

EXAMINERS' REPORT

June 2024 examinations

Subject F102 — *Life Insurance* Fellowship Principles

INTRODUCTION

The attached report has been prepared by the subject's Principal Examiner. General comments are provided on the performance of candidates on each question. The solutions provided are an indication of the points sought by the examiners, and should not be taken as model solutions.

QUESTION 1

i. Product design differences:

- For tiered benefits to be paid the benefit design will require different levels of severity to be specified.
- Each level of severity will have its own level of cover.
- Each level of severity will require its own claims definition.
- Under the existing product a claim will result in termination of the cover.
- Under the new product a claim will not result in termination of cover, unless a claim is made at the maximum severity for the full sum assured.
- The new product design will need to specify how cover is reduced/reinstated after a partial claim.
- The new product design will need to specify what happens if a mild condition progresses into a more serious one.
- The new product design will need to specify whether there will be any reduction in premium after a partial claim has been made.
- It is likely that the insurer will be liable for a wider range of claims under the new product since policyholders can claim for milder conditions than would be valid under the standard lump-sum product. Therefore, the insurer should consider implementing stricter underwriting requirements for the new benefit.
- The insurer will need to ensure that its salesforce is well equipped to explain the new design to consumers as it is more complex and may lead to policyholder dissatisfaction if they do not fully understand the product.

Pricing differences:

- The current product requires an incidence rate per condition by age.
- The new product will require an incidence rate per condition, per severity by age.
- The administration of the new product is likely to be more onerous and therefore may require a higher administration expense assumption.
- There is likely to be more uncertainty in the expected claims experience of this new product, and therefore higher margins may be required in the pricing basis for the new product.

ii. Comments:

- The statement is not necessarily valid as it does not state whether the new product will cover the same conditions as the old product.
- The products may have different exclusions.
- The new product may have additional benefits, such as children's benefits, which the old product did not have.
- It will depend on the severity of illnesses covered under the new product relative to the old product and at the level of sum assured associated with the levels of severity.

- If relatively high sums assured are offered, then the increase in the expected frequency of claims may result in a more expensive product overall.
- The underwriting, product development costs and administration expenses are likely to be higher for a tiered product than a non-tiered product, leading to higher expense loadings on the office premiums.
- The increased uncertainty in the claims experience of the tiered product may result in higher margins needing to be assumed in the pricing basis.

iii. Claims experience during lockdown:

- Since people will be forced to stay at home, they may miss some of their scheduled doctors' appointments.
- People may be scared to visit medical centres in fear that they may be infected by the pandemic illness.
- Therefore, people may miss their regular health screening appointments such as mammograms or prostate checks.
- This is likely to result in lower than would otherwise have been anticipated critical illness diagnosis rates during the lockdown period.
- This may result in a reduction in critical illness claims for the insurer during this period.
- If the pandemic illness itself is covered then the critical illness experience would be significantly worse.

Claims experience after lockdown:

- This may, however, result in an increase in claims in the future as the diagnoses that were "missed" during the lockdown are "caught up" shortly after the lockdown.
- This may also mean that the critical illnesses then diagnosed may be at a worse stage of development than they otherwise would have been.
- The pandemic illness itself may have exacerbated the likelihood and/or severity of covered critical illness conditions.
- This would mean that for the new tiered product the insurer may experience more claims at higher tiers than they otherwise would have expected.
- This would likely result in worse than expected claims experience for the insurer.

Performance was disappointing on this question.

In part (i) many candidates simply listed the product design factors and then added generic comments such as "need reinsurance", "tax will be the same" etc. and subsequently did not score well.

In part (ii) candidates generally either scored very well or very poorly.

In part (iii) the candidates that understood that the claims experience was influenced by access to health care facilities scored reasonably well. Candidates generally didn't generate enough points for this question.

