

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2016

Subject SA2 – Life Insurance Specialist Applications

Introduction

The Examiners' Report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

F Layton
Chair of the Board of Examiners
July 2016

A. General comments on the *aims of this subject and how it is marked*

1. The aim of the Life Insurance Specialist Applications subject is to instil in the successful candidates the ability to apply knowledge of the United Kingdom life insurance environment and the principles of the actuarial practice of life insurance to a United Kingdom life insurance company.
2. The Examiners' Report covers more points than would be expected to get full marks. This is so that alternative approaches to questions by different candidates can be accommodated. Whilst candidates are expected to show knowledge of the relevant content of the Core Reading, it is much more important in this exam to tailor answers and apply that knowledge to the specifics of the question than it is in earlier exams.

B. General comments on *student performance in this diet of the examination*

1. As usual questions requiring candidates to demonstrate their knowledge of the Core Reading were generally well answered. However there was less evidence that candidates could apply this knowledge to the specific scenario outlined in the questions.
2. Candidates who applied a systematic approach to the longer questions, e.g. question 1 part (iii) generally performed much better; such an approach is often successful.
3. Some candidates restricted their ability to score highly by considering too narrow a range of points rather than thinking more widely.
4. Candidates should use Examiners' Reports to practise applying their knowledge to the situations set.

C. Comparative Pass Rates for the past 3 years for this diet of examination

Year	%
April 2016	46
September 2015	46
April 2015	38
September 2014	43
April 2014	32
September 2013	38

Reasons for any significant change in Pass Rates in current diet to those in the past:

The Pass Rates are variable from session to session and this is at the higher end relative to recent sessions.

D. Pass Mark

The Pass Mark for this exam was 62%.

Solutions

- Q1** (i) Both are approaches used to determine the amount of capital required to meet obligations in extreme, adverse circumstances...
... normally stated as the capital required in excess of liabilities held.
Economic capital is not mandatory, whilst regulatory capital is.
Economic capital is not disclosed, whilst regulatory capital may be.

Economic capital is a company's own assessment of its capital requirements necessary to run the company's operations.

It is based on its own risk profile...

... and its own risk appetite.

It will also take into account the needs of the ongoing business strategy...

... including planned new business.

Conversely, regulatory capital requirements are prescribed by the regulators; for example, Value at Risk in a 1/200 event.

Regulatory capital may only be set with regard to the in-force business.

However, regulatory capital requirements have become increasingly similar to economic capital requirement calculations

e.g. Pillar 2 capital requirements (ORSA).

The regulator may require the insurer to assess its regulatory capital in accordance with its own risk profile and appetite.

And it is increasingly common for jurisdictions to require regulatory capital to be sufficient to meet new business plans.

Notwithstanding this convergence, the company's economic capital requirements may be higher than the regulatory capital requirements...

... in order, for example, to be able to fund the company's strategic plans.

.

Alternatively, the company may use a higher confidence level in its economic capital assessment than the regulatory capital assessment...

... e.g. 1 in 500 year event rather than 1 in 200 year event...

... as it wishes to achieve a high credit rating.

Or it may use a longer time horizon

Alternatively, the economic capital may be less than the regulatory capital.

For example, if regulated under the Solvency II framework, due to the removal of the risk margin, ...

... the removal of contract boundaries, or

... the removal of ring-fencing.

- (ii) The available capital percentage can be improved through either increasing the available capital or reducing the economic capital required, or both.

The company could seek further investment from shareholders (by raising share capital or reducing dividends).

It could use financial reinsurance techniques.

Or securitisation.

Or subordinated loan stock.

The company could write without profits business within the with profits fund or transfer funds from the without profits fund.

The company could reduce the with profits payouts in order to build up the available capital.

It could do this by simply targeting less than asset share when determining final bonus rates...

... particularly on surrenders.

Or the company could introduce an asset share charge for the guarantees offered...

... or for the cost of capital.

The company could reduce the level of smoothing.

The company could be more proactive in the application of market value reductions.

The company could reduce the level of new with profits business written into the fund.

Alternatively, it may be possible to increase available capital through writing more capital-generating new business.

The company could seek to reduce the risk in the fund.

The company could reduce the risks inherent in new with profits business by no longer offering the no-MVR guarantee.

It could reduce costs.

Or take actions to reduce operational risk.

