RISK MANAGEMENT IN GEOPOLITICAL TIMES

LIFE COLLOQUIUM EXPLORING LONG-TERM RISKS

Amba Zeggen 8 October 2025

PROBABILITY & PARTNERS



International Actuarial Association
Association Actuarielle Internationale

LIFE Colloquium

Exploring long-term risks

October 8, 2025



Topics today

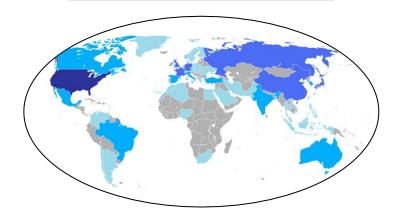
Definition & History



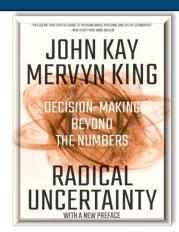
(Longterm) Stress Scenarios



Hegemony



Psychology



Current developments



Our role



About ...



Amba Zeggen

- Partner insurance at Probability & Partners
- Mathematics & Actuarial Sciences
- Risk Management + 25 years
- Solvency II, Capital Management
- Consultant, Lecturer, Non-exc. Director

PROBABILITY & PARTNERS

Firm

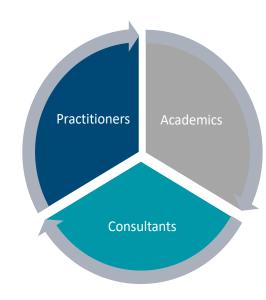
- Risk consultancy firm founded in 2014
- Approximately 40 quant and risk consultants
- Based in Amsterdam

Clients

- Wide range of clients in the financial sector
- We work for banks, insurers, pension funds, asset managers

Expertise

- We help our clients manage their risks
- We have a holistic approach to risk management
- Unique blend practitioners, academics consultants



https://probability.nl

Geopolitics & Hegemony

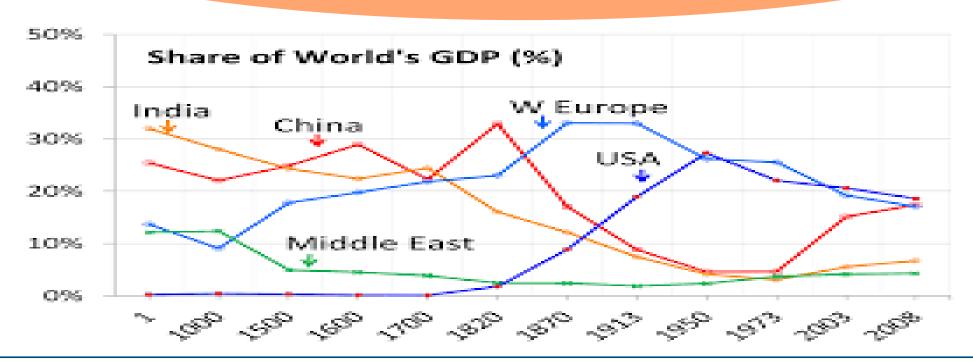


Geopolitics definition

"Geopolitics is the analysis of the interaction between geographical settings and political processes. It seeks to understand how geography constrains and shapes political choices and power distributions in international relations." (Flint, C. Introduction to Geopolitics, 3rd ed., 2016).

HEGEMONIC CYCLE FROM 1 AD

Hegemony
Supremacy based on ideological and political leadership, economic and commercial advantage, and, ultimately, military power.



The data for the first 2003 years (1-2003 AD) are in the table of hardcopy version here: Maddison A (2007), Contours of the World Economy I-2030AD, Oxford University Press, ISBN 978-0199227204

Geopolitics & Hegemony

Geopolitics

E.g. Geolocation
Landscape
Raw materials
Territorial waters





Political power Economic power Military power Soft power











Impact of geopolitical risk & world power shift



"History shows that periods of power diffusion go hand in hand with increasing tensions and a higher risk of conflict between emerging and existing powers."

