

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2015 examinations

Subject CA1 – Actuarial Risk Management

Paper Two

Introduction

The Examiners' Report is written by the Principal 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 at the date the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

F Layton
Chairman of the Board of Examiners

July 2015

General comments on Subject CA1

This subject examines applications in practical situation of the core actuarial techniques and concepts. To perform well in this subject requires good general business awareness and the ability to use common sense in the situations posed, as much as learning the content of the core reading. The candidates who perform best learn, understand and apply the principles rather than memorising the core reading.

The examiners set questions that look for candidates to apply the principles specific to the situation set out in the questions, having read the question carefully. Many candidates gain few marks by writing around the subject matter of the question in a more general fashion. Detailed specialist knowledge is not required and nor is very detailed development of particular points.

Good candidates demonstrate that they have used the planning time well to understand the breadth of the question and to structure their answer appropriately – this is a big advantage in making points clearly and without repetition. This also enables candidates to use the later parts of questions to generate ideas for answers to the earlier parts.

Time management is important so that candidates give answers to all questions that are roughly proportionate to the number of marks available.

The comments that follow the questions concentrate on areas where candidates could have improved their performance. Candidates approaching the subject for the first time are advised to use these points to aid their revision.

Comments on the April 2015 paper

The general performance was lower (as reflected in the lower pass rate) than in September 2014 but within the usual range.

It will be seen that some of the points below are shown in bold text. These are the key points and additional credit was granted where these were made clearly.

The comments that follow the questions concentrate on areas where candidates could have improved their performance. Candidates approaching the subject for the first time are advised to use these points to aid their revision.

1 Policyholder may not be aware of what products are available.

Policyholder may have a lack of understanding of own needs

And not anticipating likely changes in needs.

Policyholder lack of financial awareness/education may mean they can't match products to needs.

Policyholder greed e.g. see high returns but ignore the risks.

Distributors – independent intermediaries are more influential than say a stall at the supermarket.

This is exacerbated by the likelihood of independent intermediaries pushing products with higher commission.

It may also be that a competitor's product is more suitable but the intermediary would sooner take the business.

Distributor may not have the knowledge required to identify the most appropriate product

Or may offer misleading information.

Suitable product may not be available.

Suitable product may be unaffordable.

Suitable product may not be available as a standalone product i.e. only available as part of a bundle.

Legal requirement to take a certain policy, e.g. fund must be used to purchase an annuity.

Generally well answered, with better candidates coming up with a wider range of reasons.

2 (i) Assumptions used

Actuarial method used

Value of liabilities accruing over the year

Increase in the past service liabilities over the year

Investment return achieved on the assets over the year

Surplus or deficit at the end of the year

Change in the surplus or deficit over the year

Benefit cost over the year in respect of any directors

Membership movements

Value or and / or type of assets held

Expenses of the scheme

Extreme events or experience in the period

Prospective risks of the scheme

(ii) **Closed to benefit accrual**

There may be no contributions to the pension scheme following closure to benefit accrual.

Although deficit contributions may continue following closure.

If the link between pension and salary has been broken this may have reduced the liabilities changing the funding position.

There may also be changes to benefits before retirement. This may impact immediately on the cash flow reported.

May need to account for the scheme on the basis of insurance company pricing, rather than treating as a going concern.

Different country

Primary impact will be due to the difference in accounting rules, which may change both how figures are calculated and presented.

May place different emphasis on the relative importance of balance sheet and income statements.

Different methodology may apply, for example smoothing of results.

Different statutory assumptions, or acceptable assumption ranges may apply.

The disclosure requirements, i.e. information to be shown, may be different.

If based in a different country, with a different currency, the results may be subject to fluctuations in exchange rates

Which could relate to the currency benefits are paid in, and the currency of pension scheme investments – both of which may differ to the reporting currency.

General differences

There may have been other significant events, such as transfers of members, impacting the accounts, e.g. part scheme buy-out.

General experience may lead to different results, for example if asset return had been strong over the year.

Previous results were incorrect e.g. due to model errors.

Changes in market conditions may lead to significant differences in assumptions which may also impact on the accounts.

This question was answered well by most candidates with most scoring the majority of marks available.

3 The chairman is unlikely to be a member of the specialist team responsible for the modelling

As a result the chairman may be treating the model as a black box.

He may find it very difficult to interpret or understand the model and its output.

