

Actuarial Society of South Africa

28 MAY 2012

Subject F203 — General Insurance

Specialist Applications

EXAMINERS REPORT

Question 1

Examiner's overall comments:

This question was answered reasonably well by most candidates. The comments for each question within question 1 should be read to understand where candidates could've done better.

i)

Examiner's comments:

This question was bookwork. Candidates who studied well did well. Several candidates could've done better.

Direct insurance has two meanings:

- Business acquired without the intervention of an intermediary
- The cover provided by an insurer to an original policyholder, as opposed to any reinsurance cover provided for the insurer

Personal lines

- Types of insurance products offered to individuals, as opposed to commercial lines business or group business
- They include private motor, domestic household, private medical, personal accident and travel insurance

Product pricing

- Product pricing is the determination of the actual office premium
- This will take account of current market conditions

Rating

- The process of arriving at a suitable premium for an insurance risk
- The term is sometimes synonymous with underwriting, though rating is strictly just one part of the underwriting process.
- Assigning the appropriate premium rate to each group of homogeneous risks.

ii)

Examiner's comments:

This question was reasonably well answered. Several candidates made the assumption that all intermediaries assist with administration, which isn't necessarily true. Some candidates considered UMA's and brokers separately but mentioned the same points under each section failing to generate extra marks.

Advantages to insurer

- Peace of mind that the client understands the product and is getting good financial advice,
 - Specifically given the FAIS regulations and requirements that brokers need to fulfill
- Ensures that the insurer gets good feedback and adapts to market requirements quickly as product is being compared to other products all the time
- Administration burden could be reduced if broker takes over some of this role
- Brokers can assist the client at time of claim with technical jargon and ensure that their clients are properly protected
- Single contact point to client making it easier for client to transact with company
- Immediate access to broker's client base
- Marketing costs reduced, as broker does his/her own marketing on your behalf

Disadvantages

- It costs money and insurer needs to pay commission
- Brokers can exert unwanted pressure on the insurer and move books of business if they are disgruntled
- Additional costs as brokers need to be trained on the product nuances and innovations, generally broker consultants fulfill this role, which comes at a cost.
- If you give your underwriting pen away:
 - Difficult to increase rates due to pressure
 - Brokers may cut rates by too much
- Risk that your reputation could be damaged by poor/inappropriate brokers
- Less incentive to keep claims cost down because they are employed by the client
- Potential loss of data if broker does admin and doesn't hand over the data to you and data may not match internal requirements
- Additional cost of compliance and binder agreements
- Potential anti-selection, as they know your prices and risk appetite
- Regulatory risk from non-compliance
- Churn, depending on commission structure (minor)
- Delayed cash flows from brokers – impacts capital and cash flow

iii)

Examiner's comments:

Several candidates failed to mention that this was not a good idea as there was no analyses backing it up, which was disappointing. Some candidates repeated question ii in the answer here, which didn't generate extra marks.

Merits of the chief operating officer's proposal

- It may be considered a knee jerk reaction and consequently may not be a good proposal
- it is not clear that selling business through the direct channel is the sole cause or part of the problem
- A lot of analyses work first needs to be done to determine the root cause of the problem
- Then an appropriate solution can be determined
- Changing distribution channels will involve a lot of time and money,
- This will be wasted if not the ideal solution and the problem will still persist
- Stablesure doesn't have any relationships with brokers, which may be a huge challenge to start from scratch – it may take a long time to do business through intermediaries
- Call centre staff will no longer be needed and a lot of infrastructure may not be needed under the new distribution model.

Reasons for drop in volume

- New insurance company could be causing it due to:
 - o Superior package (including product, service, marketing)
 - o Cheaper premiums in order to get a foothold in the market
 - o Distribution channel could be converting current direct clients to intermediaries, through the BFS client base
 - o Strong brand name and current customer base could lead client to move their personal lines business to BestInsure
 - o Self-selection of clients possibly leaving poorer risks

Own company factors:

- o Poor service, claims ability
 - o Advertising poor / advertising spend decreased
 - o Bad media e.g. public complaints
 - o Premium increases upon renewal, e.g. due to parts inflation
 - o Underwriting margin is too high, which has left room for competitors to offer cheaper rates
 - o Has the same happened to commercial business or not, which could help assess the reason behind the movements.
- Numerous direct insurance initiatives have entered the market recently which could be causing clients to move and people are generally more willing to shop around
 - Economic and insurance cycle
 - o Consumer disposable income may be under pressure and insurance spend may be one of the first things people reduce.

iv)

Examiner's comments:

This question was bookwork. Several candidates did poorly. It was clear which candidates had studied well and they did very well in this question.

