

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2014 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 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.

D C Bowie
Chairman of the Board of Examiners

July 2014

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 – 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.

Comments on the April 2014 papers

The general performance was slightly higher than in April 2013. Questions 6 and 7 were on average less well answered.

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 (a) The insured will be indemnified against legal liability resulting from negligence in the provision of a service. Cashflow (both claims and expenses) will be payable in the event of a claim, and there may be some delay before settlement.

The amount will not be known in advance; and it will be expected to increase with inflation. There may be additional inflation if claims are settled through court.

Index linked bonds may be suitable (although inflation link may not be sufficient) or high quality (low volatility) equities.

- (b) Individuals will receive an income for themselves and their dependents in the event of the insured risk occurring. The most common insured risk is long term sickness or incapacity due to accident or illness.

Cashflows will be needed regularly over term specified in the contract; which may be quite long. These may be fixed or linked to inflation.

High quality (investment grade) bonds of a suitable term are likely to be suitable; fixed interest or index linked to match the contract.

- (c) A cash sum will be provided on the diagnosis of a critical illness. The amount will depend on the underlying contract and is likely to be fixed at outset.

Contract term may be more than one year – in which case there will be continuing premium income and perhaps claims more likely towards end of term

Duration-matched fixed interest bonds would be suitable investments.

If the insurance was linked to a with profit life insurance policy, then a mix of assets could be held e.g. bonds, equities and property. This would reflect the reasonable expectations of the policyholders.

- (d) Cashflow will be paid out on proof of the theorem. The amount is fixed; but the timing is unknown (uncertain) and may never be paid out.

It is not diversified over a pool of similar risks/policies.

The €m may be held in a secure cash investment; but care will be needed to ensure that this amount does not fall below €m. Derivatives could be used for this purpose.

May hold less than €M to anticipate interest before likely claim date, and accept risk of need to top up.

It may be possible to hedge this event.

A range of scores. Some candidates didn't comment on investments or didn't go into sufficient detail.

- 2 (i) The reasons for a pension scheme calculating the provisions include the following:
- To determine the liabilities to be shown in the scheme's published accounts and reports (regulatory purposes)
 - To value the scheme for merger or takeover
 - To determine the excess of assets over liabilities
 - e.g. to inform sponsor of any shortfall that will need to be made good (e.g. contribution plan update)
 - To value benefit improvements for the scheme and whether any discretionary benefits can be awarded (e.g. one off uplifts)
 - To calculate discontinuance/surrender benefits
 - To influence investment strategy
 - To provide disclosure information for beneficiaries
 - To consider other options for the derisking of the scheme e.g. experience analysis used to identify risk variance.

(ii) There are 3 main methods of allowing for risk in cashflows

1. Best Estimate plus Margin for economic and non-economic assumptions

An approach to the uncertainty surrounding benefit costs may be taken by using assumptions that do not reflect an actuary's best estimate of future experience.

A risk margin is built in to each assumption starting with the best estimate assumptions together with an explicit margin for caution – / e.g. a reduction to the qx in respect of mortality.

Assessment of the necessary margins depends on the risk involved and its materiality to the final result and the risk appetite of the schemes trustees.

Where a risk factor has been stable over many years and is not exposed to economic events, it may be reasonable to add a simple percentage loading – e.g. younger age's mortality might be relatively stable

In other cases a more detailed analysis of experience for various sources, perhaps using a stochastic (or other) approach may be needed (e.g. inflation linked liabilities)

2. Contingency Loading

This approach is to increase the liability value by a certain percentage (could be arbitrary).

The choice of this loading is effectively another assumption; and should ideally reflect the degree of uncertainty that exists. It would therefore be expected to increase with the value of the liabilities but not in proportionate manner.

