EXAMINATION

September 2007

Subject ST1 — Health and Care
Specialist Technical

EXAMINERS' REPORT

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. The questions and comments are based around Core Reading as the interpretation of the syllabus to which the examiners are working. They have however given credit for any alternative approach or interpretation which they consider to be reasonable.

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Chairman of the Board of Examiners

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Comments

Candidates who approached the questions, especially the more substantial elements of each question, in a methodical and detailed manner were far more likely to satisfy the examiners and receive a pass in the subject. There was often a lack of sufficient detail in the answers with candidates failing to realise that each valid point in the answer would normally attract 0.5 marks with the more basic elements e.g. details in a pricing basis such as age and sex, would attract 0.25 marks.

Candidates should also recognise that whilst reinsurance can play a valuable role in the UK health insurance market, reinsurance is not a panacea for all evils.

The mathematical elements of Q1 and Q7 (ii) and (iii) were poorly answered. Candidates often did not set out the formulae and the items were not defined where required. Candidates need to be aware that the examiners expect an answer to the best standard of recording used in the office.

There were instances where candidates did not address the question e.g. Q8. Candidates often failed to link their answers to part (i) of the question, where they were asked to set out a framework for evaluation and then in part (ii) use that framework. The conclusion is that the candidates did not read the question properly.

Comments on individual questions are set out below:

Question 3

Little detail was given by many students on Q3 regarding two aspects of reinsurance considering the number of marks on offer.

Question 5

Candidates did not realise that both methods set out in question 5 (iii) are less than perfect.

1 (i) Proportion of premium in year * written premium
9/12*12000 = £9000

(ii) Incurred claims = sum of payments = monthly benefit * (months of sickness – deferred period)
= £2000 * (8 - 6) = £4000
Loss ratio = incurred claims / earned premium
= 4000/9000 = 44.4%

(iii) Combined or operating ratio.

2 (i) The insurer remains solvent
Customer detriment is minimised (or that customer needs are met)
Insurer files adequate accurate reports to allow to assess general viability
Probity (or equivalently, honesty, integrity, fitness for purposes)

(ii) Customer Detriment
Benefits must be clearly described
Impact based product, sounds complex
Difficult for customer to understand what they are buying
Use of term "Critical Illness" engenders expectations (in most territories) and so should be avoided
Value for money — limited benefit so would expect this to be cheaper than full cover CI
In some territories may wish to be advised of likely premium increases
Sales process should be outlined to ensure that right information is available to support sale and no undue pressure applied to sales process
Claims administration process

3 (a) **Financial reinsurance (short term contracts)**

A wide variety of financial reinsurance contracts exist, devised primarily as a means of improving the apparent accounting position of the cedant.
Involves only a small element, if any, of transfer of insurance risk from the cedant to the reinsurer.
Similar risks to those that relate to investments.
Many forms of financial reinsurance are, in fact, often viewed as being more similar to investment than to reinsurance.
Usually the effective "return" that the contracts provide is low in comparison to conventional investments.

Financing reinsurance (long term contracts)

Aim is that the reinsurer relieves the ceding company of part of its new business financing requirement, eg with regard to solvency, expenses, commission.
Straightforward loan from the reinsurance company would not achieve this, as the ceding company would usually have to add the amount of the loan to its liabilities.
The risk premium reinsurance method is one type of arrangement which can be associated with a financing arrangement
The "loan" is usually presented as a reinsurance commission related to the volume of business reinsured.
The "repayments" — spread over a number of years — are added to the reinsurance premiums.
The reinsurer takes into account the expected lapse experience of the portfolio of reinsurances in determining the loan repayments.
An alternative approach is to make use of the future profits contained in a block of new or existing business.
The reinsurer again provides a loan to the direct-writing company, but, as the repayment of the loan is contingent upon the stream of future profits being generated by the business, the direct writing company does not need to reserve for the repayment within its supervisory returns.
This second approach may also be used where a direct writing company needs to improve its solvency position, for example after a large drop in asset values, or where it wishes to fund a new project, for example the setting up of a new subsidiary overseas.