Source: Clingendael Monitor

"Higher GPR (geopolitical risk) increases the probability of an economic disaster and predicts lower investment and employment. The adverse implications are stronger for firms in more exposed industries, and high firm-level GPR is associated with lower firm-level investment."

Source: American Economic Review, Dario Caldara and Matteo Iacoviello



Long-term geopolitical risks

Long-term geopolitical risks refer to enduring shifts in global power relations, military dynamics, trade systems, cultural influence, and political regimes that gradually alter the macroeconomic and operational context in which insurers operate.

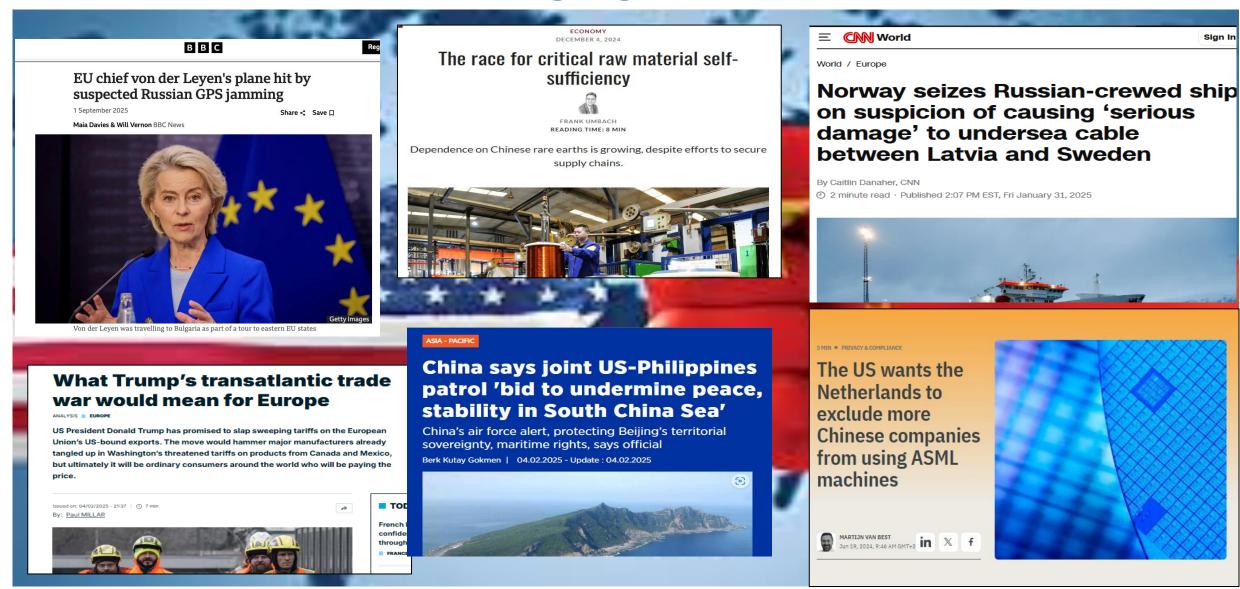


For the insurance sector, these risks materialise through persistent market volatility, regulatory fragmentation, supply chain and cyber vulnerabilities, and changes in demographic or economic stability that affect both investment returns and policyholder behaviour.

Geopolitical & Hegemonic Developments (1)



Is the world order changing?



...Or has the nature of the hegemon changed







Trump signs executive order withdrawing from the World

Health Organization





Geopolitical & Hegemonic Developments (2)



