

# **EXAMINERS' REPORT**

*November 2016 examinations*

**Subject F203 — *General Insurance*  
Specialist Applications**

## QUESTION 1

- (i) *Examiners' notes: This was a fairly straightforward knowledge question. Better candidates mentioned the differences in characteristics between products and made their answer relevant to company in question. Overall this question was well answered.*

*The below list shows a list of relevant points that could have been made under each class.*

### **Employer's liability**

- Employer's liability gives rise to bodily injury claims of various sizes, including some very large ones
- Large individual claims can arise where bodily injury is such that cost of medical care is very high e.g. back injuries or employee's salary is high... or employee is young... and therefore loss of future earnings when unable to work is high
- The likelihood of some large claims (e.g. asbestos) will depend upon size of past exposure and trades covered
- South Africa has specific legislation covering employers liability: The Compensation for Occupational Injuries and Diseases Act (COIDA) applies to: all employers; and casual and full-time workers who, as a result of a workplace accident or work-related disease: are injured, disabled, or killed; or become ill during employment
- Occasionally catastrophes can affect this class, although this is less of a feature than for household business (or some other valid comment about relativity to other classes)
- Catastrophes will depend upon trades covered

### **Product Liability**

- Product liability can give rise to property damage and bodily injury claims of various sizes, including some very large ones
- Likelihood will depend upon the products covered, e.g. pharmaceutical products
- Claim size distribution is generally more skew for product liability than for public liability or employer's liability
- Class does lend itself to aggregation of claims and large individual claims (e.g. product recall, drug with severe adverse side effects)
- Class action law suits is also a feature of this class

### **Public liability**

- Public liability gives rise to property damage and bodily injury claims of various sizes, including some very large ones
- Likelihood will depend upon business covered, e.g. major sporting event
- Claim size distribution is generally more skew for public liability than for employer's liability
- Any valid example – e.g. construction bridge collapsing on the highway

### **Professional indemnity**

- Claim sizes generally depends on professions covered within account
- Likelihood of a large claim depends upon policy terms and conditions and generally frequency is more variable than for other classes
- A professional negligence claim against a large firm of accountants may result in a very large claim if a company became insolvent as a result of negligent advice
- Market-wide issues such as pensions misselling claims on professional indemnity for financial advisors, may be considered as catastrophe claims

- (ii) *Examiners' notes: This question was well answered with most candidates listing the reasons to substantiate the adjustment. Better candidates again tailored their answer to the question*

#### Adjusting for the patterns

- If left unadjusted in aggregate data, individual large claims might distort the projection of the OCR
- This is the case if individual large claims have a different claims development pattern than non-large claims and the mix of non-large and large claims varies from year to year (due to random large loss experience i.e. if frequency of large claims is low)
- Leaving large claims in the aggregate data could result in unstable chain ladder development factors and average development factors for each development year might be distorted by unusually high or low large loss experience in recent years and even when the averages are not distorted, applying an average chain ladder development factor might be inappropriate for those years of account with unusually high or low large loss experience.
- Catastrophes can cause a similar problem to individual large claims
- Although the various individual claims arising from a catastrophe may develop at a similar speed to non-catastrophe claims they may bias the average date of occurrence
- E.g. class action claim occurring at the end of an accident year for public liability account might result in year being less mature than normal claims resulting from class action suit reported very quickly and therefore distort reporting pattern
- Catastrophes may lead to greater claims leakage owing to pressure of making payments this distorting the true payments pattern
- The inflationary effect on a large claim is likely to be different to that on smaller claims

#### Reinsurance calculations

It might be necessary to assess current and future recoveries on excess of loss and catastrophe reinsurances. And this may be easier to do by removing the elements of large claims that are recoverable and projecting them separately

- (iii) *Examiners' notes: Majority of candidates discussed defining large claims at length whilst giving little attention to the extraction methods. Marks were still given for this approach but overall the question did not score well.*

