EXAMINATIONS

September 2001

Subject 403— UK Fellowship General Insurance

Paper One

EXAMINERS' REPORT

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. The examiners are mindful that a number of interpretations may be drawn from the syllabus and Core Reading. 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.

The report does not attempt to offer a specimen solution for each question - that is, a solution that a well prepared candidate might have produced in the time allowed. For most questions substantially more detail is given than would normally be necessary to obtain a clear pass. There can also be valid alternatives which would gain equal marks.

K Forman
Chairman of the Board of Examiners
20 November 2001

1 Most candidates scored reasonably well on this bookwork question. Some candidates failed to distinguish between investment income and investment gains.

(i) losses can be

carried back and set against the previous year's profits
carried forward and set against future profits
surrendered to other companies in the same group, and offset by these companies against their taxable profits

(ii) **Investment income**

Most investment income is included in trading profit
And therefore subject to corporation tax
UK dividends are not included in the computation of profit for tax purposes and hence no tax is payable

Investment gains

Realised investment gains are included in trading profits and therefore subject to corporation tax
Unrealised gains are not part of trading profit and therefore
Are not subject to tax in the year in question

2 Only the better candidates managed to score more than half marks. The main problem with candidates answers was that they did not discuss how the issues that they described would be a problem in valuing the liabilities.

Claims reported

There is generally a delay in the notification of claims to the insurer, and a delay in receiving full information on a claim

The ability to value the claims reported is dependent on the data received from the broker/ agent. If very little data is available, the claim will be subject to greater uncertainty

If the intermediary has the authority to pay claims, then there may be inconsistencies in the payment patterns (particularly timing) between different brokers which can cause distortions in run-off patterns.

If standardised estimates are not being used by these brokers, there may be inconsistencies in the reserves held for claims that they settle.

If discounting reserves need to allow for the time taken to receipt of premiums.

Poorer quality data

Unexpired risk

Pipeline premium

Delay in the receipt of information, particularly if the intermediary carries out the bulk of the administration and hence difficult to assess what risks have been written.

Effect upon calculation of SM

Broker balances — probability of default will vary by intermediary, need to allow for in valuing the liabilities.

3 Most candidates answered this question reasonably well.

The minimum capital requirement is calculated on the basis of such components as the volatility of past profits, the direction and volatility of past reserve development and the quality and diversification of asset holdings.

Advantages:
It recognises the risk profile of the business
It can reflect changes in risk over time
It recognises the volatility inherent in the business.
It will penalise companies that hold inadequate reserves or that write business on inadequate rates.
It can recognise asset and credit risk.

The disadvantages are the practical issues of deciding:
The definition of profit.
The definition of volatility (e.g. does it refer to observed variation in experience from the company's own experience or variation about the industry average?)
The period over which volatility is measured.
How to allow for reinsurance and the security of the reinsurers used.
Complex and time consuming.
Whether the same proportion should be applied to the volatility for all companies.
Subjective and open to manipulation

4 Candidates generally did not score very well on this question, although it was fairly straightforward non-standard bookwork.

Explanation

to control the amount and type of risk accepted
Reinsurer's requirements
to ensure a consistent approach to underwriting across lines/offices

Items Covered

underwriting philosophy
level of authority of underwriter — max line size by business line/class
referral procedures
pricing methods/controls to be employed
implications for reinsurance
declinature procedure

5 The solutions to this question were generally very good although some candidates managed to get confused between prospective and retrospective arrangements.

Premium for a risk depends to some extent on actual claims experience for that risk
can use frequency or severity of the claims
can be prospective or retrospective
if retrospective, sometimes called "swing rated"
may have a max and min rate, called a "collar"

prospective

- premium at renewal depends on experience prior to renewal
- insurer takes on all the underwriting risk

retrospective

- premium for current period is adjusted based on experience for that period
- deposit and adjustment premium/ refund
- in practice, adjustment premium is simply added to next renewal
- premium

5 Most candidates failed to produce anywhere enough points on this question to gain sufficient marks.

Margins in other reserves
Business of the companies
Date of original loss
Purpose of valuation
Terms and conditions of liability
Solvency margin
Evidence of precedents
Is there external / market information which could back this up?
Size of individual claims
Size of class of business in relation to the total
Size of reductions as a % of overall claims
Claims assessors estimates of reductions possible
Estimates of dates reductions could be achieved for each claim.
Do your estimates already allow for possible reductions if the claims patterns indicate this to be a regular feature of this class?
Are these claims paid or outstanding?

