

# **EXAMINERS' REPORT**

*November 2015 examinations*

## **Subject F103 — *General Insurance* Fellowship Principles**

### **INTRODUCTION**

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

## QUESTION 1

### i. Areas in which the reinsurer might assist:

- Product design, including advising on appropriate terms and conditions, taking into account details of other products in the market.
- Pricing – the reinsurer will be able to provide past claims experience data to assist in setting pricing assumptions.
- Provide or assist with the development of models for pricing, catastrophe modelling, etc.
- Assist with the setting of reserving assumptions, as the insurer will not have this information initially.
- Advice on setting initial underwriting policies.
- Advice on establishing claims controls.
- Refining policy wording to avoid ambiguities which the insurer may not have been aware of.
- Development of a suitable administration system, e.g. for holding policy and claims information, by advising on what may be required.
- Marketing strategy – distribution channels and selecting target markets.

### ii. Relative experience of surplus reinsurers:

- The overall experience of the surplus reinsurers would not be expected to be the same for the reasons outlined below.
- Not all of the reinsured policies will exceed the capacity on the first surplus treaty and so will not be placed on the second, and thus the reinsurers will not share the same portfolio of risks.
- Of those policies that are reinsured by both, different proportions of each could be reinsured.
- Where policies are reinsured by both surplus reinsurers their claims experience will, proportionally, be the same (although there would still be differences in respect of expenses and investment returns).

### iii. QS Recovery from A = $20\% \times R140m = \$28m$

On policies 1-3 the first 20% of the risk is taken by Company A, with the balance being split as follows:

#### Policy 1:

EML after A =  $0.8 \times 50 = \$40m$

This is split between PropSure, B & C in the ratio 25:15:0

#### Policy 2:

EML after A =  $0.8 \times 250 = \$200m$

This is split between PropSure, B & C in the proportion 25:125:50

Policy 3:

The EML after A is split between PropSure, B & C in the ratio 1:5:10 (as PropSure wishes to retain as little of this risk as possible and thus needs to use all available lines of surplus reinsurance).

Hence the claim recoveries from B & C on policies 1-3 are as follows:

Policy	Recovery from B	Recovery from C
1	$5 \times 80\% \times (15/40) = \$1.5\text{m}$	0
2	$20 \times 80\% \times (125/200) = \$10\text{m}$	$20 \times 80\% \times (50/200) = \$4\text{m}$
3	$40 \times 80\% \times (5/16) = \$10\text{m}$	$40 \times 80\% \times (10/16) = \$20\text{m}$

*Part (i) was bookwork and was generally well answered.*

*Part (ii) was poorly answered by most candidates. Most candidates demonstrated that they did not have a clear understanding of surplus reinsurance by answering this question as though the two surplus reinsurers were providing layers of excess of loss cover. A few candidates failed to even read the question carefully enough, and discussed the experience of a surplus reinsurer relative to that of the ceding company.*

*Part (iii) was not a particularly difficult calculation question and was answered well by the better prepared candidates. There were, however, a significant number of candidates who displayed very little knowledge of how such calculations should be carried out. Some candidates also carelessly omitted currency and units from their answers.*

## QUESTION 2

Differences resulting from the types of business concerned include:

- The insurer selling Personal household (PH) should have much larger volumes and better data quality than the insurer selling professional indemnity (PI) business.
- PH is a large volume business with many smaller premium policies written, which means that there will be a much larger volume of information.
- Also, since the business is written through direct channels, the company will have access to all the detailed policy and rating factor information.
- PH should thus also be able to identify potential data errors through built in error checking validation when data are captured.
- Direct business is also transacted through the internet, which enables the company to tailor make the input they would require and have the user enter this information at the point of underwriting.
- The PI business is sold mainly through brokers and the company might have multiple brokers writing this business onto its books, which could lead to less consistency with the data.
- If experience rating is used, the PH business should have access to better quality claims data owing to the higher volume of business and shorter tail.

- The average premium size and policy limit is generally larger, and fewer policies will be written, and may be subject to more complex or facultative reinsurance for larger limit business.

The quality of the data will be determined by the different broker systems, and may come in different forms. The broker might not capture or might not share the underlying rating factor information, but even if this is provided, it is difficult to always validate the data quality.

In addition to the above, two companies writing similar business will also have different data quality depending on the age, design and quality of each company's system.