#### Defining large Claims

- Predetermined Threshold (e.g. 90 - 95th percentile) based on own claim distribution
- Use a suitable excess function
- Consider the point just below the XoL threshold
- Fixed amount based on class and underwriters definition of large claims

#### Different extraction approaches include:

1. Do not extract large claims from data
  - + Simple and quick
  - + Fairly robust if large claims experience has been fairly stable from year to year
  - + Ensures reasonable allowance for unreported large claims
  - May result in over/underestimation of IBNR if large loss experience has not been stable
  - Does not recognise trends in large claim experience

2. Extract whole of each large claim and associated history if its incurred claim amount exceeds a certain threshold e.g. R1, 000, 000
  - + Non-large claims triangulation is not distorted by part-history of large claims
  - Will need to restate history of non-large triangulation each year as non-large claims become large
  - So difficult to reconcile with last year's data
  - Difficult to allow for claims currently classified as non-large to become large
  
3. "Once large always large" => even if incurred claims for a loss falls back below threshold, still treat as "large"
  - + Reduces need to amend history of non-large triangulation each year
  - + Recognises the potential for large claims to become non-large and therefore avoids over-estimation of reserves for large losses
  - May distort any large claim average cost analysis
  
4. Only extract claim from the point that it become large i.e. history of claim before large remains in the aggregate data
  - + No need to amend history of non-large triangulation each year
  - May be sharp reductions in claims in non-large triangle from one development year to next
  - Development factors that rely too heavily on such an instance would result in optimistic non-large IBNR estimate
  
5. Apply indexing to the large claim definition e.g. R 1, 000, 000 for losses occurring in 2000, R1 100 000 for losses in 2001 etc.
  - + Ensures that large loss definition maintains real value over time
  - + If there were no indexation, there would be very few claims extracted from early years of account compared to later years and this would add to the reliability of development analysis
  - + Can make definition coincide with excess point for excess of loss reinsurance
  - Indexation introduces complexity
  - Inflation hard to measure
  
6. Only extract the part of each large individual claim that is in excess of the threshold
  - + The non-large aggregate claims history does not then change over time
  - + If threshold is in line with excess point for excess of loss reinsurance, then reinsurance IBNR can be identified more easily
  - Might be harder for systems to extract the excess over the threshold

(iv) *Examiners' notes: This question tested the higher order reserving knowledge of candidates. Overall this question was not well answered with many candidates commenting that Interim Measures are appropriate – although the question clearly stated that there are no differences in underwriting philosophy between on and off platform business and then showing the on-platform business having significantly different run-off patterns to that assumed in interim measures.*

*In Part (b) marks were also given for candidates who mentioned that Credit Guarantee business volume might increase following the downgrade as companies are now looking to rather insure their creditor exposure risk.*

Implicitly by applying the interim measures, Liabsure are allowing for a level of IBNR that is equivalent to the industry calibrated standard at an approximate 75th percentile level.

The interim measures could be used in instances where there is not enough information to perform an actuarial reserving exercise. It could also be used to check the results of the independent exercise against reasonability of what is expected in the market. APN 401 states that where the member is in any doubt regarding the sufficiency of the data used in the valuation, other actuarial guidance should also be considered, the interim measures in this case could be used as other actuarial guidance.

Theoretically the interim measures are not allowing for the movement on the case estimates reserves, i.e. not accounting for the “Not Enough” or “Too much” reported reserves. There could be upward movements on existing reported claims.

A comparison of the percentages when applied to earned premium would be:

Development Period	Independent Implied factors	Interim Measure factors
5	10%	0.19%
4	24%	0.31%
3	36%	0.66%
2	37%	1.65%
1	37%	4.47%
0	89%	12.49%

The above shows that the implied factors are significantly more than that of the interim measures. Given the comment that there are no material differences in the way that claims are handled or business is accepted this shows that the interim measure factors are not a good fit for the underlying business and in my opinion does not constitute a best estimate view.

