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Centre for Risk Studies

CAMBRIDGE RISK BRIEFING

EMERGING CORPORATE RISKS: ARE THEY INSURABLE?

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Consumer Businesses in Radical Change

Plastic waste set to beat price as UK shoppers' top concern

How changing customer behaviour is affecting shopping habits

CUSTOMER 26 Jan 2018 by Sasha Fedorenko

The death of the High Street: 1,772 shops disappeared from Britain's town centres last year, as 18.2p of every £1 forked out by shoppers is spent online

Ocado warehouse fire: Sales warning as shares drop

MANAGEMENT

Retailers Face Radical Change

3,509 views | Apr 26, 2018, 01:42pm

Death Of The High Street

Report shows a third of consumers prefer sustainable brands

05/01/2017

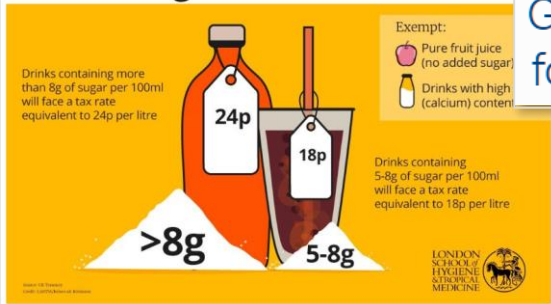
4,920 views | Jul 19, 2018, 12:07pm

Trade Wars Disrupt Supply Chains, Slow Global Growth

The supermarket wars are going nuclear

By ALEX SEBASTIAN FOR THIS IS MONEY
PUBLISHED: 13:52, 19 September 2018

The UK sugar tax



Global Geopolitical Risk Concerns for Businesses

22,161 views | Dec 5, 2018, 12:57am

Five Trends Shaping The Future Of Customer Experience In 2019

The Observer

Markets warm to the power of the green consumer

Now's the moment to strike ethical deals.

Supply Chain Disruption A Major Threat To Business

Opinion February 7, 2019

Will a sugar tax solve SE Asia's growing diabetes problem?

Madeleine Randell / / Share: f t G+ @

News

Millennials shunning alcohol as getting drunk is no longer cool

CNN Health + International Edition +

UK millennials are drinking less alcohol, study finds

By Rob Picheta, CNN
Updated 1602 GMT (0002 HKT) October 10, 2018

Scottish food watchdog wants 'revolution' on food sales

16 June 2017

Businesses Should Prepare for Consequences of Climate Change

Why the ecology crisis poses a threat to business as usual



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Corporate Risk Disclosure Requirements

Risk Register: UK Financial Reporting Council

- UK Corporate Governance Code – from Jan 2019
 - Part 4 Audit, Risk and Internal Control, item 28, requires:

“a **robust assessment** of the company’s **emerging and principal risks**, and to confirm in its annual report the procedures in place to **identify emerging risks**, and an explanation of how these are being managed and mitigated ... and **probability** of related events”

- But provide no definition of emerging risk
- So what are emerging risks?



Emerging Risk Definitions from Industry

ISO

Developing a new standard:

Guidance for managing emerging risks to enhance resilience (ISO/NP 31050)

LLOYD'S

“An issue that is perceived to be potentially significant but which *may not be fully understood* or allowed for in insurance terms and conditions, pricing, reserving or capital setting”

Swiss Re

“Newly developing or changing risks which are *difficult to quantify* and which may have a major impact on an organisation”

EY

“Scenarios that could stand to *derail the company's plan*”



“*Long term trends*, hot topics and weak signals”

