

Getting Going – Accelerating Climate Risk Analytics

Climate Scenario Analysis Practices at U.S. Banks 2023

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Executive summary

Understanding and analyzing climate risk has recently become a critical goal for banks—driven in part by regulatory mandates and market pressures. In response, U.S. banks have now started to get going on the task. In the last year, some have made substantial progress in developing climate scenario analysis (CSA) capabilities. Still, key gaps must be filled to attain the quality of analytics that would enable banks to use the analytics beyond regulatory compliance. In our view, banks can benefit by deepening and accelerating their work on the topic.

In this report, we examine the current state of the industry and provide perspectives on U.S. financial institutions' climate scenario analysis capabilities based on a survey conducted by the Risk Management Association and Oliver Wyman in Q4 2022. Key takeaways include:

- **The potential of climate scenario analysis is just beginning to be tapped.** Use cases such as strategic planning (35% of respondents employ CSA in this process), credit assessment (26%), and client engagement (14%) are not yet common among surveyed banks. When well developed and effectively deployed, CSA can generate useful insights for decision-making across these use cases.
- **Many banks have not yet deployed the analytics needed to successfully complete the Federal Reserve's CSA pilot.** Of the focus areas of the pilot, banks as a group lag most in the ability to assess transition risk in commercial real estate (39% of respondents can do so), largely due to data challenges. The banks a size smaller than the six in the pilot should begin to prepare capabilities, as broader regulatory exercises are expected to follow.



Overall, survey results revealed banks' CSA methodologies are evolving, they sometimes miss key risk drivers or are based on overly simplified approaches, and there is still work to be done in strengthening capabilities. Some challenges to advancing the use of CSA across portfolios include the following:

- **Transition Risk for C&I: Sector-specific approaches provide more differentiated counterparty-specific answers. However, only 22% of those surveyed use this approach for at least part of their portfolio.** Simplified “emissions-based” or top-down approaches are more popular but may not adequately capture the transition dynamics of high-risk sectors such as energy and power generation.
- **Transition Risk in Real Estate: In the U.S., this has not been widely modeled due to data challenges.** Energy consumption and efficiency data is not easily available across the board outside of certain urban areas such as New York City that have requirements to report this type of data. However, there are approaches to estimate proxy data and perform meaningful transition risk analysis.
- **Physical Risk in Real Estate: Banks are typically reliant on specialized vendors for the data to perform property-level physical risk analysis.** Most banks have contracted such vendors to provide physical risk data for Commercial Real Estate (85%) and for Residential Real Estate (71%). However, offerings vary widely in scope, quality of underlying models, and output metrics. Understanding vendor capabilities and appropriate “fit-for-purpose” application of the data is critical.
- **Physical Risk in Real Estate: Banks are missing out on several key physical risk drivers in their current modeling.** Only 37% of banks currently model how higher future insurance premiums or other climate-related costs of ownership could affect the market price of real estate.

Why It Matters: Deepening and accelerating the development of select CSA capabilities can position banks well for any upcoming climate risk-related regulatory requirements. More importantly, it allows them to better understand their climate risks, make strategic business decisions, and draw conclusions for credit underwriting.



Intro: The regulatory and market pressure on banks to build out climate risk analytics capabilities is growing

Analyzing climate risks is now a crucial goal for banks. Regulators across the globe believe these risks are substantial and require banks to both have an overall understanding of them and the ability to do quality scenario analyses. In response to these mandates and pressure from many other stakeholders, banks are beginning to understand and quantify climate risks, and to work toward integrating climate-related considerations into risk management frameworks. Many banks have made substantial progress over just the last year. In this report, we examine the current state of the industry and provide perspectives on U.S. financial institutions' climate scenario analysis capabilities based on a survey of RMA's Climate Risk Consortium members conducted by the Risk Management Association and Oliver Wyman in Q4 2022.

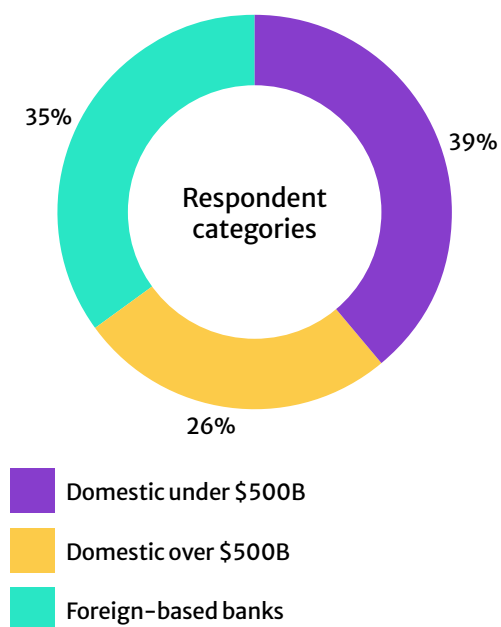
In January 2023, the U.S. Federal Reserve released specific guidance for a climate scenario analysis (CSA) pilot involving six of the largest U.S. banks. The CSA pilot is intended to help the Federal Reserve test current climate risk management practices of large banking organizations, as well as to enhance the ability of the organizations "to identify, measure, monitor, and manage climate-related financial risks."¹ While it is a requirement for these six banks to participate, the pilot will not yet be used for capital stress testing purposes as it is "exploratory in nature and does not have bank capital or supervisory implications."¹ However, the exercise demonstrates U.S. banking regulators' intention to accelerate action to effectively manage climate risks. Although this exercise applies narrowly to the six named banks, broader CSA exercises are expected to follow and some regional banks are already gearing up. In fact, effective climate scenario analysis is among the Principles for Climate-Related Financial Management for Large Financial Institutions that was released by the FRB in December 2022. And while many banks will have progressed in key areas, several gaps persist and institutions need to revisit their approaches, especially if the outcomes are to be used to drive concrete business and risk decisions.

While banks are using CSA results mostly for general risk management and reporting purposes, few banks are incorporating climate risks systematically in strategic business planning, credit decisions or loan pricing at this stage. When well understood and effectively deployed, quantifying and actively managing these risks can create a competitive advantage for banks. Eventually, the market will fully reflect these risks. Given ongoing improvements in data availability and the increased focus on the topic from a range of stakeholders, the timing is right to strengthen climate risk-related capabilities.

