

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2022

CP1 - Actuarial Practice Core Practices Paper Two

Introduction

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

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

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the Specialist Advanced (SA) and Specialist Principles (SP) 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.

Sarah Hutchinson
Chair of the Board of Examiners
July 2022

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

The aim of the Actuarial Practice 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.

This subject examines applications in practical situations 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 in CP1 rather than only memorising the core reading.

The examiners set questions that look for candidates to apply the principles in CP1 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, nor is very detailed development of particular points.

Good candidates demonstrate that they have planned well their 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.

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.

Candidates who give well-reasoned points, not in the marking schedule, are awarded marks for doing so.

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

Candidates performed better on paper 1 with the average mark being 7% higher than paper 2.

There were two case studies on paper 2 and where there was a high number of marks allocated candidates appeared to be inadequately prepared. Well prepared candidates structured their answers to achieve the marks allocated. Many candidates did not utilise the information provided in the case studies which meant they were not awarded some relatively easy marks.

C. Pass Mark

The Pass Mark for this exam was 54
1187 presented themselves and 506 passed.

Solutions for Subject CP1-2 - April 2022

Q1

(i)

It would be difficult for a small company to offer a range of products so TT may have decided to only offer a single product.	[½]
It may be easier to achieve brand awareness with a single product.	[½]
This product may meet TT's risk appetite.	[½]
It will be possible to achieve diversification within this single product e.g., by travel regions or by type of policyholder.	[½]
This simple product will meet the needs of TT's target market.	[½]
It will be easier to market a simple product through social media and this is likely to be suitable for their target market.	[1½]
Marketing their product through social media should keep expenses down.	[1]

The potential customers may only be concerned about medical risks when travelling and so this product will provide the basic travel insurance they need for their peace of mind. The product will be easy for them to understand.	[1½]
The potential customers may not particularly value any additional features and so will not be willing to pay more for cover they do not need.	[1]
The market for travel insurance may be very competitive and this basic product may offer a very competitive price that potential customers are willing to pay. This competitive price will also be useful for TT's marketing.	[1½]
Only offering the policy to lives aged under 65 and with no pre-existing conditions should make underwriting process simple and reduce underwriting costs.	[1]
This will also reduce the number of claims and so will also reduce the claims administration costs.	[1]
Offering only medical related benefits should also reduce the administration costs since no need to deal with claims due to travel delays or lost items.	[1]
They will have data for these medical related costs. They will not have data for other travel insurance feature e.g., lost luggage, missed departures. Nor will they have data relating to any other business.	[1½]
TT may have expertise of very simple travel insurance products but will have no experience (so no skills or expertise) in other areas. This would make them less comfortable expanding to more complex products.	[1½]
This niche product may be making a good profit. The current strategy could be expected to maximise overall profits and may be expected to give the best return on capital.	[1½]
There may be a high barrier to entry for other markets.	[½]
The capital requirements for these limited policies may be lower. This may fit in with the capital TT has available. They may not have enough capital available to enter other markets.	[1½]
The regulations may be less onerous.	[½]
The legal involvement may be lower as these should be relatively simple policies	[½]

[Marks available 18½, maximum 10]

(ii)

TT will no longer be able to sell its product as it does now. It will have to accept potential policyholders with pre-existing conditions.	[1]
TT will have to reprice its product and the price will increase.	[1]

