INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2016 (with mark allocations)

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.

F Layton
Chair of the Board of Examiners
June 2016

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

1. The aim of the Actuarial Risk Management subject is that upon successful completion, the candidate should understand strategic concepts in the management of the business activities of financial institutions and programmes, including the processes for management of the various types of risk faced, and be able to analyse the issues and formulate, justify and present plausible and appropriate solutions to business problems.

2. 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.

3. 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.

4. 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.

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

6. 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.

7. In this diet the scoring for the exam was done out of 200 and therefore the mark scheme shows a total of 200 marks available for the paper.

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

1. The standard of answers on this paper has been consistent with previous sessions, better candidates ensure that their answers are planned out and focus on answering the specifics of the questions being answered.

2. As per previous sessions candidates need to consider the application side of the questions being asked and ensure their answers are sufficiently wide to cover all options as well as going into enough detail to cover the main points.

3. Disappointingly the general bookwork questions were answered less well than in previous sessions.

C. Pass Mark

The Pass Mark for this exam was 56%. It should be noted that this is the average mark to be achieved across both papers.

Solutions

Q1 (i) Value at Risk generalises the likelihood of underperforming by providing a statistical measure of downside risk. [2]

VaR assesses the potential losses on a portfolio over a given future time period with a given confidence level. [3]

Measured either in absolute terms or relative to a benchmark. [1]

VaR is based on assumptions that may not be immediately apparent. [1]

Frequently calculated assuming a normal distribution of returns. [1]
[Max 6]

(ii) The risk measure can be expressed as the expected shortfall below a certain level. [2]

Expected Shortfall = $E[\text{Max}(L - X, 0)] = \int_{-\infty}^{L} (L-x)\, f(x)\, dx$, [3]

where L is the chosen benchmark level. [1]

If L is chosen to be a particular percentile point on the distribution, then the risk measure is known as the Tail VaR. However the Tail VaR can also be expressed as the Expected Shortfall conditional on there being a shortfall. [2]

Shortfall measures are useful for monitoring a funds exposure to risk because the expected underperformance relative to a benchmark is a concept that is easy to understand. [2]

[Max 6]

[TOTAL 12]

Part (i) – Most candidates answered this well, better candidates went further than the first few statements. Candidates that drew diagrams often explained their answers well.

Part (ii) – Disappointingly answered given bookwork, a full answer needed more than just stating the formula (although few managed to get the full formulae).

Q2 Lily and Poppy have conducted an initial appraisal relating to opening one shop. They will have investigated the risks involved in the project. These will include:

- Finding suitable premises, staff and suppliers. [1]
- Attracting enough customers (spending enough money). [1]
- Having sufficient capital available to fund the project. [2]

They will have come to a view on the best course of risk mitigation, having regard to the costs involved. [1]

They will need to evaluate the most likely cashflows for capital expenditure (e.g. buying/leasing shop and fitting), running costs (e.g. cost of flowers and other supplies, cost of staff) and revenues (mainly sales of flowers). Many assumptions will be needed. [4]

They can then use these cashflows to calculate the net present value of the project using an appropriate risk discount rate. They will have decided on a suitable discount rate; this may relate to rate of return that they could earn elsewhere with an adjustment for the risk involved. [2]

The cashflows would also be used to calculate the payback period. [1]

Opening a chain of shops would involve a similar process but the values and risks will change. [2]

Finding suitable premises may be more difficult as they may be less likely to have local knowledge. Similarly for suppliers. They may have to rely on the advice of others. [3]

There may be more competition in different locations. However, having more shops will give some diversification. [2]

They will be less likely to be personally involved and so will need to hire a manager for each shop and will have less control over other staff. This is likely to lead to increased costs. There will be additional risks involved and the standards may not be the same for all shops. [5]

There may be additional regulations, pensions or insurance requirements. They may lack the expertise to carry out this much larger project. [2]

Analysis of likely customers will be needed; this will again be more difficult in an unfamiliar area. [1]