3. Discounting cashflows at a risk premium

This is the traditional discounted cashflow approach where the cashflows are assessed on a best estimate basis; and then discounted at a rate of return that reflects the overall risk of the liability

The choice of discount rate is critical and should reflect the general level of uncertainty

Part (i) was generally answered well, however, a number of candidates focussed too narrowly on the different accounting-type purposes rather than the broader range of uses for a valuation. On part (ii) most candidates identified the three methods to allow for risk, and better candidates went beyond this to explain how the size of the margin should reflect the level of uncertainty and the purpose of the valuation.

3 (i) Both the company and industry data are large datasets so credible.

Depending on the product the higher lapses may be more or less prudent.

Need to consider the use of the results and whether this use requires prudence.

Regardless of the prudence, if the internal results are wrong then they should not be used.

Using industry experience instead would mean using a higher lapse rate assumption. So consider the implications of using a higher lapse rate than reality.

For regular premium contracts, higher is more prudent early on in the contract term – when the initial expense of setting up the policy has not been covered by the premiums received This would not be the case for single premium policies.

Depends on whether the contract has a surrender benefit, and whether there is a guaranteed minimum. If there are guaranteed minimum surrender benefits.

then higher lapse are more prudent. However, if there are no surrender benefits, or the policy is single premium, the company will make a profit on lapse and so a higher assumption is less prudent.

Consider the impact of PRE on surrender pay-outs.

Need to consider the use of the lapse assumptions.

For pricing need a realistic assumption with some margin in case experience is not as expected. I.e. the assumption should be based on the actual company experience and not industry. Unless there has been a significant change that could mean future experience is significantly different.

For reserving purposes need to use prudent assumptions. Depends on the basis the company produces reserves.

Also consider whether there are good reasons for company's experience differing from industry; e.g. different sales channels, customer base, time lags etc: if there are then using the industry results is less likely to be suitable.

(ii) Data integrity

Ensure basic validity checks on the data.

Check that the data received from the accounting department ties up with that from the admin department i.e. that the policy did exist and the premium that should have been received.

Check the latest valuation results: in-force at start of the period + new policies written during the period – policies lapsing during the period = in-force at the end of the valuation period. This needs to be done for each major product class and underwriting year.

Check if the results, and raw input, for the report are consistent with that in the previous report.

Check the data for the report reconciles with that in other reports e.g. supervisory returns, published accounts.

Correct and consistent exposure and claims counts

Check that the policies are correctly classified as lapsed based on when premium was last received.

Check whether there was an option to have a shorter premium paying term than the policy is on risk for.

Check for potential distortion to the results due to timing when experience data has been taken from, for example number of policies in premium grace period that have not paid premiums.

Check for any clustering of dates, was it a leap year that the policies were written and the next they were shown as lapsed etc.

Check that there is consistency/correspondence between exposure and claim data

Validation of process and results

Check the data transfer manipulation process i.e. the raw data may be correct but in calculating the output for the report there may have been an error, for instance lost data

Check the grouping of the data

Are the actual lapse consistent with those that were expected?

Check that lapse rate measure e.g. policy or premium weighted lapse rates, is consistent with the industry experience lapse rate measure.

Analyse the drivers of the lapse rate, for example by underwriting class, sum assured band, premium size band, entry year, distribution channel, calendar year, etc. This may help explain changes in experience and difference with industry.

Check the analysis of surplus.

Check for changes in the mix of business e.g. sum assureds, ages.

Most candidates scored reasonably well on part (i) but some candidates didn't consider how the analysis may be used so missed several marks. Again on part (ii) many candidates didn't apply their answers to the specifics of the question, referencing general data checks not relevant to the data in question.

4 (i) The main tools available for risk management are:

- diversify the risk away
- implement control measures that reduce the likelihood of the risk event occurring
- implement control measures to ensure that the price paid for the risk is fair
- implement control measures to mitigate the consequences of a risk event that does occur
- transfer the risk

The insurance company can diversify their risk by marketing a wide range of different products of different sizes insuring a wide range of risks. There

should also be a good mix of business. They can also diversify by geographical area. Their investments can be diversified by asset class and within each asset class. They can also diversify by reinsurance providers.

