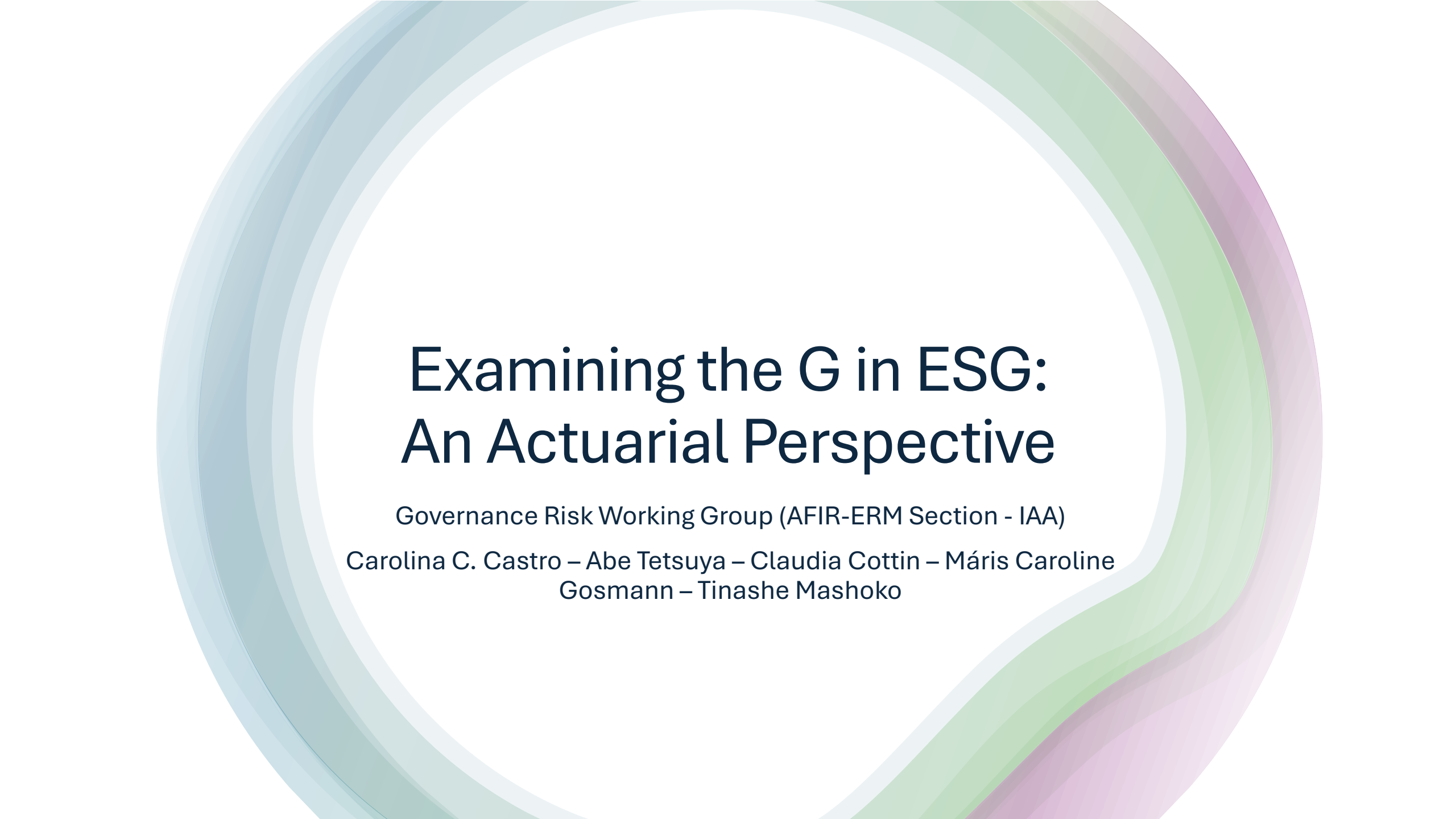




Examining the G in ESG: An Actuarial Perspective

Governance Risk Working Group (AFIR-ERM Section - IAA)

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Based on the presentation at *2nd. Joint Colloquium of Sections of the International Actuarial Association* (JoCo 2025, Sao Paulo, Brazil, May 2025)

Content

Introduction

Governance Risk in Sustainability

Role of the Actuary

Some examples



Introduction

ESG and Sustainability

ESG



“Environmental, Social and Governance”.