IFRS reserves require the company to set the reserves at a level which is best estimate and then allows for the company to keep the reserves at a 75th percentile level.

From the information given no allowance for additional margins/75th percentile reserving was done by Liabsure. Although calibrated at the 75th percentile level, the interim measures do not adequately fit the underlying profile and cannot be considered a 75th percentile reserved.

SAM will require reserves to be held at a best estimate. SAM will also require the addition of a risk margin to the results as well an allowance for a ULAE reserve. The interim measures cannot be broken down into these elements and it will be hard to distinguish between best estimate and the additional risk margin.

The risk margin in the SAM formula usually makes use of the simplification of running down the SCR in accordance with the run-off of reserves. The interim measure factors do not adequately show the run-off pattern as observed for the on-platform business and will underestimate the run-off of the SCR and thus the risk margin requirement.

(v) *Examiners' notes: This question again tested the higher order commercial thinking of candidates. Better candidates tailored their report to the facts given in the question and also related their answer to the previous conclusions reached. Overall the question did not score well because of:*

- *The lack of relevant points raised*
- *Poor structuring of the answer (ie not breaking the answer into parts ie off and on platform.*
- *Candidates showing little appreciation of the changing regulatory regime*

#### **Off Platform Business**

- The interim measure factors applied does not sufficiently fit the claim patterns of the underlying business, given no material changes in claims and underwriting philosophy. This causes the reserve to be significantly understated. From the independent patterns derived, the reserve should be in the region of R1, 084m compared to the current reserve of R96.5m.
- This is a significant difference and will also significantly impact the income statement and balance sheet position of the company.
- It would be our recommendation to rather make use of the implied patterns from the on-platform to inform the reserve for the off-platform segments.
- SAM would require that the provision be broken down into best estimate and an explicit risk margin. By using the interim measures this is not possible and we would recommend Liabsure consider alternative methods, i.e. using a similar pattern to On-Platform business in future.

#### **On Platform Business**

- There is a significant difference in the independent estimate and the company's internally calculated provision. (R1 705m vs R1 223m). The majority of the difference is explained by considering the development of the latest years. This stems from the triangle still showing significant developments in the 2010 and 2011 accident years.
  - From our analysis, the possible range of reserves is between –R297m and R6, 357m (By considering the minimum and maximum development factors). By using the Data As-Is, the reserve is R1, 941m and by applying the BF method the result is R1, 470m. The Liabsure result is thus on the lower end of the range.
  - There is no mention of Liabsure holding a tail reserve. Given the classes of business underwritten an additional tail reserve could be considered.
  - In addition no mention is made of holding margins. It is current industry best practice to include a margin in the results.
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- There are various approaches and methodologies to setting margins. For example:
  - 75th percentile, calculated stochastically, has often been used by several insurers historically, based on the previous draft regulatory Financial Condition Reporting guidelines.
  - The SAM draft technical specifications require a margin based on cost of capital.
  - No Actual vs expected run-off table was provided. From this table additional information on the current reserving strength could be obtained. It would be our recommendation that such a table is produced in future and included in the information sent to our firm.

- There is no explicit mention of ULAE in the reserve calculations. Though not a requirement of IFRS (only stating whether you hold or not hold such a reserve), the effects of including such a reserve could be quantified. The classes of business underwritten does show longer patterns, compared to the property classes and a ULAE reserve could be material.
- There is no mention of discounting being applied. Again we would recommend that the effects of discounting be quantified as it could have a material impact on the final results of the reserve. Discounting would currently require the discounted mean terms of reserves being more than 4 years.

Although it was only our scope to consider the gross reserves, the reinsurance structure will materially affect the final net provisions carried in the financial statements.