This may lead to a fall in sales to healthy lives as travel insurance is unlikely to be compulsory.	[1]
This may lead to anti-selection and a change in the business mix.	[1]
The higher premium may make the product less competitive.	[½]
The expected cost of future benefits on this product will have changed. The insurance provided will be unchanged.	[1]
Including those with pre-existing conditions will affect both the probability and the severity of future claims.	[1]
TT's past data is unlikely to be reliable for estimating future claims.	[½]
TT could try to adjust its existing data to allow for these changes, but this could be very difficult in practice.	[½]
TT could look for external data if they cannot rely on their own data.	[½]
The expenses relating to claims would also be expected to increase. But again, they won't have data to price this accurately.	[1]
Contingency margins will need to load into premiums to allow for uncertainty.	
This will increase the price paid by consumers.	[1]
Increases in the cost of claims and potential uncertainty may lead to additional provisioning and/or capital requirements.	[1]
New reinsurance arrangements may be needed.	[½]
TT may need to introduce additional features to make the product attractive.	[½]
There may be additional marketing costs due to these changes.	[½]
Other travel insurance companies are also likely to be affected if they previously insured those with pre-existing conditions for an additional premium as they will no longer be able to charge an additional premium. However, they may have more data to reprice their policies. TT will need to see how competitors react as they will still need to be competitive	[2]
TT could consider bringing down the age limit from age 65 as this may reduce the number of policyholders with pre-existing conditions. However, the rules on this could change in the future too.	[1]
TT could use exclusions e.g., to countries with high medical costs.	[½]
TT will need to change their terms and conditions and their policyholder literature.	
They will also need to train their staff to allow for the change.	[1]
TT will need to estimate and monitor the impact on product profitability.	[½]
An alternative may be to reclassify the product as medical insurance. This may be exempt from the new rules relating to asking about medical conditions.	[1]
The legislation may lead to higher business volumes as those with pre-existing conditions are no longer excluded. This means there may be more policies over which to spread the company's fixed costs. However, this could lead to new business strain.	[1½]
Claims underwriting should be easier and cheaper as there will be no need to investigate if a claim is due to a pre-existing condition.	[½]
There may be reputational advantages as TT will no longer be turning away those with pre-existing conditions.	[½]

[Marks available 21, maximum 8]

(iii)

TT's own data will not be suitable on its own to reprice the product as it only includes healthy lives.	[½]
Also, TT will be unable to use its past data to estimate future business volumes.	[½]
TT will need to obtain suitable data relating to likelihood and costs of claims to use and	

so will need to use additional sources. [1½]

Reinsurance companies could be a useful source of relevant data. [½]

However, the data may not be suitable as it may not represent the lives who would be attracted to TT's simple product. [1]

For example, the data may include those who are more concerned about the additional features rather than simply the price. [½]

The reinsurance company may be able to advise further on this aspect. [½]

It may also be possible to use data available from the insurance industry or other insurance companies. There will be similar issues relating to the data being suitable for TT with this data. [1½]

TT may be able to use its own data for expenses. Will need to adjust their previous figures to allow for the additional expected claims. [1]

TT will need to monitor the experience of its future policies and be ready to adjust its prices if needed using its own data. [½]

It may take time for TT to build up enough data to have sufficient credibility for pricing. [½]

TT will need data to be stable for pricing so may need to exclude any years where experience is distorted, or it may be necessary to adjust that particular year's data. [1½]

[Marks available 10, maximum 6]

(iv)

A pandemic or an epidemic affecting a part of the world with very large numbers of TTs policyholders. This could result in a high number of policyholders needing treatment while abroad. The risks of individual policyholders becoming unwell when abroad will not be independent. [2]

OR

A pandemic could lead to large numbers of potential policyholders no longer travelling. This will mean that they no longer need travel insurance and so TT's business volumes would be affected. [2]

A natural disaster affecting large parts of the world or parts of the world where many of TT's policyholders have travelled. This may again lead to a high number of policyholders needing medical care. It will also be likely to affect repatriation making this much more costly than expected. [2]

(v)

TT will not be able to reduce the likelihood of these low likelihood risks but they can focus on reducing the impact of the risks. [1]

These risks can only be diversified in a limited way e.g., by types of journey or policyholders, by covering a wide range of locations. This is a particular issue as TT only offers travel insurance. [2]

Can diversify by reinsurer (only valid if reinsurer default covered in (iv)). [½]

The risks can be reinsured. Catastrophe excess of loss or aggregate excess of loss (stop loss) could be used. Other types of reinsurance could be suitable but they must be appropriate for the risks described in (iv) [1½]

Strong management control procedures could reduce some of the impact. For example, good data, monitoring aggregation of risks. [1]

Monitoring the position and taking early action may be useful e.g., advising against travel in certain circumstances. [1]

Terms and conditions of the policies could be used e.g., stating that travel should not be taken against government advice. [1]

Could have exclusions in the terms and conditions e.g., travelling to countries with significant illness or warzones or exclusion from payment due to certain events (natural events or epidemics). Could have a maximum benefit pay-out. [1½]

Claim control systems can be used to guard against fraudulent or excessive claims. This will be particularly relevant as re-existing conditions are not covered. However, it may be difficult to check claims in these exceptional circumstances. [1½]

A bond or reinsurance cover which pays out on a low-likelihood high-impact event could be used. For example, pandemic bonds which pay out in a pandemic. [1]

For any risks that are retained it is vital that sufficient capital is held. [½]

[Marks available 12½, maximum 5]

(vi)

