the firm have for operational risk and its climate-related aspects?
- **Other risks:**
  - **Reputational risks:** depositors, customers, shareholders, and counterparties may stop doing business with banks they perceive as having high climate risk exposures or activities that contribute to climate change. How might this increase the bank’s cost of capital?
  - **Legal risks:** banks may face losses and expenses because of lawsuits, including lawsuits that affect borrowers, related to climate change.
    - Do banks face “lender liability” because of environmental litigation?
  - **Political risk:**
    - Bank investments in overseas projects may be subject to enhanced political risk, including expropriation, if climate change contributes to conflict, political instability, and civil strife.
    - Climate change could lead to legislative and regulatory actions (both domestically and abroad) that could limit or otherwise affect business decisions by banks.

The following matrix provides one map of how physical and transition risk intersect with operational, credit, and liquidity risk:

	Physical Risk	Transition Risk
Operational Risk	Losses to a bank’s operations and Property, Plant & Equipment because of increased frequency and severity of climate-related shocks; Losses due to disruptions to physical infrastructure (electric grid); Losses to a bank because of disruptions to financial system infrastructure (e.g., payments systems, financial market utilities).	
Credit Risk	Higher default rates and loss-given default from borrowers who face physical losses from climate-related shocks, water stress, or chronic or long term productivity losses (e.g., real estate losses due to hurricanes; agricultural loan losses due to drought).	Higher default rates and loss-given default from borrowers who face transition risk (e.g., coal mining, oil and gas exploration companies; or borrowers in communities where the economy is dependent on the fossil fuel industry).
Market Risk	<p>Losses to assets due to changes in market prices caused by climate-related issues (e.g., exposure to agricultural commodity prices rises because of crop damage).</p> <p>A bank’s cost of capital may increase if a significant number of shareholders and bondholders withdraw financing because of a bank’s climate-related risks or financing of carbon emissions.</p>	<p>Losses to assets due to changes in the price of carbon (whether an explicit or implicit price and whether the change occurs via government regulation or by market forces), competition from cheaper technologies, or investor-driven reallocations of capital or shareholder engagement or consumer shifts. These include stranded asset risks.</p> <p>A bank’s cost of capital may increase if a significant number of shareholders and bondholders withdraw financing because of a bank’s climate-related risks or financing of carbon emissions.</p>
Liquidity Risk	Losses as climate-related physical losses impair the value of long term assets and/or disrupt short term funding sources.	Losses because changes in the price of carbon impair the value of long term assets and/or disrupt short term funding sources.

Traditional Safety & Soundness Concerns:

- **Loss correlations:** Climate risk creates potentially massive correlated risk that are harder or impossible to diversify:
  - Banks face uncertain and potentially high correlations of **physical risks**.
    - Assets with geographic diversification may face near simultaneous climate-related shocks (*e.g.*, wildfires in the Western United States and hurricanes in the East).
    - Losses and correlations of losses from physical risk may increase suddenly.
  - Banks face uncertain and potentially high correlations of **transition risks**, as different asset classes may lose value nearly simultaneously as economies transition away from carbon-intensive assets.
    - Losses and correlations of losses from physical risk may increase suddenly.
    - Fire sale risk is a particular form of correlated risk.
  - Banks face uncertain and potentially high correlations of—and feedback effects between—**physical risk** and **transition risk**, as increasing physical damage from climate change drives a rapid, disorderly transition away from carbon-intensive assets.
  - These correlations raise the question whether private risk-spreading and risk transfer mechanisms, such as insurance, reinsurance, or capital markets:
    - have the capacity to absorb increased correlated risk; and
    - spawn systemic risk in the process of attempting to spread that risk.
  
