



Institute
and Faculty
of Actuaries

EXAMINERS' REPORT

SP2 - Life Insurance
Specialist Principles

September 2023

Introduction

The Examiners' Report is written by the Chief 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.

For some candidates, this may be their first attempt at answering an examination using open books and online. The Examiners expect all candidates to have a good level of knowledge and understanding of the topics and therefore candidates should not be overly dependent on open book materials. In our experience, candidates that spend too long researching answers in their materials will not be successful either because of time management issues or because they do not properly answer the questions.

Many candidates rely on past exam papers and examiner reports. Great caution must be exercised in doing so because each exam question is unique. As with all professional examinations, it is insufficient to repeat points of principle, formula or other text book works. The examinations are designed to test "higher order" thinking including candidates' ability to apply their knowledge to the facts presented in detail, synthesise and analyse their findings, and present conclusions or advice. Successful candidates concentrate on answering the questions asked rather than repeating their knowledge without application.

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.

Sarah Hutchinson
November 2023

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

The aim of the Life Insurance Specialist Principles subject is to instil in successful candidates the principles of actuarial management and control that are relevant to life insurance companies, as well as an understanding of the market and business environment for life insurance products, and their associated risks. The candidate should gain the ability to apply the knowledge and understanding, in simple situations, to the operation, on sound financial lines, of life insurance companies. The life insurance products covered by this subject exclude health and care insurance products covered by the Health and Care Specialist Principles subject.

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. The Examiners may also award marks for valid points that are not included in the marking schedule, or alternative examples where an example is given in the schedule.

Candidates are expected to show knowledge of the relevant content of the Core Reading and be able to apply this knowledge where appropriate. To achieve a good pass mark, candidates must be able to utilise their applied knowledge and analyse the best outcomes as specifically required by the exam question.

B. Comments on candidate performance in this diet of the examination.

Many candidates were able to score well on the parts of the paper where direct application of the core reading was required, for example, in Questions 1(i)- 1(iii), 2(i), 3 and 8(i). Candidates should note that question parts which require direct application of the core reading (i.e., without tailoring the response to the specifics of the question) represent a small proportion of the overall marks in the paper.

Stronger candidates were also able to generate a wide range of points on the 'discuss' question parts in the paper, particularly those with a higher number of marks. Often in these questions the stronger candidates differentiate themselves through considering a range of points, and by including points relevant to the specific situation in the question.

These question parts generally require a greater depth of understanding of the material to do well. Generating full marks in these questions is intentionally challenging in order to differentiate candidates. To score well candidates need to demonstrate their understanding of the material in the subject, and how to apply it effectively to the situation given in the question, addressing a number of points in sufficient detail.

C. Pass Mark

The Pass Mark for this exam was 56
567 presented themselves and 231 passed.

Solutions for Subject SP2 – September 2023

Q1

(i)

The expropriation price of a unit is calculated as follows:

The market bid price of the assets held by the fund	[½]
Less expenses that would be incurred on the sale of units	[½]
Plus the value of any current assets in the fund (e.g. Investments purchased but not settled)	[½]
Less the value of any current liabilities in the fund (e.g. Investments sold but not settled)	[½]
Plus accrued income (e.g. Interest income from fixed interest securities and bonds)	[½]
Less outgo such as fund charges	[½]
Less accrued tax, if applicable	[½]
Divided by the number of units in force at the valuation date	[½]
	[Marks available 4, maximum 3]

(ii)

The appropriation price is the price at which units are created whilst the expropriation price is the price at which they are cancelled	[½]
It is normally higher than the expropriation price	[½]
The market offer price of units is used instead of the market bid price	[½]
The expenses that would be incurred on the purchase of units are added, rather than deducting the expenses incurred on sale	[½]
	[Marks available 2, maximum 1]

(iii)

