

EXAMINATIONS

April 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.

J Curtis
Chairman of the Board of Examiners

5 July 2004

- 1** (i) *This part of the question was generally well answered with candidates producing a wide range of points. Most candidates had a good understanding of the differences between full and sector postcode rating. The points about anti-selection were not always well explained however. A number of candidates did not mention that more accurate rating might result in some policyholders being uninsurable. The omission of this point was surprising given industry discussion and press attention in recent years.*

In parts (ii) and (iii) some candidates confused the term "theoretically correct premium rate" with risk premium. The term was used and interpreted correctly in question 4 (iii) of the morning's Paper 1, and, whilst it is not directly defined in the glossary of 403 core reading, its meaning is implicit from the definitions of product costing and product pricing in the glossary. ("Product costing is the calculation of the theoretical office premium to be charged for a particular class of business" and "Product pricing is the determination of the actual office premium. This will take account of current market conditions.") The Examiners felt that the meaning should have been clear from the context of the question as a whole but were nevertheless more lenient on this question when considering borderline exam scripts.

(ii) A number of the marks available for part (ii) were for discussion of the effects of a competitive market. Many candidates outlined some points but did not explain these fully enough. General insurance practitioners should be aware that the premiums produced by actuarial analysis are not necessarily the appropriate rates to charge to customers, and they should be able to discuss the reasons for this.

(iii) The quality of answers for part (iii) was varied. The best candidates were able to talk separately about new and renewal business and mentioned some relatively simple investigations eg reviewing effect of previous price changes and testing the market on a sample of callers. Some candidates went off on a tangent describing analyses to derive the components of cost.

(iv) Most candidates had a reasonable attempt at this part of the question. The better candidates made a wide variety of points.

(v) Most candidates were able to tackle advantages and disadvantages from both the insurer and the lender's point of view, although most missed a number of the drawbacks for the insurer. The question required candidates to "discuss" rather than list the points. Points about increased administration or increased profitability were not generally discussed fully enough to gain high marks.

- (i) Full postcode v sector

Sector + 's

- easier to explain to customers e.g. if they move around the corner then their premiums are less likely to change

- customer is more likely to know their sector level postcode
- if sector level is the market norm then there is less risk involved in rating in the same way as the market unless you are certain the full postcode rates are correct
- easier to implement as with c1.8m full postcodes it takes a lot of time to maintain and update systems, this may not pass a cost benefit analysis

Sector –'s

- poorer risk selection e.g. may still take on poor flood risks that full postcode rates would allow you to avoid
- makes company look “backward” if others have implemented full postcode rating, this may be important in terms of gaining future business in channels other than direct selling
- could be selected against if other insurers rate at full postcode and hence end up taking on risks others will not cover. This will lead to deteriorating profitability. In extremis this will mean the insurer only covers the poorest of risks as better risks will have gone to one of the other insurers where cover is cheaper..

Full +’s

- More detailed method of rating so where the risk profile is “lumpy” over geographically contiguous areas more accuracy is possible. Where a sector postcode contained a full postcode area in which the insurer didn’t wish to write business, then at sector level they may have to turn away all business in that sector. This may not be acceptable to the lender.
- If competitors are at sector level there is the opportunity to take on low risk business in sectors that are perceived as high risk because they contain a full postcode which is high risk.
- In some cases this is easier to explain to the customer as they are charged a premium which better reflects their risk.

- Perils other than flood vary at full postcode level e.g. subsidence and full postcode rating would mean this could be allowed for when information was available. This may not have been worth implementing full postcode rating for on its own.
- Possibility of better reinsurance terms for rating more accurately. Also by rating more accurately could reduce the capital requirements.

Full –'s

- Difficult to maintain on systems due to the number of full postcodes there are. This is exacerbated if the lender has their own system as they would need to commit to the greater maintenance and the initial work to convert the system.
 - If the EA data is poor then implementing at full postcode level risks losing customer and lender goodwill. Also could lose significant volumes of business with resultant implications for expense ratio and profitability.
 - At the true risk rate some customers will not be able to afford to insure their homes. They will be deemed uninsurable which will have an effect on the value of their properties. Should this be the case this raises moral and political issues. There are potential solutions to this such as offering household insurance but excluding flood cover.
 - The lender may be reluctant to implement this as there will be areas they cannot provide household insurance in and they will probably not be able to sell mortgages where they cannot offer insurance cover.
 - Also the lender may not wish to invest time and resource into making a change that they perceive is detrimental to their business.
- (ii) Implementing the theoretical premium rates may not be the best course of action as:
- There is a risk in rating differently to the market and presuming the old rates were market proximate this means there are risks in moving to the new rates. In areas where the new rates are cheaper the insurer will pick up a lot of business. If this turns out to be underpriced then there will be a considerable loss. Conversely if the rates are too high then the insurer will not write much business and coverage of fixed expenses will be inadequate.
 - The theoretical rates could be very different to the previous rates and this will result in large premium changes to customers at renewal. This could lead to complaints which will increase pressure on staff who deal with customers. The insurer could lose a lot of business, which will affect the expense ratio and profitability.