QUESTION 2

i. General principles:

- The company would select assets that maximise returns.
- The company would select investments that minimise risk, by:
 - Selecting assets that match the liabilities by nature.
 - Selecting assets that match the liabilities in term.
 - Selecting assets that match the liabilities by currency.
- The company would aim to maximise returns subject to an acceptable level of risk.
- The company would rely on the extent of its free assets to determine how much risk it could take on.

ii. Impact of legislation:

- Legislation may restrict the company's ability to match its liabilities:
 - There may be restrictions on the level of assets that may be invested offshore.
 - There may be restrictions on the level of assets that may be invested in a particular instrument.
 - There may be restrictions on the level of assets invested in a specific asset class or currency.
 - There could be a prescription to invest in certain assets.
 - There may be limits on counterparty or credit risk.
 - There may be limits on the extent to which a specific asset class may be taken into account to demonstrate solvency.
 - There may be a minimum credit rating required for bonds.
 - There may be restrictions on the level of mismatching.
 - ESG considerations may need to be applied when selecting investments.
 - Regulation may exist in respect of a minimum liquidity requirement.

iii. Determining a suitable investment strategy:

- The company should model the expected future liabilities under the portfolio of with-profits endowment policies to determine a suitable portfolio of assets.
- Investments should match the modelled liabilities by nature, term and currency:
 - The guaranteed death and maturity benefits, comprising the sum assured, are liabilities that are guaranteed in money terms.
 - These should be matched with government bonds of a matching term.
 - In the local currency.
 - Future expenses are liabilities guaranteed in terms of a non-investment index.
 - These should be matched with inflation-linked government bonds of matching terms.
 - In the local currency.
 - Should bonds of a sufficiently long term not be available, assets providing a real yield e.g. equities could be used.
 - Future terminal bonuses are discretionary liabilities.

- These should be matched with assets that provide the highest expected returns over the term of the liability.
- Locally-listed equities would be the best match for these liabilities.
- Given that this is an emerging economy, offshore equities could be considered for additional diversification, however this would introduce currency risk.
- Immediate liabilities would be matched fully with cash.
- The company would model the expected returns of different portfolios of assets stochastically.
 - This would be done to determine what combination of assets gave the best returns at an acceptable level of risk of insolvency.
- The company is newly established and therefore its level of free assets is likely to be low.
 - It should therefore match guaranteed liabilities as closely as possible.
- The company would consider the level of bonuses declared by its competitors, to ensure that its investment strategy could deliver matching returns.
- The company should consider tax when selecting investments as well as any restrictions placed on investment by legislation.

iv. Changes to investment strategy:

- The change would lead to an increase in the level of guaranteed liabilities, once declared.
- Future reversionary bonuses are a discretionary liability, and suitable investments depend on policyholder expectations.
 - Policyholders are likely to expect future bonuses to provide real returns, which implies real-return assets are needed.
- This would require an increase in the proportion of assets invested in government bonds and a reduction in equity assets.
- A developing economy is less likely to have an extensive bond market.
- This would mean that the company would have to take on additional risk by:
 - Investing in corporate bonds and increasing credit risk;
 - Investing in international bonds and increasing currency risk; or
 - Retaining a high proportion of equity assets and increasing the mismatching risk.
- The company is likely to have low free reserves and the increased investment risk is likely to place solvency at risk.

Part (i), bookwork, was generally well answered. However, many candidates wrote far too much detail for this part and answered much of part (ii) in part (i), wasting time, and suggesting they did not read the whole question through.

Part (ii) was generally well answered. Marks were not awarded for the statement “regulation may restrict the type of assets the company may invest in”, as this simply restates the question. Points on tax were also not awarded marks as tax is not part of investment legislation.

Part (iii) was also reasonably well answered. Several candidates discussed appropriate assets but neglected to cover the modelling - despite the question asking how you would “go about” determining the strategy. Points were often lost for not describing each component of the liabilities but rather suggesting a holistic strategy. Candidates needed to identify that the risk should be minimised for the guaranteed component by matching.

Part (iv) was not as well answered as the earlier parts, although most candidates identified that the guaranteed component would now increase over time.

