Effective Financial Planning for Life Insurance Companies

Presentation by Kim Hoong CHIN

Senior Manager and Consultant – Asia Financial Services
Topics

- Recent worldwide insolvencies
- Characteristics of healthy and failed companies
- What makes companies insolvent
- Avoiding insolvency
  - Financial planning and early warning system
  - Statutory Valuation
  - Embedded Value / Appraisal Value
  - Simple ALM
- Management, communication – focusing on ALM
Recent worldwide insolvencies
## Insolvencies Cases

<table>
<thead>
<tr>
<th>Company</th>
<th>Causes</th>
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<tbody>
<tr>
<td><strong>Korea</strong></td>
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<tr>
<td>Korea Life (1998 – 99)</td>
<td>High guarantees, falling interest rates</td>
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<td>Kookim Life (200)</td>
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<td>Hyundai Life, Hanil Life, Samshi</td>
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<td>Allstate Life (1999)</td>
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<td><strong>United States</strong></td>
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<td>Mutual Benefit Life Insurance – mutual (1991)</td>
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<td>Executive Life of California (1991)</td>
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<tr>
<td>Company</td>
<td>Causes</td>
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<tr>
<td>Japan</td>
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<tr>
<td>Nissan Mutual (1998)</td>
<td>High guarantees, falling interest rates</td>
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<td>Toho Mutual (1999)</td>
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<td>Daihyaku Mutual (2000)</td>
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<td>Taisho Life (2000)</td>
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<td>Chiyoda Mutual (2000)</td>
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<td>Kyoei Life (2000)</td>
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<td>Tokyo Mutual (2001)</td>
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<td>United Kingdom</td>
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<tr>
<td>The Equitable (current)</td>
<td>Mis-selling, high guarantees, falling interest rates</td>
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<tr>
<td>Other UK (closures to new business) - 37 of 48 par funds</td>
<td>Mis-selling, high guarantees, falling interest rates</td>
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Characteristics of healthy and failed companies
Key Drivers of success

**Macro Environment**
- Factors that affect all life insurance companies
- Life companies do not have direct control over these events
- Testing the ability and robustness of the management in adapting to these changes

**Organisational Behaviour**
- Good leadership and strategy
- Internal control and disclosure
- Risk management
- Performance evaluation and compensation
- Bad loans / poor investment decisions
- Competent /professional staff

Success or Failure??
Key Characteristics of Successful Institutions

Macro Environment
- Strong prudential oversight
- Effective government policies
- Effective legal framework
- Satisfactory bankruptcy laws
- Healthy shareholder rights
- Best practice code

Organisational Level Indicators
- Strong collective Board of Directors
- Board has integrity and good judgment
- Strong internal control
- Proper disclosure and transparency
- Sound risk management
- Effective performance evaluation & compensation
- Team of competent /professional staff
### Key Characteristics of Failed Institutions

#### Macro Environment
- Economic recession
- Ineffectual regulatory supervision
- Opaque disclosure
- Ineffective legal framework
- Inadequate bankruptcy laws
- Weak shareholder rights

#### Organisational Level Indicators
- Gross mismanagement
- Poor record keeping
- Weak risk analysis
- Poor guidelines on policy lending
- Portfolio of bad loans
- Poor investment decisions
- Fraudulent activities
Trowbridge Deloitte

What makes companies insolvent?
Fundamentals of Life Insurance Company

- Profit
  - High, predictable, not negative,…

- Financial strength
  - Solvent, safe, efficient,…

- Reputation
  - Perception, share price,…

- Compliance
  - Do what you have to do…
What makes life insurance companies crash?

- Lapses
- Mortality
- Expenses/commission
- Reinsurance
- New business volumes
- Premium rates and other policyholder guarantees/options
- Asset/investment strategy
Avoiding insolvency

Financial planning and early warning system
Fighting Back: Control cycle

Blissful Ignorance

Awareness of Issues

Monitor

Investigate

Risk/return Decision

Information Available

Action
Tools available to actuaries

- **Statutory Valuation**
  - Static, prudence and limited information

- **Embedded Value / Appraisal Value**
  - Static, realistic and taking into account of expected future events

- **Asset Liability management**
  - Dynamic, realistic (both assets and liabilities) and taking account of expected future events
Statutory Valuation

- Usually performed annually as part of the regulatory requirements
- Static information: a point in time
- Valuation basis
  - May be prescribed or based on judgment
- Minimum requirement for the companies to demonstrate solvency
  - Value of assets > value of liabilities by a margin
  - The margin is usually prescribed by the regulators
Statutory Valuation

