

# Is there a storm coming?



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Business resilience and better forecasting is the key to coping with the impact of increasingly extreme and unpredictable weather, according to Maths Stanser of QBE.

## Overview

2019 saw the hottest June ever recorded, as temperature records tumbled across Europe. Only six months before, a polar vortex caused record low temperatures in the US mid-west. The city of Chicago was colder than Antarctica.

Extremes of weather are becoming the norm, yet predicting how weather affects business is increasingly difficult. Environmental factors, like climate change, water shortages and more extreme storms and floods, are just some of the factors making the world an increasingly unpredictable place for businesses.

According to the QBE Unpredictability Index, almost all of the 'least predictable years' in the Index have occurred in the past 20 years, with the majority during the past 10 years. This increase in unpredictability is largely driven by deterioration in political stability since the Millennium. However, environmental factors are increasingly interacting with political, economic, societal and business risks.

## Unpredictable weather

Weather is becoming more extreme, with more intense periods of hot or cold. This year's heatwave in Europe resulted in record temperatures in many countries, while heatwaves in 2018 set new records in Japan, Canada and Algeria. In contrast, the so-called 'Beast from the East' in 2018 caused freezing temperatures in the UK, setting a new UK low for Spring.



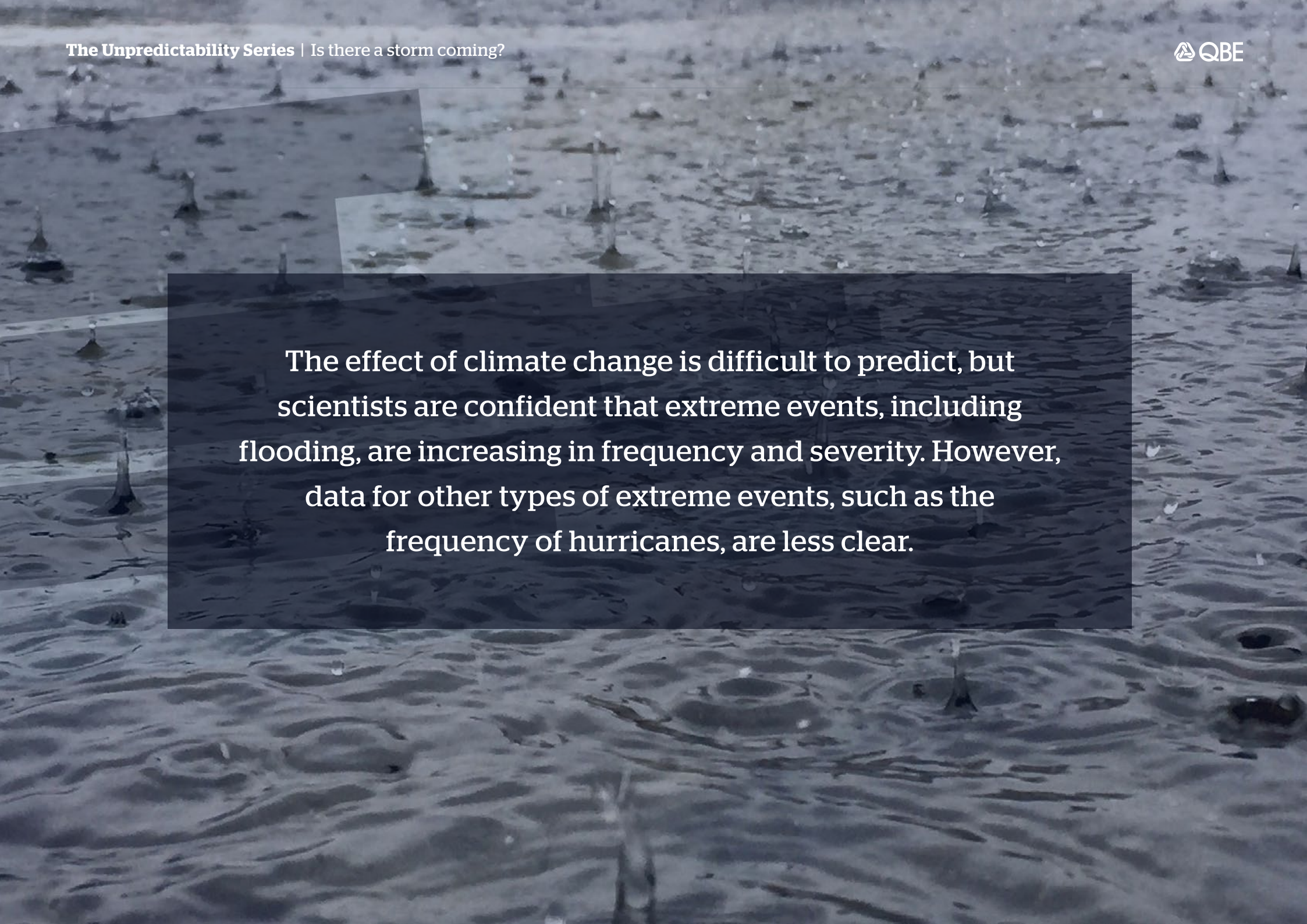
# £1bn

**The estimated daily cost to the UK economy from 'The Beast from the East' weather disruption**

Unseasonal events can have a disproportionate impact as people and businesses tend to be less well prepared. The 'Beast from the East' cost the UK economy an estimated £1bn per day, while UK supermarkets lost £22m in lost sales as shoppers stayed at home. The

heatwave in Europe is threatening a repeat of last year when low water levels on the River Rhine made parts of the river unnavigable, disrupting supply chains and cutting industrial and manufacturing output.





