EXAMINATIONS

September 2004

Subject 403— UK Fellowship General Insurance

Paper Two

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.

M Flaherty
Chairman of the Board of Examiners

7 December 2004

1 *Very few candidates got the projection periods correct in part (i), however many made a reasonable attempt to demonstrate to the examiners that they understand the issues. Candidates did however manage to go on and score reasonably well on part (ii). Also part (iii) was generally answered quite well. Answers to part (v) were generally on the short side with most candidates mentioning appropriate data and data sources but there was in several cases a lack of discussion regarding the advantages and disadvantages for both parties.*

(i) (1) mid point for inception of risks is 1 June
(2) midpoint for claims in the 3 years of cover is 18 months.
(3) Therefore midpoint of projection period is 1 Dec in 2006

Year 1 – mid point claims (half business 10 months, half for 4). mid point of claims – mid September (3.5 months)

Year 2 – (half – whole year, other half split as per year 1) – mid point 4.75mths from year end

Year 3 (2/3 whole year, 1/3 split as per year 1) – mid point 5.17 months from year end.

Assuming that there are no offs other than at end year 3.

Year 4 and 5 – mid point = 6 months.

Implicit assumptions

Claims are evenly split across the three years of the policy.

Vehicle risk profiles have not changed year on year and future will have the same profile as the past.

Cover offered and terms and conditions remain the same.

The % of vehicles hired out each day has not changed over the period of insurance.

Claims incurred includes all IBNR and IBNER — giving total cost for the earned exposures.

Inflate claims costs to year 6 values / divide by total exposure.

	Period of inflation	*Inflated costs*	*Exposure*	*Burning cost*
AY1	6 plus 2.5/12	14926500	23,333	639.71
AY2	5 plus 3.75/12	41370406	63,333	653.22
AY3	4 plus 4.17/12	74132798	103,333	717.41
AY4	3 plus 5/12	89876172	120,000	748.97
AY5	2 plus 5/12	89876172	120,000	748.97
Total		310,182,048	430,000	721.35

Comparing the calculated figure with the accident year equivalents. It is higher than the projected costs from 2000–2002 but lower than the recent accident years.

Compare reasonableness with last year's premium

(ii) Comments on the results.

The burning costs from each year do not give a consistent view of the costs for the new year.

2003 and 2004 are consistent but the other years are significantly lower.

It could be that the inflation is understated for the older years.

More recent years could have an element of over reserving, leading to an overstatement in claims costs.

IBNR / IBNER may not have been allocated correctly to each accident year.

More recent years may have had more large losses.

Using all years past experience may be understating the costs of the premium

The earlier years only have exposures from the first 2 years of the fleet.

It is often the case that AD claims are not evenly reported throughout the period that the hire vehicle is in the scheme. It is likely that the small bumps and scratches will only be repaired when the vehicle is 3 years old and is being made ready for sale.

(iii) Obtain the claims and exposure data split by vehicle inception year and exposure year.

Split the claims costs by claim type.

Produce frequency and average costs.

Separate out large losses.

Obtain information on the calculations used to calculate the IBNR — ensure that the amounts have been allocated correctly to each accident year or year of the scheme.

Understanding the cause of the results would help in assessing the best method of pricing.

One option is to come up with the claims cost separately for each of the three years of vehicle cover. There will be very little data to use for the last year of the hire cars coverage as only 2 years of business written is fully exposed.

Look at the experience of any other similar fleets of hire cars you have on the books or anything written in operations overseas.

(iv) No differential by location, vehicle car group or excess mileage.

No conditions placed on drivers with convictions.

3 year term with no chance to change rates for 3 years of vehicle experience risk from changes such as legislative changes.

It is unlikely that claims will be evenly spread throughout the term. It is likely that the AD claims will be reported late on in the term of the policy.

Risk of under pricing and with cap on premium increases it may be impossible to catch up over the period of the scheme.

(v) (a) You would want claims experience including age of driver as you want to evaluate the expected cost of claims from this segment of drivers to assess whether this is similar to that of the rest of the exposure.

The past experience from this scheme will not have any experience from young drivers.

You could look at the loading for young drivers on a standard book of business.

Poorer experience of younger drivers unlikely to be covered by the additional £50 excess.

Possible selection by drivers wanting a hire car as the premium will be cheap.

Unless overall premium rates are increased and you have cross subsidy the overall premium level will be too low.

Rental car company could increase their business by renting to 21-25 year-olds.

(b) You may be able to get mileage per hire period from the hire car records.

May be that there are very few cars that have actually had mileage in excess of 250 miles per day.

Extra effort for car rental company – declaring the mileage.

Effort for insurer of trying to collect the extra premium

Seems like a sensible option although it may not be worth the effort of trying to collect the extra premium

Consider what competitors are doing.

If there is lots of higher mileage hire contracts then the standard premium would drop, all other things being equal.

(c) **Differential rates by ABI car group and rental location**

Need historic policy exposure and claims data in order to assess the differentials for both car group and rental location.
Look at the two-way table and the consistency of results over time.

