



Monetary Authority of Singapore



# Regulatory Updates by MAS

## Asian Actuarial Conference 2026

19 Aug 2026

Presented by:  
Lee Wai Yi, Director & Head of Supervisory Analytics Division  
Insurance Department

# 1. How actuarial roles have evolved

---

Examples of actuarial functions which have evolved in tandem with the regulatory framework over the years



# Evolution of actuarial roles in the following core functions

**① Product Development & Pricing**

**② Stress Testing & Capital Management**

**③ Enterprise Risk Management**

# Product development & pricing

## 1970s – 1990s: foundations

### Life

- Product oversight built on actuarial certification of premium rates and reserving bases
- Appointed Actuary focused more on technical adequacy

### General

- Pre-Sep 1989: Motor insurance premiums were strictly derived using a standard tariff tables provided by the General Insurance Association of Singapore (GIA)
- After 1989, the strict tariff evolved into a Points Rating System (which began incorporating driver characteristics like age and marital status).
- Fire insurance tariffs were liberalised in 1999

## 2000s: disclosure and suitability

### Life

- MAS Notice 302 set expectations on life insurance product development and pricing governance
- Benefit illustrations and product summaries standardised to aid comparability
- Guidelines on Fair Dealing introduced in 2009, with five outcomes owned by boards and senior management

### General

- In July 2001, a Risk Factor Premium Rating System was introduced, which allowed insurers to gradually factor in their own claims experience and company-specific risk profiles

## 2010s: conduct moves to the core

### Life

- Financial Advisory Industry Review (2012–13) introduced the balanced scorecard, direct purchase insurance and the web aggregator
- Pricing judged on customer value, not profitability alone
- Actuaries drawn into product governance, target market definition and distribution economics

### General

- General insurers started experimenting with the use of advanced telematics, granular data analytics, and specific behavioural risk factors in pricing

## 2020s: fair dealing more entrenched

- Fair Dealing Guidelines updated in May 2024 to cover all financial institutions and all products, with new guidance on product design (e.g. need to rigorously test suitability and stress-test market conditions), differential treatment (e.g. data-backed justification) and vulnerable customers
- IAIS also consulted in 2026 on customers receiving value from insurance products

### Life

- Product approval streamlined from Nov 2024 – tiered notification, with prior approval reserved for genuinely novel features

### General

- More sophisticated use of advanced telematics, granular data analytics and specific behavioural risk factors in pricing

# Stress testing & capital management

## 1970s – 1990s: solvency margin era

- Statutory fund and solvency margin requirements under the Insurance Act
- Capital assessed on less risk-sensitive manner
- Actuarial work concentrated on liability valuation and certifying solvency

## 2004: risk-based capital introduced

- RBC introduced under the Insurance (Valuation and Capital) Regulations 2004, in force from 23 August 2004
- Conservative blunt margins replaced by explicit charges for insurance, market and concentration risk
- Dynamic Solvency Testing (DST) introduced as a forward-looking tool for appointed actuaries to evaluate long-term solvency and financial health of insurers under various adverse scenarios (subsequently replaced by ORSA and Industry Wide Stress Test (IWST))

## 2012 – 2020: RBC 2 review

- RBC 2 review launched in 2012, with successive consultations, impact studies and parallel runs at YE2018 and YE2019
- Capital calibrated to a 99.5% VaR over one year period, with matching adjustment and illiquidity premium introduced
- Useful feedback received from the actuarial community and SAS on RBC 2 review
- IWST was more sophisticated with more insurers scoped in, more scenarios considered and inclusion of liquidity stress testing. Also focused on quality of board & senior management deliberations and reasonableness of management actions.
- E.g. consideration of climate stress testing in 2018 with extreme flood scenario, and a more comprehensive exercise in 2022 with long-term physical and transition risk.