Sensitivity of business to rating changes

To help assess the effects of a rate review an insurer would build up a model of how much business it expects to pick up at the new rates.

Variables in the model will include:

- The relative size of the new premiums
(i.e. pitch rates at a level that is expected to increase volumes to the desired levels)
- The premium's rank in the market – might be difficult to obtain
(compare our rates to those of our competitors)
- The size of the increases or decreases imminent renewals will face
- i.e. the model needs to assess the immediate as well as the medium/long term impact of the rate review.

The model can be developed by reference to other information such as

- Previous changes to volumes following changes in premiums
(i.e. past take up rates and renewal rates)
- The volumes of business written by different insurers with different rankings in league table of premium rates
- The views of underwriters as to the sensitivity of the market to premium rates
- Some measure of general economy for comparison with the time of the previous rate changes

You will also need to consider the extent to which changes in the premiums affect the policyholders' choices.

Other factors that may affect the change in volume include:

- The efficiency of the market for the class of business
- The reputation of the insurer in the market place – good, as medium sized
- Any loyalty that has been built up between the policyholder and insurer
- Competitors' expected increases by time and amount.

(It is also possible that an insurer dealing directly with policyholders could introduce the new rates for a sample of proposers and observe the result. This would give a quick, up-to-date assessment of the reaction that the rate change would have on the overall premium volume. Companies selling through the traditional outlets cannot be so flexible.

In any case, it is important that the insurer also builds in assumptions for the likely effect of the rate change on the rates of other insurers, as this may make the volume change a short one.)

v)

Examiner's comments:

Many candidates didn't mention that more analysis was needed. Candidates who answered specifically considered improvements to both ideas did well, as opposed to candidates who came up with new ideas, which was not asked by the question.

Concerns

The proposal

- The proposal might not be technically sound as no analysis has been done and appears to be a reaction due to the Board pressure
- No analyses have been done to check what the results of the proposal will be and the impact on the company's business.
- The 10% margin effectively reduces underwriting profit to zero.
- Reserving strain could arise as there is no buffer for unforeseen events, which in turn could put pressure on capital
- The proposal is not sustainable over the long term
- Specific concerns:
 - If competitors found out, they could undercut rates further, as they know you will match, which could ruin your whole business
 - Matching, you have no idea how much money you are losing and you could be matching a "buying business strategy".

Actuarial pricing & analyses

- The proposal ignores all principles of actuarial pricing including:
 - Risk & rating factors
 - Frequency & severity models
 - Adjustment loading for expenses,
 - Return on capital
 - Investment income
 - Business risks
 - Including minimum premiums
 - Underwriting guidelines – one would still want to consider the quality of the risk before just matching premiums
- The proposal ignores actual underwriting results in the past and underwriting margins actually achieved. Actual results may have been consistently worse (or better) than the priced 10%.
- The proposal ignores capital levels and financial strength of company to fund this strategy

Moving away from market rating factors can cause the following:

- Inability to use market statistics
- Anti-selection by policyholders – worse risks flock to where its cheapest
- Reinsurers may become unhappy and increase rates and terms or retract cover.

Suggestions

- Put a time frame on the changes & monitor the impact, so that changes can be made in good time if things turn out worst than expected. (i.e. pilot)
- Set limits on the “matching strategy” such as:
 - Only for certain risk groups e.g. married members or both household and cars on policy
 - Match up to a maximum of x% or until a maximum of Rm is given by the discounts
 - Only match rates from some specified insurers.
- With regards to reducing rates, rather take an amount less than 10%, so that there is still some underwriting margin due to the company and to assist against unexpected events.

vi)

Examiner’s comments:

This question was poorly answered. Several candidates failed to mention evaluation of risks and missed operation risks in their answers.

