

Weekly Summary

# Economics of Climate Change

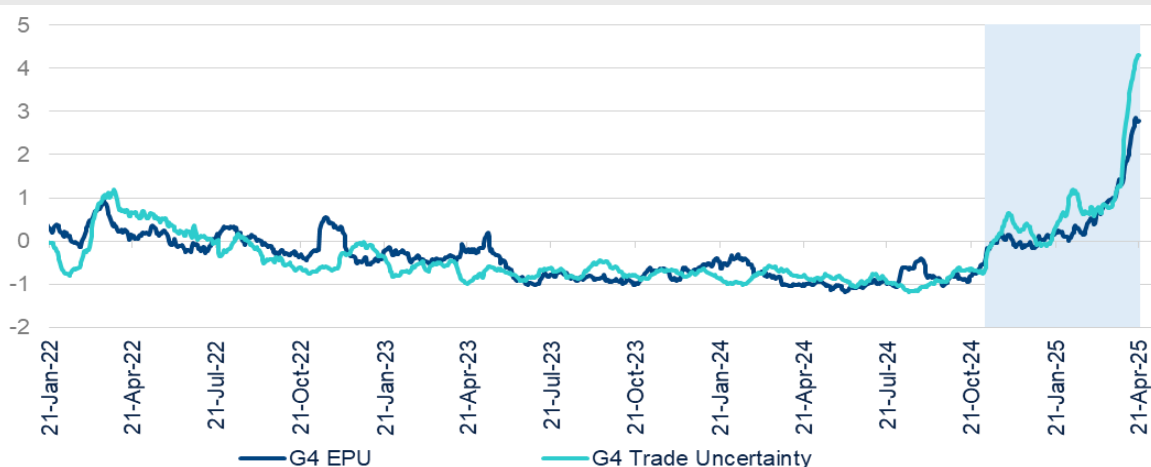
April 25, 2025

## Climate Scenarios: From Uncertainty to Risks

Unprecedented uncertainty underscores the importance of scenario-based analysis for climate risk assessment, especially in the short term. Climate risk scenarios from leading research institutions can serve as a starting point to illustrate potential economic outcomes.

**Global Uncertainty at its Peak.** U.S. mercantilism aimed at eliminating bilateral trade deficits, the use of tariffs as a tool to achieve this (but also as leverage for other objectives), and the chaotic handling of announcements, truces, or exemptions have driven the global economic policy and trade uncertainty to its highest levels in years (**Figure 1**). Against this background, economic forecasting is more necessary than ever and, at the same time, more difficult, as the potential shocks and their compounding effects extend well beyond what is typical in normal times.<sup>1</sup>

Figure 1. **Global Uncertainty. Economic Policy Uncertainty (EPU) and Trade Uncertainty**



Source: BBVA Research & [The GDELT Project](#). Positive (negative) values indicate greater (lower) uncertainty relative to the mean of period 2021-nowadays. G4 refers to the median values of China, Germany, Japan and the US. Shaded area corresponds to the period since the election victory of Donald J. Trump.

**Scenarios: Turning Uncertainty into Risk Assessment.** Traditional economic forecasting often conveys uncertainty with statistical confidence intervals around a single baseline. However, those are usually based on historical error distributions and may not fully capture unprecedented risks. Relying solely on a single baseline and historical fan chart can be unsatisfactory when the economy is facing unusual or extreme risks. Against this background, scenario analysis might be especially useful considering *specific risk events* not well handled by forecasting because historical data offers limited guidance – for example, a pandemic, a trade war, a rupture of

1: "The unpredictability with which these measures have been unfolding also has a negative impact on economic activity and the outlook and, at the same time, makes it more difficult than usual to make assumptions that would constitute a basis for an internally consistent and timely set of projections." [World Economic Outlook, April 2025; Executive Summary](#).

long-kept consensus on global governance, or a climate crisis triggered both by physical or transition risk—. <sup>2</sup> In this sense, it is important to highlight that uncertainty is inherent to the analysis of climate change resulting from human activity, <sup>3</sup> and therefore, scenario analysis is an essential tool. <sup>4</sup>