- Both the above points could lead to strain on solvency.
- Competitive environment so just implementing the theoretical rates could lead to large increase or decreases in the amount of new business written through the direct channel. Either of these outcomes could be detrimental to the insurer. An increase in new business would place the call centre under pressure and could result in long waiting times for callers and a poor reputation. In addition there could be a worsening of underwriting standards. A decrease in new business would mean the insurer would have too many staff and expenses as a percentage of premium would increase.
- May want to give call centre staff the ability to price match. Alternatively may want to grow market share and thus deliberately write at lower rates. Could also allow for customer behaviour and use inertia pricing
- Difficult to know how to allocate expenses to get to theoretically correct rates so there will always be subjectivity in the rates.
- Moving the rates a small amount from where they are now lessens the risk if they turn out to be incorrect.
- Theoretical rates may call for changes to computer systems that would cost more to make than the new rates would make. In this case it would not be pragmatic to implement the new rates.
- Can increase rates if market rates are generally higher
- May not want to have significantly different rates for lenders / direct if TPRs show that to be the case.

(iii) New business

- Compare to competitors rates to see if there are any areas where we could charge more and still be the cheapest and if there are any areas where a small decrease in premium would make us competitive.
- This is introducing cross-subsidies into the rate in order to maximise the total profit.
- Compare terms and conditions to see if can differentiate
- Model the new business you believe the insurer would win on the theoretical rates and then amend the rates to optimise the profit made.
- For the business written via the lender it would be sensible to engage them at an early stage and determine the systems capability they have and how receptive they are to changes.
- These will determine the rates that are proposed to them for new business.

Renewals

- Often decide to run the renewals as a different book, so change the rates towards the new ones over a period of years.
- Thus the level of premium change faced by any customer can be controlled.
- Also the business strategy of selling new business at a discount and increasing the prices at subsequent renewals may be used.

(iv)

- Lender may not like change.
- Systems may need changes, staff retraining, literature changed.
- If there are full postcodes where the insurer will not provide cover any documentation which guarantees cover would need to be refreshed.
- All of this could be expensive and would bring disruption for which the lender may not see any benefit.
- Full postcode rating could be a threat to their core business of lending money to people to buy homes.
- However this could be a positive point as if they believe in the flood data they will know areas where properties are at risk of flooding and they probably don't want to lend money there anyway as their security (the house) is at risk.
- Contract with the lender may not permit changes to the rates of this kind.
- If there are to be large changes in customer premium the lender may feel, as the insurance bears their name, that their brand will be damaged in the eyes of the public.
- E.g. bad publicity.
- The lender may just refuse to change unless the insurer bears all the costs they incur.
- If the proposal involves new business and renewals being charged different rates or on different basis then the lender may not agree with the philosophy of charging different rates for the same risk.
- If significant increases / decreases in premiums this will have to be explained to customers. Could lead to loss in business and hence commission for the lender and consequential knock-on effects.

(v) Lender + 's

- Disruption to the customer can be minimised. The lender will determine premiums and can manage the changes in over a number of years if they so wish.
- Lender has control, for example could accept business that the insurer would not accept.
- Flexibility over rates – opportunity to make more profit
- Brand protected, the small bit of the business does not place at risk or constrain the larger part.

Lender – 's

- Bear the financial risk (volumes) of the difference between the insurers rates and the rates charged to the customer.
- Risk of pricing so that end up owing the insurer a substantial sum of money.
- Similarly they may end up making less money in commission and spending more in expenses than where the insurer set the rates charged to the customer
- Need to employ people to set the rates.
- Administration involved in setting up a system to determine what is payable to the insurer for the risks the lender has accepted and handling lapses, mid term alterations and renewals as opposed to the insurer doing it all. This could be costly.

Insurer + 's

- Get the rate you want for each risk.
- Lender will be happy so good relationship fostered.

Insurer – 's

- Lose control of the risk profile of the business. Lender could pile on business in high risk areas and the insurer would know nothing of this until they calculated how much premium they were owed.
- Lender may write business which the insurer wished to decline. Once they are on cover unlikely to exit in the year and then the lender and insurer have to agree a premium.

