

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2019 Examinations

Subject SA3 – General Insurance Specialist Advanced

Introduction

The Examiners' Report is written by the Chief Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision

Mike Hammer
Chair of the Board of Examiners
July 2019

A. General comments on the aims of this subject and how it is marked

1. The aim of the General Insurance Specialist Applications subject is to instil in successful candidates the ability to apply knowledge of the United Kingdom general insurance environment and the principles of actuarial practice to providers of general insurance in the United Kingdom.
2. Our expectation of a passing candidates at this stage is that, broadly, they should appear capable of stepping up to a head of function (pricing / reserving / capital) role at a small-mid sized organisation or being a senior member of a function team at a larger organisation. They should demonstrate not only a grasp of the technical aspects of general insurance actuarial work, but should also a good sense for products, the competitive marketplace, regulatory environments and the operational aspects of an insurance company. They should be able to pull these areas of understanding together to provide well rounded advice to the users of their services.
3. Consistent with previous examiners' reports, we would offer candidate's two key pieces of advice – (i) read the question thoroughly and (ii) take the time to think about what is going on. Further to previous reports, we would stress that candidates do not need to get the majority of the points included in this report in order to pass (there are significantly more than 100 marks available for the points in this report). Time spent making sure that you are answering the question that is asked is therefore more valuable than a panicked rush to put down as many points as possible, regardless of whether they are relevant.
4. On the first point, candidates should always work on the assumption that the question wording has been carefully chosen. It is therefore essential to read the question properly.
5. If something is not asked for then candidates will waste valuable time writing answers that will gain no marks. These broader answers may be a logical next step to the question and so may be appropriate for candidates to discuss in a professional context. This is an exam however with a finite number of marks available and so the scope must necessarily be limited and specifically defined.
6. If a question does specifically mention something, candidates should also assume that there are definitely marks available for this aspect of the question. During the exam setting process, any content that is superfluous will have been removed. A clear implication of that is that if there are numbers provided in the question paper then there are marks available for comment and consideration of those numbers.
7. Wording of question sections should also be considered in the context of the position within the overall question. Where new question information is provided between sections, candidates should recognise that this information is specifically relevant to the following section or sections. When answering preceding question sections, candidates should not consider any subsequent information in their answers (although it may cover similar ground).

8. Various examples from this paper of recurrent failure to read the question are noted below. On the second issue, candidates should note that SA3 is the key paper at which we test candidates' broader thinking. This is generally the final paper before qualifying as a professional, and we consider a capacity for broader thinking to be one of the best indicators of a candidate's suitability to act in a professional capacity once qualified.
9. As such we aim to design exam papers so that it is difficult to pass without displaying some capacity for independent and broad thinking, as well as to heavily reward instances where these skills are displayed. When reviewing past papers, candidates should assume that the marks available for generic points are substantially less than those awarded for the more challenging points that would be the mark of high quality professional insight in a practising actuary. Marks available for list items from bookwork are lower still.
10. We strongly recommend that candidates step back and take the time to thoroughly think about what is actually going on in question situations proposed rather than simply considering numbers to be analysed with standard techniques. For example, candidates might think about what claims actually are for a particular class of business, considering factors such as what actually causes the claim, who brings the claim, how it is dealt with once brought, what makes one claim small while another is substantial etc.
11. This more grounded, real world perspective will help candidates to consider such things as practical issues, stakeholders involved and their potentially diverging objectives, wider impacts, regulatory or ethical issues, inappropriateness of certain actuarial techniques for the specific situation, current economic or cyclical effects etc. This is likely to lead to significantly broader point generation (and indeed reflects the thought processes of the examiners in drafting the questions and solutions) and a more rounded understanding of the underlying risks and dynamics which should also be of value to candidates when dealing with different stakeholders in their professional life.
12. More generally, we would also advise candidates to employ basic exam techniques such as well structured answers and effective time management.
13. Candidates who give well-reasoned points, not in the marking schedule, are awarded marks for doing so.

B. Comments on *student performance in this diet of the examination.*

Questions 1 & 4 were well answered reflected in the pass mark of the paper. Question 2 was the weakest on the paper, with a number of candidates not reading the question properly or struggling to think through commercial reactions & dynamics. Question 3 was varied, a reasonable number of candidates did well but some seemed to struggle to apply their core product knowledge when a situation was framed as a pricing question.

