The economic toll of climate extremes

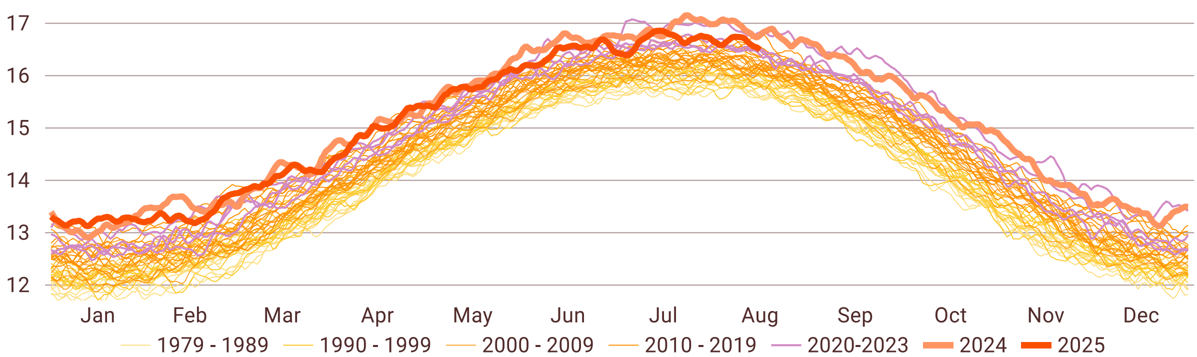
The ongoing global warming significantly increases the likelihood of extreme weather events, including heatwaves, floods and storms. Poor harvests and rising food prices are among the consequences of these events, which in turn means implications for monetary and fiscal policies. Total economic losses are spread across many sectors and continue to grow significantly. Yet the total financial impact in the Nordic and Baltic region has so far remained relatively limited compared to other EU countries. However, as Europe is warming faster than other continents, the risks of supply-chain disruptions and rising prices are likely to grow.

This analysis was originally published on 26 August 2025 as part of Swedbank Economic Outlook. Read the full report here (PDF).

Analysts:
Emma Paulsson, emma.paulsson@swedbank.se, +46 73 083 47 32
Greta Ilekyte, greta.ilekyte@swedbank.lt, +370 620 15270

Third-warmest June globally

Degrees Celsius, air temperature, global mean



Note: 2-metre air temperature. Sources: Climate Change Institute, University of Maine & Swedbank Research

Average temperature anomalies are rising

From record-breaking heatwaves to raging wildfires, June 2025 was the third-warmest June on record globally, while Western Europe experienced its hottest June ever recorded. Two major heatwaves swept across the region, causing "very strong heat stress" in large parts of Western and Southern Europe. In some areas of Portugal, temperatures soared to 48°C. Spain endured its hottest June in 64 years, and the UK recorded its highest June temperatures ever.

The number of global temperature anomalies (difference from average) is rising. Surface temperature plays a critical role in regulating numerous environmental and ecological processes essential to both humans and other life forms. These include key components of the water cycle – such as evaporation, cloud formation and precipitation. Hence, the surge in temperature anomalies escalates the likelihood of extreme weather events, such as heatwaves, floods or storms. Extreme weather events are one of the most tangible effects of global warming and are a clear sign that climate-related risk is a present reality.

Research summary: extreme weather impacts the economy through different channels

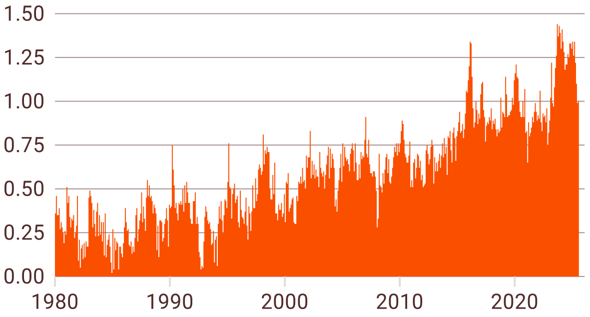
Extreme weather events affect economies through different channels, depending on when, where and what types of weather events occur. Both the supply and the demand side of an economy can be affected. The ECB recently published a noteworthy study, Going NUTS: the regional impact of extreme climate events, in which it empirically assessed the impact of various types of extreme weather events. In short, heatwaves were found to harm productivity, disincentivising investment and output in the long run. Droughts affect the labour market by causing declines in employment and number of hours worked, while heavy rain and storms cause larger migration flows.

