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Assessing the risk of climate change to a business

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The realisation that climate change threatens economic systems has led investors, standard-setters and regulators to call on businesses to assess their exposure to climate-related risks, and to disclose the financial impact of these in their annual reports and financial statements where material. Indeed, mandatory disclosure requirements have already been implemented in some jurisdictions and are being proposed elsewhere. Mandatory disclosure of physical climate risk by a single business predisposes that the business can reasonably assess this risk. Here, we use the analogy of a spider's web to examine how changes in the frequency and magnitude of extremes, that break parts of the web, combine to affect the efficiency of a hypothetical business. We demonstrate that the precise location of an extreme event, the precise characteristics of the event, and whether a subsequent event occurs close to or distant from an earlier event strongly influences vulnerability. In short, to estimate the impact of climate change induced extremes on a business requires not merely the general frequency of events, but the precise geolocation of the event mapped on the vulnerabilities of the business. We conclude that mandatory disclosure of future climate risk by a business cannot be other than deeply uncertain and this is not resolvable via foreseeable advances in global or regional climate modelling.