

# EXAMINATIONS

April 2000

**Subject 403 — UK Fellowship General Insurance**

*Paper Two*

## EXAMINERS' REPORT

1 *The main aim of this question was for the candidate to look at the generic actuarial control cycle and then using the specific information given in the question to compare the 'ideal' with the 'actual'. Most candidates centred their solution around the ideal rather than concentrating on the actual situation with which they were faced. Any valid approach was given credit with the solution below only being one such approach to the content to be included within the generic structure of the control cycle. Many candidates still fail in their drafting style by not being concise, helpful in their tone and structuring their response and some even fail to start and end the report in an appropriate way.*

- Premiums are received up front. Losses emerge over time. We do not know the result arising from a tranche of business for many years. Management cannot afford to wait that long to make decisions so they need good early estimates of results.
- There is a risk that a line of business is not identified as being unprofitable for a period of time during which more unprofitable business may be written.
- There is a risk of an individual bad underwriter giving rise to severe losses.
- Policywording control – anti selection
- There is a risk of servicing a broker who supplies only poor risks.
- Need to assess any accumulation of risk
- Management needs information to make informed decisions:
  - needs to be timely,
  - accurate,
  - detailed and
  - presented clearly.
- We need to worry about what is presented in the published accounts for various reasons:
  - rating agencies use them. A fall in the credit rating of the company may have a material impact on the new business quality and volumes.
  - Management owe a duty of care to the shareholders. The published figures may affect stock market prices or make the company more vulnerable to a takeover.
- Underwriters need to agree the underwriting plan with senior management. Otherwise planning is very difficult and accountability does not exist. Guidelines need to be set for underwriting purposes with acceptance / referral levels. The actual results need to be monitored against the budget, with discrepancies

explained and justified. In particular, we would wish to monitor the portfolio movements, claims experience and any under / over reserving.

- There is clearly a need for much better communication between the underwriters and the actuaries.
- We need to allow for IBNR and investment income. Otherwise it is hard for the company to compare long and short tail of lines of business. IBNR is often calculated at a highly aggregated level. Management needs this more detailed in order to spot individual underwriters who may be getting out of control.
- One solution is to “atomise” the IBNR down to the individual contract level based on outstanding and/or pure premiums. The contracts can then be aggregated back to any level management likes.
- The calculations at the individual contract level are not particularly meaningful, but provided they are aggregated back up sufficiently, it does provide a reasonable estimate of our ultimate results by sub-group.

**2** *The first part of the question was generally well answered with the better candidates scoring well over half marks. Again there were some cases of the report not being concise enough with good section planning. In a few cases the solution was not structured around the DCF model although credit was still given for valid points. Candidates generally performed very well in part (a) of the second part but most candidates could not describe in sufficient detail alternative proposals in part (b).*

(i) **General**

Construct a DCF model by adding CF's for each major class  
Combine smaller classes into a single class

**Data Sources**

Look at Management Accounts by month if available.  
Published A/C's not available because Co. B is a branch  
Budgets for 2000 + are probably available.  
Use equivalent Co. A internal data sources as benchmarks.

**Premium**

Determine GEP's for each class and product if significant enough.  
Look at premium by channel.  
Potential loss of business following takeover,  
as intermediaries reduce amounts in combined A+B.  
Need to compare our intermediaries' premium split with B's if available  
to see where there are concentrations / big overlaps  
Might use an overall Intermediary Loss parameter in DCF  
or for particular classes of business if appropriate  
Look at trends in premium growth for any sharp ups / downs

Forecast premium growth may be different for C's advisors than A's  
actuary  
In particular different assumptions re effects of rating action

### **Claims Cost**

Decide on cohort to project — U/W, Acc, Trading year  
Probably best to use Trading Year  
Easiest cohort to compare with published a/cs  
despite prior year claim reserve movements being included  
Decide on how to allow for B's observed claim reserving policy  
Project frequency and claim cost separately where possible  
Allow for claim cost (and frequency) inflation  
Effects of U/W cycle, but a 10 yr projection period could smooth out effects

