Reinsurance Optimisation

GIPC Reinsurance Working Party
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This presentation has been prepared for the Actuaries Institute 2012 General Insurance Seminar. The Institute Council wishes it to be understood that opinions put forward herein are not necessarily those of the Institute and the Council is not responsible for those opinions.
What does Reinsurance Optimisation look like?

On the one hand ..... Insurance Companies buy reinsurance for the same reasons .......

Reduce exposure
Smooth earnings
Supplement capital
Create surplus capital

From what perspective?

On the other hand ..... Insurance Companies have vastly different reinsurance programs ..... Coverage
Structure
Quality
Price
Factors that define the Reinsurance Environment

Insurance and reinsurance markets
1. Reinsurance market cycle
2. Reinsurance pricing
3. Soft v hard market
4. Reinsurance product
5. Innovation
6. Global supply

Economic forces
1. Economic cycles
2. Claims cycles

Social and community
1. Superimposed inflation
2. Utility of insurance
3. Legislative changes

Prudential and legislative requirements
1. Capital charges
2. Prudential compliance
3. Legislative compliance

Climate
1. Weather patterns
2. Urbanisation
3. Catastrophe modelling
4. Environmental degradation
External Environment - Onion & PEST

- **Macro Layer**
  - Broad macro forces influence overall strategy

- **Stakeholder Layer**
  - Regulation and legislation are paramount

- **Insurance Company**

- **Political Forces**
  - 1
  - 2
  - 3

- **Economic Forces**
  - 1
  - 2

- **Social Forces**
  - 1
  - 2

- **Technology Forces**
  - 2
  - 4

- **Industry Layer**
  - Directly influences reinsurance strategy
A Prudential view of Reinsurance

Policyholders

Governance Framework

Risk Appetite

Capital Management

Risk Management
A Prudential view of Reinsurance

Policyholders

- Maximum Event Retention ("MER")
- Minimum Capital Requirements ("MCR")

Capital Management

Governance Framework

Risk Management

Underwriting Risk
- Large Risks
- Risk accumulate
- Uncertain Future

Reserving Risk

Risk Consequence
- Market Risk
- Credit Risk
- Operation Risk

Reduce profit volatility
Support Strategy
Tax advantage

Balance the needs of policyholders and shareholders

Risk Appetite
Aligning Risk Appetite and Reinsurance

Risk Capacity
- Reinsurance support MCR
- Design and scale of Reinsurance program
- Loss modelling, performed and verified

Risk Targets
- Aligned KPIs
- Reinsurance program reviewed by actuarial
- Reinsurance specialists review wordings
- Strong monitoring regime

Risk Tolerances
- Board approval of MER
- Board approval of target solvency ratio
- Target reinsurance cession ratios
- Reinsurance program design

Risk Limits
- Minimum reinsurer counter-party ratings
- Limits on original business aligned reinsurance capacity
- Minimum compliance standards for GPS 230

Insurance Group
- Risk appetite

Risk appetite
- Link to strategy

Reinsurance
- Response
Three Lines of Defence Framework

<table>
<thead>
<tr>
<th>oversight</th>
<th>Board &amp; Executive</th>
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<tbody>
<tr>
<td></td>
<td>• Risk appetite</td>
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<tr>
<td></td>
<td>• Approve REMS</td>
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<tr>
<td>3rd line</td>
<td>Internal audit</td>
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<td>• Test and verify</td>
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<td>• Assurance on Risk and Compliance</td>
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<td>2nd line</td>
<td>Group and divisional risk &amp; compliance</td>
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<td>• Design, interpret and develop reinsurance risk management framework</td>
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First line of defence

<table>
<thead>
<tr>
<th>Core</th>
<th>Non core</th>
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<tr>
<td>Claims</td>
<td>Loss modelling</td>
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<td>Technical Pricing</td>
<td>Capital modelling</td>
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<td>Risk &amp; Compliance</td>
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<td>Operations</td>
<td>Peril monitoring</td>
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Reinsurance Business Units

- Shared Services
  - IT and systems
  - Human Resources

- Outsourced Services
  - Broking Service
  - Dispute manage
  - Consultants

Non-core reinsurance functions are often outsourced
Reinsurance Framework - Internal perspective