In our report "[Getting Going: Breaking Through the Barriers to Corporate Climate Action](#)"² we described how corporations can accelerate their climate actions. This report focuses now on how banks can get going to enhance climate scenario analysis capabilities and deepen their understanding of climate risks.

1 Federal Reserve Board, "[Pilot Climate Scenario Analysis Exercise: Participant Instructions](#)," FRB, 2023.

2 Oliver Wyman, The Climate Group, "[Getting Going: Breaking through the barriers to corporate climate action](#)," 2022.



Overview of the study

- The survey gathered responses in Nov/Dec 2022
- 23 large banks of the RMA consortium participated; banks were segmented into three groups for analysis:
 - U.S. domestic firms between \$100B and \$500B in total assets (9 respondents)
 - U.S. domestic firms over \$500B in total assets (6 respondents)
 - Foreign-based banks (parents and major operations outside of the U.S., 8 respondents)

The industry has made progress in developing climate risk analytics capabilities focused on specific portfolios and risk types

The banking sector in the U.S. has made significant progress in recent years in building climate scenario analysis capabilities. According to survey results, the progress is, unsurprisingly, focused on developing analytics for portfolios with the highest climate risk concentrations.

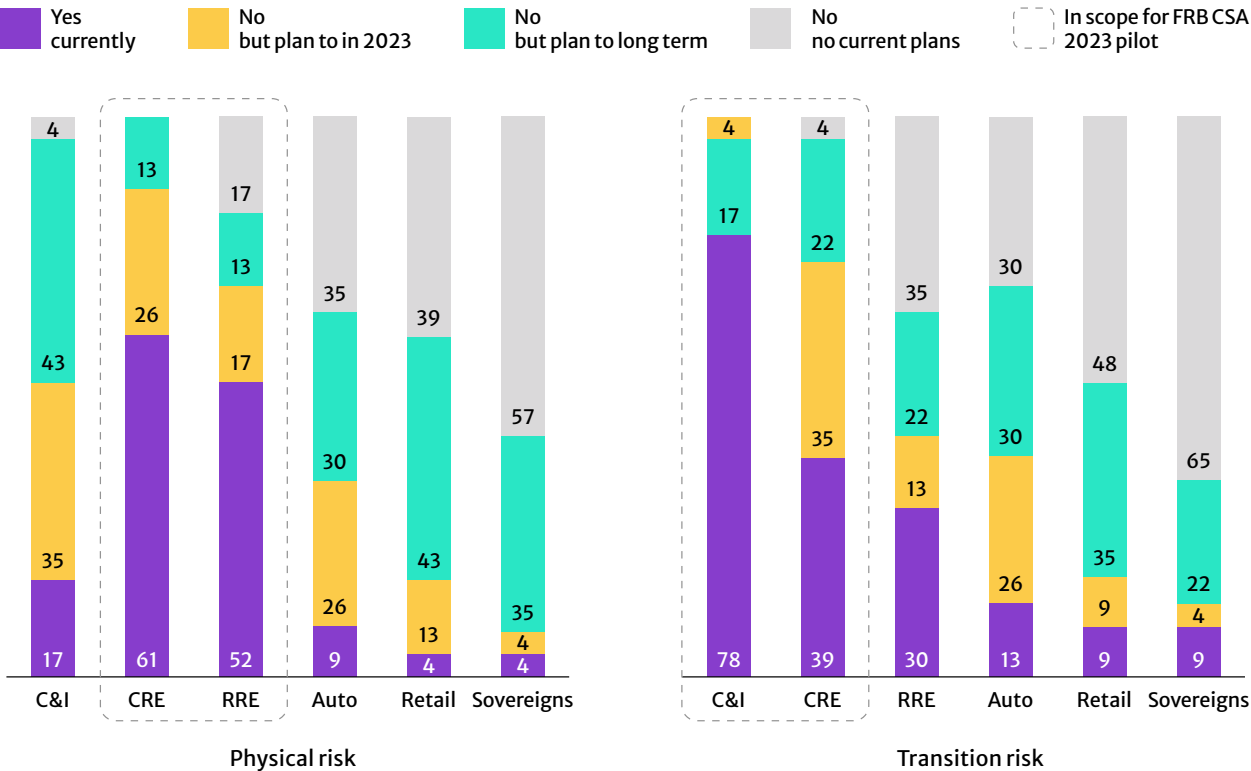
The Fed pilot exercise is divided into transition risk and physical risk modules. More than three-quarters of survey participants are analyzing their Commercial & Industrial (C&I) portfolios in terms of transition risk with all but one bank expected to develop capabilities by the end of 2023. Capabilities for analyzing the transition risk, of Commercial Real Estate (CRE) are currently far less developed (39% of respondents). That said, a large share of banks indicated that they will be focusing on this topic in 2023 (35% of respondents).

Capabilities related to physical risk are further along for real estate portfolios; over half of the respondents have developed some CRE and Residential Real Estate (RRE) capabilities. Physical risk analysis for C&I portfolios is less developed – only 17% have that capability – likely due to the limited data around company asset locations. Various vendors are developing offerings in this space, and analytics capabilities are expected to improve in the coming years, with 35% of banks planning to tackle C&I physical risk in 2023.

Not surprisingly, the Federal Reserve included the portfolio/risk type combinations where banks have developed the strongest capabilities as a focus for the 2023 pilot exercise: Physical Risk for Residential and Commercial Real Estate, Transition Risk for Commercial and Industrial, and Commercial Real Estate. Out of the four focus areas, transition risk capabilities for CRE are the least advanced. Many banks do not yet have the analytics deployed to successfully complete the FRB CSA pilot in its entirety.

For portfolios outside of C&I and real estate, including consumer auto and other retail, there has been minimal progress due to limited expected climate impacts—although some banks are working on developing consumer auto loan capabilities. Only a small proportion of banks plan to develop any climate-related analytics for these portfolios in the near term.

