

Managing Reserve Risk with Governance and Risk Management

2012 Casualty Loss Reserve Seminar
Denver, Colorado

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Discussion Themes

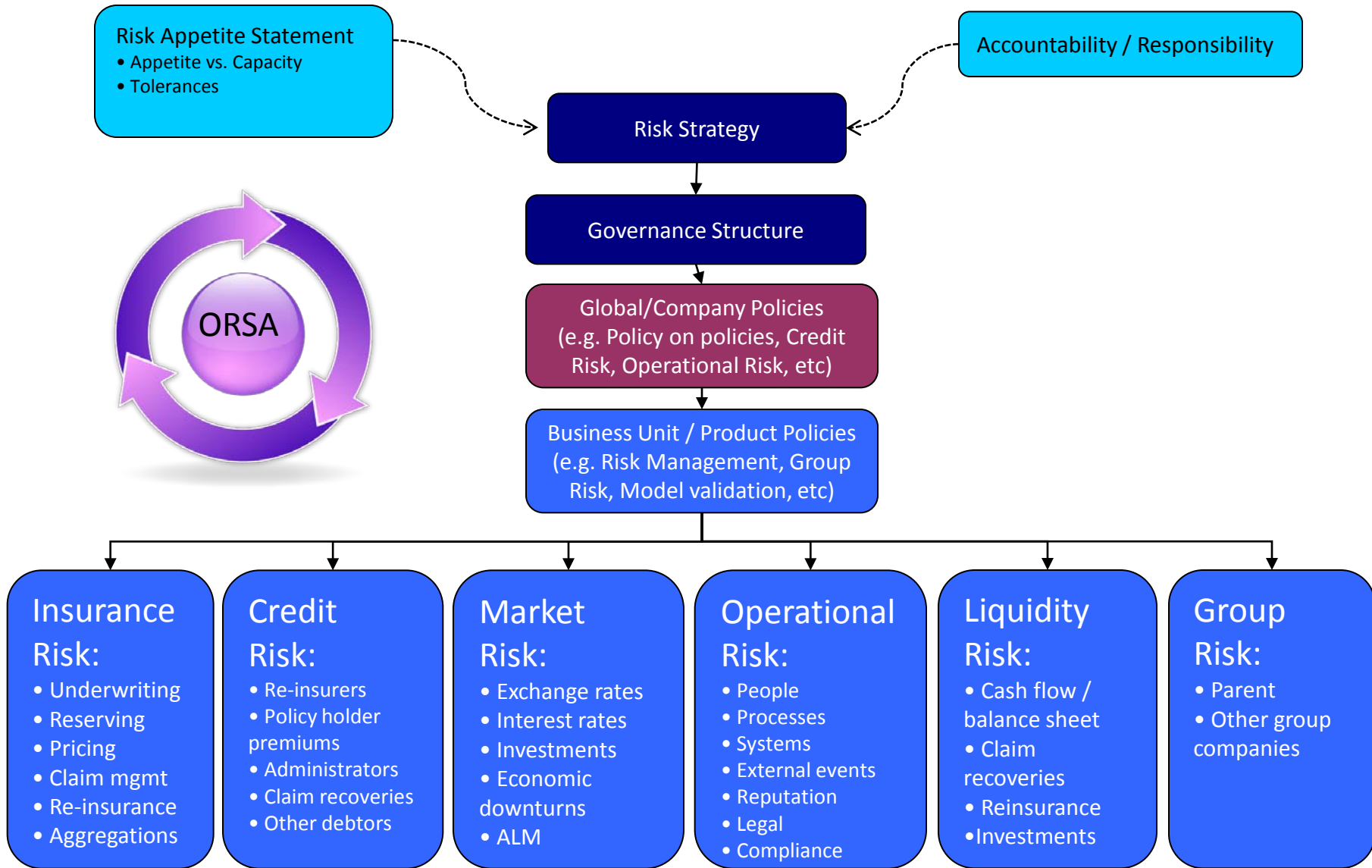
Primary Elements of a Successful Reserving Governance Framework:

- Reserve Committees
- Policies, Guidelines, and Procedures
- Documentation
- Internal Controls

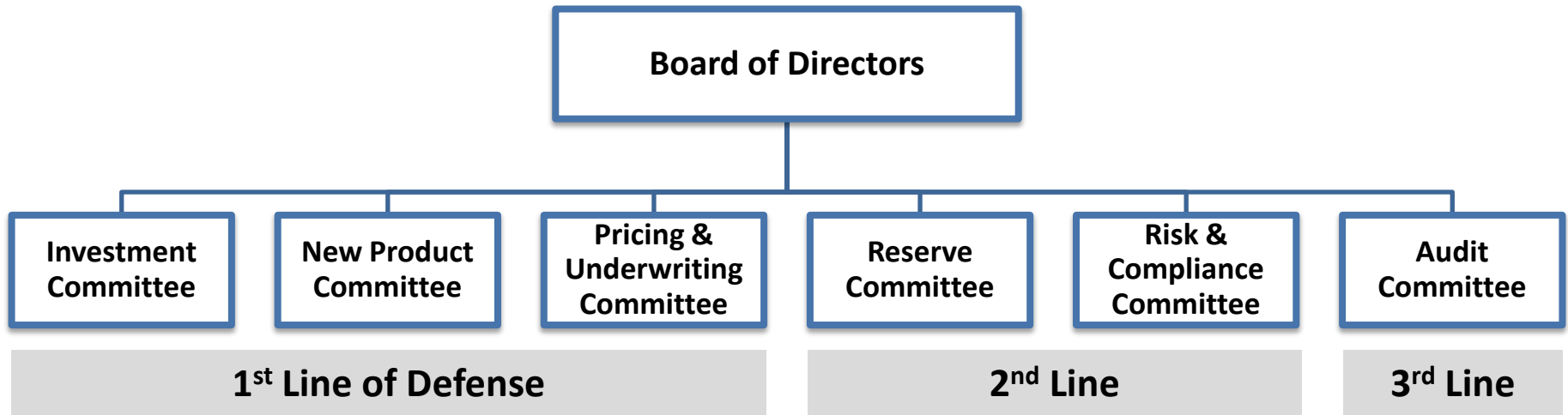
Governance Defined

- How the organization / function / process is organized and who is involved
- Policy / Rules
- Procedures
- Resources / Roles defined
- Power / Delegation of Authority
- Change Management

Risk Management Framework Example



Governance and Committee Structure



- Committee membership consists of Cross-Functional Senior Management
- Sub-committees or councils with more specific remit may support or report into defined committees (e.g. Operational Risk Council)
- Supported by ongoing operational, financial and underwriting performance monitoring

Reserve Committees

Reserve Committee Overview

- Why have a Committee?
 - To ensure adequate and reasonable reserves are in place for insurance exposures and that reserving activities are consistent with applicable insurance accounting policies, actuarial standards of practice, and other related policies.
- What is needed?
 - Committee Charter, Meetings, Materials, and Communications

Reserve Committee Charter

Charter Sections:

- I. Membership
- II. Purpose
- III. Responsibilities
- IV. Meetings and Reports

Reserve Committee Charter - Membership

- Potential Members
 - President / CEO
 - Chief Actuary
 - Chief Financial Officer
 - Controller
 - Business Unit / Product Line Executives
- Considerations
 - Chairperson?
 - Secretary?
 - Additional invitees / participants?

