

# **EXAMINERS' REPORT**

*November 2015*

## **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.

*General comments from the examiners:*

*Many candidates are not successful because of their poor exam technique.*

*A number of candidates failed to answer the question. Making points that are true, but do not answer the question and are not relevant to the question will not score marks.*

*A number of students are giving vague and general points, which will not score well.*

*A number of candidates did not tailor the number of the points in their solution to the number of marks allocated to the sub-part of the question. This resulted in too many points being given for some parts, and subsequently too little time to put down sufficient points in other parts.*

*Lengthy solutions for questions parts with limited marks are largely points that are repeated using different wording, which will not score marks.*

*Another key area of weakness for candidates who are not successful is giving too much detail on individual points and failing to give a sufficient breadth of different points.*

*Weaker candidates also experience challenges in integrating concepts from different sections of the course material into a well-rounded solution that considers all aspects of the problem.*

## **QUESTION 1**

i.

Factors to consider:

- Price of the reinsurance, including reinsurance commissions, any financing commission offered and whether a profit share is offered or not.
- Experience of the reinsurer with respect to critical illness business and any technical assistance available from the reinsurer.
- Credit rating of the reinsurer and strength of the financial position of the reinsurer.
- Treaty terms being offered, including items such as automatic acceptance limits, benefit maximums, etc.
- Financial reinsurance support that might be available (e.g. nil premium payment period).
- Current relationship with the reinsurer including how much business the insurer currently reinsure with the reinsurer.
- Cost of solvency requirements, if the risk is retained, vs cost of reinsurance.

ii.

Assumptions to consider:

- Mortality assumptions: both the base mortality and future likely improvements should be considered. These are key assumptions in the pricing.
- Morbidity assumptions: both the base morbidity (critical illness) and future likely improvements/deteriorations would need to be reviewed.
- Investment return/risk discount rate: if the reinsurance structure is a level premium reinsurance structure this could have a significant impact on the rates.
- Expenses: the expense charge is likely to be relatively simple for a reinsurer and is unlikely to have a significant impact on the rates, but it should be reviewed to see if it is consistent with actual incurred costs.

- Lapses/withdrawals: the reinsurance structure would influence whether this is important as an assumption. It would be important for level premium structures but not important for risk premium reinsurance.
- Margins: what level of margin is allowed for and how it is allowed (eg. is there an uncertainty allowance on each parameter or overall on the final price).
- Options and guarantees: are there options/guarantees being priced for and how do they impact the final pricing.

*Examiners' comments*

*For part (i) a number of candidates missed straight forward bookwork points. A number of candidates failed to answer the question, giving more points on why an insurer would obtain reinsurance, rather than focusing on factors that an insurer would consider when selecting a reinsurer.*

*For part (ii) many candidates gave repetitive points on the reasons for pricing assumptions being too high and actions the insurer could take to reduce assumptions, which was not asked in the question. Few candidates considered the importance of each assumption to pricing critical illness reinsurance and discussed how to allow for possible future changes in experience for individual assumptions.*

## QUESTION 2

i.

Policyholder needs met by the product:

- Income protection (IP) benefits replace part of the income that the insured life would have earned if he/she becomes unable to work (in his/her own occupation or possibly any other) due to accident or illness.
- This benefit can be used to maintain the standard of living of the insured life on disability as the state sickness benefits are usually insufficient.
- The benefit may be used to meet monthly loan servicing costs e.g. mortgage repayments.
- IP benefit may be used to cover premiums on other insurance policies.
- Professional practices (lawyers, doctors) may use IP (Locum Protection) to protect the partnership by replacing the income lost due to incapacity of one of the partners.

ii.

Product-related factors:

- Premiums may be uncompetitive.
- Benefit escalation might not be sufficient (out-of-claim and/or in-claim) leading to an inadequate replacement ratio at claim stage or inadequate income after inception.
- Disability definitions might not be appropriate for the target market.
- Waiting and deferred periods might be too long compared to competitors.
- Linked-claims period might be too short.
- If there is no waiver of premium while incapacitated it might be seen as unattractive.
- Policyholders may value rehabilitation benefits, if this product does not provide these benefits it might be less attractive than products that provide these benefits.