The idea is that decision makers should not solely focus on the more or less short-term financial returns of corporate entities, but assess them with more comprehensive criteria, reflecting human and societal responsibility in quite a broad sense.

Sustainability

- “(...) meeting the needs of the present without compromising the ability of future generations to meet their own needs (...)”.
- *UN Brundtland Commission from 1987*
- Another connection: classify the UN Sustainable Development Goals under “E”, “S” or “G” (but some might fall under more than one).





Introduction

Our Working Group

Creation and members

- In 2022, three Working Parties were established by the AFIR-ERM Section of the IAA, to examine “E”, “S” and “G” from an actuarial perspective.

AFIR-ERM Working Parties - Call for volunteers Usuarios externos Recibidos x

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para mí ▾

25 nov 2021, 5:16 p.m.

- Financial services systems
- Regulatory and/or market approaches to governance of ESG
- Link to business activities
- Differences between jurisdictions
- Link to other risks
- Successful systems of governance

Objectives are as follows:

Present a paper to IAA AFIR ERM stakeholders of the corporate governance system with actuarial considerations needed to address ESG (aka sustainability) risks to the Financial Services¹ business activities².

To identify necessary governance elements to practically embed ESG risks within a firm's governance system and the socio-environmental network³, recognizing that progress with ESG risk management and corporate governance systems may vary by jurisdiction.

Past work and members

E, S and G groups are connected with mutual observers.

Members: not the same initial composition. Members and past members from Asia, Africa, America, Europe and Oceania.

- Survey in 2022 (331 responses)

- Webinars in 2022, 2023



Join us in our upcoming AFIR-ERM webinar on:

ESG Governance Risk Management in the Financial Services Industry: Learnings from regulators in Australia and China

07:30 AM (CEST) | Date: 03 May 2023

15:30 PM (AEST) | Date: 03 May 2023



Governance Risk
Management – Series 1

12 Dec 2022

IAA AFIR-ERM Section
Presenting the IAA AFIR-ERM Working Parties
Series
Moderated by: Annie Tay FIA CERA

Our current work

- Definition of Governance Risk in sustainability.
- Comparison between regulations of banking services, insurance services, pensión and other financial services, and countries.
- Quantification:
 - Identification: list of risks
 - Assessment: past events (“failures”), relationships with other risks (eg.:operational), research on the topic.
- Role of the actuary

2. Governance Risk in the context of Sustainability

2.1 Governance

The concept of governance (in organizations) might be as old as time, since it is necessary for the survival of the organization, and for fulfilling its obligations (in a broader sense) and

¹ <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

² https://www.unepfi.org/fileadmin/events/2004/stocks/who_cares_wins_global_com_pact_2004.pdf

³ <https://www.unepfi.org/about/>

Paper

emerges in various forms throughout the history of civilisation. Whenever groups of people get together, they have a need for processes to enable them to act as a collective rather than

Governance Risk in Sustainability

Definition, and: is it possible to quantify it?

The definition...

This risk refers to the economic loss and the business uncertainties faced by the firm affecting shareholders and policyholders/customers, as well as the external agents due to the governance system of the firm; in the context of managing the firm's ESG/Sustainability risk exposure.

The Corporate Governance system on ESG/Sustainability is concerned with the exercise of power and decision over an entity ("firm") and to hold a balance between the following goals:

- (i) **Financial perspective** – the entity's ability through its governance system deals to manage the entity's economic ambitions and ESG/Sustainability, including getting the return on investments and protection/assurance of customers and policyholders' obligations and their trust.*
- (ii) **Operational perspective** – the ability of the entity, through its system of Governance, is continuously and effectively resilient and strive to achieve its strategy, taking into account its risk and the protection of all stakeholders (customers/policyholders, shareholders, regulators and externalities including the Environment and Societal concerns).*
- (iii) **Environmental and Societal perspective** – the ability to steward resources within a firm to align the interests of individuals (customers, policyholders, shareholders), corporations and the wider society/environment.*

Why is it important?