C. Pass Mark

The Pass Mark for this exam was 61

Solutions for Subject SA3 – April 2019

Q1

(a) Maximum premiums

- Should ensure premiums are affordable [1]
- TCF [½]
- Which is particularly important for compulsory classes [½]
- Or for vulnerable people [½]
- . . . e.g. subsidence / flood exposures [½]
- Makes financial planning easier as removes some uncertainty [½]
- May help attract business from abroad [½]
- Could stifle competition, i.e. everyone charges the maximum [1]
- Loosens pricing discipline / creativity [½]
- May need to be revised annually? [½]
- Regulatory overheads [½]
- If the maximum is set too low all insurers may pull out of that class of business [1]
- Risk of insolvency increases if made unprofitable [½]
- If set too high then pointless [½]
- May lead to increases for lower risk policyholders to subsidise higher risk [1]
- Unlikely to be relevant for commercial business [½]
- May create incentives to weaken other policy aspects to manage price caps [½]
- . . . such as more restrictive T&Cs, worse service etc [½]

(b) Gender neutral pricing

- Gives the appearance of fairness [1]
- Conversely may appear unfair where public are aware of impacts of gender [1]
- Will meet EU legislation [½]
- Proxy [1]
- More pooling of risk [½]
- Example of someone who pays more [½]
- Example of someone who pays less [½]
- May be nobody pays less if prices just go up to the more expensive gender [1]
- May impact profits / commercial implications [½]
- Where gender is a risk factor pricing is more difficult ... [½]
- ... as need to make an assumption regarding proportions [½]
- May lose business if international competitors are not similarly restricted [½]
- And similarly insurers could be selected against in this scenario [½]

(c) Standard formula

- Allows more meaningful comparisons between insurers [½]
- Particularly between similar sized companies [½]
- Writing similar lines of business [½]
- Although unless it is very complex comparisons will be broad brush [½]
- May be cheaper to use than alternate methods [½]
- Cheaper for regulators [½]
- Less investment in internal model development [½]
- Easier to implement [½]

- Easier to use / explain [½]
- One size doesn't fit all [½]
- Don't need approval [½]
- Does need to be reviewed regularly [½]
- Less documentation and compliance issues [½]
- Less data required [½]
- More transparency [½]
- May result in higher or lower capital depending on requirements [½]
- May still be considerable scope for actuarial judgement [½]

[28, Max 12]

[Total 12]

The standard formula section was generally well answered as it's a more frequently recurring knowledge based element.

Answers on the other elements varied more with some candidates not getting many of the commercial reaction or affected policyholder group points.

Q2

(i) Advantages

- Inclusion of acquisition costs is more consistent with international accounting standards [1]
- . . . may make it easier to communicate with investors / rating agencies / reinsurers / overseas regulators [1]
- High commission products will now be highly visible and have a high opportunity cost for insurers that choose to write them [1]
- This may push insurers to renegotiate commission levels or pull out of products with excessive commission [1]
- This is likely to reduce the number of poor value products sold to consumers [1]
- Allows regulators to focus more easily on changes to affordability for policyholders [1]
- May create more incentive for insurers to challenge overall commission levels with brokers and reduce undue market influence [1]
- May encourage insurers to write more business directly to capture more of the value chain / make better use of GG capacity [1]
- . . . may reduce the number of delegated arrangements in place which is potentially lower risk / lower regulatory cost [1]
- May provide better indication of likely levels of any insurance premium tax expected [1]

Disadvantages

- Gross net measure is more directly aligned to premium actually received by the insurers [1]
- . . . so is likely to be a better indicator of the expected profitability of the insurer [1]
- . . . making it a more useful indicator to support maintenance of financial stability of insurers [1]

- Investors / rating agencies / reinsurers etc. may be more interested in profitability so gross gross may not be as useful for external reporting [1]
 - Gross gross measure may not align as well to internal performance targets / underwriting management / strategy [1]
 - Profit commissions would be included in GG premium so could further distort true profitability if there is offsetting profitability / [1]
 - New / renewal mix may become more important if acquisition costs are higher on new business [1]
 - . . . although many of the additional costs on new business may be internal so not affected by the change [1]
 - May be some IT / reporting / calculation change costs involved [1]
 - . . . although would expect systems to already capture pre and post acquisition cost data [1]
 - Potential for business plan arbitrage to maximise profit potential within gross gross business plan limits [1]
 - . . . e.g. by pulling back in higher commission lines and using that capacity more efficiently in lower commission lines of business. [1]
 - . . . or by creating artificial structures to disguise the true volumes of commission payable, e.g. by writing as reinsurance of a local fronting agent [1]
 - May drive pricing distortions / volume impacts in particular product lines depending on typical commission levels [1]
 - Any systemic shifts in commission levels may force insurers to shed business to stay within their premium limits [1]
 - May be challenges in setting appropriate starting business plan limits as part of the transition – companies with a higher average commission will effectively get extra capacity relative to their peers [1]
- [26, Max 8]