- The product may be expensive relative to other products due to premium guarantees, a lack of product features that would act as incentives to get policyholders to return to work etc.
- Product structure may be undesirable e.g. policyholders may prefer a unit-linked benefit with a savings component to a non-profit IP product.
- Product might be too complex.

Other factors:

- Insufficient commission to incentivise brokers and agents to sell a complex product.
- Ineffective sales channels (e.g. due to poor training, poor support).
- Poor marketing of the product, or targeting the wrong markets.
- Poor servicing and (probably related) poor brand image.
- Recession leading to poor sales for most products.

iii.

The insurer would be exposed to the anti-selection risk (the insurer will accept more sub-standard lives at standard rates), particularly if benefits limits for medical examination referral are for competitors lower than the new proposed medical limits.

In addition brokers may take advantage of lower underwriting limits to encourage policyholders to take out policies with higher benefit limits.

Reliance on disclosures by the policyholder increases the risk that claims are repudiated on the basis of non-disclosure of relevant information at the proposal stage, this may have a negative impact on the reputation of the insurer.

Underwriting systems/software and manuals will need to be updated and underwriting staff will need to be trained to use the proposal information and lifestyle disclosures alone to underwrite higher benefit level policies.

There will be more variation in morbidity experience than expected in the pricing of product. Cost of obtaining reinsurance may increase, as reinsurance terms may depend on the more onerous existing underwriting practices.

iv.

Advantages:

- There is considerable uncertainty in estimating future disability claims experience in the long term (which is dependent on changing risks and trends) hence considerable risk in offering long-term guarantees.
- Risk based capital requirements (and cost of capital) will be lower due to lower guarantees.
- The lower guarantees (and hence less need for margins and higher capital requirements) should lead to more competitive premium rates.

Disadvantages:

- Premium increases will not be well received by policyholders, and some policyholders may not have understood that this was a possibility, resulting in brand damage for the insurer.
- Some policyholders may cancel their policies (higher surrender experience), and in particular those in better health (selective withdrawals) leading to a worse risk pool.
- Due to competition and marketing pressure, the insurer may decide not to increase premiums, which could be problematic.

*Examiners' comments*

*Part (i) was mainly bookwork, but many students failed to discuss the financial needs that an income protection product could meet (e.g. locum protection for professional practices).*

*A good understanding of the product features was required for part (ii). Weaker candidates failed to discuss a sufficient range common features for an income product in their solutions.*

*For part (iii) weaker candidates failed to discuss the implication of the change in the underwriting practice. Few candidates considered the need to change underwriting processes.*

*For part (iv) most candidates were able to identify the key advantages and disadvantages relating the change to reviewable premium rates.*

### **QUESTION 3**

i.

Main features:

- The single premium is paid into an investment fund which purchases a number of units that represent a share of that fund.
- There is usually a range of funds that the policyholder can choose from.
- The total value of an individual policyholder's fund at any time is the number of units multiplied by the unit price.
- The value of the units depends on the value of the assets underlying the investment fund (the unit price will be calculated daily as the value of the assets changes).
- The policyholder's share (i.e. the number of units) changes when a cashflow relating to the policy occurs (e.g. deduction of a charge, a switch to another fund, payment on surrender or maturity).
- The insurance company will deduct charges from the policyholder's fund. These may be deducted from the premium before it is invested (e.g. bid/offer spread); or on a regular basis from the unit funds (e.g. annual fund management charge).
- The charges are kept by the insurer to cover expenses and cost of guarantees.
- The insurer will aim for charges to exceed expenses guarantees, to give profit to the insurer.
- The value of the policy at maturity is usually the (bid) value of units.
- A surrender penalty may be deducted from the value of the units if the policyholder withdraws from the contract.

ii

a. 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 unit 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 will arise.

b. Appropriation price:

- The appropriation price is the price at which an insurer will create a unit i.e. the amount of money that must be put into the fund for the creation of a unit.
- To achieve the basic principle of equity this price per unit is such that the net asset value per unit is the same before and after the creation of the units.

iii.

