



Lenders, Investors, Asset Managers, & Insurers Must Better Quantify Climate Change Risk

Risk is everywhere. A bond might default, a trade war might shock oil prices, or a virus might sweep across the globe. Much of our economy has been built around containing risk: construction companies design buildings to specific resiliency standards, while actuaries, catastrophe modelers, and other quants put a price on risk. Meanwhile, regulators and shareholders often require a quantitative accounting of risk as part of a company's overall enterprise risk management (ERM) strategy.

While climate change has already been linked to record heat waves, wildfires, and catastrophic floods, any material accounting of climate risk has lagged behind. Despite its potential to disrupt companies' finances and business models, it is rarely included in the risk management frameworks of the world's largest companies. The Task Force on Climate-related Financial Disclosures (TCFD), an initiative designed to encourage financial services companies to examine how climate risk might affect their resilience, found in its 2018 Status Report that relatively few companies disclose the financial impact of climate change on their operations or business model. Where they do, it is often in a token box-ticking way. TCFD also discovered only limited information about the soundness of companies' strategies under different climate-related scenarios. Even companies that do make these disclosures need to include more actionable climate-related information.

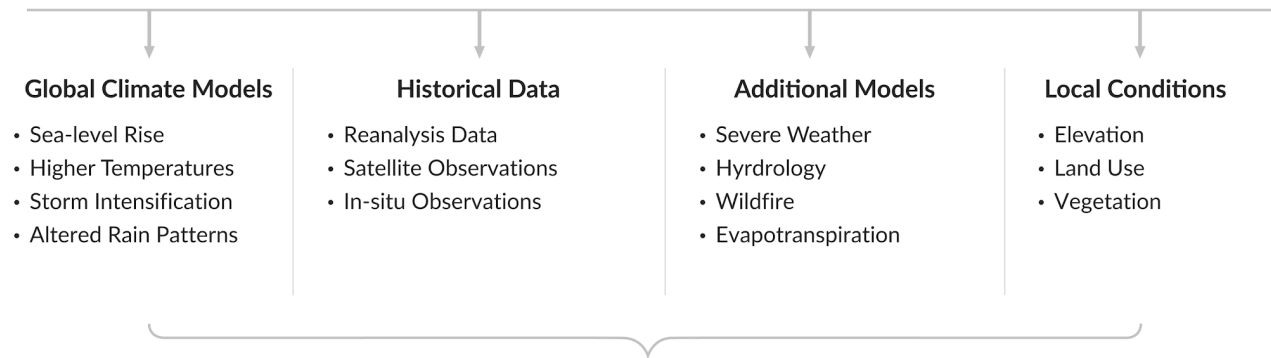
Climate change preparation starts with an accounting of climate risk that goes beyond guesswork and qualitative assessments. Like other forms of risk, it should be quantified so that risk managers can prioritize immediate and future mitigation strategies for both individual projects/assets and for their organization's broader ERM framework. Whether we're ready or not, the climate is already changing, so it's time for organizations to adapt. That transition can begin today.

Jupiter ClimateScore Global 2.0™

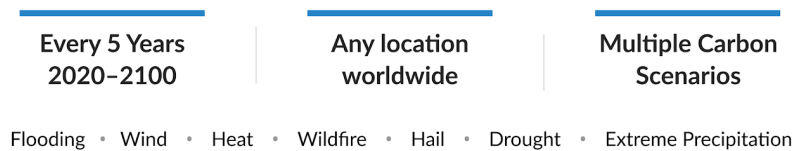
Jupiter's ClimateScore Global quantifies physical climate risk around the world. With its expansive and detailed projections of perils for the remainder of this century, it answers the fundamental question, *"How will future climate lead to extreme weather that affects my locations of interest?"*

ClimateScore Global employs dozens of the scientific community's most respected climate models, coupled with machine learning, land use and elevation data, and models for hydrology, wildfire, severe weather, and more. By distilling the complex interactions between expected changes in sea levels, surge, storm intensity, land and sea surface temperatures, and pressure and precipitation patterns, it pinpoints what decision-makers need to know: the depth of the water, the speed of the wind, the intensity of the heat, and the probability of drought, wildfires, and hail. Those metrics, in turn, can feed damage and economic loss models to put a price on climate change.

Data Sources



Simulation of Future Perils



Key Features

- Metrics to directly measure **flood, wind, heat, wildfire, drought, hail, and extreme precipitation physical risk**, each offered at multiple customizable return periods and peril thresholds that reflect the vulnerability of the asset at risk, and put into context for users via scores and benchmarks by region
- **Best-in-class spatial resolution** available worldwide, tailored to required use cases and providing a single, consistent solution for quantifying climate risk for globally distributed companies, supply chains, and portfolios
- Data available at five-year increments from **2020 through 2100**, enabling both medium-term and long-term projections of future risk
- Directly maps physical climate risk to **financial impact** by peril, region, asset or sector
- Supports the newest **Shared Socioeconomic Pathways climate scenarios**—SSP1-2.6, SSP2-4.5, and SSP5-8.5—that will be used by next year's IPCC report to quantify how risk responds to different socioeconomic, emissions mitigation, and climate adaptation conditions
- **Interact with the data** via on-demand reports, APIs, hands-on data science tools, and interactive applications that can be customized to users' specific needs

Use Cases

ClimateScore Global's scope and granularity captures the most complete view of climate risk across the globe and across time. This allows business users from multiple industries to project how a portfolio of assets may be affected by climate change: the perils it will be exposed to, the vulnerable segments and locations, and how that risk will change over time and across varying carbon emissions scenarios.

With this knowledge, companies can incorporate climate risk into their overall enterprise risk management strategy, where it can be further used to respond to increasing demands from regulators and shareholders and to

disclose under TCFD. Furthermore, climate risk can be deployed across numerous business processes that are specific to their industry:

Banking and Financial Services

- Understand the safety of a mortgage asset over the mortgage's expected life cycle
- Price and structure mortgage-backed securities and bonds based on their climate risk exposure
- Identify climate risk in clients' and lending counterparties' physical assets, supply chains, and distribution networks
- Understand the climate risk of financial assets (mortgages, mortgage-backed securities, and bonds) based on underlying collateral/credit risk

Asset management

- Quantify and optimize asset value exposure to physical climate risk across global portfolios using asset identifiers (CUSIP, FIGI, etc.)
- Understand when to require a more comprehensive assessment and disclosure of climate risk from portfolio holdings

Insurance

- Manage portfolios according to climate risk
- Design insurance products that are triggered by adverse climate conditions
- Improve underwriting guidelines to improve risk selection
- Conduct portfolio stress tests and collaborate with clients to recommend risk engineering efforts with the largest resiliency ROI

Real estate

- Target investment opportunities and avoid locations projected to be outside the company's risk tolerance
- Allocate capital to improve the long-term resiliency and lower the insurance costs of specific developments

Jupiter ClimateScore™ Intelligence Platform

ClimateScore Global is built on top of the cloud-based Jupiter ClimateScore™ Intelligence Platform. Based on the latest global atmospheric science, ClimateScore is designed specifically for the rigors of dynamic climate and weather analysis and prediction. Its physics-based and artificial intelligence models are continuously fine-tuned using petabytes of constantly refreshed data from millions of ground-based and orbital sensors. Novel machine learning techniques reduce local biases of scientific simulations and continually improve the accuracy of results as new observations become available. Jupiter HeatScore,™ WindScore,™ FireScore,™ and FloodScore™ services are also based on the ClimateScore platform. Contact request@jupiterintel.com to schedule a live demonstration of ClimateScore Global.