An offer basis is applied when a marginal transaction involves the creation of units	[½]
On an offer basis the amount of money put into the fund being equal to the net number of units being created	[½]
multiplied by the appropriation price	[½]
A bid basis is applied when a marginal transaction involves the cancellation of units	[½]
On a bid basis the amount of money taken out of the fund being equal to the net number of units being cancelled	[½]
multiplied by the expropriation price	[½]
	[Marks available 3, maximum 2]

(iv)

A company will normally expect policyholders to contribute to costs relating to the policy that are not prices into unit values	[½]
This will include marketing costs and commission	[½]
Plus, a profit margin	[½]
The company may apply a “bid/offer” spread when pricing units, to allow for these costs	[½]
Typically the price of purchasing a unit (“bid price”) will be increased to allow for this, whilst the price of selling a unit (“offer price”) will be left unchanged	[½]
Also prices are likely rounded in practice, and so the exact theoretical price will not apply	[½]

There may also be timing differences between the unit transactions and the recalculation of the unit price	[1/2]
It is also possible for errors to arise in the unit pricing process which cause the price to be an unexpected value	[1/2]
A “broad equity” principle is likely to be applied where switching between valuing the fund on a bid or offer basis is not done on a daily basis	[1/2]
Instead only a significant movement will cause a move between bid/offer pricing bases	[1/2]
e.g., if the price moves outside of a particular tolerance	[1/2]
This means a transaction that should in theory use a “bid basis” may use an “offer basis” or vice versa	[1/2]
This is primarily done to reduce volatility in quoted prices	[1/2]
A management box may also be used to reduce volatility	[1/2]
	[Marks available 7½, maximum 5]
	[Total 11]

Most candidates were able to score well on this question overall.

Parts (i) (ii) and (iii) were generally answered very well.

Part (iv) required that candidates developed a wider range of ideas and applied their understanding a little more, and so was less well answered. Better prepared candidates provided a number of reasonable examples with sufficient detail for a “discuss” type question. Marks were not awarded for suggestions which indicated impropriety on behalf of the insurance company.

Q2

(i)	
Endowments are intended as savings products	[1/2]
paying benefits on survival	[1/2]
or on death during the term of the policy.	[1/2]
Both with profits and unit linked endowments meet similar customer needs	[1/2]
They allow customers access to investment expertise	[1/2]
Endowments are often used to provide cover for a loan of other large payment	[1/2]
e.g., Mortgage (<i>or any suitable example</i>)	[1/2]
and are also used to provide a lump sum benefit at retirement	[1/2]
If inflation-linked they may also provide inflation protection	[1/2]
Endowments may also be used in estate planning	[1/2]
where parents pay the premiums but with the benefits going to children	[1/2]
They may also be a tax advantageous form of investment	[1/2]
	[Marks available 6, maximum 3]
(ii)	
It may change volumes of new business written by the insurer	[1/2]
as well as the type of policyholders purchasing the business	[1/2]

and the per policy profit margin.	[½]
It may reduce the level of capital that the insurer needs to hold for the business	[½]
Due to lower guarantee costs / passing more investment risk to the policyholder	[½]
and the removal of the need to hold capital for smoothing	[½]
providing that the insurer designs the product appropriately.	[½]
Any change in risk profile will be slow though, as the existing business will remain.	[½]
It will also be possible to limit exposure to early lapses through the product charging structure.	[½]
The insurer is still exposed to early deaths and will need to hold capital to support these.	[½]
It is possible that competitors have switched to a unit linked basis	[½]
So, the insurer may be more in line with the market	[½]
but they could have lost a key point of differentiation.	[½]
However, if this is the insurer's first unit linked product, then there will be expenses in making this change.	[½]
and significant training of staff	[½]
and systems development.	[½]
and new marketing / product literature.	[½]
Administration costs could also be higher depending on the number of funds.	[½]
The company will need to change investment strategy	[½]
or may outsource investment management.	[½]
If the product is set up with variable charges, then it may be possible for the insurer to increase charges to cover increasing expenses....	[½]
but customer expectations here will be important....	[½]
and depend on information provided at the point of sale.	[½]
Customer expectations are likely to be more straightforward for unit linked compared to with profits business.	[½]
When the change is made, there may be issues or concerns raised by consumers/ brokers about the loss of the With-profits endowment product.	[½]

[Marks available 12½, maximum 5]

[Total 8]

This question was generally well answered.