(ii) Advantages

- Most aligned of all to the profitability of insurance companies as it directly relates to the volume of premium they receive [1]
- Would also pick up reinsurance cycle effects in any planning and rate monitoring [1]
- Encourages more use of reinsurance potentially reducing volatility of the overall market [1]
- May be easier to track the overall size of the market as it would inherently avoid any double counting (with GG or GN basis any inwards reinsurance from another regulated entity would show up twice) [1]

Disadvantages

- Could allow insurers to pursue higher market share while staying within their plan limits by ceding business externally [1]
- . . . may reduce the overall size of the regulator's market if that increases volume ceded overseas [1]
- Would be harder to isolate rating levels for the market as they would be a blend of direct and reinsurance rates [1]
- Increasing reinsurance rates would lower profitability but also allow insurers to write more business as their net net volumes would be lower [1]

- Greater uncertainty around reinsurance costs e.g. adjustments and reinstatements or profit commissions on QS, or cover not purchased until mid-year [1]
- Reinstatements may mean that underperforming businesses gain the ability to write more business [1]
- Allocation of reinsurance costs to individual policy level for rate monitoring purposes could be challenging [1]

[11, Max 4]

(iii)

- If same rate is used would mean an increase in the overall levy payable by the market [1]
- . . . although an alternative rate could be selected to make the market impact roughly neutral [1]
- If a flat rate is used across the market then there will be a reallocation of costs between low and high commission companies [1]
- . . . companies with lower commissions are likely to be winners [1/2]

Characteristics of winners / low commission companies (offer corresponding marks for losers):

- More inwards reinsurance [1/2]
- More direct to customer business e.g. through sales or websites [1/2]
- Fewer delegated arrangements [1/2]
- Fewer broker facilities [1/2]
- More commercial business like energy, political, terror etc. [1/2]
- Less consumer business like A&H, motor, warranty etc. [1/2]
- Could make some lines of business no longer viable if commissions are particularly high [1]
- May alter demand for different classes of business with resulting impact on rates / competition / availability [1]
- May impact amount of overseas business accepted in some lines [1]
- . . . or ability to access overseas business through local delegated arrangements [1]

[10½, Max 4]

[Total 16]

This was the weakest answered question on the paper, and was generally lowest scoring in spite of whole marks being available for every point and substantially more marks being available than the limits on the question, although some candidates were able to score a lot of marks without needing to write that much.

The most common mistake was not reading the question properly – this looked at a change of basis for planning and rate monitoring only. Companies could still look at whatever basis they want and would generally have had the ability to do so before or after the change. This resulted in a number of candidates putting non scoring marks down.

Some candidates also failed to read the question which clearly set out what was meant by the three premium bases, although in 2i this generally did not have as substantial an impact on the marks as it just changed the advantages to disadvantages and vice versa.

On the net net side however candidates were more likely to miss out on marks, e.g. for interpreting the question as a net net basis removing the impact of reinsurance to the affected processes.

Again a number of candidates didn't consider the commercial reactions and implications for market dynamics, behaviours and demands for different types of business. These sort of higher order skills are a key part of what we are testing in SA3.

2(iii) was generally reasonably scoring as candidates only needed to work through a few of the most obvious points to get near full marks.

