



Institute  
and Faculty  
of Actuaries

# EXAMINERS' REPORT

SA3 - General Insurance

Specialist Advanced

April 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  
Chair of the Board of Examiners  
July 2023

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

The aim of the General Insurance Specialist Advanced subject is to instil in successful candidates the ability to apply knowledge of the general insurance environment and the principles of actuarial practice to providers of general insurance. Our expectation of a passing candidate at this stage is that they should demonstrate not only a grasp of the technical aspects of general insurance actuarial work, but also a good sense for products, the competitive marketplace, regulatory environments, and the operational aspects of an insurance company. They should be able to pull these areas of understanding together to provide well rounded advice to the users of their services.

We would offer candidates two key pieces of advice - (i) read the question properly and (ii) order your answer before committing to paper. We would stress that candidates do not need to make the majority of the points included in this report to achieve a pass mark (there are significantly more than 100 marks available for the points in this report). Therefore, time spent making sure that you are answering the question that is asked is more valuable than attempting to make as many points as possible, regardless of whether they are relevant.

The wording of the question has been carefully chosen. Therefore, it is essential to read the question properly. Various examples from this paper of recurrent failure to read a question are noted in the commentary for the questions. If something is not asked for then candidates will waste valuable time writing answers that will gain no marks. These broader answers may be a logical next step to the question and so may be appropriate for candidates to discuss in a professional context. However, this is an exam with a finite number of marks available and so the scope must necessarily be limited and specifically defined.

If a question does specifically mention something, candidates should also assume that there are marks available for this aspect of the question. During the exam setting process, any content that is superfluous will have been removed. A clear implication of that is that if there are numbers provided in the question paper then there are marks available for comment and consideration of those numbers.

Wording of question sections should also be considered in the context of the position within the overall question. Where new question information is provided between sections, candidates should recognise that this information is specifically relevant to the following section or sections. When answering preceding question sections, candidates should not consider any subsequent information in their answers (although it may cover similar ground).

On the second issue, candidates should note that SA3 is the key paper at which we test candidates' deeper thinking. Successful candidates will be able to display some capacity for independent and broad thinking, as well as to reward instances where these skills are displayed. When reviewing past papers, candidates should assume that the marks available for generic points are generally fewer than those awarded for the more challenging points that would be the mark of high quality professional insight in a practising actuary. Marks available for list items from knowledge are lower still.

We strongly recommend that candidates step back and take the time to thoroughly think about what is actually asked in question situations proposed rather than simply considering numbers to be analysed with standard techniques. For example, candidates might stop to think about what claims actually are for a particular class of business, considering factors such as what event causes the claim, who reports the claim, how it is dealt with once reported, what makes one claim small while another substantial, etc. This perspective will help candidates to consider items such as practical issues, stakeholders involved and their potentially diverging objectives, wider impacts, regulatory or ethical issues, inappropriateness of certain actuarial techniques for the specific situation, current economic or cyclical effects, etc. This is likely to lead to significantly broader point generation (and indeed reflects the thought processes of the examiners in drafting the questions and solutions) and a more rounded understanding of the underlying risks and dynamics which should also be of value to candidates when dealing with different stakeholders in their professional life. Some examples of this failure to think more widely on the current paper are noted in the commentary for the questions below.

More generally, we would also advise candidates to employ basic exam techniques such as well-structured answers and effective time management. The online delivery of the exams should assist candidates with providing well-structured answers. Bullet points within answers can help make answers clearer, and we would advise candidates to ensure that separate points are split into separate bullets and that they do not duplicate the same point across separate bullets. Candidates should also consider the command words used and tailor the depth of their answers accordingly.

Candidates who give well-reasoned points relevant to the specific question being asked, which are not in the marking schedule, are awarded marks for doing so.

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

A number of specific comments are provided next to the questions where there were repeated reasons for candidates to score lower marks.

These include issues taking enough time to read the question properly and lack of consideration of secondary factors to assist with point generation and time management.

