

BIG DATA & ALGORITHMIC FINANCE



Karen HUYNH

Researcher, Amundi Asset Management

Karen Huynh, PhD, is a research analyst at Amundi Investment Institute.

DOES THE STOCK MARKET PRICE PHYSICAL CLIMATE RISKS?

Karen HUYNH, Marie BRIERE, Anja DURANOVIC, Irene MONASTEROLO and Stefano RAMELLI.

This paper develops a bottom-up, forward-looking measure of hurricane risk exposure based on a probabilistic assessment of damages to companies' physical assets and assesses whether this physical climate risk is priced by global equity markets. Average expected losses on physical assets due to hurricane and expected losses that would occur for rare hurricane events are estimated in three different climate scenarios (RCP 2.6, 4.5 and 6.0).

Our results show that a one standard deviation higher cyclone exposure is associated with a 2.2% higher annual return during "quiet" years, while it is associated with a -0.7% annual return during years of intense (above median) cyclone activity. Firms with high hurricane exposure, lower profitability and lower investment are particularly affected.

Overall, the market appears to price physical risks related to tropical cyclones. But the premium fades out during years of high cyclone activity.

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