Supervisory Capacity Building: Actuarial Services

Module 2.3 – Risk management in insurers

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Agenda

1. Key Insurance Core Principles (ICPs) on Risk Management

2. Supervisory Perspective
   a) Risk-based Supervision Regimes
   b) Singapore CRAFT
      - Overview of a Risk Assessment Process
      - Risk Rating
      - Impact Assessment

3. Conclusion: Putting it together

1. Key ICPs on Risk Management

ICP 8: Risk Management and Internal Controls

ICP 13: Reinsurance and Other Forms of Risk Transfer

ICP 16: Enterprise Risk Management

ICP 8: Risk Management & Internal Controls

ICP 8: "The supervisor requires an insurer to have, as part of its overall corporate governance framework, effective systems of risk management and internal controls, including effective functions for **risk management**, compliance, **actuarial matters** and internal audit."

*"**the Board is ultimately responsible** for ensuring that the insurer has in place effective systems of risk management and internal controls and functions to address the key risks it faces"* - ICP 8.0.1

*"The systems and functions should be **adequate for the insurer's objectives, strategy, risk profile,** and the applicable legal and regulatory requirements. They should be adapted as the insurer's business and internal and external circumstances change."* – ICP 8.0.3

ICP 16 – Enterprise Risk Management

ICP 16: "The supervisor establishes enterprise risk management requirements for <u>solvency purposes</u> that require insurers to address <u>all relevant and material risks</u>."

"The objective of ERM is not to eliminate risk. Rather, it is to <u>manage risks</u> within a framework that includes <u>self-imposed limits</u>." – ICP 16.0.8

*"The IAIS recognises the different levels of sophistication of supervisors and insurance markets… this ICP **may not be <u>fully</u> achievable by some insurers** and in some markets in the near future. Nevertheless… **good risk management practices and procedures need to be in place for solvency requirements to be effective**." – ICP 16.0.9*

ICP 13 – Reinsurance and Other Forms of Risk Transfer

ICP 13: "The supervisor sets standards for the use of reinsurance and other forms of risk transfer, ensuring that **insurers adequately control and transparently report their risk transfer programmes**. The supervisor takes into account the nature of reinsurance business when supervising reinsurers based in its jurisdiction."

A reinsurance contract… ***does not constitute a legal transfer of part of the underlying risk****…. Nonetheless, it is normal… to refer to reinsurance contracts as having the effect of transferring part of the underlying risk, and this is true in an economic (although not legal) sense. – ICP 13.0.13*