For one shop, it is possible that Lily and Poppy were able to provide the finance themselves; perhaps with help from friends and relatives or using a bank loan which could be secured on their homes. The situation for a chain of shops will be very different. They will need to access further finance; this will probably be from a bank although other forms of finance could be used. This may be difficult to secure and is likely to be at a relatively high rate of interest. The interest and repayments on any loans will need to be allowed for when calculating the net present value of the project. [7]

The likely cashflows for the chain can now be evaluated and used to calculate the net present value. They will probably need to use a range of assumptions to check for the sensitivity of the results. The risk discount rate used is likely to be higher than that used initially for one shop to allow for the additional risk. Lily and Poppy can then decide whether this net present value is satisfactory. [5]

The payback period is likely to be longer and this may no longer be satisfactory. [2]

Lily may have a different goal from Poppy and may not wish to be involved in opening a chain of shops. [1]

There could be economies of scale – i.e. more buying power may mean better rates from their suppliers. [1]

Depending on geographical spread may be able to share advertising costs, flexibility to share staff. [2]

The initial appraisal may not be suitable for the expansion. [1]

It may be sensible to start with one shop. Will then be able to decide whether or not to expand and how this may be done. [1]

[MAX 22]

This question was generally answered well by most candidates. Stronger candidates ensured that their answers were well structured (rather than just focusing on one section of bookwork and not making it relevant to the question) and went into sufficient depth to cover the main points as well as ensuring they had looked at all of the possible impacts of the plan of having more shops. The answer needed to ensure it focused on the question being asked rather than just discussing the initial appraisal, although this was often a good starting point to develop the answer.

Q3 (i) **Insurer**

NCD is a form of experience rating in which policyholders are allowed a discount from the basic premium according to a scale that depends upon the number of years since the most recent claim. [2]

Advantages

If other insurers are not offering a similar system it will look innovative. Alternatively, this may be needed if NCD is offered by competitors. [1]

The basic principle is that if the policyholder's claim history is an indicator of future claims then it can better price the risks. It can charge less for better risks and more for higher risks (or reject them). This should attract more customers increasing new business volumes. Anti-selection should be reduced as bad drivers would get a better premium from a company not offering a NCD. If it correctly prices the lower risk for policyholders with a good claims history it will result in more profits despite the lower premium. [6]

Improved claims experience – It will charge higher premium to poor drivers to reflect their higher risk. [1]

Improved claims experience – It can reject/restrict policies to those with a good claims history giving a better pool of risks. [1]

Improved claims experience – A lower premium will attract and retain more policyholders with good claims experience giving a better pool of risks. [2]

The NCD should increase retention which should lower costs. [2]

A no claims discount will affect policyholder behaviour, both in risk they take (e.g. driving style) and decisions about claiming (less likely to claim if cost of claim is less than additional premium from making a claim) – improving claims experience and reducing administration expenses. [3]

This may help with brand loyalty and give opportunities for sales of other business. [1]

May need to update reinsurance, may get better rates. [1]

Disadvantages

The increase in new business will also cause a new business financial strain. [1]

Loss of NCD and resulting premium will encourage such policyholders to lapse, and insurer loses future profits. [1]

Increases the insurance market focus on price and not other product differentiation such as service, insurance benefits etc. [1]

How much does claims experience reflect the risk? Even good drivers will occasionally have an accident and make a claims – this does not make them a poor driver. [1]

Back testing NCD against the insurer's historical experience has limitations if this was not a past rating factor. The presence of an NCD will change policyholder behaviour so it not fully reflective of future experience. [2]

How to price, this is a change to the rating and we have no experience of this. [2]

Systems changes, costs and time. [2]

Updating marketing literature and policy documents. [1]

Processes – underwriting, claims handling. [1]

Staff training. [1]

All take time and increase costs, which will need recouping. [1]

The NCD may be regarded as a marketing trick and put potential customers off. [1]

If policyholders withhold claims in fear of being charged more their claim history doesn't reflect accident history. [1]

There may be problems with evidence if accepting NCDs from other insurance companies. [1]

Introduce as a new product or change to existing, if latter then various pools of policyholders and phase in over time. [1]
[Max 18]

(ii) **Policyholder**

Low risk policyholders will get charged a lower premium. [2]