*The question was generally answered well by the better prepared candidates. Often, however, too few points were given.*

### QUESTION 3

i. Good rating factors will satisfy the following requirements:

- Define the risk clearly. In quantitative terms, this means that the rating factor should be correlated with the expected claims.
- Do not correlate too closely with other rating factors. This ensures that they add value to the underwriting process. We should choose each additional rating factor to remove as much of the residual heterogeneity as possible.
- Are practical to obtain and record. For example, we would not ask policyholders for their claims history over their entire lifetime as they may be unable to recall all the information.
- Are objective. This avoids disputes between the insurer and policyholder over the truth of the information provided.
- Are verifiable and preferably factual. This helps to prevent fraudulent behaviour.
- Are acceptable to the policyholder. Otherwise, the insurer may lose potential customers or renewals. For example, requiring genetic test results to be disclosed might be unacceptable to policyholders.
- Are not open to manipulation. For example, we would not ask policyholders how many claims they expected to make!
- Are acceptable to the market. For example, brokers may object to a proposed new rating factor.
- Are allowed by the regulator. For example, regulation may only allow a limited number of rating factors.

ii. Before conducting an analysis using a GLM it is appropriate to firstly check and have an understanding of the raw data that will be used in the model.

The raw data need to be checked for completeness, e.g. raw claims data reconciles with accounting information and all rating factors are included. Furthermore, there is also a need to check that the data have not been corrupted in the cleaning process, otherwise the analysis will be useless. Once this is done, it is also used to compare the raw data with that used in a previous review to ensure that the most recent and appropriate data are being used. This will also highlight any new factors introduced or factors that were excluded previously.

Checks on the credibility of data in cells and homogeneity within cells should also be conducted. The rating factors chosen should have as much explanatory power as possible and remove the heterogeneity within each risk group. In selecting the rating factors to be used, we usually do an analysis of variance (ANOVA) exercise. This ANOVA can be a one-way analysis, two-way analysis or multivariate analysis. In the case of one-way ANOVA, we investigate the amount of variability explained by each factor without taking into consideration the correlation between factors.

We may find that when we split policyholders into different age groups, for example, the variability of claims experience within each age group is small relative to the variability in the overall portfolio of risks. Hence the factor “age” helps to “explain” the variability because, after grouping the policyholders by age, there is little residual variability left within the groups.

In a two-way analysis of variance, we investigate each factor and the correlations between any two of the factors. This can explain the variability better than a one-way analysis. For example, the one-way analysis may show that the size of a household claim is highly related to both the number of bedrooms and the value of the contents. A two-way analysis may reveal that these two factors are in fact highly correlated, so that only one should be included in the pricing factors. It also helps in identifying the interaction effect between factors and can reveal the exposure and claim numbers for various combinations of levels from a pair of factors.

We need to achieve a balance between the number of rating factors and the homogeneity of the risks. We should choose each additional rating factor to remove as much of the residual heterogeneity as possible. If the factors do not sufficiently distinguish between different levels of risks, insurers are likely to attract the underpriced risks and lose the over-priced ones. However, if too many factors are chosen, insurers may experience difficulty due to high administrative costs and resistance of the market and brokers.

Having a good understanding of the underlying data will help when deciding on the appropriate balance of the number of rating factors to include into the analysis. A correlation analysis will explain why the multivariate results for a particular factor differ from the univariate results. It also indicates which factors may be affected by the removal or inclusion of any other factor in the generalized linear model. Cramer’s V statistic can be used to understand the correlation between two variables.

We should also assess the validity of other risk groupings by stochastic analyses to test for differential results. We should adjust the theory for practicalities, including the availability of information and the applicability of systems. If we can’t get the data in a reliable easy-to-use format, we may need to compromise our calculations.

There is little value in having a rating factor that is fully correlated with another rating factor.

Finally, a distribution analysis for claim amounts could be analyzed for various segments of the data. This is useful for identifying presence of large losses which may need to be addressed before fitting a generalized linear model and also helps to better understand the statistical distribution of the claim amounts. A distributional analysis may also reveal unusual patterns that may need to be further investigated.

*The question was generally answered well by the better prepared candidates. Often, however, too few points were given.*

## QUESTION 4

i. The claims characteristics refer to the ways in which, and speed with which, claims originate, are notified, are settled and paid and are, on occasion, reopened. Claim frequency and amount, as well as potential accumulations, are also relevant.

ii. Motor:

- High expected frequency, with many accidents for small claim amounts.
- There may be variability in claim amounts due to aggregations, for example a hail storm. Full accident write-offs or theft of high value vehicles may result in large claims, although not as large as the largest buildings insurance claims.