Benefits to policyholder:

- The policyholder is protected from the risk that the annuity payment that can be purchased by the amount in the policyholder unit fund on conversion is lower than the average monthly payments in the three years prior to the conversion to the level annuity.
- Since the policyholders are retired and likely to be risk averse, this guarantee is likely to be appeal to policyholders.

Risks relating to the initial unit-linked retirement income period of the policy:

- Since the policyholder retains the investment risk during the first 10 years of the policy there is a risk that returns on the unit fund are lower than expected.
- This risk is exacerbated due to the single fund choice.
- There is a risk that the insurer increases the charges, if charges are not guaranteed.
- Both of these risks will reduce the investment fund, resulting in a lower than expected annuity payment if the expected payment is higher than the guarantee.

Risks relating to the guarantee:

- The initial premium is reduced by a fee for the guaranteed minimum annuity payment which will reduce the unit fund and subsequently the annuity payments in the first 10 years of the policy.
- The guarantee may be poor value for money from the policyholder's perspective, particularly if a high margin for uncertainty is included in the charge for the cost of the guarantee.

Risks relating to the level annuity:

- Annuity payments are level so inflation is likely to erode the value of the annuity, resulting in the annuity payment being insufficient to maintain the policyholder's standard of living.
- The policy will not provide good value to the policyholder, if he/she dies shortly after the conversion to the guaranteed level annuity.

General risks:

- Changes in tax legislation could reduce the value of the policy.
- Benefits may be lost or reduced on insolvency of the insurer.

iv.

Modelling the cost of guaranteed annuity:

- The cost of the guarantee is dependent on future investment returns, so a stochastic model should be used.
- The model will project the values of the unit fund for the 10 year period, by simulating investment returns and future asset prices, and estimating the annuity payments to the policyholder (before the conversion date) and charges on the unit fund.

- Projected annuity rates at conversion will also be modelled using simulated projected bond yields in the market at the conversion date.
- The probability distribution used to model the investment return and the mean and variance are key assumptions for this model. These assumptions must be consistent with the assets mix for the unit fund before the conversion to the level annuity and market bond yields for the level annuity.
- Assumptions on mortality, withdrawal and expenses will also be needed. These assumptions would take into account expected experience and will probably be allowed for on a deterministic basis.
- The model will allow for interaction between the cashflows and all assumptions should be consistent with each other and allowance should be made for interactions between assumptions.
- The 'cost' of the guarantee is the difference between the value of the unit fund at conversion and the price of the guaranteed minimum annuity payment using the projected annuity rates at conversion.
- If the projected fund value exceeds the cost of the guaranteed minimum annuity payment at the projected market rates then the cost of the guarantee for that particular scenario is zero.
- If it is less than the cost of the guaranteed minimum annuity payment then the cost of the guarantee is the difference between the fund value and the cost of the annuity.
- The present value of the cost of the guarantee is determined by discounting the simulated cost of the guarantee at a suitable rate (i.e. risk discount rate).
- A large number of simulations will be run (5,000 to 10,000 simulations).
- The expected present value of the cost of the guarantee determined by the model will be the average discounted cost of the guarantee over all simulations.
- The variability of the cost of the guarantee is reflected in the distribution of the simulated cost of guarantees. This allows one to estimate the cost of the guarantee with a higher level of confidence (99.5%).

*Examiners' comments*

*Parts (i) and (ii) were mainly bookwork and were generally well answered, but weaker candidates gave vague points and failed to link the appropriation price to the equity principle well.*

*Part (iii) required some discussion of the risks relating to the cost of the guarantee. Weaker candidates made too many general points and failed to discuss a sufficient range risks relating to the altered product.*

*Candidates who scored well in part (iv) were able to explain the modelling process for determining the cost of a guarantee in an ordered way. Some candidates gave points relating to determining the charge for the guarantee which was not required.*

## QUESTION 4

i.