The study also mentions that extreme weather events affect the capital stock (including machinery, buildings and infrastructure), labour supply and productivity. The effects can be persistent over time. Additionally, worsening extreme weather events are likely to exacerbate the economic challenges resulting from low productivity growth and demographic pressures.

Several studies have identified a negative impact on near-term economic activity. The near-term impact arises primarily from the destruction and disruption caused by the event itself, reflected in actual output and the output gap. The abovementioned ECB study suggests a more persistent medium-term effect on economic activity and that the effects of weather events on output can intensify over time. The intensifying effect is described as connected to higher uncertainty, income losses and disruption as well as higher emigration, which depresses demand and makes lower economic activity and employment persistent. Although all regions affected by extreme weather showed a decline in net inward migration, the effect was likely smaller for the Nordic and the Baltic countries than for other regions that are more heavily affected by climate change. Investment in adaptation or rebuilding after such events reduces productivity (in economic terms), as it represents an "opportunity cost"; resources are diverted from other priorities, such as developing new technologies. When floods occur in high-income regions, economic activity can even increase as the region manages to "build back better", whereas floods in less wealthy regions leave economic activity lower than before.

Average temperature anomalies

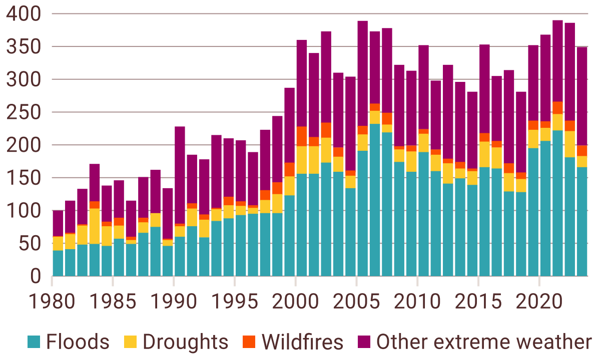
Degrees Celsius



*Yearly surface temperature from 1980–2025 compared to the 20th-century average (1901-2000)
Sources: NOAA & Swedbank Research

Number of natural disasters

Total, world



Sources: Swedbank Research & Macrobond

Extreme weather is pushing up food prices

The impact of an increase in extreme weather events is already visible in food prices (and is classified as an indirect effect). By damaging harvests, extreme weather events impact the prices of unprocessed foods with a lag of just a few months. In the case of processed foods, the impact on food prices may be delayed for longer periods of time.

While not directly affected, prices of foods such as meat and dairy products may be impacted through higher prices for fodder. Other indirect channels of pass-through from adverse weather events to prices can include lower supplies of livestock; in this case, the effects on food prices may be delayed for years. When Sweden experienced a drought in the summer of 2018, cereal prices rose rapidly; the extreme weather contributed to higher prices already in the late autumn of that year and has also been blamed for higher meat prices in 2025 – seven years after the event. Higher food prices also have a way of spreading to other price components in an economy, meaning that they pose an upward risk to other prices such as restaurant and accommodation prices: They can even lead to an elevated risk of wage-price spirals, depending on the level of the price increases.

Research suggests that extreme weather events increase volatility in prices but do not necessarily lead to permanently higher prices. Intuitively, however, it is likely that more frequent incidence of such events will persistently raise food production costs through higher investment and insurance premiums, much of which will probably be passed on to consumers. For the Nordic regions, recent research finds that climate change both benefits and threatens harvests, indicating that region-specific strategies can help in risk management.

However, the prices of many food products are set on the global market, meaning that weather events in other countries affect prices in our home markets. Conversely, for food products such as olive oil and pork, where the EU is a net exporter, weather events in countries such as Italy and Spain affect food prices globally. In 2024 alone, at least eight different food products ranging from cocoa to onions were affected, according to a recent study (Kotz et al, 2025).

Country	Food item	Extreme weather	Date	Price increase, y/y%
Ghana & Ivory Coast	Cocoa	Heat	Apr 2024	280%
Vietnam	Coffee	Heat	Jul 2024	100%
Brazil	Coffee	Drought	Aug 2024	55%
Japan	Rice	Heat	Sep 2024	48%
UK	Potatoes	Rain, floods	Jan-Feb 2024	22%

Source: Kotz et al, 2025

In the Baltic countries, this summer was unusually rainy. In Estonia, rainfall in June was 150% above average, and in July it was 134% higher than usual. Similar conditions were recorded in Latvia and Lithuania. May and June were also colder than average, delaying or destroying the ripening of crops. Heavy rains damaged grain fields and flooded potato ridges in Estonia, while in Lithuania, below-zero temperatures in May considerably reduced the fruit harvest. As a result, the prices of domestic fruits and vegetables are expected to rise this year in the region, whereas it's less clear whether prices in other countries will also be affected.