pwc

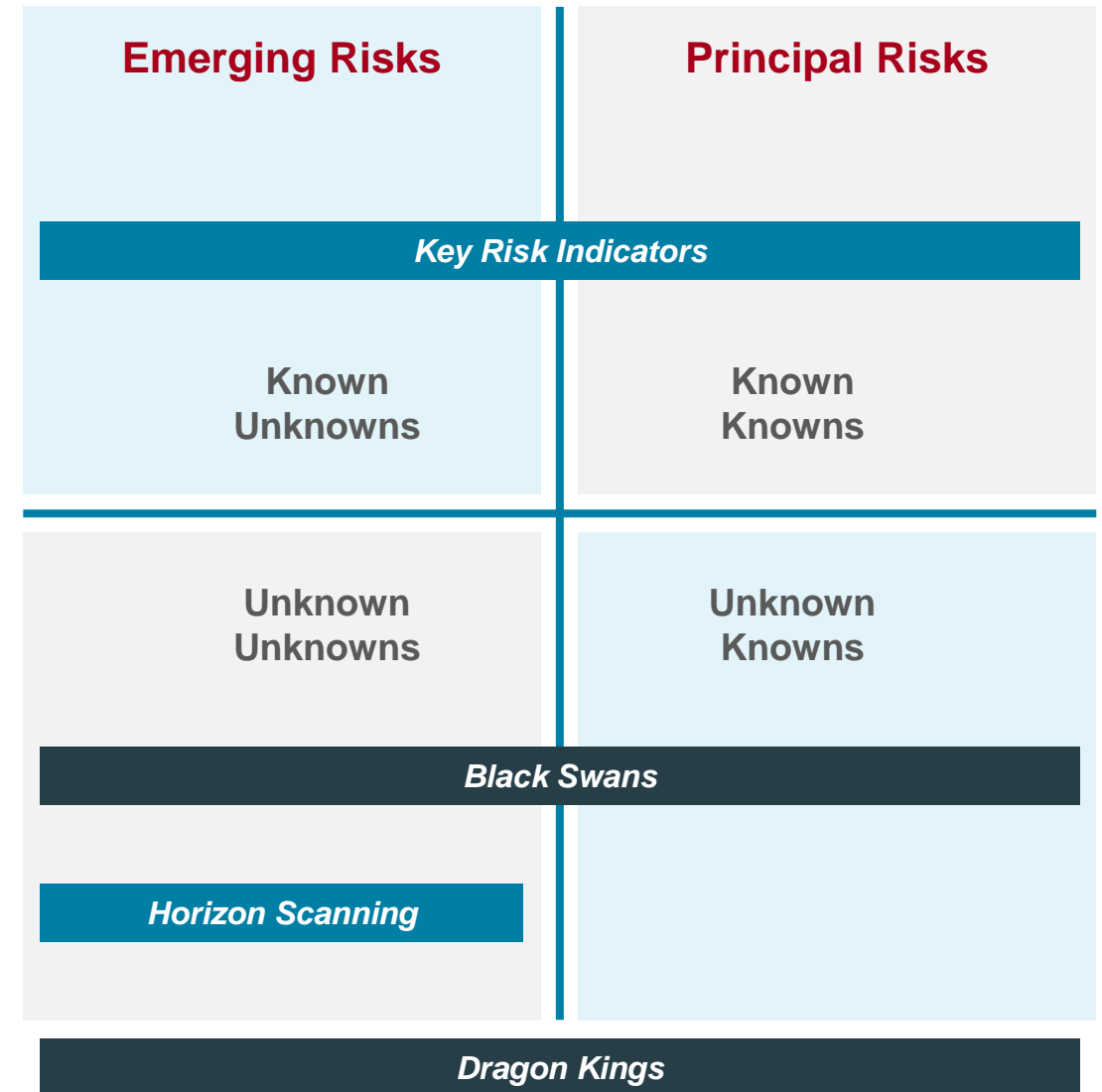
“Emerging risks, also sometimes called global risks, are large-scale events or circumstances that arise from global trends; are *beyond any particular party's capacity to control*; and may have impacts not only on the organisation but also on multiple parties across geographic borders, industries, and/or sectors, in ways difficult to imagine today. Emerging risks are those *large-impact, hard-to-predict, and rare events beyond the realm of normal expectations*—what philosopher–epistemologist Nassim Nicholas Taleb calls “black swans” in reference to the fact that Europeans once knew that all swans were white—until explorers in Australia discovered black ones”

CRS Proposed Definition of Emerging Risk

Emerging Risk

A new risk, changing risk, or novel combination of risks for which the broad impacts, likelihoods and costs are not yet well understood.

(Cambridge Centre for Risk Studies)

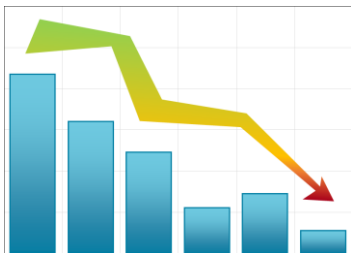


Towards a Taxonomy of Business Risk

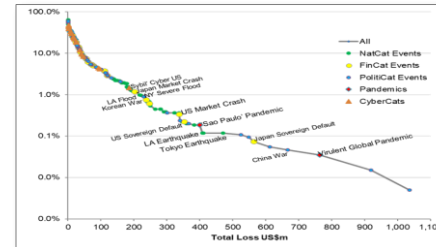
- These applications require a structured approach to estimating business loss from widely different causes
- A taxonomy of business risk identifies a representative suite of causes of loss for most organisations
- Built on 5 strands of research:



Review of risk registers
from annual reports



Historical review of causes
of corporate distress



Corporate risk profiling
case studies



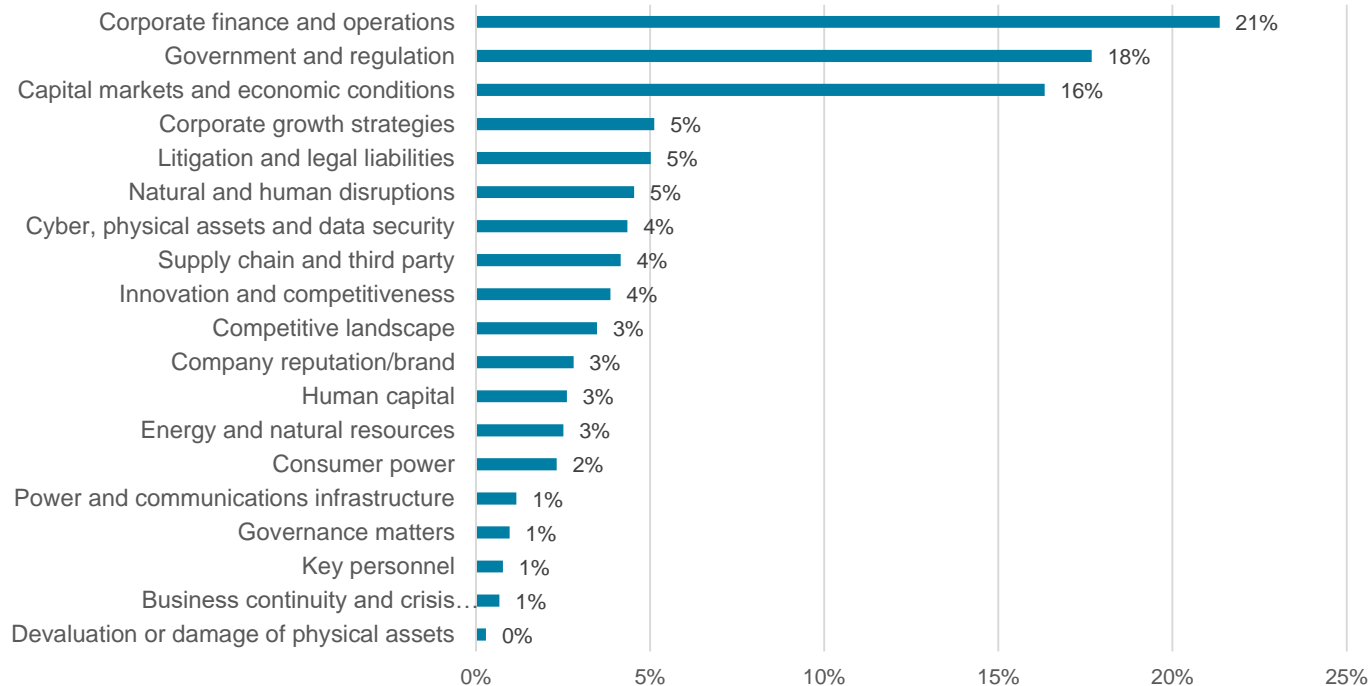
Consultations on
corporate risk



Horizon scanning

Survey of Risk Registers of Public Companies

Frequency of Risks identified in Annual Reports



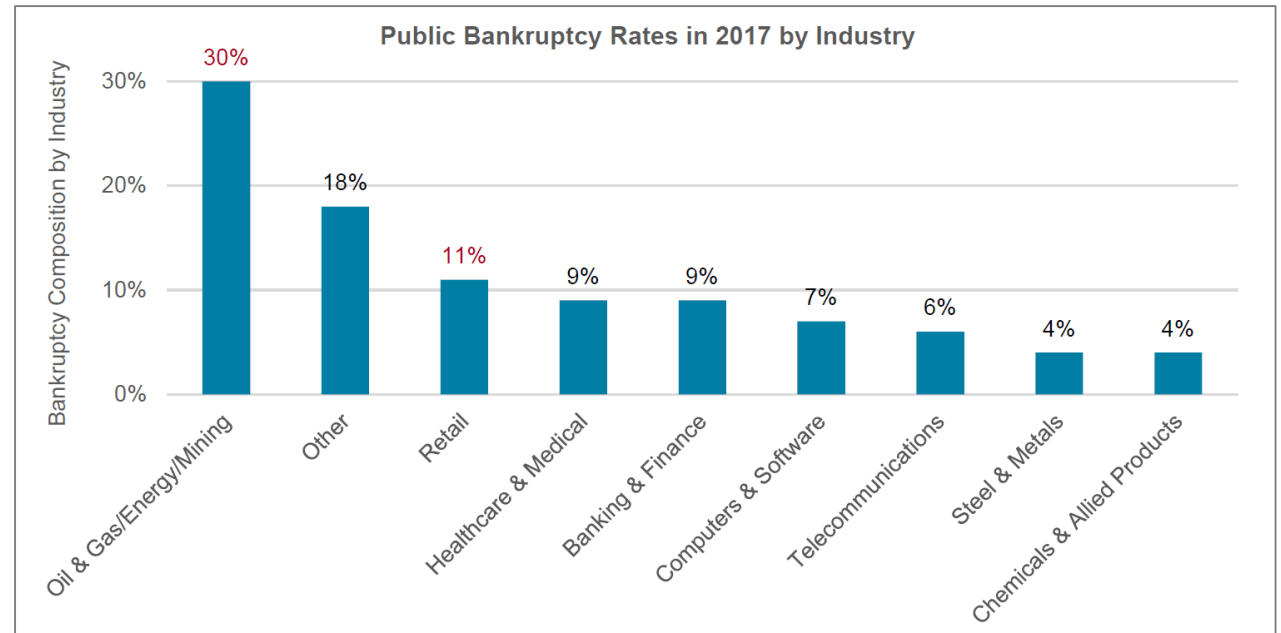
- Growing trend and regulatory requirements for companies to declare main risks to their shareholders
- CCRS has analysed the annual reports of many public companies, and compiled a list of over 1,088 identified risks
 - Reveals wide variation in the risks that companies think pose a threat to their shareholder value
 - Companies do not employ a consistent methodology: no accepted standard approach or best practice