Or may have relied solely on the advice of others, including experts in those areas and so he may have no way of sense checking the reasonability of the output or challenging basic assumptions.

An independent peer review can provide assurance on the quality of the results.

These experts will have a vested interest in the use of the model (bonuses etc.) and so may underplay the risks.

Models are generally parsimonious, so the model may contain errors due to the simplifications taken, or not reflect basis risk.

They also may not be able to effectively communicate the risks in a way that the chairman can understand.

Full appreciation may require a lot of output, which adds to the problems with understanding.

Given the detail and complexity, the chairman may end up assuming that it must be right – blinded by science and presentation.
In any event, it is likely that many assumptions will have been made; together with assumptions about correlations.

It may be difficult to appreciate the significance of individual assumptions. In particular the most significant factors may not be appreciated.

If key assumptions are fundamentally wrong in some way there will be problems.

In particular subjective assertions on the efficiency of markets or on the assumption of rational behaviour (i.e. ignoring fear and greed) may be flawed.

Some assumptions may be hard to model. For example default risks or behaviour of sovereign debt.

Many such assumptions will require probability distribution functions. These can be very subjective and hard to get “right”.

The use of distribution functions can mean that low likelihood but high impact risks are not fully appreciated. This is especially relevant given the aim for no risk, hence big shocks could be very serious.

To fulfil the no risk aim of the contract may require hedging and/or the use of gearing.

In particular, assumptions on money market interest rates will be needed. If these assumptions are significantly wrong or if markets become illiquid hedging won't work and huge risks could arise.

Essentially, risks won't be appreciated if the assumption about being hedged isn't true.

In particular, it may be difficult to assess the circumstances under which hedging may fail and hence the risk exposure.

It may not be possible to hedge some of the assets underlying the product

Hence approximate hedging may be needed; e.g. using indices to match an actual portfolio or if commercial products are held e.g. a fund of funds approach.

Likewise it may be difficult to assess and hedge any currency exposure.

Similarly, default and counter-party risks could be significant and they are hard to hedge.

The institution may not be certain as to what it is actually insuring. For example, will the loss be solely related to the price of the new product or its use in combination with other assets – what is it being sold as?

Even if the premiums do meet claims costs, they may not meet expenses/etc so the policies may not be profitable.

Generally disappointing answers. Few candidates mentioned the main points that the question was asking for, rather focusing on modelling generally.

- 4**
- (i) (a) **Longevity risk is the risk that an individual lives longer than expected**
- (b) This risk is important: risk that the individual's savings are used up while they are alive so unable to maintain desired standard of living.
- To the individual this risk is non-diversifiable, so transfer is best way to manage it.
- (ii) the State
- Employers or groups of employers
- Individuals
- Financial institutions or other corporations
- (iii) *Annuities sold by financial institutions (e.g.) life insurance co's*
Widely established market with capacity and competition.
- This packages investment risk with longevity risk.
- Insurance company can hedge investment risk so longevity is main risk in pricing.
- Regulations, compensation schemes, etc help ensure that the risk transfer is effective.
- Often perceived as expensive because of long life expectancies (approx. = payback period).
- People often unwilling to buy indexed annuities which limits effectiveness at transferring the risk.
- State pensions/benefits.*
Often flat-rate or targeting subsistence level so incomplete risk transfer.
- Sometimes inflation protection provide through automatic or discretionary increases.
But often partially salary related or means-tested top up.
A state-financed health service will reduce the individual's healthcare costs, especially at very advanced ages.
- Often pay-as-you-go financed so perhaps less effective if not sustainable as dependency ratios increase, and state cuts provision.**
Though state's ability to redefine benefits /increase retirement age may allow it to target the most significant risks.

Employers - occupational pensions.

Defined benefit plans were relatively common in 20th century in developed countries without extensive state pension (e.g. UK, USA) with employers assuming the longevity risk.

Employer (to some extent, at least implicitly) provides capital to support the risk that has been transferred to pension scheme.

Coverage now generally limited to public sector and medium/large private sector employers.

Trend has been for employers to close schemes as unwilling to accept the risks.

Often replaced by defined contribution schemes which don't transfer longevity risk.

Though DC schemes do provide an easily accessible savings plan which can be used to purchase annuity at retirement.

If the employer becomes insolvent all benefits may not be protected or funded (50 years is a long time).

Individuals by informal family support.

Children or extended family providing services gratis (or in return for inheritance).

Historically the most common mechanism before development of the 3 above

Somewhat less common recently as wider mobility means children may not be able to support parents.