QUESTION 3

i. a. An internal linked fund:

- Consists of a clearly identifiable set of assets, e.g. equities.
- It is divided into a number of equal units consisting of identical sub-sets of the fund’s assets and liabilities.
- This division is notional.
- The insurer is responsible for determining the price of units

b. Basic equity principle:

- The basic equity principle of unit pricing for an internal fund states that the interests of unit holders not involved in a unit transaction should be unaffected by that transaction.
- For the holder of a unit the only prices relevant are those at which they buy units in the fund and those at which they redeem units.
- In theory, the movement in price between those two events should only reflect the performance of the assets backing the units and charges deductible under the policy terms.
- Therefore the price of units should not be affected by creation or cancellation of other units.
 - Otherwise cross-subsidies between unit holders would arise, which would be viewed as unfair.

ii. a. Impact on the fund’s NAV:

- Increase in NAV of R5.0m in respect of the value of the property, plus an allowance for transaction costs of R0.5m (as the fund is valued on an offer basis).
- The cash in the bank account will decrease by R2.5m; and liabilities will increase as a result of the R3m loan.
- There should be a zero net impact on the fund’s NAV.

b. Impact on the fund's NAV:

- Reduces NAV by an accrual of R100 000 for the expense (invoiced to the fund).
- However, if there is an existing related accrual for an amount that is different to the R100 000, the fund's NAV will change by the difference between the new accrual and the existing accrual.

c. Impact on the fund's NAV:

- No impact as this is not a cost incurred by the fund.
- Such costs will be included in the expense allocation to the non-unit fund and will therefore be covered by charges on the policy.

d. Impact on the fund's NAV:

- As the tax only applies on capital gains from a future date, no accrual for CGT is immediately required.
 - Thus there is no immediate impact on the NAV.
- However, market values may change in anticipation of CGT leading to a reduction in the NAV of the fund.

e. Impact on the fund's NAV:

- The value of the fund's equity holdings will be reduced by:
 - the value of shares sold at offer price; and
 - the allowance for the transaction costs associated with selling the equities.
- The fund's cash holdings will:
 - increase by the value of shares sold at the bid price received (which may be lower than offer price);
 - less the transaction costs incurred on selling the equities.
- The net impact on NAV should be a small reduction reflecting the spread between the offer and bid price, if any, on the shares sold and the effect of the associated transaction costs (likely to be negative, but relatively small).

iii. Constraints:

- Actuarial funding will be constrained to the extent that future charges on the product are sufficient to cover future expenses (i.e. non-unit cashflows should remain positive) when projected on a prudent basis.
- There should also be an appropriate unit-related surrender penalty.
- The extent of the funding is limited by the size of the surrender penalty, so that the surrender value is never larger than the funded value of units (to prevent a strain on surrender).
- The unfunded value of units should only be available on contingent events such as death or at maturity.
- There may be regulatory constraints on using actuarial funding.

iv. Comments:

- Under actuarial funding the unfunded value of units is reduced in anticipation of future fund management charges on the current unit fund, only.
- The bid-offer spread applies on the receipt of a premium.
 - It would be inappropriate to reduce the current unit fund in anticipation of the bid/offer spread that may result from expected future premiums.
- Although it is true that the bid/offer spread is included in the price of the unit, the charge is fixed in monetary terms (it is equivalent to an allocation percentage).
 - Therefore, even if the current unit-fund could be reduced by the expected receipt of these future monetary amounts, it would expose the company to the risk of a movement in unit prices.
- Thus, although it is true that the fund management charge can be actuarially funded, the bid/offer charge cannot be actuarially funded.
- The bid/offer spread can be included in the calculation of any non-unit reserves.

Part (i) was standard bookwork and well-prepared candidates did well. A common mistake in part (i)(b) was to state that the net asset value would not change due to a transaction, when it should be that the net asset value per unit is unchanged. Clearly when units are created/cancelled, the net assets (for the fund as a whole) will change.

Answers to part (ii) were reasonable. Candidates that did best understood how the net asset value would be calculated on an offer basis and were then able to outline the impact of the event on the net asset value before and after the event. The question required an explanation, and so no credit was given for any mathematical formula or statements, where the logic behind the formula or statement was not explained.

In part (iii) many candidates needed to be more precise with their answers, for example stating that a surrender penalty was required without stating that it needed to be unit-related. Many candidates explained the process of actuarial funding in general and did not outline the necessary conditions for actuarial funding, and therefore did not answer the question asked.

Candidates found part (iv) challenging. Most candidates did not appreciate or state that a bid-offer spread only results in a charge on the receipt of a premium and is a monetary cashflow.