Policyholder incentivised to become a better, lower risk, saving the policyholder further money longer-term. [1]

On average premiums will increase, insurer aiming to make a higher profit. [1]

There will be an increase in premiums if the policyholder makes a claim. This may be seen as unfair to unlucky drivers with not at fault claims. [2]

Higher premiums for the most risky drivers will make insurance less affordable. This may lead to more drivers driving without insurance. [2]

[Max 4]

[TOTAL 22]

Part (i) – Generally well answered with most candidates scoring well. As per other questions the better candidates structured their answers well and consequently went into sufficient depth to pick up most of the marks. Weaker answers tended to repeat the same points. Interestingly few candidates actually explained the purpose of NCD

Part (ii) – This question was only worth two marks, and many candidates went into too much detail and probably wasted valuable time.

Q4 A structured settlement is similar to the development of a product. [1]

Actuaries can help stakeholders to identify and analyse the financial risks they face and to manage and mitigate those risks. [2]

The actuarial skills of particularly importance here are:

- Identifying the risks involved and financial consequences. [3]
- Identify how the risk and consequences will change over time. [2]
- Design a settlement scheme providing benefits to injured players that meets the benefit needs of injured players over the progression of the illness. [3]
- How the inherent risks in the settlement can be assessed, quantified, managed and monitored. [3]
- Economic analyses to form judgements about future inflation (expense and benefit) and interest rates. [2]
- Advising on appropriate assumptions to use. [1]
- Analyse data relating to future liabilities to estimate payments that need to be met. [2]
- Build, parameterise, test and implement a model to assess the risk exposure. [4]
- Build appropriate margins into assumptions and appreciate the impact of such margins. [2]
- Project and discount future cashflows using assumptions. [1]
- Carry out sensitivity analysis. [1]

- Calculate the cost and form of the benefits and the timing of the contributions required to build up a fund over time to meet the future liabilities. This should balance the respective needs of the different stakeholders. They can advise how the company could finance this. [6]

- Advise on mitigation (e.g. reinsurance) and other risk transfer mechanisms to reduce the risk and uncertainty in the scheme for the club owners. [2]

- Advise on how the benefit scheme should be managed over time, including how reserves will be calculated, how and when assumptions should be reviewed and updated. [2]

- Advise on structuring or incentives in the scheme to increase the certainty of the cost of the scheme, for example higher potential benefits for players who submit to a medical assessment at the outset of the scheme. [2]

- Contribute to decisions on appropriate investment policies aimed at meeting future liabilities. [2]

- Understand where and when expertise of other professionals is needed to contribute to the assessment of the scheme. [1]

- Apply the highest standards of independence and due diligence to protect and balance the interest of the stakeholders, for example an affordable and certain cost to club owners, secure scheme for the beneficiaries providing appropriate and predictable benefits. [5]

- Clearly communicate the results of the work and the various options so that the club owners, their advisors and negotiators can negotiate agreement on a settlement. [4]

[MAX 30]

> This question had mixed responses. Those candidates that used the Actuarial Control Cycle to plan their answers did well in ensuring all areas were covered, whereas others who focused on one area (e.g. structuring the settlement) didn't go into sufficient depth. In particular the weaker candidates focused on area, and then had a lot of repetition rather than moving on to other ways that the actuary could help. In questions like this giving examples is worth considering to highlight the point being made and the better candidates did this.

Q5 (i) The primary problem would be that many individuals would not have enough money to live on (maintain pre-retirement standard of living). [2]

This would be the case even allowing for lower living costs in retirement (pension low v average living costs). [1]

And would be especially true for relatively high earners – higher drop in living standards. [1]

If, as may be likely, the pension is unfunded, security is basically a promise – so future payments are vulnerable. [2]

Ancillary benefits (e.g. for spouses) may be low or vulnerable to erosion. [1]

The pension may increase (if at all) in line with inflation not earnings – so further reducing living standards long-term. [2]

And the inflation rate used may underestimate increases in pensioner living costs. [1]

The pension may end up being a political football – promises made but not kept, interests ignored if votes don't matter etc. [1]

[Max 6]