In part (i) most candidates were able to outline the customer needs that an endowment product fulfils.

In part (ii) candidates were able to articulate a range of impacts on the insurer of the difference between a conventional and unit-linked endowment. Stronger candidates then explained the impact of the changes they identified. Some candidates incorrectly assumed that the existing business would be converted to unit-linked, which was not suggested in the question.

Q3

Volumes of business written may change with the revision to the product [½]

as may the mix of business written, and both will have a second order effect on the assumptions used.	[½]
Timing may change the assumptions used	[½]
if the existing product was last repriced some time ago	[½]
the company may want to use more up to date data	[½]
Alternatively, they may look for consistency in the timing of assumptions to ensure consistency of price.	[½]
They will need to consider inflation	[½]
Margins for uncertainty included in the assumptions may differ	[½]
reflecting the lack of experience regarding the option	[½]
or to ensure meeting of a profit target in regard to the new option.	[½]
Although if best estimate assumptions are used this will not apply.	[½]
Investment return is unlikely to differ given the investment will be done at a high level, and there is no change to guarantees under the product.	[½]
If the company uses a risk-free approach, we also would not expect a difference.	[½]
Persistency rates may change as a result of the option being present. The lapse rate will be expected to reduce	[½]
as there is now an alternative to lapsing	[½]
How this will affect the persistency rate both before and after option take up may be considered separately.	[½]
If the option is only available at specific terms in the contract this will alter the persistency profile by term.	[½]
To do this an option take up rate will need to be assumed i.e., a rate at which the policy will become paid up.	[½]
The company has no experience with which to set this assumption so will require external data/expertise.	[½]
e.g., industry data (<i>any relevant example</i>)	[½]
There may be costs associated with revising marketing and any additional administration regarding the more complex policy.	[½]
The burden of operating expenses may increase for paid-up policies, as premiums are no longer received yet they still require administration (unlike surrendering policies).	[½]
Overheads relating to the option may be applied only to new policies or spread across new and existing business.	[½]
Pricing could be done on a marginal basis where overheads are ignored, however this would likely be consistent with the main policy.	[½]
Per policy expenses may be affected by the volume of business sold, which may change as a result of the new option.	[½]
The cost of taking up the option will generally be applied as part of determining the paid up sum assured.	[½]
These costs will need to be assumed in pricing the option, perhaps based on cost of similar actions within the company.	[½]
The mortality basis chosen should reflect any change in the future expected mortality from policies being made paid up that would previously have surrendered	[½]
and any difference between the mortality of paid-up policyholders and those remaining in payment.	[½]
The company would not be likely to have any of its own data in this respect and may rely on external advice to assess this.	[½]
In practice there it is likely the mortality basis will be unchanged	[½]
if changes are not material	[½]

as in practice there are a number of reasons to make a policy paid up vs maintaining or surrendering, and these are not all clearly linked to the mortality of the policyholder.

[1/2]

[Marks available 16½, maximum 8]

Most candidates were able to pick up some marks on this question by indicating that assumptions on paid up rates would be required, and that there would be additional expenses involved, and also an impact on persistency.

Better prepared candidates were more systematic in their approach, considering the assumptions in the existing product and the paid-up rate itself. Marks were not awarded for generic discussion of the principles of setting discontinuance and alteration terms.

