INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2013 Examinations

Subject CA1 – Actuarial Risk Management

Paper One

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 2013

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 2013 paper

The general performance was slightly below that in September 2012. Questions 6 & 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 The introduction of the smoking ban will change the claim experience

Lower frequency of fire claims
- lower property and contents claims
- consequently lower business interruption,…
- … and public liability claims decrease

Improvements in the environment within the insured premises should lower employer and public health claims (eg from passive smoking). This will decrease the tail of the business i.e. shorter tail.

The combined effect is that this should reduce the claims cost, and reduce premiums.

However, the businesses that currently have high patronage from smokers will be disproportionately affected by the change with at least temporarily lower footfall

Lower patronage of businesses will lower their profitability resulting in increased business failures, this will lower business volumes for the insurer, and defaults on periodical or end of year balancing premiums (this may be offset by other businesses attracting new customers and becoming more profitable)

Fewer policies with lower premiums is more likely to reduce profits rather than increase.

There is also likely to be lower persistency as businesses shop around to reduce their premium or reduce cover to reduce premiums

Claims experience may deteriorate as businesses increase the risk due to the need to lower costs in the face of lower patronage

The mix of the business will also change as the smoking ban will affect some businesses more than others, for example higher risk, higher premium, higher profitability businesses may be disproportionately affected.

Failure to review premium rating factors to anticipate this change may result in a premium rate out of line with the market, leading to either higher volumes where premiums set lower than the market, or lower volumes where premiums set higher than the market. Both of these likely to be adverse to profitability

Reinsurance arrangements should also be reviewed. Insurer may need lower aggregate cover to reflect lower business volumes.

New risks will arise in relation to people smoking outside premises in designated smoking areas; these will be hard to price

There may be disputes if fires result from people who contravene the ban – will the insurer attempt to exclude such claims?

For policies in force at the time the ban starts, claim frequencies will fall, resulting in a windfall profit

Reasonably well answered. The candidates who scored best approached this question in a methodical way considering how the insured risks could change, the resulting impact on claims and premiums, how and why the volume of business written may change and the resulting impact each of these would have on the insurer. Weaker candidates spent too much time setting out the insurance lines that might be provided, rather than discussing which ones would be most impacted by the change or the implications for the insurer's profitability.

2 A model will need to satisfy the following requirements:

- The model being used must be valid, rigorous enough for its purpose and adequately documented
- The model chosen should be capable of adequately reflecting the risk profile of the financial products, schemes, contract or transactions being modelled.
- so at the planning stage, the requirements of all stakeholders should be brought into account and the budget/timescales/etc should be established
- At the model design stage, the methods or other models available to test the model should be considered, so that the model built can be adequately tested.
- The parameters used must allow for all those features of the business being modelled that could significantly affect the advice being given.
- The inputs to the parameter values should be appropriate to the business being modelled and take into account any special features of the provider and the economic and business environment in which it is operating.
- The workings of the model should be easy to appreciate and communicate. This is both the structure of the model and how the parameterisation has been determined. The model should exhibit sensible joint behaviour of model variables.
- The outputs for the model should be capable of independent verification for reasonableness. The results should be displayed clearly and should be communicable to those to whom advice will be given.
- The model must not be overly complex so that either the results become difficult to interpret and communicate or the model becomes too long or expensive to run, unless this is required by the purpose of the model. It is important to avoid the impression that everything can be modelled.
- The model should be capable of development and refinement – nothing complex can be successfully designed and built in a single attempt
- A range of methods of implementation should be available to facilitate testing, parameterisation and focus of results

- The limitations and key assumptions\dependences of the model should be clearly documented.

Most candidates did well and scored highly, but a lot were very inefficient by describing every possible aspect of modelling and so devoting too much time to this question. The question did not ask for detail on the process of building and running a model. The best answers were crisp and concise and went through the bookwork logically.

3 (i) The risk portfolio (or risk register) would categorise the various risks to which the business is exposed.

An appropriate categorisation might be based on:

- financial risks and non-financial risks
- financial risks categorised between: business risk, market risk, credit risk and liquidity risk
- and non-financial risks between: operational risk and external risk

Against each risk would be recorded a quantification of:

- Impact
- Probability

For a simple business the quantification might simply be a subjective assessment of 1 to 5 for each risk. This would be unlikely to be appropriate in this case.