Symptoms of Corporate Distress

- CCRS identifying causal processes and factors that led to the distress of businesses
- Compiling a grading and diagnostic listing of corporate difficulty and distress
- Symptoms range between:
 - profits warnings
 - credit downgrades
 - formal insolvency




Our definition of distress:

1. Prolonged or severe one-off shock to corporate operational efficiency and financial performance
2. Inability to meet creditor obligations
3. High sensitivity to economic conditions and boom-bust business cycles



Bankruptcy rates in 2017 by industry (Source: BankruptcyData's 2017 Corporate Bankruptcy Review)

Historical Catalogue of Corporate Failure Case Studies

	Taxonomised Risk	Scenario	Consequence
 <p>Consumer Discretionary Apparel, accessories & luxury goods</p>	<p>Disruptive Technology E-commerce</p>	<ul style="list-style-type: none"> Consumer shift to fast-fashion retail & online competitors 	<p>Filed for Chapter 11 on 4th May 2016</p>
 <p>Industrials Airline</p>	<p>Political Violence Terrorism</p> <p>Political & Democratic Ideological Shift (Brexit)</p>	<ul style="list-style-type: none"> 2 biggest markets, Egypt & Tunisia, closed to tourists after terror attacks Fall of £ increased fuel & aircraft costs 	<p>Filed for Chapter 11 on 2nd October 2017</p>
 <p>Information Technology Communications equipment</p>	<p>Macroeconomic Tariff War (China-US)</p>	<ul style="list-style-type: none"> ZTE prioritised US sales (47%) over China (17%) Ban stemmed from violation of sanctions on Iran & North Korea Long-time customers scaled back deals with ZTE amid supply concerns 	<p>Severe short-term distress where major operating activities ceased</p>



Finance & Economics



Market Crash in each of the major stock markets of the world; 10%, 50% and 85% peak to trough



Sovereign Crisis in each of 180 countries, leading to default and currency devaluation



Commodity Crisis oil price hikes of varying magnitude causing related price shocks to other commodities



Tariff Trade Wars between each of the major trading blocs of the world



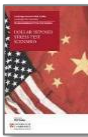
Macroeconomic Regimes: Recession plus 5 other states of the economy



Eurozone Meltdown Break up of the European Union and Euro currency



Global Property Price Crash: Asset bubble burst causes financial crisis



De-Americanization of Global Economy: Dollar deposed by China Renmimbi



Historical catalogue of past financial crises: Worst financial crises of past 200 years

Geopolitics & Security



Interstate conflict between each of 60 national pairings, with three different severities of conflict



Social Unrest in each of the countries most at risk, scenarios of varying severity



Separatism Conflict in each of 180 countries, leading to default and currency devaluation



Terrorist Attack at key facilities and in major national markets, terrorist attacks of different severities



Interstate Conflict impact on trade and business resulting from China-Japan war in Pacific region



Social Unrest: 'Millennial Uprising' study of economic impacts of social change in youth culture



Cyber Terrorism: potential for destructive cyber attacks being instigated by terrorist groups



Global City Risk: Geopolitical and security risks around the world by city

Technological



Cyber Attack six different loss processes, multiple scenarios for systemic attacks



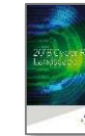
Power Outage in each Wide Area of 180 countries, leading to default and currency devaluation



Solar Storm Economy impact from coronal mass ejection causing power outage and satellite damage



Nuclear accident core meltdowns simulated from each of 160 nuclear power plants in the world



Cyber Risk Landscape summary of trends in each of the major loss processes



Cyber attack on critical national infrastructure causing failure of major systems and power outage



Cyber Loss Scenarios a range of scenarios for how cyber loss can potentially occur in businesses



Systemic Cyber Attack Scenario Sybil logic bomb impacts industry standard database



Environmental



Earthquake large magnitude events in major seismic areas close to centres of production



Tropical Windstorm hurricane and flood events in coastal regions prone to tropical cyclones



Flood events from coastal storm surge, riverine flood, and flash floods in flood-risk areas



Freeze events and extreme winter weather causing transport difficulties and activity outages



Drought: Water stress scenarios, causing reduced availability for manufacturing and agriculture



Volcanic Eruption for each of 700 active volcanos causing ash plume disruption of air traffic and business



Climate Change scenario of changing investor sentiment with divestment to low carbon economy



NatCat Fincat scenarios of trillion dollar natural catastrophes that cause stock market impacts



Cities at Risk Hazard zones around the world for each of the environmental threats to the global economy



Social & Humanitarian



Human Pandemic scenarios of influenza and emerging infectious diseases, with virulence and infectiousness



Plant epidemic scenarios of agriculture and food stress from disease outbreaks in staple crops



Anti Microbial Resistance in pathogens, with implications for epidemic exacerbation



Human Resource and Talent between each of the major trading blocs of the world



Ageing Economy: Demographic trends in each country with changing consumer patterns and trends



Pandemic scenario of a highly infectious, moderate virulence pathogen impacting global economy