Principles to be considered for developing a surrender value basis:

- Policyholders' reasonable expectations (surrender value should be fair between surrendering and continuing policyholders).
- Hence, surrender values should not too low at early durations compared with premiums paid and should be consistent with maturity values at later durations taking into account expected bonuses at maturity.
- Surrender values should not exceed the asset share over a reasonable time period (should be affordable).
- Surrender values should include bonuses declared to date and consider whether all or portion of terminal bonus should be granted on surrender.
- Surrender values should be consistent with disclosures at new business stage.
- Surrender values offered by competitors.
- The basis should not be subject to frequent change, unless dictated by financial conditions. The basis should not lead to significant discontinuities in surrender values over time, so new basis should ideally be consistent with current prescribed basis.
- Avoid selection against the insurer e.g. consider if market value adjustment should apply.
- The basis should not be excessively complicated to calculate or explain and should be capable of being documented clearly.

ii.

If surrender values are too high:

- Surrender values could be inconsistent with maturity values.
- It will not be easy to ensure equity with continuing policyholders or shareholders.
- The insurer will have to 'take from' maturities in order to make surrender values affordable.
- Future bonus may have to be lower due to worse surrender experience.
- High surrender values could lead to a change in surrender/withdrawal behaviour which might cause liquidity risk if more surrender payments are made than expected.
- High surrender values could encourage lapse and re-entry or selective withdrawals.
- If numbers of withdrawals increase, it will have an impact on the ability of remaining policies to cover expenses.
- High surrenders may result in insufficient (or no) profit retained by insurer on surrender.
- The product might become expensive due to costly surrender benefits and having to keep higher reserves.
- Could lead to pressure on free assets/solvency position.

If surrender values are too low:

- Surrender values may look unreasonable relative to premiums paid or maturity value.
- Surrender values may look unreasonable compared to values offered by competitors.
- This will cause customer dissatisfaction and reputational risks.
- There is a risk of low product sales because of low surrender benefits are offered resulting in overheads not being covered (due to reduced number of policies).

- High profits from low surrender values might not be sustainable.
- The regulator could intervene and impose minimum surrender values due to policyholder reasonable expectations and treating customers fairly principles not being met.

*Examiners' comments*

*This question was largely bookwork and was generally well answered by students.*

## QUESTION 5

i.

Gross premium method:

Policyholder liabilities are determined as the present value of future benefit outgo plus the present value of expected future expenses less the present value of expected future premiums.

The policyholder liabilities will include an allowance for:

- Future death and loyalty bonus benefits
- Future administration expenses
- Future office premiums (taking missed premiums into account)
- Project to the terminal age for the whole-life death benefit
- Taking into account expected mortality rates and lapse rates, based on the policyholder profile
- The regulatory regime will dictate whether these assumptions are set on a best-estimate or prudent basis depending on the solvency margin requirements
- The discount rate should be based on the yields of assets matching the liabilities or the risk-free rate
- The basis chosen should recognise profit in an appropriate way over the duration of each policy

ii.

Data checks:

- Data should be checked for accuracy and completeness.
- Policy data from the previous valuation should reconcile with current policy data taking policy movements (e.g. new business, lapses) into account.
- Reconciliations of policy data can be performed on number of policies, premiums, sum assured.
- Movements in policy data (e.g. claims) should be checked against accounting data.
- Check data for consistency with the previous valuation and any changes to business written over the period (e.g. average sum assured, ratio of premium to sum assured).
- Checks should be made for usual values (e.g. zero premium).
- Perform spot checks on individual data with policy contracts for accuracy.

Checks on the results:

- Reconcile results with those of the last supervisory valuation.
- Perform simple ratio checks on results e.g. the increase in reserves as a proportion of premium.

- Construct a very simple “back of the envelope” model using a few model points to represent the whole policy portfolio. Check the full model’s output against this for order-of-magnitude errors.
- Perform sensitivity tests on key parameters and check for reasonability of changes in results.
- Perform an analysis of surplus to explain the reason for the change in results.
- Perform an analysis of embedded value to explain reason for change in results.

iii.