(ii) The main reason will be to increase incomes in retirement for pensioners (maintain pre-retirement standards of living). [2]

Although there will be a cost now, it would be hoped that in future, pensioners will be less reliant on the state – lower cost of means-tested benefits (or let basic state pension wither in real terms). [3]

As the arrangement is, this should provide more security of income. Both in terms of payments actually being made and in the level of income i.e. more certainty. [3]

The policy may help to encourage individuals to make additional savings so increasing their independence (via personal assets) – political reasons. [1]

Government contributions will be needed since otherwise it may be difficult to introduce for political reasons – people want something extra for being forced to contribute – the aim will to give perceived value for individual contributions. [2]

Funding may provide resources that could be used for investment opportunities (public or private) e.g. to buy government bonds to finance state spending on infra-structure projects say. Funding could be used for other purposes. [2]

The policy will reduce the need for the government to educate individuals further on the advantages of pension provision. [1]

[Max 6]

(iii) It is almost certain that the arrangement will provide pensioners with higher incomes than previously. [2]

This may depend on what happens to the basic state pension (reduced?). [1]

Or if there are a number of individuals with no salary. The self-employed may slip through the net. [2]

Depending on the proportion of salary used and/or the contribution rate for individuals, pensions may not look good value for contributions paid. Individuals will want a reasonable return (at least what they could get via private arrangements). [2]

The link of pension to salary will help to maintain living standards. Though this will depend on the proportion, gaps in salary (no earnings) and any revaluation applied to past salary. [4]

The use of a threshold will be relatively more favourable to lower paid individuals. [1]

That is, they will receive a higher proportion of salary as pension compared to higher earners. [2]

This could be viewed as targeting benefits on those who need them most – i.e. those less able to make private arrangements. [2]

It will also help keep costs down i.e. less of a subsidy to the "rich". [2]

Having a career average arrangement rather than final salary should result in a lower cost. [1]

To a degree, the aims of reducing costs and boosting income will contradict each other – cuts in other benefits due to higher pensions leaves individuals no better off. [2]

However, good (better than expected) returns on the funds could generate surplus for the government. [1]

Funding will in theory provide more security for pensions – designated resources set aside in advance. [1]

However, this fund may be illusory in practice – part of general government resources. [1]

As such it could be used for other purposes and so we are back to a promise albeit a stronger one. [1]

There is also the issue of the government's competence – will they invest wisely. [1]

Likewise inefficient admin may mean that the fund is insufficient – cost and security implications. [1]

However, there may be economies of scale compared tom operating many schemes. [1]

A prescribed formula for calculating pension will give individuals more certainty about the level of pension that they can expect. [1]

But there will still be uncertainties. Future salary will be unknown as will the level of the threshold and future inflation. Indeed there is no guarantee that the formula won't change or the whole arrangement be scrapped. [5]

As the arrangement is defined benefit, there will be uncertainties over ultimate costs (e.g. related to longevity, investment returns. This could imply reductions to benefits or higher contributions from individuals. [3]

It is possible that the arrangement will help foster more of a savings culture. If benefits look good v contributions then individuals may save more. [1]

But the requirement to make contributions may mean that less well-off individuals replace existing private savings with the secondary pension. So no gain here. [2]

It may provide an additional incentive to work. [1]

It may be easier to introduce compared to educating and encouraging employers to arrange and provide pension benefits. [1]

In theory, the fund will be available for useful and profitable investment. [1]

In practice though, the government's short term financial and/or political needs may take priority over long term investment. [2]
[Max 16]

(iv) They could receive a flat annual fee (maybe x per account) or a flat annual fee per member. This may increase each year. [3]

Or, a series of re-negotiable short-term contracts. [1]

They could receive a percentage of the contributions received. [1]

Admin services in particular, could be charged on a time/function cost basis i.e. specific fees for specific functions or staff – this gives more flexibility if exactly what is involved is unclear. [2]

Investment services in particular, could be charged as a percentage of funds under management (fund values). [2]

In any case, the fees could vary depending on performance e.g. scales that give higher payment if certain targets (efficiency, customer service, investment returns etc.) are met. Fees could also depend on the types of funds invested in. [2]