ESG considerations will impact insurance companies through their investments, the products they sell and their operations. [1½]

All investments will need to take ESG considerations into account. This will apply to their equity and debt, and also to any properties and infrastructure they hold. ESG will need to be a key consideration in all their transactions. [2]

Insurance companies will also need to consider where their finance comes from For example banks, sovereign funds, private equity. Do these finance providers meet ESG expectations? [1]

ESG considerations will apply in the short term to ensure investments are suitable; some investments may need to be sold. They will also need to be considered in the long term to insure they hold suitable investments going forward aligning to their ESG policy. [1½]

As shareholders, insurance companies will need to use their influence responsibly to ensure that the companies they invest in behave in an ESG appropriate way; this may be more effective than selling shares. [1½]

ESG considerations can also affect the products that insurance companies sell. For example, may offer reduced premiums for electric cars. [½]

Property insurance could aim to ensure high environmental standards in any rebuilding. [½]

Could aim to offer insurance at subsidised rates to those who might need but otherwise not be able to afford insurance. [1]

Alternatively, may refuse to offer insurance to certain industries~ For example those not operating in line with their ESG standards. [1]

Companies will also need to take account of ESG considerations when running their companies. External stakeholders (policyholders, shareholders, regulators) will expect the company to take ESG considerations into account when running their business. These stakeholders could put pressure on the company if they do not operate in line with ESG standards. [1]

There may be costs involved in meeting ESG standards. [½]

Social considerations could lead to improved working conditions which may lead to more satisfied and more productive employees. Improved governance should lead to a more ethical, diverse, and effective board. Environmental considerations will apply to how companies use their buildings and to their working practices. [3]

Climate change may influence environmental considerations which will affect insurance companies. This could impact pricing and capital needed. [1]

Overall, these measures should lead to an improved reputation for the company which

will be positive for attracting both customers and employees. [1]
 [Marks available 17, maximum 7]

(vii)

More onerous regulation could increase TT's running costs which will reduce TT's profits. More staff will be required to comply with the new regulations. Governance processes and procedures may need to be changed to comply with the new regulations. If TT does not comply there may be regulatory actions e.g., fines. [2½]
 This will be particularly important as TT is still owned by its founders and so there may be improvements that need to be made. [1]

Even if TT already has high standards the new regulations may require new different high standards. TT will also need to take a proactive approach so that they will be in a strong position if there are any further changes. [1]

Where appropriate TT will need to change its internal processes and procedures to comply with the new regulation. It will need to ensure it has suitable monitoring processes in place to ensure it continues to comply with the regulations. [1]

They will need to ensure all their investments meet any new ESG standards. As travel insurance is a short-term policy, investment income would not be expected to be a significant factor. However, it may still take additional effort to ensure its investments are all suitable. [1½]

As TT only offers travel insurance it may need to deal with the environmental risk of promoting air travel. [1]

This will need to be dealt with effectively otherwise its reputation may suffer. [½]

It could calculate the carbon offset needed for flights to various destinations and offer to pay this or share the cost with its customers (alternative suitable example can be given credit). [½]

This may affect business volumes or profits and/or lead to increased prices for customers. [½]

Business may suffer or costs may increase if any regulatory action results in restriction of air travel. [½]

Social factors may be relevant for the medical expenses it is covering. May aim to ensure that the medical care it offers is in hospital/medical centres where employees have good working conditions. It may be difficult to monitor this in practice. [1½]

It should ensure it treats its employees well also. Care may be needed if any areas are outsourced e.g., call centres [1]

[Marks available 12½, maximum 5]

(viii)

TT is still owned by its four founders. If they had the wealth, they could raise the additional capital between them. This may not be likely. [1½]

TT could issue debt. This may be relatively expensive as TT is still in private hands. The debt could be secured or unsecured. If TT has security to offer this may reduce the cost of the debt. [2]

TT could take out a bank loan, but this would not be a long-term solution [1]

TT could sell all or part of the company. [1]

This could be to private investors or on the stock market. [½]

Any new owners could provide additional capital needed. [½]

They may be concerned about losing control of their company. [1]

If capital was needed for a joint venture, the partner could supply the capital needed [½]

TT could also consider crowd funding. This may be suitable if TT has a good reputation with its policyholders and the general public. However, this may be a risky approach.

[1½]

[Marks available 9½, maximum 5]

[Total 50]

Part (i) This was answered reasonably well, but the well prepared candidates came up with more reasons and then explained to get good marks.