Household contents:

- Lower frequency of claims than motor, but may be higher than buildings due to frequency of theft.
- There may be little variability in claim amounts, having limited scope for very large claims being personal lines business, except maybe for specie/art.
- There is some risk of aggregation of claims due to catastrophe **such as** hail/earthquake.

Household buildings:

- Low frequency of claims, although geysers – related claims (which fall under buildings cover) are common. Some buildings damage as a result of break-ins, so the frequency of such claims will be related to theft frequency.
- High variability in the size of losses, as there will be many small claims with the possibility of very large claim amounts these could be caused by one off large losses such as subsidence, conflagration (fire) or earthquake.
- Catastrophes such as earthquake may result in large losses from single events (geographical accumulations).

iii. Loss components to be modelled separately:

Attritional:

- Attritional loss can be modelled as an aggregate distribution using a Lognormal/similar.
- Due to the high number of losses classed as attritional, the stability of the distribution means that an aggregate distribution is appropriate.
- The loss distribution can also be linked to premium income (where all else equal, high growth results in a higher absolute loss).

Large:

- Large losses are best modelled using a frequency-severity approach. This allows more details of the available information to be used, especially important where there is scarce data.
- The additional detail is worth the effort due to the larger values and will also enable reinsurance limits to be tested more adequately.
- Frequency can be modelled using a Poisson/Negative Binomial.
- Severity can be modelled using a Pareto/LogNormal or other heavy-tailed distribution.
- Need to decide on a threshold per class of business above which large losses will be modelled, to not allow large losses to unduly affect attritional claims distributions.
- Large losses will be important for household buildings and motor (1<sup>st</sup> and 3<sup>rd</sup> party).

Catastrophe:

- Catastrophe losses will be modelled using different approaches depending on the peril.
- Earthquake – may use a catastrophe model which applies losses to the exposure base.
- Factors which will affect the size of the loss include event magnitude and location.
- Other perils such as hail/flood etc. may be modelled using a frequency severity approach.
- This could be based on historic losses experienced by the insurer/industry, or purely a theoretical forecast model.
- Motor may be more affected by hail/flood damage than earthquake, whereas buildings are most affected by earthquake.

iv. Allowance for correlations:

- Can correlate lines of business in attritional losses and large loss number/size of losses. This depends very much on historic experience.
- Catastrophe model will automatically apply same scenario, so there is some correlation built in.
- Underwriting cycles may introduce correlation between the lines of business, as well as dependency as a result of economic conditions.
- Stronger correlation between buildings and contents than the other lines of business, as contents are normally in the insured building.
- Diversification between lines will serve to reduce the overall capital requirements.

*Part (i) was answered well by most candidates.*

*In part (ii), most candidates failed to compare the characteristics of the claims frequency and severity between the classes. Motor claims have significant scope for variability which was not identified by most candidates. Similarly with buildings cover, geyser claims will be for small amounts but there is the potential for much larger losses. Accumulations are also relevant to the extent that they can cause an increase in claims frequency.*

*Parts (iii) and (iv) were poorly answered. Many candidates discussed general issues surrounding capital modelling and not specifically related to modelling the frequency and severity, which would have been a clear indicator that attritional, large and catastrophe claims were the main issue. Part (iv) required some wider thinking about how the lines may be expected to interact.*

## QUESTION 5

i. Accounting concepts:

<b>Concept</b>	<b>Explanation</b>
Going concern	The enterprise will continue in operational existence for the foreseeable future.
Accruals basis	Revenue and costs are recognised as they are earned or incurred, not as money is received or paid.
Consistency	There is consistency of accounting treatment of like items within each accounting period and from one period to the next.
Prudence and realisation	Revenue and profits are not anticipated (that is, must be realised), and provision is made for all known liabilities, whether the amount of these is known with certainty or is a best estimate in the light of the information available.
Separate valuation of assets and liabilities	When determining the aggregate amount of any item the enterprise must determine separately the amount of each individual asset or liability that makes up that item.

ii. Underwriting profit = earned premiums – claims incurred – expenses (incl. commission)  
+ DAC increase

Insurance profit = underwriting profit + investment return (on insurance funds)

Profit after tax = Insurance profit + investment return (on SH funds) – tax

Retained profit = Profit after tax – dividends

	DG	Co. A
	R mill	R mill
Underwriting profit	22	-216
Insurance profit	57	234
Profit after tax	102	249
Retained profit	77	144

iii. Claim ratio = Claims incurred / premiums earned

Profit margin = Insurance profit / premiums earned

Return on SH Funds (held at 31.12.2013) = Profit after tax / (SH funds at 31.12.2014 – retained profit from P&L)