Policyholders

Oversight - Board
- 3rd line - Internal audit
- 2nd line - Risk and compliance

First line of defence
Reinsurance Business

Risk
- Underwriting Risk
  - Large Risk
  - Risk accumulation
  - Uncertain Future
- Reserving Risk
  - Market Risk
  - Credit Risk
  - Operation Risk

Reduce profit volatility
Support Strategy
Tax advantage

Balance the needs of the needs of policyholders and shareholders

Reinsurance Levers
- MCR
- MER
- Design
- Modelling
- Solvency
- Review
- Cession ratios
- KPIs
- Counter-party
- Compliance

Risk Capacity
Risk Targets
Risk Tolerances
Risk Limits

REMS
- Gap Analysis
- Alignment
- Review
- Use Test
# Reinsurance Analysis and Process

## Quantitative

<table>
<thead>
<tr>
<th>Gross analysis</th>
<th>Pricing analysis</th>
<th>Impact analysis</th>
<th>Benchmarking</th>
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</table>
| Must understand nature and cost of losses being considered for reinsurance | Expected ceded losses
Expense loading
Profit or cost of capital | Structure optimisation
Analysis of efficiency
Capital implications
Regulatory implications | Structure, including limit and retention
Price
Ceded cost of capital |

## Qualitative

<table>
<thead>
<tr>
<th>Placement process</th>
<th>Security</th>
<th>Documentation</th>
<th>Benchmarking</th>
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</thead>
</table>
| Art as much as science
Negotiation important
Incorporation of quantitative analysis critical | Regulatory implications
Risk appetite considerations
Rating agencies
Downgrade clauses | Contract wordings
REMS and RAS
Board reporting
Technical analysis reports | Against peers
Against previous year(s)
Against expectations |
# Multiple stakeholders

**APRA**
- Regulatory framework

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<td>Decision making</td>
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| Placement process                |
| Art as much as science           |
| Negotiation important            |
| Incorporation of quantitative analysis critical |

| Security                         |
| Regulatory implications          |
| Risk appetite considerations     |
| Rating agencies                  |
| Downgrade clauses                |

| Documentation                     |
| Contract wordings                 |
| REMS and RAS                      |
| Board reporting                   |
| Technical analysis reports        |

| Benchmarking                     |
| Against peers                    |
| Against previous year(s)         |
| Against expectations             |

**Actuaries**
- Key role in quantitative elements

**RI manager**
- Key role in qualitative elements

**RI broker**
- Key support role across quantitative and qualitative elements

**Business**
- Key role across quantitative and qualitative elements

**Board**
- Must understand both quantitative and qualitative elements

**Reinsurers**
- Providers of capacity
Optimisation 1: Capital Efficiency

Risk / Return defined

- Change in risk normally measured as change in capital, i.e.
  Capital required before reinsurance
  Less
  Capital required after reinsurance

- Return normally measured as profit divided by change in capital
Optimisation 1: Capital Efficiency

Ceded Return on Capital
- Calculated as Ceded Profit Margin
  \[ \text{Ceded Return on Capital} = \frac{\text{Ceded Profit Margin}}{\text{Change in Capital}} \]
- Compared to the insurer’s own internal Return on Capital
- If lower, then the reinsurance is accretive to the overall Return on Capital
- Or, the proposed structure is efficient
Optimisation 2: Reinsurance Strategy Map

Financial Perspective
- Productivity: Reduce profit volatility
- Long term shareholder value: Support Capital
- Growth: Balance business objectives / reinsurance

Client Perspective
- Customer Value Proposition: Long term partner, risk and capital
- Reinsurance program design and selection
- Reinsurance program and execution

Internal Perspective
- Reinsurer Focus: Build Reinsurer relationships
- Develop reinsurance risk levers
- Build Reinsurance broker relationship
- Capital / Risk: Underwriting and reserving risk
- Manage Reinsurance program risk
- Risk appetite aligned for reinsurance

Operational Excellence
- Improve reinsurance placement process
- Comply with REMS

Learning and Growth Perspective
- First Line – Right people, right skills
- Develop governance framework
- Quantitative and qualitative analysis

Organisation / Human / Information Capital
Optimisation 3: Reinsurance
Mind Map
Thank you

Any Questions?