Ebola Outbreak counterfactual scenario for 2014 Ebola outbreak worldwide, and impact on economy



Food security crisis and inflation High inflation world scenario from commodity price shocks and crop failure

Governance & Liability



Regulation Change scenarios of major regulatory changes in business activity in high risk jurisdictions



Disruptive competitor scenarios of aggressive price competition and disruptive business models in market



Reputation risk scenarios for consequences of brand devaluation, customer churn, and other effects



Contingent liabilities scenarios of class action law suits and external litigation



Mergers and Acquisitions Failures not adding the expected value and synergy in



Insider threat scenarios of rogue employees and senior company officers



Risk Management Perspectives of Global Corporations Compilation of principal risks



Corporate Risks Governance and Liability shocks in corporate risk

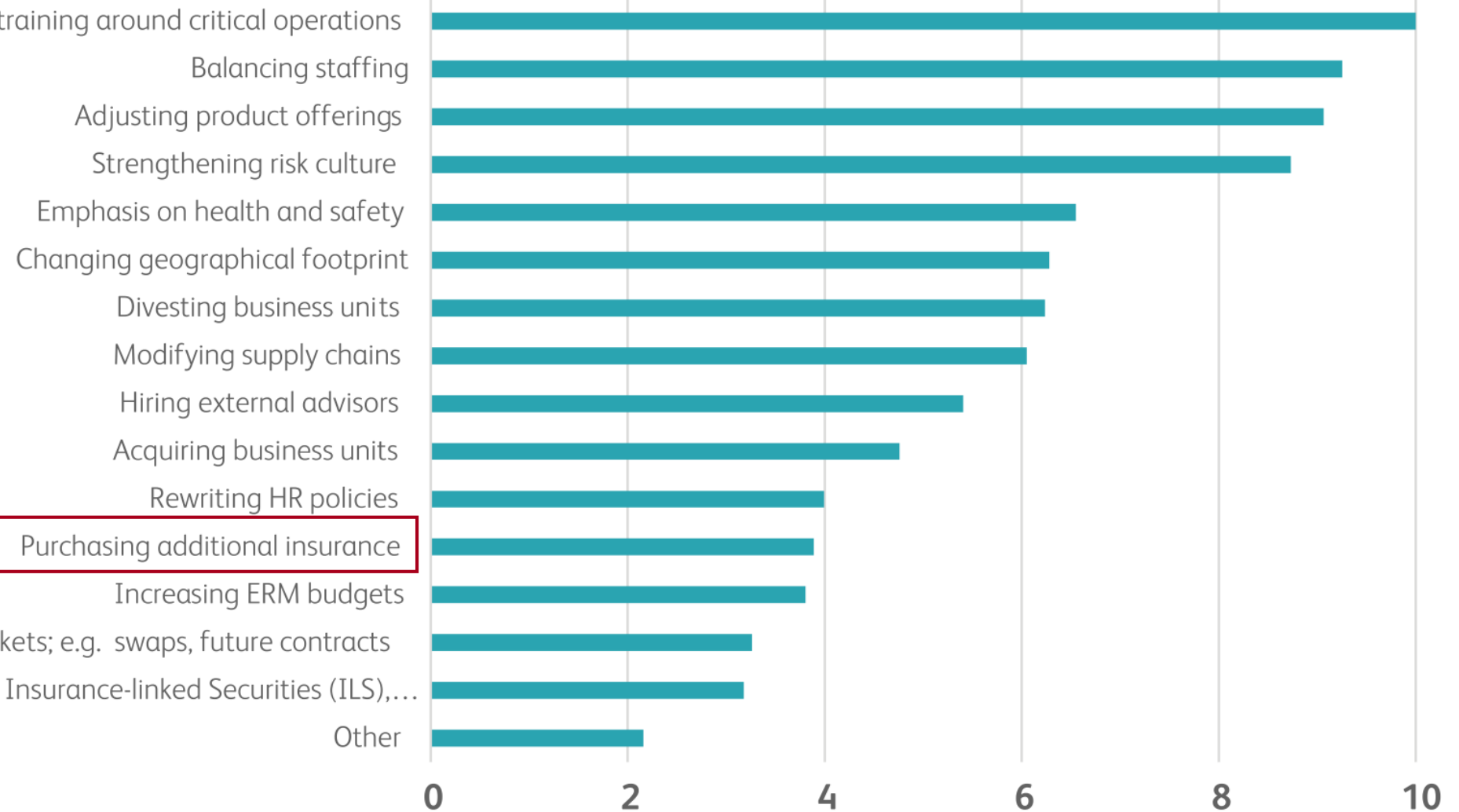
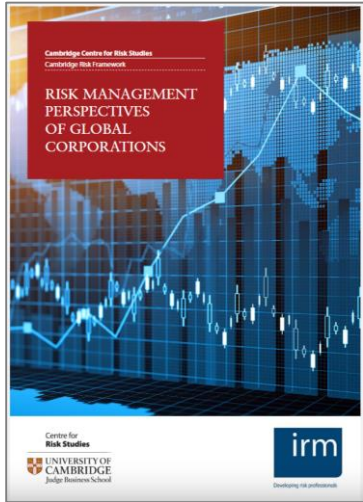