Developments on several areas

Natural Resources

Economy

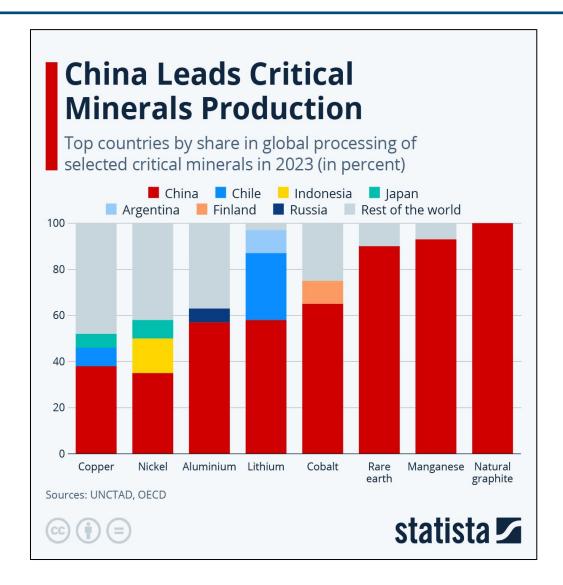
Technological

Financial

Market Intervention

Geopolitics: Raw material





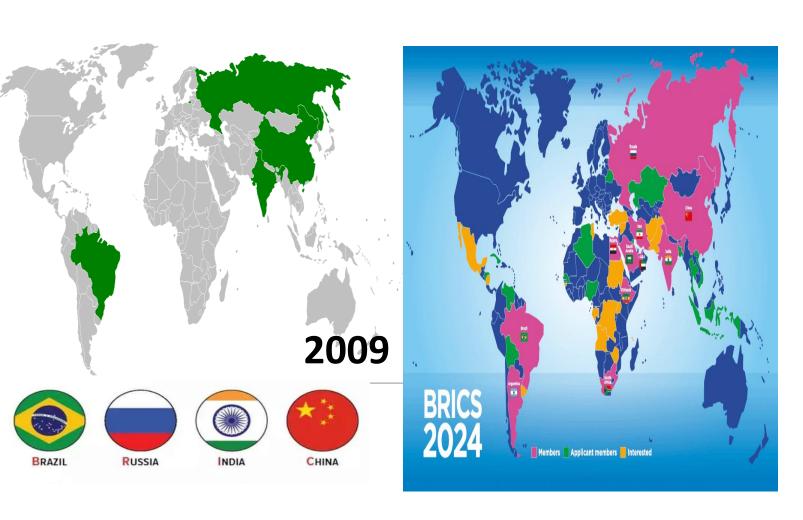
"China produces around 90% of the world's rare earths, a group of 17 elements used across the defense, electric vehicle, energy and electronics industries. The United States has only one rare earths mine and most of its supply comes from China."

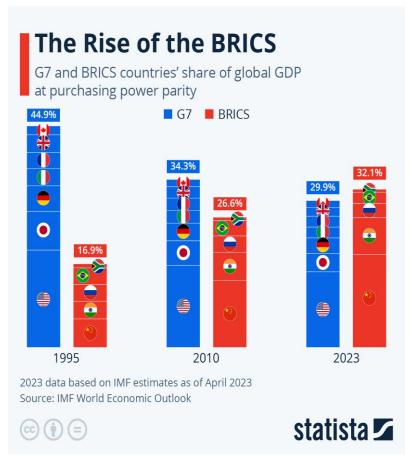
https://www.reuters.com/world/china-hits-back-us-tariffs-with-rare-earth-export-controls-2025-04-04/