Also increasing female participation in employment reduces the time available for them to care for elderly.

And reduced family sizes reduces the likelihood of a child being available/willing to provide support.

Though it is possible for children to subcontract the services if they cannot provide support themselves.

(iv) ART mechanisms include longevity swaps and bonds

The issuer makes payments linked to the scheme's actual mortality experience, or a longevity index.

i.e. if scheme's experience is that people live longer so its benefit payments are higher, then the issuer will pay more.

In return the scheme makes payments based on a defined mortality index

... usually adjusted upwards to represent the premium for the risk transfer.

In the case of a bond, these are discounted to give the purchase price paid at outset.

With a swap, there will be a regular process for comparing actual/expected and posting collateral.

This risk may be attractive to investors for diversification

... because it is uncorrelated to other holdings in their portfolio.

Or it may be negatively correlated if other holdings will be more profitable in the event that longevity increases.

Investors may be able to make a profit through taking advantage of a regulatory arbitrage.

For example, investments in healthcare suppliers.

Also the risk may be rewarded if the pension scheme is willing to pay a premium for the risk transfer.

Part (i) was generally well answered; most candidates got the definition correct, better candidates gave sufficient detail in (b). Part (ii) was well answered with most scoring full marks. Part (iii) was answered reasonably well, but the better candidates managed to focus on each of the four parties in a structured way. Part (iv) was answered reasonably well with most mentioning longevity swaps but the better candidates went into more detail and had considered other ideas.

- 5** (i) Capital Management involves ensuring that an insurance company has sufficient solvency and cashflow to ensure its future growth aspirations can be met in all foreseeable circumstances.

The insurance company will require working capital – a cushion against fluctuating trade volumes

The company will also need “start up” capital – to obtain premises, hire staff, purchase equipment etc. It will need to set up suitable management systems to administer the liabilities, collect premiums, etc.

An insurance business cash flow pattern is that new business costs in selling a policy occur before premiums are received creating a cash flow strain especially for regular premium. In the interim it will hold capital to meet the

expected claims/expenses, both for future periods of insurance against which premiums have been received, and for claims already incurred but which have yet to be settled.

But there is a possibility that the event leading to payment will arise before the provider has had time to accumulate sufficient funds from premiums/contributions to pay the benefits. There is thus a need for additional capital to smooth out these fluctuations, that is not repaid when the initial contracts terminate but is rolled forward

There may also be a statutory or regulatory requirement to hold a provision for the future liabilities in excess of the best estimate value of the future outgo

Paying commission to brokers/intermediaries will use up a high proportion of initial premiums – this will need to be met from the “start up” capital

If the company decided to invest the premiums in a portfolio of assets that didn't replicate the liabilities they would need to hold more capital

The government/regulator will want to ensure that insurance companies have adequate capital so that financial promises made to members of the public are kept. It will also want to avoid one insurance failure reducing confidence in other insurance companies; or in the country's wider financial services sector

Insurance company will need capital to demonstrate financial strength to policyholders, rating agencies and providers of capital.
The level of guarantees in a product will also influence the level of solvency margins the regulator will require and therefore impact on capital requirements

- (ii) In theory the subsidiary could simply draw down from the bank's capital when it needs resources.

But the bank may not be willing/able to support the subsidiary when it becomes necessary. Therefore, usually there is a legal requirement for subsidiary companies to have sufficient capital to trade independently. And also there is likely to be specific legislation on insurance companies imposing capital requirements.

Also, the bank's capital requirements will be suitable for the banking industry and may not be adequate for insurance

To allow the bank to operate independently of the bank in the case that the bank gets into financial difficulty.

- (iii) Fund from bank's own profits/surplus
Raise cash from a bond issue

Subordinate inter-company loan from bank
Raise cash from increasing the amount of equity available (shares)
Sell other parts of the business or property

- (iv) The regulator will monitor the adequacy of the provisions that the provider sets aside against future liabilities. It may even prescribe the basis (methodology and assumptions) by which these amounts are calculated.

Given that the future is impossible to predict, the regulator will require that the provisions will contain margins above those that might be assumed on best estimate basis.

The minimum capital requirement can be a highly prescriptive, prudent valuation basis

The minimum capital requirement could be a simple model based in industry average ratios

The minimum capital requirement could be an absolute minimum monetary amount, e.g. £10m

Or it can be established on a best estimate basis with substantial additional capital as a buffer for general adverse experience

Or a combination of these two approaches

- (v) There are regular reporting requirements that enable the regulator to monitor the financial position of the company and it is probably this reporting that has shown the insurance company to be below the threshold.