Q4

First life age:

Age may be below the minimum age for taking an annuity [1/2]

or may have policyholders with very old ages [1/2]

suggesting they have died but dependents have not informed the insurance company [1/2]

e.g., over 120, or under 18 (*any suitable example*) [1/2]

The age could be missing entirely [1/2]

First life age vs Second life age:

May have policies where the first life and second life ages are very different [1/2]

which may be correct [1/2]

but could be a data issue and worth investigating if there are a number which large differences [1/2]

Joint life data may be missing, or a second life shown on a policy marked as single life. [1/2]

Second life annuity percentage:

The dependents pension may be out of line with the policy terms and conditions [1/2]

For example, the terms and conditions may not allow a dependents pension to be more than 100% of the first life [1/2]

Average annuity percentage may not be in line with expectations [1/2]

Original premium divided by annual annuity amount:

A check carried out by dividing the original premium by an approximate annuity factor [1/2]

May indicate the annuity amount is unreasonable and has been set up incorrectly (e.g., if premium is greater than annuity). [1/2]

e.g., if the current amount is lower than the original, and inflation has been positive, then this suggests an error. [1/2]

Current annual amount vs original annuity amount for policies with indexation

Indexation may be too high or too low / absent [1/2]

Suggesting indexation has been applied incorrectly [1/2]

[Marks available 8½, maximum 6]

Most candidates identified a number of appropriate checks to perform on this data, and so secured a reasonable proportion of the marks.

Stronger candidates considered these checks systematically and were therefore able to generate a wider range of ideas, and greater clarity in their explanation.

Q5

(i)

Advantages:

Policyholders may have initiated the sale if responding to an advert, this may mean low withdrawals	[½]
No commission and low overheads so reduced costs	[½]
This means it will have competitive rates so attracts new business	[½]
Competitive rates also may mean low withdrawals	[½]
Using social media means the company may be able to reach new customers. including a younger demographic previously untapped by the insurer.	[½]
There may be first mover advantage if no other companies are doing this (i.e., no real competition)	[½]
Sales volumes may therefore increase	[½]
and this also introduces cross-selling opportunities	[½]
There may be limited regulation allowing the company freedom in its approach.	[½]

Disadvantages:

The marketing method is new so there is a risk that sales are low, leading to low profitability.	[½]
Policyholders have taken no advice, so this may not be the right product for them	[½]
This method leaves out those who are not on social media	[½]
The products have to be very simple to be able to market in this way so may not attract those with high income and a need for more sophisticated products	[½]
Simplified underwriting will need to be used.	[½]
resulting in higher anti-selection.	[½]
Persistency may be lower on the new product.	[½]
The initial competitive advantage may fall away quickly as others enter the market.	[½]
Price will need to be competitive, reducing profits	[½]
There will be an additional cost in setting up this new sales channel	[½]
and additional cost in maintaining it	[½]
There may be extra regulatory requirements involved as part of the selling process	[½]
There may be regulatory restrictions on how to sell via social media	[½]
Or there may be restrictions on what contract can be sold this way	[½]
The company may lack experience for this target market	[½]
making it hard to price/set assumptions	[½]
This marketing method could result in very high applications	[½]
as the company may find it hard to control the marketing once it is on social media	[½]

This may result in poor customer services	[½]
Complaints could go viral on social media	[½]
resulting possibly in reputational risk	[½]
or the systems may not work	[½]
resulting in cyber risk.	[½]
The company may lose favour with existing sales partners such as insurance intermediaries	[½]

[Marks available 17½, maximum 9]

(ii)	
Analyse the reasons for the fall in sales and act accordingly	[½]
Spend more on advertising via social media	[½]
Have a dedicated active social media account to increase engagement	[½]
Use data analytics for targeted advertising	[½]
Use education campaigns to promote the need for insurance	[½]
Clearly state no medical is required	[½]
Have a clear, quick, and easy online sales process	[½]
with good sales support	[½]
Be clear on climate change/environmental and social governance position as this may attract some people	[½]
Offer a donation to popular causes e.g. social or environmental initiatives (any suitable example)	[½]
Offer discounts or vouchers	[½]
or offer more competitive pricing	[½]
Highlight tax advantages if there are any	[½]
Make use of sponsored influencer content to promote the product	[½]
Design innovative products for the target market	[½]

[Marks available 7½, maximum 4]

[Total 13]

This question was quite well answered by many candidates.