Liability Risks Legal settlement scenarios and Liability shocks in corporate risk

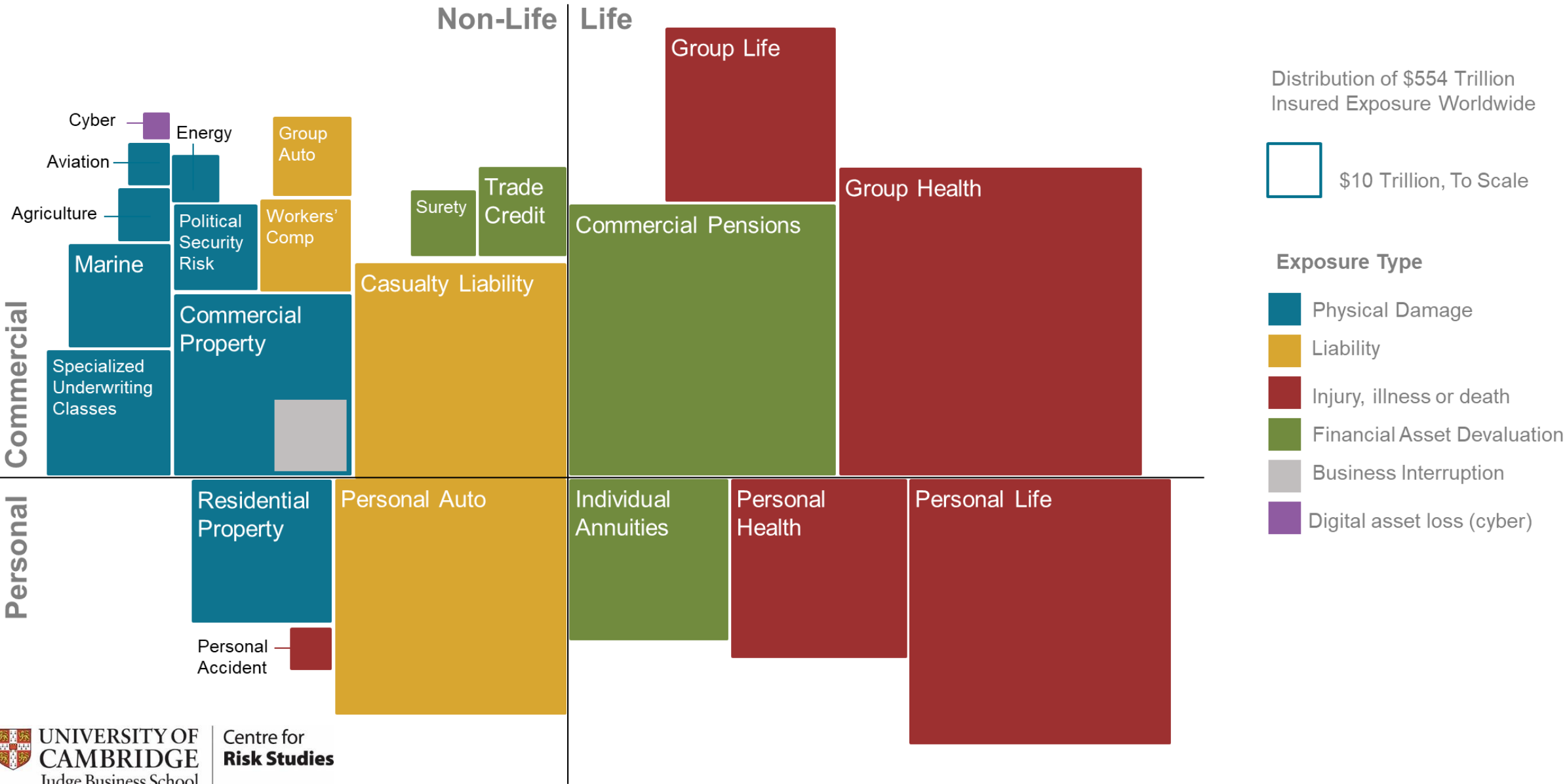
Example Scenarios Currently in Development

Sustainability & Climate Change	Financial & Economic	Technological	Social & Humanitarian
 Climate Change Disrupts Supply Chain & Distribution	 Financial Crisis Following Property Price Crash	 Lengthy Power Outages Disrupt Revenues	 Pay Equality Movement
 Packaging, Plastics, and Food Waste Regulation	 Trade War between UK and China	 Rapid Consumer Shift to Online Shopping	 Outbreak of Infectious Disease Pandemic
 Rapid Uptake of Plant-Based Diets	 Trade War between US and Europe	 Large Data Exfiltration Cyber Attack	 Fake News & Negative Media
 Consumer Shift to Sustainable Products	 De-Americanisation of Financial System	 Contagious Malware Cyber Attack	 Ageing Population Overburdens Public Sector
 Emerging Markets Demand Causes Commodity Shortages	<div>Geopolitical & Security</div>  Eurozone Meltdown	 Major Failure of Cloud Services	<div>Governance & Liability</div>  Increasingly Litigious Society
 Demand for Localisation of Product Sourcing		 Disruptive Effects of Digital '4 th Industrial Revolution'	
 Disclosure & Regulation of Carbon Intensity		 Digital Privacy Backlash	
 Investment Devaluation from Carbon Investment		 Manipulative Psychology Escalates Consumer Trends	
 Introduction of UK Agriculture Bill		 Environmental Pollution	
	 Radical Left Shift of UK Government		 Allergen Labelling Regulation
	 Interstate Conflict between NATO and Russia		 Introduction of Universal Basic Income
	 Social Unrest: Millennial Uprising		 Anti-Monopoly Intervention
			 Tightened Tax Policy