It could reduce the cost of the guarantee by reducing the regular bonus rate or changing the structure to defer the accumulation of regular bonus.

Traditional reinsurance could be considered to reduce risk.

Or the company could reduce risk by changing its investment strategy.

It could reduce the proportion of equities held.

It could adopt different investment strategies for the different segments of the fund.

At the least, different strategies could be adopted for the asset shares and the estate.

Further, a different strategy could be adopted for the assets backing the cost of guarantees.

This could be achieved, for example, by the use of derivatives...

... or dynamic hedging.

Asset-liability management techniques would be valuable in this process.

- (iii) The policyholders, regulators and distributors are likely to find any action that increases the available capital percentage acceptable...
... subject to the need to treat customers fairly.

Shareholder capital injection

Increasing the equity capital increases the available capital by increasing the assets.

If this shareholder capital were to be put into the with profits fund, the shareholder interest in it would be diluted through the 90:10 process.

As a result, this is not likely to be acceptable to shareholders.

Reducing the dividends is also unlikely to be acceptable to shareholders...

... unless the future of the company is threatened.

Other capital raising methods

Financial reinsurance, securitisation and subordinated loan stock techniques may be difficult to implement for with profits business.

They would not directly impact available capital on a realistic economic basis and would only reduce the required economic capital if repayments can be defaulted under the adverse scenarios at the selected confidence level.

Overall are unlikely to be an acceptable option.

Without profits business

The profits from this business would directly increase the assets, and hence increase the available capital.

However, this may take some time to become material...

... especially if the company does not have a reputation for writing such business.

There may also be development costs for new products...

... which would reduce the amount of capital in the short term.

And further capital would need to be held to cover the risks inherent in the without profits business.

It is also more likely that the company would want to write without profits business solely for the benefit of shareholders.

As a result, this approach is unlikely to be acceptable to shareholders.

It would likely be acceptable to policyholders if they are expected to benefit from profits.

The regulators would need to be convinced that it would be of overall benefit to the policyholders...

... and that the with profits fund was not taking on too much additional risk.

With profits payouts

Reducing asset shares would, most likely, reduce liabilities and the available capital would increase.

If the company instead targeted less than 100% of asset share when determining final payouts, ...

...the speed with which the available capital would increase would depend on the exit profile of the business.

Policyholders are unlikely to be happy with this approach.

Shareholders will see a reduction in the shareholder transfers arising from declared bonuses and so may also be unsupportive.

However, paying consistently less than asset share may not be consistent with treating customers fairly.

If payments are reduced only for surrenders, this may not be deemed to meet the principles of treating surrendering and continuing policyholders equitably.

Introducing asset share charges would be effective as it would increase the available capital.

However, the introduction of new asset share charges may not be permitted for existing policyholders...

... depending on what has been communicated.

Therefore this approach may not be acceptable to policyholders

... and regulators.

Also, asset share charges would make the guarantee more likely to bite.

Further such charges are likely to reduce new business levels.

Reducing the level of smoothing would reduce the required capital.

It would be necessary to consider the PPFM and, if necessary, amend it.

This action would not be supported by the policyholder and likely also the FCA (depending on the extent of the reduction).

But would be acceptable to the shareholder and PRA.

New with profits business

Changing targeted new business sales volumes would have no immediate impact on the available capital.

It is likely that this action would take some time to take effect, although new business strain would possibly reduce.

The ultimate impact would depend on whether new business is expected to increase the value of the estate, or whether it is expected to reduce the estate.

And the overall benefit would depend on the extent of additional economic risk capital required to be held to support the new business.

The FCA would not support the writing of new with profits business that is expected to reduce the value of the estate.

So new business would be neutral or would be expected to increase the estate.

Thus reducing new business could be neutral or detrimental to the aim.

It would also be against shareholders' best interests as they would lose out on the profit participation. It might also be perceived as a sign of weakness.

However, it may be acceptable to the existing policyholders.
Alternatively, increasing new business volumes may be difficult as with profits business is relatively difficult to sell in the UK, so high volumes are unlikely.

Regular bonus / guarantees

Reducing the regular bonus would be effective as it reduces the liabilities/cost of guarantees (and hence increases available capital),
depending on the extent to which the guarantees are expected to be in the money...

... and also reduces required economic capital.

However, the acceptability would depend on the extent to which such a reduction is consistent with policyholders' reasonable expectations.