(b) **Determination of the retention limit**

It is necessary first to estimate the statistical distribution of the risk experience costs of the portfolio on various assumed retention limits.
One then needs to judge how low a probability should be aimed at for various degrees of departure from the overall average risk costs.
One approach is to set the retention limit at such a level as to keep the probability of insolvency below a specified level.
Using a stochastic model for expected claims rates and a model of the business, expected claims can be projected forward together with the value of the company's assets and liabilities.
Using simulation a retention level can then be determined such that the company stays solvent for 995, say, out of 1,000 runs.
Another possible approach is to consider the total of:

(1) the cost of financing an appropriate risk experience fluctuation reserve, and

(2) the cost of obtaining reinsurance — the reinsurer naturally incorporates an expense and profit loading in its reinsurance terms, and the ceding company incurs administrative expenses

As the retention limit increases, (1) will increase and (2) will decrease, and a retention limit can be adopted which minimises the total (1) + (2).
To calculate (1) the simulation approach discussed above would probably need to be used to determine the reserve the company needs to hold.
Where financing is involved the reinsurer may set a maximum retention in order that the reinsurer obtains an adequate level of risk business
Similarly, the local regulator may have rules or limits on retentions for a new insurer
In many territories there are spin-off advantages in a low proportionate retention (maybe 50%) which would scale down the solvency margin requirements
A new short term insurer, independent of financing, will want cover for large individual risks (e.g. life supporting treatment in expensive foreign hospitals) and thus retention will dependent on availability of free capital and the likelihood of multiple claims.
Might have low retention limits as new start up and uncertainties involved.
Limits will depend on level of risk aversion
Volatility of results
Absence of data – would use market data from reinsurers, consultants

4 (i) (a) Experience rating — the practice whereby the healthcare premium for a group contract depends wholly or partially on the past experience of the group

(b) Credibility — relates to the factor, lies between 0 and 1, which represents the proportion of the final risk premium which is derived from past experience, the balance coming from book rates.

(c) Burning cost is the estimated cost of claims in the forthcoming insurance period, calculated from previous years' experience, adjusted for changes in the numbers insured, the nature of cover and medical inflation. The term can be used to describe the historic cost of claims only. The burning cost should include estimates of all claims reported but not settled and claims incurred but not reported.

(ii) Significant changes in personnel
Economic changes
Benefit inflation
Changes of location
Changes of work practices
Changes in cover required
Claim volatility
Political conditions
Unusual large claims

(iii) Premiums need to be earned
Premium may be estimated as full profile not known until end of scheme year
Claims need to be incurred
Must capitalise future claims costs
Need to consider IBNR

Incurred but not reported terminations
Claim payment delays
Expenses
Investment return
Tax
Impact of reinsurance on bottom line
Cost of capital (or suitable comment on supervisory reserves)

5 (i) **Reasons for reporting potential claims**

To ensure valid claims are ready to be paid at the end of the deferred period.
For the purposes of early intervention from a claims management perspective.

(ii) The options are:

Pay an amount commensurate with what would have been expected if the claim had been properly notified (ie take on trust)
Decline the claim
Reduce the benefit payable
Back date the claim to the end of the deferred period if supporting medical evidence can be provided
Assume that the commencement of payment to be the date of notification
Assume that the commencement of payment to be the date of notification plus the deferred period

(iii)
- If you introduce a new system you will be running the new and old system in parallel with likely administration problems
– You cannot change the policy documents but you can change your internal approach on late notification
\+ Consider what is the current market practice
\+ Consider what policyholders would expect to happen – reputational risk

You need to advise sales distributors of changes made
You need to advise staff and provide appropriate training on changes made
Regulator's view to change
May enable lower price to be charged
Need to consider reaction of reinsurers
Could look at numbers and amounts currently missing cut-off to assess effect

(iv) There is a balance, you need to find the middle ground

Basis 1 gives early involvement and hence allows for more claims management but may have a large number of claims which do not reach the end of the deferred period

Basis 2 may result in fewer claims being processed but gives less opportunity for early claims management

Basis 1 would be preferable for longer deferred periods and basis 2 for shorter deferred periods

Hence solution would be to have a basis that varies by deferred period

6 (i) Deferred period — 3 to 12 months
Benefit escalation — level or RPI
Length of benefit payment — lifetime or say 3 years
Maximum initial benefit — consistent with cost of care.
Assistive devices — fixed number of monthly benefits
Respite care
Cash benefits or care only
Independent care advice
Death benefit
Surrender value
Paid up benefit
Benefit trigger — failure of 2/3 ADLs, cognitive impairment
Options and guarantees
Fixed benefit or indemnity
Waiver of premiums

(ii) Profitability
Marketability – meets customer needs
Marketability – sales channels
Competitiveness
Financing requirements
Risk characteristics
Onus of any guarantees
Sensitivity of profit
Extent of cross-subsidies
Administration systems
Consistency with other products of the company
Availability of reinsurance
Regulator's approval
Underwriting
Claims management

(iii) Tax relief on premiums
Subsidise premiums
Exclude parts of the population from the national welfare scheme
Offer a reduction in general taxation where appropriate insurances are effected
Can reduce cost of care by direct subsidy to providers.
Customer education

7 (i) **Cash Plans**

Cash Plans are a defined-benefit defined-premium insurance product.

For premiums as low as £2 per week, the subscriber and family are entitled to a range of specific payouts dependent on certain healthcare related events.