The reinsurance company can diversify across a large portfolio and deal with a wide range of providers. They can also diversify by geographical area and assets.

Outsourcing e.g. of administration functions can be used to transfer the risk and therefore to reduce the uncertainty/volatility.

The insurance company can reduce the likelihood of some risks occurring by the terms and conditions in their policies (e.g. all doors and windows must be locked when away from property for household contents policy), or premium structure (e.g. lower premium for no claims gives incentive to policyholder).

The reinsurance company could impose terms and conditions on the cedant if appropriate.

They can both implement control systems to reduce the likelihood of operational risks such as financial fraud.

It may be possible for both to contribute to public education campaigns to reduce risks of certain events.

The insurance company can ensure the price paid is fair by underwriting prior to the acceptance of risk. This should identify risks for which special terms will need to be quoted. Adequate risk classification will help to ensure that all risks are rated fairly.

It may be harder for reinsurance companies to price some of their contracts as there will be limited data on some risks (e.g. low probably high impact). Will need to investigate, may be possible to use some historic data.

The reinsurance company can check the quality of the insurance companies' practices to ensure they are as expected.

The insurance company can mitigate the consequences of a risk by using claims control procedures. This should guard against fraudulent or excessive claims.

Management control procedures can be used to monitor the liabilities and so the potential adverse risk events (for both companies). Will need to hold good quality data; have good accounting and auditing procedures. Care will be needed over any options and guarantees offered.

- (ii) (a) The first stage of risk classification in the design of a contract is identification and documentation of the risk characteristics involved.

This will include risks relating to individual policies; i.e. the proposer and the home being insured, and risks aggregating over the whole portfolio of policies.

For each risk the provider will need to decide which risks it is prepared to:

- take on and keep
- take on but lay off; e.g. through the use of reinsurance or alternative risk transfers
- refuse

For those risks that are taken on and covered within the contract there is a decision required on the extent that the risk will be accepted.

Having decided on the risks to retain, the provider may change the product design.

- (b) When pricing the contract it is necessary to translate the risks into risk factors that can be used to measure the frequency and severity of the risks so that the premium for each policy reflects the risk being taken on, by using suitable rating factors such as postcode, property size etc.

There was a wide spread of marks gained from part (i). Better candidates gave a well-structured answer identifying first the key broad areas of risk management and then elaborating on each. However, most candidates focused on the direct insurer, with few candidates identifying the different points and issues for reinsurers. Part (ii) was generally not answered very well. Most candidates appeared to consider the risk under the home insurance as pre-determined, rather than it being the insurer's decision to decide what risks to accept under the contract, the extent they are accepted and whether they will be retained or reinsured.

- 5** (i) For a risk to be insurable:

The policyholder must have an interest in the risk being insured; to distinguish between insurance and a wager.

A risk must be of a financial and reasonably quantifiable nature.

The amount payable by the insurance policy in the event of a claim must bear some relationship to the financial loss incurred.

In most countries individuals are deemed to have an unlimited insurable interest in their own lives and that of any spouse.

- (ii) Risks and uncertainty will arise both from the outcome of the business already written and in the determination of premiums to charge in future periods.

Claims

Travel insurance claims are subject to wide variability in amount and frequency, and will probably vary depending on locations (for example medical costs will vary, some airports maybe lose more baggage etc.). Changes in claims costs year on year may be due to changes in the underlying risk or merely random variation.

As the insurer only writes travel insurance there is no opportunity to cross subsidise with classes at different stages of the cycle.

Variability will also exist in terms of cost of handling claims.

Operational risks in relation to its business processes; e.g. IT failures on its claims helplines.

Delays from occurrence to notification, or from reporting to settlement result in uncertainty regarding the ultimate cost of claims.