2 *Although this second question was framed around motor insurance, the Examiners consider that no candidate would have been disadvantaged by not working in personal lines insurance. The skills and understanding tested in this question are relevant for a range of classes of business and the question required only a basic knowledge of motor insurance, which is largely covered by 303 material.*

(i) On the whole, this part of the question was answered fairly well. Some candidates produced a very thorough discussion of the characteristics of motor insurance but did not relate them to the development patterns shown in the question. Others talked in great detail about individual development factors but did not make general points on the claims characteristics of motor insurance business.

(ii) The question was well answered with some candidates achieving close to maximum marks. The weaker candidates made no reference to the insurance cycle or to the effects of premium rate changes. These are particularly relevant for motor insurance.

(iii) The ability to adapt benchmark information in different situations is important in many aspects of the general insurance actuary's work, particularly in reserving and pricing. Most candidates seemed comfortable talking about the risk features but did not address problems with data timing differences or partial years of account. The better candidates identified the problems/issues for all aspects of each of parts (a) to (e) and went on to make practical suggestions that would be appropriate for a high level review. Answers that talked about obtaining a complete claims listing and splitting benchmark data by head of damage, or between disputed and non-disputed claims, did not demonstrate a pragmatic response in light of the purpose of the reviews, which were high level reserving exercises.

(iv) The Examiners often find that candidates do not document their assumptions well, but there was a wide variety of quality of answers for this question. More than two thirds of the marks available were for stating assumptions. Therefore, the candidates who recognised that the written rate changes needed to be earned, but then went on to struggle with the rate change earning calculations, did not necessarily score poorly.

(v) Again, there was a wide variety of scores for this question. The well prepared candidates scored close to full marks.

(i)

- Motor claims can be split into bodily injury and property damage claims
- The property damage claims tend to be reported and settled fairly quickly
- Bodily injury claims may take longer to be reported and sometimes the case estimates deteriorate as new medical evidence comes to light

- Further delays occur on BI claims as cases are brought to court to determine liability and settlement values
- Hence paid and incurred development patterns tend to be medium tailed, as shown in the triangles
- Motor claims are generally reported within the first 3 to 4 years, by which time statute of limitation kicks in for most claims
- This explains the more pronounced than otherwise expected notified claim movements in development period 2–3
- However IBNER claims development occurs after that point as medical conditions change or cases are brought to court
- Hence there is some notified claim development after year 3
- The extent of this late notified claim development depends on the strength of the companies' case reserves
- Generally motor claims are high frequency and relatively low amounts (except BI type claims) which explains relative degree of stability in the triangles.
- Currently in the UK claims are settled in lump sums rather than by structured settlement hence the bulk of payments are likely to occur within the first 10 years

(ii) Between companies

- Different mix of business
- e.g. targeting different customer groups; e.g. more non-comprehensive business
- Different target loss ratios for same profit
- Deliberate attempt to grow portfolio at expense of short term profitability
- e.g. Co B which may be a new entrant into the market
- Commission may not have been treated consistently between companies
- E.g. premium for Co A may be net of commission whereas Co C's may be gross of commission
- Co C appear more profitable than Co A but may be paying more commission to intermediaries in order to acquire the business

- Different definitions of claims with respect to allocation of claims handling expenses
- Different companies have different underwriting practices and control
- And different claims handling practices
- Timing and extent of premium rate changes / pricing structure
- Stability of ULRs depends upon size of company
- Different reserving strength between companies
- If ULRs are net of reinsurance then different reinsurance programs will have different effects.

By year

- Random variation (insurance is uncertain)
- Premium rate changes not in line with severity & frequency changes
- Caused by the insurance cycle
- E.g. premium rate increases in 2000–2002 following competitive market in late 1990s
- If not best estimate margins may vary by development year

(iii) General points that may come out under any part

- For each benchmark accident year cohort, accidents can be assumed to happen evenly throughout the year, on average at 1 July
- Therefore the factor to ultimate from year 1 applies on average to accidents occurring 6 months before then
- Need to take care in applying benchmark incurred claim patterns as different companies will have different case reserving strength
- Bodily injury claims are longer tailed than property damage claims...
- due to delays in assessing medical conditions and some cases being resolved in court
- For specialist business might want to abandon these benchmarks in favour of benchmarks from similar account

- Could try to get hold of quarterly developments for the benchmark companies
- Compare company triangles with benchmarks to see if developed similarly

(a)