Part (ii) This was well answered with most candidates picking up the points that scored the marks on offer.

In Part (iii) candidates often focused on why past data would not be reliable rather than how they could potentially obtain suitable data and the challenges of that.

Part (iv) This part was answered very well.

Part (v) This part was also answered well with most candidates scoring more than half of the marks available

Part (vi) This part was answered reasonably well. Better candidates went into more breadth and depth on how ESG could impact the business, and this scored more marks than those that focused on one or two points.

In Part (vii) only well prepared candidates focused on the issue and utilised the information in the case study.

In Part (viii) most of the candidates produced long lists of answers on less obvious options which reduced the number of marks that could be achieved. The more obvious points like debt were missed for a lot of candidates.

Q2

(i)

Pensions schemes and insurance companies could invest in corporate bonds to meet future liabilities as part of an investment strategy balancing risk and return. [1]

A pension scheme and insurance companies will look to achieve higher than risk free returns) but with have a limited tolerance to the volatility of their funding/ solvency position. [1]

Corporate bonds have a higher expected return than risk free assets and a lower volatility of returns than other riskier assets classes such as equities. [1]

Since corporate bonds provide known cash flows, they are particularly good at matching liability cash flows of known amount and timing, for example annuities [1]

Most corporate bonds will be fixed interest and can be used to meet fixed liabilities For example pensions in payment. It may be possible to find bonds with terms of a Suitable length to match liabilities. [1½]

Matching cash flows between assets and liabilities significantly reduces the likelihood that corporate bonds need to be sold at an uncertain price before maturity which increases the likelihood that a higher than risk free return will be achieved [1½]

Corporate bonds with a good credit rating can provide an attractive return relative to the level of risk taken compared to government bonds.	[½]
There is potentially a good supply of these assets.	[½]
There may be lower demand so they could be cheaper than alternative investments.	[½]
They can be easy to trade and have low dealing costs.	[½]
A wide range of terms will be available.	[½]
There is a low risk of default for issuers with a good credit rating.	[½]
Investors may be able to benefit from any illiquidity premium if they plan to hold the bond to maturity	[½]
Corporate bonds may be suitable to give diversification by asset class.	[½]
Can hold a diverse portfolio of corporate bonds by industry, term, coupon to lower risks.	[½]
Corporate bonds may be acceptable for demonstrating solvency under current rules.	
Regulation may require pension schemes to hold corporate bonds and/or holding these bonds may lead to reduce levies.	[1]
	[Marks available 12½, maximum 6]

(ii)

The regulator will want to ensure that the market it regulates works efficiently and will correct perceived market inefficiencies.	[1]
It aims to protect consumers of products and services	[½]
It aims to maintain confidence for example, in the financial system, a profession etc	[1]
It sets regulations and guidance to support the implementation of legislation.	[½]
It provides supervision and oversight of the firms and individuals operating within the market to check that the legislation and regulations are being complied with and usually has regulatory powers to punish transgressions.	[1]
	[Marks available 4, maximum 2]

(iii)

Fundamentally the world doesn't stand still and the regulator has to react to these challenges so that it can continue to facilitate an orderly market by correcting perceived market inefficiencies.	[1½]
For example, the regulator may need to react to insurers introducing new products or pension schemes adopting new approaches to investment and managing risk. There may have been a recent one-off event or scandals or a large default. There may be consumer pressure to review.	[2]
Market practice, products, skills and technology may have changed. What counts as a bond may have changed so the regulation may no longer be suitable.	[1]
Regulation has a cost, the direct costs of the regulator and regulations on market participants. The regulator will look to amend its regulations and supervisory practices to ensure that the costs for companies complying with the regulations does not become excessively onerous. Will also need to ensure that the cost of running the regulator does not become excessive.	[1½]
The regulator would need to review the regulations and supervisory practices to implement improvements and amendments in regulation.	[½]
A regulator could change its risk appetite. Implementing risk appetite changes requires regulations and/or supervisory practices to be updated.	[1]
A regulator gains experience in operating its regulation and supervisor practices. It may find that it cannot do what it expected or wanted to be able to, or implement change as quickly as it expected or there were unintended consequences which require changes.	[1½]
In this case the regulator would look to make changes.	[½]

The regulations may find that its current regulations and supervisory practices do not have the benefits the regulator was expecting [½]

The regulations may find that its current regulations and supervisory practices are causing issues it did not expect [½]

For example:

Changed product innovation. [½]