- **High degrees of leverage:** Many borrowers that have a high degree of climate risk exposure also have high degrees of leverage.
  - The oil & gas sector is a prime example.
  - Leverage makes borrowers more susceptible to shocks.
  - This is layered on top of financial institution leverage.
  - Embedded leverage in financial markets creates additional risks.
  - A low interest rate environment can exacerbate these risks.
  - Supervisors and examiners should re-enforce the 2013 Interagency Guidance on Leveraged Lending and consider making it subject of notice and comment rulemaking:  
<https://www.federalreserve.gov/supervisionreg/srletters/sr1303a1.pdf>
  
- **Asset-liability mismatch:** This creates run risk.
  - *Asset-liability mismatch means that longer term, latent risks, such as from climate change, pose significant threats.* Losses to long term assets can cause particular risks for banking and shadow banking intermediaries that rely on short term funding and engage in liquidity transformation.
    - For banks, this risk arises not only from reliance on repo and similar short-term funding, but also from wholesale depositors (including uninsured business depositors and insured holders of jumbo CDs).
  - Longer term assets may suffer from more mispricing of climate risk given:
    - the uncertainties and rapid changes in environmental conditions and the development of climate science; and

- the fact that many debt securities owned by financial institutions are not SEC-registered and trade in opaque and often illiquid markets, if they trade at all.
- Supervisors and examiners therefore need to have high quality information about not only the climate risk—both physical and transition risk—of a financial institution’s assets, but also:
  - how those assets are financed and associated liquidity risk;
  - the duration of those assets; and
  - whether those assets trade on opaque and illiquid markets.

**Focus on Particular Market Activities:**

- **Insurance and hedging tools may be suddenly repriced or become unavailable:**
  - Property/casualty insurance typically has a one year term. This ostensibly protects insurers and allows them to reprice premiums or exit a market if climate-related risks manifest or intensify.
  - But higher premiums or insurers exiting a market may leave consumers, investors, *and financial institutions* suddenly exposed to much higher costs or degrees of risk.
    - For example, the State of California had to make emergency policy interventions as insurers threatened to exit the state’s insurance market as a result of massive wildfires.
    - Similarly, the coverage afforded by federal flood insurance is in contention and in flux.
  - Supervisors and examiners should investigate:
    - banks’ vulnerability to changes in property/casualty insurance accessibility for themselves or for their clients;
    - the extent to which banks are using derivatives, insurance, and capital markets to hedge climate-related risks;
    - potential mispricing, holes in coverage, or other limitations of these products; and
    - conversely, the extent to which the bank’s use of hedging and insurance products have led to inappropriate risk-taking that exacerbates climate risk and its drivers.
- **Securitization and the assessment of climate risk of underlying assets:**
  - To the extent that climate risk causes correlated losses on underlying assets, such as real estate or leveraged loans, asset-backed securities can suffer sudden and severe episodes of price correction.
  - Supervisors and examiners should gather information about:
    - the location—which affects physical risk—of assets underlying a bank’s asset-backed securities holdings;
    - the transition risk of a bank’s asset-backed securities holdings; and

- the extent to which a bank's asset-backed securities trade on opaque and illiquid markets, if they trade at all.
- Supervisors and examiners should evaluate whether climate risk creates warehouse risk for banks that act as originating lenders or reputation risk.

### **Other Improvements to Supervisory Policy Tools:**

- **Call reports:** Bank regulators should require climate risk disclosure as part of call reports. Regulators should focus initial disclosure requirements on bank loans with the highest, clearest, and most direct links to climate risk, namely loans to companies in the fossil fuel extraction, production, and processing sectors. Transparency is critical for enabling market discipline.
- **Retracting “guidance on guidance”:** Bank regulators should suspend and rollback guidance and rules that attempt to calcify and thus weaken supervision as part of the historic regulatory tool kit.
- **Scenario analysis and stress tests:** Bank regulators could follow the lead of central banks and regulators in other countries and develop scenario analyses for climate risks and incorporate climate risks into stress tests while improving stress tests to take into account the time horizon of climate risks and qualitative analysis of risk.