Good idea particularly if the exposure of vehicles by either car group or location has been changing over the period.

If the exposure has been fairly static in the past and is likely to remain so in the future there is little to be added by trying to rate by type of vehicle experience.

Car hirer could gain a competitive advantage if their competitors are not being charged differential rates.

If competitors are able to buy their insurance at differential rates then car hirer may well be at a competitive disadvantage with their current arrangement.

(d) Would be difficult to price when the fleets are new because of the fact that claims are not likely to be even throughout the 3 years of the vehicles life.

Would want to use data from years when there are equal number of vehicles of each age.

Need to model the expected number and cost of OD claims and the variability in these numbers. Expected number of claims will be dependent on the usage of the cars.

Amongst other things this is dependent on the number of tourists visiting the country.

It may be possible to have the limits of the aggregate deal dependant on the number of "lease years /days" (the number of days that the vehicles are actually leased out during the period of insurance cover)

To calculate the number of claims per 'lease year' this data item is required.
It is possible to calculate something but it wouldn't be easy. Big downside risk for the insurer. Claim is either nothing or quite a lot. If the expected frequency of claims is set too low and the aggregate is breached the cost could be large.

Rental company may be better off as they are not paying the insurer's profit and contingency loading for AD claims.

The level of the aggregate may affect the attractiveness of the proposal to the hirer.

(e) Need to assess the cost of handling each non third party claims and apply this cost to the expected number of claims in order to cost the fees for service option.

Possibly greater uncertainty of claims costs when you only have the third party element, although for car hire scheme the AD element may also be uncertain.

Favourable to car hirer if the insurer is making excess profits from the AD element of Premium. Vice versa if there is little margin in the AD claims.

Easy to assess if the claims experience is split by the type of the claim.

Rental company may not want to carry the risk due to possible accumulation.

(f) Not running the risk of a guaranteed premium.

Base the deposit premium on expected claims cost — as premium will be adjusted, the experience from the different ages of the vehicles is not such an issue.

Difficulty of agreement between parties on the credibility used in the final premium adjustment.

Would want to have a specific method of adjusting for IBNR when calculating the adjustment premium.

Car Hire company don't have the certainty of knowing what the insurance cost will be for the year.

Would want an adjustment for large losses.

(g) Consistent with the hire companies charging structure. Helps match income with expenses.

Premium reviewed each year. For the Insurance company, the premium is based on a more realistic exposure structure.
Data — would require the number of days the car has been hired out in the past.

Moral hazard — risk of the hire company not providing the "correct" exposure data.

The car hire company would still want fire and theft cover for the whole period including when the vehicle is not on the road.

2 *Part (i) tested general knowledge needs of 2 different sets of insured persons for travel insurance and was generally well answered. Many candidates however failed in part (ii) to discuss the issues they would consider in determining the measure of exposure and rating factors to price the business, instead lists were produced. Part (iii) was also not very well answered by several candidates with only general comments being made rather than specific points for this question. Part (iv) was particularly not well answered with typical confusion being demonstrated in deriving written and earned premiums. In many cases there was evidence of poorly constructed accounts and statement of further assumptions.*

(i) Need to consider the various perils and benefits typically available under travel insurance cover.
21-year old
Annual policy required
Wider geographical location coverage
Impact of delays and cancellations likely to be of less importance
More likely to require cover for extreme activities
Lower cover limit for loss of baggage / possessions required
Personal assistance cover more likely to be of benefit
Missed departure and travel assistance less likely to be required as greater flexibility on travel arrangements and less likely to have fixed bookings.
Required medical cover limits likely to be lower unless visiting United States or other countries with high medical expense costs.
Lower excess likely to be required as likely to be on a tighter budget
Automatic renewal may be required, as travels may overrun the 1 year term
Flexibility to change cover whilst away.

Family
Annual policy may not be required … depends on expected trips
Multi-person policy required
Personal assistance cover less relevant as developed countries usually have better services and facilities
May not require PP cover as it is included in their household policy.

(ii) Exposure measure should be the factor that best defines / reflects the underlying risk
It should be robust for different risk groups.
Both exposure measure and rating factors should be …
… objective
i.e factual and not based on judgement in order to avoid potential disputes
… measurable
… obtainable / verifyable
To avoid fraudulent behaviour
… non-manipulable
This is in order to avoid moral hazard

… acceptable to the policyholder
Policyholders should not be put off by having to provide the requisite information.
Rating Factors also likely to be the same as that used by competitors, in order to minimise risks of adverse selection
Method of distribution may affect factors available for rating
They should not be correlated to other factors used for rating the risk …
… as they do not add any additional value to the risk assessment process
They should be risk factors or reliable proxies for risk factors

(iii) Distribution Channel
This might be direct (internet or telephone), via brokers, travel agents, linked with credit cards / bank accounts
Need to consider acquisition costs, commission rates if applicable
Time needed to get things up and running
Market Environment / insurance cycle
Possibility of accumulation of risk – depending on method of sale.
Possibility of large individual losses
Current and likely future environment in which the company operates
E.g. with regard to competitors, regulations, etc.
Is it a profitable industry?
Does it link well with the overall corporate strategy?
Might it be a useful loss leader as a lead into other profitable lines of business?

