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Risk-Based Capital - concept

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The insurance contract

- In an insurance contract there is a transfer of risk from the insured to the insurer.

- The price for this transfer is the premium paid by the policyholder.

- The risk premium is determined by determining the expected claim (probability of claim times amount payable on a claim).

- Both probability of a claim and amount payable can be variables rather than a fixed number.

- The risk premium is then loaded for expenses of the insurer, distribution costs and cost of capital required to be held for the risk assumed.
What determines the capital required per unit of risk?

- Capital required per unit of risk can be determined as the likelihood that there are sufficient funds to cover the total losses in a portfolio – e.g. 99 times in 100 years (i.e. 99% of the time).

- If the company is willing to be less certain of solvency, say level of sufficiency targeted is one in two years (i.e. 50% of the time), more risks can be taken per unit of capital.

- Capital required can also be determined by Regulations.

- In practice the capital required will be the greater of the above two computations.
What are the risks the insurer faces?

- The first obvious risk is that the premiums are mispriced.
- Where claims amount for any particular event is dependent on external factors (e.g. court awards) there is an additional risk of claims escalation, claims provision may be inadequate.
- Where premiums need to be invested before claims are paid there is the risk of loss on investments.
- And then there is operational risk….
Risk identification and Risk quantification

- A mean or an average does not adequately define a Risk.

- Two additional requirements to modeling risk is variance and distribution.

- These parameters can be subjective in nature, especially those with a very low probability of occurrence (e.g. Tsunami).
Valuation of General Insurance Liabilities

- The general insurance liabilities consist of 2 types of reserves:
  1. **Claims liabilities** to be calculated using accepted actuarial/statistical methodology; and
  2. **Premium liabilities** to be determined as higher of unearned premium reserves (accounting basis) or actuarially calculated unexpired risk reserve (URR) plus PRAD

- 2-step process:
  1. Compute best estimates (i.e. statistical central estimate of liabilities)
  2. Add PRAD (i.e. additional explicit prudential margin to cater for mis-estimation of best estimate of policy liabilities)

- The PRAD for claims liabilities and unexpired risk reserve are set at 75% confidence level

**Probability Density**

- Best estimate
- 75th percentile
- Provisions

PRAD will secure at least 75% adequacy level
The idea behind Risk Based Capital

- Under Risk based capital there are capital charges on the assets of the insurer. These charges will vary by the level of risk underlying the asset (defined as volatility).

- There will be similar charges on premiums and outstanding claims provision designed to ensure that a certain level of capital is being held for the (i.e. volatility) risk taken.

- Some credit can be taken where the risk portfolio is diversified.
Cost of capital

- Capital is required in any business. Usually as working capital.
- But do you know that there is a price on capital?
- Capital in an insurance company is held in reserve, not to be used unless the premiums are inadequate. This capital has a carrying cost.
Why do regulators want RBC?

- It is a globally accepted principle.
- However, it has yet to be adopted by many countries.
- Convergence with Banking Regulations (Basel II).
CAR Interventional Level of 130%

- **CAR < Internal Target**
  - BNM assesses insurer’s circumstances and remedial plans to restore CAR above internal target before deciding on level of regulatory intervention required
  - Insurer shall not pay dividend on its shares
  - BNM may impose restrictions on insurers from making discretionary payments e.g. dividends, interest or redemption of capital instruments

- **Deteriorating CAR**
  - Continued deterioration will attract increasing levels of regulatory attention

- **CAR < 130%**
  - Strict supervisory action e.g. business restriction, restructuring requirement
Ultimate aim of RBC

- To motivate insurer to manage their risks on an active basis, RBC is not only for meeting statutory requirement but also for internal “use”.
Takaful and RBC

- As in conventional insurance, the tabarru’ fund is subject to volatility. To ensure claims are paid there is the *qard* or interest free loan from the Takaful operator.

- On this basis the there is a risk that the operator may be called upon to support the tabarru’ fund. Thus the operator would need some capital to ensure that it is able to support the tabarru’ fund. RBC concepts can apply here.

- The savings component in a takaful savings product may need no capital support if there are no investment guarantees present in the product.