Candidates were generally able to come up with a good list of the advantages and disadvantages of the new distribution channel in part (i), and so many candidates scored well in this part.

Better prepared candidates produced more specific points relating to the likely characteristics of the social media sales route and were then able to bring these ideas into the suggestions in part (ii).

Candidates achieved better results in part (ii) by considering the specifics of this channel, such as using influencers and targeting sales.

Q6

The timescale for making this change is potentially unreasonable, if just announced.	[½]
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and so the company may wish to seek a delay in the implementation of this proposal.	[1/2]
and/or some form of transitional arrangement to ease the change from the existing approach to the new approach.	[1/2]
Although this may only impact in-force business and not new business	[1/2]
Other like-minded insurers may have similar ideas so the industry may wish to feed back as a whole.	[1/2]
This is likely to be a very material change in the valuation of the industries assets and liabilities.	[1/2]
This may or may not be beneficial for the company, and it will need to carry out a detailed assessment of the expected impact	[1/2]
considering each product line separately.	[1/2]
This will involve determining new up to date best estimate assumptions	[1/2]
given passive assumptions will likely be out of date and will include prudence	[1/2]
Assets will need to be valued at market value instead of book value	[1/2]
A suitable rate of return on assets will need to be determined	[1/2]
This may be difficult for assets where the country does not have a sufficiently deep or liquid market.	[1/2]
Liabilities may be valued under either a replicating portfolio or risk-neutral basis.	[1/2]
A risk margin will need to be determined for elements of the basis where a deep or liquid market does not exist	[1/2]
such as expenses, persistency, or mortality.	[1/2]
This will depend on the regulations being suggested but may be an extremely complex calculation.	[1/2]
For long term business there may be a desire for an "illiquidity premium"	[1/2]
if liabilities are substantially more onerous than before	[1/2]
The illiquidity premium is to reflect that assets are held to maturity and some of the price relates to the cost of liquidity.	[1/2]
Otherwise, the annuity and whole of life business maybe valued at a much more penal rate than under a prudent valuation.	[1/2]
If such an adjustment is not present in the regulations the insurer may wish to argue for their inclusion.	[1/2]
The change in valuation approach will have an impact on the insurer's solvency	[1/2]
At the extreme the change in valuation could make the insurer insolvent, and it may need to warn the regulator of the impact of the change.	[1/2]
and/or determine actions that could be taken to avoid this.	[1/2]
Additional costs will emerge from altering the valuation basis	[1/2]
as well as a need for additional resources.	[1/2]
potentially including external expertise.	[1/2]
Changes to systems	[1/2]
and training costs	[1/2]
Future running costs are likely to be higher due to the move to an active valuation approach.	[1/2]
reflecting the need for more frequent valuations and regular review of assumptions.	[1/2]
Costs will need to be factored into policy premiums	[1/2]
which will need to be repriced under the new approach.	[1/2]
The company's investment strategy will need to be revisited in light of the change.	[1/2]
to better match assets to liabilities under the new basis.	[1/2]
Changes to the company's future business strategy will need to be considered.	[1/2]
The company may wish to cease selling certain lines of business.	[1/2]
Or take account of opportunities as a result of this change.	[1/2]

If the insurer is already operating in international markets, or is based overseas, it may already be valuing some or all of its business on this new basis.	[½]
In which case this may be an advantage over other insurers.	[½]
and potentially beneficial if the company is already required to value business on the basis proposed.	[½]
If the insurer only operates domestically then this change may make operating in other territories easier in future.	[½]
The sensitivity of assets and liabilities will change	[½]
which may impact how risks are managed / risk tolerance	[½]
Results will be more volatile, which may have implications to how results are reported	[½]

[Marks available 23, maximum 11]

[Total 11]

This question was set to be more challenging than other parts of the paper.

Most candidates were able to make a number of points on this question and outline some sensible factors that the insurer should consider in changing its valuation basis, recognising the impacts of moving to best estimate assumptions. Further marks were awarded to those candidates who used the product information given in the question to provide more specific answers (e.g., by mentioning the possibility of an illiquidity premium). Only the strongest of candidates recognised that the timescale for the change might be unreasonable and suggested that the insurer might want to discuss this and the possibility of transitional arrangements within the industry and with the regulator and considered the ongoing operational impact to the company.