A form of profit share may apply. That is fees paid back to government if things go well and maybe extras paid if they don't. [1]

A decision will be needed as to whether all charges are to come from individuals' accounts or whether some will come direct from the government. [2]

[Max 6]

(v) Assuming that there are no benefit guarantees or underpins, the third party is merely acting as an agent i.e. they have no obligation to pay benefits from their own resources. [3]

The main risk will therefore be that the charges they receive are not enough to cover the costs they incur. [2]

However, if all fees are deducted from individuals' account (not paid by government) then returns could look very low and the provider may get the blame. [1]

Expenses could be relatively high and so the risk potentially quite serious. [1]

The sums involved are likely to be quite low and a lot of the work messy (mistakes from people not used to pensions). Hence overheads could be quite high. [3]

Likewise, set up costs could be significant – especially if the third party doesn't currently have similar business. [2]

This will be exacerbated if the systems cannot handle the work and new systems are needed. Also, if extensive staff training is needed. [3]

Service targets may not be met leading to penalties. [1]

Cross subsidies may not be as expected. [1]

And because the involvement of the government will mean things are more complex than they need to be. [1]

Furthermore, the government are likely to want to keep costs low (to them and to individuals) hence they may drive a hard bargain. The government may change the rules which would lead to additional work and costs. [3]

They may try to push for the business to be a loss leader that generates more business (from government or raised profile). [1]

In particular, any contracts may be hard to fathom with lots of terms and conditions – hence it may be difficult to work out what they are actually going to receive. [2]

These conditions could be squeezed in the future i.e. once committed hard to get out. [1]

There is also the issue of whether payments will be made on time. [1]

However, things could work in their favour as the government will need someone and if few are interested they may be in a strong position. [2]

Regulatory costs or data protection issues could be expensive (e.g. expenses or fines). [2]

There is the risk that such a big job will take time and resources away from other areas of the business so causing them to suffer. Capital strains may arise if a lot of upfront spending is needed. [3]

Conversely, they may end up being over-reliant on government work, which would make them vulnerable to losing the business (e.g. loss of scale and wasted investment). It could be relatively easy for the government to switch contractors. They may even stop the scheme. [4]

Should things go wrong – especially benefits turning out to be poor value e.g. unfavourable annuity rates, then the third party may suffer reputational damage. This could have poor consequences for existing and future work. [3]

If the government decided to move the money to another fund manager at short notice would they have liquidity issues? [1]

Would the fund manager be unfairly blamed for general market falls particularly if the individuals had not had the investment risks explained to them adequately? [1]

Fees may be lower than expected if investment markets fall and these may not cover expenses. [1]

There may be penalties if the fund underperforms any benchmarks. [1]

[Max 16]

[TOTAL 50]

Part (i) – Generally disappointing answers given – there was a lot of general repetition, i.e. points mentioned in a different way but still the main point already made (may not have enough to live on). Better candidates considered wider issues, but few scored full marks.

Part (ii) – Better answered compared to part (i) with many giving good wide ranging discussions but there was some confusion in answers with some candidates not explaining the points they were making. Surprisingly few candidates mentioned the obvious points.

Part (iii) – Generally poorly answered with few ideas generated, with most giving a list of risks without discussing them in any depth. Some candidates didn't seem to appreciate how the cap worked and hence didn't answer the question well. Candidates needed to set out the risks the government and future pensioners were exposed between the time when contributions were paid until the pension becomes due for payment.

Part (iv) – Generally well answered with most getting some marks, but the better candidates ensured they answered fully rather than repeating the same point several times.

Part (v) – Generally poorly answered – the better candidates applied the bookwork to the question being asked, whereas pure bookwork answers scored poorly. A reasonable number of candidates focused on the administration aspects but did not pick up the easy marks for discussing the fund manager as well – i.e. needed to plan their answer to the question being asked. On the fund manager risks, many looked at it from the clients view point which unless the fund had guarantees or underpins would have little impact on fund managers. Few candidates identified the political risk exposures faced by either the administrators or fund managers which given the significant number of changes we have seen over the last 10 years was disappointing.