Expected effect:

- Reduced lapse rates will have opposing effects on different elements of the gross premiums valuation.
- Policies in early duration are likely to have a negative liability because of the upfront commission payment.
- Reduced future lapses will cause the policyholder liability to be even more negative because a part of the premium is expected to “repay” the upfront commission and we are now expecting more policies to contribute (i.e. the expected present value of the premiums is higher). This will reduce the liabilities.
- But this reduction in liabilities is counteracted by an increase in the liabilities due to an:
  - increase in the expected present value of loyalty benefit payments for policies in-force less than 60 months (more policyholders are likely to receive the benefit);
  - increase in the expected present value of the death benefits (more policies will be in-force at the time of death); and
  - increase in the expected present value of the expenses.
- The overall effect on the liabilities of the change in the lapse assumption will depend on the combined effect these components of the liability valuation.

iv.

Reducing lapse risk:

- Frequently monitor lapse experience and the factors that affect persistency of business and update lapse assumptions for pricing and valuation models if necessary.
- Reduce the risk of mis-selling by improving product disclosures provided in the sale process.
- Tailor remuneration structures to achieve a better balance between rewarding new sales and persistency (e.g. use a combination of upfront and renewal commission).
- Improve mechanisms for collecting premiums (e.g. introduce direct debits) to avoid missed premiums.
- Send reminders to policyholders to pay outstanding premiums encourage policyholders to pay arrears premiums before policies will lapse.
- Improve ongoing customer service.
- Ensure that the premium rates and product features remain competitive compared to other products in the market.
- Build the insurer’s brand and reputation in the market place through advertising and promotion.
- Introduce other product features or bells and whistles.

- Train of sales' staff to improve the quality of sale's service.
- Introduce financial underwriting to ensure that the clients can afford the premiums.

*Examiners' comments*

*Most candidates answered the question and scored reasonably. Candidates struggle to get the balance of too much or too little detail correct. Bookwork marks were missed out.*

*For part (i) many candidates missed out on easy marks by simply not describing the components and assumptions of the method. Candidates who gave a generic answer that did not refer to the question generally scored poorly.*

*Part (ii) was generally better answered. Candidates who did not focus on the types of checks, but on the detail of specific types missed out on marks.*

*For part (iii) candidates who focussed on or discussed the effect of each cashflow did very well in this question, although few described the effect of duration properly. Some referred to asset shares, which, if the application was correctly described, was also accepted. Many students thought that they had to be sure about the overall effect and guessed.*

*Part (iv) was very well answered. Many candidates commented on simply reducing the premium or increasing the premiums allowed to be missed without lapsing the policy. Without adequate explanation of the risks involved these comments did not achieve marks. Reasonable alternatives were also considered.*

## QUESTION 6

i.

(a) Embedded value profit can be calculated as the sum of:

- The shareholder-owned share of net assets, where net assets are defined as the excess of assets held over those required to meet liabilities.
- The present value of future shareholder profits arising on existing business.

(b) Assumptions:

- Mortality rates and mortality improvements
- Disability rates
- Withdrawal rates
- Expenses and expense inflation
- Benefit inflation and claim sizes
- Premium collection rate
- Commission claw back rate (i.e. the rate at which commission claw backs is successful)
- Investment returns, valuation discount rate or valuation interest rate
- Volatility of investment returns
- Future asset mix
- Future new business volumes (may affect the future per policy expense assumption)
- Future changes in tax rates

ii.

Discussion of the proposal to allow for analysis of Embedded Value (EV) profits:

- Using the analysis of EV profit means the remuneration scheme allows for changes in the expected future profits from existing business across all future years, and not only

for the profits made during the most recent year. This aligns the remuneration scheme more closely with the interest of shareholders.