Q7

Expense data would need to be inflated from the time of the analysis to the point at which it is used.	[½]
and adjusted for any changes since the analysis took place (e.g., cost saving measures)	[½]
The expense analysis would be based on the company's existing business.	[½]
so, it would be appropriate to use the expense analysis for the product that most resembles the new product as a starting point.	[½]
with costs adjusted to allow for any new features.	[½]
allowing for development costs to be allocated back to the product.	[½]
e.g., costs of new computer systems (<i>any suitable example</i>)	[½]
or included in general overheads and spread across the business.	[½]
Prudent margins may be included for uncertainty in the pricing assumptions for the new product.	[½]
either as a whole or on new elements specific to the new product offering.	[½]
Credibility of Data:	
The company will need to decide on the period of historic expense data to use.	[½]
to ensure it has enough recent data to provide a credible analysis.	[½]
that can be divided into homogenous groups.	[½]

but not so long that the data is no longer relevant to a new product. [1/2]

Suitability of Data:

If the product line is entirely new to the company, then existing data may not be appropriate for some expense elements. [1/2]

so, it may need external expertise/information in determining level of cost. [1/2]

e.g., reinsurer data. [1/2]

or industry data. [1/2]

adjusted to allow for the companies own operating model and expense base. [1/2]

Categorisation of Expenses:

The existing expense data should be divided into direct expenses which are dependent on the volume of new business [1/2]

and overheads that relate to general management and servicing but are not directly related to volumes [1/2]

(e.g., property costs, financial reporting, IT services - *any suitable example*) [1/2]

To be applied to the new product direct expenses would also need to be divided into

Initial [1/2]

Renewal [1/2]

Termination [1/2]

and investment expenses. [1/2]

Allocation of Expenses:

Most of these expenses are proportional to the number of contracts written or in-force [1/2]

Hence can directly be treated as part of per policy costs for a new product. [1/2]

adjusted as required (e.g., including additional salary costs). [1/2]

Underwriting costs may be related to the size of benefit [1/2]

Overheads would have been assessed at a company-wide level and allocated back to products. [1/2]

e.g., in line with salaries for sales costs (*any suitable example*.) [1/2]

or in relation to the office spaced used for property expenses (*any suitable example*.) [1/2]

It would need to be assessed if the overheads would change as a result of the new product. [1/2]

Potentially no change if not material vs. size of company [1/2]

and whether the new product would pick up a share of existing overheads or initially be priced on a marginal basis. [1/2]

Marketing and Commission Expenses:

Marketing costs may be related to the amount of commission (if applicable) [1/2]

Commission (if applicable) would be excluded from the expenses being analysed on the basis that its format is known and can be allowed for explicitly in setting prices for intermediaries. [1/2]

If the company has an outsourcing arrangement, other costs may also be known (but would need to be negotiated for this product). [1/2]

Investment Expenses:

Investment expenses are normally expressed as a percentage of funds under management so that they can be treated as a deduction from the earned investment return on the new product. [1/2]

Investment expenses applicable to the new product would need to be based on an assumed investment mix. [½]

Future Expenses:

Future expense inflation should also be considered. [½]

Results:

The company may want to compare its resulting assumptions to those derived from previous exercises and ensure that the result of the exercise appears appropriate. [½]

[Marks available 2½, maximum 12]

[Total 12]

Most candidates were able to make a reasonable start on this question, and in particular many were able to describe how to allocate expenses by a range of criteria as a basis for inputs into the pricing process.

Better prepared candidates covered also covered the wider discussion on the suitability of the expense data for a new product and adjustments that might need to be made to it, rather than focusing purely on the expense allocation.