#### Risks of inadequate reserving

A sharp increase in loss reserves has a direct influence on the income statement, shareholder confidence and stock prices. Because the size of loss reserves affects income and hence taxes and stock prices, it is possible that the loss reserves in financial statements may not be objective estimates of future losses

Establishing inadequate reserves may lead to inadequate future premium income as setting premium rates are dependent on reserve strength. Inadequate premium setting could lead to further adverse selection being experience which will add further pressure on the underwriting performance. Poor underwriting results could lead to an increase in the price of reinsurance which adds further pressure to the profitability of the company.

These losses could lead to a diminished capital base, ultimately causing solvency issues and possible insolvency.

(vi) *Examiners' notes: Only a handful of candidates addressed the professional aspects of the question (as shown in the final paragraph)*

- You have constructed a range of results, showing the minimum and maximum range by considering the aspects of the data provided.
- You have recalculated the reserve based on 2 methods, the Chain ladder method as well as the Bornhuetter-Ferguson method. Both of these are well established actuarial methods in the practice of setting reserves.
- You have compared the results of the interim measures applied to the off-platform business to the factors derived on the on-platform business and have found the results applied to the off platform business unreasonable. You have stated your reasons for this in the actuarial report.
- You have considered the aspects of both the International Financial Reporting Standards (IFRS) as well as the future SAM regulations.
- You have considered the reserves setting practices of Liabsure to that of industry best practice

Where the actuarial work in question is being carried out by a Member in the capacity of reserved role holder (such as the head of actuarial control), it is important for the Member to bear in mind they will remain legally responsible for the work in terms of their statutory duties. This means that they must be content with the opinion that they are providing even where that piece of work is subject to review of other individuals who take a different view to the Member carrying out the reserved role. The fact that the reviewers have taken a different view should not mean that a reserved role holder is providing an opinion which goes against their own judgement.

## QUESTION 2

The question's background was the understanding of pricing from a GLM and Black Box perspective in the South African Intermediated market. This question also examined regulatory and commercial aspects of implementing pricing increases and reasons for differences in performance between intermediaries. In general the GLM and pricing components were well answered and the regulatory and commercial aspects were not well answered.

i) *The first part was straightforward and well answered by most candidates. Better candidates clearly understood the requirements for GLM pricing.*

- Data collected will be split between policy and claims data at a risk item level

Policy data will need to contain the following:

- A risk item number
- A measure of exposure - either in vehicle years or kilometers for the risk item
- Relevant rating factors i.e. age, gender, make, model, power to mass
- Split by exposure years to allow for inflationary adjustments

Claims Data will need to contain the following:

- A risk item number
- A loss date to link to the relevant policy exposure period
- Distinct description of peril
- A best estimate of the ultimate claim amount
- Consider removing of / capping of large claims

Perils considered:

- Accident - potential splits between Own Damage, Third Party and write off. Medium sized company so probably combined
- Theft including hi-jack
- Glass
- Other including fire and hail.
- Types of models:

Probably fit 3-4 separate frequency and severity models depending on the final perils selected

- Gamma error structure for the severity models
- Poisson error structure for the frequency models
- Models can then be either combined at a peril or overall level

ii) *This question was well answered as it was straight bookwork.*

- Risk Factor - A factor that is expected, possibly with the support of statistical evidence, to have an influence on the intensity of risk in an insurance cover. Not necessarily statistically measurable

- Rating Factor - A factor used to determine the premium rate for a policy, which is measurable in an objective way and relates to the intensity of the risk. It must, therefore, be a risk factor or a proxy for a risk factor or risk factors.

iii) *This part of the question was generally answered well. Students did not differentiate ownership of data particularly well between non mandated intermediaries and binder holders.*

- Data for Binder Holders will be held on the Broker System. The level of data held on the insurer system needs to be checked.
- Data for Non-Mandated Brokers will be held on the broker and insurer systems. The quality of the data held on the insurer system needs to be checked.
- If data is not available on the insurer systems appropriate data extracts need to be requested from brokers.

