INSTITUTE OF ACTUARIES OF INDIA

EXAMINATIONS

4th September 2021

Subject CP3 – Communication Practice

Time allowed: 3 Hours 30 Minutes (09.30 – 13.00 Hours)

Total Marks: 100

Background

You are an Actuary working in the capital management department of a large life insurance company. The company predominantly sells protection products and some unit linked products with considerable mortality covers. The Company of late has ventured into Critical Illness insurance and Health Insurance. Reinsurers have been in the news lately as they have increased premiums due to adverse claim experience. The reinsurance program is coming up for review and you have circulated the draft reinsurance program to the Board members. One of the directors, who has joined recently and is relatively new to the insurance sector has written to you as follows.

I see that the "Annual reinsurance program" is in the agenda for the Board meeting. We have been reading in the news recently that reinsurers have been raising prices. Will we not give up our profits by reinsuring? We are a large company, with a healthy capital position and should be in a position to absorb any minor losses. I saw from your financial statements that almost 20% of our premiums go towards reinsurance and this number has been increasing. While I have seen the program, I would like you to simplify it for me and explain, the qualitative and quantitative aspects which go into the decision making of reinsurance. I would request you to draft a note for me as pre- read for the meeting.

Q. 1) Draft a note in response to the email of the director explaining in simple language the reinsurance program and the aspects which have been considered in arriving at the program. The excerpts of the reinsurance program have been provided for drafting your response. **[90]**

Q. 2) What were some of the terms which you considered as jargon and left out of your reply or explained so that a lay person can understand them? **[5]**

Q. 3) One of the ways that communication with non-technical audience can be made effective is by leaving out information which may not be relevant for the audience. Explain what information you considered as irrelevant and left out of your reply. **[5]**

Excerpts from reinsurance program

Reinsurance is a critical risk management tool to manage mortality and morbidity risk and reduce the risk to earnings and solvency. The Company considers the following factors before determining the reinsurance arrangement in terms of extent of risk to be ceded and nature of obligation.

- Risk appetite for mortality and morbidity risk
- Impact on Solvency
- Mechanism of reinsurance
- Product type
- Technical expertise
- Adherence to any Regulatory limits of minimum retention
- Credit rating of reinsurers

Approach to reinsurance type of arrangement and extent of retention

Technical assistance

Reinsurers assist us with new products. We need technical expertise from the reinsurer in the areas of underwriting and product design.

Levels of retention

Our intention is to retain more when we have large book with stable credible experience. The level of retention is decided based on the impact on solvency, volatility of profits, the average sum assured and the variance of the sum assured distribution.

Catastrophe cover

The level of catastrophe cover is assessed based on the risk retained by the company and the expected impact as assessed based on the number of deaths seen in catastrophes in the past.

Results of the analysis and recommendations

Mortality risk

We have followed a deterministic approach in arriving at retention level by carrying out sensitivities at different retention levels. The retention level is the level upto which the company bears the risk and beyond this level the risk is borne by the reinsurer so that the higher the retention level the greater the risk borne by the company.

The risk appetite statement of the Company requires us to minimise the impact on volatility of profits to less than the 10% of the yearly expected profits in a 1 in 10 stress scenario subject to a minimum level of capital being maintained.

The mortality experience on the term product has been stable and is about 80% of the reinsurance rates.

The results of the sensitivity tests are given below. The current mortality experience is about 80% of reinsurance rates.

Retention levels	**Base case**		**Moderate Stress scenario (worsening of mortality)**	
	Expected profits ₹ crore	Solvency ratio	Impact on profits ₹ crore	Impact on solvency
₹ 30 lakhs (Minimum required as per regulations)	800	215%	-10	-1%
₹ 40 lakhs	850	210%	-35	-10%
₹ 50 lakhs	870	205%	-50	-30%
₹ 60 lakhs	890	200%	-80	-40%

Observations and recommendations

- Increasing the retention will improve the expected profitability. This is because at the current observed mortality experience, the outgo on account of claims would be lower than outgoes on account of reinsurance. This is as expected, as reinsurers would load for their expenses and profits in their reinsurance premiums.

- However, volatility of profits would be higher.
- As is observed even in a relatively lower stress scenario of 1 in 10 shock the impact on the profits is quite significant.
- At a retention level of ₹ 50 lakhs we would be able to avoid the degree of volatility as articulated in the risk appetite statement while increasing the profits.
- Solvency is relatively less sensitive to the stress. This is because with higher retention, higher capital for mortality risk is offset by capital for default risk of reinsurer.
- Though not presented here the average sum assured for the pure term product is ₹ 1 crore. The maximum sum assured which is being issued is ₹ 100 crore. With the proposed retention, we can continue to write higher sums assured.
- For unit linked product while the retention which is being proposed is ₹ 50 lakhs, it would be reinsured on sum at risk basis. This would ensure that reinsurance costs are lowered.

CI and Health Insurance business

No quantitative tests were done. The primary considerations here are that this business is relatively new and the Company has little previous experience and therefore the reinsurer's expertise with product design, pricing underwriting and claims management is required.

Recommendations

- A quota share arrangement with a relatively low retention is being proposed.
- This would enable us to mitigate any parameter risk.
- This product being relatively new, the average sum assured is not known. Therefore, a quota share arrangement ensures that reinsurer and the company share the risk.
- In the case of Health Insurance as the maximum sums assured are limited to ₹ 10 lakhs, an upper limit is not being proposed with reinsurance being purely on quota share basis so that the entire risk is shared proportionately between us and the reinsurer.
- In the case of Critical illness product, the maximum sum assured that can be offered is ₹ 1 crore. In order to limit peak risks quota share is being proposed upto ₹ 20 lakhs with the balance being passed on the reinsurer.
- Once our expertise increases, the retention levels would be reviewed.

Catastrophe reinsurance

Past catastrophes have been examined to see the maximum number of deaths. Based on this an estimate has been made of the number of claims which can expected in the event of a catastrophe. The average sum assured has been multiplied with the expected number of deaths to arrive at the cover.

About the products

- Critical Illness product offers a lump sum that is payable if the policyholder suffers one of the defined conditions during the term of the product. The term of the product is ten years. Premiums are guaranteed during the term of the product.

- Health insurance product indemnifies the cost of hospitalisation subject to a maximum sum assured. The product is renewable every year.
- Individual protection product is a basic term product with level premiums and sum assured being payable on death during the term of the product.
- Unit linked product offers a death benefit which is higher of a specified sum assured or the fund value and the mortality charges levied by the company are guaranteed.

Summary of the reinsurance arrangements and retention levels being proposed

Protection business - Sum assured in excess of ₹ 50 lakhs will be reinsured. Reinsurance is on risk premium basis and is on guaranteed terms throughout the term.

Critical illness- Quota share with 50% being ceded to the reinsurer upto sum assured of ₹ 20 lakhs. Sums assured in excess of ₹ 20 lakhs will be passed on to the reinsurer. Reinsurance is on risk premium basis with the premiums being reviewable after ten years.

Individual Personal Medical Insurance business - Quota share arrangement with 80% being ceded to the reinsurer.

Unit linked business- Sum at risk in excess of ₹ 50 lakhs is reinsured.

Catastrophe cover -The level of catastrophe cover is ₹ 100 crore. The trigger is 5 deaths and ₹ 2 crore of claims from a catastrophe.

Credit rating- The credit rating of the identified reinsurers is at least AA-.

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