**Climate scenarios: Alternative references anchored around climate transition risk events.** Geopolitical fragmentation and the decoupling of climate policies are characteristics of the current economic situation, and thus would be the most likely scenario—at least in the short term. <sup>5</sup> However, the mere worsening of both factors—geopolitically driven economic fragmentation among major economic regions and the decoupling of climate policies—could trigger risk scenarios on a global range. The possibilities for defining scenarios are countless, but some have already been developed in 2023 by leading research institutions on climate change and can be well adapted to the current circumstances of “**climate (policies) uncertainty**” (Table 1). Three of the thirteen short-term climate risk scenarios published in September and October 2023 by the Bank of France and the Network for Greening the Financial System (NGFS) <sup>6</sup> included a narrative that aligns with the current situation: Climate policy uncertainty, lack of ambition in the face of acute climate events, or geopolitical tensions that may hinder the maintenance of existing global value chains.

Table 1. **Short-Term Climate Risk Scenarios**

| Scenario                                  | Trigger(s)   | Contagion Channel(s)   | Outcome   |
|---|--|--|---|
| <b>Uncertainty on transition policies</b> | Higher risk premia and confidence shock due to policies uncertainty  | Corporate financing costs, household consumption   | Disinflationary initially; later moderate growth and inflation volatility   |
| <b>Low policy ambition and disasters</b>  | Insufficient policy response, severe physical risk impacts (compounding disasters)                                 | Physical disasters, investment freeze, risk premia surge   | Severe disruptions, inflation, sharp GDP contraction, financial instability.  |
| <b>Diverging realities</b>                | Unequal transition policies, severe disasters in emerging economies or geopolitical tensions clog up supply chains | Physical impacts on emerging, global supply chain disruption, critical minerals shortage. The realization that the transition is ineffective hits investors. | Sharp increase in global risk premia, economic slowdown, stagflationary pressure, rising sovereign risks in emerging economies. |

Source: BBVA Research from [BdF Sep-23](#) and [NGFS Oct-23](#).

**A starting point for monitoring the evolving situation of climate policies and their economic impact.** In such a fluid situation, it seems reasonable to keep open the possibility of alternative realizations of various shocks. Once quantitatively calibrated—both in terms of their severity and the chosen modeling approach—these scenarios would allow approximations of their impacts on economic activity, prices, or banking related variables, thereby meeting the demands of supervisors or risk managers.

2: Box 1. Defining Economic Scenarios: Consistent “what if” constructs with shocks, channels and outcomes.

3: [Global | Transition towards decarbonization. Challenges, levers and investment needs | BBVA Research](#), July 12, 2024.

4: “Climate scenarios are inherently complex constructs designed to explore how different pathways can lead to various long-term temperature outcomes. They are built upon a multitude of assumptions that encompass a wide range of variables, including physical climate factors, socioeconomic trends, carbon pricing mechanisms, and policy measures required to achieve specific temperature targets.” [Global | What are the most likely long term climate scenarios? Not the most ambitious](#). BBVA Research, December 13, 2024.

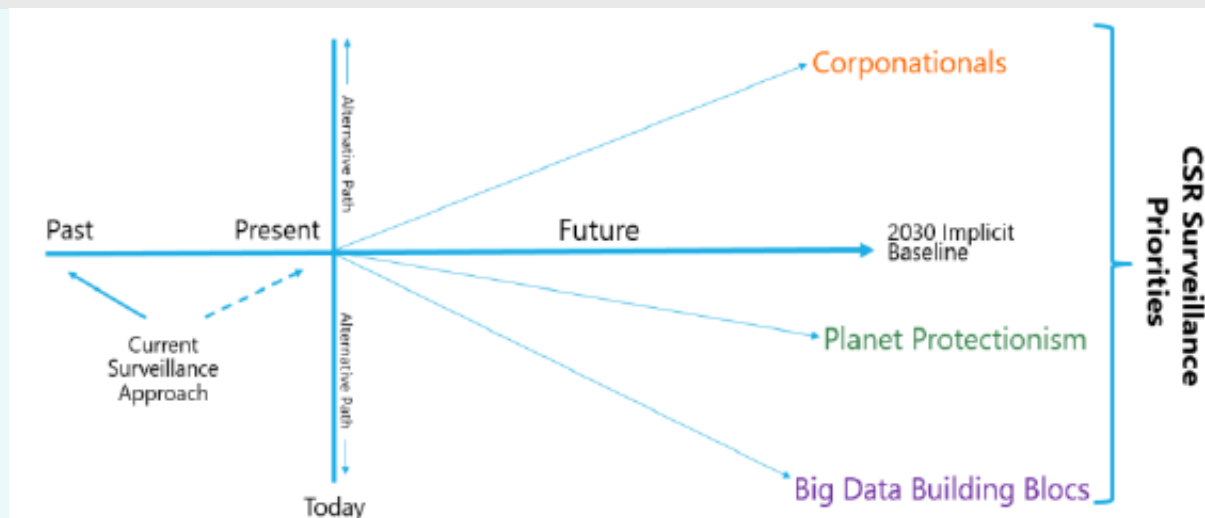
5: [Global | Geoeconomic Fragmentation, a Vulnerability for the Climate Transition | BBVA Research](#). April 4 2025.

