

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

16 April 2024 (am)

Subject SA2 – Life Insurance Specialist Advanced

Time allowed: Three hours and twenty minutes

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator.

If you encounter any issues during the examination please contact the Assessment Team on T. 0044 (0) 1865 268 873.

- 1 (i) Set out how a life insurance company determines whether it should award the same rates of reversionary bonus to all types of with-profits contracts. [3]

A proprietary insurance company (Company X) has three ring-fenced with-profits funds:

- Fund A, which contains without-profits endowments and conventional with-profits endowment assurances
- Fund B, which contains only conventional with-profits endowments
- Fund C, which is closed to new business.

Funds A and B are open to new with-profits business, albeit new business has been reducing.

Company X targets with-profit maturity pay-outs to be broadly equal to asset shares over time.

Company X wishes to simplify its with-profits business to reduce its costs. Company X is considering merging Funds A and B.

After the merger, for all with-profits business in the merged fund:

- the asset share calculation methodology would be the same.
- the regular reversionary bonus rates and terminal bonus rate scales would be the same.

- (ii) Discuss the difficulties the company may face with paying the same reversionary bonus rates and terminal bonus rates for business in the merged fund.

[Note: A discussion of how the company can merge the approach to projecting asset shares is not required.] [15]

- (iii) Discuss other factors that Company X should consider, from a policyholder perspective, when deciding how to merge Funds A and B. [8]

Fund C has a mixture of conventional with-profits endowments and whole-of-life policies as well as some unitised with-profits contracts.

Fund C has a run-off plan that distributes the estate by uplifting all asset shares by the same percentage once there is an excess of assets over a specified level of capital.

The number of in-force policies has been reducing in Fund C, mainly due to deaths and maturities. Company X is concerned about the potential tontine effect and increasing per-policy costs.

Company X is therefore proposing to convert the with-profits policies in Fund C to conventional without-profits policies.

- (iv) Discuss the factors that Company X should consider in deciding whether to implement this proposal. [10]

[Total 36]

2 A life insurance company writes regular premium unit-linked endowment business.

The main features of the policy are as follows:

- The customer can choose from a range of unit-linked funds.
- The policy is for a fixed term.
- The benefit on maturity at the end of the term or on death before the end of the term is the value of units held at the date of maturity or death.
- The value on surrender is 95% of the value of units held at the date of surrender.
- The only charge is a monthly management charge that is a percentage of units held and is deducted each month. The charge is the same irrespective of the unit-linked fund chosen by the customer.
- The policyholder may change the level of premium they pay at any time during the contract, including stopping paying premiums altogether.

The unit-linked funds are managed by an external investment company. The investment company charges a monthly management charge that is a percentage of the units held each month. These charges differ depending on the unit-linked fund.

Administration services are provided by an external outsource provider. The outsource provider charges the life insurance company an annual per-policy fee (in \$) that increases each year in line with a nationally recognised rate of inflation.

- (i) Describe the main risks to the life insurance company associated with this product. [14]

The life insurance company is considering an alternative charging structure for new business as follows:

- A lower monthly management charge
- Less than 100% of premiums paid in the first year will be allocated to units
- A monthly monetary fee (in \$) that increases each year with a nationally recognised rate of inflation.

The life insurance company assesses the profitability of its products based on the average net present value of future cashflows per policy, assuming the shareholders' required rate of return.

The proposed charging structure has been determined to ensure that the net present value per policy is unchanged from that under the original charging structure.

- (ii) Assess the proposed new charging structure from the perspective of the company. [7]

It has been suggested that the value paid at the maturity date of the policy should be the higher of:

- the value of units held at the maturity date, or
- the sum of the premiums paid into the policy.

- (iii) Discuss the suggestion. [10]

[Total 31]

3 A proprietary life insurance company operates in a territory that has a regulatory regime similar to the Solvency II regulatory regime.

The company has sold term assurance business and individual immediate annuity business for many years. Sales of these products have been reasonably stable over recent years and the company now has large volumes of both products in force.

Three years ago, the company started to write impaired life annuities and it now sells significant volumes of this business.

The company defines ‘Available Regulatory Capital’ as the regulatory value of assets less technical provisions. Over the last 3 years, the Available Regulatory Capital has steadily reduced.

- (i) Discuss possible reasons for the decline in the company’s Available Regulatory Capital. [12]
- (ii) Suggest possible reasons why having insufficient capital may be a problem for the company. [4]

The company defines its Solvency Ratio as the ratio of the Available Regulatory Capital to the Solvency Capital Requirement.

Over the last 3 years, the company’s Solvency Ratio has increased.

- (iii) Discuss possible reasons why the company’s Solvency Ratio might have increased. [9]
- (iv) Explain why the company’s rating agency capital may differ to the Available Regulatory Capital. [5]
- (v) Suggest the possible actions the company may take in response to the declining Available Regulatory Capital. [3]

[Total 33]

END OF PAPER