Reinsurance for Healthcare Programmes

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Acknowledgements

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Agenda

- Why Reinsurance ?
  - Smoothening of income stream
  - Capital Availability
  - Vertical Capacity
- Risk Transfer is not free
- Exposure Accumulation
- Loss Experience Characterization
- Proportional vs Non-Proportional
- To Reinsure or not?

Why Reinsurance – Smoothening of income stream

- Focus on Underwriting Income
- Book is expected to be priced at an expected value plus a risk load
- Expected Value is an estimate
- Good Years and Bad Years
- Impact of Catastrophes
- Outflow to reinsurers during good years and inflow from reinsurers during bad years

Why Reinsurance – Capital Availability

- Reinsurers provide Capital
- Typical reason for Proportional Treaties
- Capital requirement is regulated
- Available Capital and Required Capital
- Additional capital is more readily available in the reinsurance market
- Primarily a long term versus short term decision

Why Reinsurance – Vertical Capacity

- Risk Tolerance
- Largely driven by size of exposures
- Large Losses and Catastrophes
- Low Frequency and High Severity
- Simpler to buy reinsurance than to visit the capital markets
- Added benefit -- reinsurer may have better analytics for this class of business

Risk Transfer is not free

- Reinsurer is not different from the insurer
- Operating Costs have to be allocated
- Reinsurer needs capital
- Reinsurer underwrites underwriters
- Reinsurer has to handle data in different formats -- reinsurer is more of a partner than a regulator and hence cannot impose formats

Overarching Reinsurance

- IRDA Circular of 2004 on Good Corporate Governance procedures for placing Reinsurance
- All Approvals from the Board
- Steps for effective Enterprise Risk Management
- Adequacy of Capacity based on Exposures
- Retention as a function of Risk Tolerance approved by the Board

IRDA Circular Highlights

- Setting Underwriting Guidelines
- Tracking Aggregate Exposures by Line
- Establishing Exposure Limits per Risk
- Establishing Rules for Facultative Covers
- Establishing Exposure Limits by Location
- Establishing Exposure Limits by Line
- Integrating with Capital requirement
- Clear definitions of Binding Authority

Operational Details

- Maintain list of Approved Reinsurers -- Rules
- Exposure limits
- Maintain list of Approved Intermediaries – Rules
- Credit Risk of reinsurers and intermediaries
- Operational Risk of the transactions
- Internal Control Systems

Exposure Accumulation

- What is an Exposure?
- Known
- Are there Latent Exposures?
- Why accumulate Exposures?
- Accumulation by Peril
- Accumulation by Regions

What are Exposures

- Coverage dependant
- Peril dependant
- Known
- Latent
- Some Complex examples

Accumulation of Exposures

- Why -- Basis for projecting overall losses
- By Peril
- By Location/Region
- By deductibles
- By Limits
- Building Blocks for Loss Estimation
- Inter-linkage
- Setting Risk Tolerance Limits
- Setting Capital Requirements
- Risk Return Tradeoff

Projection of Losses

- Experience Method
- Exposure Method
- Catastrophes
- Credibility
- Reliance on Models
- GIGO
- Model Basics

Decision Making

- Goal setting choices
- Developing overall distributions
- Evaluating Risk Return tradeoffs
- Defining Working Layer and Excess/CAT Layer
- Proportional vs Non-Proportional Treaties
- Arrow Theorem
- Per Risk and Per Event Limits

Value Equation – Proportional Treaty

- Premium Surplus Ratio -- PSR
- Retention Level -- R
- Ceding Commission -- CC
- Variable Cost of Production -- VC
- Loss Ratio -- LR
- Expected Return on Capital employed
- $[PSR/R]*[\{CC - VC\} + R*\{1 - CC - LR\}]$

Layer Losses

- Basic Loss Cost
- Increased Limit Factors – example
- How to estimate ILF’s
- Simplifying assumption – Severity Driven
- Ratio of Conditional Expectations
- Is it too simple?
- Need for simulation

Value Example – Non-Proportional Treaty

- Basic Layer 1,00,000
- Excess Layers – 1,00,000 and 3,00,000
- Layer Loss costs: 1,000; 500; 500
- Basic Layer premium: 1,200
- ILF's: 1.5 and 2
- Layer Premiums: 1,800 and 2,400
- Implied Loss Cost in Layer
- Other Costs -- Allocated Production Cost
- Cost of Allocated Capital
- Risk Premium