The register should also show the time horizon over which each risk applies and should show any correlations between the risks

Risk analysis models may be needed to generate a financial impact figure. As risks are essentially rare events, the probability figure may still be subjective. There may be statistics available for historic experience of certain risks which, appropriately modified, might be used. Caution will be needed to ensure they are still appropriate particularly as the company is carrying out business in many parts of the world.

The product of the impact and the probability measures give an idea of the relative importance of the various risks.

(ii) Regular reviews will be needed to ensure that all the risks affecting the business are being taken into account.

There may be new risks e.g. environmental or regulatory risks or new competition.

Existing risks may change: their impact and/or probability.

There may be risks that, although they existed, haven't been allowed for in the past. Regular reviews, possibly by different individuals, make it more likely that these will be picked up.

The company will also want to ensure that its risk management processes are still appropriate and working as expected; regular reviews of the risks will be needed as part of this process.

(iii) The risk portfolio analysis in part (i) will have identified a range of high impact but low probability risks.

These are among the most difficult to manage; they are likely to include both risks related to normal business activities and operational risks. It is important to manage such risks in a measured way.

Low probability, high impact risks:

- can be diversified in a limited way – by operating in different countries subject to different economic and other conditions and also by undertaking many different types of projects.
- can be passed to an insurer using some form of catastrophe insurance for example.
- can be mitigated by management control procedures, such as disaster recovery planning

Some such risks can only be accepted as part of the consequences of the business undertaken, and the management issue then becomes how to determine the amount of capital that it is necessary to hold against the risk event. The techniques of scenario analysis, stress testing and stochastic modelling enable this to be done.

The company can decide to avoid some risks eg by not operating in some territories

The company will have determined its own risk tolerance – for example the ability to withstand an event that might occur with a 0.5% probability within one year. This means that the company accepts that it might be ruined by a rare event, and has decided not to take such events into account in its risk management.

On (i) many candidates discussed how to identify all possible risks and possible mitigation options. Few dealt with good classification of the risks in the register by funnelling down in a systematic way to obtain the relative importance of each risk. Part (ii) was answered fairly well although for only 2 marks it is best to get to the point quickly. Part (iii) was generally done very well. The better answers showed good understanding of risk tolerance and acceptance of risks (and that insurance might not be available), and gave examples suitable for this specific scenario.

4 (i) In order to project expected results need to project cashflows

Projection to include:

- Expected premiums
- Investment income
- Expenses
- Commissions
- Expected claims (including claims inflation)

These elements must be projected in a consistent way, (i.e. should not be projected independently) and should allow for lapses

Claim rates will be based on expected rate of death

Claim rates and amounts will depend on type of pet and definition of treatment on the approved list

Treatments which occur over long periods (sustained courses) and one off treatments may need separate consideration. If contracts are valid for a long period this will be particularly relevant

Longer term contracts will also be influenced by the rate of increase of vets fees

The introduction of any new treatments, or refinement of existing treatments will also influence the expected cost of claims unless excluded from the policy

Once the projected cashflows for a policy are set the insurer needs to model the portfolio of contracts

This will involve projecting the number of policies in force and the type of policies in force, for example by type of pet

The number of policies in force will also affect the expense of running each policy and contribution to overhead expenses required per policy

The aggregated level of cashflows will form the expected results

Also, consider the sensitivity of results to the assumptions adopted and allow for reserving and cost of capital

(ii) Pet mortality rate UP

Pet morbidity rate UP

Withdrawal rate UP

Investment income DOWN

Expense of managing the pet insurance product UP
Claim management expenses UP

Contribution to overheads from other products DOWN, which will affect the contribution required from pet insurance

Inflation rate applicable to expenses UP

Cost of treatments required UP

Vet expense inflation UP

Volume of new business DOWN

Changes to the mix of business (eg different types of pet), ie more of the less profitable ones

Changes to the mix of sales channel - eg more commissions

Cost of guaranteed insurability options for renewals

Random variation

New regulations eg greater reserving requirements

On part (i) scoring was variable: many candidates missed the point of the question by detailed discussion of general data issues, premium rating, and whether to use a stochastic or deterministic model. Good candidates related their answers to pet insurance: types of animal, term issues and types of treatment. Part (ii) was generally done well with most scoring highly. Weaker candidates did not identify which direction of deviation would lead to worse profits.