Q8

(i)

The company could have accumulated large reserves meaning it is able absorb losses without reinsurance. [½]

of it could be part of a larger group and have protection via its parent company [½]

The insurer is experienced in the products that it sells [½]

and so has limited need of the technical expertise the reinsurer brings. [½]

The insurer has good volumes of data to set assumptions. [½]

and this data is more relevant than data provided by the reinsurer. [½]

With stable business volumes, the insurer is unlikely to need access to new capital for this business. [½]

and will have stable aggregate experience if the volumes are sufficient. [½]

The insurer has strict risk underwriting controls or policy limits to reduce risk [½]

The insurer does remain exposed to some forms of catastrophe events (such as a pandemic). [½]

but may feel that these rare events are within risk appetite. [½]

The insurer saves on the costs of the reinsurance premium by this approach. [½]

and also does not give away any part of the profits from the business. [½]

Reinsurance rates may be uncompetitive. [½]

or may be unavailable [½]

or may have poor reputation / credit rating. [½]

Annuities and term / whole of life assurance form a natural hedge to some extent. [½]

[Marks available 8½, maximum 5]

(ii)

The insurer should review the regulations applying in its territories. [½]

to assess whether financial reinsurance options (such as risk premium or contingent loans) will achieve the intended purpose.	[1/2]
The reinsurer will need to make a profit on any business that is ceded to it.	[1/2]
and so, the insurer needs to consider the loss of profit on its own business as a result.	[1/2]
In a competitive market such as the term assurance business.	[1/2]
This could make the business loss making.	[1/2]
This is especially true if written on an original terms basis.	[1/2]
The reinsurer will have its own standards and approaches to doing business.	[1/2]
and this could mean the insurer needs to compromise on its underwriting approaches to develop an agreement.	[1/2]
This could have the effect of increasing risks to the business if these changes are material.	[1/2]
and mean that existing mortality assumptions need to be reviewed.	[1/2]
Expense assumptions may also need to be changed if the underwriting process changes.	[1/2]
The insurer needs to consider if there will be any competitive impacts of this change.	[1/2]
For example, due to premium changes.	[1/2]
Or changes to the underwriting approach.	[1/2]
Involving a reinsurer in their business also introduces counterparty risk.	[1/2]
so the insurer needs to perform due diligence on potential reinsurance partners	[1/2]
or consider involving a range of reinsurers to spread this risk	[1/2]
and consider their exposure limits to each reinsurer.	[1/2]
There is a legal risk associated with the reinsurance contract.	[1/2]
so any contract should be carefully considered by legal experts.	[1/2]
They will need to consider the reinsurance contracts that are available in the market	[1/2]
[Marks available 11, maximum 6]	

(iii)

If the insurer is seeking capital to support writing more new business, then proportional reinsurance	[1/2]
under an original terms treaty would be appropriate.	[1/2]
Quota share is most likely.	[1/2]
as this will allow reinsurance benefits for all policies.	[1/2]
The capital required to support new business will be reduced	[1/2]
It may also be possible to reinsure existing business in order to free up capital.	[1/2]
In both cases reserves will reduce due to the share of risk passed to the reinsurer.	[1/2]
There is no indication that the company has doubts over its claims experience.	[1/2]
so using non-proportional reinsurance products to reduce the risk capital required seems unlikely.	[1/2]
Risk premium reinsurance could include a financing element	[1/2]
depending on the regulations	[1/2]
Reinsurance commission may be an option.	[1/2]
Here the reinsurer provides the insurer with a commission payment related to the value of the business reinsured.	[1/2]
Repayments are spread over several years.	[1/2]
and are added to reinsurance premiums	[1/2]
The repayments are adjusted to account for expected lapses	[1/2]
or a contingent loan may be an option.	[1/2]
Here, the reinsurer provides the insurer with a cash loan.	[1/2]
representing the value of future profits of a block of business.	[1/2]

The insurer repays the loan to the reinsurer over a specified number of years	[½]
and receives the cash immediately which increases its free assets.	[½]
If the insurer does not make a profit, then repayments will not be made.	[½]
Excess of loss with a high retention level could be a cheap way to reduce capital requirements.	[½]
If the company's reserving regime has a component relating to extreme loss.	[½]
	[Marks available 12, maximum 6]
	[Total 17]

In part (i), many candidates made a good attempt at explaining why the insurer might not currently have the need for much reinsurance, and this part was quite well answered. Better answers considered the unavailability or undesirability of reinsurance as well.