Total economic impact on the Nordics and Baltics

The total economic impact of extreme weather events extends across most sectors, affecting companies, households and the public sector. Although data on economic losses due to extreme weather events is still lacking, estimates of direct costs (such as ruined houses, bridges and harvests) are available on a national level, although they do not include indirect effects (e.g., price changes in food or productivity losses).

The cumulative direct economic losses from extreme weather events from the 1980s to 2023 reached more than EUR 1,600 per capita in Denmark (3% of its GDP in 2023), according to calculations by the European Environmental Agency (EEA). The corresponding loss was approximately EUR 544 in Latvia, EUR 690 in Lithuania and EUR 950 in Norway. Estonia, Finland and Sweden experienced costs lower than EUR 500 per capita (EUR 400 per capita in Sweden).

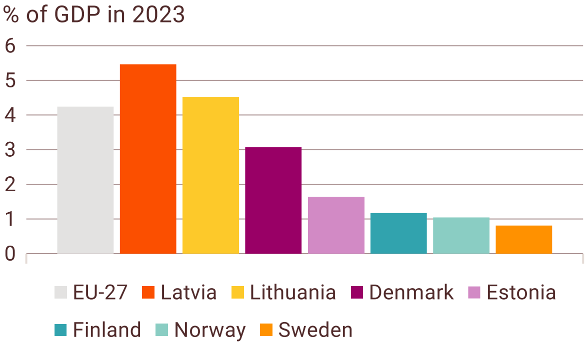
On average, per capita expenditure in EU member states between 1980 and 2023 amounted to EUR1,713. The Baltic states incurred higher costs relative to GDP, owing to the greater importance of agriculture and their comparatively weaker economies. Among them, Latvia stood out, experiencing an impact of more than 5% of its GDP. The abovementioned ECB study found prolonged effects of extreme weather on GDP – up to four years after an extreme weather event. According to the EEA estimates, less than 20% of the total losses were privately insured, meaning that financial solutions to risk-sharing are still lagging.

However, it is likely that the actual total economic losses would be considerably larger if indirect costs were included. Indirect economic costs include reduced productivity, lower labour supply, volatile prices, and less effective investment and consumption, as discussed in the research summary above. In addition, indirect costs are expected to increase significantly in the future. As shown in the ECB study, if severe climate hazards projected under a high-emissions scenario were to occur globally, the euro area could face average total economic losses up to 15 times greater than the expected direct climate impact by 2050. The findings indicate that the main economic impacts are likely to occur indirectly, especially via disruptions to supply chains.

Given their broad impact on prices, extreme weather events and climate-related risks have become a significant concern for monetary policy, primarily due to the increased likelihood of more volatile and elevated inflation. As ECB President Christine Lagarde noted during the latest Governing Council meeting, "Extreme weather events, and the unfolding climate crisis more broadly, could drive up food prices by more than expected".

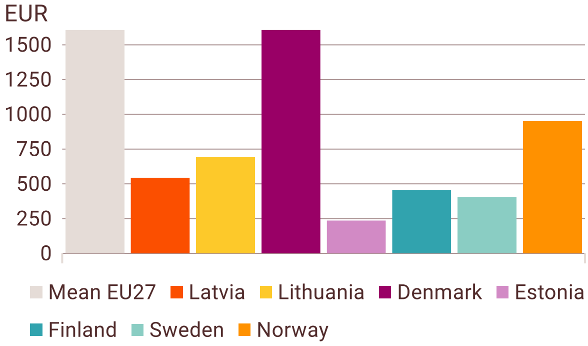
There are also implications on fiscal policy, including the need to fund climate adaptation and to invest in infrastructure capable of withstanding changed weather conditions. Everything from hospitals and water facilities to railways and power gridlines may be affected – issues that fall largely within the scope of fiscal policy. Financial markets will also face consequences; higher price volatility could lead to greater interest rate fluctuations, while insurance premiums and the search for market-based risk-sharing solutions are likely to become increasingly important.

Direct cumulative losses due to weather and climate-related events (1980-2023)



Sources: European Environmental Agency & Swedbank Research

Direct per capita losses due to weather and climate related events (1980-2023)



Sources: European Environmental Agency & Swedbank Research

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Swedbank C&I, Swedbank AB (publ), SE-105 34 Stockholm.

Visiting address: Malmskillnadsgatan 23, 111 57 Stockholm.