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## Climate change effects on business

Climate change is likely to be behind these extreme weather events. The past four years are the warmest on record, while 2016 was the hottest year ever at 1.2C above the pre-industrial average.

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Generally, scientists expect climate change will increase the likelihood of extreme heatwaves and potentially extended drought conditions. Research also points to an

increased likelihood of more intense rainfall events and tidal flooding in low-lying coastal areas. According to NOAA, some effects of climate change might suppress hurricane formation, but, once storms form, warmer oceans and atmosphere could make storms more powerful and wetter.

Climate change will also present new risks. Global sea level has been rising over the past century, and the rate has accelerated in

recent decades with global warming. According to a 2019 research paper published by the Proceedings of the National Academy of Sciences of the United States of America (PNAS), global sea levels could rise by more than two metres by the year 2100. This is more than twice earlier predictions - the Intergovernmental Panel on Climate Change's Fifth Assessment Report forecasted a one-metre rise in sea levels by the end of the century.

Rapidly growing cities and climate change will make cities more vulnerable to rising sea levels. Eight of the world's 10 largest cities are close to the sea, while two-thirds of the global population is expected to

live in cities by 2050, according to the UN. Already an estimated 800 million people and 570 coastal cities are exposed to a sea-level rise of 0.5 metres by 2050, stated by the World Economic Forum's Global Risks Report.



## Global catastrophe losses

The growing volatility of weather is evident in insurance claims. Global insured losses from natural catastrophes have been steadily rising in frequency and severity. In large part, this is a reflection of increased insured assets and economic activity in regions exposed to windstorms, flooding, wildfires and earthquakes.



# \$100bn

**in losses from hurricanes Harvey, Irma, and Maria in the US**

2017 was one of the most devastating years on record for tropical cyclones with over \$100bn in losses from hurricanes Harvey, Irma, and Maria in the US, and Typhoon Jebi in Japan. 2017 and 2018 were also notable for wildfires in North America, which generated record combined losses of over \$40bn. The 2018 (Camp Fire) wildfire in California cost insurers \$12.5bn, the most expensive single wildfire on record.

Natural catastrophe losses are also increasing with the globalisation of supply chains, which expose companies in the US and Europe to disasters all around the world. This is evident in the growing relevance of business interruption losses from natural catastrophes, which has significantly added to the insured cost of some disaster events.

## Wider impact

The impacts of extreme events and climate change stress social, economic, political, and business risk. Environmental factors, including extreme weather events, can destabilise entire regions, as governments, individuals, and businesses respond to the increased frequency and severity.

The World Economic Forum, for example, says water shortages are already contributing to conflict. In 2017 alone, water was a major factor in conflict in at least 45 countries. Rich Sorkin, CEO of Jupiter, cites New Orleans as an example: “A city that benefits from substantial disaster funding, New Orleans has seen a 10% population decline since Hurricane Katrina nearly 15 years ago. These issues, and the associated stresses on municipal finance, national debt, and immigration, will continue to worsen.”



## Business risk management

Higher frequency and severity of natural catastrophes, and increased volatility of catastrophe losses, will require much higher levels of risk management and greater use of data analytics to better understand and mitigate catastrophe risks.

This is just as true for the insurance industry as it is for those businesses it insures. The insurance industry is working to ensure continuity of cover as society and businesses adapt to more extreme and more unpredictable weather. In this regard, insurers continue to develop modelling capabilities, and are increasingly making use of new sources of data. For example, QBE has partnered with Jupiter, an emerging leader in predicting and

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managing climate risk. Jupiter's ClimateScore platform analyses and predicts climate risk from one hour to 50 years in the future.

The insurance industry is also looking at ways to expand cover to risks that are currently uninsured or underinsured. A substantial 'protection gap' exists with natural catastrophe risk, whether it is flood exposures in the US or windstorms in emerging markets. Some \$280bn

of disasters went uninsured in 2017 and 2018 combined, more than half the total cost of natural catastrophes. At the same time, many of the financial losses caused by extreme events are currently not widely insured. Lost profits, increased operating costs and supply chain disruption associated with heatwaves or cold snaps are typically uninsured where there is no physical damage.

## Predicting the weather

Awareness of how weather affects business and the impact of climate change is increasing and, according to Rich Sorkin: “most companies are in the early stages of assessing what this new class of risk means for them. In every industry sector - utilities, oil & gas, retail, insurance, banking, wealth management - leaders are emerging who are at the forefront of understanding these risks.”

The prediction of extreme weather events will continue to become more unpredictable, for longer time scales of two years and beyond. “As the atmosphere and oceans warm, historical patterns of weather become less and less relevant, and the consequences of uncertain levels of carbon dioxide in the atmosphere become more difficult to predict,” says Sorkin.

However, for shorter time horizons (up to 15 days), predictions will become more accurate of all kinds of weather, including extremes. Just as it has over the last 70 years. Together with advances in data and analytics, better near-term weather forecasting should improve business risk management, enabling companies to identify risks in advance and take measures to mitigate losses.



## Build resilience against weather

Business resilience and the ability to limit business interruption losses will be key to coping with unpredictable and extreme weather events. The more an organisation can prepare for how weather affects business, improving the resilience of buildings and supply chains, the lesser the impact. But, while property damage can be repaired, the loss of critical customers and reputation can have a far greater financial impact.

Risk management and loss prevention advice and services will be an even more valuable aspect of insurance. Insurers like QBE, which are investing in modelling and insightful data, can provide services and advice to help businesses build their resilience and get back to full capacity should the unexpected happen.

**Thank you to Rich Sorkin,  
CEO of Jupiter for his insights  
for this article.**



## Keep in touch

If you haven't already signed-up to receive the Unpredictability Series you can do so at

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Published September 2019

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