The regulator would expect the company to establish a recovery plan to get above the threshold; and this will be monitored closely by the regulator
The regulator could actively be involved in understanding what the insurance company is doing on a day by day basis; e.g. investment purchasing
This could involve the insurance company needing to get some actions (anything around strategy as an example) signed off by the regulator as well as the normal board review

The regulator could decide to close the life insurance company to new business; so that new policyholders are not entering a fund whose solvency may be in doubt

If the provider was closed to new business it will still have outstanding liabilities but in these circumstances it should be able to make significant cost savings which would improve the position

There would also be a release of capital that would have been tied up in financing any new business strain of the business on the books

The regulator could request the bank puts in additional capital into the life insurance company to get the company above the threshold again

The regulator could insist on the bank selling the company to another provider who would take on the liabilities

The regulator could force the sale of part of the inforce business to raise capital.

The regulator may be able to override contract terms to remove discretionary benefits or reduce financially onerous guarantees.

The regulator will take the more severe actions if the insurance company was significantly below the threshold (or even below the solvency position on a best estimate basis), for example take over running or wind-up company.

Part (i) was generally well answered with most candidates producing a few ideas on why capital would be required. Part (ii) was reasonably well answered. Part (iii) was disappointingly answered with few thinking wide enough to score the required marks. Part (iv) was not very well answered with few candidates picking up the required depth or detail to score well. Part (v) was reasonably well with most candidates suggesting a few ideas, but the better candidates expanded on their answers and thought how the whole process would work from monitoring to selling – i.e. considered all the possible options the regulator has.

- 6** (i) Initial concern will be the accurate identification of the current illness.

The main financial risks relate to potential length the illness.

And the level of medical care they require over that time.

There is a risk that the condition does get worse and the care costs significantly increase because of this.

Risk that the illness initially identified is not the underlying condition, but a symptom of something more serious which will increase costs.

For some conditions there might not be any chance of recovery; but there might be enhanced treatments (that might be expensive) which prolong life leading to higher pay outs

Potential moral hazard for individual not to recover if condition is mild; and they are getting a good standard of living due to care provided.

Potential moral hazard of doctors using more expensive treatments, or continuing treatment for longer than is necessary.

There is claims control and claims underwriting risk

There will be investment risk in relation to assets backing reserves.

Geographic risk if some locations have better access to treatments for certain illnesses. Pricing would need to consider treatment statistics relating to location of individual (e.g. Heart attack treatment might be particularly poor in one city compared to the rest of the country).

There is a fraud/moral hazard risk if the individual is required to inform the insurance company when that they have got better.

Although risk is reduced if payments from policy are directly linked to bills from medical and care providers.

There is a risk that medical and care cost inflation might be higher than expected leading to increased costs.

There may be changes in legalisation or tax such that the profits are reduced over the duration of the contract.

There may also be changes to factors that can be used in underwriting such that risks might not easily be assessed.

If cover is added or removed from the policies there might not be sufficient data to make a reliable estimate of the cost of claims.

There will be limited data for some illnesses which would make assessing the likely recovery time and medical care difficult to assess.

If the company decides to reinsure the risk there could be an issue of recovery if the reinsurer was to become insolvent.

The policy wording will need to be precise so that the only claims paid are those that the company intended to provide cover for. Similarly the wording on reinsurance contracts must be precise so that the company recovers what it expects to.

There might be currency risks if the individual moves abroad and makes claims for medical care in that territory.

Reputational risks. Definitions need to be clear so that there is no ambiguity. Otherwise there could be a reputational risk if the insurance company refuses to pay out on a claim

- (ii) Underwriting generally refers to the assessment of the potential risks so that each can be charged an appropriate premium.

The proposal form will be used for the initial collection of information on the risk.

Underwriting can be used to manage risk in the following ways:

It can protect a provider from anti-selection

It will enable a provider to identify risks for which special terms need to be quoted

For really sick (or substandard risk) the underwriting process will identify the most suitable approach and level for the special terms to be offered

Adequate risk classification within the underwriting process will help to ensure that all risks are rated fairly

It will help in ensuring that claims experience does not depart too far from that assumed in the pricing of the contracts being sold.