BRICS: Multilateral developments



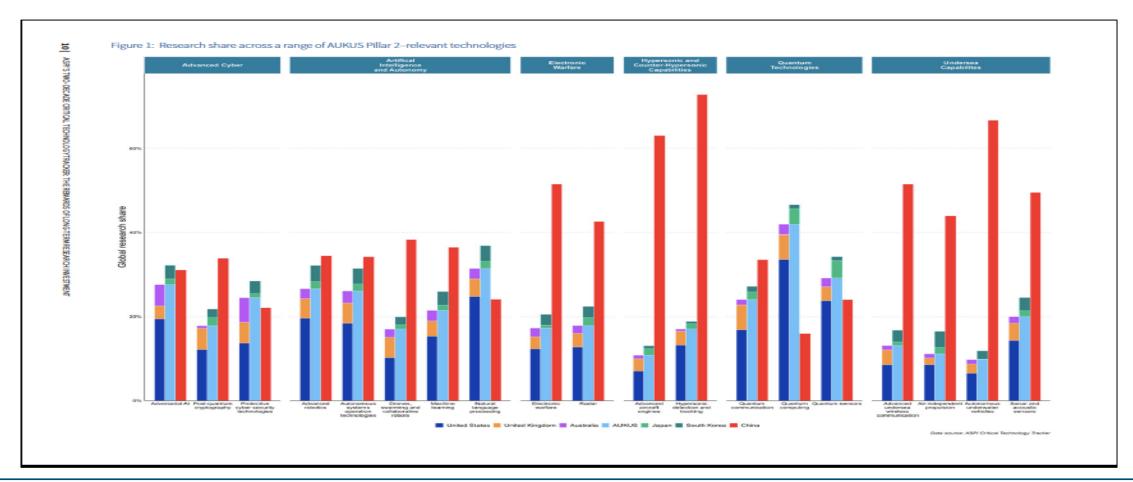




Technological leadership is changing

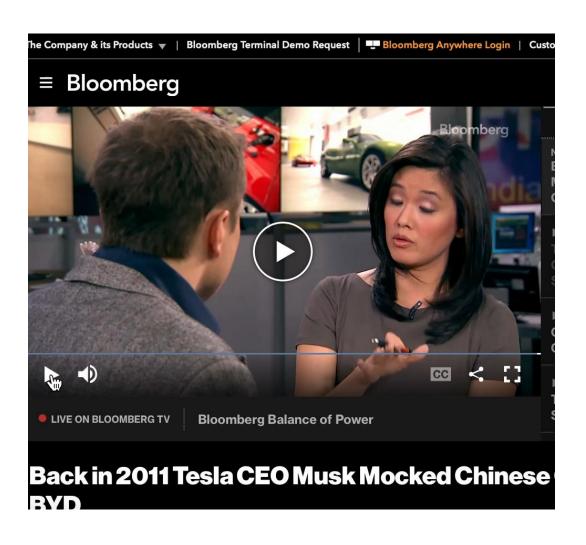
"China led in just three of 64 technologies in 2003–2007 but is now the lead country in 57 of 64 technologies in 2019–2023".

ASPI's two-decade Critical Technology Tracker: The rewards of long-term research investment



Technological power: Made in China 2025





Longterm impact

Technological power: Made in China 2025





Register

Home News Sport Business Innovation Culture Arts Travel Earth Audio Video Live

China's BYD overtakes Tesla revenue for first time

31 October 2024

Share < Save □

João da Silva Business reporter



Are US Treasuries/USD a safe haven?



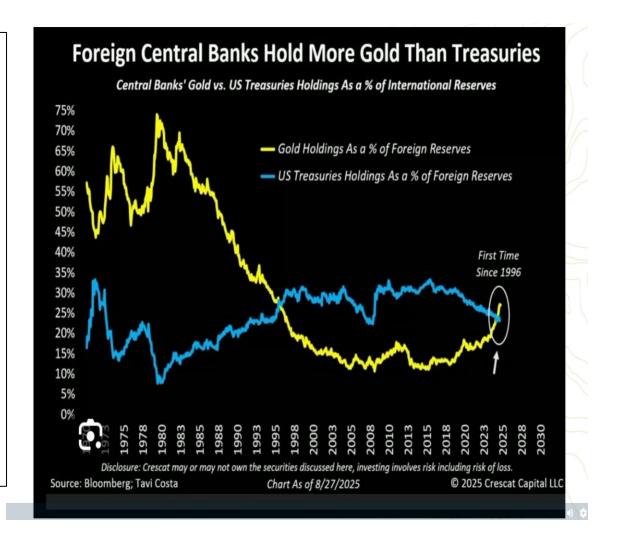
Tariffs have rocked US government bonds – are they still safe?