In part (ii) and (iii) some candidates interpreted the question as the insurer simply needing reinsurance and based their answer on this. Most candidates did identify the nuance of the insurer needing financial support and proceeded on this basis.

Part (ii) was reasonably well answered, with most candidates coming up with a range of factors to consider.

In part (iii), many candidates made a start at identifying the forms of reinsurance that might be required, but only the better prepared candidates were able to develop a sufficient range of points to score well.

Q9

(i)

Mortality risk will be the most important risk for term assurance business.	[½]
So they will need sufficient data to model this reliably	[½]
Persistency data will also be an important assumption.	[½]
Although experience may be affected by the transfer and change in service afterwards, meaning past experience may be less relevant.	[½]
Data on expenses is unlikely to be available in detail	[½]
and may not be directly relevant to Company B even if available	[½]
They will inherit Company C's existing data, however	[½]
Data may not be of a suitable quality	[½]
Data may not be in the same format / may not be compatible with B's systems	[½]
Data may be incomplete	[½]
There may be errors in the data	[½]
Since C is newly established, the volume of data may be low	[½]
meaning it is not sufficient to provide a credible analysis.	[½]
C may be reluctant to share data	[½]
The data may only be available in a summarised form	
They could supplement this with their own mortality data from existing policies, however	[½]
The products are different, so unlikely to be suitable	[½]

Their original policyholders may be from different location, occupation etc. compared to Company C	[½]
Care will be needed when using historic data from Company B, as it may be out of date	[½]
They could use data from reinsurers	[½]
This could be costly	[½]
May not be relevant to the customer base	[½]
They could adapt standard tables	[½]
May be out of date in comparison to B's recently sold policies	[½]
They will need to consider the implications of transferring data from one company to another	[½]
Will need to keep customers aware of how their data is being used	[½]
Any mishandling of data could risk regulatory fines and reputational damage.	[½]
	[Marks available 13½, maximum 7]

(ii)	
Consider the model they will use	[½]
Did they inherit a model from C that is of suitable quality?	[½]
Or can their own existing model be adapted?	[½]
Since B is a larger and more experienced company, they may prefer to rely on their in-house expertise rather than a model from	[½]
Or they could buy a new model from an external party	[½]
These options will incur costs which must be considered	[½]
Consider suitable assumptions	[½]
including margins for prudence given uncertainty	[½]
Company C's assumptions from the last valuation may be a starting point if available.	[½]
As mortality is the most onerous risk, they will need to ensure they have suitable assumptions	[½]
Which will rely on having suitable data	[½]
These could come directly from C	[½]
Or from other sources suggested in (i)	[½]
Expense risk will also be a key consideration	[½]
So they will need to consider whether expense assumptions need to change	[½]
Their own expenses may be expected to be higher / lower than C's were	[½]
and the expenses may differ from those experienced in B's existing policies	[½]
There will also be costs associated with the transfer of business to allow for.	[½]
The new products may provide diversification against their existing products	[½]
So need to model the diversification benefit when considering their overall capital requirements	[½]
The term assurance will most likely be modelled deterministically	[½]
If C took a different approach, B may need to redesign the model (or use another)	[½]
Must ensure they are following all regulatory requirements	[½]
	[Marks available 11½, maximum 7]
	[Total 14]

For part (i), most candidates identified some issues with data between the two organisations, and some of the difficulties that company B might have.

In part (ii), a number of candidates produced a generic answer around modelling of capital requirements, and so missed out on the marks relating to the specific situation of this takeover, and the relationship between Company B and Company C.

[Paper Total 100]

END OF EXAMINERS' REPORT



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