May be difficult to recover money already paid.
Reinsurance program — i.e. the effect on the net and gross of reinsurance figures

7 Almost all candidates could describe the insurance cycle, but only the better candidates managed to explain the features of the general insurance industry which cause such cycles to occur regularly and how companies may mitigate the effect on their financial performance. Some candidates considered only the events that cause the cycle.

(i) It is the observed phenomenon of insurance rates rising and falling compared to the long term rate over time.
Rates fall due to increased competition as more capital is attracted into the marketplace. Eventually rates fall below the level where insurance companies can trade profitably and the whole industry starts to lose money. Eventually the losses cause some capital to leave the marketplace. The remaining members in the marketplace then raise rates.

(ii) Insurance is a highly specialised industry that is not well understood by many people outside of the industry.
Some of the capital that is attracted during the hard part of the cycle is "naive capital".
It is provided by people who do not fully understand how to price and reserve insurance risks.
By reserving inadequately these capital providers help drive rates down thinking they are still making a profit when in fact they are not.
Eventually the losses cannot be ignored and they withdraw from the market in fright.
Insurance has a tradition of long term relationships between insureds and their insurers.
This means that in some years if losses are made by an insurance company it is not too worried as it relies on future profits that it will be able to make from its existing clients.
This reduces the incentive for companies to increase rates if the rest of the marketplace is not doing so too, i.e. competition
Effect of economic cycle on propensity to claim.
Dependency on investment returns
Uncertainty of claims experience i.e. catastrophes and latent claims.
Entry and exit costs are high in insurance.
This discourages companies setting up when rates begin to harden then pulling out when rates soften again.
The long term nature of many insurance relationships also discourages this behaviour as a company with a reputation for suddenly pulling out of the marketplace will find it difficult to attract business.
The overheads of running an insurance company are high. Capital costs cannot be reduced much even if no business is written due to the minimum

solvency margins typically not being solely based on premiums written that year.
Staff costs cannot be quickly reduced due to employment laws, the need to service existing business and the difficulty of hiring on new staff when rates turn.
The difference between making enough profit to cover fixed expenses and making a marginal profit is thus significant.
Companies are often tempted to write business they know is strictly speaking underpriced to achieve some contribution for fixed expenses.

(iii) There are many way to mitigate this:
Weaken reserves
Change policy conditions
Customer retention strategy
Proactive portfolio management
Claims management
Tighten up on fraud
Strengthen reserves
Set up claims equalisation reserves in some territories
Purchase reinsurance cover — i.e. attempt to pass on the losses to a reinsurer. Some companies claim that they can arbitrage in this way.
Arrange long term multi-year financial deals. Often with an experience fund to smooth out performance. Need to ensure compliance with the regulators and tax authorities in the various countries.
Don't write business in loss making years. Will still have to manage expenses though. Will also have to manage customer relationships.
Diversification of business by classes of business and countries

8 Most candidates managed to produce reasonable answers to this question, although most did not go into enough detail. In particular answers were lacking in depth concerning the wide range of risks that should have been covered in part(i). Also there was a general lack of comment about statistical modelling in part (iii).

(i) Underwriting Risk
Asset risk
May be new class of business
Therefore unable to assess risks accurately
And calculate premiums correctly
Reinsurance default risk
May have inadequate reinsurance protection
Accumulation of risk — major manufacturer may provide large volumes of business
Increased chance of solvency-threatening loss

Reserving Risk
Inability to assess claim development correctly

Could be exposed to significant increase in claims cost following establishment of new legal precedent or legislation
Potential for increased claims due to changed economic conditions

Credit Risk
Could have excessive premium still to be booked (held by manufacturer / dealers)
May be using weaker reinsurers

Management Risk
Currency risk
Exposure to external political risks
Poor information and control systems
Exposure to fraud — policyholders, dealers etc.
Poor claims control
If this business is large in relation to other liabilities, rapid growth may cause internal problems through inability to process business properly
Expense overruns through overtime payments etc.
May have charged inadequate premiums to win contract

(ii) Expected volume, loan period, vehicles covered, vehicle cost, past depreciation, anticipated future depreciation, dates of introduction of new models (i.e. old models obsolete), economic — state of used car market at the end of the financing period, other quotes, geographical spread, any commission payable, how will residual value be determined,

(iii) Need to determine variability of residual values for each model.
Look at past residual values after the relevant period for each month for last 5–10 years, depending on available information (available from manufacturer, independent guides) of each model / similar models.
Try to fit a statistical distribution to obtain expected residual values.
Look at economic conditions relating to new and used car markets and make adjustments to distribution if appropriate.
Run simulations assess potential loss costs.
Divide loss costs from appropriate scenarios depending on appetite for risk by number of vehicles to get risk premium per vehicle.
Competitor rates
Add loadings for expenses, commission (if appropriate), profit, contingency margin, reinsurance cost (if appropriate) and investment return

(iv) Mileage limit/ usage, excess, experience rating, profit share, vehicle condition at end, service history, guaranteed minimum premium to insurance company (to cover set-up costs), payable on all sales (to avoid anti-selection) or certain models excluded (if estimates unreliable regarding depreciation costs), maximum benefit payable (either on individual risks or overall), residual values in finance package to be agreed with insurance company, maximum period of finance.