Wednesday, April 23, 2025



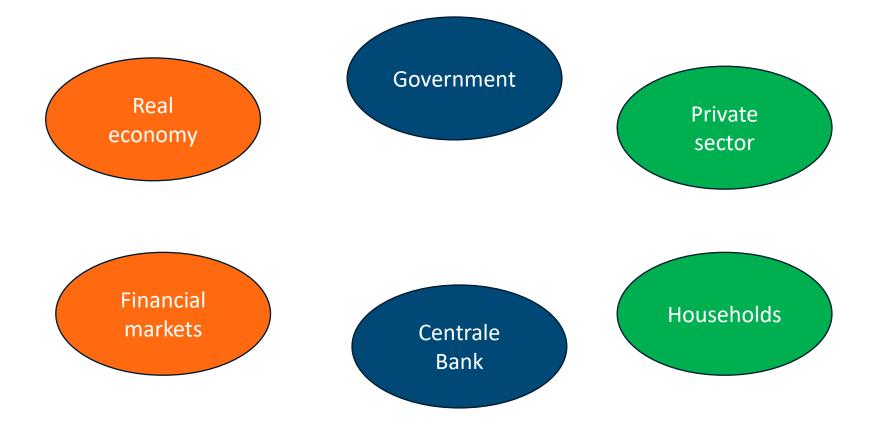
• Archived article: Please note that tax, investment, pension and ISA rules can change and the information and any views contained in this article may now be inaccurate.

When equity markets experience turbulence, people have historically



Who causes the shock, who reacted?





The choreography between governments and markets has fundamentally shifted

Global Financial Crises 2008

Euro crises 2012

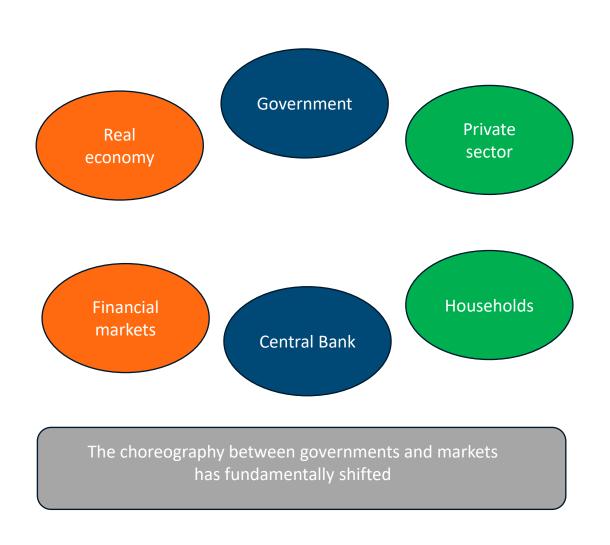
Corona 2020

Liz Truss tax plan 2022

Trump liberation day tariffs 2025

Who causes the shock, who reacted?





Shock 2012

Global Financial Crises 2008 Euro crises Corona 2020 Liz Truss 2022 (tax plan) **Trump 2025** (liberation day)

Caused

Financial markets

Government

Government

Government

Reacted

Government/ Central Bank

Central Bank: Draghi-"Whatever it takes"

Government

Central bank

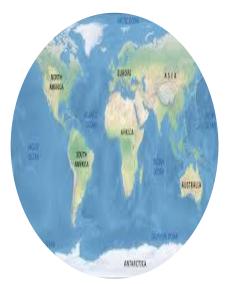
Financial markets

Recap geopolitics & hegemony

E.g. Geolocation
Landscape
Raw materials
Territorial waters



Political power Economic power Military power











Leading to Risks

"History shows that periods of power diffusion go hand in hand with increasing tensions and a higher risk of conflict between emerging and existing powers."

Source: Clingendael Monitor

"Higher GPR increases probability of economic disaster, predicts lower investment and employment. High firm-level GPR is associated with lower firm-level investment."