Exhibit 1: Physical and Transition Risk Climate scenario capability by portfolio (%)



Climate Scenario Analysis has untapped potential beyond regulatory compliance

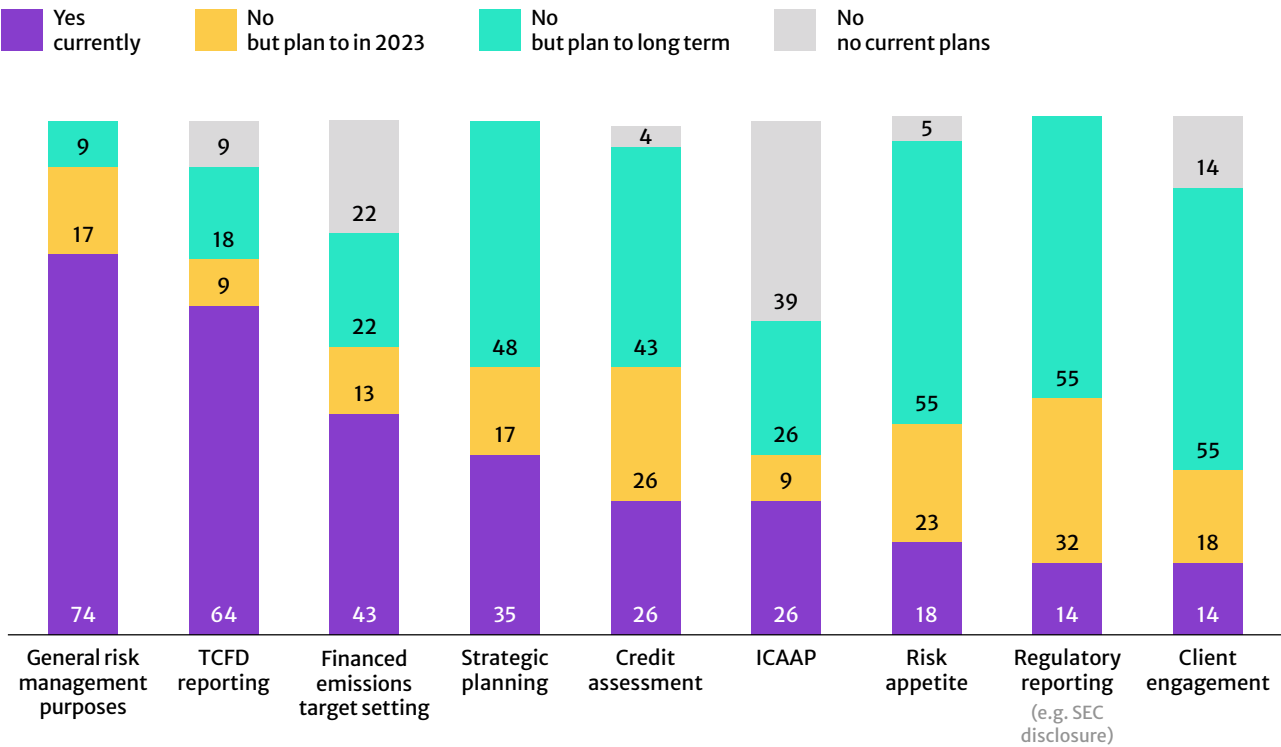
As Climate Scenario Analysis practices evolve, banks are continually exploring various use cases beyond regulatory exercises. Most prominently, survey results show 91% of institutions are using, or are planning to use, climate scenario analysis outcomes for general risk management purposes by the end of 2023. This often includes activities related to identifying, measuring, monitoring, and managing climate-related financial risks.

The second-most common use case for CSA is related to disclosures and investor reporting. 64% of respondents currently disclose CSA results in their *voluntary* disclosures based on the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). Banks do not yet disclose CSA results as part of *mandated* financial disclosures (14% of respondents mention regulatory reporting as a use case). The Securities and Exchange Commission (SEC) proposed a rule in April 2022 that, if adopted in its proposed form, would require public companies to provide detailed reporting of their climate-related risks and describe any analytical tools, such as scenario analysis, if used. Challenges in quantifying climate-related risks could have a significant impact on investor perceptions if firms are not ready to produce robust estimates.

Financed emission target setting is another use case for CSA among 56% of respondents. The process involves applying scenario analysis techniques to identify how the bank's portfolio and corresponding emissions may evolve over time and the actions needed for the bank to reach an emissions target. The type of analysis differs in nature from a CSA conducted for risk management purposes, but there are some overlaps. Both exercises may leverage similar scenarios, rely on the company's emissions data, and are based on similar calculation components such as energy consumption estimates. Aligning these climate-related processes in a coordinated way can realize efficiencies and increase consistency.

Survey respondents are also beginning to explore the use of CSA in strategic planning (35% of respondents), credit assessment (26% of respondents), and client engagement (14% of respondents). To better utilize their material investment in climate risk analytics, banks need well-developed methodologies with specific use cases in mind. A bottom-up approach, based on asset-or transaction-level details, is required to make useful decisions about single counterparties. The following sections describe some common practices and call out common gaps and pitfalls of Climate Scenario Analysis methodologies.

Exhibit 2: Current use cases for Climate Scenario Analysis Transition (%)



Transition risk for C&I portfolios – Looking beyond top-down approaches to sector-specific analysis

The vast majority of large U.S. banks analyze transition risk in the C&I portfolio. They use a wide range of approaches. The United Nations Environment Program Finance Initiative and Oliver Wyman published a paper in 2018³ describing a framework that has since been adopted by many institutions. It is based on a bottom-up approach for a sample of counterparties that is extrapolated to the wider portfolio. Generally, data availability and quality have improved since then, and more sophisticated analytics have been developed to perform systematic and repeatable borrower-level analysis at scale.

3 UNEP-FI, Oliver Wyman, and Mercer, “[Extending our Horizons: Assessing credit risk and opportunity in a changing climate](#),” 2018.