QUESTION 4

i. Components of the embedded value (EV) calculation:

- The shareholder-owned share of net assets, where net assets are defined as the excess of assets held over those required to meet liabilities.
 - These assets may be valued at market value or may be discounted to reflect “lock-in”, for example if they are required to be retained within the fund to cover solvency capital requirements.

- Alternative to reduced asset values, a deduction to EV can be made for the cost of holding capital requirements.
- The present value of future shareholder profits arising on existing business.
 - The process of determining this amount is similar to performing a profit test, bearing in mind that some elements will not be applicable (e.g. new business expenses).
 - Unit-linked business: The present value of future charges (including surrender penalties) less expenses and benefits in excess of the unit fund, plus investment income earned on and the release of any non-unit reserves.
- It is important that the reserves used in the determination of net assets are consistent with those used in the determination of the present value of future profits.
- Tax is allowed for within the calculation as appropriate.

ii. The principles that should be considered in setting the EV basis include:

- The basis for an EV calculation should reflect:
 - Expected future experience on a best estimate basis.
 - An appropriate risk margin to allow for the unpredictability of profit emergence for life insurance business.
 - The need for consistency:
 - with previous EV bases;
 - between assumptions; and
 - with published accounts.
- The EV basis should consider the pricing bases as any differences will immediately lead to EV movements on writing new business different to those implied in the pricing bases.
- The assumptions used to determine the assets and liabilities to be shown in the insurer's published accounts should be consistent with the legislation and accounting principles governing the preparation of those accounts in the country concerned. Matters to be considered include:
 - Whether a going concern or break-up basis is to be used;
 - Whether the accounts have to be true and fair; and
 - Whether assumptions should be best estimate or include margins.
- The embedded value basis should comply with any actuarial professional guidance on embedded values.

iii. Determining best estimate assumptions:

General:

- The general approach will be to use historical experience to derive best estimates of each assumption, and then to adjust for expected future conditions.
- Margins for uncertainty may be included in the individual assumptions or allowed for in the risk discount rate.

Investment returns:

- This will be based on the expected future returns for each of the asset classes.
- Assumed returns for different asset classes should be consistent with one another.
- The returns for each unit fund are then the weighted average expected return based on the particular fund's asset profile.
 - This would usually be the longer-term mandate or benchmark.
- Separate assumptions for interest income, rental income and capital gains may be required depending on the tax regime.

Risk discount rate:

- This will be based on the risk-free rate (yield on government bonds) of appropriate duration.
- There will be an allowance for return for shareholders and to reflect the risk of the business.
- The Capital Asset Pricing Model (CAPM) is one method that can be used as a guide to the appropriate level of the risk premium to be added to the risk-free rate.

Expenses (including commission):

- Use the most recent expense investigation to derive maintenance unit costs and other relevant costs.
 - That is, acquisition and initial costs are excluded as these relate to new business.
- Expected investment expenses should be considered separately and could be deducted from the assumed investment returns above.
- Commission will be based on the commission scales in place.

Expense inflation:

- This could be based on the company's expectations for expense growth,
- Alternatively, it could be taken from the difference between the nominal and real yield curves.
- The assumptions for expense inflation need to be consistent with the assumptions for investment returns.

Withdrawals:

- The recent experience would be a starting point.
- However, this assumption is more sensitive to expected future economic conditions including employment rates.

Tax:

- This would be based on the current tax regime and current tax rates.

- Any expected changes to these would normally only be taken into account if the changes were certain and imminent.

Mortality and/or morbidity (for products that provide risk cover):

- Use the recent internal mortality or morbidity investigation if sufficiently credible.
- Alternatively, use reinsurer or industry standard tables, adjusted for the demographic profile of the insurer's policyholders and the insurer's underwriting standards.

Overall the question was not well answered, indicating a general lack of understanding of embedded values, even though the question was primarily about setting assumptions.

Part (i) was bookwork. Most candidates stated the main components but did not give all the details.

Candidates struggled with general principles for EV basis setting in part (ii).