It could result in unhappy policyholders, and also unhappy shareholders who will see reduced or deferred distributions.

It may also lead to lower with profits new business volumes and increased exits.

Similarly removing the no-MVR guarantee would reduce both liabilities and capital requirements.

This is only likely to be possible for new policies.

However, this would be unpopular with potential new customers and it might result in lower new business volumes, which would be unpopular with shareholders.

Investment strategy

Reducing the equity proportion would be effective in increasing the available capital ...

... due to the lower volatility of investment returns ...

... so lower best estimate guarantee liabilities...

... and in reducing the economic capital required in respect of the no-MVR guarantee.

However, the current investment strategy has been set in line with past communications to policyholders (*or alternatively is in line with PRE*) ...

... and so changing it could be considered unfair.

Lower equity investment could reduce average future returns and hence future bonuses...

... resulting in unhappy policyholders

and unhappy shareholders (in respect of the profit transfer).

As a result, this approach is not likely to be acceptable.

Reducing the proportion of riskier assets in the estate would reduce the overall investment risk in relation to the assets backing the economic capital required...

...and so would be effective in increasing the available capital percentage (through reduced economic capital required).

Better asset/liability management would be effective, but again it would be necessary to check the PPFM and possibly amend it.

If the investment strategy for assets backing the cost of guarantees were to be constructed so that those assets rose in value when asset shares fell, then this is likely to have the most significant impact on the available capital.

Purchasing derivatives (for example) would not change the available capital on a realistic basis, ...

... as the cost of purchasing the derivative would broadly offset the market value that can be allowed for.

However, it would reduce the economic capital required and so improve the ratio.

Note that there would be an offset to the reduced capital as credit risk would increase.

There is also the question of whether the company has the necessary expertise.

As the investment strategy for asset shares is unaltered under this approach, it would be acceptable from a policyholder perspective.

It will improve the ratio of available to required capital in the fund and so will be acceptable to shareholders...

... and regulators.

Traditional reinsurance

Traditional reinsurance is unlikely to be effective...

... since it may be difficult to implement for with profits business...

... and risks that are typically reinsured (i.e. mortality) are unlikely to be material for with profits business.

General considerations

The extent to which these actions are possible will depend on the PPFM.

The company should seek the advice of the With-Profits Actuary and the Actuarial Function Holder.

Similarly, the views of the With Profits Committee should be sought.

The WPA and WPC will consider the additional improvement in policyholder benefit security ...

... against any reduction in expected benefit payouts...

... within the context of communications made to policyholders.

The costs involved in taking any of the actions would need to be taken into account as they would reduce the available capital.

- (iv) There are two regulators to consider: the PRA and FCA.

The regulators are likely to have opposing objectives.

The FCA will not wish the available capital to be excessive...

... as this could be unfair to the policyholders ...

... as it may imply that payouts are lower than they could or should be.

The PRA would not wish any reduction in available capital to be too much...

... as this could jeopardise future solvency...

... and therefore the ongoing security for policyholders.

If the views of the two regulators conflict, the PRA's viewpoint is likely to be dominant.

It is also a regulatory requirement for all with profits funds to consider whether there is "excess surplus"...

... and to take action if this is the case.

- (v) If payouts target less than 100% of asset share, then this should probably be the first action (i.e. increase back to 100%).

Similarly, if charges had been made to asset shares for use of capital or for guarantees, then these could be:

- reduced.
- stopped.
- refunded.

If the regular bonus rates have been constrained to below the self-supporting level, then regular bonus rates could return to that level.

If the investment strategy of the asset shares has been constrained to be less risky than preferred, then this could be returned to the preferred level.

If new business has been constrained as the strain was hindering capital growth, then new business levels could be increased.

The company could increase the level of smoothing.

It could extend or increase the level of guarantees offered.

It could use the estate, rather than asset shares, to cover expense overruns or overheads.

It could consider investing in new product development.

If there is genuine "excess surplus", then the company should consider whether to:

- make a distribution from the estate,...
- ... which could be via increased asset shares (i.e. target payments greater than 100% of asset share)...
- ... or could be via a special bonus.
- carry out a reattribution exercise.

- (vi) ESGs will be used as part of the company's asset-liability modelling. ESGs produce numerous simulations of possible future economic outcomes based on underlying probability distributions. These are used as inputs to the stochastic projection model. ESGs output coherent sets of the macroeconomic variables necessary to perform the projections. Including investment returns, interest rates and inflation.