Products may no longer meet the needs of consumers as the external environment changes. [½]

Changed competition. [½]

A reduced number of market participants may reduce the level of competition. [½]

A change in consumer protection mechanisms developed by the market itself. [½]

A change to markets consumer protection by switching from sales advisors to direct online sales without advice. [½]

Alteration in the behaviour of consumers, who may be given a false sense of security and a reduced sense of responsibility for their own actions. [½]

An undermining of the sense of professional responsibilities amongst intermediaries, advisors, professional service providers, senior managers, etc. [½]

Where the regulator deems these changes undesirable it could make changes in regulations/practices to stop these issues occurring in the future. [½]

The regulator needs to review the impact including the effect that regulators are having on the other economic costs of regulations. [½]

The regulator needs to collect information and data to carry out its work. The information and data available and needed changes over time. The power to collect specific data is usually set out in the regulations, so reviews are necessary to make changes to stop collecting data no longer required, to start collecting new/additional data or change the frequency that data is collected. [1½]

A regulator makes changes to regulation or practice to comply with best regulatory practice. For example, it could look to make changes in line with equivalent regulators in other markets or regulators in other countries. [1]

The regulator could make changes to regulation to comply with changes in government legislation or changes to government policy or changes in policy resulting from a change of government. [1]

The regulator may be given a new operating scope that it needs to implement. [½]

[Marks available 20½, maximum 6]

(iv)

Consumers - will be affected by changes the level of protection provided by the level of regulatory reserves and capital requirements, the financial strength of firms following regulatory changes and the cost of financial products following the change. The change could lead to greater financial protection (or the opposite) [2]

Insurance companies - Insurance companies will be affected in absolute financial terms by changes and also changes relative to other firms. This includes the costs of implementing changes e.g., new financial projection systems. It could impact the firm's overall solvency - the insurance company could have to raise capital. Could impact its product profitability - could make certain products more or less desirable for the company to write. It could change the company's business mix. [3]

Credit rating agencies - there may be an increased demand for their services (under option A). May see the regulator being more involved with their ratings (perhaps to

ensure consistency between agencies). Likely to be considerably reduced demand for their services if option B is chosen.	[1½]
Other regulators - insurance companies and consumers will alter behaviour, for example new regulatory arbitrages created, changed international competitiveness.	[1]
Financial professionals e.g., actuaries - there may be new or changed statutory roles, they will need to implement the changes.	[1]
Insurance company shareholders - will be affected by profitability and capital requirement changes including how they move over time with financial conditions. It could affect where shareholders invest their money - some insurers could be more or less attractive investments for shareholders. The whole insurance industry could become more or less attractive for investors in general.	[2]
Insurance company employees - changed regulation will change the type of skills required by insurance companies.	[½]
The regulator - there will be cost impact on the regulator from changes, for example time and cost of approving internal models. The regulator could change how they supervise e.g. they may need to spend more time on companies that look weak under the new regulation	[1½]
The regulator's employees - the regulation will change the type of skills required by the regulator.	[½]
Investment fund managers - will be affected by changed insurance company investor preferences for different asset types. They may need to buy/sell large amounts of assets to comply with the new regulations.	[1]
Other investors - changed insurance company investor preferences will change the demand for different asset types and hence prices and returns available.	[1]
	[Marks available 15, maximum 5]

(v)

Regulation policy advisors - to set out the objectives of the regulation change, implications for other regulations and how the proposal fits with its regulatory objectives.	[1]
Lawyers - to provide advice and direction on whether the regulator has the legislative authority to implement the regulatory change, whether the regulator needs to seek permission to make the changes from the government or needs a legislation change. Lawyers will also be required to either write or review the regulation changes.	[1½]
Media and communications specialists - Changes to regulations in most countries go through a process of consultation, impact assessment testing before ultimate implementation. Throughout this process it will be necessary to communicate, lobby and influence a wide range of stakeholders.	[1½]
Senior managers and directors of insurance companies - will need to respond to the changes by coming up with a solution that is practical and can be easily implemented. This may mean additional skills are needed which will have associated costs that they will need to approve (under C). Changes may lead to additional capital being needed to be held - will need to consider implications.	[1½]
Supervision specialists - will carry out the day-to-day practical supervision of firms and will input into the review and updating of regulations.	[1]
Actuaries - will need to assess the impact of the regulations on solvency	[½]
Other professionals involved in the area - to see if there may be any impact which needs to be taken into account.	[½]
Credit risk analysts and specialists - to devise, develop and implement the credit risk regulatory changes and to consider the implications of changing ratings.	[1½]