Things to consider in risk management strategy

- Evaluate and assess the entire claims process, detailing each step from claim notification, through to appointing assessors, interaction with external providers, client interaction, fraud detection services, claim authorization process, claims payment process and reinsurance recoveries processes.
- Identify risks per area: process, system, people
 - Detailed discussions with key staff
 - Evaluate actual historical operation failures
 - Both the frequency and severity
 - Sufficient detail to allow forward forecasting of similar events. Include an appropriate measure of exposure to be able to assess the level of future exposure (e.g. number of staff, size of book)
 - Develop strategies to mitigate & manage such risks and strategies to avoid/prevent the exposure completely
- Evaluate unknown risks (brainstorm and discuss what possibly could go wrong in each area of each process, including systems and people)
- Monitor risks
 - Keep registers of all risk exposures and monitor risks
 - Measure the impact of risk mitigation techniques
- Give feedback back into the risk management strategy for areas of improvement

Other things to consider:

- Appropriate segregation of duties e.g. person authorizing claim payment shouldn’t also pay claim
- Appropriate training of all staff
- Appropriate quality control checks throughout the system

QUESTION 2

Examiner’s overall comments:

This question overall was poorly answered by candidates. Candidates did not do well on the interim measures and the capital and reinsurance answers were disappointing. The comments for each question within question 2 should be read to understand where candidates could’ve done better.

i.

Examiner’s comments:

This question covered bookwork. Several candidates didn’t know the exact definitions and therefore didn’t do well.

IBNR	
Previous rules	Interim Measures
<ul style="list-style-type: none"> • Based on 7% of Net Written Premium of last rolling 12 month period • Percentage the same for all classes of business. 	<ul style="list-style-type: none"> • Based on percentage of Net Earned Premium of the last 6 years. • Percentage decrease by year and differ between classes of business.
Unearned Premium Provision	
No difference	No difference
Outstanding Claims Reserve	
No difference	No difference
Unexpired Risk Reserve	
No difference	No difference
Contingency Reserve	
10% of Net Written Premium	No contingency reserve requirement
Cash Back Reserves	
No difference	No difference

Capital Adequacy Requirements	
Previous rules	Interim Measures
SCR = 15% of max (NWP of last 12 months, NWP of previous financial year) plus A contingency reserve equal to 10% of net written premium for the 12 months preceding the calculation date.	SCR based on the sum of the Basic Solvency Capital Requirement (BSCR) and Operational Risk (OP) <ul style="list-style-type: none"> • BSCR consists of Insurance Risk, Market Risk and Credit Risk. • Insurance Risk is a percentage of NWP, differing by class • Market risk applies different percentages to different asset classes

	<ul style="list-style-type: none"> • Credit risk is based on a percentage that is based on the credit rating of the counterparty. • Operational risk is calculated as the minimum of a % of BSCR or a loading based on the gross earned premium.
Minimum capital = R5 million	Minimum capital is the higher of <ul style="list-style-type: none"> • R10 million • 13 weeks' operating expenses • 15% of max (NWP of last 12 months, NWP of previous financial year)

ii.

Examiner's comments:

Several candidates used 7% for the old IBNR when it was stated that IBNR was 15%. Several candidates failed to mention market risk for assets backing liabilities and chose not to use cash in this regard and/or included the contingency reserve as a liability which would not apply under the interim measures.

The capital requirements are calculated as follows:

$$\text{BSCR} = ((\text{Insurance capital})^2 + (\text{Market Capital})^2 + (\text{Credit Risk})^2)^{0.5}$$

$$\text{SCR} = \text{Operational Risk} + \text{BCSR}$$

$$\text{Operational Risk} = \min(0.3 \times \text{BSCR}; \text{Basic_OP})$$

$$\text{Basic_OP} = \max(\text{OP}_{\text{premiums}}, \text{OP}_{\text{provisions}})$$

$$\text{OP}_{\text{premiums}} = 0.03 \times \text{GEP} + \max(0; 0.03 \times (\text{GEP} - (1.1 \times \text{GEP}_{\text{prev}})))$$

$$\text{OP}_{\text{provision}} = 0.03 \times \text{GTL} + \max(0; 0.03 \times (\text{GTL} - (1.1 \times \text{GTL}_{\text{prev}})))$$