Changes in Cover

If cover is added or deleted from the travel policies there probably won't be sufficient data to make a reliable estimate of the impact of the change.

Characteristics of Policyholders and travel locations

If the company is aiming to attract different risks to those that it has historically held the claims experience may differ from the past. It is difficult to determine how the claims will change. There may be opportunities for anti-selection if the premiums do not reflect the risk across the range of business written correctly. If the majority of the contracts issued are those where the rates are inadequate, this anti-selection will result in losses.

The travel destinations exposure is less likely to be known for annual policies.

Increasing Hospital Costs in overseas countries (Inflation)

The costs of medical care abroad might be increasing faster than the insurance company expects and hence may need to pay out more than expected. Also individuals may not recover quickly depending on the standard of the care in individual countries (and this will vary by country).

Fraud Rate

Individuals might declare goods in their luggage that they didn't have and hence increasing the pay-outs.

Legislation

There may be fiscal changes in tax or the cost of medical care abroad. There may be changes in cover. There may be a change in the restriction of factors that can be used in underwriting.

Catastrophe

A natural catastrophe or outbreaks of illnesses in individual countries could lead to many claims – but will be relative depending on the number of visitors to that country.

The company could be exposed to writing business to people who have similar characteristics (and holiday destinations).

Currency Risks

The medical costs (or emergency replacement of luggage etc.) are likely to be in a foreign country, so this exposes the company to risks of fluctuating currencies.

Reinsurance

This is subject to uncertainty as the company might not appreciate the scale of the risks and purchase inadequate reinsurance. It may have doubts about the value for money and the availability of reinsurance.

The ability to make a recovery will depend on the solvency position of the reinsurer.

Policy Wording

This must be precise so the only claims paid are those that the company intended to provide cover for.

- (iii) The purpose of pooling risks is to increase the number and diversity of risks with the aim of increasing the certainty of the aggregate total claims cost.

Ideally risk events need to meet the following criteria to reduce the volatility of the risk profile:

- Individual risk events should be independent of each other.
- The probability of the event should be relatively small.
- Large numbers of potentially similar risks (e.g. main European countries) should be pooled in order to reduce the variance and hence achieve more certainty.
- Low variability in individual event cost, and amount of event cost.

- Moral hazards should be eliminated as far as possible because these are difficult to quantify.
- There should be sufficient statistical information to enable the insurer to estimate the risk and its likelihood occurrence.

However the desire to write business means that the insurer may provide cover when these ideal criteria are not met.

For countries where there will not be many people travelling the risks of loss are probably higher due to the lack of pooling within the business and hence the maximum limit is probably the key point.

A policy may cover groups of individuals so there is a likelihood that the risk events will not be independent, so limiting the benefit of pooling.

The insurer could increase the pooling of the risks through reinsurance, for example, reciprocal quota share insurance with another travel insurer to increase the spread of risks exposed to, excess of loss reinsurance where the reinsurer pools low likelihood, high variability claims across insurers and reducing the individual claim variability of retained risks.

Part (i) was generally done well. Part (ii) was reasonably well answered although only the best candidates covered the wide range of topics. Part (iii) was not answered well by most candidates who didn't seem to know the bookwork or consider how pooling could be used for travel insurance.

- 6** (i) Currency volatility can affect profits over the next few years if this risk is not hedged or managed.

Changes to tax rates or the why they are levied will have an affect on post-tax profits.

Oil Company

The most important factor will be the real (net of currency issues) price of oil.

Assuming that the company owns oil reserves, a rise in prices means that its assets are worth more. That is, it can sell its products for higher prices without a similar increase in costs. This is because its costs will be less volatile than its revenues.

The impact will be less significant if it produces oil on licence. However, any fee may be linked to the price of oil.

The price of oil will be driven by supply and demand.

In general supply will be relatively known in the short term (especially if existing supplies are being exploited at close to full capacity) as it takes a long

time to develop new fields. This implies profits predictable if oil price is stable.