The various Climate Scenario Analysis approaches for transition risk in C&I portfolios include:

- **Bottom-up, driver-based approaches:** Bottom-up approaches require counterparty-level climate-related data and financial data, which are stressed based on the climate scenario. These approaches often make use of rating models to then estimate the potential climate impacts on borrowers' credit quality, based on scenario-adjusted financials:
 - **Emissions-based approach:** This approach is based on company-level emissions data and factors in projected carbon taxes as the main driver of transition costs. These increased costs are reflected in borrowers' P&L based on sector-specific pass-through rates. Nearly half of the banks surveyed are currently employing an emissions-based approach for at least one sector. Some, but not all, emissions-based approaches focus more on price and cost, while giving less attention to, or even missing, volume-related dynamics.
 - **Production or sector-specific approach:** This approach uses company-level production and other granular data and estimates the impact of demand and supply changes on the company's revenue, costs, and sometimes on more granular risk drivers such as volumes, prices, unit cost, capital expenses, and asset value. The survey found that 22% of respondents use this approach for at least part of their portfolio. It needs to be tailored to the specific sector by identifying unique climate risk drivers. This paper's Spotlight section explores the production-based approach for the power sector.
- **Macro economic based top-down approach:** This approach is based on stressed macroeconomic variables provided by the Network for Greening the Financial System (NGFS) analysis. The NGFS scenarios provide macro variables at the national economy level. More advanced variations of this approach include the development of regional or industry-specific macro variables. For example, macro variables can be more severely stressed in geographies that are over-proportionally impacted by transition risk. The advantage of a macroeconomic based top-down approach is that existing loss forecasting models can often be leveraged. But there are substantial drawbacks, given it often doesn't capture industry and company-specific effects. Thirteen percent of survey respondents use this approach for at least part of the portfolio.

Exhibit 3: % of banks that are employing each method for at least one sector*

Emissions-based approach (carbon costs and pass through)

48

Production-based approach (based on shift in production and demand)

22

Macroeconomic-based approach

13

Other approach

22

*Multiple responses possible

Although an emissions-based approach is most popular among survey respondents, we believe this dominance reflects an early stage of development. We expect more sophisticated bottom-up approaches to increase in frequency in the future. This is because top-down approaches or simplified emissions-based approaches might not always generate meaningful insights about the transition risk of single counterparties. Production-based approaches provide more differentiation and could be preferred for high-risk sectors that require industry-specific modeling, especially if banks are aiming to utilize the outcomes to drive business decisions or facilitate dialogue with their clients.

Many institutions tap third-party vendors to meet analytics and data requirements. 62% responded that they buy specialist datasets to support C&I climate scenario analysis. Others source climate-specific data from their clients directly (through questionnaires, relationship managers, etc.) or manually from the client's annual reports.

SPOTLIGHT

Sample production-based methodology for power generation

The Power Sector is expected to undergo a fundamental transition over the next decade and beyond in the manner that power is produced. Given this shift, the current carbon footprint of a power generation company is not a sufficient proxy to forecast its future-state emissions. The illustration on page 11 shows potential electricity generation composition by various types of producers and illustrates why explicit modeling of production dynamics is needed to effectively project financial performance.

The three examples of power generators shown below were analyzed through S&P and Oliver Wyman's Climate Credit Analytics (CCA) scenario analysis product.⁴ The illustration shows:

A large electricity producer that is already well positioned in renewable production can benefit from the transition by capturing market demand and may greatly improve its rating.

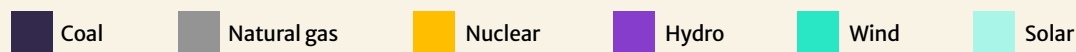
A nuclear producer can minimize its exposure to coal and gas, thereby minimizing the impact of the carbon tax, and still maintain a stable credit risk rating due to stable volume and investment in renewables.

Conversely, a producer with carbon-intensive energy sources (coal and gas) may not be able to survive the transition given poor financial performance due to the carbon tax, and growing debt and insufficient cash flows limiting the ability to invest in renewables.

These outcomes depend on the current fuel mix and corresponding emissions profile, current financial conditions, ability to take on debt and invest, and the company's planned transition strategy and targets.

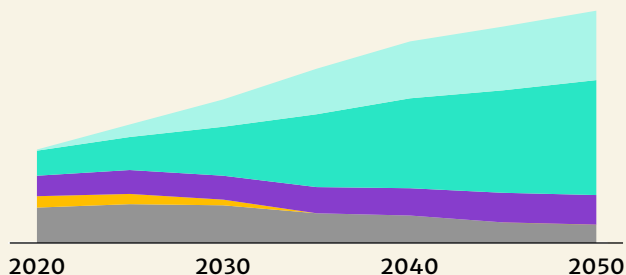
⁴ <https://www.oliverwyman.com/our-expertise/insights/2020/sep/climate-credit-analytics.html>

Exhibit 4: Electricity generation by fuel source

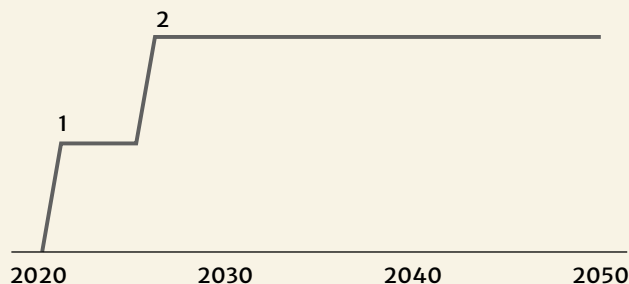


Electricity generation by fuel source

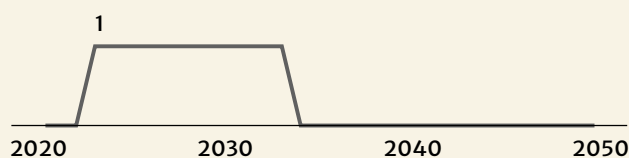
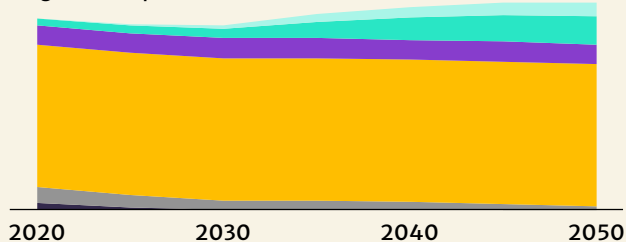
Large renewables producer



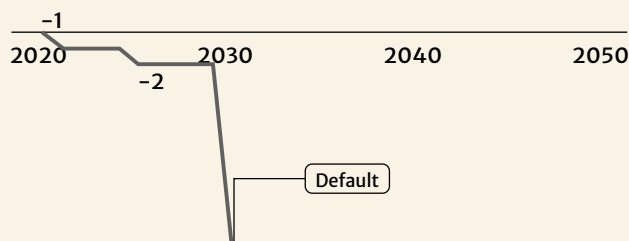
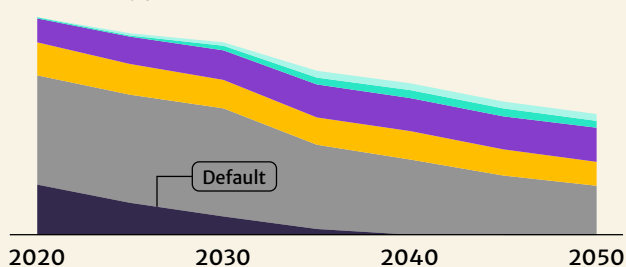
Change in rating Rating notch change vs. 2020