(v) Stop Loss

Results in this class of business may be volatile
Because linked to economic cycle
And used car market
Will protect against loss ratio higher than expected

Quota Share

No information on size of company or how significant this is likely to be in relation to other liabilities
To spread risk if new class of business
In return for expertise from reinsurer

Aggregate Excess of Loss

Protection against large number of losses after specified excess
e.g. if sudden drop in used car prices

9 There was a wide range of marks for this question even though there was no strong evidence of candidates running out of time. Most candidates who scored well on this question went on to pass. In particular a good answer to this question demonstrated to the examiners a candidates understanding of general insurance. In part (i) not all candidates commented upon the experience by class of business and as a whole, as requested. In part (ii) candidates lack of understanding of profit were clearly demonstrated by their lack of points describing the further information required.

(i) Analysis providing ultimate loss ratio by accident year for each line and whole company.

Analysis showing reserve strengthening/releases in 2000 for past accident years.

Class 1

Accident Year	**Ultimate @ 31.12.99**	**Ultimate @ 31.12.00**	**Run-Off (loss)/profit**	**ULR @ 31.12.99**	**ULR @ 31.12.00**
1997	1,300	1,313	(13)	65%	66%
1998	3,400	3,536	(136)	62%	64%
1999	3,500	3,850	(350)	58%	64%
2000		4,000			80%

Class 2

Accident Year	**Ultimate @ 31.12.99**	**Ultimate @ 31.12.00**	**Run-Off (loss)/profit**	**ULR @ 31.12.99**	**ULR @ 31.12.00**
1997	751	738	13	75%	74%
1998	1,596	1,556	40	76%	74%
1999	1,738	1,668	70	79%	76%
2000		2,250			90%

Total

Accident Year	**Ultimate @ 31.12.99**	**Ultimate @ 31.12.00**	**Run-Off (loss)/profit**	**ULR @ 31.12.99**	**ULR @ 31.12.00**
1997	2,051	2,051	0	68%	68%
1998	4,996	5,092	(96)	66%	67%
1999	5,238	5,518	(280)	64%	67%
2000		6,250			83%

State assumptions: undiscounted reserves, best estimate, level of prudence in reserves unchanged between the two evaluation dates.

Class 1
Experience indicates short tail business
Reinsurer default
Claims inflation higher than expected
Past accident years have suffered from run-off losses, reasons could be:
IBNER is inadequate due to recent legislative changes
More IBNR claims than expected
More credible information is now available (since relatively new company and book of business)
old case reserves reassessed in a one-off exercise,
more cases re-opened,
reserves may be discounted (the change is partly due to unwind of discount)
Loss ratio for latest accident year is much higher than previous years:
Catastrophes
soft market
and therefore lower premium per exposure than in previous years
(Latest year earned premium is much lower than previous year)
mix change (i.e. exposed to more unprofitable business)
legislative changes

extra caution due to adverse run-off losses for previous accident years
Bulk IBNR on latest year
(however no evidence of this at previous year end)

Class 2 — Past year run-off surplus
Experience indicates long tail business
more credible information,
old cases reassessed,
prudent reserving philosophy for this line in the past,
management action to offset losses in class 1

Classes 1 and 2 — run-off losses from past years
Latest year very high loss ratio compared to previous years
may just be caution as year is immature.

(ii) Demonstrate understanding of profit (premiums - claims - expenses + inv return - tax)
Confirmation of auditing of accounts
Details of changes in policy conditions
Details of changes in premium rates
Subdivide experience into homogeneous groups
Basis of reserving
Expenses — look at expense ratios
and combined ratios over time
Investment return generated — look at insurance result over time
Or look at discounted loss ratios and expenses ratios
Gross/net impact of reinsurance
changes in reinsurance — performance of reinsurance / bad debt —
frequency / size effects / catastrophe effects
Market features (losses and also premium levels)
Level of capital supporting business
Cost of capital / target rates of return
pattern for release of capital over time

For line of business comparison
allocation of fixed expenses
allocation of umbrella reinsurance costs
allocation of investment return
allocation of capital
allocation of tax