## 2020 onwards: RBC 2 and beyond

- RBC 2 took effect on 31 Mar 2020
- Further enhancements took effect Mar 2026 (e.g. introduction of counter-cyclical adjustment for equity risk charge, revision of structured products capital treatment and differential treatment for infrastructure investments)
- More frequent updates expected in capital framework as risks, market conditions and international practices continue to evolve
- Close oversight of capital and liquidity positions remain important, in light of market volatility. Beyond IWST and ORSA, insurers should also proactively conduct bespoke stress testing tailored to their risk profiles and circumstances.
- MAS will continue to engage in more system wide analysis to assess potential contagion risks across financial sectors

# Enterprise risk management

## Pre-2013: risks managed by functions

- Largely based on existing MAS guidelines around governance and core insurance activities (e.g. underwriting, product pricing, claims and reinsurance management)
- Financial risk management largely through the lens of RBC (2004) e.g. market and credit risks
- No formal framework linking business strategy, risk appetite and projected capital positions

## 2013 – 2014: introduction of MAS Notice 126

- Notice 126 on Enterprise Risk Management issued 2 April 2013, effective 1 January 2014
- Annual Own Risk and Solvency Assessment (ORSA) links business strategy, risk tolerance, risk management and capital
- Board ownership of the risk governance framework and risk tolerance statement

## 2017 – 2021: raising the bar

- MAS information paper (July 2017) set out supervisory observations on board deliberation, risk tolerance and continuity analysis
- Feb 2021 consultation aligned requirements with the IAIS Holistic Framework and updated Insurance Core Principles – covered liquidity risk management requirements (which includes liquidity stress testing, what can qualify as liquid assets etc)
- Environment risk management guidelines introduced in 2020 for insurers

## 2023 onwards: management of liquidity and ALM risks

- Amendments to Notices 126, 125 and 124 took effect 1 January 2023 – systemic risk mitigation, enhanced liquidity risk management and stress testing, and broader disclosure
- ALM and liquidity risks back at the centre especially given the market volatility and structural shifts
- Actuaries expected to work closely with investment functions too
- Climate risk drawn into the ERM framework – transition planning guidelines (issued Mar 26) require board oversight and integration into risk appetite and strategy, taking effect from Sep 2027

## 2. Areas of Relevance

---

Sharing of recent work or publications by IAIS and MAS that would be of relevance or interest to the actuarial community