### **C. Pass Mark**

The Pass Mark for this exam was 65  
446 presented themselves and 152 passed.

## Solutions for Subject SA3 - April 2023

### Q1

(i)

Insurance risk (sometimes also referred to as Business risk): [½]

Risk relating to underwriting activity, including: [½]

Reserve risk: [½]

Risk related to written/earned business [½]

Premium risk: [½]

Risk related to business yet to be written/earned [½]

Catastrophe risk: [½]

Risk related to catastrophe events [½]

Credit risk: [½]

Risk of loss if another party fails to meet its financial obligations, or fails to perform them in a timely fashion. [½]

Market risk: [½]

Risk relating to the volatility of investments (property, equity, bonds) [½]

Operational risk: [½]

Risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. [½]

Liquidity risk: [½]

Risk that a firm is unable to meet its obligations as they fall due as a consequence of having a timing mismatch or a mismatch between assets and liabilities. [½]

Group risk: [½]

Risk that a firm experiences from being part of a group as opposed to being a standalone entity. [½]

Other reasonable points (*½ mark per point*)

[Marks available 9, maximum 4]

(ii)

Review RI programme e.g.: [½]

XoL coverage and its impact on catastrophe risk [½]

QS to proportionately reduce all elements of insurance risk [½]

Review underwriting strategy/guidelines e.g.: [½]

reduce concentration of risks geographically [½]

increase diversity in the portfolio by writing other lines of business [½]

Review expenses e.g.: [½]

Look for areas of synergies within the organisation given that it is an established firm [½]

Put controls on external (e.g. consultancy) spend [½]

Review investment strategy e.g.:	[½]
to increase	[½]
or to reduce the capital charges associated with risky investments	[½]
Consider other financial instruments such as cat bonds	[½]
Other reasonable points ( <i>½ mark per point</i> )	

[Marks available 6½, maximum 6]

**[Total 10]**

*Candidates scored well in part (i) of this question, as expected given its straightforward nature.*

*Candidates also generally scored well on part (ii), with better candidates able to generate points by proposing strategies across different areas such as reinsurance, underwriting, etc.*

## Q2

(i)

Those who cannot or do not want to afford the higher payments postpone projects that involve financing	[1]
Higher interest rates attract foreign investment / capital inflows in line with global macroeconomic conditions	[1]
Higher interest rates make loans more expensive for both businesses and consumers and everyone ends up spending more on interest payments	[1]
It simultaneously encourages people to save money to earn higher interest payments	[1]
To help manage inflation and moderate economic activity by reducing the supply of money in circulation —a.k.a. cool off the economy	[1]
Make treasury bills more attractive to raise debt	[1]
Influence exchange rates e.g. to impact imports/exports	[1]
Promise as part of a political campaign	[1]
Other reasonable comments ( <i>1 mark per well explained point</i> )	

[Marks available 8, maximum 4]

(ii)(a)

Reserving:

If the reserves are discounted, a large increase in interest rates from 2% to 5% will lead to a significant drop in reserves	[1]
Increase in interest rates will impact future inflation, which needs to be taken into account when setting reserves	[1]
Any reserves for PPO claims (which a company with 10 year history is more likely to have) currently in payment will need to be revised	[1]
Any open liability claims estimates will need to be revised, as such a significant change in interest rates will likely lead to a change in Ogden rates	[1]
Need to review the appropriateness of the Standard chain ladder method given that the past may no longer be a good indicator of the future	[1]

(b)

Pricing:

Need to be reviewed to take into consideration impact on future claims inflation	[1]
Profit loading may need to be reviewed, as investment returns will change	[1]
Target loss ratio may be revised as change in investment return will mean potentially unprofitable business can be written, if investment returns can offset underwriting loss	[1]
The customer spending may be affected, which can affect the price elasticity	[1]
Additional covers (add-ons) may be more difficult to sell	[1]

(c)

Capital modelling:

Market risk will change as change in interests rates will add volatility. Any change in the reserves will impact the insurance risk	[1]
The volatility of premium provisions may increase, could require revision of factors used for that part of the calculation	[1]
The cost of capital may increase, leading to pressure on return on capital	[1]
Any discounting used within the capital model will be impacted	[1]
<i>(Award up to 1 mark per section for any other reasonable comment - 1 mark per well explained point, up to 3 marks per section, maximum of 6)</i>	

[Marks available 14, maximum 6]

(iii)

Motor: [½]

Change in interest rates will affect the cost of liability claims, which needs to be reflected in reserving and pricing for this class	[1]
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Travel: [½]

Change in interest rates can have an impact on exchange rates and the cost of claims incurred abroad will be impacted, which will likely be reflected in the pricing of this product	[1]
May also impact the cost of liability claims	[1]

Household: [½]

Change in interest rates will impact the ease of access to mortgages and might impact the values of the properties, which will likely be reflected in the pricing of this product	[1]
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Mortgage indemnity insurance: [½]

Change in interest rates will affect mortgage repayments and defaults may increase	[1]
<i>(Award up to 1½ marks for any other reasonable example with an explanation. Award marks only for Personal Lines examples)</i>	

[Marks available 7, maximum 3]

(iv)

Some of the changes within the company will take time to implement: [1]

e.g. any change in investment strategy will take months to disinvest from existing portfolios and invest in new ones	[½]
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e.g. any changes to premium rates will take time to be assessed and lead time for implementation	[½]
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Invitations for renewals are usually sent 1 month in advance	[1]
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- If there is a significant impact on the capital / solvency position, it will take time to potentially raise additional capital [1]
- Within financial markets, most of the impact is likely to happen immediately following the adjustments, financial markets will react quickly / or a point on how expectations on changes in rates may already be priced in [1]
- Will want to keep up with competitors who may have already implemented the change [1]
- Various external stakeholders will be impacted e.g. [1]
- Financial regulator may require insurance companies to assess and report on the impact ahead of time [1/2]
- Investors will want to understand the impact on the financial position of the company [1/2]
- Reinsurance partners will want to start negotiations of the new terms and conditions [1/2]
- Rating agencies may look favourably upon company if change is made early [1/2]
- This is a significant change which might meet a strong opposition and not materialise [1]
- (Award up to 1 mark for any other reasonable comment - 1 mark per statement and 1/2 mark for examples, maximum of 4 marks)*

[Marks available 10, maximum 4]

(v)

- It is true that the impact on the long-term insurance contracts will be more significant as assets and liabilities held by long-term insurers are more sensitive to changes in interest rates [1]
- However, the company may sell long-term general insurance contracts, e.g. mortgage indemnity insurance [1]
- Also, if reserves are discounted, the impact on any long-tailed reserves will be material [1]
- For any long-tailed claims (either PPOs or lump sum) the settlement values will be affected [1]
- The company's assets and investment value will be impacted [1]
- The customers will be impacted as well, which in turn will impact the insurance company [1]
- Return on capital expectations will be revised, so company's profitability will need to be reassessed [1]
- (Award up to 1 mark for any other reasonable comment - 1 mark per statement, maximum of 4 marks)*

[Marks available 7, maximum 4]

**[Total 21]**

*Candidates scored reasonably well on this question, in particular for earlier parts.*

*For part (ii) better prepared candidates showed their broad knowledge of insurer operation, by being able to generate scoring points across each of the reserving, pricing and capital areas.*

*Candidates did not score as well on parts (iv) and (v), failing to generate sufficient points to score highly.*

*For part (iv) candidates can generate points by thinking about the various different stakeholders impacted.*

**Q3**

(i)

Purpose of the exercise	[½]
Reliance on the outputs of this planning - impact on capital, RI, pricing?	[½]
The nature, size and structure of the insurer	[½]
Volatility of the results	[½]
Line of business written - cat exposure?	[½]
Volume of business written	[½]
Seasonality of the business	[½]
Stage in the insurance cycle	[½]
Time horizon of the planning exercise	[½]
The economic environment	[½]
Time taken to complete the exercise	[½]
Availability of resources / cost of exercise	[½]
Regulatory requirements	[½]
Other insurers / market practice	[½]
Expectation from internal and external stakeholders	[½]
Any significant internal or external changes	[½]
Any goals/objectives that the company has and the strategy to meet these	[½]
Other reasonable comment ( <i>½ mark, maximum 1</i> )	