Solvency ratio = Shareholder funds at 31.12.2014 / written premiums

	DG	Co. A
	R mill	R mill
Claim ratio	73.9%	88.7%
Profit margin	5.0%	2.9%
Return on SH funds (held at 31.12.2013)	12.8%	13.0%
Solvency ratio	73.1%	28.5%

iv. The main limitations include:

- Only one year's worth of financial information has been provided. In order to identify important trends, several years of data are required. One year's data could reflect significant random fluctuation in experience (claims or investment).
- The effective ROC to DG depends on the acquisition price – a large premium to NAV would reduce the calculated ROC for shareholders of DG.
- There is no indication of the level of prudence and other accounting conventions used in the financials e.g. the extent of margins in the reserves.
- There is no indication of the level of risk-based capital requirements. If Co A does not meet either the statutory requirements or economic capital based on DG's standards, DG will need to allocate additional capital towards the acquisition (unless this was reflected in the purchase price).
- There is no information on how the purchase will be funded by DG – if debt is used this will substantially increase risk to existing shareholders.
- The decision cannot rely solely on financial information, and DG would need to consider a number of other issues. For example:
  - Synergies obtained in various functions;
  - The diversification benefit of exposure to EL;
  - Given that the target Co A is substantially larger than DG, DG's business mix may change substantially and lead to unwanted exposures and concentrations (including EL).
  - Co A's brand, expertise and new business growth opportunities;
  - Etc.

*This question was generally well answered.*

*Part (i) was straightforward bookwork, however most candidates did not know this well enough to score full marks.*

*Part (ii) was answered reasonably well. Most candidates got the wrong sign on the DAC change, so got no credit for the underwriting result, however if the methodology was correct did get credit for subsequent calculations, including those relating to part (iii).*

*For part (iv) there was a range of answers from those with no valid points to those that scored nearly full marks. Surprisingly, almost no-one considered the issue of the purchase price for the target company.*

## **QUESTION 6**

i. Possible reasons for the differences:

- Data:
  - There could be a data error in the data used by your analyst or the company.
  - The company and your analyst could have used different data sets e.g. 10-year or 15-year triangles.
  - The company or your analyst could have used additional data, e.g. historical large loss information, market trends.
  - Different development factors may be excluded from the chain ladder projections.
  - Different loss ratios may be used in the BF method.
- Methodology:
  - The company may have changed its methodology from last year.
  - The company could, for example, be using paid data for some accident years instead of incurred data.
  - The company could have fitted a curve to smooth the development factors.
  - The company could have adjusted the development factors for any changes in the business, e.g. changes to the terms and conditions.
  - Different curves may be fitted to the tail of the claims development pattern.
- Underwriting and claims staff:
  - The company may be using additional information from the underwriting or claims staff that was not used by your analyst.
  - This may have impacted the loss ratios used by the company or the methodology used.
- Genuine differences of opinion:
  - The company and your analyst could have different views about how experience will turn out. Especially where subjective opinion is needed.
- Other reasons:
  - The company may have been pressured by management to produce lower reserves.
  - The company may have made different allowances for reinsurance.
  - The company may have dealt with large losses differently.
  - There might be a calculation error in the company's or consultant's estimates.
  - Change in periodicity of development e.g. using monthly instead of annual claims development triangles.

➤ Different treatment of claims handling expenses.

ii. Reserve clean-up exercise:

- This will not have any impact on the IBNR if fewer than 7 years of claims cohorts are used.
- This will tend to lower the incurred development factors projecting lower ultimates, and will project similar releases in future periods. The IBNR should thus reduce if incurred data is used in the chain ladder method.
- The issue is the distorting impact on the chain ladder development factors and the implicit assumption that this clean up exercise will repeat itself.
- It will have minimal impact if claims are fully developed after 7 years.
- It may have an effect on historical loss ratios used to estimate the prior loss ratios in the BF method.
- There should not be an impact on the pure IBNR as this does not affect the cost of unreported claims.