“What is not defined, can not be measured” (W. T. Kelvin)

- Links with operational and reputational risks, but not the same.
- “Classical” non compliance risks... or not? (median to long term effects).
- Universal definition of ESG and sustainability?

Lists of risks (work in progress)

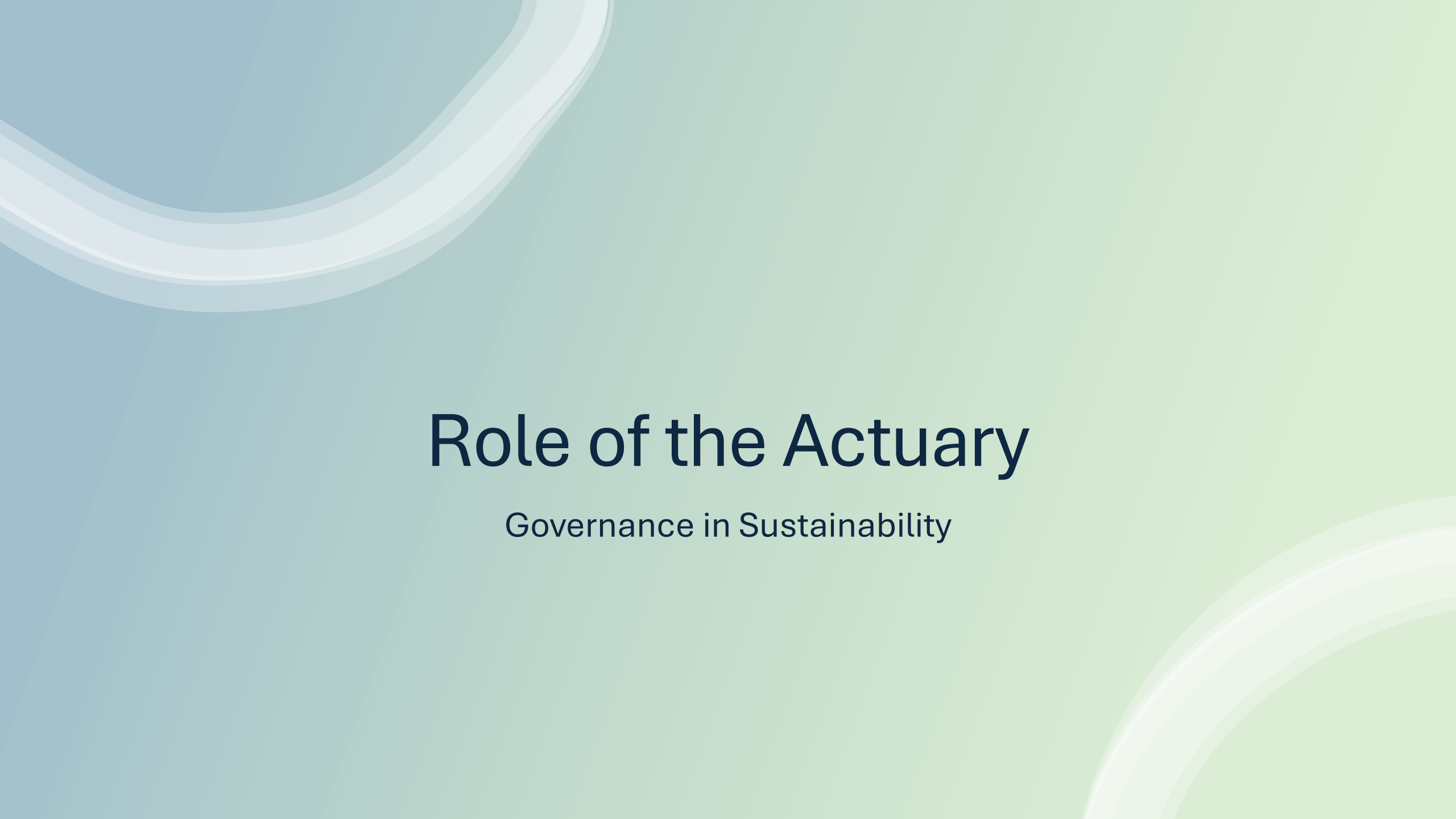
- Sources:
 - Risk surveys (such as World Economic Forum's, The Institute of Internal Auditor's Survey, among others) that lists risks related to sustainability (and governance aspect related to these risks).
 - International Organizations (such as UN, World Bank, among others).
 - National or regional regulators.
 - News articles.