[Marks available 8½, maximum 4]

(ii)

Deterministic model	[½]
This allows user to calculate a single point estimate	[½]
It requires the input for each of the assumption to be a fixed value	[½]
Stress and scenario modelling	[½]
This is an extension of a deterministic model	[½]
A stress test assesses the impact on a financial plan of a major change in a single assumption in the model	[½]
e.g. a major change in the future inflation rate.	[½]
A scenario test assesses the impact of a combination of stresses	[½]
e.g. a higher conversion rates with a lower average premium	[½]

Stochastic modelling [½]  
 Stochastic model helps assess the variability of the outcome [½]  
 Requires assumptions about the variability of the inputs, usually in the form of a parameterised statistical distribution [½]  
 Produces a range of results [½]  
 Likely a new company will not have sufficient data to parameterise [½]

Dynamic financial analysis [½]  
 This is an extension of a stochastic model [½]  
 It incorporates feedback loops and management actions between iterations [½]  
 It enables evaluation of the impact of different strategic decisions on the financial results [½]  
 It provides management with information: [½]  
 Information about the interaction of decisions from all areas of company operations [½]  
 A quantitative view of the risk-and-return trade-offs inherent in emerging strategic opportunities; and [½]  
 A structured process for evaluating market alternatives [½]  
*(Award up to 2 x ½ mark per section for any other reasonable comment. We are asking specifically for a model, not an approach: Do not award points for description of top-down and/or bottom-up approaches. Award ½ mark per point including naming of the model, up to 4 marks for individual section, maximum of 6 marks)*

[Marks available 11, maximum 6]

(iii)

Likely to get it wrong as this is a new company [½]  
 Initial plan might be intentionally conservative [½]  
 Error in the model [½]  
 Inaccurate pricing - too low, more business written [½]  
 Unexpected hardening of rates - same number of policies written, but with higher average premium [½]  
 Unexpected business mix - higher average premium, e.g. bigger properties, younger drivers than expected [½]  
 Failure of a competitor drove more customers towards new insurer Business uptake higher - impact of good marketing [½]  
 Change in regulation e.g. introduction of mandatory covers, increased minimum limits [½]  
 Other reasonable comment (*½ mark, maximum 1*)

[Marks available 4, maximum 3]

(iv)(a)

Reserving:  
 The reserves will increase [½]  
 depending on the reasons for growth, there may be impact on assumptions used: [½]  
 e.g. change in mix -> impact on development pattern for CL [½]  
 e.g. change in mix -> prior LR for BF / IELR methods [½]  
 with increase of data volumes might be able to use other reserving methods [½]  
 e.g. more reliance on CL rather than IELR method [½]  
 impact on claims frequency [½]

(b)

Pricing:

The pricing of policies needs to be reviewed as may be incorrect	[½]
The amount and allocation of expenses might have changed and will need to be reflected	[½]
The mix of business may be different than assumed leading to a different target loss ratio	[½]
The profit loading may need to be reviewed	[½]
Allowance for RI may need to be reviewed	[½]
With greater data volumes there is an opportunity to expand on the number of factors used in pricing	[½]

(c)

Capital modelling:

The capital requirements will increase	[½]
Greater uncertainty in future business exposures	[½]
The higher written premium will affect all of the insurance risks - reserve, premium and CAT risks	[½]
If using QS reinsurance, the counterparty credit risk will increase as higher recoveries are expected	[½]
Can be partially offset if the additional business is (expected) to be profitable, as higher earnings can be retained and boost available capital	[½]
In an extreme case, the regulator place additional capital loading due to the uncertainty of future exposures	[½]
May impact level of diversification between classes of business	[½]
Operational risk may increase due to higher volumes of business and claims needing to be handled	[½]