Corporate Mitigation Strategies (where higher score is more important)



Mapping \$554 Trillion of Global Insurance Exposure



Cambridge Taxonomy of Business Risks

Financial & Economic	Geopolitical & Security	Technological	Environmental	Social & Humanitarian	Governance & Liability
Macroeconomic <ul style="list-style-type: none"> Market Crash <ul style="list-style-type: none"> Asset Bubble Financial Irregularities Economic Recession Economic Restriction Trade Sanctions Tariff War Commodity Price Fluctuation Sovereign Crisis Default Investor Sentiment <ul style="list-style-type: none"> Negative Market Outlook Low Carbon Transition Competition <ul style="list-style-type: none"> Disruptive Competitor Aggressive Competitor <ul style="list-style-type: none"> Price War Counterfeit Products Counterparty <ul style="list-style-type: none"> Creditor Failure Customer/Client Failure Government Failure Supplier Failure <ul style="list-style-type: none"> Supply chain disruptions Bargaining power against suppliers 	Political & Democratic <ul style="list-style-type: none"> Ideological Shift <ul style="list-style-type: none"> Nationalism Populism Protectionism Political Shock <ul style="list-style-type: none"> Sudden Leadership Change Regime Change Political Corruption Nationalisation Political Violence <ul style="list-style-type: none"> Assassination Terrorism Coup d'État Social Unrest Civil Conflict/Separatism International Conflict <ul style="list-style-type: none"> Interstate Conflict <ul style="list-style-type: none"> Conventional War Asymmetric War Nuclear War Criminal <ul style="list-style-type: none"> Cartel Pressure Organised Crime 	Disruptive Technology <ul style="list-style-type: none"> E-Commerce <ul style="list-style-type: none"> Clicks & Mortar Gig Economy Robotics & Automation Artificial Intelligence 5G Technology Augmented/Virtual Reality Blockchain Cyber Attack <ul style="list-style-type: none"> Data Exfiltration <ul style="list-style-type: none"> Intellectual Property Loss Contagious Malware Cloud Service Provider Failure Distributed Denial of Service Attack Financial Transaction Theft Industrial Control System Compromise Internet Service Provider Failure Infrastructure/System Failure <ul style="list-style-type: none"> Network Disruption Power Outage Satellite System Failure Internet Outage Industrial Accident <ul style="list-style-type: none"> Explosion Fire Nuclear Pollution 	Sustainability <ul style="list-style-type: none"> Natural Resource Deficiency <ul style="list-style-type: none"> Water Fossil Fuels Raw Materials Biogeochemicals Food Insecurity Land/ Ocean System Change <ul style="list-style-type: none"> Biodiversity Loss Ecosystem Collapse Waste and Pollution Climate Change <ul style="list-style-type: none"> Climate Change Extreme Event Exacerbation Ocean System Change Sea Level Rise Geophysical <ul style="list-style-type: none"> Earthquake Tsunami Volcanic Eruption Hydrometeorological <ul style="list-style-type: none"> Drought Electrical Storm Flood Freeze Hail Heatwave Temperate Windstorm Tornado Tropical Cyclone Wildfire Space <ul style="list-style-type: none"> Solar Storm (CME) Astronomical Impact Event 	Consumer Power <ul style="list-style-type: none"> Shift in Consumer Demand Activism Consumer Boycott <ul style="list-style-type: none"> Commodity Boycott Brand Name Boycott Single Firm Boycott Transparency of Information <ul style="list-style-type: none"> Supply Chain Provenance Failure of Brand Management <ul style="list-style-type: none"> Negative Customer Experience Key Influencer Disruption Negative Media Coverage Human Resources <ul style="list-style-type: none"> Labour Disputes & Strikes Loss of Key Personnel Failure to Attract Talent Employment Practices Gender & Diversity Communication Failure Human Capital <ul style="list-style-type: none"> Ageing Population Labour Shortages Humanitarian <ul style="list-style-type: none"> Poverty Hunger or Famine Inequality <ul style="list-style-type: none"> Welfare System Failure Mass Migration <ul style="list-style-type: none"> Refugee Crisis Infectious Disease <ul style="list-style-type: none"> Plant Epidemic Animal Epidemic Human Epidemic/Pandemic 	Regulation & Liability <ul style="list-style-type: none"> Tightening Fiscal Policy <ul style="list-style-type: none"> Taxation Non-Compliance <ul style="list-style-type: none"> Violations of Existing Regulation Internal Corruption & Fraud Negligence Emerging Regulation Revised Accounting Standards Licence Revocation Contingent Liabilities <ul style="list-style-type: none"> Private Lawsuit Mass Tort Class Action Strategic <ul style="list-style-type: none"> Strategy Failure <ul style="list-style-type: none"> Divestitures Joint Ventures Mergers & Acquisitions Restructuring Asymmetric Board <ul style="list-style-type: none"> Rogue CEO Hostile Takeover Model Failure <ul style="list-style-type: none"> Failure to Forecast Business Future Products & Services <ul style="list-style-type: none"> Product Defect/Failure Innovation (R&D) Failure

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Cambridge Taxonomy of Business Risks: What is Insured?