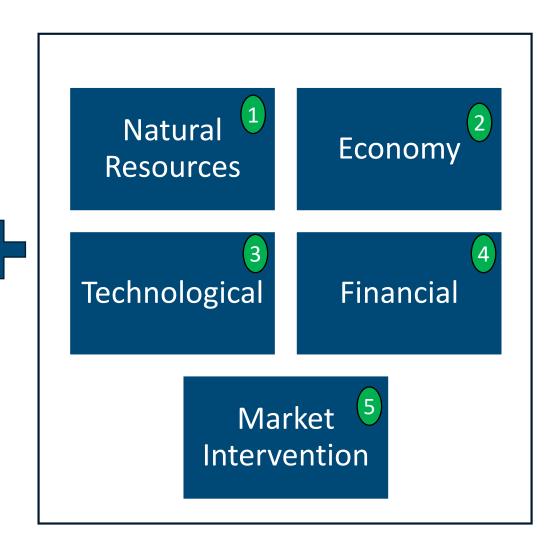
Source: American Economic Review, Dario Caldara and Matteo Iacoviell**O**

What types of GPR scenarios do you foresee?



Developments on several areas







Longterm impact

How geopolitical risks trickle down to business operations

Geopolitical scenarios and risks

Impact real economy

E.g., Trade, economic growth, inflation, sectoral effects, unemployment, savings, investment, government budget

Impact Financial marktes

E.g., Stock prices, interest rates, capital movements, risk premiums, exchange rates, market crashes, and liquidity

Impact Public infrastructure

E.g., Transport, digital, financial, energy infrastructure

Impact on Clients

Households

Businesses

Business Operations Impact

Suppliers

Employees

Bron: Probability & Partners

Some examples of scenarios

1. Scenarios for Public Infrastructure

- A. Digital infrastructure
- B. Electricity
- C. Roads

2. Taiwan-China Conflict

- A. Stalemate continues
- B. Taiwan declares independence
- C. China takes over Taiwan

3. Al Impact

- A. Productivity gains
- B. Abuse by totalitarian regimes
- C. Disruption of democratic processes
- D. Digital colonialism
- E. Digital curtain

4. Ukraine-Russia Conflict

- A. Ongoing stagnation
- B. Deal
- C. War in other parts of Europe

5. Climate Scenarios

- A. Global problem with global solution temperature kept in check
- B. Temperature rise countries bear their own costs of damage and adaptation

6. Scenarios per Geopolitical Risk Domain Trade Barriers and Blocs

- A. Situation as of December 2024
- B. Two blocs: US & Europe ↔ Russia & China
- C. Three or more blocs
- D. US sidelines itself

Scenarios (could) take place simultaneous

7. Expanding US territory

- A. Green-Land/Canada
- B. Deal with Russia/China sphere of influence

8. Other scenario's

- Default France
- ...

Which of these scenarios are long term?

The Impact of Geopolitics on Long-Term Risk

Long-term risks, structural shifts: global power, trade, markets, technology — all interacting over decades

Market & Investment Risks

- Structural inflation and interest-rate volatility from geopolitical shocks
- Wider credit spreads and flight-to-safety dynamics affecting solvency
- Fragmented capital markets reducing diversification and liquidity

Operational & Strategic Risks

- Sanctions or capital controls limiting investment options
- Cyber and outsourcing vulnerabilities in critical operations
- Cross-border complexity due to diverging regulatory regimes

Policyholder & Product Risks

- Economic uncertainty driving higher lapse rates
- Shifts in mortality/morbidity from migration or health crises
- Lower demand for long-term savings products in volatile environments

• Strategic & Reputational Risks

- ESG alignment pressure amid geopolitical polarisation
- Reputational exposure to politically sensitive investments
- Rising expectations for ethical, resilient investment strategies

When will you take action e.g. adjust Asset Allocation?