GEP = Gross Earned Premium

GTL = Gross Technical Liabilities

	Comments/Reasons	Total
BSCR		
IC		Guarantee: $0.5 \times 100 = 50$ ($0.5 \times \text{Guar_NWP}$)
		Liability: $0.32 \times 50 = 16$ ($0.32 \times \text{Liab_NWP}$)
		Total: $50+16=66$
MC	Use cash to back liabilities because it has no market risk and the lowest credit risk. Can also use equities if this is considered a better match between assets and liabilities. Will also award marks for a blend of assets provided that reasoning is given.	0
CC-Cash	A+ factor for bank Same apply as to MC. If candidate uses other assets to back liabilities marks will be given, provided that they gave reasons.	$0.0103 \times 50=0.52$ (total Tech liab)
CC-Prem due	Provided that they used cash to back liabilities. If they used other assets and candidate provided reasons, marks will be given.	0
CC-Total		$=0.52+0=0.52$
BSCR		$\text{Sqrt}((66^2) + (0.52^2)) = 66$
Operational Risk		
30% * BSCR		$0.3 \times \text{BSCR} = 19.8$
OP _{premiums}		$0.03 \times 160 + (0.03 * (160 - (1.1 * 60))) = 7.62$
OP _{liabilities}		$0.03 \times 56 = 1.68$
Basic_OP		$\text{Max}(7.62, 1.68) = 7.62$
Ops Risk		7.62
Total Technical Liabilities		50
Current Capital	This is the sum of the free assets (55) plus the contingency reserve (50)	$50 + 55 = 105$
Min Capital Old method	25% of NWP	$0.25 \times 150 = 37.5$
New capital	BSCR + Op Risk	$66+7.62=73.62$
Difference	Difference between min old and	$73.62 - 37.5 = 36.12$

	current	
MCR		
Old MCR		$0.15 \times \max(\text{NWP}, \text{NWP}_{\text{prev}}) = 0.15 \times \max(65, 150) = 22.5$
13 weeks Ops expenses		$= 13/52 \times 25 = 6.25$
New MCR	No difference between old and new method	$= \max(10, 6.25, 22.5) = 22.5$
IBNR		
Old IBNR	Questions states that they hold 15% IBNR	$0.15 \times 150 = 22.5$
New IBNR		Guarantee: $(0.1632 \times 80) + (0.05 \times 30) = 14.56$
		Liability: $(0.1249 \times 45) + (0.0447 \times 20) = 6.51$
		Total: $14.56 + 6.51 = 21.07$
Difference	Old and new IBNR very close	$21.07 - 22.5 = -1.43$

iii.

Examiner's comments:

This question was not well answered.

Difference in IBNR: -R1.43 million
Difference in SCR capital requirements R36.12 million
No Difference in MCR

Because a contingency reserve is no longer required that amount is also available for capital.
The company is therefore solvent under interim measures.

iv.

Examiner's comments:

Candidates failed to address each area of reserving and capital as was requested which led to them not doing well. Many candidates spoke about Solvency II and SAM, which was not relevant to the question being asked.

Advantages:

The minimum capital requirement has increased from R5 million to R10 million. The higher number provides better protection to policyholders.

The different insurance risk loadings by class of business reflect the underlying risk more appropriately than the fixed percentage of Net Written Premium.

An explicit operational risk loading is now included.

Previously no specific market or credit risk was allowed for in the capital requirements which did not drive risk related investment behavior, except for the admissibility rules. In the interim measures companies with more aggressive investment strategies will have to hold more capital.

Shortcomings:

The capital adequacy requirement in the interim measures still does not necessarily reflect the 1 in 200 event for the individual company.

The admissibility and spreading rules were not removed. Adding market and credit risk and limiting assets has a double impact on capital.

The insurance risk loading does not vary with premium size. This provides no diversification benefit for larger insurers.

No credit risk is added for reinsurer creditors because the current approved/non-approved rules are maintained. This is definitely a weakness because the current rules are not optimal for big international reinsurers without an office in South Africa.

The framework still does not adequately allow for non-proportional reinsurance because retention levels are not taken into account.

No specific cat loading is included.

IBNR

Advantages:

Previously IBNR was based on NWP and if term business is in run-off no IBNR was raised. Now IBNR will be based on NEP and an IBNR will be raised as long as premiums are earned.

A different IBNR percentage for different classes of business is applied. Companies writing mainly motor business will have a lower IBNR than a company writing mainly guarantee.

IBNRs are based on the last 6 years of premiums. If a company wrote huge volumes of business in a particular class over many years and suddenly wrote a lot less in the previous 12 months, the interim measures will still base the IBNR on the older business, while the previous measures made no provision for this.