Advantages
- Information readily available
- Publicly available and in standardized format
  - Able to compare against peer
- Relatively easier for management to visualise current financial situation
  - Eg. solvency ratio was $x\%$ reduce/increased to $y\%$
- Commonly used indicator of financial strength

Disadvantages
- Solvent today but not necessary in future
- Insufficient information for management to assess the decision made
  - New business adding value to the company/ shareholders
  - Effect of any investment decisions.
  - Ability to support future bonus rates, dividend to shareholders etc
Embedded Value

- What is Embedded Value / Appraisal Value?
  - Cash flow items such as premiums, expenses & claims are explicitly projected forward and discounted back to arrive at the value of the liabilities
  - Provide a value of the company at a point in time
  - A measure of the shareholder value of the company
  - Movements of EV/AV over time indicate value added/destroyed

Policy cash flows

Discount at discount rate

Present value of all policies
Appraisal Value = Embedded Value + Value of Future New Business
Embedded Value / Appraisal Value

- Normally conducted as part of internal management process
  - Measure the success or failure of the management decisions (e.g. profitable new business will add value to the company)
- Static valuation but based on expected future events
Embedded Value / Appraisal Value

- **Advantages**
  - Taking into account of expected future events
    - New business
    - Management actions (e.g. reduce expenses, improving persistency)
  - Realistic assumptions

- **Disadvantages**
  - Sensitive to assumptions changes
  - Difficult for management to visualize the concept
  - Time consuming and skill required to carry out such valuation
  - Require appropriate cash flow projection system
ALM Investigation

- ALM investigation processes
  - Develop ALM model capability
  - Run calculations
  - Develop measures for comparing strategies
  - Analyse & evaluate strategies
  - Decide strategy
- Outcomes
  - Implement strategy
  - Monitor performance
What is ALM?
- Tool to help management understand and manage risk
- Old approach:
  - we can’t measure risk …
  - … so we try to eliminate all uncertainty
- New approach:
  - we try to position the company with a known acceptable level of risk
- Model both asset portfolio and liability explicitly

Ultimate Goal
- Maximise shareholder value through the best use of available capital
- Provide stability to business, policyholders and shareholders
ALM Investigation: Understand Investment Risk

- Understanding the risk of future losses
  - erosion of capital base
  - maintenance of solvency
- What risk profile is associated with each investment strategy
  - how much equity vs. fixed interest
  - what duration of bonds?
  - rebalancing
  - investment and reinvestment of cash flows
  - market value or book value measurement
  - more subtle asset dimensions: convexity ...
  - more esoteric asset classes: derivatives ...
ALM investigations: Evaluate strategy

- Answer questions such as …
  - What is the expected value of the business?
  - What is the probability distribution of the value of the business?
  - What is the probability of meeting the performance objectives?
  - What is the probability of insolvency?
  - How severe a shock can the company withstand?
  - How much capital is needed?
  - What is the probability of meeting policyholders’ reasonable expectations?
  - How does this strategy affect the company’s Beta (correlation between company stock price and movement in the local equity market as a whole)?
  - etc
ALM investigations: Develop strategy

- Major changes
  - New strategies to avoid risk
  - New strategies accepting greater risk along with greater expected return
  - New strategies to minimise capital requirements

- Adjustments to address risk
  - Explicit acceptance of risk
  - Reduce or transfer risk
  - Contingency plans

- Implications of strategy
  - Value
  - Uncertainty
  - Capital requirements
  - Planned responses to events
ALM investigations: Develop contingency plans

- What should management do if returns
  - Fall / are stable / rise?
- What should management do if business volumes change
  - increase / decrease in new business
  - increase / decrease in lapses
- What changes should be sought to the product?
  - repricing
  - changes to benefit structure
  - support for any necessary lobbying
- How should management seek to direct sales
  - more or less of the product?
  - repricing?
- etc...
Asset Liability Management

Advantages
- Dynamic
- Model assets performance explicitly
- Ability to quantify various strategies
- Ability to allow for fluctuation in the experience (rather than a central estimate)
- Ability to investigate potential effect of certain random events

Disadvantages
- Difficult to model (a lot of variables)
- Time consuming and skill required to carry out such exercise
- Difficult for management to visualize the concept
- Require appropriate cash flow projection system
ALM Management and communication
ALM Management team members

Asset Managers

Accountants

Senior Management

Experienced Model builders

Experienced Actuaries

Asset-Liability Management
Role of Asset Managers

- Provide data for actual initial asset holdings
  - Actual bonds, mortgages,..
- Provide input on future buying and selling plans, and expected future asset mix
  - How to invest new money received
  - Which assets to sell if there are high benefit payments
  - What ongoing asset mix to hold
- Describe limits and restrictions on asset holdings
  - Maximum/minimum regulations
  - Can you sell part of a property?
  - How are mortgages managed?
- Responsible for execution of asset strategy
Roles of Accountants