5 (i) Diversification

Underwriting to ensure a fair price is paid

Control measures to reduce the likelihood of a risk event occurring

Claims procedures to mitigate the consequences of a risk event that has occurred

Management control systems

Reinsurance/securitisation/ART

(ii) Infrastructure investment will have high initial costs during the construction phase.

These are expected to be followed by stable long term inflation linked returns once it becomes operational.

The inflation linking may be a good match for defined benefit fund liabilities depending on the nature of the benefit structure.

The investment will have different characteristics from equities and bonds and so there will be a diversification benefit for the portfolio.

In most cases, the long term nature of the investments should be a good match for defined benefit fund liabilities so the investment being illiquid should not be a problem.

The investment may offer good potential returns given the level of risk

Tax breaks perhaps or other govt support/guarantees

Investment for the social good

Possible attraction of consortium investment compared to other forms of infrastructure investment, eg lower fees.

(iii) There will be an initial construction risk. This is the risk that the construction will not be completed on time and/or on budget, and there may also be an environmental risk at this stage.

- This could be mitigated by good project management. Ideally could obtain guarantees from the government or the construction partners before taking on the project. If this is not possible, could take out insurance, or possibly a mixture of the two.

A long infrastructure construction phase will carry greater risk that the requirements are changed and additional cost incurred

There is a political risk – future governments may not support the project; and there is a regulatory risk – future regulation could limit the expected returns.

- These would need thorough investigation. A guarantee of future returns should be sought

There will be operational risks after the construction is completed, and risks that the project is not commercially successful (too few passengers/freight)

- The trustees should undertake thorough research and may obtain guarantees from other consortium members who will be responsible for operations

There is also the risk that the fund would have no experience of management of this type of asset.

- Can take advice initially and possibly employ or train an internal expert.

There is a liquidity risk if capital is tied up for a long period, managed by ensuring that this project is not too large a proportion of the scheme's assets and by cashflow planning.

If the scheme is not located in the same country as the investment, there would be currency risk, which could be managed by currency hedging.

(iv) The scheme will model the overall portfolio using one or more of scenario analysis, stress testing and stochastic modelling.

It will consider the correlations between the infrastructure investments and other elements of the portfolio, and also between the assets and the scheme's liabilities.

The model will consider liquidity constraints (given the nature of the infrastructure investment)

The trustees would then assess what combined risks might be mitigated

Part (i) was answered satisfactorily, although the question asked "state" so no additional credit was awarded for explaining the various types of ART. Part (ii) was generally done well with balanced answers ie most recognized that for only 3 marks an essay wasn't needed but that it wasn't enough to simply state "matching", "diversification" etc. Varied scoring on (iii): some candidates looked at risk management from the point of view of the consortium generally rather than the trustees of the pension scheme; better candidates used a good structure linking mitigations to each risk. Part (iv) was generally answered poorly, generic answers were submitted which failed to consider the impact of the new investment with the existing portfolio.

6 (i) The insurer will need to construct a pricing basis for the new term insurance contract. The key elements will be mortality experience, initial and renewal expenses including commission, persistency experience.

The data needs to consider the level premium period separately for the level premium and post level term periods.

Level term period

The insurer may already have internal experience of level premium term that can be used, covering mortality persistency and expenses

Additional data will be needed beyond this to take account of product differences, for example in underwriting, and therefore mortality experience, underwriting and therefore persistency, persistency experience due to product differences, experiences due to product differences.

There may be industry experience for the product from other insurers, or from reinsurers that can be used, either directly, or to adjust the expected experience

There may be experience from other insurance markets for the new market, again either directly from industry experience or from reinsurers that can be used to adjust the expected experience taking account of general differences between the countries

Post level term period

The post level term expected experience is more challenging. The mortality and persistency experience will depend on the need for cover beyond the level premium, which will depend on original term and age, premium rates and duration post the level term period.