- EV also allows for cost capital (which could in some cases be an allowance for riskiness), so basing executive remuneration on EV profit means that cost of capital (and potentially riskiness) is also allowed for.
- It more accurately reflects the impact of new business. Usually new business makes a negative contribution to profits (due to new business strain), but should make a positive contribution to EV.
- Executive remuneration can be determined more fairly, as aspects of the company's performance that are outside the management's control can be excluded from the executive remuneration assessment. For example, to the extent that investment performance is outside the management's control this can be excluded from their remuneration assessment.
- Executive remuneration can be tailored to be specific to each executive's role by only using those elements of the EV profit that is relevant to them. For example, a sales manager's remuneration would be affected more heavily by the contribution to EV from new business, while an investment manager's remuneration will be affected more heavily by the reduction in EV due to mismatch losses.
- It might bring the company's remuneration scheme more in line with those of competitors.
- It might not be appropriate to only base executive remuneration on EV profits, as the company's short term profits are also important and hence also need to be allowed for (at least to some extent) within the executive remuneration scheme.
- Benchmarks for management should be set at a reasonable and appropriate.
- The actions of some executives might take a while to influence the EV, in which case manual adjustments to their remuneration might be required.

iii.

Other reasons for performing an analysis of EV profits:

- Validate the calculations, assumptions and data used in the EV calculation.
- Reconcile the EV values for successive years.
- Show the financial effect of deviations between the best estimate assumptions and actual experience.
- Show the financial effect of writing new business.
- Provide management information.
- Provide detailed information for publication in the company's accounts or those of any parent company.
- To be consistent with the reporting being performed by competitors.

*Examiner comments*

*Part (i)(a) was mainly bookwork and was well answered.*

*For part (i)(b) many students erroneously mentioned that cashflows and reserve rates are assumptions. This is not correct, as cashflows and reserves are calculated (i.e. not assumed).*

*A number of students discussed the risk discount rate (this is not an assumption about future experience, but rather the return required by shareholders) and commission (commission is usually calculated using pre-specified rules). These points did not score any marks.*

*Part (ii) was well answered by students who understood the question. However, a number of students did not understand the term “EV profit” and hence commented on “after tax profits” or simply on “EV”, which was not asked by the question. Some students made generic points regarding performance remuneration, but did not link this to EV profits and hence did not score marks. Some students mentioned that EV profits can be manipulated (e.g. if management changed the assumptions and or by other methods). But, this issue is not unique to EV calculations as it is also a concern for profits made during the year (as these profits also depend on reserves, which are based on models and assumptions).*

*For part (iii) many students gave reasons for calculating EV instead of reasons for performing an analysis of EV (AOEV). It should be noted that the AOEV cannot be used to determine a value for a takeover or merger. Some aspects of the AOEV, e.g. VNB, can be used for this, but this had to be mentioned explicitly to score marks. Many students mentioned that an AOEV might be required by the regulator: this is unlikely, as regulators are concerned with solvency and market conduct, not with profitability.*

## **QUESTION 7**

i.

The investments selected should be appropriate to the nature, term and currency of the liabilities. The extent to which the appropriate investments referred to above may be departed from in order to maximise the overall return will depend, inter alia, on the extent of the company's free assets/risk appetite.

The part of the benefit in the form of the basic sum assured and existing declared bonuses is guaranteed in nature. These benefits are best matched by bonds/fixed interest securities (government or corporate bonds).

Part of the benefit (future bonuses) will be discretionary. The insurer will aim to maximise the discretionary benefits (i.e. maximise returns), but this would be subject to the expectations of policyholders and their attitude to risk. Policyholders will usually expect the proceeds of their contracts to maintain their value in “real” terms. Hence the assets should be those that are expected to provide a “real” return (equities and property).

Part of the expected future outflows relating to this business will be expenses, which are likely to be linked to an inflation index (index-linked bonds).

But assets selected will depend on:

- The bonus philosophy of the insurer (split between reversionary and terminal bonuses).
- Policyholder expectations of smoothing of bonuses/company's smoothing philosophy
- The level of free assets.

The assets should have the same discounted mean term as the liabilities.

Assets should be denominated in the same currency as the liabilities, to reduce currency risk. Some holdings in cash are likely to be necessary for the company to operate on a daily basis without needing to realise any non-cash assets.

The company should consider the different tax treatment of different asset classes.

The assets held should be sufficiently diversified (across type, sector and counterparty) so as to minimise the risk of over-exposure to any one asset class, sector to counterparty.

Regulatory rules may limit the types of amounts of assets of certain types that can be held.

Consider the effect of selected assets on solvency requirements.

ii.