Hence demand will be the key driver on profits and this will be closely linked to overall world economic growth. However, demand from developing or industrialising economies may have more impact than that from mature economies.

Prices are likely to be more volatile than pure supply and demand imply due to the action of speculators trying to take advantage of future economic and other developments.

Profits will also be affected by operational risks and the way the company develops its own reserves, e.g. better than expected yields would boost profits, or a disaster cutting supply would reduce them.

Consumer goods manufacturer

The most important factor will be the demand for its products from the developed country.

Spending on consumer goods will be broadly discretionary (in terms of timing) or non-essential. Hence the level of economic growth in this country will be the major driver of demand. In particular, low interest rates and low unemployment will boost consumer spending – especially if there is also asset price inflation (shares or houses).

However, its market will be competitive and so demand for its products will crucially depend on relative prices v the competition and on fashion trends.

Will the decision to move production overseas will cut costs and hence prices sufficiently to boost its market share profitably? Also will the company be able to maintain quality/reputation?

The exchange rate v the currency of the production country will be very important. Low costs there could be offset by an appreciating currency.

Likewise costs, especially wages, could increase significantly in the developing country along with other operational risks.

Security consultancy

The most important factor will be the demand for its services.

In general, there will always be an underlying demand for security personnel and so general economic uncertainty or worldwide instability may not be crucial.

However, wealth creation in developing countries may boost demand significantly. Such countries may not have adequate or reliable law

enforcement systems in place so it may be better for people to make their own arrangements with external consultants. Such countries will also need advice on setting up their own security or policing systems.

Profits will be influenced by the company's ability to get and maintain contracts. Hence its reputation and recent performance will be crucial. This will depend on the quality of personnel it can recruit especially leadership on the ground.

Overall supply of personnel will matter. But, contacts and an ability to offer attractive terms and conditions will matter more – especially relative to any competition.

- (ii) *One example for each required*

Oil Company

A decision by a group of producers to restrict supply e.g. OPEC would seriously affect the price of oil and hence profits. This may not be favourable e.g. if demand fell or if the affected area was where the company obtained most of its supplies.

A decision by the government of a major consuming country to raise (or lower) tax on oil products could seriously affect demand. This would be especially true if alternative energy sources were available or encouraged.

Consumer goods manufacturer

A decision by the government of the developed country to impose high import tariffs on consumer goods manufactured abroad would increase prices and so seriously reduce demand.

A change in government in the producing country could lead to increases in costs if pro-worker legislation were to be introduced e.g. minimum wages, maximum working hours or health and safety policies.

Security consultancy

A decision by a powerful country to invade a smaller country would greatly increase the need for security personnel from both sides. Similarly, large conflicts between any countries would also boost demand.

Another major country significantly reducing its armed forces would increase the supply of security personnel. If this company didn't have relevant contacts, it could be undercut or priced out of contracts by better-connected rivals.

- (iii) This model derives the value of a share as the discounted value of the expected future dividend stream. Hence it will be necessary to estimate future dividend payments.

Current (or recent) dividends can be projected into the future.

Alternatively, profit forecasts for the next few years could be used for short-term dividend estimates with the general projection kicking in later.

The required rate of return (real or nominal) would usually be calculated as the yield on a long-term government bond plus an appropriate risk margin.

Allowance would need to be made for the tax status of the investor e.g. using net dividend income.

- (iv) It is difficult to determine the risk margin for discounting the future profits.

The discounted value of profits may be sensitive to profits/dividends in the long term where there is greater uncertainty making the valuation less reliable.

Oil Company

Given the volatility e.g. demand and currencies, it will be very difficult to project future profits/dividends.

The company will derive its profits from its oil reserves (current and future) i.e. it will have large stocks.

Hence the company could be valued in a similar way to a property company (it will have significant – if unique – property assets) by looking at net asset value. That is, the asset value can be projected on a range of future oil prices (allowing, possibly, for related supply and demand consequences).