(d)

Reinsurance:

The cover may not be sufficient and the contracts may need to be renegotiated additional reinsurance may need to be purchased	[½]
There will typically be a premium adjustment at the end of the cover year to recognise higher volumes	[½]
Inaccurate estimate of the volumes may lead to increase in rates for future contracts	[½]
Other reasonable comment ( <i>½ mark per point, up to 4 marks for individual section, maximum of 10</i> )	

[Marks available 12, maximum 10]

**[Total 23]**

*Candidates generally scored well on this question as a whole.*

*Well prepared candidates were able to generate a wide range of points for part (iv) across each of the reserving, pricing, capital modelling and reinsurance areas, scoring highly as a consequence.*

**Q4**

(i)

It is a means by which an insurance company obtains from other insurance companies (reinsurers) protection against the risk of losses [1]

There are different types of reinsurance:

Excess of loss [½]

Surplus [½]

Quota Share [½]

Stop loss [½]

Retrocession is a term used for reinsurance of another company's reinsurance business [½]

[Marks available 3½, maximum 2]

(ii)

Quota Share advantages:

It spreads risk, enabling insurer to write larger portfolios of risks [½]

Encourage reciprocal business [½]

It directly improves the solvency ratio and helps the insurer to satisfy the statutory solvency requirement [½]

It is administratively simple [½]

The commission may help with cash flow [½]

Quota Share disadvantages:

It cedes the same proportion of low-variance and high-variance risks [½]

It cedes the same proportion of each risk, irrespective of size [½]

It passes a share of any profit to the reinsurer [½]

Excess of Loss advantages:

It allows an insurer to accept risks that could lead to large claims [½]

It reduces the risk of insolvency from a catastrophe, a large claim or an aggregation of claims [½]

It stabilises the technical results of the insurer by reducing claims fluctuations [½]

It helps make more efficient use of the capital by reducing the variance of the claim payments [½]

Excess of Loss disadvantages:

May be hard for insurer and reinsurer to price [½]

The insurer pays a premium to the reinsurer that in the long run, if priced accurately will be greater than the expected recoveries under the treaty [½]

[Marks available 7, maximum 4]

(iii)

Generic comments:

Price offered by reinsurers was too high [½]

Unacceptable terms and conditions [½]

Insurance ABC is new and there is limited trust from reinsurers [½]

Insurance ABC may have very limited loss and exposure data available [½]

Other valid points [½]

Specific comments:

Lack of capacity in the market as placing towards the end of the year (after August)

after 1/1 and 1/7 renewals when most RI contracts are written	[1]
Insurance ABC may not have a credit rating yet or may have poor credit rating	[1]
Insurance ABC might write unwanted, high risk exposures like PI in US or Property in Asia (due to CAT exposures)	[1]
Very high ceded percentage (80%) may seem unusual for regular reinsurers	[1]
Terms of the sliding-scale ceding commission may be seen as unusual	[1]
Brokerage fee being paid by ABC may be seen as non-standard	[1]
Other valid points	[1]
	[Marks available 9½, maximum 5]

(iv)

Calculate XoL contract:

$$\text{XoL premium} = \text{£9m} \times 20\% = \text{£1.8m} \quad [1/2]$$

Loss 1:

$$\text{RI recovery} = \text{£11.5m (gross loss)} - \text{£1m (excess)} = \text{£10.5m, but cover only to £9m} \quad [1/2]$$

$$\text{Reinstatement} = 50\% * \text{XoL premium} = 50\% * \text{£1.8m} = \text{£0.9m} \quad [1/2]$$