Answers to part (iii) were disappointing on the whole given the simple nature of the question. Many candidates wrote about matters other than assumption setting, such as explaining the effect or importance of an assumption or describing calculation methods. The question clearly asked for how assumptions could be set, rather than why for example.

In parts (ii) and (iii) there was also some confusion between published reporting, which is determined by the market, versus supervisory/prudential reporting, which is determined by the regulator.

QUESTION 5

i. Main features of a passive valuation approach:

- The valuation method is relatively insensitive to changes in market conditions and the basis is updated relatively infrequently.
- Assets are valued on historic cost, with possible amortisation over time.
- Reserves are likely to be calculated using the net premium method.
- Assumptions remain unchanged ("locked in") from those used when the policy was first written.
 - There may be a requirement to update demographic assumptions if experience worsens.
- Solvency requirements are likely to be determined using a simplified approach such as a prescribed percentage of liabilities.
- It is straightforward to implement and less subjective than an active approach.
- The approach results in a relatively stable profit emergence compared to an active valuation approach.

ii. Possible types of data errors, and checks to identify them:

- Missing policies.
 - Check that the number of policies in force reconciles with policy movements.
- Errors in Sums Assured in force.
 - Check that sums assured in force reconcile with policy movements sums assured.
- Errors in start or end date (and therefore outstanding policy term).
 - Check against original application forms, or
 - Check for unusual or unlikely values.
- Errors in policyholder details (e.g. age, gender).
 - Check against original application forms, or
 - Check for unusual or unlikely values.
- Errors in policy status (e.g. showing a policy as active but the insured is deceased or the policy has matured, or as single premium when it should be recurring premium).
 - Check that premiums received are as expected on active policies.
- For regular premium policies where the allowance for expenses is implicit, the office premium will be needed to test the adequacy of this implicit assumption, and there could be errors in the office premium (e.g. captured incorrectly at inception).
 - Check that office premiums in force reconcile with policy movements office premiums, or
 - Check the ratio of office premium to sum assured for all business in aggregate over time for unusual changes.

iii. Implications of changing to an active approach:

- Valuation models will need to be redesigned.
 - Gross premium valuation is more complex requiring more assumptions.
 - Experience analyses for more items will be needed (e.g. expenses).
 - Experience analyses will be required more often.
 - A long lag time may be needed before YouSave is ready to implement the active approach.
- Asset values are based on market prices, or proxies for market prices for illiquid assets, making the valuation more complex than simply using historic values.
- Financial results will be more volatile and more complex to understand and explain.
- Additional costs will be needed for training staff and for IT/modelling.
- Two valuations are likely to be needed for a period – one on a passive approach and one on the new active approach before the change is implemented.
 - This will increase complexity and cost.
 - There may be a large one-off change in results switching between approaches.
- Solvency capital requirements regime will need amending to be more risk based.
 - This will provide more useful information for management.
 - It will be significantly more complex to model and understand than the current simplistic approach.

- YouSave may need to review its products, e.g. possibly removing guarantees and options due to high solvency requirements on the new approach.
- YouSave may review its investment and reinsurance strategies to reduce risk if capital requirements are too high on the new approach.

Part (i) was bookwork, yet not well answered by many candidates. Some confused valuation approach with investment strategy. Many candidates thought a passive approach means that valuations themselves are infrequent and many thought that this approach leads to little or smoothed changes to reserves over time (rather than profit emergence).

Part (ii) was surprisingly poorly answered by many candidates who struggled to think of possible relevant data errors and follow instructions. Many gave examples not relevant to the valuation of liabilities, or otherwise related to the valuation methodology itself, and many were too vague about errors and checks e.g. listing “inaccurate/missing values” without specifying what values were being referred to, or “spot checks” without elaborating what alternative source(s) may be used to check against. When instructed to provide n items, only the first n items given will be marked. Candidates who provide more than n items are wasting time.

In part (iii) many candidates suggested that an active valuation approach requires more regular valuations (as opposed to more regular basis changes) than a passive approach, and several suggested that conventional without-profits benefits include bonuses. Many candidates simply listed features of net- and gross-premium valuation methods and many did not adequately explain their points as required.