Large nuclear producer



Carbon heavy producer



By using production data and scenario assumptions by fuel source, a company's transition risk can be more adequately assessed. Given the nature of production-based approaches—they are industry-specific and relatively complex, but have less need for differentiation across institutions—vendor tools have some popularity across financial institutions. 62% of survey respondents say they buy specialist datasets or use vendor models for C&I transition risk analysis. The CCA tool, for example, helps financial institutions assess the impact of a transition to a low-carbon economy on the creditworthiness of their counterparties. It performs a borrower-level Climate Scenario Analysis leveraging production-based approaches for sectors with high transition risk. S&P Trucost, IHS, and S&P Market Intelligence datasets provide the underlying company-level and industry-specific data that is needed for this type of analysis.

Transition risk in real estate portfolios – Capturing material risks despite data challenges

Banks are prioritizing Physical Risk Analysis for their real estate portfolios, as 61% and 52% of respondents have already developed CSA capabilities for the CRE and RRE portfolios, respectively. Transition risk capabilities are less developed, with 39% and 30% of banks saying they have developed capabilities for the corresponding portfolios.

Transition risk for commercial real estate in the U.S. has not been widely modeled due to data challenges. Energy consumption and efficiency data is not easily available across the board outside of certain urban areas such as New York City with local legal requirements to report this type of data. But data availability and transition risks are increasing as more municipalities are moving to implement laws raising energy efficiency reporting and requirements. Accordingly, the Federal Reserve identified transition risk in CRE as a focus area of the pilot exercise. Initial methodologies to quantify these risks have been established through guidelines released in the 2021 Climate Biennial Exploratory Scenario (CBES) exercise conducted by the Bank of England. Similar concepts, tailored to the local data situation and likely policies can also be developed for the U.S. market.

The outcomes of this analysis could help inform decision-making and help generate insights for the business that are otherwise not easily available.

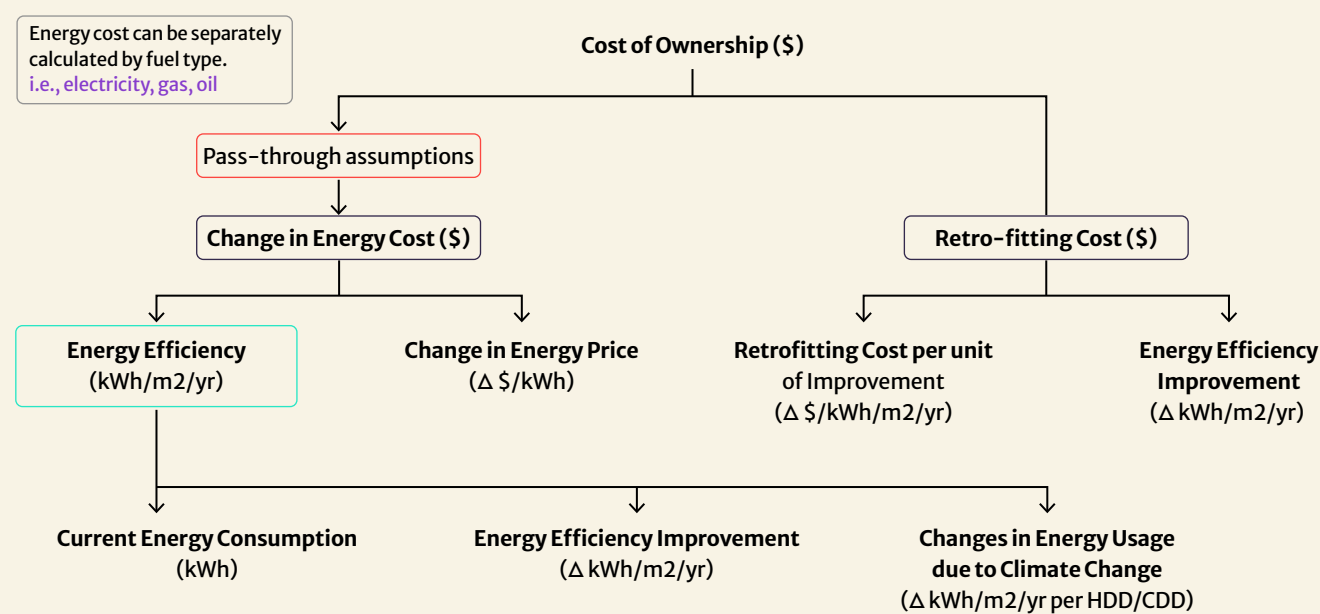


SPOTLIGHT

Commercial real estate transition risk methodology

Transition risk can materially drive the cost of ownership, which impacts property valuation, affordability, and eventually credit risks. The transition risk-related cost of ownership components can be broken into two main drivers: energy cost and retrofitting cost. These components can be estimated and projected along climate scenarios, even if data is incomplete.