Reserve Committee Charter – Stated Purpose

- Ensure that adequate and reasonable reserves are in place
- Ensure that senior management is aware of material risks relating to the estimation and recording of reserves
- Facilitate the communication of reserving activities and decisions throughout the organization
- Oversee the development, implementation, and maintenance of applicable policies and standards of practice

Reserve Committee Charter – Responsibilities

- Review insurance reserves for adequacy and reasonableness
- Review and discuss results from actuarial reserve reviews along with key assumptions and materials issues underlying current reserve valuations
- Review changes in reserve amounts and measures of reserve adequacy over time
- Review and approve parameters for determining when reserves should be modified (i.e., determine reserve adequacy targets)

Reserve Committee Charter – Responsibilities, continued

- Review and discuss the basis for determining incurred loss estimates for current period exposures (i.e., review booking loss ratios)
- Understand changes in assumptions and methodologies used to estimate, evaluate, determine, and record reserves
- Review results of internal and external audits as well as results from external consulting engagements
- Review and approve reserving policies, procedures, and roles as they are developed and updated

Reserve Committee Charter – Meetings and Records

- Meeting frequency?
 - Monthly, twice-quarterly, quarterly
- Quorum and voting?
 - Designees allowed
 - Majority needed
 - Unanimous
- Third party attendance – no voting rights
- Meeting minutes
- Reports
 - Chairperson to communicate with Board, Audit Committee, and Risk Management Committee

Reserve Committee – Meeting Materials

- Agenda
- Minutes from Prior Meetings
- Reserve Position Summaries
 - Comparison of carried reserves to point estimates
 - Comparison of carried reserves relative to ranges
- Reserve Development Schedules
 - Comparison to immediate prior indications
 - Comparison to historical indications
- Summary of changes in key assumptions and methodologies
- Summary of key risks
- Key Statistics (loss ratios, frequencies, severities)
- Booking loss ratios / roll-forward estimates
- Reserving activity status updates

Reserve Committee – Annual Self-Assessment

- Questions to ask Committee
 - Are reserves reviewed for adequacy and reasonableness in enough detail and with enough frequency (formally or informally)?
 - Are you comfortable with the amount and level of discussion and/or documentation you receive?
 - Are you comfortable with your understanding of the process and of the parameters / methods used for determining reserve estimates and ranges?
 - Are you comfortable with the level of information you are provided regarding changes in assumptions and/or methodologies used to estimate, evaluate, determine, and record reserves?

Policies, Guidelines, and Procedures

Reserving Policy Overview

- Company / Product Level Policy
 - Focus on governance, standards, guidelines, authority levels, and controls
- Actuarial Department Policy
 - More specific
 - Focus more on procedures than policy
- Other Related Policies

Company Reserving Policy

Policy Sections:

- I. Approvals and Revision History
- II. Purpose**
- III. Scope**
- IV. Definitions
- V. Policy Statement**
- VI. Standards, Practices and Procedures (the detail)**
- VII. Accountability
- VIII. Information and Communication
- IX. Policy Monitoring and Maintenance
- X. Affected Areas and Exceptions

Company Reserving Policy – Purpose and Scope

- Purpose
 - To outline the reserving governance arrangements surrounding the reserve setting policy and the framework / controls used to ensure that reserves carried in the financial accounts make an adequate (but not excessive) provision for unpaid losses
- Scope
 - Applies to all reserving activities for all lines?
 - Applies to all accounting regimes and regulatory jurisdictions?

Company Reserving Policy – Policy Statement

- Policy Statement
 - The objective of this policy is to set out the framework and controls used by Company XYZ to manage the acceptance and mitigation of Reserving Risk (i.e. risk that ultimate costs vary from those assumed when the obligations were estimated)
 - The level of Reserving Risk that is considered acceptable is determined with reference to risk appetite and is reflected in reserve strength targets

Company Reserving Policy – Standards, Practices and Procedures

- Objectives and Risk Appetite
 - Arrangements outlined in the policy are intended to ensure that management is provided with an objectively derived best estimate determined in compliance with actuarial standards and that management understands the main assumptions, uncertainties and risks implicit in those reserves
 - Reserving risk shall be managed and mitigated through the following primary processes
 - Reserving Process and Procedures
 - Reserve Committee
 - Target Reserve Strength