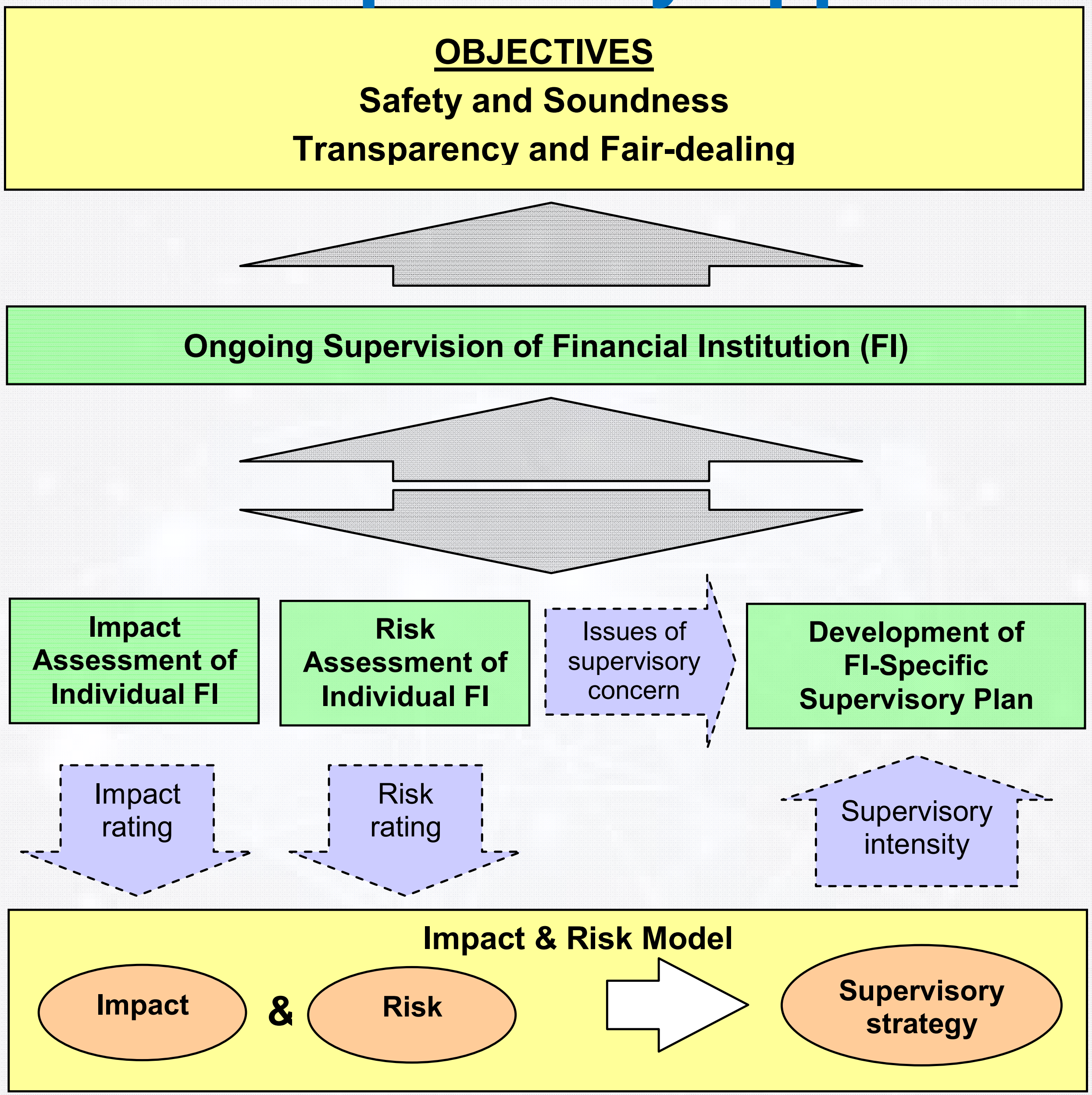
"The supervisor takes into account the <u>nature of supervision of reinsurers</u> and other counterparties, including any supervisory recognition arrangements in place – ICP 13.3

2. Supervisory Perspective

Risk-based Supervision Regimes

- Many supervisors have implemented risk-based supervision
- Examples:
  - **Australian Prudential Regulatory Authority**:
    - Probability and Impact Rating System (PAIRS) – risk assessment model
    - Supervisory Oversight and Response System (SOARS) – supervisory stance based on PAIRS assessment
  - **Canada's Office of the Superintendent of Financial Institutions**
    - Supervisory Framework – a) significant activities, b) inherent risks and risk management for each activity (=>net risks); c) Overall net risks; d) Composite Risk Rating
  - **Monetary Authority of Singapore**
    - Comprehensive Risk Assessment Framework and Techniques (CRAFT)

