



INSTITUTE OF ACTUARIAL
& QUANTITATIVE STUDIES

NON LIFE INSURANCE – PRINCIPLES, PRODUCTS, PRICING

UNIT 1: CHAPTER 1: REINSURANCE

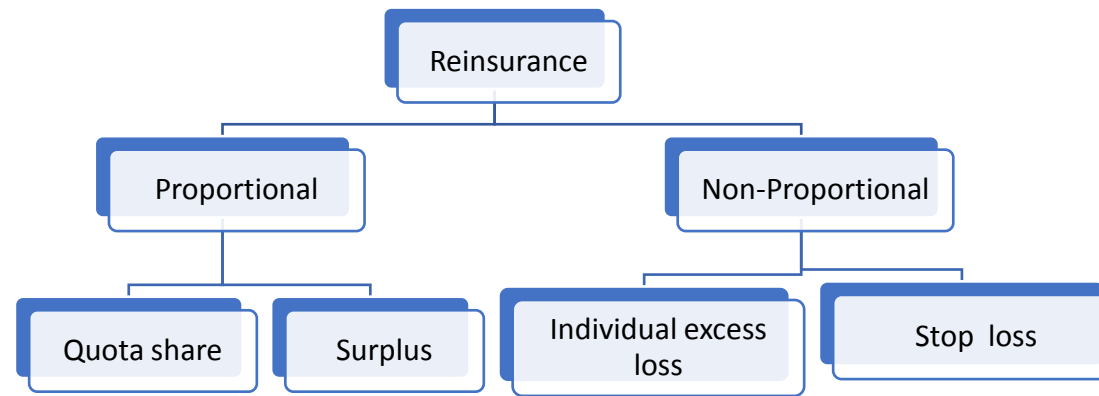
CONTENT: PRESENTATION

Reinsurance

Reinsurance is a form of insurance purchased by insurance companies in order to mitigate risk. With reinsurance, the company passes on some part of its own insurance liabilities to the other insurance company.

Insurers purchase reinsurance for four reasons:

- To limit liability on a specific risk
- to stabilize loss experience
- to protect themselves and the insured against catastrophes
- to increase their capacity.



Proportional Reinsurance : the direct writer (original insurance company) & the reinsurer share the cost of all claims . This is of two types –

Quota share reinsurance – Reinsurer and writer share all premiums and losses according to a fixed percentage.

For example, Bajaj Allianz enters into a reinsurance contract with Munich Re with retained proportion of 80%. This means Bajaj Allianz pays 80% of the claim amount and gets to keep 80% of the premium received . Munich Re has to pay 20% of the claim amount and receives 20% of the premium.

Retained Proportion denotes by α . Let X be the gross claim amount, Y be the net claim amount paid by the insurer and Z be the claim amount paid by the reinsurer.

$$Y = \alpha X$$

$$Z = (1 - \alpha) X$$

Surplus share reinsurance: A surplus share treaty is a reinsurance treaty in which the ceding insurer retains a fixed amount of policy liability and the reinsurer takes responsibility for what remains. Surplus share treaties are considered pro-rata treaties and are most commonly used with property insurance.

For example: HDFC Ergo forms a surplus share reinsurance contract with Swiss Re and underwrites policies with a coverage of Rs 50,00,000 with retention of Rs 20,00,000 . The remaining 30,00,000 are ceded to reinsurer.

Non-Proportional Reinsurance : Under a non-proportional reinsurance arrangement, the direct writer pays a fixed premium to the reinsurer. The reinsurer will only be required to make payments where part of the claim amount falls in a particular reinsurance layer.

Individual excess loss : reinsurer makes a payment when the claim amount for an individual claim exceeds a specified excess point or retention.