Company Reserving Policy – Standards, Practices and Procedures

- Reserving Process
 - Analysis undertaken by the Actuarial function on a quarterly basis to evaluate whether carried reserves make an adequate provision for unpaid losses
 - Carried reserve adequacy is assessed in terms of the carried reserve position relative to actuarial best estimates and ranges
 - Reserve strength thresholds may also be used by management to trigger when adjustments should be made to ensure reserves remain adequate but not excessive in relation to the risk profile of the business

Company Reserving Policy – Standards, Practices and Procedures

- Reserving Procedures
 - Reserves estimated at a product level
 - Product level estimates are aggregated and reviewed for reasonableness using various diagnostics
 - Ranges around estimates are calculated
 - Independent peer review of calculations is undertaken
 - Finalized actuarial estimates are presented for review and approved by the Reserve Committee
 - Changes to carried reserves are booked by Finance
 - Forecasts of future loss ratios based on outcomes from the reserve analysis are reviewed with the Reserve Committee

Company Reserving Policy – Standards, Practices and Procedures

- Target Reserve Strength
 - Company XYZ has no appetite for carrying inadequate loss reserves in its balance sheet
 - Board may set targets for carried reserve strength with reference to actuarial best estimates / ranges and company risk appetite
 - Reserve Committee may set reserve strength thresholds (monetary or statistically based) to trigger when carried reserves should be adjusted to ensure they remain adequate but not excessive
 - Basis for setting target reserve strength shall be reviewed by Board at least annually

Company Reserving Policy – Other Sections

- Approvals and Revision History
- Definitions
- Accountability
- Information and Communication
- Policy Monitoring and Maintenance
- Affected Areas and Exceptions

Actuarial Policy / Procedures

Document Sections:

- Products Reviewed
- Product Segmentation
- Frequency of Review
- Roles and Responsibilities
- Assumptions and Methodologies
- Software Applications
- Operating Controls
- Secondary Review Process & Checklist
- Reserve Monitoring & Governance
- Desktop Procedures / Summary of Results

Reserving Procedures Document

- Products Reviewed & Product Segmentation
 - How portfolio of business is split relative to reserve analysis, opinion work, etc.
 - Line of business, Product line, Legal entity
 - Reserve components reviewed
 - Gross vs. Net, Loss vs. LAE, Salvage/Recoveries
- Frequency of Review
 - Quarterly with interim roll-forward calculations?
 - Specifics for each line or for each type of analysis
 - Monthly, quarterly, semi-annual, or annual

Reserving Procedures Document

- Roles and Responsibilities
 - A listing of key personnel defined for each product/segment
 - Data, Primary Analysis, Secondary Review
 - Might be internal or external
 - A listing of opining actuaries by legal entity or regulatory jurisdiction
 - Might differ for internal management information versus statutory opinions

Reserving Procedures Document

- Assumptions and Methodologies
 - A listing and brief description of methodologies used (e.g. Loss Development Method, B-F, Cape Cod) to determine indications
 - Define approach for making selections (by accident period or in aggregate)
 - Define how actuarial ranges are determined
 - Scenario based
 - Ranges around selected LDFs
 - Bootstrapping at stated confidence intervals
 - Judgment

Reserving Procedures Document

- Software Applications
 - A listing of what is used and how it is used
 - MS Excel
 - MS Access
 - Specialty Software Application
 - SAS
 - Data query tools (e.g. Cognos Impromptu)

Reserving Procedures Document

- Operating Controls
 - Reconciliation of Input Data
 - Secondary Review Process
 - Chief Actuary's Review
 - Reserve Committee Meeting
 - Reserve Committee Minutes and Follow Up Reports
 - Documentation of Process and Results

Reserving Procedures Document

- Secondary Review Process & Checklist
 - Listing of what are expected checks and deliverable of this process
- Reserve Monitoring & Governance
 - Reserve Committee process and reporting requirements
- Desktop Procedures
 - Introduction / description of each product line with more specific information regarding reserving segmentation
 - More of a how to or step-by-step listing which includes data sources, query names, listings of file locations, naming conventions, etc.