Q3

(i)

- Size of risks [½]
- Volume of claims [½]
- Number of years of relevant history available [½]
- . . . choice of base period within available history [½]
- . . . sensible comment on what makes a year relevant / not relevant [½]
- Large claim distortion potential [½]
- Best approach to use for adjusting for large claims [½]
- Appropriate return period to apply to any large claims [½]
- Appropriate large claim loading to use [½]
- Catastrophe claim distortion potential (and any similar commentary to large claims) [½]
- Consistency in case reserving over time [½]
- Level / quality of case estimation [½]
- Appropriate development to ultimate [½]
- Choice of development method [½]
- e.g. paid / incurred / BF / other [1]
- . . . or combination depending on maturity of year [½]
- Choice of IELR in any BF type method [½]
- Credibility weighting across years [½]
- . . . taking account choice of development method [½]
- . . . and relative size of different years [½]
- Appropriateness of benchmark development patterns if required [½]
- Quality of data [½]
- Is data up to date? [½]
- Changes to underlying risk profile [½]
- Claims frequency inflation [½]
- Claim severity inflation [½]
- Extent of inflation inherent in the exposure measure [½]
- Other relevant trends [½, Max 1]
- Changes to exposure volumes [½]
- Changes to rating levels if using premium as a proxy for exposure measure [½]
- Nature of rate index (including / excluding claims inflation) [½]
- Changes to terms and conditions [½]

- Accident year / underwriting year / reporting year basis [½]
 - Any distortions to periods involved (e.g. partial years) [½]
 - Insurance cycle effects [½]
 - Appropriate allowance for any profit commissions [½]
 - Deductibles / excess / limits [½]
 - Any aggregate limits / deductibles [½]
 - Reinsurance [½]
 - Line of business [½]
 - Office premium loadings Up to one mark for (half per point) [½, Max 1]
 - Changes in processes [½, Max 1]
 - Currency [½]
 - Up to 1 mark for sensible comments around NCBs etc if different interpretation [Max 1]
- [24½, Max 8]

(ii) *Don't give credit for repeating generic points from (i) but if they are tied to the class in some way as specific example of a generic issue then can give credit*

Individual large commercial property risks in the US

- Significant large claim / fire potential [1]
- Significant CAT exposure potential [1]
- Majority of risks may not have experienced a major fire / CAT loss so will need some form of large loss / CAT loading [½]
- Risks that have experienced a large loss / CAT may be unfairly penalised by a burning cost approach and will require some form of adjustment / smoothing [½]
- Appropriateness of adjustment / large loss loading is likely to vary significantly by risk [½]
- . . . likely to be heavily dependent on type of occupation [½]
- . . . industrial higher risk than office block for example [½]
- . . . building construction also relevant, age / building code / safety features etc. being other indicators [½]
- Appropriateness of CAT adjustment / loading is likely to vary significantly by risk [½]
- . . . location will be most significant driver [½]
- . . . e.g. coastal for hurricanes, flood plain for flood, fault line for earthquake [1]
- . . . may be CAT model information to provide appropriate loading [½]
- . . . construction / occupation etc. may also impact risk [½]
- Layer structure will significantly affect the volume of data likely to be available and relevant for experience pricing [1]
- . . . may work adequately for primary layers without significant CAT or large loss potential [½]
- . . . particularly if the risk is also large enough / there are enough locations to have a reasonable spread of lower value claims [½]
- . . . although many such risks would also have deductibles [½]
- Short tail so development not too problematic [½]
- Reason for cover [½]
- New vs renewal [½]
- Scope for negotiation [½]

- Business interruption cover [½]
- Other ancillary covers [½]
- Sensible comments on brokers [½]
- Other relevant comments on US not covered in CAT content e.g. fire regs [1]
- Any changes in risk profile / risk mitigation / underlying exposures etc [1]

Travel insurance written internationally direct & delegated

- Direct business for consumer policyholders generally won't have any experience so would not carry out any kind of burning cost experience pricing on an individual policy basis for an individual consumer policy [1]
- . . . although would have a lot of data to develop an exposure based pricing model which is likely to be based on own internal data [1]
- Large commercial risks may have sufficient data for pricing [½]
- . . . binders are also likely to have sufficient claims data for pricing [½]
- Predominantly attritional portfolio [½]
- Some large loss potential from major medical expenses [1]
- Some accumulation potential from CAT driven travel cancellation [1]
- Pretty standardised cover so limited T&C concerns [½]
- Rate changes / exposure changes will be key to know [½]
- Any mix changes could be material [½]
- e.g. age / occupation etc. [½]
- . . . location key for CAT exposures [½]
- Claims inflation potential issue for medex [½]
- . . . which may vary significantly by region [½]
- Short tail so development not too problematic [½]
- International so some currency consideration issues [½]