Correlations between variables will be allowed for, in order for the joint behaviour of economic variables to be modelled.

Both asset and liability projections will depend on the specific economic scenario and will need to be consistent with each other.

The projections may be dynamic to allow for management or policyholder actions.

A suitably large number of scenarios will need to be run, e.g. 10,000.

The time horizon will need to be appropriate for the portfolio of pension business in question.

The input parameters will need to be calibrated for this purpose...

...particularly in relation to the volatilities of the economic variables.

The most likely calibration for this purpose would be a "real world" calibration...

... as these calibrations focus on realistic long term expectations.

The financial projections will produce the amount of capital required for each simulation...

... i.e. the amount of assets (in excess of liabilities) that has to be held at outset in order to meet any projected shortfall of the initial backing assets.

Thus a distribution for the capital requirements can be determined...

... and hence the appropriate level of capital determined reflecting the company's risk appetite...

... e.g. by taking the Value at Risk at a specific confidence level.

A commercially available ESG may be purchased and used.

If the resultant stochastic model is very cumbersome, then a "proxy model" may be developed instead...

... which is calibrated to reproduce the ESG simulated outcomes.

- (vii) The company's main risk exposure is that the fund charges raised from the policies are insufficient to meet the costs of running the company.

So the main non-economic stresses would be in relation to:

- withdrawal (transfer out) rates.
- paid-up rates.
- mortality.
- expenses.

Stress direction would be higher rates for all the above.

If relevant, there may be a stress for lower new business volumes.

May also perform a pandemic stress.

Candidates who scored well in part (iii) systematically approached each suggestion from part (ii) from the view point of each stakeholder to assess the suitability.

For part (iv) it was important to recognise that there are two regulators in the UK and that the PRA and FCA may have differing perspectives.

Part (v) required applying knowledge of the management of with-profits funds to effectively reduce surplus, either via increasing benefits or reducing assets. Most students got the very obvious answers such as distribution of the estate, a number of students failed to consider less obvious reasons such as reducing charges, and paying expense over-runs, and they therefore lost out on marks.

On the final part, some candidates wasted time by discussing market risks (which did not answer the question).

- Q2** (i) First line of defence is the business operations,...
- ...where a well-established control environment is embedded into day-to-day operations.
- Second line of defence is the oversight function, such as a standalone risk function.
- This area will have responsibility for the production, implementation and monitoring of risk management policies and procedures.
- Third line of defence is the independent assurance providers, such as internal and external audit.
- They provide evaluation and challenge of the organisation's risk management processes.
- (ii) This is the risk of mismatches in short-term cashflows.
- For this company, it is the risk that it has insufficient income arising from the assets...
- ... or insufficient cash or other short-term liquid assets...
- ... to meet the short-term annuity payments due to the policyholders...
- ... and also to meet short-term expenses,
- ... or to meet margin/collateral (if a swap is used).
- As a result the company may have to realise assets at inopportune times...
- Or may not be able to realise assets quickly (e.g. property).
- ... making a loss ...
- ... or not achieving full market value.
- (iii) This is the risk that the company will behave in such a way as to disadvantage the client.
- This may arise as a result of operational failure or poor servicing
e.g. late or missed payment of annuity benefits
or poor quality of communications.
- It may arise due to information asymmetries
e.g. in relation to underwriting, if impaired life annuities are sold.
- It may arise due to failing to keep pace with regulatory requirements
e.g. in relation to equality legislation.
- It may arise due to poor control of distribution
e.g. if the distributors are not making sufficiently clear to customers the range of different annuity types available.

The company may make poor strategic decisions, such as inappropriate product design.

- (iv) Restrict the level of exposure to each third party, i.e. the amount invested in each bond.
Ensure there is diversification between different counterparties, i.e. investment across a wide range of bonds.
Restrict investment to only bonds above a certain credit rating.
Monitor exposures very carefully...
... including the likelihood of default...
... the amount of potential recovery if a default were to occur...
... the period for which the exposure continues.
Use credit derivatives...
... such as credit default swaps.
The above should be managed through an effective governance framework with specific accountabilities.
- (v) The longevity risk is that the annuitants live longer than was expected...
... in the pricing assumptions.
This would lead to lower profits arising than expected...
... or even losses.
If the annuitants live longer than is allowed for in the reserves...
... then this could put pressure on solvency.
However, the additional solvency capital requirements held should cover a fairly high variation in longevity.