Other Related Policies

- In addition to Actuarial Standards of Practice and Reserving policies and procedures, reserving activities may also be governed by other policies
 - Accounting Policy
 - Spreadsheet Control Policy
 - Model Governance or Validation Policy

Spreadsheet and Model Governance

- Manage inventory of spreadsheets and models
- Describes practices and controls
 - Monitoring, performance testing
 - Documentation requirements
- Expects independent review and testing
 - Functional testing
 - Control testing
 - Reporting
 - Remediation

Documentation

Documentation Requirements

Means many things...

- From governance perspective, need evidence that went through appropriate process
- At analysis level – procedures, review notes, actuarial report, secondary review checklist
- Management presentations
- Reserve Committee meeting materials and minutes
- Inclusion in other governance meetings
 - Board meetings
 - Audit Committee
 - Risk Management Committee

Documentation Requirements

Specifics for actuarial analysis...

- Purpose
- Data used
- Comprehensive description of assumptions and methodologies
- How analysis is set up
- Desktop procedures
- Acceptance thresholds
- Description of logic behind choices
- Documentation of parameter choices used
- List of experts used and their qualifications
- Rational behind the approach

Internal Controls

Monitoring and Controls

- Operating Controls within Actuarial Reserving Process
 - Reconciliation of input data
 - Secondary review process and checklists
 - Chief Actuary's review
 - Reserve Committee
 - Documentation of process and results
- Additional Controls
 - Internal / External audits and SOX reviews
 - Access controls
 - Risk metrics / key risk indicators – tracking
 - Risk control self assessments
 - Independent validation and periodic monitoring of models
 - Demonstration of independence of function / of the actuary

Risk Metrics / KRI's

Track over time and report out at Reserve Committee and in other governance meetings

- Reserve development
 - \$ amount and/or as a % of some exposure measure (e.g. prior indications, annual earned premium)
- Reconciliation imbalances / differences
- Reserve adequacy or position relative to range
- % of Portfolio / Carried Reserve balance analyzed

Risk Control Self Assessment

- Annual assessment to identify potential risk-control gaps; part of Operational Risk Management Framework
- Components:
 - Define / identify process and sub-processes
 - Inherent risk questions
 - Critical process, reliance on others or third parties, process maturity, resource availability, regulatory impact, etc.
 - Key risk ratings – define and quantify
 - Key controls

Key Risks and Key Controls

- Key Risk #1
 - Risk of under-reserving if the actuarial indications are under-estimated leading to having to strengthen reserves in future accounting periods
- Key Controls
 - Provision for uncertainty factored into Reserve Committee decisions
 - Quarterly reserve review carried out by actuarial department inclusive of data refresh, data analysis, data reconciliation, review of reserve development, documentation, and Reserve Committee meetings
 - An independent secondary analysis of the primary reserve analysis is completed each quarter to highlight issues or concerns or estimates that appear out of the ordinary.
 - External reviews performed annually in some jurisdictions or tri-annually in others

Key Risks and Key Controls

- Key Risk #2
 - Departure of key personnel leading to missing deadlines and delays in reserve analysis causing the business to make incorrect decisions
- Key controls
 - Training and development of Actuarial personnel, including attendance at conferences and seminars to keep up with industry best practice
 - Cross training enables employees to job share on different analyses. Secondary reviewer developing the ability to perform the primary analysis.
 - Continuing education, including an actuarial study program

Reserving Governance Checklist

- ✓ Reserve Committee
- ✓ Reserving Policy
- ✓ Actuarial Reserving Procedures
- ✓ Other Related Policies
- ✓ Documentation
- ✓ Risk Metrics / KRIs
- ✓ Risk Control Self Assessment

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