For larger proposals the financial underwriting procedures will help to reduce the risk from over insurance.

Medical and other evidence

The company will want to obtain evidence about the health of the applicant and in particular what illness they have.

This will be considered alongside the current treatment; and a view formed of the likely needs in the short and long term for care.

The company is looking to assess the length of time the individual will be ill, recovery rates and the likely costs of the care/medicine.

Will consider the general health of the individual (e.g. BMI, other conditions) that might impact on recovery from illness.

Also will want to consider the area's record in terms of recovery rate; so will ask for doctors that are treating them along with hospital information.

If applicable consider whether the individual has had the illness before; and previous recovery times and/ or impact on future recovery times.

Specification of terms

Applicants who only have a minor condition and the needs for care are limited might be offered a low premium on the basis that costs are likely to be low.

If the individual's conditions mean that costs are likely to be higher, payable over a longer term or are variable might be offered a high premium on the basis that costs are likely to be high.

If the member has had poor recovery times from previous illnesses the premium could be adjusted to reflect this.

If the illness is unknown or the data available is severely limited then the illness could be excluded from the contract, i.e. no insurance offered.

Certain types of care/medicine could be excluded if there was evidence that there was no link to improving the illnesses.

The insurance company could restrict available medical and care treatments to only those from an approved list, or from approved providers to manage the costs.

(iii) *Diversification*

The company will be looking for different geographical areas of the business (i.e. not all exposed to territory).

The insurance company will also want to diversify by having a large number of individuals insured with a number of different illnesses to limit exposure to particular treatments and care needs.

If the company is planning to reinsure it might want to consider diversifying by using more than one reinsurer.

Claims control systems

Claims control systems mitigate the consequences of a financial risk that has occurred. They guard against fraudulent or excessive claims.

The costs of implementing and maintaining a control system must be compared with the benefits gained from it.

The insurance company will want to ensure that it is regularly checking the care costs/claims are valid to ensure that they are only paying for legitimate costs incurred by individuals who still have the illness that was insured.

Management Control systems

Data Recording – it is important that the company holds good quality data on all the risks it insures, with particular emphasis on the risk factors identified when the product was designed or when the risk was underwritten. This can assist in ensuring that adequate provisions are established for those risks and reduce the operational risks from having poor data. Also the data recording could be used in the actuarial control cycle to better price the risks

Accounting and Auditing – good accounting and audit procedures cannot change the risks accepted but enable proper provisions to be established.

Monitoring of liabilities – protect against the risk that the total risk (aggregate over all policies) has brought the total exposure to an unacceptable level.

Reinsurance – the company could use reinsurance to manage the risk.

Partnering up with a supplier of treatment to fix costs and reduce claims inflation risk

Part (i) was generally well answered with most candidates understanding the risks with the better candidates discussing in more depth those risks. Part (ii) was reasonably well answered with the better candidates tailoring to the product mentioned as opposed to bookwork answers. Part (iii) was reasonably well answered with most candidates getting the main management tools, the better candidates went into more detail.

7 (i) Events leading to delay or cancellation of flights

Luggage lost/damaged in transit

Theft of personal property

Poor comfort, e.g. no available seating, failure of air conditioning, or lack of refreshments

Purchase protection for any goods bought at the airport, including higher value duty free items

Compensation for injuries caused at the airport, e.g. food poisoning from catering facilities

Insurance for car parking facilities

Maintenance of onward journey, e.g. cover for rail or bus tickets

Medical insurance or life assurance covering sickness or death at the airport

(ii) The main source would typically be historic data from the airport

However, six months data is unlikely to provide a reliable sample size

Particularly as this data will include the initial opening of the airport

This is the period when staff will be trained / will be less familiar with procedures and hence more issues may have occurred

Data from other comparable airports could be used

But would need to consider an appropriate peer group in terms of

Volume of luggage handled and number of different flights handled

Location of airport and any structural differences

For example available technology to assist handlers

And cultural differences, for example if that geography has a higher overall crime rate which may influence baggage handlers

This would be a compromise between accessing more data, and the data being of less direct relevance

The airport may not have access to this data, for airports run by competitors

But the insurance company might
Reinsurers may also provide another source of data

This may have the added advantage of the reinsurer's expertise and may link to the pricing offered for reinsurance

Regardless of the source of data it will be important to consider variability due to

Abnormal or random fluctuations

Changes in experience over time

Heterogeneity in the underlying data, for example a different mix of business / standard class of business