Employers liability brokers & binding authorities

- Significant large claims potential [½]
 - Significant latent claim potential [½]
 - Long tail class so development is going to be very critical [½]
 - Broker sourced business may not have large experience volumes depending on size of client [½]
 - Certainly would expect limited large losses for SME business [½]
 - Binders would be expected to have reasonable volumes [½]
 - But length of tail means only established binders will really have seen full potential [½]
 - Any class specific changes to risk profile [½, Max 1]
 - Choice of IELR is going to be highly significant for this [½]
 - Weighting between years could be material [½]
- [3½, Max 9]

(iii)

Commercial property

- Sum insured likely exposure measure [1]
- Potentially split across multiple locations [½]
- Likely to have some kind of first loss curve to capture layer structure [½]
- Rating factors applicable to the risk [½]

- Some may apply by location, e.g. occupation / construction [1]
- Some may apply at overall level, e.g. risk management / claims history [1]
- May include some explicit loadings for CAT exposures either through 3rd party model or internally (credit for any sensible commentary) [1]

Travel insurance

- Likely to have multiple sums insured for different perils e.g. medex vs luggage [1]
- Likely to be standard tiers of coverage options for simplicity [½]
- . . . potentially with some add-on covers e.g. sports [½]
- Duration a key exposure factor [½]
- Location e.g. US / ROW [½]
- Pre-existing conditions exclusions or adjustments [½]
- Also number of people covered [½]
- Unlikely to have any kind of ILF / first loss [½]
- Will have some kind of deductible adjustment [½]
- Variety of rating factors likely to be used [½]
- *Credit for any sensible examples of rating factors* [1]

Employer's liability

- Wageroll most likely exposure measure (turnover or headcount also possibilities) [1]
 - Likely to split into detail to pick up mix of different activities e.g. office vs high risk manual [1]
 - May be standard cover (statutory minimum is £5m and typical is £10m) so limited use of ILFs [1]
 - Although may be some ILFs if alternative cover levels [½]
 - No deductible factors but may be credit if any warranties for agreed retention in place [1]
 - Likely to be a variety of rating factors e.g. risk management or other examples [1]
- [17½, Max 9]

(iv)

- Property – could argue depending on interpretation of “large” but likely to be at least partly exposure rated for CAT or very large losses [1]
- Travel – mostly experience for binders, mostly exposure for direct, based on data availability [1]
- EL – mixture for binders depending on size / history, mostly exposure for direct except largest and most established clients [1]

[Max 3]

[Total 29]

Performance was variable on this.

3(i) was mostly quite high scoring as candidates just needed to mention a number of different considerations applicable to either reserving or burning cost pricing.

In spite of having 3(i) to establish candidates thinking on issues and distortions, a number of candidates then gave much weaker answers for 3(ii), and didn't write down the product characteristics relevant to the considerations they'd raised in part (i). This is a recurring

question structure where we establish generic bookwork before asking candidates to apply the same list of issues to a specific situation or product later on.

Also, as we reiterate in the examiners reports, candidates should not get concerned about whether a question is ostensibly on pricing, reserving or capital – most can be answered well just with a solid knowledge of the individual product lines (e.g. mentioning CATs on US property and latent claims on EL).

3(iii) was the weakest answered part of the question, although we would remind candidates that SP8 content is examinable in SA3. All candidates should be broadly aware of the basic structure of a pricing model which largely applies across most lines of business:

- An exposure measure to which a base rate is applied for a base level of cover (often divided e.g. by trade with different base rates applicable)*
- Some form of limit factor or first loss curve to adjust for different limits or deductibles. This may not be relevant for all classes, for example motor third party liability where there is no policy limit, or may be more of a bundled change in coverage (e.g. different tiers of limits and items covered on a travel insurance policy)*
- Rating factors applicable to the class, where the specific characteristics of the risk or the cover applied are used to adjust the price*
- Office premium adjustments for costs or commercial variations to the base risk cost*

Again, candidates should focus on having a strong understanding of the core characteristics of the main general insurance products that they are able to apply into reserving, pricing, capital or other situations – even if they do not generally work in a particular area the product principles are the same.