- Provide input in constructing a full balance sheet and profit and loss account for the company
  - \textit{ALM is normally carried out on a full company level}
- Describe the accounting treatment of all items under all possible outcomes
  - \textit{Some outcomes in an ALM study might not have ever been encountered in the past – eg the company being very close to insolvency}
- Advise on any tax effects
Role of Senior Management

- Define the objectives of the ALM exercise
  - Investigate dividend strategy?
  - Investigate investment strategy?
- Provide input as to future business strategy
  - New business sales
  - Dividends to follow market?
- Define the company’s required level of return and its appetite for risk
  - EV to rise 20% over 3 years with 75% probability
  - Probability of insolvency in next 12 months < 1%
- Coordinate ALM process and oversee execution
Role of Experienced Actuaries

- Advising on treatment of liabilities, including calculation of liabilities requiring judgement
  - Setting future valuation basis
  - Setting future premium rates
  - Setting strategy to be RBC-efficient
- Advising on assumptions
  - Are lapse rates interest-sensitive?
  - Are new business volumes dividend-sensitive?
- Review and interpretation of results
- Assessing consistency of strategies with senior management objectives
  - Some objectives turn out to be impossible to meet…
Role of Experienced Model Builders

- Building and maintaining the calculation model
  - Model of entire company is very complex
  - Many new features, such as dynamic decisions where the model performs calculations which depend on future as yet unknown results
- Collating data and assumptions for input into the model
  - Many more inputs required for assets, strategy and accounting treatment
- Performing ongoing calculations
  - Many scenarios are often investigated
  - Reporting complex results to senior management so that they are clearly understood is key

Asset-Liability Management

Experienced Model Builders
### ALM Team - Skills Requirement

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<tr>
<th></th>
<th>Senior Management</th>
<th>Experienced Actuaries</th>
<th>Experienced Model builders</th>
<th>Asset Managers</th>
<th>Accountants</th>
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<tbody>
<tr>
<td>Understanding the ALM Concept</td>
<td>✔ ✔ ✔</td>
<td>✔ ✔ ✔</td>
<td>✔</td>
<td>✔ ✔ ✔</td>
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<tr>
<td>Providing Input to the Process</td>
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<td>Using the Calculation Tools</td>
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<td>Interpreting Results</td>
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<td>Drawing Conclusions</td>
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<tr>
<td>Implementing the Strategy</td>
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<td>✔ ✔ ✔</td>
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Training Requirements- all Team Members

- Fundamentals: Workshop / Meeting
  - Overview of ALM
  - Defining the objectives
    ...and not running before you can walk
  - Measuring the results
    - What form will the answers be in?
- Choosing the right team
  - What skills are required?
  - When will their input be needed?
  - Managing expectations
- Ensuring delivery
- Skills transfer: Review & Monitoring
  - Project management
  - Part of decision-making process
  - On the job training

Requirements:
Overview / kick-off meeting
Ongoing project management
Steering committee
On the job training
Training Requirements: Non-Actuaries

- **Guidance, Review, and Refinement**
  - This is best done **on-the-job**:
    - Understand each person’s role
    - May need guidance to the type of input required
      - *What has worked well for other companies?*
      - *What will work well for your company?*
    - Clarity to what is important and what is not
      - *Concentrate energies on achieving objectives*

- **A Framework for the Future**
  - Set up an ongoing process for effective measurement of the possible effects of future strategy decisions
  - Put an early warning system in place
    - React early to the unexpected with:
      - *An experienced “strategy” team*
      - *The right tools to test the way forward*

**Requirements:**
- Ongoing guidance
- Review
- Process design
- Reporting mechanisms
Training Requirements: Non-Actuaries

- A Framework for the Future
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Requirements:
- Ongoing guidance
- Review
- Process design
- Reporting mechanisms
Training Requirements: Experienced Actuaries

- Learning to be the link
  - The Actuary can be the link between the different parts members of the team
    - *In particular between the model and the strategy team*
- Driving the reporting framework
  - Return is often measured by EV, AV or earnings
    - *Calculated or influenced by the Actuary*
  - Dividend levels and new business premium rates are key
    - *Calculated or influenced by the Actuary*
  - Capital requirements depend on liabilities
    - *Calculated or influenced by the Actuary*

Requirements:
- Know-how transfer
- Sounding-board
- Reporting mechanisms
Training Requirements: Experienced Model Builders

- Using the Calculation Tools
  - Best done by experienced model builders
  - Involves learning about
    - New software/ modules
    - Many new formulae
    - New features
    - The detailed calculations in the model

Requirements:
- Intensive training
- Full-time immersion
- Full commitment