What do the recent market trends show?
Financial strategy
Must consider the company's role & purpose, and the main aims of the company.
5 year projections will be needed to ensure proposal has a sound financial basis, including sensitivity test

Reinsurance arrangements must be considered in order to ensure exposure is suitably controlled to this new class of business
Financial and Business Objectives
Key measurable targets detailed, against which success of financial strategy can be measured.
E.g. with regard to market share, profitability, financial strength, etc.
SWOT and Business Risk Analysis
Action Plans
Need to consider various aspects of implementation / start-up
Need staff on board to do the work
Need systems in place and processes detailed to enable business to function efficiently with all applicable documentation
Need to consider pricing issues
Need data in order to model the appropriate risk premiums
Need information in order to estimate various expenses
Need to establish required return on capital / profit
What contingency margin is required for adverse experience?
Cost of reinsurance

Income and Expenditure forecasts / projected profit and loss account
Does the company have lots of spare capital with which to venture into new areas.
Are there any solvency issues that may limit the entry?
Are there any cashflow requirement issues?
Need to consider potential alternatives to this course of action.
Are there more profitable areas for expansion?
Are there more niche markets within the overall travel insurance class.
E.g. Saga — over 50s.
Regulatory and Legislative requirements
Will the FSA grant authorisation?
Lots of information will need to be provided regarding business plans, etc.
Close liaison will be needed to ensure regulator has confidence
Investment strategy will need to be established

(iv) Assume …
… Policies are sold evenly thro' the year
… Risk is spread evenly across the policy term
… 52 weeks in a year
… Business remains split in the same proportion for future years
… Premium levels remain constant for the period covered by the financial plan.
… The claims ratio applies equally to both types of policy
… The expense ratio applies equally to both types of policy
… The commission rate applies equally to both types of policy ..
… are covered proportionally by the reinsurer …
… and are the only expenses relating to business acquisition
… Any development costs relating to this new line of business are accounted for in the year to 31 March 2005
… Net investment returns of 5% p.a. are achieved on the average balance of technical reserves held at the start and end of the year.
… Only o/s claims and unearned premium reserves are required – i.e. No additional URR is required

2006 Written Prem = $0.75 \times (24 \times 100 + 780 \times 20)$
2006, 7 & 8 Reins Prem = $0.4 \times$ Written Prem
2006 UPR c/f = $(1 - 0.4) \times 0.75$
$\times [780 \times 20 \times (1/39) + 24 \times 100 \times (7.5/12)]$

2007 WP = $0.25 \times (24 \times 100 + 780 \times 20) + 1.2 \times$ 2006 WP
2007 UPR c/f = $(1 - 0.4) \times 0.25 \times [24 \times 100 \times (1.5/12)]$
$+ 1.2 \times$ 2006 UPR c/f

2008 WP = $1.2 \times$ 2007 WP
2008 UPR c/f = $1.2 \times$ 2007 UPR c/f

	Financial year ending 31 March		
	2006	*2007*	*2008*
Written Premium	13,500	20,700	24,840
– Reins Prem Paid	5,400	8,280	9,936
Unearned Prem b/f net of Reins	0	855	1,071
– Unearned Prem c/f net of Reins	855	1,071	1,285
Net Earned Premium	7,245	12,204	14,690

2006 Net Incurred Claims = $0.85 \times 7{,}245$

Net incurred claims	6,158	10,373	12,487

2006 Exps excl Comms'n = $0.10 \times 13{,}500$
2006 Comms'n Paid = $0.05 \times 13{,}500$
2006 Comms'n Rec'd = $0.05 \times 5{,}400$
2006 Net DAC c/f = $(675 – 270) \times (855 / 8{,}100)$
2007 Net DAC c/f = $(966 – 386) \times (1{,}071 / 12{,}420)$
2008 Net DAC c/f = $(1{,}159 – 464) \times (1{,}285 / 14{,}904)$

Expenses excluding Commission	1,350	2,070	2,484
Commission Paid	675	1,035	1,242
– Commission Recvd from Reinsr	270	414	497
Net DAC b/f	0	43	50
– Net DAC c/f	43	50	60
Total Expenses	1,712	2,684	3,219
Underwriting Result	–625	–850	–1015

2006 Inv Return = $0.05 \times 0.5 \times (400 + 855)1$
2007 Inv Return = $0.05 \times 0.5 \times (400 + 600 + 855 + 1{,}071)$
2008 Inv Return = $0.05 \times 0.5 \times (600 + 800 + 1{,}071 + 1{,}285)$

Investment return on Technical Acct	31	73	94
Insurance Profit (on Tech Acct	–594	–776	–921

END OF EXAMINERS' REPORT