MAS - Supervisory Approach

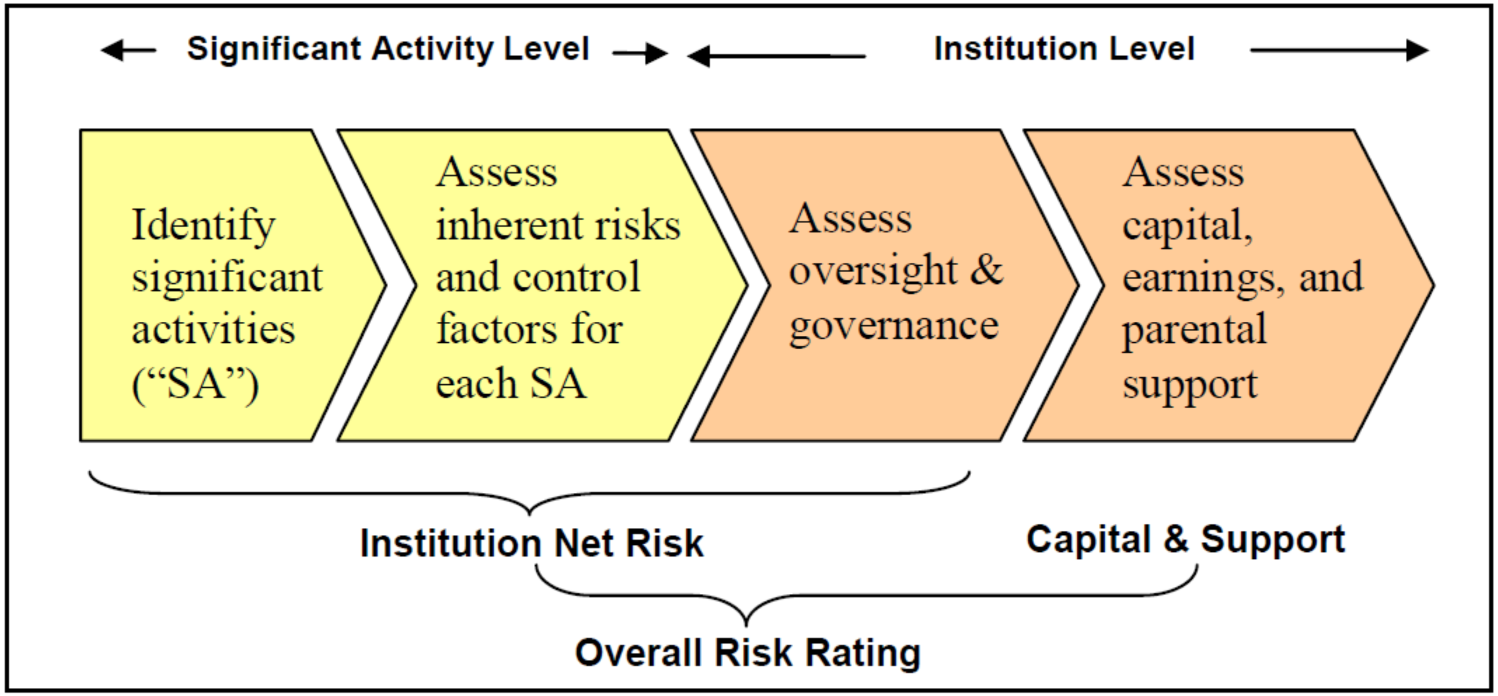


CRAFT – Factors behind the risk rating

<table>
<tr><th colspan="4">Overall Risk Rating</th></tr>
<tr><th colspan="3">Institution Net Risk</th><th>Capital & Support</th></tr>
<tr><th>Inherent Risks</th><th>Control Factors</th><th>Oversight & Governance</th><td rowspan="2">• Capital
• Earnings
• Parental support</td></tr>
<tr><td>• Credit / asset
• Liquidity
• Market
• Operational
• Technology
• Insurance
• Market conduct
• Money laundering / Terrorism financing
• Legal, reputational and regulatory</td><td>• Risk management systems and control
• Operational management
• Internal audit
• Compliance</td><td>• Board of directors
• Senior management
• Head office / parent company</td></tr>
</table>

<< Assessed at Significant Activity Level >>	<< Assessed at Institution Level >>

Overview of the Risk Assessment Process



Identification of Significant Activities ("SA")

- SAs have a material impact on an insurer's ability to achieve its business objectives and comply with solvency requirements.
- Can be a significant line of business or business function.
- Should be consistent with insurer's business model and organizational structure
- <u>Role of Actuarial function</u>
  - ➢ Should consider the materiality and impact of business line SAs
  - ➢ For life insurers, actuarial function is typically a SA
    - On its own e.g. product development & pricing, actuarial valuation
    - Within certain functional SAs e.g. asset-liability management within Investment.