These include dental, optical, physiotherapy, maternity, hospitalisation, recuperation, hearing aids and consultation.

Schedules of benefits are bought in "units" with equivalent levels of contribution increase.

The purpose of the arrangement is cash in hand as opposed to reimbursement, thus reducing anti-selection

Limits may apply to ensure that the payout is no more than say 50% of the medical bill.

(ii) *The following gives two possible solutions – marks were given for other appropriate approaches*.

Scheme Year	*Inflation Index*	*Rate Change %*	*Premium Index*		*Original Premium*	*Original Losses*	*Inflated Premium*	*Inflated Losses*	*Loss Ratio*	*Weighted*
2006	1.01	0	1	1	140	130	140.0	131.3	93.8%	123.141
2005	1.0201	0	1*(1+0)	1	120	110	120.0	112.2	93.5%	104.928
2004	1.0303	10	1*(1+.0)	1	100	105	100.0	108.2	108.2%	117.033
2003	1.0406	0	1*(1+.10)	1.1	160	145	176.0	150.9	85.7%	129.358
2002	1.051	N/A	1.1*(1+0)	1.1	150	130	165.0	136.6	82.8%	113.14
							701.0	639.2	91.2%	587.6
					Weighted average loss ratio					91.9%

Assumptions

Similar policy conditions/coverages
Incurred losses include IBNR
Years are complete so 2006 losses have not been scaled up from a partial year figure
No change in business mix
There are no ‘one-offs’ in the data

(iii) Increase needed if actual loss ratio used is 91.2/85 = 1.0728
Increase needed if weighted loss ratio used is 91.9/85 = 1.0815

(iv) Projected volumes of business in 2007 (Written Premium)
Information on unusual exposures, if any
IBNR, particularly for 2006.
Inflation will continue to run at 1% p.a.
Loadings for internal expenses both fixed and variable.
Taxes and any other levies.
Investment income.
For this we need to know payout pattern and premium receipt pattern as well as investment yields on suitable assets.
Any changes to the product
Impact of reinsurance

Economic outlook
Political change
Cost of capital

(v) A typical UK hospital cash contract has heavy coinsurance, low benefits, low maximum payout so possible reasons are:

Fixed benefits
Low benefits
Low maximum payout in each class
Possible increase in small amounts not being claimed
Good claim control
Cap on overall benefits
Effect of increases in excesses (not raised every year, rounded figures)

8 (i) For each of the possible design changes we need to consider factors like:

How does the change meet customer needs?
How do we price for the benefit?
Impact on sales process — how easy, price
Impact on claims handling
Risk management — opportunity for anti-selection
Administration issues
Impact on valuation/capital needs
Behaviour of competitors
Any regulatory issues?
Impact on reinsurance
Impact on sales process – how easy to describe option
Is the price acceptable to potential customers?
Company strategy/culture
Profitability
Lapse and re-entry risk

(ii) **Option A**
If policy designed to meet a mortgage then no need for an increase.
If policy designed to meet needs of dependent or business cover then may need increase at something like RPI and so an increase option would be valuable.
15% looks a very high increase.
May wish to redefine as RPI with a maximum of 15%.
Need to decide basis for increased premium — either original premium needs to increase at an agreed percentage or new cover is purchased at the then premium rate.
Note cost of increase should not be greater than new business rate or risk that healthy lives would purchase additional cover in the open market.
Lose option if not exercised to manage anti-selection risk.
Impose maximum age for exercise of option.
Impose maximum initial sum assured for option or maximum sum assured after increases.

Impose maximum policy term.
Restrict option to lives accepted at standard terms.
Need to have a clear administration process.
Valuation needs to take account of option.
Option increases price.
Need to agree how increase in cover to be shared with reinsurer if reinsurance on a surplus basis. Increases should be shared proportionately.
May only offer on certain events in order to reduce selection risk

Option B
Meets customer need of certainty of cost.
Increases premium.
Guarantee charge difficult to quantify and may be too high or too low.
Uncertainty about changes in detection or prevalence of diseases in future — trend risk.
Need to hold appropriate risk capital
Impose maximum duration of guarantee.
Increased risk so higher profit loading.
May wish to impose maximum level of cover.
May wish to increase proportion of business reinsured

Option C
Simplifies sales process
Reduces cost of policy issue
Increased risk that claim will be denied
Creates uncertainty for customer that claim will not be paid
Risk of litigation
May get high proportion of substandard risks if competitors continue to underwrite fully
May wish to limit sum assured
Risk that life is substandard increases with age so may wish to limit maximum age
Danger insurer has already accepted other cover on special terms and so policyholder may assume insurer aware of pre-existing
In each of the above cases, would need agreement from reinsurer if covered by a reinsurance agreement.

END OF EXAMINERS' REPORT