For example: Apollo enters into a reinsurance treaty with Swiss Re and reinsurance layer is fixed at 50 lac to 1 crore.

$$Y = X \quad ; X < 50 \text{ lac}$$

$$Y = 50 \text{ lac} \quad ; 50 \text{ lac} < X < 1 \text{ Crore}$$

$$Y = X - 50 \text{ Lac} \quad ; X > 1 \text{ crore}$$

$$Z = X - 50 \text{ lac} \quad ; 50 \text{ lac} < X < 1 \text{ crore}$$

$$Z = 50 \text{ lac} \quad ; X > 1 \text{ crore}$$

Stop Loss Reinsurance : the reinsurer is liable for the insured's losses incurred over a certain period that exceed a specified amount or percentage of some business measure, such as earned premiums written, up to the policy limit. Under this kind of policy, the direct writer (insurance company) agrees to carry the full burden of the loss up to a limit, L and claim amount exceeding L is paid by the reinsurer.

For example : Acko enters into a reinsurance contract with Munich Re and the contract indicates that the insurance company ,Acko is responsible for losses up to \$500,000, but that the reinsurance company, Munich Re is responsible for anything above that limit.

$$Y = X ; X < L$$

$$Y = L ; X > L$$

$$Z = X - L ; X > L$$

Terminology in Reinsurance

GWP : Gross Written Premium

NWP: Net Written Premium

Net premiums written is the sum of **premiums written** by an insurance company over the course of a period of time, less **premiums** ceded to reinsurance companies, plus any reinsurance assumed.

Earned Premium :the **premium** collected by an insurance company for the portion of a policy that has expired. In other words, the **earned premium** is what the insured party has paid for a portion of time in which the insurance policy was in effect, but has since expired.

Net Earned Premium: means the **Net Written Premiums** recorded during the Experience Period, plus the unearned **premium** reserves at the beginning of the period, minus the unearned **premium** reserves at the end of the period.

Net Loss ratio :
$$\frac{\text{Net Claims Incurred}}{\text{Net Earned Premium}}$$

Net Expense ratio :
$$\frac{\text{Expenses}}{\text{Net written premium}}$$

Net Commission Ratio :
$$\frac{\text{Commission}}{\text{Net written premium}}$$

Net Combined Ratio : the sum of loss ratio, expense ratio and commission ratio.

Start date : the date the policy is activated.

End date: the date at which the policy term ends

Policy year : A policy year is based on policies with effective dates in a twelve month period. So, policy year 2019 data are those policies with effective dates between 1/1/19 and 12/31/19.

Accident year : Accident year data is based on accidents that occur within a twelve month period. Thus, accident year 2019 is based on those accidents that occurred between 1/1/19 and 12/31/19.

Reporting year : The year in which claim incurred before is reported to the insurance company.

Net claims incurred : The amount of claims incurred during an accounting period after deducting reinsurance recoveries.

Claims Reported : Claims reported to the company.

Incurred But Not Reported (IBNR) is a type of reserve account used in the insurance industry as the provision for claims and/or events that have transpired, but have not yet been reported to an insurance company.

Incurred Loss Ratio - The percentage of losses incurred to premiums earned.

Reinstatement Clause - When the amount of reinsurance coverage provided under a treaty is reduced by the payment of a reinsurance loss as the result of one catastrophe, the reinsurance cover is automatically reinstated usually by the payment of a reinstatement premium.

Reinstatement Premium - A pro rata reinsurance premium is charged for the reinstatement of the amount of reinsurance coverage that was reduced as the result of a reinsurance loss payment under a catastrophe cover

Profit commission is the commission over and above the ceding commission offered by the reinsurer to the cedant to encourage good quality underwriting and profitability of the treaty, where cedant is the insurance company the reinsurer insures.

Understanding accident year

Take an example, a small general insurance company looks over 5 motor insurance policies . Two policies were initiated in 2015. Other three policies were initiated in 2014, 2016 and 2017 respectively. One of the policy from 2015 group and the policy initiated in 2016 reported a claim in 2017. The policy initiated in 2017 reported a claim in 2020 while the policy initiated in 2016 reported a claim in 2018 and the other policy initiated in 2015 reported a claim in 2019.

Specify the policy year and accident year for each policy.

Thank You!