6: [Global | Short-term Climate Scenarios: Narratives, Shocks and Modelling | BBVA Research](#). February 21, 2024.

## Box 1. Defining Economic Scenarios: Consistent “what if” constructs with shocks, channels and outcomes.

An economic forecasting scenario is a self-consistent narrative about the future, usually built around a set of specific assumptions or shocks. The scenario is translated into quantitative terms using economic models, yielding an alternative forecast trajectory for variables like GDP, inflation, employment, etc. Importantly, scenarios are not outright predictions or preferred outcomes – they are illustrative “what if” constructs. Crucially, scenarios are constructed to be internally consistent. All the pieces of the narrative – the shocks, the policy reactions, and the economic feedback loops – must fit together logically. By exploring a range of “what if” situations (for example, a surge in oil prices or a major geopolitical conflict), forecasters and policymakers can better prepare for different possibilities. Possibilities are infinite, and the first election is choosing the set of relevant narratives. For example, **Figure B1** shows the three alternative futures relevant for the IMF in 2021<sup>7</sup> for 2030: Corporational scenario, Planet protectionism and Big Data Building Blocks.<sup>8</sup> It seems that the set of potential scenarios for surveillance might be nowadays slightly different. A scenario posits not only an initial trigger (or set of triggers), but also possibly different behavioral responses or structural conditions that influence how the shock plays out. Crucially, scenarios are constructed to be internally consistent. All the pieces of the narrative – the shocks, the policy reactions, and the economic feedback loops – must fit together logically.

Figure B1. **Scenarios: Alternative Futures**



Source: 2021 Comprehensive Surveillance Review— Background Paper on Scenario Planning. IMF May 2021.

7: 2021 Comprehensive Surveillance Review— Background Paper on Scenario Planning. IMF May 2021.

8: “In the **Corporationals scenario**, corporations with extensive global footprints have used technology to assume the provision of services previously performed by governments but with unequal benefits and volatile capital flows. In **Planet Protectionism**, poorly designed unilateral protectionist actions have amplified a negative aggregate supply shock as countries grapple with the complementarities and tradeoffs between environmental and debt sustainability. In **Big Data Building Blocs**, the decade’s productivity gains from a big-data, 5G-fueled information wave were beginning to taper when a hybrid cyber-physical attack cemented a downshift in the global economy.” Ibid 7.

## Highlights of the Week

- **Global | [Power Hungry: How AI Will Drive Energy Demand\\_ IMF WEO April 2025](#).** Booming AI adoption is set to drive massive electricity consumption, challenging policymakers to balance economic gains with energy prices and climate goals.
- **Global | [Frontiers Award goes to biologist who demonstrated the impact of climate change on species displacement](#).** The BBVA Foundation Frontiers of Knowledge Award in Climate Change and Environmental Sciences goes to US scientist Camille Parmesan for her pioneering studies showing that “wild species shift their geographical ranges in response to climate change”.
- **Global | [State of the climate: 2025 close behind 2024 as the hottest start to a year - Carbon Brief](#).** Global temperatures in the first quarter of 2025 were the second warmest on record, extending a remarkable run of exceptional warmth that began in July 2023.
- **Europe | [European State of the Climate 2024 | Copernicus](#).** Globally, 2024 was the warmest year on record, following on from the remarkable warmth of 2023. The last 10 years have been the warmest ten years on record.

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