Loss 2: no recoveries on XoL as this is PI claim [1/2]

$$\text{Loss 3: RI recovery} = \text{£2m (gross loss)} - \text{£1m (excess)} = \text{£1m} \quad [1/2]$$

$$\text{Claims net of XoL} = \text{£32.5m (gross claims)} - \text{£9m (XoL recovery from claim 1)} - \text{£1m (XoL recovery from claim 3)} = \text{£22.5m} \quad [1/2]$$

$$\text{Premium net of XoL} = \text{£43.5m (gross premium)} - \text{£1.8m (XoL base premium)} - \text{£0.9m (XoL reinstatement)} = \text{£40.8m} \quad [1/2]$$

*(Give full credit to candidates assumes that premiums are earned uniformly over the year)*

$$\text{Loss ratio net of XoL} = \text{£22.5m} / \text{£40.8m} = 55.1\% \quad [1/2]$$

Calculate QS contract:

$$\text{Quota share percentage} = 80\% \text{ (intended contract)} * 75\% \text{ (amount placed)} = 60\% \quad [1/2]$$

$$\text{Claims net of QS} = \text{£22.5m (claims net of XoL)} * (1 - 60\%) \text{ (QS percentage)} = \text{£9m} \quad [1/2]$$

$$\text{Premium net of QS} = \text{£40.8m (premium net of XoL)} * (1 - 60\%) = \text{£16.320m} \quad [1/2]$$

$$\text{Ceding commission \%} = 20\% \text{ (min)} + (60\% - 55.1\%) \text{ (Loss ratio net of XoL)} = 24.9\% \quad [1]$$

Ceding commission % needs to be capped at 30%

$$\text{Ceding commission} = 24.9\% * (\text{£40.8m} * 60\%) \text{ (ceded premium)} = \text{£6.084m} \quad [1/2]$$

$$\text{Brokerage} = 2.5\% * (\text{£40.8m} * 60\%) \text{ (ceded premium)} = \text{£0.612m} \quad [1/2]$$

Net Profit:

Assume an expense ratio of 20% of gross premium [1]

$$\text{Expenses} = 20\% * \text{£43.5m} = \text{£8.7m (candidate's assumption)} \quad [1/2]$$

$$\text{Net Profit} = \text{£16.320m (net premium)} - \text{£9m (net claims)} + \text{£6.084m (ceding commission)} - \text{£0.612m (brokerage)} - \text{£8.7m (expenses)} = \text{£4.092m} \quad [1]$$

*(Award ½ mark for listing an assumption but capped to a maximum of 1 mark - e.g. assume all claims / losses are valid, timing of the claim payments, etc.)* [1]

[Marks available 11, maximum 8]

(v)

The net loss ratio is 55.1% compared to gross loss ratio of 74.7% [1/2]

The XoL reinsurance contract helped improve the result significantly [1/2]

However, the cover was not sufficient for loss 1, and Insurance XYZ had to pay more than just the excess for the loss after the full XoL cover was exhausted	[1]
Also, the PI loss was not covered at all	[1]
The ceding commission slide for QS cover does not seem unreasonable, and Insurance XYZ received commission above the minimum	[1]
However, the brokerage commission is usually paid by the reinsurance company	[½]
The ceding commission contributes significantly to the expenses incurred by Insurance XYZ	[1]
[or any other comment connecting the ceding commission to expenses]	[1]
Other reasonable points ( <i>½ mark per point, maximum 1</i> )	
	[Marks available 6½, maximum 3]
	<b>[Total 22]</b>

*Many candidates struggled with this question, in particular the calculation part of the question, part (iv), which was worth the highest number of marks for this question. Many candidates failed to score more than a couple of marks for this part.*

*Candidates should practice a wide range of calculation questions in preparation for this subject. Well prepared candidates should be comfortable with performing the different types of calculation questions that can arise for subject SA3 and should expect to score highly in calculation type questions.*

## Q5

(i)