Common SAs for Life Insurers

- **Investment**
- **Product Development & Pricing**
- **Actuarial Valuation**
- Accounts, Financial Reporting & Credit Control
- **Underwriting**
- Operations
- Claims
- AML/CFT
- **Participating Fund**
- Distribution
- **Reinsurance Management**

What is Inherent Risk?

- Any uncertainty that is intrinsic to a business activity.
- Evaluated by the potential impact and probability of material loss arising from the SA.
- Not all inherent risks are assessed for every SA
- Differentiate between <u>primary</u> and <u>secondary</u> inherent risks.
  – Primary inherent risks have greater influence on net risk score
- Differentiate between gross and net inherent risk
  – Net inherent risk is the level of inherent risk as mitigated or aggravated by the <u>intervention or absence of control factors</u> present in the insurer
- Examples:

Significant Activity	**Primary inherent risk**	**Secondary inherent risk**
Pricing & Product Development	Pricing risk Operational risk	Technology risk Legal risk
Reinsurance Management	Credit/Asset risk	Liquidity risk Operational risk

What are Control Factors?

- Oversight infrastructure to manage inherent risks
- Assessed in the context of the risk profile of the insurer.

Risk management systems and controls	Management Oversight (Operational)	Internal Audit	Compliance
• Independent oversight of risk management • Identify/assess risks, establish policies/controls to manage risk, develop risk tolerance limits, monitor risks, report results	• Line management / department heads to exercise effective oversight of day-to-day ops • Ensuring controls are in place to manage and mitigate risks	• Independent assurance of the effectiveness of / adherence to control and governance processes	• Independent oversight of an insurer's compliance with all relevant laws, regulations, codes of conduct, and standards of good practice

Other Factors to Consider

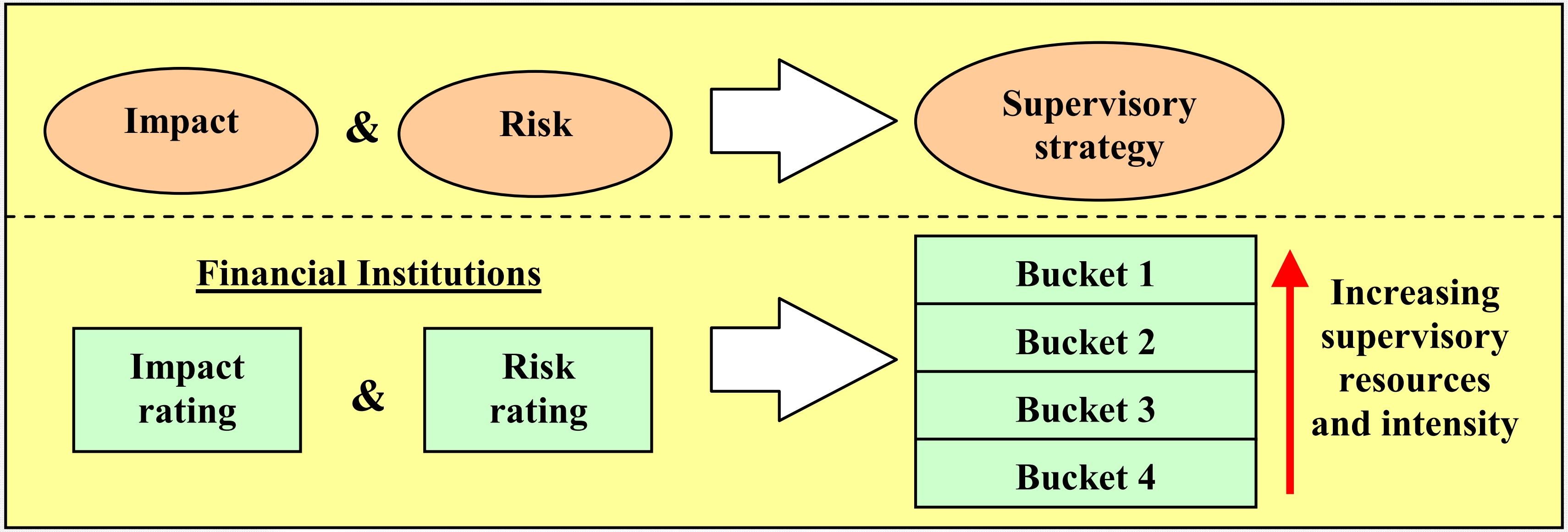
- Quality of oversight by Board, Senior Management or Head Office
- Consistency/Strength of Earnings
  - Earnings represent an internal source of incremental capital to support growth or replenish reserves when needed
- Capital
  - Strength of regulatory capital ratio
  - Resilience of capital position based on results of stress testing and Own Risk and Solvency Assessment (ORSA)
- Parental Support
  - For foreign branches and foreign owned subsidiaries: quality of support from the Head Office/Parent Company.