There may be industry, reinsurer data, or from other markets on the post level term experience. Granular data will be required to understand the relationship between mortality and persistency relative to original term, age, original premiums, post level term premiums and duration post the level term period.

There may be data for other products that provide an indication on policyholders behaviour for example renewable term assurance

Internal data will be needed for other pricing elements such as expenses, profit contribution, etc

(ii) The regulator may require a maximum premium rate:

- To ensure that the product is fair to policyholders
- To ensure policyholders can make a comparison between similar products
- To ensure that insurers can not effectively shorten the policy or abuse their position by charging a premium post level term in excess of the sum assured
- To ensure that the policyholders can continue to benefit from the protection cover, particularly if their state of health becomes such that replacement cover can not be obtained

(iii) The objective in setting the maximum premium is to avoid making a loss

The premiums will need to reflect that there is anti-selection within the continuing policies, and that this is a maximum premium.

So the starting point is to consider policyholders who will be unable to get replacement cover, or only at a higher premium because their health has deteriorated during the level term period

The average expected mortality of this cohort of policyholders can be assessed separately for policyholders within initial terms 10, 15, 20 and 30 years.

The office will want to avoid making a loss on continuing polices so the worst health deterioration for an age (relative to initial term) can be selected

There are two approaches from here over how the premiums can be set:

Approach 1: The average health will be expected to continue to deteriorate for this cohort so an adjustment to the expected mortality experience will be necessary. It will be simplest to include a single loading here that captures both further deterioration and an allowance for the uncertainty over the experience and a set of premium rates can then the calculated based on this expected experience.

Approach 2: The premium rate can be calculated based on this expected experience and a loading applied to the premiums to take account of the uncertainty of the mortality experience including further deterioration of the health for the continuing cohort.

These approaches should be justifiable to the regulator (including any regulatory restrictions on level of maximum premiums).

However, there will be other policyholders that continue cover, for example:

- Policyholders who want continuity of cover and have not (yet) obtained replacement cover
- Policyholders who only need continuing cover for a short period, and therefore do not want the hassle of arranging replacement cover for a short period
- General lethargy of the policyholders so they continue their policy even if they do not continue to need the cover or could obtain cover at a lower premium

If some policyholders will only pay the first post level term period to provide continuity of cover whilst they arrange replacement cover then the premium rates will still need to reflect that mortality is likely to continue to deteriorate after the level term period.

So there is uncertainty about the type of policyholders continuing and therefore the state of health of continuing policyholders.

The approach to setting the maximum premiums will depend on the role the maximum premiums will take, for example:

- The importance of the maximum premium on sales volumes
- The extent that the insurer has an appetite for post level term experience risk

If the insurer is tolerant of the risk, it will be more inclined to set the maximum at a lower level than the initial approach would suggest

If the PLT premium rates are important to the sales volume then the level of PLT premiums on competitor products need to be taken into account.

(iv) The objective of the insurer is to maximise the profitability of the contract.

Charging the maximum premium is only likely to be optimum if only policyholders would can not get replacement cover continue their policies.

After 12 years the insurer will now have started to get initial 10 year level premium policies entering the post level term period so will have some experience on which to refine the premium.

There may also be industry experience emerging that indicates the sensitivity of the post level term lapse rates to the step up to the yearly renewable premium rates. There may also be industry experience emerging on the mortality experience in the post level term period relative to the post level term lapse rates.

The insurer's own experience combined with industry experience can be used to determine new premium rates to apply that optimise the profitability post level term; however, experience may be expected to worsen in future years as those policyholders lapse having organised replacement cover.

The post level term persistency will depend on the post level term premiums. The higher the premiums the greater the anti-selection at the PLT point. The lower the premiums the lower the lapse rate at the end of the level premium term.

The lapse rate will also be affected by the size of the step-up in premiums at the end of the level premium period. To minimise impact, the insurer could step premiums gradually to achieve optimisation of profitability.