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16/04/2019

Financial & Economic	Geopolitical & Security	Technological	Environmental	Social & Humanitarian	Governance & Liability
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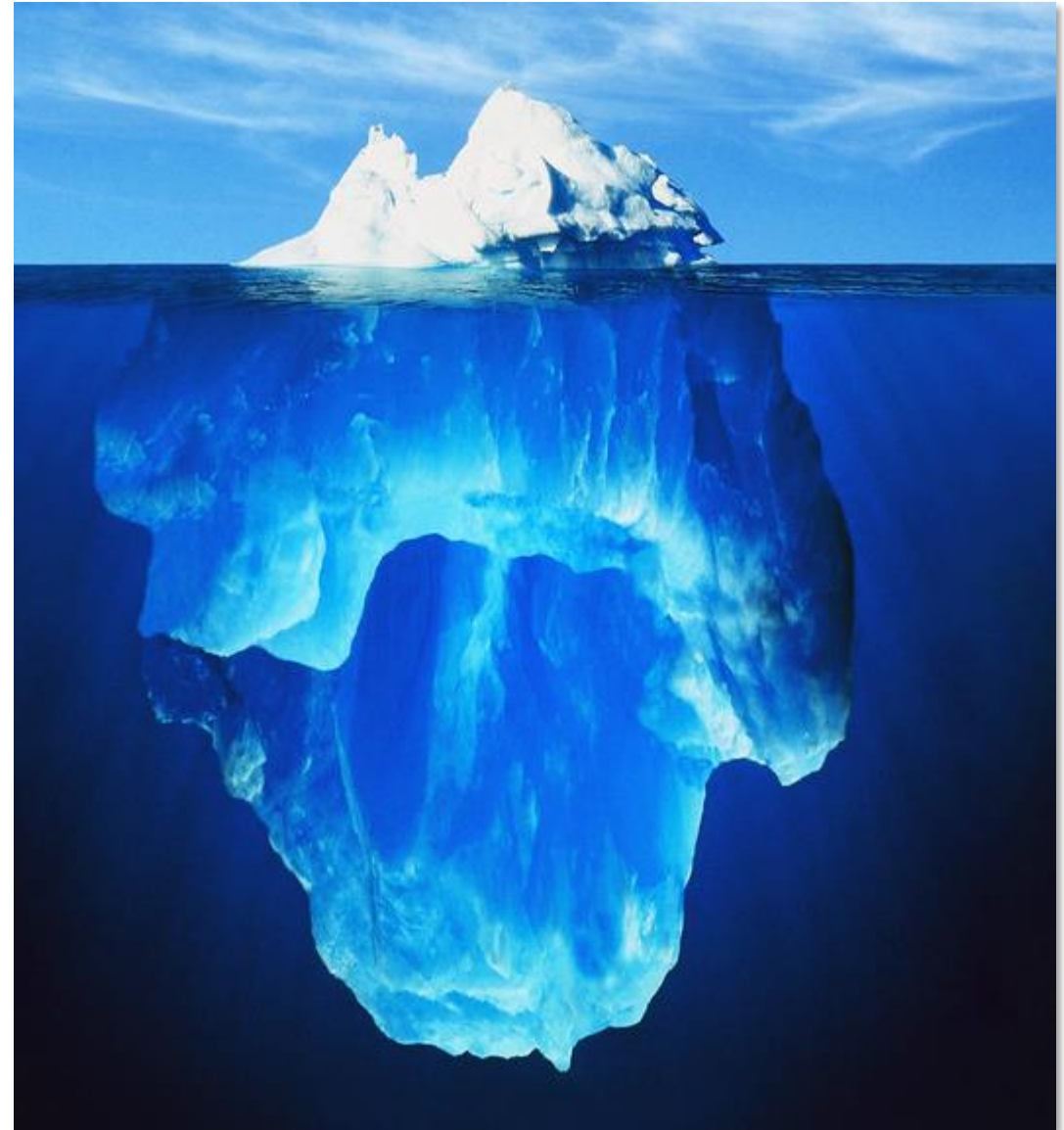
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Are Emerging Corporate Risks Insurable?

- To insure an emerging risk you need:
 - To define a peril
 - Eliminate information bias
 - Eliminate moral hazard
 - Produce a risk model for the peril
 - Include verifiable quantitative metrics
 - Audit or settle claims to contractual standards
- Can we develop parametric triggers?
 - Independent proxy variables
- CRS engaged in trying to quantify through the definition of metrics



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