

**CASE STUDY**

# Understanding the Impact of Climate Change on a Bank's Loan Portfolio

**THE CLIENT:**

A major commercial bank

**USERS:**

The sustainability team

Climate change means that we may face more frequent or severe weather events, such as floods, droughts, and typhoons if action isn't taken. These events bring physical risks that can have a negative impact on businesses and the overall economy. At the same time, steps taken to help alleviate climate change can result in transition risks, as carbon taxes and other policies add new operating costs. There is a complex interplay between physical and transition risks that can impact the operational stability, creditworthiness, and financial performance of firms.

The Financial Stability Board established the Task Force on Climate-related Financial Disclosures (TCFD) to develop recommendations for more effective management of climate change risks in financial markets. TCFD advises the use of scenario analysis to assess climate risks, and asks banks to voluntarily reveal the results in annual filings, along with the metrics and processes used to conduct the analysis. This major commercial bank wanted to respond to TCFD's transparency measures by taking steps to better understand the impact of climate change on its loan portfolio.



## Pain Points

The bank needed access to comprehensive climate data and analytics in order to meet the TCFD recommendations. It recognized the importance of considering the impact of both transition and physical risks on its loan portfolio, and was looking for a solution that could help:

- **Provide insights on different policies that could be used to encourage a move to a low-carbon economy** and the potential impact these policies could have on its loan portfolio.
- **Assess the likelihood of a range of extreme weather conditions** and resulting wildfires, droughts, and floods taking place and the possible impact of these events on its loan portfolio.

The sustainability team reached out to Trucost, part of S&P Global, to see how the firm could assist. Trucost assesses risks relating to climate change, natural resource constraints, and broader environmental, social, and governance factors.

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## The Solution

Trucost met with the bank's sustainability team and discussed two proprietary climate analytics tools that are used to explore the interplay between transition and physical risks under alternative climate change scenarios.

- **The Trucost Carbon Earnings at Risk analytics** capture regulatory transition risks by evaluating financial exposure to more than 130 carbon pricing plans,<sup>1</sup> alongside future carbon pricing scenarios across corporate and portfolio earnings.
- **The Trucost Climate Change Physical Risk analytics** evaluate corporate and portfolio exposure to seven climate change hazards at the asset level, based on a database of over 500,000 corporate assets linked to ultimate parent entities (e.g., heatwaves, cold waves, droughts, hurricanes, wildfires, and river and coastal flooding).



### Understand Carbon Earnings at Risk

This capability helped the bank stress-test its loan portfolio using carbon price scenario pathways to evaluate a client's current ability to absorb future carbon prices, and the impact this could have on the bank's earnings. A carbon price risk premium reflected the additional financial cost per ton of greenhouse gas emissions from the price that was currently being paid, based on the choice of scenario, as well as a company's primary sectors of operation, geographical exposure, and the time horizon of the analysis.

The bank deals with many loan clients and chose to focus the analysis on a subset of sectors most vulnerable to climate change, and provided Trucost with generic information on the location and business sector for each client. In turn, Trucost provided estimates of the earnings at risk, which the bank mapped to specific clients in its loan portfolio to produce the final results.

<sup>1</sup> All coverage numbers as of July 2020.



### Evaluate Climate Change Physical Risk

This capability, which was launched by Trucost at the end of 2019, helped the bank quickly assess corporate asset-level exposure to low, moderate, and high future climate change scenarios based on data from the Coupled Model Intercomparison Project, a key input to the Intergovernmental Panel on Climate Change reports (IPCC).<sup>2</sup> By geo-locating client assets and facilities on climate change hazard maps, vulnerable locations were identified. Assets were then aggregated to a company level and assigned a score, enabling the bank to evaluate the relative risk of different types of clients.



## Key Benefits

<sup>2</sup> The IPCC is the United Nations body for assessing the science related to climate change. The IPCC does not conduct its own research. The reports aim to be objective and transparent.

The bank recognized that climate change is a growing concern and could impact its clients and the bank's financial outlook. As such, it was open to using innovative approaches to integrate climate risk analysis in loan book decision-making. The team felt the Trucost solutions provided a number of important benefits, including the ability to:

- **Better understand potential portfolio exposure to transition climate risks** by examining the financial impact of carbon prices at a company and portfolio level under a range of scenarios.
- **Anticipate the impact of weather-related events** on their clients' facilities, and possible implications for the bank's portfolio.
- **Use the findings to engage with loan clients** on their preparedness for policy changes and strategies for climate change adaptation.
- **Inform TCFD-aligned reporting**, risk management, and corporate resilience.
- **Report to stakeholders** on forward-looking estimates of financial risks embedded in the loan book, in line with TCFD recommendations.
- **Identify transformative solutions** for a more sustainable global economy.

**[Click here to learn more about turning climate risk into climate opportunity with TCFD reporting](#)**

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