Shortcomings:

There is still no distinction between personal and commercial business. Typically a class such as cellphone insurance should hold substantially less IBNR than commercial property.

Any over- or under-provision in the Outstanding Claims Reserve is still not taken into account.

The outstanding Claims reserve is still left to the judgment of claims technicians.

The new percentage still does not necessarily reflect the risk position for an individual company.

No discounting is allowed which might lead to an overstatement of reserves.

The data requirements are onerous.

UPP is still based on a straight line approach and special dispensation is required if a different earnings pattern is used.

Cash Back Reserves is still not risk-based.

v.

Examiner's comments:

This question was not well answered. There was no need to do calculations in this section, which cost some candidates time in answering this section properly. Some candidates referred to Risk Based Capital measures, but didn't link it back to the interim measures requirements of the question which didn't generate marks for them.

IBNR

IBNR will increase because of 3 things:

- Increase in the guarantee and liability NEPs
- Adding another year of history will cause a marginal increase.
- Adding the Engineering book

Market Risk

No market risk is currently applicable because all liabilities are matched by cash.

The increase in IBNR might cause an increase in the market risk loading because the company will not have enough cash to back all the liabilities, especially if some of the cash is used to buy equities or bonds.

Moving the cash into equities will reduce the credit risk but add substantial market risk.

The drop in credit risk will be small compared to the increase in market risk.

If the increase in investment income exceeds the net increase it is worthwhile, otherwise stay in cash.

Moving into bonds instead of equities will have a lower capital risk charge than equities and might also have a higher return than cash. However this will still attract a higher capital risk charge than current position.

Insurance Risk

The increase in the guarantee and liability premiums will increase the insurance risk.

Adding the engineering business will also increase the insurance risk. This will be small in the first year but grow fast as the business grows.

The overall loading per Rand retained will drop because Engineering carries a lower insurance risk factor than guarantees and liability.

The non-prop reinsurance on the engineering book will cause a drop in the NWP and NEP.

As long as the reinsurer is approved it will have little effect on the capital requirements because the premium ceded is small compared to the amount ceded on proportional treaties.

Credit Risk

It is difficult to know what the increase in premium debtors will be resulting from the engineering book, but this will increase the credit risk.

vi.

Examiner's comments:

This question was not well answered. Many candidates didn't consider the current program. Many candidates didn't address the volatility and capital concern raised in the question. Several candidates mention alternative risk structures and stop loss, but failed to mention that these reinsurance structures aren't always readily available in the market and combined with the previous comments, few marks were awarded in such cases.

Current programme

The catastrophe cover is necessary for engineering and should be continued.

If the retention on this programme is low enough and enough cover is purchased the capital of the company will be adequately covered against a catastrophe.

The excess of loss treaty does reduce the volatility in the underwriting results.

Since IBNR is based on NEP and Insurance Risk and NWP the programme will not provide solvency relief in case of capital strain.

Surplus

A surplus treaty will also reduce the volatility in the results.

The surplus might also provide solvency relief, depending on the design of the treaty and the size of the risks insured. (If the first line is low enough, the NWP and NEP will be lower than with a XoL treaty).

However, on a small book of business the balance of the treaty might be distorted if a low retention level is required. (The balance of a reinsurance treaty is defined as the ratio of the total premiums receivable by a reinsurer under a surplus treaty to the reinsurer's maximum liability for any one claim, based on EML.)

The insurer will also sacrifice profit if more risk is ceded.

However, the insurer will get reinsurance commission which is not the case with XoL.

It might be difficult to get a surplus treaty with reasonable terms if the reinsurers believe that the insurer has a lack of skills.

Quota Share

A quota share will provide the biggest solvency relief.

However, it does not reduce volatility in the underwriting results.

The company will sacrifice underwriting profits but will receive reinsurance commission.

It might be difficult to get a quota share treaty with reasonable terms if the reinsurers believe that the insurer has a lack of skills.

Facultative reinsurance

Another option is to place facultative reinsurance on all large risks or where the underwriters feel unsure about the nature of the risk.

This will have the advantage of having to purchase less cover on the treaty programmes.

Recommended Programme

Buy facultative cover on individual large risks. This will reduce the volatility.

Purchase a quota share treaty. This will reduce the NWP and NEP and provide some commission income.

Reduce the cat cover because of the quota share.

As soon as critical mass is achieved purchase a surplus treaty. This will reduce the capital and reduce the volatility.