6 (i) Legislation – regulations [1]

State benefits [1]

Tax [1]

Accounting standards [1]

Capital adequacy and solvency [1]

Corporate governance [1]

Risk management requirements [1]

Competitive advantage [1]

Commercial requirements [1]

Changing cultural and social trends [1]

Demographic changes [1]

Environmental issues [1]

Lifestyle considerations [1]

International practice [1]

Technological changes [1]

[Max 10]

(ii) **Capital adequacy and solvency**

Capital adequacy and solvency is a key requirement of developed banking and insurance regulation for financial institutions. [1]

As the trust is insurance for individuals it may be required to comply with requirements for insurance companies in the country. [1]

This may lead to increased premiums. [2]

This may affect the investment strategy of the fund. [1]

Although as the government set up the trust there may be exemptions in place. [1]

If capital is required to start up the trust, this will restrict the ability of the Trustees to lower premiums. [1]

And may result in subsidy between cohorts as the required level of capital fluctuates with the volume of business. [1]

Changing cultural and social trends

With increasing home ownership and immature insurance market there may be significant interest in joining the benefit trust. [3]

Increase in prosperity may lead to an increase in the value of contents covered. [1]

If home ownership becomes more significant insurance companies may enter the market reducing demand. [1]

If the benefit trust becomes "encouraged" or "established" as a security for mortgages it could become dominant and cover the majority of mortgages. [1]

This could be driven by the mortgage providers, who may see the security of mortgage payments as beneficial to them. [1]

Depending on the level of contributions and "spare" income for individuals there may be varying participation, particularly if these change in a growing economy. [1]

Risk management requirements

The Trustees will need to manage risks within the benefit trust to look after the interests of all beneficiaries. [2]

As well as looking to maintain capital they will need to consider the risk of significant cross subsidy between cohorts. [1]

Operational risk, of record keeping and management of claims will need to be considered. [1]

The Trustees will also need to manage market and credit risk. [1]

Which will impact on the investment of assets, as well as setting premiums for different individuals. [1]

State benefits

Demand for the trust will be related to the level of state support. [1]

State benefits relating to death benefits and disability / redundancy would directly reduce demand for the benefit trust. [2]
As a trust set up by the government there may be an element of subsidy in either premiums or management of expenses. [1]

There may also be implications for means tested benefits if benefits paid from the benefit trust are taxable or count against any earnings thresholds. [1]

Any changes to future levels of direct or indirect state support would lead to changes for the benefit trust which would need to be managed. [1]
[Max 16]

(iii) In order to match the assets and liabilities the Trustees will need a projection of liability outgo. [2]

And consideration given to the sensitivity of those cashflows under different assumptions and scenarios. [1]

Projections could be made using a deterministic or stochastic approach. [1]

This projection could attempt to be matched by buying assets which match liabilities by amount and timing e.g. buying bonds with coupons / maturity values exactly matching the expected cashflows. [2]

Given mortgage terms are typically up to 25 years, it may be that bonds of an appropriate duration are available in the market, although this availability may be limited. [2]

Alternatively if the exact match is not available or is too expensive, an approximate match may be constructed based on the assets which are available. [2]

It may not be possible to exactly match outgo from the liabilities as this would also require allowance for mortality risk. [1]

[Max 6]

(iv) Infrastructure projects may have similar characteristics to property investments. [1]

They may be expected to carry a degree of investment risk and in return provide higher returns. [2]

As such if the benefit trust had a portion of assets invested to achieve growth, rather than being a matching asset class, this may be appropriate. [1]

Infrastructure projects tend to be large, long term, investments. [2]

It may be that the benefit trust will have sufficient assets under management to allow it to access infrastructure directly. [1]

Access to this as a direct investment which is beyond some other investor classes may mean this is a good investment opportunity. [1]
Infrastructure may provide good diversification compared to other asset classes. [2]

Returns from the project may be linked to inflation. [1]

It may be that the value of the infrastructure project is correlated with property prices, and if so may be a good match for the property insurance cover provided. [2]

There may be a political reason why this is an appropriate investment. [1]

For example, as the government set up the benefit trust it may hope that it can in return provide capital for some of its projects. [2]