Consumer goods manufacturer

Given that the company has been making losses, there may have been no recent dividends to base projections on.

The company is making significant changes to its operating model and so any past data, if available, may not be useful.

There are likely to be competitors using similar approaches and so a comparison of key operating factors may help with relative valuations.

In this case, such relative factors may revolve around production costs (allowing for currency) or quality of product (e.g. brand strength).

Security consultancy

Here the problem may again relate to volatility e.g. in a fast changing market. It is likely that the company could change a lot in the short-term as the needs of clients and the political climate could vary greatly (demand for services)

The company could alter the scale of its operations quickly so making projections relatively meaningless. Accordingly, it may be difficult to find similar companies for comparisons.

The company will have few tangible assets. Its primary assets will be the people it employs.

Hence valuations will probably be very subjective based on an assessment of the abilities of senior management, their contacts, and their ability to generate business and adapt to changing circumstances.

- (v) If the institution already holds similar stocks in its portfolio, it may reject the stocks on grounds of diversification. That is, comparables may offer better returns.

All of these stocks could be viewed as risky and so may not suit the institution's risk appetite. In particular, the institution may be seeking relatively low volatility e.g. stable dividend flows i.e. it is selling itself as a prudent manager.

It may view the stocks as too illiquid to invest in.

However, the important points are likely to revolve around the wishes of the institution's clients.

The institution is not investing its own money, it is managing other peoples' money on their behalf. The institution is likely to have voluntary or ethical restrictions based on perceived preferences of its clients.

In this case, the ultimate investors are members of pension schemes and private individuals – based in the developed country. They may have strong views about how their money is invested.

Each company has features that may mean that such investors would not want to be associated with them and hence the institution may choose not to invest. In particular:

Oil Company

Reservations here could be down to environmental or green concerns. As oil products are associated with high carbon emissions some investors may not wish to invest.

Such fears could be exacerbated if there has been a recent high profile environmental disaster linked to the oil industry (or specifically this company) e.g. a large oil spill.

Alternatively, high oil prices may be linked to general recessions (and certainly high fuel prices). Excess profits may sit uneasily with the general population who may be struggling to cope. This may cause public relations

problems for the institution (at the trough of a recession, future oil prices may be expected to fall – hence share prices may have peaked).

Consumer goods manufacturer

Issues here could be to do with the closure of domestic plants and a transfer to overseas production. This policy will lead to domestic job losses and could be very unpopular – won't invest in a company that sells out our people etc.

In particular pension scheme funds may be influenced by employee or union representatives who would not wish to be associated with investment in companies that lay off lots of workers.

Such transfers of production are often associated with tax avoidance (especially if past losses are involved). If successful, they may also involve large bonuses for senior management. Again such outcomes would be very unpopular with "ordinary" people.

Security consultancy

Here the problems will focus on merchants of death arguments. Many investors will not wish to be associated with companies who seem to employ mercenaries.

This will be a particular problem if the company is associated with unpopular regimes or factions or has been involved in incidents connected to civilian casualties.

Given the importance of senior management, a particularly notorious high profile individual may put off investors.

Candidates' answers to part (i) were often narrow, also many candidates discussed factors that might affect profits over the long term rather than over the next few years as per the question. Most candidates scored well on part (ii), relating points to the specifics of the 3 companies mentioned rather than making more general comments. Part (iii) was surprisingly poorly answered for straightforward bookwork. Part (iv) was also not well answered with many candidates commenting only on general drawbacks of the model and not on its application to these companies. Many candidates approached part (v) only from the perspective of underlying investors, rather than the large financial institution and its own objectives.

7 (i) Characteristics of the parties involved

The potential policyholders are individuals considering care costs in old age. They may be older (this event may be in the foreseeable future) or younger (this is part of their general financial planning).

They will want the product to meet their needs in a cost effective manner. Their needs will be influenced by their capacity to pay, the risks to be covered (the benefits that are needed) and their attitude to financial risk.