QUESTION 6

i. Features of reinsurance

- Original terms:
 - The original premium and claims are shared in the agreed proportion (fixed for quota share business).
 - The insurer provides the reinsurer with its premium rates so that the reinsurer can assess the appropriateness of the premium rates.
 - The reinsurer then determines what reinsurance commission it is prepared to pay the insurer to determine the total cost of the reinsurance.
 - The size of the reinsurance commission will take account of the attractiveness of the business being ceded.
 - The amount of the sum assured to be reinsured can be on a quota share or individual surplus basis.
- Risk premium:
 - The cedant reinsures part of the sum assured or the sum at risk, i.e. the excess of the benefit payable over the reserve, on the reinsurer’s risk premium basis.
 - The reinsurer provides the insurer with a set of risk premium rates accounting for the likely experience of the business being reinsured.
 - The risk premium charged will be this rate multiplied by the reinsured amount.

- The risk premium can be renewed annually or guaranteed depending on the contractual agreement.
- The amount of the sum assured or sum at risk to be reinsured can be on a quota share or individual surplus basis.

ii. Most appropriate type of reinsurance and how it works:

- Since the company is looking to manage its exposure to single events, catastrophe reinsurance (or Aggregate Excess of Loss (by event)) would be the most appropriate reinsurance.
- Catastrophe reinsurance is a type of non-proportional reinsurance.
- This would be useful to manage some of the concentration risk that the company would be exposed to by writing group life business (e.g. employees working at the same location).
- The cover is usually only available on an annual basis and must be renegotiated each year.
- Catastrophe reinsurance covers deaths in excess of a certain number.
 - From a single event
 - Within a fixed time from the event
- The definition of what constitutes a catastrophe is specified in the reinsurance treaty.
- Usually there is a retention limit (excess point) up till which the insurer will pay any such losses and then the reinsurer pays out above this limit.
 - The reinsurers liability in respect of a single claim could be subject to a maximum amount and amounts above this would revert to the cedant.
 - There is usually a maximum cover per life.
- War, epidemics and nuclear disasters are usually excluded.
- Catastrophe reinsurance reduces the potential loss due to non-independence of the risks.

iii. Why Company A is more likely than Company B to purchase catastrophe reinsurance:

- Company B is large and sells a range of individual risk products and hence it likely has a higher risk appetite and benefits from diversification of risks.
 - Whereas Company A is a small insurer which writes predominately group life business and hence likely has a lower risk appetite and hence higher need for reinsurance.
- Company B sells individual risk products and hence there is likely no individual link between lives insured.
 - Thus Company B is likely to have lives insured spread by geographical location.
- Company A will have insured groups of lives.
 - These would typically be linked by employer.
 - This will be particularly true where many of the lives covered work in a single location.
 - Hence, any disaster at that place of work may lead to multiple deaths from a single event (e.g. fire or building collapse).

- Thus catastrophe reinsurance would provide appropriate mitigation.
- In addition, it may be common practice for groups of employees to travel together for work purposes.
 - This leads to the risk of multiple deaths from one travel related incident e.g. a plane crash.
- For Company A, there are also likely to be concentrations of insured lives by broader geographical location.
 - Hence, any disaster in that location where there are many people could impact those lives (e.g. fire in a shopping centre or a stampede in a sports stadium).
- As a result, Company A is more exposed to single events leading to multiple deaths than Company B and hence it is more likely to purchase catastrophe reinsurance.

On average, candidates did well on this question. This is to be expected, as it had a significant bookwork component and some fairly standard application.

Part (i) was not as well handled as might be expected for a bookwork question.

Part (ii) was well answered, with many candidates listing more valid points than were required to get full marks.

Part (iii) had a wide spread of marks. Many candidates focused on alternative forms of reinsurance that might be more relevant for Company B, instead of (correctly) focusing on why catastrophe reinsurance is particularly relevant for Company A.