Data needs to be verified as follows:

- Check that premiums and claims tie up to the totals reflected by brokers in the income statement / bordereauxs
- Check that loss ratios make sense to the staff looking after the broker portfolios
- Check vs data from previous pricing exercises
- Check that number of policies and average premium per policy are sensible and agree with broker staff expectations
- Check that there is a policy / risk item number that can link exposure and claims data
- Check how well rating factors are populated
- May need to use external data to clean up if data is not well populated - MM codes or ITC
- Prepare exposure data and clean up rating factors
- Prepare claims data, consider capping for large losses and ensure that there is a link to the exposure data
- Perform one way analyses by rating factor to check that results are sensible

iv) *This part of the question was not answered well by all candidates. Candidates did not tie back the data used in the pricing exercise to that of this impact analysis. Almost no candidates mentioned that data and pricing structures needed to be recreated to the point in time that the policy was written. Higher skills application was not consistent.*

- Similar data needs to be collected as for GLM pricing purposes
- Additional items of data that needs to be added is premium information, inception date and or renewal date
- Rating data needs to be the same as when a policy was written. Use age at time of writing policy and not current age etc, same with NCB
- Use the Black Box rateset that was in place at the time of writing the policy and recalculate the premium that should have been charged. Adjust for any renewals that have taken place since policy inception
- Compare the premium charged to the premium that you have calculated
- **There will in all likelihood be a spread around a 0% difference.**

- A normal / bell "distribution" around 0% difference is ideal. Anything resembling a uniform or log-normal type of shape indicates a problem.
- If the impact analysis is not a normal shape, look at the loss ratio of the broker. A poor loss ratio and poorly implemented premiums indicate that you have identified a problem
- Look at how these brokers quote. How do they access your balck box - could there be errors in linking to your Blackbox? Could fields not be properly linked between broker and blackbox fields
- Discuss these brokers with your sales areas to get more information as to why there are departures from our rates? Discount mandates, poor loss ratio performance etc
- Inform your marketing Director that remedial action will be necessary to return these brokers to the rates that they should be charging

v) *Candidates did not focus well on the fact that the insurer has been long established and that new business was half of existing business. The candidates accordingly focussed more on loss ratio related issues than the retention related issues that the question was examining.*

- Your business has been established for a number of years
- An average loss ratio of 80% means that you have a similar level of new business as to existing business
- This indicates a very high level of churn in your business
- Policies take a number of years to become profitable so lapse rates need to reduce

#### Recommendations to COO

- Churn in business and lapse rates are too high
- Does the insurer have a retentions team?
- Can we prevent the brokers from lapsing / moving the policies by active retention?
- No claims bonus or a similar mechanism
- Investigate the cause of the lapses. Poor service/ claims / price / non payment of premium?
- In case of non-payment of premium, is our / the broker's debit order collection strategy appropriate? Do they collect debit orders on appropriate days? Are they falling behind competitors technologically?
- Does our renewal pricing strategy need to change?
- New business loss ratio is a function of market forces, capital and appetite. Is the insurer too aggressive? Are they targeting the incorrect segments? Are there errors in rating?

#### Recommendations to Marketing Director

- Find out whether the broker is losing these policies or are they being moved around to other insurers that the broker is dealing with
- Are these brokers writing these policies just based on price or are they providing a service
- Are we selected against by brokers who do not want to place poor risks with their other insurers? Increases the Anti-selection prevalent in our portfolio
- Can lapse scoring be put in place to write policies with more longevity?
- Ensure that advertising is appropriate to attract right customers and broker relationship/ virtue is highlighted
- Sell more products to existing clients
- How is the brand being positioned in the market place?
- Is a discount structure necessary to retain these policies?
- Are these policies being moved because our broker fees aren't as competitive as other insurers?

vi) *This part of the question was not answered very well. Candidates did not pay enough attention to all the factors that could affect average cost per claim and often regressed to discussing pricing matters which were not being examined in this question.*