Impact Assessment

Considerations for assessing impact:

- Relative size and importance
  - E.g. gross premiums or asset base relative to total population of insurers
- Relative scale of retail reach
  - Number of customers
  - Number of representatives
  - Type of business
- Degree to which the insurer is critical to the stable functioning of and confidence in the financial system

Impact & Risk Model



MAS CRAFT Scoresheet

	Inherent Risk (IR)										Control Factors (CF)					
	IR 1	IR 2	IR 3	IR 4	IR 5	IR 6	IR 7	IR 8	IR 9		CF 1	CF 2	CF 3	CF 4		
Significant Activities (SA)	Credit / Asset	Liquidity	Market	Operational	Technology	Money Laundering/ Terrorism Financing Risk	Legal, Reputational & Regulatory	Insurance	Market Conduct	IR of SA	Risk Management Systems & Controls	Management Oversight	Internal Audit	Compliance	CF of SA	Net Risk of SA
SA 1																
SA 2																
SA 3																

Inherent Risk Rating / Net Risk Rating/ Overall Risk Rating
4-point scale: Low, Medium Low, Medium High, High

Control Factors / Board & Senior Mgmt, Capital, Earnings, Parental Support
4-point scale: Strong, Medium Strong, Medium Weak, Weak

Board & Senior Mgmt Oversight	
Institution Net Risk Rating	
Capital	
Earnings	
Parental Support	
Overall Risk Rating	

3. Conclusion: Putting it together

Putting it together - SA: Actuarial Valuation

Primary Inherent Risk	Secondary Inherent Risk
Insurance (reserving) risk	Operational risk Technology risk Regulatory risk

- Gross IR is lower when:
  - Less complex products to value and less use of approximation methods or model points
  - Comprehensive data for valuation, and greater granularity in valuation assumptions
  - Use of established actuarial valuation software

- Net IR is lower when:
  - Insurer has well established and documented process and procedures for setting and reviewing reserving methodology and assumptions, and reviewing the valuation results
  - Granular experience studies to back assumptions used
  - Experienced staff, and good management oversight

Putting it together - SA: Pdt Devpt & Pricing

Primary Inherent Risk	Secondary Inherent Risk
Insurance (pricing) risk Operational risk	Technology risk Legal risk

- Gross IR is lower when:
  - Insurer sells more traditional products which are less complex to price, or offers lower guarantees

- Net IR is lower when:
  - Insurer has well established and documented processes and policies in place (e.g. assumption setting, peer review, product approval process, monitoring experience post-launch etc)
  - Clear and well articulated procedures and criteria for withdrawal and re-pricing of existing products
  - Clear documentation when quoting a rate that is different from the technical base rate for competitive reasons
  - Good audit process to monitor compliance with insurer's policies and procedures

Questions?