The longevity risk is exacerbated as the product is without profits and charges cannot be updated.

There is a related expense risk if annuitants live for longer than expected.
There is also an increased investment mismatch risk if longevity is different to the level that has been assumed.
If annuitants live longer then there is also a greater risk in respect of availability of sufficiently long term assets.

There are three particular sources of uncertainty in determining future mortality:

Model risk

There are different models available that can be chosen, and there is a risk that the wrong selection is made.
There is also a risk that errors are made in the modelling.

The model may have been incorrectly specified...
... or incorrectly built...
... or the run process may not have been carried out correctly.
The model may be over-simplified...
... or over-complex.

The outputs may be misinterpreted...
... or used for an inappropriate purpose.

Parameter risk

Even where the “correct” model is used, there is a risk that the parameters chosen do not adequately reflect the future experience of the annuitants.

Low volumes of data increases both model and parameter risks.
For example, if the company has a small portfolio of annuity business...
... and has been writing it for only a few years.

Random fluctuations / stochastic risk

Even if the “correct” model and correct parameters were known, the outcome would be uncertain due to random fluctuations.
This is particularly the case if the portfolio is relatively small.

Risks arise both in respect of actual experience relative to the base mortality table chosen...
And the rates of future mortality improvement which are applied to those base tables.
There tends to be greater uncertainty surrounding the latter, i.e. future mortality improvements.
The further mortality rates are projected into the future, the more uncertain they become.

The company is likely to use a standard CMI mortality table as its base table (e.g. the “00” series).

There is a risk that the mix of business actually written differs from that underlying the CMI table population

e.g. by socio-economic group

e.g. the company may write significantly higher amount annuities on average than the rest of the industry.

e.g. the mix of males and females is different to that expected.

Similarly, if it uses the “cohort” approach to model improvements.

E.g. because the rate of improvement has been consistently more rapid for higher socio-economic groups.

There is a risk that any adjustments that have been made by the company to reflect the differences are inadequate.

Mortality experience analysis relative to the base tables may have contained errors.

Or may not have been based on a sufficiently credible data set.

Or the company may not have allowed sufficiently for trends over time in the historic experience.

Some mortality projection approaches (e.g. the extrapolation approach) rely on subjective judgement and this judgement may prove to be inadequate
e.g. judging the period over which trends are projected.

Explanatory, or process-based, projections attempt to model trends in mortality rates from a bio-medical perspective,
... and these may not be effective if the processes causing death are not well understood and cannot readily be mathematically modelled.
Uncertainty particularly exists around future mortality at very high ages...
... due to there being limited data available at these ages.
Further uncertainty is generated by future changes in smoking habits...
... and cardio-vascular disease (which are important factors in future mortality improvements).
There are complex interactions between a number of factors underlying future mortality improvements, ...
... and these are difficult to estimate and model.
If impaired life business is sold, there is a risk that the underwriting process is inadequate and hence longevity is not appropriately assessed.

The longevity risk is compounded for this company due to this being the only business that it writes...
... So there is less opportunity to diversify it away.

- (vi) Selling term assurance would mean that improvements in mortality rates would reduce the levels of claims paid on these products.
This would therefore provide a hedge against the mortality improvements on the annuity business.
However, the insured population differs
e.g. the age of term assurance policyholders is normally younger than that of annuitants.
The socio-economic group covered might also differ.
The rate of mortality improvements can vary by these factors.
Also term assurance policies tend to have a shorter term than annuities.
Therefore it is unlikely to be a perfect hedge.
Depending upon the level of the in-force of the annuities, it also may take a significant period of time to generate enough volume of term business to provide a viable hedge against the annuities.
- (vii) The company has no past experience of writing this business...
so would need to gain advice on setting premium levels...
... particularly in view of equality legislation (gender neutral pricing)
It will also need advice in relation to underwriting...
... as writing term assurance business introduces significant anti-selection risk.

Initial uncertainties in relation to experience may mean needing higher margins in the pricing
... which would mean that premiums would be less competitive.
And similarly may mean higher margins in reserves.
Generating an appropriate volume of business on the term assurance may prove particularly difficult...
... given how competitive the market tends to be.
The company may not have the right distribution channel to sell the term assurance.