Q4 (i)

Policyholder (main driver)

- Age [½]
- Gender if allowed [½]
- Occupation [½]
- Location [½]
- years since obtained licence [½]
- claim history / NCD [½]
- Previous convictions [½]

If driving restricted to named drivers or any third party [½]

Details of additional drivers [½]

Vehicle

- make & model [½]
- age [½]
- use - personal / business [½]
- value [½]

- mileage [½]
 - modifications [½]
 - where kept overnight [½]
- Policy specifics:
- Type - Comprehensive / Third party [½]
 - Excess [½]
 - Term [½]
- [9½, Max 6]
- (ii)
- Lack of data [½]
 - . . . or understanding of the risk, impacting [½]
 - Pricing [½]
 - reserving [½]
 - capital modelling [½]
 - Anti-selection [½]
 - . . . leading to financial loss [½]
 - Loose policy wording providing additional coverage [½]
 - . . . or additional claims disputes [½]
 - Lack of relevant operational capability [½]
 - . . . or adequate pre-launch testing impacting [½]
 - Claims handling [½]
 - IT [½]
 - Sales [½]
 - Customer service [½]
 - Wrong assessment of demand levels [½]
 - Too low to cover fixed expenses [½]
 - Too high to manage effectively [½]
 - Concentrations in segments indicating anti-selection [½]
 - Slow to market so lose first mover advantage [½]
 - Competition higher than expected [½]
 - Liquidity issues [½]
 - Reputational impacts [½]
 - Regulatory issues [½]
 - Reinsurance issues [½]
- Credit for other valid points* [12½, Max 6]

(iii)

Reserving

- Hourly basis means earning pattern will be extremely quick for individual policies [½]
- Volumes will be more variable however as majority of period earnings will be for policies entirely new in the period [½]
- Likely to be negligible UPR at any valuation date [½]
- . . . unlikely to know exactly what UPR was at a point in time and will have earned by time valuation is carried out [½]
- Any reserving carried out in advance of the valuation date would have a greater uncertainty in projected exposure volumes [½]

- Any triangle projections are unlikely to be effective given variation in earnings profile [1]
- . . . may need some form of bespoke reporting delay / earning pattern methodology and or some form of IBNER allowance [1]
- Uncertainty in initial IELRs [1½]
- Reporting delay potentially expected to be shorter than normal as policyholders will be coming off cover very soon after starting their cover so are likely to wrap up quickly [1]
- . . . especially if the mobile app allows electronic claims reporting [½]
- . . . or actively queries the policyholder to confirm whether or not they have had any incident [½]
- . . . reporting may be quicker if using policy to borrow someone else's car as there would be social pressure to resolve any damage caused quickly [1]
- . . . may lead to lower pure IBNR [½]
- IBNER development / settlement delay on known claims likely to be similar as not particularly affected by any of the individual characteristics [1]
- . . . although may alter the balance between large / small or claim types [1]

Pricing

- Per policy cost is likely to be a lot lower [1]
- . . . but will be materially higher if expressed relative to time on risk [1]
- Likely to be much flatter rating structure given need to make short term sales quick and efficient [1]
- . . . potentially much more cross subsidy / selection risk [1]
- Rating factors that are used are likely to be similar [1]
- Direct sales and technology driven so office loadings may well be lower [1]
- Although much greater uncertainty as to how much business to spread over [1]
- Different driver mix e.g. more younger drivers given internet or more city drivers given intermittent use [1]
- No initial competition so can potentially charge higher margins [1]
- May require higher loadings for uninsured losses given uncertainty on exact timing of accidents for short usage periods [1]
- Reinsurance costs may be difficult to spread (or may be charged policy by policy) [1]

Capital modelling

- Much greater uncertainty over premium volumes & expense base [1]
 - High uncertainty over pricing given start up and non-standard nature [1]
 - Large claim experience likely to be similar however and this the key capital driver [1]
 - Accumulation risks from e.g. hail, flood may be lower as cars are on risk for shorter periods of time [1]
 - Sensible comments around capital components (UW, Res, Operational etc) [2]
- [27½, Max 9]

(iv)

Product design

- Hourly basis is non-standard for motor insurance [1]
- Limits availability of appropriate benchmark data [1]

- The costs of normal insurance relies on the vehicle not being used for a high proportion of the time [1]
- Hourly usage means that the vehicle is likely to be in use for the majority of cover as otherwise individuals will pay for a smaller number of hours [1]
- Potentially people will overpay to provide a buffer, but there will not be benchmark data to assess this [1]
- Use of product for access to someone else's vehicle on a temporary basis increases risks that the driver will be unfamiliar with the vehicle [1]
- . . . may not be dissimilar to hire vehicle risks [1]
- . . . although unlike hire vehicles people may be more likely to be driving in an area they are familiar with [1]
- Potentially greater risk of non-regular drivers using this policy [1]
- Will be key for pricing to allow for these issues but will be very uncertain [1]
- Design will also impact on other areas such as reserving etc. [1]
- Non-standard design so volumes will be particularly unpredictable [1]
- Greater risk of uninsured drivers if can't extend cover while on a journey [1]
- Increased fraud risk as may try to claim for events just outside of a short period of cover [1]
- May impact mix – e.g. more city drivers [1]

