

EXAMINATIONS

11 April 2002 (pm)

Subject 403 — UK Fellowship General Insurance

Paper Two

You must answer this subject only, you may not attempt another subject in the 400 series.

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*
2. *You have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*
3. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
4. *Mark allocations are shown in brackets.*
5. *Attempt both questions, beginning your answer to each question on a separate sheet.*

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.

<p><i>In addition to this paper you should have available Actuarial Tables and your own electronic calculator.</i></p>
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- 1 Company A is a UK based multi-national insurer (with an overseas non-insurance parent) that writes a book of predominately heavy commercial risks worldwide. The insurance company has branches in UK, France, Germany, Italy and the US. It writes four main lines of business (LOBs) in each territory; E&O/D&O (Errors & Omissions/Directors & Officers), Motor, Property Risk, General Third Party Liability. It has failed to achieve critical mass in its main target marketplaces and its parent company has decided to sell it to the highest bidder.

You work for a firm of consultant actuaries who have been asked by a potential purchaser (Company Z) to perform an independent review of Company A's undiscounted reserves as at 30 June 2001 on a "best estimate" basis. Whilst Company Z recognises that you are not auditors it nevertheless wishes you to ensure that the data provided appears reasonable and internally consistent.

You have held an initial meeting with the people (who are not qualified actuaries) responsible for setting reserves at Company A and the following facts have emerged:

- UK — all data triangles show accident year (which begins on 1 January for all countries) data at 6 months, 18 months, 30 months etc.
- In all other countries data triangles show accident year data evaluated at 12 months, 24 months, 36 months etc. but with the last diagonal of claims and premiums evaluated as at 30 June 2001.
- All countries have full gross triangles but net of reinsurance data quality is variable. For some classes of business only the last diagonal of net premium, net paid and net incurred claims are available. For some classes only the net outstandings split by LOB and accident year as at 30 June 2001 are available. For the UK only two net outstanding figures are available split by LOB; current accounting year and all prior accounting years combined.
- In France they have had to dismiss their claims manager recently because it was discovered that he had been systematically concealing the true sizes of outstanding claims in order to flatter the results over a number of years. The problem has now been fixed and there is considerable management information available concerning numbers of open claims as a result.
- The company's last published accounts for the full accounting year which ended on 31/12/2001 show outstanding claims reserves net of reinsurance recoveries of £300m and unearned premium reserves of £150m. The accounts state there is no requirement for an additional reserve to cover unexpired risks over and above that provided by the UPR.

Relationships between Company A and Company Z have recently become strained. Company A has made it plain that no further access to its staff to answer specific queries will be permitted unless Company Z makes a formal offer. You have access to all their statistical data but will not be allowed to contact Company A further. For the purposes of this exercise an answer is required based on what data is available — simply saying there is insufficient data to be certain is not what the client is looking for. The statistical data consists of the following:

- Underwriting year gross premium triangles split by LOB and country.
- Accident year gross paid and gross incurred triangles split by LOB and country.
- Details of all gross large losses (defined as being currently above £100,000) together with loss history. There are around 200 large losses.
- Details of their outwards reinsurance programmes which are extensive and extremely complicated. The structure of the reinsurance programmes do not appear to have altered radically over time. The company's retention is around £500,000 per loss.
- A list of their reinsurers together with the amount of outstanding recoveries each one owes.
- Accident year net paid and net incurred triangles split by LOB and country for most countries (but there are some LOBs/Countries where less data is available).
- A triangle of open claim counts for France split by LOB.

You have been asked to write a report concerning the following:

- Gross Triangles Issues
- Normal Accounting Type Issues
- Large Losses
- Effect of Reinsurance on Data
- Data Quality Issues

Discuss in detail the issues to be addressed that could distort the results and indicate how they might be resolved. Discuss what methodologies you would use and what assumptions you would make to arrive at an answer that you would consider to be a reasonable best estimate. [45]

- 2 In a particular country the household buildings and contents insurance market is dominated by two equal sized companies, Company A and Company B. The market is heavily regulated. Premiums may vary only in proportion to the sum insured. No other rating factors are allowed and business may be sold only through insurance brokers.

The Government has decided to remove the regulations covering premium rating and distribution and to allow companies to calculate premium rates in any way they choose.

- (i) You are a consulting actuary advising Company A. Draft a report to the Directors of Company A outlining the threats and opportunities created by this situation. [11]

Company A decides to implement a pricing structure for its buildings and contents insurance policies whereby the rate to be charged for a risk depends on many rating factors, and you have been asked for advice on this matter.

- (ii) Assuming that Company A has collected the data you would need and is able to supply it in the format required, having already made any necessary adjustments, explain how you would produce the new rating structure, discussing the main issues involved. [21]

It is now 3 years later and the market has developed considerably. One of the rating factors used by Company A is geographic location. Many more companies are now selling geographically rated buildings and contents insurance policies and the combined market share of Company A and Company B has fallen to 60% of policies sold.

You have just completed an analysis of the claims experience of Company A and have discovered that in many geographic locations the experience of the buildings insurance policies has been much better than expected, whilst in other locations the contents insurance experience has been much worse.

- (iii) Describe why this situation might have arisen. [10]
- (iv) Suggest possible courses of premium rating action available to Company A, discussing the risks associated with each. [13]

[Total 55]