# Sensemaking of global risks and trends

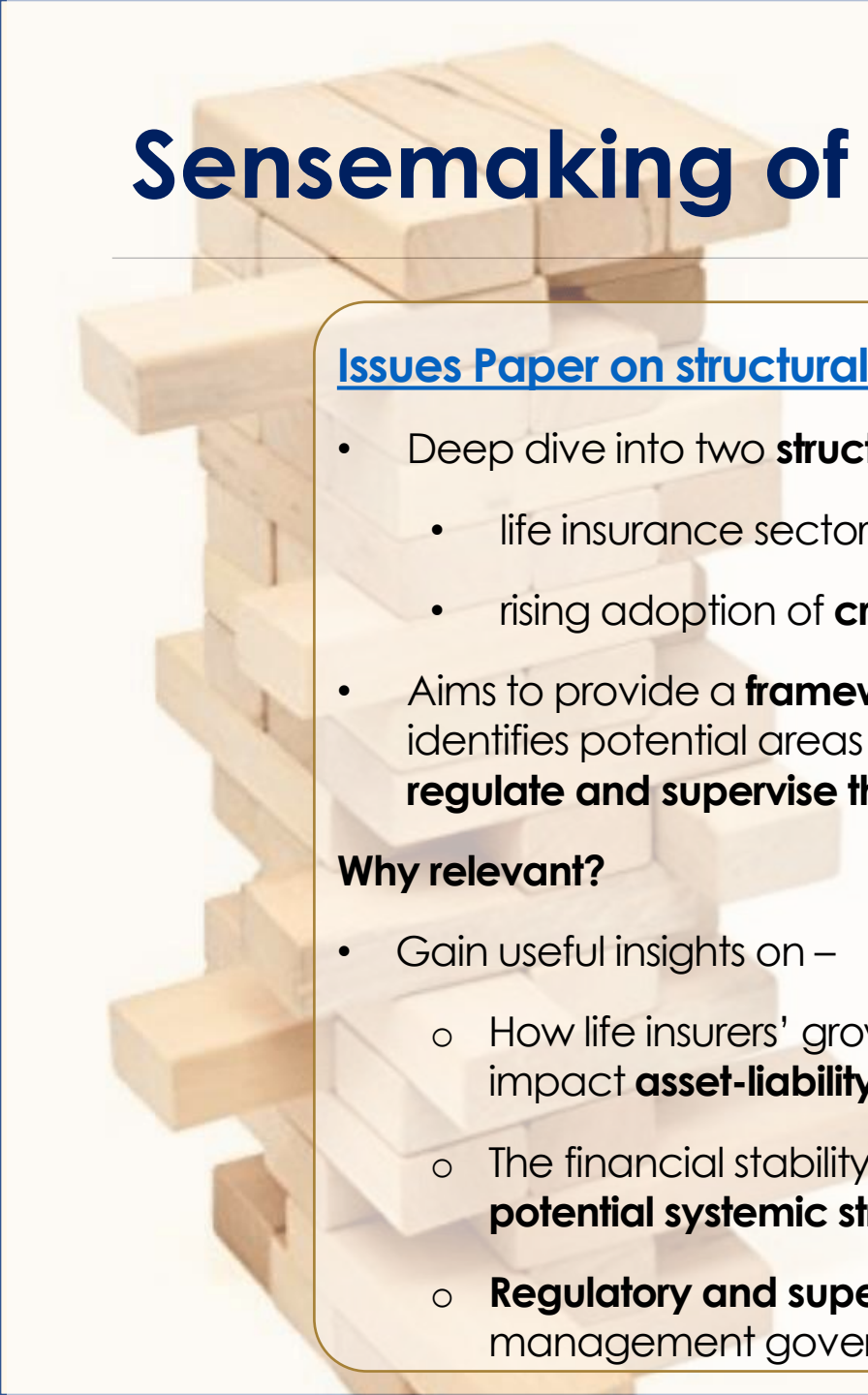


## IAIS' Global Insurance Market Report (GIMAR) Mid-Year Report [July 26]

- Published annually, GIMAR highlights the outcomes of the **Global Monitoring Exercise (GME)** and is aimed at **assessing global insurance market trends and developments** and **detecting the potential build-up of systemic risk** in global insurance sector
- Mid-year report that provides a summary of the **interim outcomes** ahead of the year end publication

### Why relevant?

- Gain useful insights on –
  - **How global insurance market performed** in terms of macro-financial developments, assets, liabilities, solvency, profitability and liquidity etc;
  - **Key macroprudential themes** identified in the insurance sector. Themes for 2026 are –
    - Impact of **macroeconomic risks on life insurers' balance sheets**
    - Transmission channels of **geopolitical risk in non-life insurance**
    - Impact of advancements in **Artificial Intelligence (AI) and technology on insurers' cyber resilience**
  - **Insurance supervisors' concerns**



# Sensemaking of global risks and trends

## Issues Paper on structural shifts in the life insurance sector [Nov 25]

- Deep dive into two **structural shifts** –
  - life insurance sector's **increasing allocation to alternative assets**; and
  - rising adoption of **cross-border asset intensive reinsurance (AIR)**
- Aims to provide a **framework for understanding macroprudential and financial stability implications**, and identifies potential areas for enhancement in IAS supervisory material to **help supervisors effectively regulate and supervise the risks identified**

### Why relevant?

- Gain useful insights on –
  - How life insurers' growing exposure to **complex, illiquid and hard-to-value alternative assets** may impact **asset-liability management and liquidity**;
  - The financial stability implications of AIR, including **structural complexities, concentration risks and potential systemic strains from recaptures**
  - **Regulatory and supervisory expectations**, e.g. stronger cross-border information sharing, tighter risk management governance and refined supervisory frameworks