The insurance company will also want the product to be cost effective. They will be influenced by the capital they have available and the expertise available as well as the chosen market.

The product design also needs to be deliverable from point of view of administrators, legal, etc.

Customer risk appetite

It is important that the long term care contract meets the risk profile of the intended purchaser; and that the risks and benefits involved in the product are clearly explained to them.

Sales will be optimised if the product can be designed to be suitable for customers with a wide range of risk appetites.

For this contract, covering the full cost of care will be suitable for a policyholder wanting low risk although this is likely to be expensive.

Could provide a cheaper product if demand is sufficient. E.g: for a policyholder willing to accept more risk for a cheaper product, the contract could cover a fixed proportion of the cost of care, pay cost of care after a certain amount or the payments made may be capped.

Level and form of benefits

The level and form of benefits will depend on the legislative framework: e.g. what benefits the state would provide (if any).

Direct provision of benefits versus cash amounts. The contracts could pay for all the costs of care throughout the remainder of life, or could provide a cash lump sum or an annuity to contribute towards the costs of care. With direct provision, will the insurer restrict the choice of care provider?

The cost of care will increase over time so will need to be taken into account either the level or form of the benefits.

Direct provision may be better if the insurance company has a relationship with a benefit provider.

Any options or guarantees

Any options or guarantees will need to be charged for.

There may be options to change from one form of benefit to another. There may also be guarantees (e.g. on discontinuance).

Benefits on discontinuance

Any discontinuance benefits should be fair to the policyholder discontinuing their policy, other policyholders and the insurance company.

This may be problematic if policyholders try to discontinue when (e.g.) they have a terminal illness that does not require long term care.

Methods of financing benefits

This is likely to depend on the form of the premium. For single premium policies, the benefits will be funded in advance. For regular premium policies, a fund will build up gradually – would premiums continue to be paid in the event of a claim?

Choice of assets

For the benefits that are funded in advance, these funds will need to be invested. The investment will need to be suitable for the form of benefit and the risk attitude of the stakeholders. Low risk assets that are expected to increase in line with inflation are likely to be suitable.

Reinsurance

The benefit design needs to be consistent with the term and conditions that a reinsurer requires to accept reinsurance of the risks.

Charges to be levied

The charges that are levied will need to meet the costs incurred by the insurance company in setting up and managing these contracts. They will include:

- contract design and advertising
- sales commission and the administration of setting up new client records
- the ongoing administration of collecting contributions/premiums etc. and paying the benefits as they fall due and management of assets
- the profits and overheads of the provider e.g. rental of office space, IT departments etc.

Capital requirements

The capital requirements will depend on the how risky the contracts are likely to be. This will need to be taken into account when designing the contracts.

The company has no experience in this nature of business and so capital requirements are likely to be higher.

Underwriting at inception

The premium and/or level of benefits will need to depend on the initial underwriting.

Claims Underwriting

Staff from the insurance company will need training in underwriting. Especially at the claims stage in assessing the severity of the case and the level of future care needed. This may be sensitive with potential adverse PR if claims are rejected

Tax and regulation

Are there tax incentives for particular benefit formats, or regulations e.g. on sex/age discrimination?

- (ii) The level of benefits would change if there was a cap. It may also influence the form of benefits.

The risk to the insurer is lower; and so their capital requirements will be lower. This may lead to lower premiums.

The policyholder will know the maximum benefit in advance but they will take on the risk that this may not be sufficient for their needs.

There may be more competition with this product. It is also possible that individuals would prefer to self-insure if the maximum amount was low relative to the assets they held.

If the state picked up costs above a threshold then the policy could provide benefits up to that level.

A wide range of scores. On part (i), good candidates identified that the number of marks on offer required broad discussion and elaborated on the details behind points rather than simply listing. Part (ii) was slightly better answered.

END OF EXAMINERS' REPORT