Exhibit 5: Overview of energy-related cost of ownership



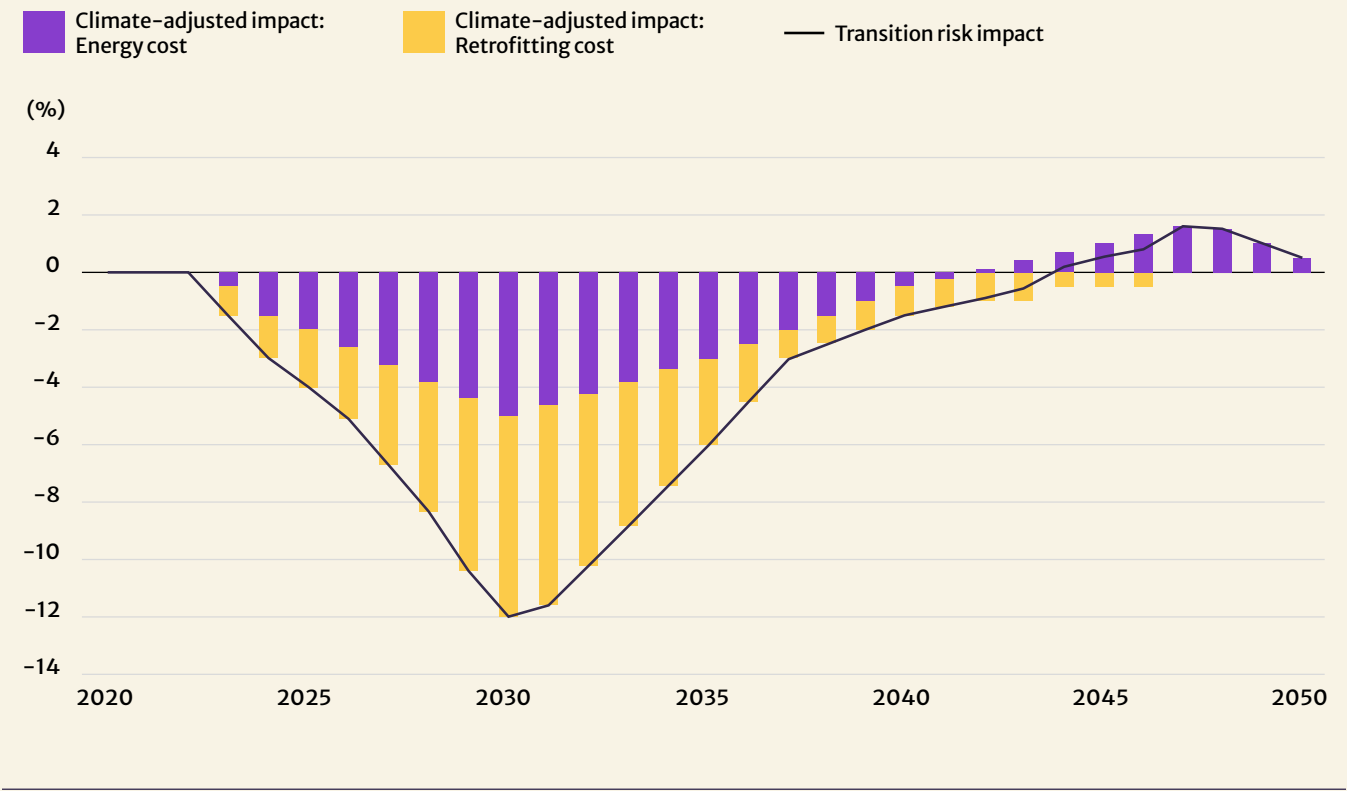
Cash-flow and valuation projections will depend on energy prices, the potential carbon taxes in many transition scenarios, energy efficiency gains, and physical energy consumption (physical energy consumption itself may be affected by climate change). In addition, cash-flow and valuation projections will depend on assumptions regarding the ability to pass some cost increases through to tenants.

The timing of investments in energy efficiency is not necessarily at the discretion of the owner. A material transition risk stems from the cost of retrofitting buildings to meet mandatory building code standards. New York City's "Built to Last" campaign, for instance, plans to reduce GHG emissions from energy used to heat, cool, and power buildings by 80% by 2050 (roughly 3.4 million metric tons of CO₂e).⁵ The city is focusing on improving compliance with existing laws and raising standards for energy performance on new construction and currently for large existing buildings. Given current buildings are expected to last well beyond 2050, retrofitting will be essential to meet this target. While retrofitting can be a costly process up front, it can result in subsequent savings, given energy efficiency improvement and potentially lower maintenance and operational costs.

⁵ <https://www.nyc.gov/assets/sustainability/downloads/pdf/publications/OneCityBuiltToLast.pdf>

Advanced climate scenario capabilities can estimate transition risk-related costs on a property-level based on the property's characteristics, and along various climate risk pathways. The following illustration shows the potential property value impact from transition risks.

Exhibit 6: Transition risk-related property valuation impacts in Net Zero 2050 scenario on a sample property

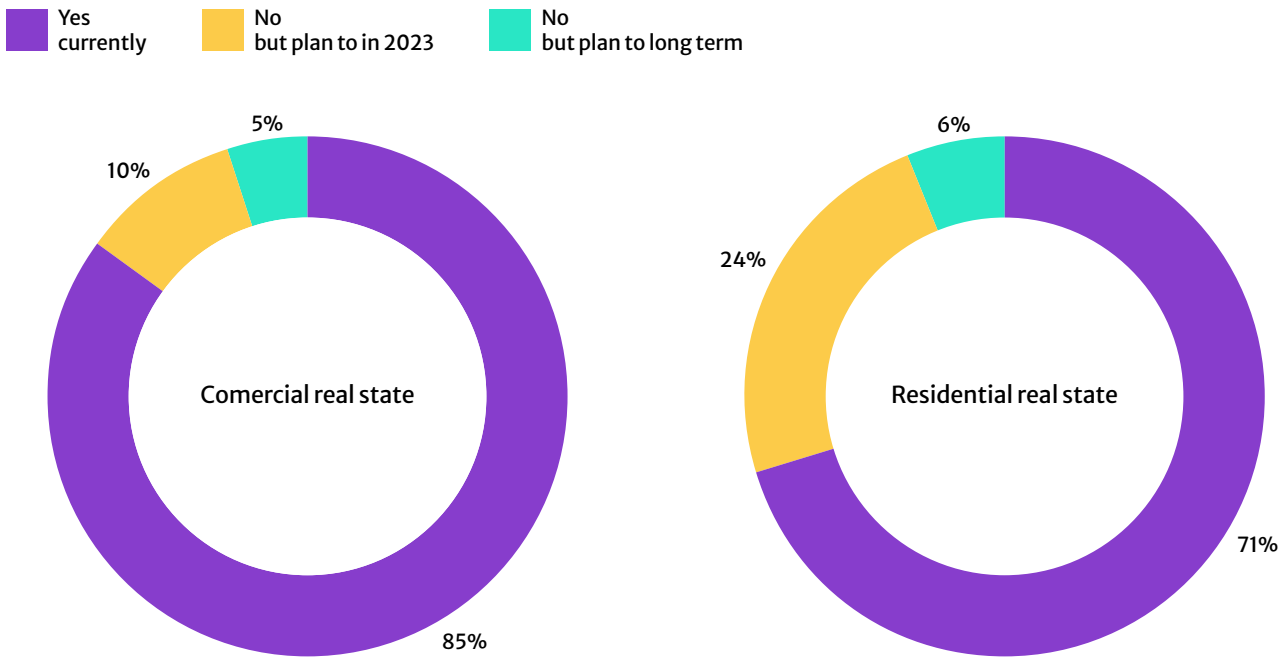


Physical risk in real estate – Understanding physical risk data and vendors, and capturing impacts beyond direct damages

Physical risk is most prevalent in banks’ real estate portfolios. That’s due to potential uninsured damages or rising insurance costs prompted by the increased frequency and severity of extreme weather. The result? The value of collateral and borrowers’ ability to pay loans drops. Banks often source the data for property-level analysis from vendors.

