Life Insurance – Overview of Products and Valuation of Liabilities

K S Gopalakrishnan

04 March 2017

Products

What is Life Insurance?

- Primary purpose is to compensate for financial loss in the event of
  - Death
  - Disability (e.g. physical disability due to an illness)
  - Dismemberment (e.g. losing a limb in an accident)
  - Illness (e.g. cancer)
  - Living longer (pensions)

What is the financial compensation?

- The amount payable can be one or more of
  - A fixed amount (e.g. Rs One Million on suffering a heart attack)
  - A regular amount (e.g. Rs 10,000 per month) for a fixed period (e.g. for 10 years) or for life (e.g. annuity of Rs 20,000 per month for life)

Who is the customer and what does the customer pay?

- The customer can be an individual (e.g. Mr Raju Rao) buying from the life insurer. This business is known as Individual Business.
- The customer can be an organization buying from the life insurer (example – A Company buying life insurance cover for all its employees; A Company funding its gratuity liability with a life insurer; A Bank buying life insurance cover for the housing loans given

What do individuals buy? – Typical Products

- Term Insurance – Pays a lump sum or a series of payments on death. No amount is paid on surviving to the end of the term or on early termination by the customer.
- Unit Linked Insurance –
  - A part of the premium goes to provide term insurance cover. The amount of insurance cover will be selected by the customer.
  - The remaining part of the premium goes into Investment Funds selected by the customer. These Investment Funds are managed by the life insurer and can be 100% Equity funds, 100% Debt funds and various combinations of Equity and Debt funds. The customer receives the fund value at the end of the policy term or on early death. The customer can also, in the interim, withdraw a part of the amount or

What do individuals buy? – Typical Products

- Without Profits Products (Endowment, Whole Life, Money Back etc.)
  - The customer selects a Sum Assured for the Premium he is paying. For example – Rs. 20,000 premium every year for 15 years and Sum Assured is Rs 200,000. As long as the customer pays all premiums when these are falling due, the life insurer will pay the Sum Assured on death or at the end of the term of the policy. A reduced Sum Assured will be paid if the customer stops paying premiums. The customer can terminate the policy any time and ask for his money – this is known as Surrender Value. This product is known as Endowment.
  - The above product, if it does not have a fixed term (i.e. continues as long as the customer is alive) is known as Whole Life.
  - The same Endowment where a specified amount is paid at various intervals is known as Money Back Product. For instance, in the above

What do individuals buy? – Typical Products

- With Profits Products (Endowment, Whole Life, Money Back etc.)
  - These are same as Without Profits Products except that the life insurer also declares a bonus every year depending on the performance of its business from these products. These bonuses are typically paid out on death or on maturity. A discounted value of the bonuses will be paid if the customer terminates the policy earlier.
  - Regulations require that at least 90% of any profits (known as surplus) emerging in the With Profits fund must be given to the customers.
  - This is quite a complicated product line because of the opaqueness in the assessment of “surplus”. The Board of the life insurer therefore carries a significant responsibility here.

What do individuals buy? – Typical Products

- Critical Illness – pays a fixed amount, or a series of amounts, on the event of the occurrence of a specified illness (e.g. Stroke).
- Pensions – An individual can save regularly, or through a single premium, for his retirement. The product structure can be unit linked, without profits or with profits. Upon retirement (or at the end of the chosen period), a large part of the accumulated amount will be used to purchase an annuity.

What do organizations buy? – Typical Products

- Term Insurance – Employer buys for Employees. Typically pays a multiple of the salary (example – 4 times the annual salary) on death of an employee.
- Gratuity – Employer gives out the Gratuity Fund for a life insurer to manage the investments. Typically, there is very little life insurance in this product. This product structure can be unit linked or without profits or with profits.

Valuation of Policy Liabilities

What is it?!

- In long term products (greater than one year), there will be a mismatch between revenue and outgo.
- Project the net outgo into the future and discount it to the present.
- Example – Rs. 7,600 annual premium for 50 years for Rs 1 crore term insurance; aged 30, male. The day the policy is issued, the life insurer carries a liability.

How estimated?

- Future assumptions made about mortality, persistency, expenses, investment returns, future bonus rates (in with profits)
- All guarantees need to be valued
- IRDA Regulations and Institute of Actuaries of India Standards provide guidance and specifics
- ICAI’s Technical Guide on Internal Audit of Life Insurance Business

Why is it important?

- This is the biggest item on the balance sheet, and goes through Revenue Account
- A small change in some of the assumptions can impact the Liability significantly
- A better experience improves P&L, and vice versa
- The Appointed Actuary is responsible for estimating the Policy Liabilities. Auditors rely on AA.

Challenges

- Data of every Policy
- Assumptions – adequate past experience; relevance of past experience; setting prudent margins
- Modelling – developing models for estimating the policy level liabilities
- Explaining movements in results to others

Questions? Comments?