- Motorcycle business BI/non-BI claims mix levels may be different to standard motor policies
- Rather than applying 12m, 24m etc cdfs, need to apply 6m, 18m etc. cdfs
- Can generate these by interpolating the 1/cdf benchmark figures, extrapolating back for the 6m cdf
- Alternatively could disregard data at 30 June 2003 in favour of data at 31 December 2002, to which benchmark pattern would more readily apply

(b)

- Business written through broker likely to experience greater claims notification delays than business written directly
- Appropriateness of benchmark patterns therefore depends on broker/direct mix of the five companies used for the benchmarks
- If benchmarks for direct business, would need to lengthen tail slightly to reflect additional delay
- E.g. interpolate pattern to delay by one quarter
- Taxi driver BI/non-BI claims mix levels may be different to standard motor policies owing to being on the road more.
- If greater proportion of bodily injury claims will need longer tail and higher factors to ultimate
- Covers being one month term would not necessarily invalidate patterns...
- ...as still expect average accident date for each accident date to fall mid-year
- but this depends on the stability of monthly renewals...
- ...amounts written (and hence earned) each month are more sensitive to rate changes as all policies renew every month. Volumes likely to be more variable

(c)

- Even if business assumed to be written evenly between 1 July 2002 and 31 December 2003, neither 2002 or 2003 would behave like a normal accident year
- Could assume that Company X's 2002 & 2003 accident years in combination would behave more like the benchmark 2003 accident year
- Rapid growth could lead to backlogs and hence development delays
- Internet business may attract a different mix of policyholders compared to that for the five benchmark companies
- E.g. more young drivers or certain occupations
- Hence benchmark pattern may be inappropriate

(d)

- The XL cover is at a fairly low level
- Net claims will have lower proportion of large losses....
-and hence lower proportion of bodily injury claims than gross
- With lower proportion of bodily injury claims will need shorter tail and lower factors to ultimate
- Portfolio is small which may mean less efficiency in dealing with claims as handling/assessment may be outsourced....
-which may mean longer patterns are required

(e)

- Underwriting year cohorts are longer-tailed than accident year cohorts
- Assuming business written evenly over each underwriting year, could blend patterns for accident year x with those for $(x + 1)$ to produce pattern for underwriting year x
- However, no court cases therefore settlement delays much reduced
- And benchmarks likely to be unreliable

(iv)

- Assume that a simple average of the ultimate loss ratios for each of the five companies will give a reasonable market estimate
- ...which assumes the five companies write similar levels of business
- and between them write a sufficiently large proportion of the motor market to be representative
- Take 2003 average ULR as a base as this is more likely to represent recent developments and assume that they are best estimates
- Could alternatively take earlier accident years as a base, although no rate change information for 2002 & prior is available
- In this case start with 76%
- Apply assumed severity and frequency inflation to numerator
- E.g. something in range 5–10% (choose 8% for calc)
-as claims inflation influenced by salary inflation/court awards “inflation” (bodily injury claims) and inflation in cost of repair
- Apply earned rate increases to denominator
- Assume no rate changes during 2002
- Assume rate changes are typical of market
- Assume rate changes apply cumulatively
- Assume theoretical rates are achieved
- Assume policies written evenly throughout the calendar year
- Increase in earned premium rates in 2004 over 2003 =
 $(1.05 \times 1/8 + 1.05 \times 1.06 \times 3/8 + 1.05 \times 1.06 \times 0.92/2)$ divided by
 $(1/2 + 1.05 \times 3/8 + 1.05 \times 1.06 \times 1/8)$
- = 1.059 (credit for close approximations)
- Hence estimated ULR for 2004 = ULR for 2003 * (1+inflation)/(1+rate increase)
- = 76% * 1.08/1.059 = 77.5%

(v)

- Specialise in niche areas
-here business less price sensitive
- ...although may not be able to access those markets immediately
-and may not have sufficient claims experience of markets to enable accurate pricing
- Offer higher optional excesses to keep premium down
- Improve claims coverage
- Offer better claims management services
-E.g. better courtesy cars, over the telephone notifications
- ...although improvements to existing service may be expensive
- Offer incentives to take out policy
-E.g. multiyear deals
- Or offer rewards for introducing friends
-E.g. gifts or cashbacks
-May be more cost effective than reducing premium rates if can strike deal with supplier (e.g. free retail vouchers)
- Offer discounts for cross selling (more than one insurance type)
- Advertising campaign
- Increase broker commission
- Use new distribution channels
-e.g. internet, partnerships with retailers, banks etc.
- But increased expenses may not compensate for unchanged premium rates
- Effectiveness on approaches depends on rationale behind not reducing premium rates.

END OF EXAMINERS' REPORT