Survey results indicate most banks have contracted such vendors to provide physical risk data for commercial (85%) and residential real estate (71%). Most of the other respondents say they plan to contract data for both in the near to long term.

Exhibit 7: Percentage of respondents who source physical risk data



Some percentages do not add up to 100% due to rounding

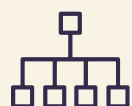
Offerings vary widely and focus on different perils, with a varying quality of underlying models and output metrics. Typically, vendors provide peril metrics such as flood depths and wind strength for a specific property location under various climate scenarios. Some vendors also provide average annual damage or loss ratios based on a set of assumptions around property characteristics or based on property-specific data provided by banks. Some of the most advanced banks are developing their own capabilities to translate peril metrics into damage ratios using publicly available vulnerability curve data, such as what’s available through FEMA’s Hazus Program. It’s important for financial institutions to understand vendor capabilities and appropriate application of the data.

SPOTLIGHT

Assessment criteria for physical risk vendors

Vendors are sometimes selected without a deep analysis of their underlying competencies. Banks can review the following competencies for their specific geographies and asset types to determine the best fit.

Exhibit 8: Key competencies expected of a climate physical risk vendor



Underlying models: The provider leverages the latest climate projections and can manipulate these into a range of different climate scenarios (known as representative concentration pathways, or RCPs) to produce output by using physical risk modeling approaches.



Coverage: The provider can model all climate-related perils, such as various flood types, across relevant major geographies. The provider incorporates relative adjustments to perils (e.g., flood defense inputs).



Resolution: The provider works to high spatial and temporal resolutions for all perils where appropriate. The preference is to use at least a sub 90-meter resolution for flood risk, and at intervals of five years up to at least 2080 across different scenarios. The provider can geocode properties to an asset (boundary) level.



Flexibility and transparency: The provider has no “black boxes” and is willing to share its underlying data (e.g., flood depths) and vulnerability functions, and can rework its modeling to incorporate adjustments.



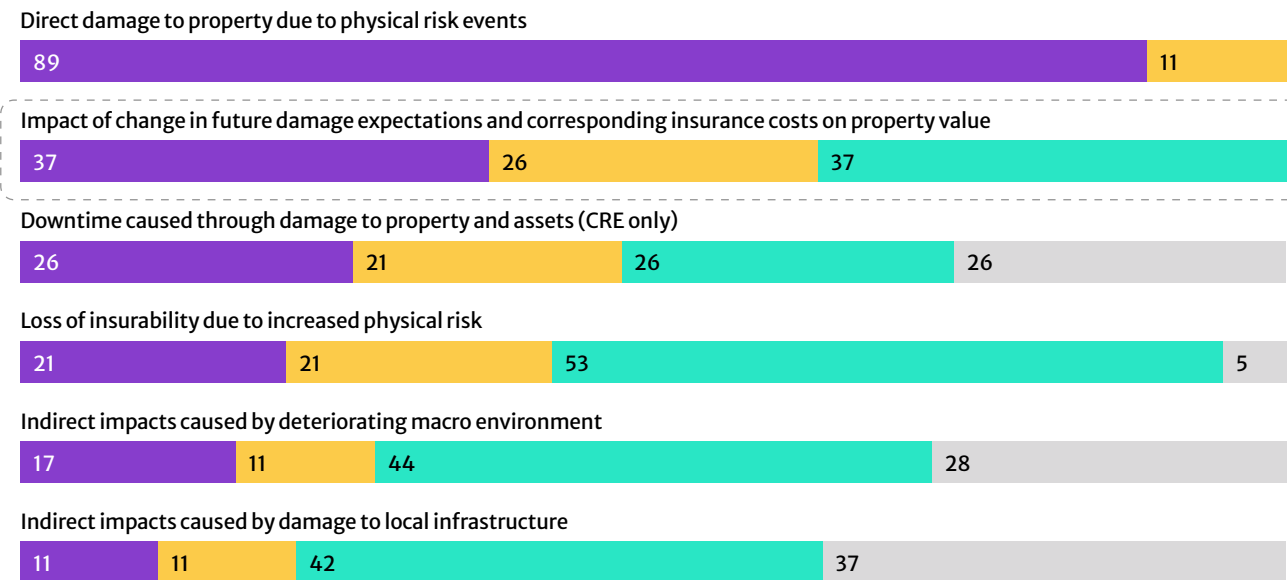
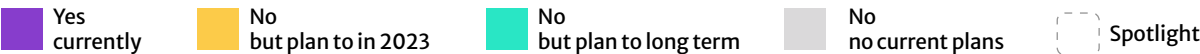
Outputs: The provider can deliver multiple return periods as part of its modeling, including average annualized loss (AAL) and average damage ratio (ADR), or a view on/quantification of business interruption impact for businesses.

With different vendors pursuing unique business models, a single vendor will not always provide the best answer across all categories. Thus, it is crucial for banks to compare vendor abilities across all competencies to determine the best fit for their organizations' needs. Vendors are constantly adjusting and improving their models, so staying aware of updates and roadmaps is important when considering long-term relationships with a given vendor.