There might have been failures/insolvencies in the market	[½]
With more capital there is a reduced chance of insolvency	[½]
Less need for industry levies	[½]
Reduces likelihood of inadequate reserves	[½]
Should have positive impact on credit ratings	[½]
May make general insurance industry more secure	[½]
Encourage people to buy insurance as it is more secure	[½]
Companies may give greater consideration to reserve uncertainty	[½]
Increase Management awareness of reserve uncertainty	[½]
May assist with estimating capital requirements	[½]
Encourages more appropriate use of reinsurance	[½]
Less reinsurance needed and thus less profits ceded	[½]
Better match to risk	[½]
Best practice globally/improve market's reputation internationally	[½]
May have positive impact on share price	[½]
Other reasonable points	[½]

[Marks available 7½, maximum 4]

(ii)

Percentile-based approach uses a distribution of losses and is a more sophisticated approach to estimating reserve adequacy, so requirement to calculate and disclose percentile promotes this best practice	[1]
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Greater clarity/transparency to policyholders/shareholders/etc. around security of insurers	[1]
Enables better comparison between insurers/relative strength of balance sheets	[1]
Focuses Management re consideration as to extent of reserve adequacy	[1]
Other valid points	[1]
	[Marks available 5, maximum 4]

(iii)

May not have sufficient data for stochastic approach	[½]
May not have expertise for stochastic approach	[½]
Additional costs associated with calculation, may need to hire expertise	[½]
May feel already have capital in place to protect policyholders	[½]
May feed through into higher insurance premiums which may reduce volumes	[½]
May be difficult to explain the calculations to Management	[½]
May tie up assets that could be better used elsewhere, e.g. for new product	[½]
Companies may appear less solvent	[½]
Results may look worse than expected at the point of change	[½]
May be difficult to compare insurers as different approaches to arriving at a reserve distribution may have been used	[½]
Deciding which percentile to reserve at	[½]
Potential to be out of line with market	[½]
Leads to holding higher/lower reserves than competitors	[½]
Out of line with market standard e.g. Solvency II	[½]
Tax payments will be deferred	[½]
Other valid points	[½]
	[Marks available 7½, maximum 5]

(iv)

Level of uncertainty / volatility associated with the Company's reserves	[½]
Distribution of reserves	[½]
Length of the tail	[½]
Impact of reinsurance	[½]
What competitors are doing	[½]
Regulator's views	[½]
Impact on credit rating	[½]
Company's Risk appetite statement	[½]
Impact on capital requirements	[½]
Availability of assets/Ability to raise capital	[½]
Level of available capital	[½]
Tolerance for reserve deterioration	[½]
Opportunity cost of capital	[½]
Other business opportunities	[½]
Impact on reinsurance	[½]
Other valid points ( <i>½ mark per discussion point, ½ mark per example</i> )	
	[Marks available 7½, maximum 5]

(v)

Merits:	
Higher levels of reserves to generally result in higher levels of security for policyholders	[1]

- It may be appropriate for some insurers (e.g. with volatile lines of business) to book reserves at such high percentiles [1]  
May increase confidence in insurance industry which may increase volumes [1]  
May make it easier to compare insurers, if all booking at such a high level [1]

Issues:

- May not be appropriate for certain lines of business with lower levels of volatility [1]  
Some insurers may become unprofitable / insolvent [1]  
May tie up capital which could be used elsewhere, e.g. developing new innovative products for policyholders [1]  
May reduce number of new entrants/competition into the market, acting as a barrier for entry [1]  
Will significantly defer the tax income from insurance sector, as all potential profits will be tied up in this prudency margin [1]  
Creates a potential overlap with any capital / solvency regulations in the country, as those are usually designed to protect against extreme scenarios [1]  
Assets tied up which could have been used to produce higher returns, with this opportunity cost perhaps passed to policyholders in the form of higher premiums [1]  
Other valid points [1]

[Marks available 11, maximum 6]

**[Total 24]**

*Candidates generally scored well on this question, for what was a reasonably straightforward reserving-based question.*

*For candidates who struggled with time management during the paper, they may have felt rushed on this last question, and hence not been able to devote sufficient time to generate enough scoring points.*

*Well prepared candidates should be able to manage their time such that they have a sufficient amount of time to devote to each question.*

**[Paper Total 100]**

## **END OF EXAMINERS' REPORT**



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