Investment managers - to assess impact if the changes could significantly impact the assets held by insurers	[½]
Credit specialists within insurance companies who are devising internal ratings at the moment - to see how they credit rate their bonds and to consider if this is likely to be consistent with standards expected under option C	[1]
Capital management specialists within insurance companies - to understand the impact on insurer capital of changes	[½]
Data and Systems specialists - Where there is new or changes to the data reporting to regulators, data systems specialists will be responsible for the devising, developing and implementing the data reporting changes	[1]
	[Marks available 12, maximum 7]

(vi)

The following marks can be given once if mentioned under any of the options: Any increase in regulator costs will lead to higher levies on insurers and pension schemes.	[½]
There may be an impact on the corporate bond market.	[½]

Option A

Effectiveness - Only recognising regulated credit ratings would ensure that bonds have appropriate capital charges where they are based on the regulated credit rating compared to using other methods of credit rating.	[1]
Will improve the overall level of consistency of approach assuming all rating agencies operate using similar criteria. Although it is possible that there could be significant differences between different credit rating agencies for the same bond.	[1½]
The approach may be considered harsh with respect to treating bonds without a credit rating as unrated	[½]
However, there may be an incentive to treat bonds as unrated compared with the alternative with a low rating.	[½]
Providing a capital incentive for bonds to have regulated credit ratings should improve the reliability of determining appropriate fair values for bonds that are not frequently traded.	[½]
The reliability fair values for bonds treated as unrated will be unchanged.	[½]

Implications - Only recognising regulated credit ratings will ensure that the credit ratings are carried out to a minimum standard.	[1]
However, the regulator will be become more dependent on regulated credit rating agencies and there will be an increased demand for credit rating agencies.	[1]
If there are only a few regulated credit rating agencies this will increase the dependence of the regulated system on these firms. Increasing the systematic dependence risk on regulated credit rating agencies would increase the implications if there are failures within one or more of these firms.	[1]
Insurers/schemes can request their own credit ratings for bonds without ratings. However, this can have significant cost implications if they have many unrated bonds, in particular for smaller insurers/schemes. There could also be duplication of cost if many insurers/schemes invest in the same unrated bonds.	[1½]
Allowing insurers/schemes to request credit ratings for unrated bonds could result in insurers/schemes using different credit ratings for the same bond if they obtained them from different credit rating agencies. The system also creates an incentive for	

insurers/schemes to use a particular credit rating agency who they believe would provide more favourable credit ratings.	[1½]
This could be part of the intention to encourage smaller insurers/schemes not to invest in unrated bonds where they are more likely to lack bond investment experience compared with larger insurers/schemes. This could incentivise small insurers/schemes to have less risky investment strategies. This in turn could reduce the supervision resources needed to supervise smaller insurers/schemes.	[1½]
There is a risk that credit rating agencies, particularly smaller agencies lack the capacity to credit rate a large increase in the number of bonds.	[1½]
Some bond issuers maintain obtain and maintain credit ratings for their bond issues so will be unaffected by the changes.	[½]
If insurers/schemes are unable or unwilling to get credit ratings for bonds without ratings, then there could be significant solvency implications for the affected insurers/schemes when the regulation change is introduced.	[1]
Insurers/schemes could require borrowers to pay for external credit ratings for new lending which could make small loan issues prohibitively expensive for borrowers. This could effectively cut a source of funding for smaller and medium size borrowers.	[1]
Suitability - This regulatory change is likely to appropriate if the regulator has significant concerns with the level of investments held by insurers/schemes and has concerns with how these insurers/schemes are internally credit rating these assets.	[1]
This option should be relatively simple to implement and will have lower costs for the regulator than options B and C	[1]
Capital charges likely to increase which may be the regulator's aim	[½]
If the regulator does not have the capacity, skills, experience or appetite to carry out supervisory review of insurers/schemes internal ratings this approach should ensure that where credit ratings are recognised, they meet minimum standards	[1]
Option B	
Effectiveness - If the regulator provides a credit rating for all bonds, then it can set and maintain the standard of credit ratings for all bonds. These ratings are in the sole control of the regulator. This should improve consistency of ratings as only one organisation doing the rating.	[2]
But would need to consider whether replicating the function of a credit rating agency is appropriate for a regulator	[½]
This approach removes the issue of insurers/schemes using a more favourable unrated category for technical provision and capital requirements if the credit rating would otherwise be low.	[1]
This approach is effective in removing the potential for bias in internal credit ratings by insurers/schemes.	[1]
This approach is effective at reducing reliance on regulated credit rating agencies.	[½]
This approach ensures that the same credit rating is used by all insurers/schemes for technical provisions and capital requirements for each individual bond issue	[1]
This approach could be effective at allowing all insurers/schemes irrespective of size to lend at an affordable cost to small and medium size companies. The credit ratings would be reliable having been set by the regulator and this would eliminate the need for the regulator to supervise the internal credit ratings by insurers/schemes.	[1½]