The administration systems are likely to need to be changed in order to cope with starting to write term assurance business.

Staff will need to be retrained.

New product literature will be required.

These changes and the product development will incur costs.

There is a risk that the volumes of new business sold are insufficient to cover the fixed and development costs.

The company may need to gain regulatory approval in order to write the term assurance business.

The capital required to support the suggestion may not be available.

There may be greater operational risk associated with writing a new product line.

The company will now be exposed to lapse risk.

(viii) Longevity swap

The insurance company pays a set series of payments to a third party.

In return it receives from the third party a floating set of payments...

... that may be linked to the actual annuity payments made, or linked to an agreed population mortality index.

The counterparty may be a reinsurer...

... or a bank.

Collateral is normally required as part of the agreement.

The collateral payment would be calculated as the difference between the present value of the floating payments and the present value of the fixed payments.

If positive, then this amount of collateral would be posted by the third party; if negative, the insurance company would have to post this amount of collateral.

The present values would be calculated using a discount rate agreed by the two parties involved.

This is typically based on a swap curve.

The life expectancy required for the floating payment would need to be agreed in advance.

The collateral payment would be recalculated on a regular basis.

Reinsurance

The reinsurance could cover the in-force business, future new business or both.

The insurance company pays a premium...

... and the reinsurer pays an agreed proportion of the annuity benefits payable.

It is likely to be done on a treaty basis.

The reinsurance could cover a proportion (or all) of the annuity payments via an original terms or risk premium basis

i.e. based on the insurance company premium rates or based on the reinsurer's own premium rates respectively.

The reinsurance could be done on a quota share or individual surplus basis

i.e. same proportion reinsured of each policy...

... or the proportion reinsured depends on a fixed retention limit and so can vary by policy respectively.

Alternatively, the company could reinsure total annuity payments that are above a certain level

i.e. an aggregate excess of loss...

... or stop loss style agreement.

(ix) **Counterparty risk**

Both arrangements generate additional credit / counterparty risk...

i.e. the third party to which the risk has been transferred may default on the arrangement.

In both cases, this may be due to the third party finding themselves in financial difficulties or becoming insolvent.

For the longevity swap, default is most likely to occur when the floating payments are expected to be higher than the fixed payments.

Collateral can be used in both cases to mitigate the risk.

For the traditional reinsurance, a deposit back agreement could be undertaken where the third party reinsurer deposits assets with the insurance company.

Other counterparty risk controls, such as only transacting with high credit quality third parties, are the same for both approaches.

For traditional reinsurance, defined actions given certain events may be used to mitigate the counterparty risk (e.g. recapture if credit rating of reinsurer falls below a certain level).

The longevity swap may be traded through an exchange or other unrelated party, which helps to manage counterparty risk.

Basis risk

For the longevity swap, if the floating payments are not based on actual annuity payments but on a mortality index then basis risk is introduced.

This risk does not arise under reinsurance.

Legal risk

The legal form of a longevity swap is often that of a derivative, rather than as a reinsurance contract.

In both cases, the contracts can be complicated ...

... and so legal risk arises in relation to their interpretation.

Disputes may arise in both cases.

Operational risk

In both cases, there are a number of additional administrative operations that need to be undertaken.

Therefore both approaches generate additional operational risk.

And there is related expense risk...

... i.e. that the additional expense of administering the arrangements is greater than expected.

If the third party is a reinsurer, it is more likely that technical assistance will be provided...

... which may reduce the potential for operational risk (relative to, say, a longevity swap with a bank).

Liquidity risk

The liquidity swap may introduce liquidity risk in relation to margin calls.

Regulatory change risk

The effectiveness of both arrangements could change if regulations change.

Some well prepared candidates lost marks in parts (iv) and (vi) by not giving examples.

In part (viii), some candidates suggested selling the business via a bulk deal, however, this option was excluded in the question.

Similarly, many candidates could describe liquidity risk in part (ii), but did not tailor their answer to the specifics of the question.

Part (v) required the candidate to be able to apply bookwork and expand on the area to make it relevant. Most gathered some marks around model risk, but did not cover all these risks, few covered the nature of longevity risk in adequate detail, with most just mentioning that losses were made if people live longer. Candidates who scored well, went into details on the difficulties of projecting improvements.

END OF EXAMINERS' REPORT