List of risks (work in progress)

- Examples:
 - Risk related to non compliance with sustainability regulations.
 - Risks related to defects in accountability, and stakeholder engagement. This can even lead to actions against the company, such as demonstrations, damage to physical assets, among others.
 - Risk related to ethical failures, corruption, among others. It includes greenwashing practices. An example can be found in the Volkswagen “Dieselgate” scandal of 2015.
 - Risk of lack or defective integration of sustainability policy into the company’s objectives and strategy. This can lead to extra costs arising from different stages of product design and commercialization.
 - Risk related to environmental crime (and Money Laundering), such as those elicited by the Financial Action Task Force. Here, the financial companies can be used as a vehicle for money laundering arising from these risks, or insurance products in particular can be used to maximize profits from environmental crime.

How to assess them, and how to monitor them (work in progress)

- Past events and their analysis
- Regulations
- Reputational impact
- And:
 - Identification of an organization internal sources of data.
 - Governance Risk in Sustainability Indicators and their relationship to events.



Role of the Actuary

Governance in Sustainability

What we aim at...

- Understanding, measuring, and communicating these risks and their implications to Boards, management and decision makers in the financial services industry.
 - Management (the Lines of Defense Model)
 - Quantification
 - Compliance
 - Sustainable design of product and services (insurance, pension, banking, securities, health).

Why (also) actuaries?

- Financial services products and services with high impact in E and S aspects: health products, insurance products, credit products, pension, investment products... short term profitability – long term sustainability balance!



<https://edition.cnn.com/2023/03/16/europe/france-pension-reform-strikes-intl>



Some examples

S and G risks and actuarial implications

Understanding the 'S' in ESG: Societal Risks

- The ‘Social’ pillar of ESG addresses how organizations and governments manage human capital, social cohesion, and public wellbeing.
- Societal risks can be chronic (e.g., gender pay gaps, occupational exposure) or systemic shocks (e.g., pandemics, civil unrest).
- These risks increasingly threaten economic resilience, investor confidence, and sustainable development — locally and globally.



Examples of Global Societal Risks

Risk Type	Global Manifestations	African Context
Infectious Diseases	COVID-19, Ebola, Zika	HIV (Southern Africa), Malaria (Nigeria, DRC), Cholera (Zimbabwe)
Workplace Injuries & Illnesses	PTSD among nurses (US), Cancers in firefighters (Australia)	Mining-related silicosis (SA), Asbestos (Zimbabwe), Burnout in teachers (Kenya)
Mental Health	Depression rising in youth globally	Suicide trends in urban Kenya, teacher burnout in Zimbabwe
DEI Failures	Racial inequity in US pension systems	Underrepresentation of women in insurance in Nigeria
Aging Populations	Dementia claims burden in Japan, UK	Long-term care gap emerging in Mauritius, Tunisia, Zimbabwe

Health and Occupational Risk

Risk

Explanation

Health and Occupational Risk

Why This Matters?

Long COVID and mental health claims have increased disability durations by 22% (LIMRA 2023), while aging workforces push workers' comp reserves up 8% annually. Traditional models underestimate chronic occupational diseases (e.g., silicosis).

Key Risks:

- Workplace injuries & diseases (e.g., construction, mining)
- Occupational health risks (asbestos, long COVID, radiation)
- Mental health & stress disorders (rising absenteeism)
- Inadequate employee protections (benefits gaps)
- Aging workforce (higher disability & healthcare costs)

Actuarial Implications:

- Reserving for workers' compensation & disability products
- Long-term care modeling (aging population)
- Biometric trends in group insurance pricing
- Pandemic-adjusted morbidity tables