- Do the Binder Holders write a similar type of customer as the non-mandated brokers?
- What is the average sum insured, power to mass and age of vehicles of binder holders vs non-mandated brokers?
- Large and attritional claims analysed separately
- Are the excess structures / franchises of the policies written similar?
- Binder holders can determine own policy wording and benefit levels
- What assessors to the binder holders use to assess their vehicles?
- Split ALAE out from repair costs
- Do the binder holders make use of similar panel of repairers as the insurer?
- What towing arrangements are in place and the cost for binder holders?
- At what level are binder holders writing off vehicles and what are their salvage agreements?
- Are levels of third party payments and recoveries similar to the insurer?
- Would binder holders consider using insurer's assessors and suppliers?
- Levels of discount mandates allowed to intermediaries
- Would suppliers give incentives for higher volumes of business?
- review of binder fees for poor performance
- What functions can be centralized to create synergies?

vii) *This part of the question was answered well at a high level. The majority of candidates recognized that the broad brush approach to a pricing increase would not have satisfactory results. The alternative approach to increasing premium was not discussed in the requisite detail by most candidates.*

a) The pros of this approach but why you would advocate against this approach

Pro's:

- The overall increase should be sufficient to improve the loss ratio to 70%
- Allowance is made for inflation
- All clients are treated in a similar manner

Advocation against approach:

- Not all clients will require the same increase versus your theoretical premiums
- Some clients may require increases and some may require decreases
- Implementing a simple, rather large increase will have the effect of potentially chasing away clients who are adequately priced while retaining clients that are still inadequately priced after the increase
- The net effect may be that the loss ratio may not change significantly and could even deteriorate
- This course of action will result in fewer policyholders for the Broker and poor sentiment from customers towards the insurer
- will result in a double increase for policyholders who have recently been renewed

— A flat premium increase would not be in the spirit of TCF after sales

b) If an increase needs to be implemented how you would approach it paying consideration to both the relationships with your Brokers and the retention and fair treatment of your policyholders?

- Consider the increases required relative to your current black box rates
- Clients requiring a small increase can merely be given an inflationary adjustment
- Clients requiring a large increase need to be discussed with the Broker
- Is there the opportunity to rebroke these clients to other insurers who may have a different impression of the risk
- Negotiate excess increases with the Brokers
- If these clients need to be re-rated pay careful attention to claims experience and premium payment history of clients
- Previous renewal data may be very useful in determining the price elasticity of these clients
- Pay careful attention to the principles of Treating Customers Fairly
- Consider the potential impact of RDR and maintaining good relationships with brokers

viii) *The requirements of a dividend policy and factors to consider when declaring a dividend were not answered well by most candidates. A number of candidates did not even consider solvency, regulations, liquidity etc when structuring their answer.*

a) Discuss the items that a dividend policy should contain.

- Policy Ownership and governance
- A target minimum level of solvency
- The purpose of the policy. That shareholders are fairly remunerated but policyholders protected
- The solvency level should reference Interim Measures but may also consider the SAM basis and your company's economic basis
- Liquidity after payment of the dividend should be considered
- The spread and admissibility of assets after payment of the dividend should be considered
- The dividend should be lower than the retained earnings of the insurer
- The economic outlook should be considered
- Level of ROE required by the shareholders
- Payment of a dividend could be discussed with the regulatory authorities

b) Discuss the factors you advise the Board to take into consideration when declaring this year's dividend?

- Performance of the company versus the rest of the market
- Has your improvement in loss ratio been better than companies with a similar portfolio to yours?
- Is the improvement in loss ratio part of the insurance cycle or as a result of the actuary's recommendations?
- What is the level of ROE targeted by the shareholders of the business?
- Will additional capital be required for any new products or ventures during this financial year?
- Any material risks from your ORSA
- Is the SAM/your internal economic basis more onerous than the Interim basis for the solvency of your company?