All bonds will have a credit rating and this could allow the regulator to review the appropriateness of fair values for bonds calculated by insurers/schemes. Fair values of infrequently traded bonds are more likely to be appropriate.	[1]
Implications - The regulator will need to have people with the skills and experience to credit rate all the bonds held by insurance companies and pension funds	[1]
Will need to ensure ratings are relevant and up to date so this work will be ongoing for the regulator.	[½]
This will be a very large number of bonds and would cover all sectors of the domestic economy and potentially also overseas issuers. This is a very wide spectrum of bonds to credit rate.	[1]
There could be issues for the smooth operation of this option if the regulator does not have sufficient resources. There may be delays as there is only one provider of ratings	[1]
The regulator's credit rating approach is more likely to be standardised to reduce the number of credit analysts required. However, this has implications for the standard and quality of the credit ratings.	[1]
If the standard and quality of credit ratings are lower compared with regulated credit ratings there is a greater risk from insurers/schemes placing reliance on the regulator's credit rating in investment decisions.	[1]
There may be credibility issues if the regulator ratings differ from those of established credit rating agencies.	[½]
The regulator could introduce a separate approval system to allow regulated credit rating agencies to provide it with credit ratings for issues they rate to be used for technical provisions and capital requirements.	[½]
There are benefits of issuers of large issue size bonds and large companies generally getting a regulated credit rating agency rating as this addresses the limitations of using a simplified standardised credit rating approach by the regulator.	[1]
Suitability - This option is likely to be expensive for the regulator. If the regulator were to have credit rating analysts specialising in each sector of the economy, it would need a very large number of credit rating analysts. This has significant cost and recruitment implications for the regulator. For small and medium size countries the cost and skills requirement is likely to be prohibitive.	[2]
Need to consider whether the issues with internal and external credit ratings are concerning enough to warrant this approach.	[½]
There may be external pressure on the regulator to amend standards e.g. political.	[½]
Option C	
Effectiveness - Allowing insurers/schemes to recognise internal credit ratings represents a risk that those credit ratings are inappropriate and consequently technical provisions and capital requirements are set at an inappropriate level.	[1½]
Allowing insurers/schemes to recognise internal credit ratings reduces reliance on regulated credit ratings or the alternative of regulator provided credit ratings.	[1]
This approach would place greater onus on insurers/schemes taking responsibility for their own bond credit ratings.	[1]
The approach could lead to material differences in ratings between insurers/schemes.	[½]
The regulator setting a standard to test the reliability of the credit rating systems and tolerance for ratings goes some way to addressing the potential risk from allowing recognition of internal credit ratings	[1]
Implications - However, if the internal credit ratings are set at an inappropriate level, then for infrequently traded bonds the fair value of the bonds are likely to also be set an inappropriate level which has risk and solvency consequences.	[1]

Small insurers/schemes are likely to have a lower level of skills and experience available to them than larger insurers/schemes, so their credit ratings are more likely to be less reliable	[½]
If a large insurer/scheme has a systematic failing in its internal credit rating process, then this could affect a large number of internally rated bonds with significant solvency implications for the insurer/scheme.	[1]
The regulator will need to introduce a review process for insurers/schemes internal credit rating systems. This will require the regulator to have access to the credit rating skills and experience to supervise and review insurers/schemes against the regulatory standard.	[1]
Will need to continually monitor to ensure models are still appropriate over time.	[1½]
If insurers/schemes need to get large numbers of internally rated bonds also externally credit rated this will have significant cost implications	[1]
This will be particularly the case if the regulator requires insurers/schemes to demonstrate the reliability of their credit rating systems to a statistical standard	[1]
Alternatively, the regulator could require fewer bonds to externally rated and apply a more qualitative assessment. However, this requires a higher level of experience to assess whether the internal credit ratings are equivalent and to identify issues with the insurers/schemes internal credit rating systems.	[1½]
Suitability - this option is still onerous for the regulator as they will need to check internal rating assessments are carried out properly. This could lead to significant resource implications and cost	[1½]