Question for the audience

- 1. If government debt/interest rates are written down
- 2. If bonds are down 20%
- 3. If Powell is dismissed
- 4. If Trump (3) or Vance (1) comes to power
- 5. If the regulator raises a question about US concentration risk
- 6. If the ALM study has been rerun

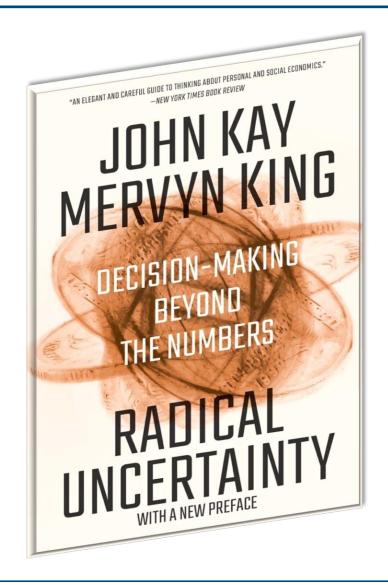




Psychology & Scenario analyses



Scenario analysis is a profession



- The world is not probabilistic many shocks are unknowable ('radical uncertainty')
- Focus on plausibility, not prediction ask 'what's going on here?' rather than 'what's the probability?'
- Build reference narratives coherent stories instead of point forecasts
- Aim for robustness, not optimisation test resilience across futures
- Scenario thinking values imagination and diversity

Summary & Conclusion



Conclusion: GPR & Risk Management

Geopolitical Risk (GPR) will be inextricably linked to the strategy and risk management of (financial) institutions.

- Organize, consolidate, and integrate expertise.
- Build resilience:
 - Plan B for Scenario X
 - Scenario-agnostic resilience
- Determine risk appetite. Set up early warning systems and action triggers.
- Increase the organization's adaptability:
 - Identify decision-making & decision-makers.
- Practice for outages, crisis management, and crisis communication.

These are actuary times: our role

1

Geopolitical Awareness and collaboration with Experts

2

Scenario Planning and Stress Testing

- Develop plausible "what-if" scenarios, such as changes in global hegemony, trade wars, or regional conflicts, and model their potential impacts.
- Test the resilience of portfolios or insurance liabilities against extreme geopolitical events.

3

Integrate Geopolitical Risk into Models and monitoring

- Quantify Risks: Incorporate geopolitical factors into actuarial models, e.g. trade disruptions, inflation spikes, migration patterns.
- Link Risks to Economic Drivers: interest rates, exchange rates, GDP growth.
- · Monitor Emerging Risks

4

Risk mitigation

- Define in advance which indicators (market spreads, solvency ratio, geopolitical escalation, etc.) would activate contingency actions.
- Encourage boards and management to assess strategic resilience: how would this decision hold up under very different futures?



RISK MANAGEMENT IN GEOPOLITICAL TIMES

LIFE COLLOQUIUM
EXPLORING LONG-TERM RISKS

Amba Zeggen 8 October 2025

PROBABILITY & PARTNERS



International Actuarial Association
Association Actuarielle Internationale

LIFE Colloquium

Exploring long-term risks

October 8, 2025



Contact details

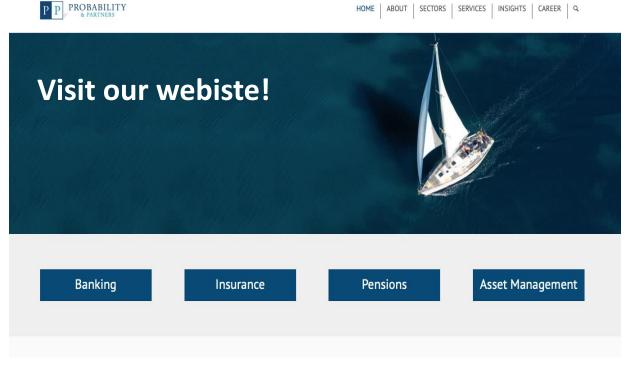
Thank You!



Amba Zeggen

amba.zeggen@probability.nl

PROBABILITY & PARTNERS



https://probability.nl