The effect of the change in investment strategy:

- The proposed investment strategy is moving away from risky assets into lower risk assets.
- The insurer will earn higher running yields on underlying investments (more certain sources of profits). In addition returns on portfolio slightly smoother, but lower in long run.
- The insurer could increase the reversionary bonus component and decrease terminal bonus. But should consider current levels of bonus compared to running yields and determine if there is scope for increase.
- The change in the investment strategy might improve the matched position of the insurer. The change might have been necessary due to high proportion of guaranteed liabilities on book.
- The insurer may decide not to change bonus distribution strategy at all. The new proposal may be a better match for the existing strategy and change is just bringing the investment and bonus distribution strategy in line with each other.
- In either case the insurer will need to consider whether the bonus distribution strategy be sustained with the new asset mix and expected returns on these assets.

Factors to consider around the bonus distribution strategy:

- The decision will be affected by policyholders' reasonable expectations and extent of the change.
- Communications to policyholders around the bonus distribution philosophy whether the new investment strategy is in line with this.
- The effect on the competitive position/marketability of the insurer.
- Implications for the solvency position of the insurer. The insurer may want to keep reversionary bonuses low to keep guarantees low to improve the solvency position of the insurer.
- The insurer will need to decide whether to implement the change the bonus philosophy for new business only or also for existing business
- The insurer should consider equity between different generations of policyholders e.g. if current funding level is high, then unfair to be for undistributed funds to be distributed to policyholders who did not help to contribute to funds.
- Consider whether a special reversionary bonus should be declared before the change, based on funding level or current level of retained profit.

Other factors to consider

- Reasons for lower risk investment strategy.
- Consistency with overall business strategy e.g. efficient use of capital or shareholders required rate of return.
- Capital requirements may change due to the lower risk investment strategy; it is likely that less solvency capital will be required.
- Potential impact on profit.
- Costs of implementing the change e.g. disinvesting and re-investing.
- The economic outlook and if change is related to expected returns on bonds vs equities for the foreseeable future.

iii.

Advantages for the policyholder:

- The cash bonus is received earlier than on the insured event.
- May meet the need for income e.g. repayment of loan.
- Less subjective decisions (less discretion on bonus to be declared), which protects policyholders against ungenerous companies.
- The bonus may appear fairer/more equitable if contribution method is used (where the bonus distribution is related to the contribution to the total profit of each of expense, mortality and investment profit for the group of policies).
- May be tax advantages/disadvantages depending on how cash dividends are taxed vs bonuses on final payout.

Disadvantages for the policyholder:

- This method may not be preferred if policyholder's intention is to save and ensure savings keep up with inflation.
- The returns may be reduced due to non-deferral of surplus as with the terminal bonus structure.
- Reinvestment risk for the policyholder if they want to save the bonuses till maturity date.

Advantage for the company:

- Marketing – the policyholder may more easily understand the basis, hence more sales.
- Marketing – policyholders may like the certainty of receiving benefit earlier rather than later, hence more sales.
- Possibly lower withdrawals because policyholders get cash in hand regularly.

Disadvantages for the company:

- Constraints on investment policy due to no deferral of bonus payment.
- No ability to use deferred profits as margins against adverse experience.
- Reduces the contribution to free assets to enable writing of new business as in case of deferred method.
- Reduces funds under management.
- Increased administration compared to other methods because of annual payment.
- Requires complex calculations.
- May be competitive disadvantage if customers do not understand the product because they are more familiar with the other method.

*Part (i) was answered reasonably well except where students went into too much detail about the types of assets to invest in and not the factors to consider for with-profits products specifically. A few students didn't know what UK style with-profits business was, even though in the third part of the question it was explained!*

*Part (ii) was poorly answered. Not enough points were made, and only one or two students mentioned that the new assets could be matching the current bonus strategy better or at least the importance of considering current levels of matching to decide if bonus philosophy needed to change.*

*Part (iii) was reasonably well answered. Be careful not to mention advantage for one as disadvantage for another, because the point will only be scored once.*

## **END OF EXAMINERS' REPORT**