[Marks available 53½, maximum 18]

(vii)

Option A

The cost of obtaining regulated credit ratings may encourage insurers/schemes to obtain credit ratings from smaller rating agencies looking to gain business and potentially with lower standards. [1]

Regulated credit rating agencies do not have identical credit rating criteria. A requirement to obtain regulated credit ratings does not prevent an insurer/scheme selecting the credit rating agency for different bond sectors that are more likely to give more favourable credit ratings. [1]

There are further issues if the volume of business placed with individual credit rating agencies is so large that it could potentially influence the credit rating outcomes, i.e., too many unfavourable credit ratings could result in a regulated credit rating agency losing a significant proportion of its income. [1]

This option increases the regulator's dependence on regulated credit rating agencies. [1]

This could be problematical if it does not regulate the credit rating agencies as well. [1]

This regulatory option is likely to increase entry barriers for insurance companies. [1]

There will be the challenge of needing to continually monitor regulated credit rating agencies and challenge of requests from currently unregulated credit rating agencies to be approved and need for time/expertise to do both of these. There will also be the challenge of ensuring regulated agencies don't manipulate ratings in order to get more business. This may be difficult for the regulator to spot [3]

Option B

The regulator may lack expertise, skill and accuracy compared to specialist agencies. [1]

This option could increase the safety and soundness for small and medium size insurers/schemes. However, it could lower it for larger insurers/schemes as their own credit rating may be more suitable. The failure of large insurers/schemes would have a greater impact than for smaller insurers/schemes so this option may prove counter productive. [1½]

There will be a challenge of a lack of independence i.e., difficult for the regulator to oversee its own operation and take a neutral view on whether doing an appropriate job.

May therefore need to involve an external agency, at a cost, to oversee the effectiveness of its rating system [1½]

Option C

It is likely to be much more difficult to hold small insurers/schemes to the internal credit rating standards due to resource constraints and fewer internally rated bonds compared with larger insurers/schemes. The regulator will need to adopt a risk appetite for the assessment of internal credit rating systems and ratings that allows for insurer/scheme size or other factor indicating the impact failure could have on the financial system [2]

Applying the regulatory standard as a statistically significance test would require large numbers of bonds to be externally rated as well as internally rated. For small and medium size insurers/schemes the cost getting external ratings, the cost of operating an internal rating system combined with the additional regulatory scrutiny is likely to be financially prohibitive relative to the return that can be achieved with publicly traded bonds with issuer credit ratings. [1½]

Even for the largest insurers/schemes some classes of bonds may be so heterogenous, [1]

for example commercial mortgage loans, that it would not be financially viable to invest in them [1]

given the cost implications of operating the internal rating systems and validating them with external credit ratings. [1]

Internal credit ratings for vastly different bond sectors, e.g., corporate bonds versus infrastructure bonds require materially different skills and experience to credit rate. It is therefore challenging to take across the reliability and equivalence of internal credit ratings for one bond sector to another. [1]

Qualitative credit rating system assessments by supervisors are subjective and therefore more open to valid challenge by insurers/schemes which increases the challenge in operating this regulatory option. [1]

There will be the challenge of a more complicated approach, given insurers/schemes have choice of internal rating and regulated rating. Also, the challenge of approving internal models which may vary one insurer/scheme to the next and continual monitoring of the models over time to make sure they are still acceptable. In addition, this option has all the supervisory challenges of Option A. [2]

[Marks available 22½, maximum 6]

[Total 50]

Part (i) This was answered well, but some candidates did not generate enough ideas to score full marks.

Part (ii) This was answered very well, with most candidates scoring full marks.

In Part (iii) many candidates mistook the question for reviewing firms rather than reviewing the regulations and supervisory practices.

Part (iv) This was answered reasonably well.

In Part (v) only well prepared candidates explained their answers in sufficient detail to score the marks on offer.

In Part (vi) only those candidates that structured their answers and used the information provided (and the guidance offered) in the case study did much better than those that tended to put all their answers together and not focusing on each of the options. The breadth of the answers was also not as good as hoped for.

In Part (vii) candidates that combined (vi) and (vii) together structured their answers well and credit was given in the relevant part.

[Paper Total 100]

END OF EXAMINERS' REPORT