# Navigating transition planning

## MAS Guidelines on Environmental Risk Management - Transition Planning [Mar 26]

- Issued 5 March 2026 as addenda to the [2020 Environmental Risk Management Guidelines](#), **taking effect from September 2027**
- Set out expectations for insurers to **manage the transition and physical risks** they and their portfolios face from climate change, through a **structured, risk-proportionate planning process**
- Sharpen expectations on **board oversight of transition planning** within business strategy and risk appetite, **assessment of climate risks over multiple horizons** using scenario analysis, and **engagement with customers and investees**

### Why relevant?

- Gain useful insights on –
  - **How climate transition and physical risks feed into decisions** like underwriting, pricing, reserving and investment over a multi-year horizon;
  - The **expanded role of climate scenario analysis**, where actuarial modelling and judgement apply directly
  - **What must be built before September 2027** – the data, metrics and governance to evidence a credible transition plan

# Strengthening operational resilience

## MAS consultations on Operational Risk and Third-Party Risk Management [Mar 26]; IAIS Application Paper on operational resilience [Feb 26]

- MAS consulted on 6 March 2026 on [updated Guidelines on Operational Risk Management](#), superseding the 2013 guidelines – risk-proportionate implementation, stronger change management, and public disclosure by domestic systemically important insurers
- Also consulted on [new Guidelines on Third-Party Risk Management](#), superseding the Outsourcing Guidelines – scope widened to all third-party arrangements, with a register, governance, life cycle management and oversight of sub-contractors
- IAIS finalised its [Application Paper in February 2026](#), covers governance and operational risk management, the elements of a sound approach, and objectives for supervisors

### Why relevant?

- Gain useful insights on –
  - **Identifying critical operations and setting impact tolerances**, then **testing resilience** against severe but plausible scenarios
  - Material third-party arrangements – **concentration risk, exit strategies and oversight of the data and AI providers that actuaries rely on**
  - Feeding operational risk into **scenario analysis, ORSA and risk appetite**

# Delivering value to customers

## Consultation on IAIS Issues Paper on customers receiving value from insurance products [Apr 26]

- Recognises that **insurance products do not always deliver a compelling value proposition**, leading to poor customer outcomes and eroding trust
- Describes the **difficulty consumers face in evaluating value**, and **supervisory approaches** such as setting “fair value” expectations, supporting informed decisions, monitoring whether the industry offers value, and intervening on low-value products
- **Complements [MAS’ Guidelines on Fair Dealing](#)**, updated in May 2024 to cover all financial institutions and products, placing responsibility on boards and senior management for the five fair dealing outcomes

### Why relevant?

- Gain useful insights on –
  - **How “value for money” is being defined and measured**, including through claims ratios, expense loadings and persistency;
  - The link back to MAS’ Fair Dealing Outcome 2, that **products suit their target customer segments**, which is a design and pricing responsibility actuaries own

# Harnessing AI responsibly

## MAS' developing framework for AI risk management [Nov 25 – Jul 26]

- Nov 25 – MAS **consulted on** [proposed Guidelines on AI Risk Management](#) covering board oversight, risk management systems, life cycle controls and capabilities
- Mar 26 – MAS concluded Phase Two of Project MindForge with 24 financial institutions (including insurers) and industry partners, publishing an [AI Risk Management Toolkit](#) **built around an Operationalisation Handbook and case studies**
- Jul 26 – Under BuildFin.ai, MAS and industry published the “[Safeguards for Agentic Finance at Runtime \(SAFR\)](#)” **white paper**, inserting a governance checkpoint between an AI agent's proposed action and its execution

### Why relevant?

- Gain useful insights on –
  - What **sound AI governance** looks like in practice, applicable to **actuarial uses of AI in pricing, reserving and experience analysis**;
  - **Practical tools for operationalising AI risk management**, including maintain a complete inventory of AI systems, materiality assessment and life cycle controls

# The end

Thank you