Health & Safety & Supply Chain Standards

Risk	Explanation
Health & Safety & Supply Chain Standards 	Why This Matters: 55% of Fortune 500s face supply chain lawsuits (Deloitte 2024), with 30% premium surcharges for non-ESG compliant manufacturers. Corruption fines average 4.2% of market cap (PwC). Key Risks: ▪ Unsafe working conditions (factory collapses, chemical exposure) ▪ Supply chain ESG breaches (modern slavery, environmental harm) ▪ Labour exploitation (outsourcing risks) ▪ Non-compliance with ESG standards (fines, sanctions) Actuarial Implications: Liability exposure from insured supply chains ▪ ESG underwriting filters for multinationals ▪ Emerging risk analytics for global operations

Societal & Community Health

Risk

Explanation

Societal & Community Health



Why This Matters:

Pandemics inflated US group life mortality by 35% in 2020–22 (SOA), while medical debt in low-income communities drives 18% higher lapse rates. Social health gaps create uninsurable populations.

Key Risks:

- Pandemics & infectious diseases (COVID-19, future outbreaks)
- Lack of healthcare access (insurance gaps)
- Social determinants of health (poverty, education disparities)
- Aging population support gaps (eldercare demand)
- Youth unemployment & exclusion (social instability)

Actuarial Implications:

- Stress-testing mortality models for pandemics
- Inclusive product design (microinsurance, community health)
- Long-term healthcare inflation adjustments

Social Instability and Government Failures

Risk	Explanation
Social Instability and Government failures	Why this matters? Social unrest and governance failures (e.g., corruption, regulatory breaches) disrupt operations and increase political risk. Actuaries must model business interruption scenarios. Key Risks: ■ Protests & political instability ■ Regulatory non-compliance ■ Corruption scandals Actuarial Implications: ■ Capital Adjustments: Increase reserves for solvency. ■ Stress-Testing: Assess risk impact on claims. ■ Claims Reserving: Adjust for unforeseen claims. ■ Pricing & Risk Margins: Reflect regulatory and reputational risks



Economic & Social Inequality

Economic & Social Inequality

Why This Matters?

The wealthiest 10% of people own 76% of all assets that can be insured, according to Swiss Re. In contrast, 40% of insurance policies held by low-income individuals are canceled within three years.

Additionally, 25% of people in emerging markets can't access insurance because they lack the digital tools needed to use modern insurance services.

Key Risks:

- Income inequality (wealth gaps affecting insurance demand)
- Digital exclusion (unbanked populations)
- Economic displacement (migrant labor risks)
- Lack of community consent (backlash, protests)

Actuarial Implications:

Adverse selection risks in underserved markets

- Lapse modeling for low-income policyholders
- Affordability challenges in pricing



DEI and Human Rights Risk

DEI and Human Rights Risk

Why This Matters:

DEI failures and labor abuses expose insurers to **legal verdicts** (e.g., \$137M discrimination verdicts in 2023) and **contract cancellations** by ESG-conscious clients. These risks correlate with **higher claims frequency** and **loss ratio deterioration**.

Key Risks:

- **DEI failures** (lack of representation, pay gaps)
- **Workplace discrimination & harassment**
- **Labour rights violations** (child labour, forced labour)
- **Human rights violations** (complicity in abuses)
- **Misalignment with local norms** (cultural backlash)

Actuarial Implications:

- Higher liability claims (e.g., discrimination lawsuits)
- ESG-driven underwriting adjustments



DEI and Human Rights Risk



DEI, Labour Rights, Human Rights, Health, Culture, Civil Unrest

- **DEI Failures & Discrimination:** Model legal risk frequency/severity; adjust reserves for DEI exposures; integrate audit scores in underwriting.
- **Labour Rights Violations:** Quantify ESG risks in supply chains; apply exclusions or capital loadings; tie premiums to labor indices.
- **Human Rights Abuses:** Adjust risk premiums by governance/human rights indices; simulate stress scenarios; tailor capital allocations.
- **Community & Mental Health:** Update morbidity projections for neurological conditions; incorporate wellness audit data in group underwriting.
- **Cultural Norms & Civil Unrest:** Price socio-cultural misalignment and unrest risk into assumptions; use real-time data to recalibrate exposure.



Challenges

And future lines of research?

- Data... always!
- Interprofesional field... actuaries, auditors, lawyers...
- Industry and jurisdictional similarities and differences.
- Low probability – high severity events... operational risk experience, such as for internal fraud, can be of help.
- How to model these risks!



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Thank you! ¡Muchas gracias!

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