By spreading the premium increase over a number of years rather than increasing all in one go, then ultimately more policyholders may continue their policy

Lower lapses may also mean more profits on other business lines (ie use this as a loss leader)

The company will also be influenced by what competitors are charging

This question was the poorest answered. It was a stretching question on an insurance type with which we did not expect candidates to be familiar. Good exam technique can help candidates: in each question part applying general knowledge to the specific circumstances. In part (i), better candidates did more than just list possible data sources but went on to describe how useful they would be and commented on the specifics of this product. Again in part (ii) most candidates started with "why regulate" in general, but better candidates went on to the specific context. Part (iii) was badly answered. Most candidates just gave general premium rating answers, without really considering whose mortality we are interested in and what uncertainty there is in giving a guarantee. Part (iv) was also badly answered, though in isolation it is quite straightforward with the insurer being able to use new data in its decisions trying to maximise profits by balancing price versus demand.

7 (i) The expected return on a corporate bond is the gross redemption yield minus expected defaults

If markets are reasonably efficient, the expected return can be built up from risk free yields.

The gross redemption yield on a corporate bond is the risk free real yield
Plus expected future inflation and an inflation risk premium
Plus a credit risk premium
Plus a liquidity/marketability premium

The risk free yield will be related to the yield available on government bonds (although this assumes that there is negligible risk of default on government bonds)

This is in turn related to short term interest rate expectations, which are influenced by current economic conditions, expectations for inflation, and general government policy

Future inflation will be based on market expectations, which will be driven by local and global markets

The risk premium will also be higher for longer term bonds as it is more difficult to predict inflation further into the future

The inflation risk premium will be related to the volatility of expected inflation so will increase in times of economic uncertainty

This is also influenced by supply and demand for indexed investments; typically demand is greater than supply which decreases the yield available as investors are willing to pay a premium for inflation protection

The credit risk premium reflects the likelihood of default i.e. the chance of payments not being received, and the expected loss given default

Likelihood of default will be affected by the financial strength of the underlying company and at longer durations the longer term prospects of the firm. This will also be affected by longer term economic conditions and the resulting impact on all companies

Expected loss given default is influenced by both the relative ranking of the debt on wind-up and the financial resources of the company relative to the total debts. The higher the ranking, the lower the assessment of loss given default, so the lower the yield. The expected loss on default will depend on the quality and value of assets on wind-up compared with the going concern value.

Yield will also be greater if there is high uncertainty over future expected loss: influence both by the specifics of the borrower, for example borrower from very cyclical industry having higher uncertainty on future profitability, and

general market expectations of future loss, for example due to expectations of economic activity

There is usually a liquidity premium for corporate bonds because in most country's government debt issues, both individual issues and total debt outstanding is larger than for any individual company.

- The liquidity of the overall bond market is linked to its overall size. The larger the market the higher the liquidity

- Central banks will often intervene in the government bond market, both through new issues and buying existing bonds and this improves the overall market liquidity. The greater liquidity in government bonds results in lower yields.

- The size of individual bond issues affects liquidity. Smaller issues have lower trading volumes so individual trades have a greater impact on the market. For example yields are determined by supply and demand, so the restricted ability to sell, or only sell at a discount will result in greater compensation being demanded in terms of yields.

The income and gains from government and corporate bonds may be subject to different taxation arrangements and rates (usually lower for govt bonds). Where there is a relative tax cost this will result in a higher yield on corporate bonds relative to risk-free rates

(ii) Increases in a bond's yield lead to decreases in its market price

Changes to gilt yields may lead to changes in corporate bond yields and hence affect the market price of corporate bonds

If the credit risk premium and inflation risk premium are unaffected by changes in gilt yields then increasing gilt yields will increase the corporate bond yield

However, changing gilt yields may affect these premiums.

Higher gilt yields may be linked to higher inflation and under a higher inflationary environment inflation may be more volatile. This could increase the inflation risk premium which further increases corporate bond yields

Higher gilt yields generally increase the cost of borrowing for companies. More expensive borrowing conditions can make trading challenging for some firms; additional challenges may increase the credit risk premium reflecting an additional risk of default.