Increased taxi volume:

- Since this increase is in the latest year it will only affect the most recent accident year.
- Based on the chain ladder the impact on the IBNR will not be immediately apparent as the increase occurred in the most recent accident year and so will not impact the development factors.
- However, the company may have adjusted the loss ratio used in the BF method and so the IBNR should increase due to the longer delay of taxi business
- The issue arises due to the change in mix of business i.e. more taxi business and the different run-off taxi claims.
- The higher proportion of taxi business should increase the IBNR though this increase will not happen immediately and so the chain ladder will tend to underestimate IBNR.
- The longer reporting delay of taxi drivers will increase the IBNR.
- Insufficient data to estimate IBNR for taxi drivers.
- IBNR may be impacted by different frequency and severity assumptions for taxi drivers compared to individuals.

Deterioration in the rand:

- The increased cost of imported parts will drive up the cost of claims and so should increase the IBNR.
- As this is a recent deterioration the implicit chain ladder inflation assumption may be too low and underestimate the IBNR.
- The allowance in the prior loss ratio is subjective and prone to error.
- Volatility in exchange rate may lead to more volatile prices which will make it more challenging to allow for inflation when estimating an IBNR.
- Only an adjustment in the most recent year has been made, the prior years have been ignored.

Increase in motor premium rates in the last year:

- This should not directly impact the IBNR though may have a second order affect.
- Increase in motor rates could have caused a change in the mix of business i.e. the assumption that the mix of business is constant made in the chain ladder may not hold.
- The increase will affect the loss ratio and so may introduce uncertainty as to the validity of the loss ratio used in the BF method and the corresponding estimated IBNR.
- Overstate IBNR if previous year's loss ratio (which will be higher based on a lower premium rate) is used.
- Historical hail event may distort development factors and impact IBNR

New claims administration system:

Interpreting delay to settlement as "settlement delay":

- New administration system does not affect the reporting delay and so should not impact the pure IBNR which depends only on the reporting delay.
- An increase in the rate of settlement of claims will increase the rate at which case estimates are transferred to paid figures within the ultimate claim figure.
- The impact will depend on the level of prudence in the case estimates.
- The chain ladder assumption that historical rates of claims settlement hold in future is not met.

Interpreting delay to settlement as "delay from incurred date to settlement":

- This will increase the latest diagonal of the incurred claims triangle which will increase the ultimate and thus the IBNR.
- The higher IBNR will result from an increase in the incurred development factors and the higher incurred amounts to which these development factors are being applied to.
- The chain ladder assumption that historical rates of claims development hold in future is not met.

Both interpretations:

- Shorter delay between incurred date and settlement date will reduce the impact of inflation leading to a lower IBNR.
- There will be an impact on the IBNER component of the IBNR given the reduction in case estimates.

iii. Reasons for correlation include:

- The new claims administration system is likely to affect most classes of business as the same administration system is used to settle the company's claims.
- The deteriorating exchange rate could affect other classes which use imported parts.
- A recession is likely to cause increase in theft of property and motor claims.
- An increase in inflation is likely to affect multiple lines of business.

- Reporting delays could change across classes, e.g. if there is a communication to policyholder indicating that they need to report claims as quickly as possible.
- A catastrophe may affect multiple classes at the same time e.g. a flood may affect property and motor claims.
- Different types of insurance, e.g. motor and household, are sold as part of a package by the same insurer.
- Insurer may use similar methodologies.
- Reinsurance arrangements may be similar between different classes of business.

*Part (i) required candidates to provide a broad range of factors which may cause IBNR estimates to differ. Some candidates' answers had too narrow a focus to score well. Some candidates gave reasons that were highlighted in the discussion with the company, which did not score marks as the question asked for "other" reasons.*

*Part (ii) required candidates to assess the impact on the IBNR (principally by thinking how each point would affect the IBNR calculation given the selected methodology) and identify potential issues. Candidates who addressed both of these points generally scored well. The question asked candidates to identify issues. Some candidates gave recommendations which did not score marks, for example to consider taxi drivers and individuals separately. Some candidates seemed to believe that IBNR included reserves for reported claims which is incorrect. IBNR generally includes IBNER an adjustment to case estimates but not the case estimates themselves.*

*A number of candidates assumed that there would be IBNR for hail damage reported in the previous year. IBNR claims for hail damage should have all been reported as at the date of the annual review. Reasonable comments on the fact that IBNR may need to be held for hail storms in the current year, and the difficulty in quantifying this, were awarded marks.*

*Part (iii) was poorly answered, which is surprising given that it was largely a book work question. As the questions asked candidates to "outline briefly" a broad range of points was necessary in order to score well.*

## **QUESTION 7**

i. Key risks and insurance suggestions:

- Damage to or theft of trucks.
  - Motor insurance. Possibly fleet insurance, although number of vehicles low at this stage.
- Damage caused to 3<sup>rd</sup> parties resulting from the driving of trucks.
  - Motor 3<sup>rd</sup> party liability insurance (included with comprehensive motor insurance).
- Damage to stock (raw or final product) while in transit.
  - Moveable property insurance (Goods in transit insurance).