QUESTION 7

i. Different types of bonuses the company may use:

- Regular reversionary bonuses added throughout the contract term, where the amount of the bonus is calculated in one of three ways:
 - Simple: % of basic benefit
 - Compound: % of basic benefit and already declared bonuses
 - Super-compound: expressed as two percentages, one applied to basic benefit and one applied to already declared bonuses.
- Special reversionary bonuses, added as a one-off.
- Terminal bonus paid when the contract reaches maturity or possibly also on death or surrender.

ii. Reasons for lower bonus rates:

- It is important to note that the fund cannot distribute more than its average earnings. To the extent that there are undistributed profits, this will provide the company with a mechanism to smooth bonuses.
- Investment surplus could have reduced, which may have been due to:
 - Reduced investment performance since the previous bonus was declared.

- Return is influenced by the assets held; There could have been a negative change in the economic conditions, makeup of assets or change to the mix of asset classes, or a change in or underperformance by the asset manager(s) and hence lower bonus is being declared to ensure the ongoing solvency of the fund.
- The company may also be concerned about poor returns into the future which would impact on the financial soundness of the fund as well as the ability to pay bonuses.
- Mortality surplus could have reduced, which may have been due to:
 - There could have been adverse mortality experience over the period, which would have resulted in a reduction in mortality profits to declare.
 - The company may also be concerned about future mortality experience and hence is not able to declare as much mortality bonus as it has previously.
- Reversionary bonuses may have reduced due to the company targeting higher future terminal bonuses.
- An increase in surrenders selecting against the company may have decreased both mortality and investment surplus.

iii. Possible actions:

- Bonus strategy:
 - Bonus strategy may be changed so as to declare returns more through terminal bonus than recurring bonus:
 - This will better cater for fluctuations in investment returns/
 - It will give more investment freedom and thus potentially increase investment returns through:
 - More stable and sustainable recurring bonuses; and
 - Higher terminal bonuses.
 - This better meets PRE.
- Communication:
 - Bonuses should be distributed in line with policyholders' reasonable expectations (PRE).
 - Reasons that experience differs from PRE, or a change in philosophy that may result in a changed PRE should be communicated.
 - If policyholders understand why bonuses are lower and this is in line with what was communicated in the documentation, it might alleviate some pressure.
- Investment strategy:
 - The investment strategy should be reviewed to ensure that its outcomes are aligned with bonus expectations created in the literature.
 - A change of exposure to asset classes may need to be initiated, to ensure alignment between the investment strategy and bonus philosophy.
 - If the policyholder expects stable returns, there may be a need to move an appropriate amount of exposure from risky asset classes to cash or bonds.
 - This investment strategy also works well if the company distributes regular reversionary bonuses.

- If the policyholder expects more than the real rate of return, greater properties and equities exposure may be sought. This will cause volatility in returns, which will need to be communicated or otherwise managed.
- This type of investment strategy aligns well where there are lower reversionary bonuses and higher terminal or special bonuses.
- Reinsurance:
 - The company could consider entering into a reinsurance arrangement to mitigate the effect of poor mortality experience.
 - Whilst this may come at a cost, it should smooth the mortality experience and hence the insurer could declare smoother mortality bonuses over-time.
- Competition:
 - Ensure that the fund takes cognisance of what competitors are offering.
 - Competitor funds outperforming similar funds from the company may cause or exacerbate dissatisfaction.
- Optimisation:
 - Grow the fund or the assets under management to benefit from economies of scale.
 - This could relatively reduce the investment expenses and provide better return for policyholders.

Part (i), which was bookwork, was well answered by the majority of candidates

Part (ii) was generally well answered. However, a number of candidates provided generic answers for lower bonuses and did not link their answers to the question and compare previous to current periods.

Part (iii) was generally poorly answered. Candidates did not generate nearly enough points and often did not address the question of alleviating future pressure from policyholders.

QUESTION 8

i. Reasons:

- Life cover is available for the whole of life and not just for a limited term.
- In addition to funeral cover a further modest sum assured is being provided.
- The insurer will need to allow for the surrender value payments, which its competitors will not need to do.
- The presence of the guaranteed surrender value effectively turns this product into an endowment assurance of unlimited term (and should thus be more expensive than a term assurance of any term).
- The guaranteed surrender value may be taken at any point in time, opening the insurer up to financial anti-selection. This needs to be priced for.
- There will be (uncertain) product and systems development expenses which need to be allowed for. These are likely to be more onerous than for competitors which already have a presence in the market.