Chosen distribution method

- Mobile phone adds significant IT risks [1]
- Need to have robust and reliable systems [1]
- Hourly nature of product (i.e. an “on demand” product) means any downtime might be particularly problematic [1]
- . . . especially if people are using the product for immediate cover out of hours [1]
- Accessing product via mobile phone is likely to limit the amount of data that can be requested from a potential policyholder [1]
- . . . typing in large volumes of data to a mobile device is prohibited [1]
- . . . people's expectation of a mobile experience is different [1]
- May be possible to supplement some information with public data sources [1]
- . . . or information collected from user's phone [1]
- . . . which may have GPS, social media information etc. [1]
- . . . using broader customer data in this way may have own separate risks e.g. around privacy [1]
- Increases risk of anti-selection where insufficient pricing information [1]
- May impact mix e.g. more younger drivers comfortable with technology [1]
- Cyber risks [1]
- Data loss risks [1]
- Expertise required [1]

Start-up nature

- Higher reliance on a small number of key people, so higher operational risk [1]
- Less own data, so less certainty around parameters for capital model [1]
- Less own data so less certainty that pricing is accurate [1]
- Likely to have less infrastructure and back-ups set-up so higher severity potential if things go wrong [1]

- New business strain may mean highly reliant on backers opening up potential for problems if they pull out with liquidity, much higher NBS for a start up than an insurer entering a new line [1]
 - also insurer entering a new line can diversify away some of the risk, a start up can't [1]
 - Expense risk is higher as potential for mis-estimation of cost of initially setting up large projects [1]
 - Higher potential for strategic risk problems if going into a new market [1]
 - Likely to be more reliant on reinsurance for ancillary services, so higher than usual reinsurance credit risk [1]
 - Higher variability of reserving risk in early years as don't have data to produce patterns from [1]
 - Although lower actual reserving risk as it takes time for business written to ramp up [1]
 - Larger potential for failure as need to get out and market product whereas established insurer can use their own brand [1]
- [43, Max 12]

(v)

- Reinsurance [1]
 - QS reduces overall risk levels [½]
 - . . . and may give some technical assistance [½]
 - . . . or could partner with other insurer in some ways [½]
 - Risk XoL will reduce large claim exposures and would be typical for most motor insurers to take out [½]
 - Stop loss may limit downside depending on availability [½]
 - Financial reinsurance for cashflow issues [½]
 - Extensive use of exclusions or restrictions or other tight policy wording [½]
 - High excess, although unlikely if borrowing [½]
 - Broader data sources [1]
 - Use of third party data sources reduces risks from low data collection at sale [1]
 - Use of other policyholder data through mobile also offsets this risk [1]
 - Pilot schemes may establish better view on volumes [1]
 - Rigorous testing of the technology before launch may reduce risks [1]
 - Purchase of cyber insurance [1]
- [11, Max 6]

(vi)

- Travel insurance [1]
- e.g. short term high risk activity as part of a trip [1]
- Personal accident [1]
- Temporary high risk activity [1]
- Car insurance for Uber or other temporary use [1]
- Using residential vehicle for other purposes [1]
- Airbnb type temporary home & contents [1]
- Again temporary use of existing asset for excluded purpose [1]
- Bicycles [1]

- alternative short term use [1]
 - Accidental damage for gadgets [1]
 - Short term higher risk activities [1]
 - Goods in transit [1]
 - May only need for a temporary [1]
 - Public liability for temporary events [1]
 - Buy for one-off if activity levels uncertain [1]
 - Commercial cover for one-off events where an annual policy would be inappropriate [2]
- [18, Max 4]
[Total 43]

This was generally quite well answered by most candidates. Parts (i) and (ii) were high scoring. The remainder of the question did require candidates to do some thinking and application to a very specific product and distribution method, but the majority of candidates responded well to the challenge and did show some good thinking on customer behaviour, technical & operational issues etc.

END OF EXAMINERS' REPORT