- Damage to workshop from perils such as lightning, hail or fire.
    - Property building insurance.
  - Damage to workshop equipment and furniture whilst in workshop e.g. flood, fire or theft.
    - Property contents insurance.
  - The above two points also apply to sales stores.
  - Personal accident to employees, especially those working in the workshop with modern tools.
    - Employers' liability cover.
  - Machinery breakdown, in case modern equipment is faulty.
    - Engineering cover.
  - Building or machinery is damaged and unable to produce goods.
    - Business interruption cover, most likely bundled with a buildings policy or engineering policy if the cause of business interruption is broken machinery.
  - Faulty furniture causing harm to the users of the furniture.
    - Product liability insurance.
  - Harm caused to customers at stores or workshop
    - Public liability insurance.
- ii. An “adjustment premium” is an additional premium payable at the end of a period of cover. This may result from the use of retrospective experience rating or from a situation where the exposure cannot be adequately determined at the start of the period of cover.

In this scenario, the stock in stores and the workshop will only be known at the end of each month. An adjustment premium will thus be needed for contents cover once the average level of contents is known. An adjustment premium may also be required depending on the level of stock transported during the month.

- iii. Points to include in response to discount request:

The spread of business around the country will justify a premium discount if the chance of all events happening at the same time is lower than the chance of each risk event occurring.

This will happen to a certain degree, but accumulations of risk still exist.

Where spreading/diversification will reduce risk:

- It is unlikely that stock at different stores around the country will be affected at the same time,
- It is unlikely that different trucks will be affected at the same time while on the road.

However, spreading will not be of benefit in the following situations:

- Concentration of items at workshop (where most business is centralised), including machinery and stock. If an event such as theft or fire occurs, it is likely

that many items will be stolen or damaged in the same incident. Furthermore, any business interruption at the workshop will affect the whole business as stores will not get supplies.

- Concentration of vehicles if they are parked in the same place overnight. Similar to above, a hail storm, fire or theft could affect a number of vehicles simultaneously.
- Greater distances travelled by trucks will result in greater exposure to risk as more time is spent on the roads.

But while there are still accumulations present in the portfolio, it is more diversified than a single policy on a single property (for the same total value) for example. Thus, some level of discount is appropriate.

However, the insurer should consider to what extent it has taken account of diversification already. One can argue that in a diversified book, all policies benefit from diversification through pooling, though individually they are not diversified policies. If the insurer has a diversified book, then a discount will be less appropriate.

iv. Ways the company could reduce insurance premium:

- Increasing the excess. The company would then pay a higher amount on each claim and make fewer claims, i.e. increasing the level of self-insurance.
- Exclude certain items from cover meaning that it would not be paid out should a particular peril occur. However, the company should be careful that it does not open itself up to risks it cannot withstand.
- Reduce risk exposure by, for example
  - Increasing the security for the building, including alarm and armed response.
  - Installing fire sensors and sprinkler system as wood is highly combustible and a fire poses a large threat.
  - Improving safety procedures to reduce the likelihood of employee liability claims.

*Part (i) was generally well answered, with candidates identifying a host of risks and suitable insurance products. Better candidates were more specific with their answers, e.g. stating commercial contents cover, rather than just stating property insurance, and making it clear how the risk relates to the carpentry business. A few candidates were too brief with their answers, e.g. "theft, property insurance".*

*Part (ii) was a definition straight from the glossary. A number of candidates did not explain the reason for adjustment premiums adequately. A common mistake was stating that adjustment premiums completely remove risk for the insurer, demonstrating a lack of understanding.*

*In part (iii) only a few candidates were able to clearly explain the likely logic behind the policyholder's request. Better candidates outlined a range of points and gave examples of different aspects of the business that would benefit more or less from diversification. Some candidates suggested strongly that a premium reduction was or was not appropriate, when*

*there actually was insufficient information to draw a firm conclusion. A few candidates made the point that insurance relies on pooling, so it is possible that diversification (with other policies) was already taken into account.*

*Part (iv) was straight-forward with most candidates performing well. Better candidates balanced their reasons with potential pitfalls to beware of, for example when opting to exclude cover for certain items.*

## **END OF EXAMINERS' REPORT**