Vendors focused on physical climate risks may not be experts in credit risk management approaches for financial institutions. Banks typically are reliant on internal capabilities or external consulting support to translate peril metrics or damage ratios into credit or other financial metrics. There are various transmission mechanisms and risk drivers that can impact a borrower's credit quality:

- **Direct damage to property due to physical risk events:** All banks either have (89%) or are planning to cover (11%) this risk driver in 2023. Banks prioritize direct damage as a physical risk driver probably because it might be the most intuitive and easiest to model. However, the financial impact of direct damages for banks has been limited due to required insurance coverage (e.g., homeowner's insurance and flood insurance in flood zones). Other risk drivers are typically more material.
- **Impact of change in future damage expectations and corresponding insurance cost on property value:** Physical risk will have a substantial impact on a borrower's insurance premiums. The speed and degree to which future insurance premiums increase can impact valuation. This impact can be substantial and often materializes in the aftermath of natural catastrophes (see spotlight below). However, at this time, only 37% of respondents are considering this effect.
- **Downtime caused through damage to property and assets:** Damages from natural hazards can lead to significant downtime and loss of income for commercial real estate assets. A quarter of respondents consider this effect.
- **Loss of insurability due to increased physical risk:** Similarly, properties can become uninsurable if excessive expected annual damage ratios make it uneconomical to insure that property. Properties cannot be financed if insurance is not available. This risk driver is considered by 21% of respondents.
- **Indirect impact caused by a deteriorating macro environment:** In addition to property level impacts related to physical damages, there could also be wider economic impacts on regions subject to physical risk. For example, areas in Texas may suffer from extreme heat and water shortages that could result in weakening of the agriculture industry and weaker GDP growth. 17% of respondents already consider this effect.
- **Indirect impact caused by damage to local infrastructure:** Physical hazards could also impact local infrastructure, which in turn may affect real estate values. Just 11% of respondents currently model this risk.

Exhibit 9: Potential physical risk elements/drivers modeled or planned to be modeled (%)



Some percentages do not add up to 100% due to rounding

Banks are planning to expand their physical risk modeling capabilities for real estate in 2023 and beyond. No individual risk driver is clearly being prioritized over others. While banks have significant capabilities for modeling direct damage, they can also build out capabilities for considering future damage expectations and specifically changing-expectations risk. Capturing this material risk is critical to getting a full picture of potential property-level physical risks and using these insights for business decisions.



SPOTLIGHT

Changing-expectations risk

Changing-expectations risk refers to the impact of changed expectations about the future climate and its impacts on the property and borrower. In areas where hazard risk has increased, properties and borrowers face higher anticipated future damages to the value of the property, costs to protect the property, its affordability, and its insurance premiums.

Changing expectations are known to materialize after natural disasters—evidence that it should be on a bank’s radar moving forward. When Hurricane Sandy struck the East Coast in 2012, the value of properties that suffered damage fell from between 17% and 22% immediately following the storm and have gradually recovered only part of their original values. All properties in the flood zone—even those not damaged by the storm—dropped in value by an average of 9% because the storm increased the perceived risk of living in those neighborhoods.⁶ But in contrast to directly damaged properties, whose values fell substantially and partially recovered, non-damaged properties’ values decreased gradually following the storm.

⁶ Ortega, Francesc and Taspinar, Süleyman, “Rising sea levels and sinking property values: Hurricane Sandy and New York’s housing market,” *Journal of Urban Economics*, Volume 106, 2018, 81–100.

Conclusion: Accelerating climate scenario analysis capabilities can unlock insights

Survey results revealed that banks are getting going and plan to further expand the scope of portfolios covered by their Climate Scenario Analysis (CSA) capabilities. Although significant progress has been made, there is still work to be done. Banks that strengthen Climate Scenario Analysis capabilities can generate insights that can be used beyond regulatory purposes. Producing differentiated counterparty-level outcomes would allow banks to deploy those insights for emerging business use cases such as credit decisioning. Through Spotlights, we highlighted some emerging focus areas to strengthen CSA methodologies:

- *Corporate & Industrial Transition risk:* Simplified “emissions-based” or top-down approaches may not adequately capture transition dynamics of high-risk sectors such as energy and power generation. Sector-specific production data and modeling logic provide more differentiated counterparty-specific answers.
- *Commercial Real Estate transition risk:* Transition risk for Commercial Real Estate has not been widely modeled due to data challenges but is now in focus through the FRB Climate Scenario Analysis pilot. It is driven by energy cost and retrofitting cost and can be approximated even without energy efficiency rating data. Capturing this risk is critical for a complete understanding of climate risks.
- *Physical Risk vendors:* A large proportion of banks have already sourced physical risk data through vendors. The vendor models vary widely with regards to the quality of underlying models, peril coverage, resolution, and output metrics, and the need to be fit for purpose. To build confidence in the insights generated by CSA, the underlying climate model inputs need to be better understood.
- *Real estate physical risk impact:* Direct physical risk impact is the primary focus, but its materiality is mitigated by insurance coverage. “Changing-expectations risk” refers to how changed expectations about future climate affect properties and borrowers—and has been observed in the aftermath of Hurricane Sandy and other events. Capturing this material risk is critical to get a full picture of physical risks to make business decisions

Accelerating the development and deepening the capabilities of climate scenario analysis can position banks well for any upcoming climate risk-related regulatory requirements. More importantly, it can unlock insights that allow the bank to understand its climate risks, make strategic business decisions, and identify implications to credit underwriting.

About Risk Management Association (RMA)

For more than 100 years, RMA has been laser focused on one thing: helping its members in the world's financial institutions better understand and address risk. As a trusted partner, RMA has weathered the many economic ups and downs of the last century alongside its members, which now number 1,600+ financial institutions of all sizes, from multi-nationals to local community banks. These institutions are represented by over 41,000 individual RMA members located throughout North America, Europe, Australia, and Asia.

Our members rely on us to keep them abreast of important industry trends and prepare them to face new challenges head-on. Our sound risk management principles are developed for members, by members, and help to build safer, stronger financial institutions, impacting local communities and the global economy.

All of this makes RMA unique – we are the only comprehensive source of risk management tools and education that has spanned the last 100 years. And we look forward to the next 100 as we help the industry come together on the transformative issues of climate, cyber, culture, technology, and more.

About Oliver Wyman

Oliver Wyman is a global leader in management consulting. With offices in more than 70 cities across 30 countries, Oliver Wyman combines deep industry knowledge with specialized expertise in strategy, operations, risk management, and organization transformation. The firm has more than 6,000 professionals around the world who work with clients to optimize their business, improve their operations and risk profile, and accelerate their organizational performance to seize the most attractive opportunities. Oliver Wyman is a business of Marsh McLennan [NYSE: MMC]. For more information, visit www.oliverwyman.com. Follow Oliver Wyman on Twitter @OliverWyman.