

HURRICANES HIT COMPANY SHARE PRICES

Temperatures and investor anxiety rise as extreme weather threatens to wreak havoc on environment and economies

Climate risks are often considered by environmentally aware investors. But research suggests share prices in carbon-intensive sectors may not reflect potential liabilities for damages from extreme weather events.

Based on the 2017 hurricane season, we estimated the top seven carbon-emitting publicly-listed companies, under a hypothetical climate liability regime, might see annual damages from North Atlantic hurricane seasons. This would amount to the order of 1-2% of their market capitalisations (or share prices) each year.

These potential financial implications are substantial. But future changes are projected to be even more significant.

WORLDWIDE AGREEMENT

The Paris Agreement aims to hold increases in global average temperatures to 'well below 2°C above pre-industrial levels, while pursuing efforts to limit increases to 1.5°C'.

The science is clear: a hotter atmosphere has a more energetic water cycle, and warmer air can hold more moisture, with the likelihood of more intense downpours. Climate change is therefore likely to increase the intensity, and possibly the frequency, of hurricanes.

Human activities are well-established as the leading cause of global warming. Cumulative carbon dioxide emissions are the primary driver of climate changes. And now we can begin to quantify the contributions to climate change from individual nations and companies, including increases in extreme event frequencies.

The 2017 Atlantic hurricane season was the second costliest to date, with \$200 billion (£149 billion) of damages estimated. Climate science says the frequency of high precipitation intensity hurricanes have increased 6% since the late 20th century, with more expected.

Although no legal precedent currently exists for climate damage liability from extreme weather events, it may be established in future. The science of attributing extreme weather events to human-induced climate change is developing rapidly.

INTREPID INVESTING

The Paris Agreement explicitly rules out loss and damage estimates associated with climate change as a basis for liability. This makes it difficult to estimate how rapidly investors should react to the possibility of companies having (or deciding) to make contributions for damages associated with climate change caused by their past emissions.

The barriers to a successful compensation case for climate damages remain substantial. But the developing science means the possibility remains. With major insurance companies and governments footing multi-billion dollar bills, the prospect of being able to pass on costs may focus minds on whether the legal barriers could be overcome.

What about investor reactions? Cautious investors might consider steering clear. Markets tend to anticipate trends, and any movement towards an active liability regime could risk shares in such companies becoming orphaned assets.

Other investors may be reluctant to buy them, except at a significant discount. Given the mounting evidence, investors may question whether these risks are appropriately priced into high CO₂-emitting companies' shares.

In 2015, fossil fuel industry activities accounted for 91% of global industrial greenhouse gas emissions. Since 1988, only 25 entities (both companies and state producers) accounted for 51% of global industrial emissions.

Seven of these top 25 emitters were publicly-

owned companies, collectively accounting for 9.5% of scope 1 and 3 emissions between 1988 and 2015.

Global average warming is currently increasing at a rate of about 0.2°C per decade, above today's level of approximately 1°C. If emissions remain flat, the 1.5°C threshold could be exceeded around 2040.

Recent research found the precipitation intensity associated with a Hurricane Harvey scale event had increased by about 15% with the amount of warming seen thus far.

Extrapolating to a world 1.5°C warmer than pre-industrial levels, we could see another 7-8% increase in possible hurricane-induced rainfall intensity. Understanding exactly how storm intensities will change in the future is a very active subject of research.

Many other factors contribute to the economic damages associated with hurricane-induced extreme rainfall. These include population growth, city planning and water management policies. However, these trends point to increased hazards from extreme hurricane-induced rainfall.

There is the possibility of higher future hurricane-induced damages, even if humanity succeeds in limiting warming to the most ambitious threshold of the Paris Agreement. Advisers and clients should be prepared. ■



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