### **Commission**

Use current rates / arrangements with intermediaries  
Unless v different to our own commission rates

### **Expenses**

U/W expenses — split between acquisition and renewal  
Synergy impact critical — understand difference between C and A's  
approach  
How much of synergy benefits to give to B in DCF model? 25% to 75%  
Claims handling expenses (indirect expense)  
compare claims dept. structures of B and A  
Cost of purchase  
Expense inflation

### **Investment Return**

What asset mix did C assume for TR and SF?  
probably B's current mix  
Rates of return on each class — average rate for 10 years  
Choice of equity return — risk free plus margin  
should be consistent with relevant part of valuation discount rate

### **Discount Rate**

CAPM – Risk Free + Equity margin \* Beta  
Choice of Beta – buyer / seller  
Compare with A's planned SH return before acquisition

### **Solvency**

Compare B's current notional solvency (because it is a branch)  
with what A needs to run business — say 40%  
Capital adjustment to DCF if difference exists  
£75m price suggests that B is undercapitalised  
Cashflow is 10 years so a terminal solvency value is needed.

Say margin of 20%

### **Reinsurance**

Goodwill is based on net income

Compare B's reinsurance charge with A's and market

B could be subsidised by C because it is a small branch

### **Tax**

Cashflows are net of tax — choose rate over period

### **Parameter Sensitivity**

Test changes in key parameters deterministically and / or stochastically

Choose best estimate assumptions to arrive at £50m

### **Dividends**

Allowance should be made for any likely dividend payments

- (ii) (a) The following items could influence best estimate choice:
- Purpose of each report — A is buying, C is selling
  - Data sources should be the same, but different interpretation of same
  - Data adjustments, treatment of missing data different
  - Reserving methods different, in particular the weightings given to each method
  - Choice of earliest Acc Yr run-off
  - Choice of development factors, averaging periods
  - View taken of data trends
  - Inflation — social, court, past, future
  - Different conclusions from meetings with B's staff
  - C is familiar with B
  - Treatment of large claims, special events (storms, etc)
  - Net of reinsurance projections, including bad debts
  - Revisions to best estimate following meetings other reporting actuaries
  - Difference in URR estimation
  - e.g. Invest Inc., DAC, Loss ratio projections,
  - Claims Handling Expenses — A's v B's
  - Allowance for discounting
  - Treatment of levies
  - Latent claims
  - UPR calculation
  - Difference is not great anyway!
- (b) It is a 50–50 sharing of the estimated difference which at first sight seems fair  
B is improving its latest profit figures — increased bonuses

No downside for the seller

A is down £10m but could have a favourable run-off of £10m if C's actuaries right

No protection for A if reserve position deteriorates

1. Do not remove any surplus from technical reserves — C will not share in any surplus

2. Cap + Collar arrangement

Suggest a certain amount be removed from reserve package

If deficit materialises, C pays A Y% of losses up to a limit L1

Ideally Y= 100% and L1 is unlimited

If surplus materialises, A pays C Z% of surplus up to a limit L2

Z should be high if no surplus is removed, i.e C should benefit more than A

The sharing of losses and surplus could be layered

A would furnish C with annual statement showing run-off position

Term of C+C and actuarial review of reserve position after 5 / 10 yrs

Definitions of reserves to be included

A has to satisfy C regarding settling practice

C+C could be split into TR and URR

3. Purchase of Reinsurance

If C does not give guarantees on downside then C pays for RI protection for A

A buys RI and treats as post acquisition cost for tax relief

Goodwill consideration adjusted

RI split into Claims Reserves and URR

Agg. XL for CR — Attach point, cover limit, term, price

Portfolio transfer instead of Agg. XL — more costly to set up

Stop Loss for URR — agree on attachment point, limit — difficulties in doing this

term — until all claims have run-off