- (iii) There will be two key elements underlying the pricing of the risk

The expected number of claims

The expected value of the average claim

Will need to sort the data received into homogeneous groups

In order to assess the likely claim levels

Without distortions due to underlying heterogeneity

Expected number of claims will depend on total volume of luggage handled

And the expected rate of loss or damage

An initial assessment will be made on the likely risk of a claim per passenger

For example for a given group there may be a 1% chance of each passenger making a claim

When pricing the risk there may need to be a margin for prudence

In order to allow for fluctuations or other limitations in the data

Or for increased moral hazard, if less care is taken as products are insured

In assessing the likely cost of each claim, consideration would be made looking at the data

Adjusting the average value for inflation if the data is not current, or the contract will be for an extended period

Care will be needed when using claim data as the average value may be distorted by policy excesses or maximum claim amounts, or selection if the airport is in a materially more or less wealthy area

Which may result in material deviations if different limits apply to this policy

For volume of luggage handled a starting point may be the projected passenger numbers provided by the airport

Or an independent analyst from the industry

Depending on how the policy is priced (a fixed premium, or a charge per passenger) this assumption may be significant

If a fixed premium, then it may be appropriate to allow a margin onto the projected figures

Or price based on a maximum passenger number with an additional premium applying if that level is exceeded

An additional amount would be charged in order to cover the expenses of administering the policy

Although no charge would be needed for marketing as it is effectively a fixed policy

An allowance for profit should also be included

Although the level of profit included will depend on a number of factors including the level of competition

And the extent to which this product may assist with building a broader relationship with the airport

Different pricing would apply if the contract was to apply for a longer period, reflecting potential economies on administration.

- (iv) Being offered a service for “free” will likely encourage passengers to use the airport

Although the actual impact would depend on whether the service can be effectively advertised to make passengers aware of the service

And whether this conveys additional value

Benefit may have limited perceived value for individuals who have never lost or damaged luggage. May be more valuable for those that have

In the context of the choice to use an airport the insurance may be a relatively minor consideration

As if the airport does not offer the flight time / destination required a passenger will not choose that airport

The airport may have a poor reputation

Travel costs may be higher due to cost of “free” cover recouped through higher ticket prices.

The convenience of access, or parking facilities, may also be more significant factors in the choice of airport

Some passengers will already have insurance for their luggage and hence this benefit may be of no value

As each flight involves two airports, passengers may need insurance for the other location anyway which limits the perceived value

And they may want insurance for the other risks which aren’t covered

It may be difficult for passengers to purchase insurance for these other elements in isolation

The insurance on a crash may be viewed as sufficiently unlikely to be perceived as a valuable benefit

Some passengers may query why this insurance needs to be offered, and if the “money” could be better spent improving facilities

By offering insurance there may be an implication is that crashes or loss/damage of luggage is likely; which would be a deterrent not an incentive to use the airport

(v) Low probability high risk events can only be diversified in a limited way

For example by insuring a large number of these risks

Where the probability of a claim is independent

This would be achieved if there was a very large volume of flights from the airport

Or if the insurance company was able to provide similar cover for a number of other airports

Or if they provide other kinds of insurance in sufficiently large quantities to diversify, for example other travel insurance products

Reinsurance may be another way of managing this risk

In particular catastrophe insurance would be appropriate

Although this would depend on the terms available, and whether the insurance is able to protect against the level of risk required.

The insurance company could just accept that the risk exists

And that if it occurs the payout of £30,000,000 or more will ruin the company
Other controls could be used to help reduce the risk

For example requiring greater vigilance by air traffic control

Excluding flights to airports with high crash rates

Or insisting that additional checks are made prior to take off to ensure all planes are fully flight worthy

Tight policy wording defining an insured event, e.g. must be a scheduled service, and only for incidents with x miles of the airport.

Part (i) was well answered with the better candidates giving more risks than weaker candidates. Part (ii) was well answered with one more source of data being mentioned by most candidates, better candidates described these sources in more detail along with giving comments on their suitability. Part (iii) was less well answered with little detail being given on some elements of the answers, those candidates who understood the pricing details of a general insurance product gave more structured answers and scored well when tailored to the solution. Part (iv) was well answered with most giving reasonable answers, with the better candidates giving more than a few reasons. Part (v) was less well answered, with most candidates mentioning reinsurance with only the better candidates going into other ideas.

END OF EXAMINERS' REPORT