These factors may lead to corporate bond yields rising more than the original increase in govt bonds and hence the market price falling relatively more

However, the effect for individual corporate bonds may differ from the general position

This is due to some companies having less exposure to the general economic environment, inflation or credit risk. For example utility companies are less exposed and have more stable performance during economic cycles. Changes in corporate bond yield for these companies may be smaller than the original change in gilt yield

The market price change will also be affected by the duration of the bond. A longer term bond will show a larger change in market price than a shorter term bond for the same change in yield

The reason for changing gilt yields may also affect the market price of the corporate bond. Gilt rate increases intended to slow down the economy may be seen as an intention to limit company prospects and hence the market price of the corporate bond may be depressed further than the theoretical change implied

Gilt rate increases intended to curb inflation may be seen as positive for the economy and hence improve company prospects if high inflation is damaging for a company, which could lead to the decrease in the market price of the corporate bond being smaller than the theoretical change implied

A gilt yield change which is fully anticipated by the market may have no impact on the price of corporate bonds

(iii) Investment return will be increased by selecting higher yield investments (after adjusting higher yield for higher expected defaults)

Selecting corporate bonds rather than gilts will increase the potential yield but will increase default risk to the investment portfolio

Lower investment grade investments would further increase the potential yield. For example B rated, or even junk status bonds will have higher yields.

These could be selected individually, or a pooled fund specialising in these investments could be chosen.

The duration of the bonds chosen will also affect the potential return. One approach would be to select bonds that match the desired cashflows (eg maturing at retirement date, or with durations spread over the future to provide an income stream in retirement)

However, the individual could select bonds of a different duration to profit from expected rises/falls in yields. For example, relatively long duration bonds could achieve higher return if there was a fall in gilt yields or credit spreads, as the market price of the bond would increase

This introduces the need to make assumptions about bond prices at the time they would need to be sold and/or reinvestment yields if they mature earlier

The marketability of bonds will also affect the risk, as if bonds cannot be sold at retirement then funds will not be available

It is unlikely that bonds are not able to be sold, however, there is a risk that volatile market prices will reduce the funds that can be realised, unless there is flexibility relating to the actual retirement date

Direct investment will give access to bonds that provide a better match to the liabilities than an investment fund, and maybe lower expenses.

Fixed bonds rather than index-linked would benefit from any inflation risk premium

Non-domestic bonds may give higher returns.

(iv) The main method of mitigating risks will be diversification

This could include a mix of gilts and corporate bonds, to reduce the exposure to corporate default risk; or a mix of corporate bonds – by credit rating; or just different companies of a similar rating; or a mix of different countries or corporate sectors

Thorough research would reduce the risks of corporate defaults

If the individual was particularly concerned she could consider using alternative asset classes, or derivatives to protect against specific losses, although this would require a change to her stated investment directives

The use of pooled funds may provide an opportunity to access a wider range of investments which could help with risk mitigation, although this could add an operational risk from exposure to the pooled fund managers

Selecting investments of the correct duration will reduce exposure to interest rates at the wrong duration

Bonds of ten year duration would exactly match the requirement for funds at retirement if the individual intends to buy an annuity then; or a longer duration would match, if the requirement is investments providing an income during retirement

The unwanted risk of annuity pricing could also be reduced by investment in bonds of a longer duration although this would not provide complete protection against the pricing basis of insurers

Index-linked bonds would mitigate against the risks of fixed investment returns if the individual requires a real income stream

The risks to be mitigated will also depend on any other savings, as decisions made for this investment will need to be considered as part of the overall risk profile of her investments

Part (i) was reasonably well answered. A lot of marks were available for a question that covered standard bookwork but asked for explanation: many candidates simply did not write enough to score well. The best answers had a clear structure ie start from the definitions and describe each element logically. Part (ii) was poorly answered. Most realized the two yields would generally move together, but few got to grips with how the higher govt yield would impact on the risk premiums in the corporate yield and hence impact the bond price. Part (iii) was disappointingly answered. Many candidates digressed into risk mitigation (part iv) or choosing other asset classes. Part (iv) was reasonably well answered; weaker candidates concentrated too much on default risk and diversification.

Many candidates answered Q7 last and seemed to run out of time, so did not score as well as they might have done on a long question where many relatively simple marks were available.

END OF EXAMINERS' REPORT