- The insurer's IT/administration systems may be older and less efficient than those of its competitors, resulting in higher costs.
- It may need to improve processes, e.g. employing more staff to improve the speed of claims payments.
- As this is a new product to the market, there may have been significant marketing expenditure, and intermediaries may require higher commissions in order to sell it.
- With the likely low initial new business volumes and the time it may take for the insurer to build up similar volumes to those of competitors, fixed expenses may need to be spread over fewer policies than those of competitors.
- The insurer has no experience in this market and so may need larger margins in its pricing assumptions (e.g. expenses, volume and mix of new business) than needed by competitors with some experience.

ii. a. Mortality risk:

- The risk faced is that mortality experience is worse than allowed for when pricing (and so claims occur sooner than anticipated).
- The risk is exacerbated due to the insurer not having any mortality data applicable to the low-income sector.
- The limited underwriting also exacerbates this risk.
- With low initial business volumes there will be a risk of random fluctuations in mortality experience.
- The mortality risk will reduce over time as the insurer builds experience and a base of mortality data in this market.
- It may be possible to mitigate this somewhat by obtaining some pricing/data assistance from a reinsurer.
- The low-income target market is likely to have worse average mortality than the insurer's current business, but it is the higher likely variability of that mortality which poses a risk.
- There is also a risk that withdrawals may be selective, leaving the company with a worse mortality experience than expected.

b. Expense risk:

- The risk is that the expenses are higher than anticipated and loaded for in premiums.
- As this is without-profits business there is no opportunity to increase premiums/charges at a later date to cover expenses.
- The company is also exposed to the risk of inflation being higher than expected on the administration and overhead expenses over the term of the policies:
 - The risk will be higher than for competitors due to the whole of life nature of the product compared to term assurance.
 - The extent of this risk will depend on how closely matched investment growth is to expense inflation.
- Higher mortality than expected may lead to higher claims payment expenses than expected.

- The level of expenses will be uncertain because the office is launching a new product (admin. costs, development costs, marketing campaign costs).
 - The insurer may need to significantly speed up claims processing relative to its standard business, due to the greater financial need of those in the low-income sector.
 - There may be other unanticipated costs in dealing with this market.
- Changes in the mix of business from that anticipated is also a problem as there are likely to be cross-subsidies involved in the expense recoupment (between policies with larger & smaller sums insured).
- Lower than expected new business volumes, which is a significant risk with this new product unfamiliar to the market, may mean fixed expenses may not be adequately recouped.
- Higher than expected new business volumes may put pressure on administration systems and result in higher new business strain than expected.
- More withdrawals than expected may result in overhead expenses not being covered.

c. Withdrawal risk:

- There is a risk of higher withdrawals than expected at early durations, before initial expenses have been recouped.
 - i.e. Withdrawals where the guaranteed surrender value is greater than the earned asset share at the time of withdrawal.
- Withdrawal rates are likely to be more unpredictable (and higher) than with the insurer's current business as the low-income market is likely to be less capable of predicting needs and have less stable incomes.
- There may be financial selection against the company at withdrawal based on the guaranteed surrender values and market conditions.

In part (i) candidates often compared the premiums against those for BigLife's other products rather than those of competitors as asked for. Several candidates did not restrict their comments to product features or expenses as directed. Some misinterpreted the benefits, thinking that multiple lives were being insured.

It was disappointing to see that some candidates tried to give more than the requested 8 reasons – only the first 8 reasons given were marked. It would help both the candidate and the marker if candidates numbered their points in such questions. This would help candidates to not waste time writing down things that won't be marked.

In part (ii) some candidates did not outline the risks as instructed, but explained for example why withdrawals may take place or what expenses there may be. It was disturbing to see the number of candidates who suggested that "high" expenses, etc. were a risk, when it is high expenses compared to what was expected that is the risk.

Several answers were very poorly expressed, and often abbreviated, making them impossible to understand. Each point needs sufficient detail if it is to be awarded credit.

In general, across several questions, examiners noted that some candidate's command of English came across as being very poor. Candidates for whom English is not their first language should give this matter some attention, as it is essential to be able to communicate one's points clearly and unambiguously.

END OF EXAMINERS' REPORT