This may be particularly relevant if the government is providing subsidy for benefits or expenses, as supporting infrastructure may lead to further financial aid. [1]

Infrastructure is likely to require significant capital, and may have a long payback period. [1]

Therefore this will be more appropriate if there is net income to the benefit trust, if disinvestment likely to be required this will be less appropriate. [2]

The appropriateness will also depend on alternative investments available. [1]

As a developing country there may not be many high quality investments available in the domestic currency. [2]

Which may increase the attractiveness of an infrastructure investment. [1]

Although overseas alternatives should also be considered, this may be less politically acceptable for the government supporting the benefit trust. [1]

The investment in infrastructure projects may be illiquid so the Trust would need to ensure it had adequate liquidity in the rest of its investments to manage liquidity risk. [2]

[Max 14]

(v) Risk classification is a tool for analysing a portfolio of prospective risks by the risk characteristics. [2]

Such that each subgroup of risks represents a homogeneous body of risk. [2]

[Max 4]

(vi) **Removing maximum contribution level**

The Trustees ability to set contributions for each individual based on the level of risk is restricted by the maximum contribution level. [2]

By removing the maximum contribution level the Trustees will be able to price all risks more appropriately. This will reduce the need for government support. [3]

This could lead to some individuals being set contributions which are prohibitive, meaning that they will not seek to join the benefit trust. [2]

With some higher risk individuals not joining the benefit trust overall claim levels may be expected to fall. [1]

As these higher risk individuals would have had contributions at the maximum level they would have made a "loss" for the benefit trust which will no longer arise. [1]

It will therefore no longer need to subsidise these individuals with higher contributions from other members, which could reduce other contribution levels. [2]

If a significant number of individuals are priced out of joining the benefit trust this may be politically difficult. [2]

Particularly if those who can no longer afford to join are concentrated in a particular region and / or are part of a vocal section of the electorate. [1]

However, if contributions could be set at a lower level for a majority of individuals that may be a positive impact on perception overall. [1]

In practice it may be that few individuals were affected by the maximum contribution level. [1]

And that as a result this proposal may have a relatively small impact on risk management. [1]

Allowing change to contributions for existing members.

By not adjusting contributions levels the Trustees are unable to respond to changing market conditions or experience. [2]

They are also unable to make corrections if any initial underwriting was inadequate, either from questions asked or information withheld by individuals. [2]

For example, changes to interest rates may significantly change the levels of mortgage repayment being protected. [1]
And it will be difficult to predict interest rates over the lifetime of a 25 year mortgage. [1]

Allowing adjustments to contribution levels will allow the Trustees to respond to these changes as appropriate. [2]

This may also reduce the level of prudence required in setting the contribution levels, as the need to build in possible future changes will be reduced. [2]

This may reduce initial contribution levels, which would improve perception. [1]

However, the perception if premiums fluctuated may be negative particularly if changes are frequent and significant. [2]

An alternative approach would be to allow for some regular adjustments to contributions based on an index, for example in line with inflation or interest rates (assuming mortgage payments are linked to interest rates). [1]

This could provide a more transparent approach which may be more acceptable to individuals as it would avoid any perception of arbitrary contribution changes. [1]

Given that more claims will occur in poor economic conditions, as an increased chance of losing jobs, it may be politically unacceptable to increase contributions in those conditions. [3]

[Max 14]

[TOTAL 64]

Part (i) – Well answered by most candidates

Part (ii) – Disappointingly answered with only the better candidates focusing on the examples being given. Too many limited their answers to the general principles.

Part (iii) – This part was answered poorly, with few actually answering the question. Also a number of candidates went into too much detail for three marks.

Part (iv) – This part had mixed solutions, with most getting the main points, but only the better candidates developing into the specifics of the question being asked.

Part (v) – Disappointing knowledge – with too many candidates not knowing this area of the bookwork and others going into far too much detail.

Part (vi) – Many candidates who planned their answer scored well, ensuring both part (a) and (b) were answered. The weaker candidates repeated the same points. Again a number of candidates only focused on either (a) or (b) and therefore only scored on the relevant part.

END OF EXAMINERS' REPORT