Institute and Faculty of Actuaries

EXAMINERS' REPORT

SP1 - Health and Care Specialist Principles

September 2023

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 later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

For some candidates, this may be their first attempt at answering an examination using open books and online. The Examiners expect all candidates to have a good level of knowledge and understanding of the topics and therefore candidates should not be overly dependent on open book materials. In our experience, candidates that spend too long researching answers in their materials will not be successful either because of time management issues or because they do not properly answer the questions.

Many candidates rely on past exam papers and examiner reports. Great caution must be exercised in doing so because each exam question is unique. As with all professional examinations, it is insufficient to repeat points of principle, formula or other text book works. The examinations are designed to test "higher order" thinking including candidates' ability to apply their knowledge to the facts presented in detail, synthesise and analyse their findings, and present conclusions or advice. Successful candidates concentrate on answering the questions asked rather than repeating their knowledge without application.

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
November 2023

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

The aim of the Health and Care Specialist Principles subject is to instil in successful candidates the ability to apply, in simple situations, the principles of actuarial planning and control needed in health and care matters on sound financial lines.

Candidates who approach the questions, especially the more substantial elements of each question, in a methodical and detailed manner are far more likely to satisfy the examiners and receive a pass in the subject. Candidates will gain few marks if they do not address the question asked but merely write around the topic of the question.

The mark allocation for each question part gives an indication of the relative length of answer or number of points to be made to gain full marks. The Examiners' Report covers more points than would be expected to get full marks. This is so that alternative approaches to questions by different candidates can be accommodated.

It is often helpful to structure and use subheadings when answering long part questions.

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

The paper was a slightly more challenging one, and this is reflected on the pass mar. However, well prepared candidates still scored well across most of the questions.

Questions that focussed on knowledge of the Core Reading were well answered by those who had prepared thoroughly. However, the paper included several part questions requiring wider thinking or application of core reading to specific circumstances, such as Questions 1(iii), 2(i), 2(ii), 3(iii), 4(ii), 5(i), 5(ii) and 5(iii). Candidates should recognise that these are generally the questions which differentiate those Candidates with a good grasp and understanding of the subject.

It is pleasing to see many candidates providing their answers under subheadings, making them easier to follow and mark. This also helps show that they have applied their knowledge to the specific scenarios described.

C. Pass Mark

The Pass Mark for this exam was 57.
308 presented themselves and 153 passed.

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Solutions for Subject SP1 September 2023

Q1

(i)

The demand for IP products with features other than those prescribed by regulation may have changed. [½]
Standard features may no longer be meeting the changing needs of the customers. [½]
Customer financial sophistication may have improved so that they are able to understand more varied product designs. [½]

The changes in customer needs may have been caused by changes in the economic conditions of the country, for example: [½]
Economic expansion / boom / recession / depression.
Employment / unemployment level.
Average income level.
State sickness benefits.
(½ mark for any two examples)

There may have been changes in employers' sickness benefits, for example: [½]
Changes in benefit level could affect replacement ratio.
Changes in duration of sickness benefits could affect deferred period.
The definition of disability may have changed.
The development in some professions / industries could affect the demand for own occupation / any occupation cover.
Indexation / benefit escalation could be affected by changes in the outlook of earnings / price inflation.
(½ mark for any two examples)

There may have been changes in taxation, e.g., IP benefits may now be taxable / non-taxable. [½]
The demand for changes could have come from the insurance industry / distribution channels. [½]
the insurers have become more technically sophisticated, so able to design and price a greater variety of designs, [½]
The demand for changes could have come directly from the customers / employers. [½]
The changes could be a fulfillment of a political promise by Country X's Government as a part of the government's health and care reform. [½]

There could have been external pressure on the government to provide more flexibility / freedom for insurers on their product design [½]
As a means to develop Country X's insurance industry.
To encourage more citizens to take out IP policies.
To encourage more competition within the insurance industry.
To bring the insurance product design in line with global trends.
To align with the insurance products of its neighbouring countries.
Other health and care products may be sold without the design restrictions and this works well.
(½ mark for any two examples)

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This may be part of the government's plan to encourage its citizens to take out health and care insurance privately to reduce its burden on health and care funding. [½]
There may be a change in the leadership of the regulator. e.g. more dynamic leadership from the industry with experience in IP products. [½]
Flexibility over the features offered may allow IP insurers to reduce their risks, which might allow them to reduce the margins they include in their premiums (so leading to lower prices, which is better for customers). [½]
Flexibility over the design may promote more competition between IP insurers, which might lead to lower prices and/or more innovative designs. The market may have matured to the point that the regulator is comfortable to have less restrictions on product features. [½]

[Marks available 7½, maximum 4]

(ii)
Advantages: Applicable to all three new product features
Company A's perspective:
Flexibility in IP benefits would offer more choices to the customers. [½]
Customer needs could be better met, as limited product features may not meet the specific needs of different customers. [½]
The additional features are likely to make the products more marketable, which will be welcome by Company A's distribution channels / brokers / tied agents / salesforce. [½]
This may also enhance Company A's brand image / reputation. [½]
This may provide Company A with competitive advantage if it is the first insurer to introduce additional features to its IP products. [½]
This would enable Company A to keep up with the market if its competitors are introducing or have already introduced additional features to their IP products. [½]
This would help increase customer satisfaction, which could improve persistency. [½]
Company A's existing and future policyholders' perspective
The flexibility will allow customers to align the benefits with the changing needs over time. [½]

Flexible benefits may make the premium more affordable / cheaper to the customer, for example: [½]
Selection of shorter deferred period,
Lower replacement ratio,
Lower benefit escalation.
(½ mark for any two examples)

Applicable to Deferred Period only: Company A's existing and future policyholders' perspective:
Shorter deferred period may align better with the duration of sickness benefits provided by some employers. [½]
Shorter deferred period may be more suitable for self-employed / contractors, or certain professions / industries where the employees are typically remunerated based on number of hours worked. [½]
A shorter deferred period may also align better with the level of savings that individuals have. [½]

Applicable to Replacement Ratio only: Company A's perspective:

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Customers may feel empowered as they have complete flexibility on choosing a replacement ratio, subject to a maximum of 75 [½]
Lower replacement ratios provide greater encouragement to return to work, which should reduce Company A's costs. [½]

Company A's existing and future policyholders' perspective:
Allowing different levels of replacement ratio is good for the policyholder as a replacement ratio at 75% of basic (net of tax) income may not be suitable for all because the relative level of living costs could vary significantly between customers [½]
For example, those who have a high mortgage / rental payment commitment are likely to require a higher replacement ratio. [½]
A lower replacement ratio would lead to lower premiums, which could mean better value for money to those who do not need a higher replacement ratio. [½]
Lower replacement ratios might be more suitable for people on lower salaries if there is a fixed State benefit. [½]

Applicable to Benefit Escalation only: Company A's perspective:
If long-term RPI is expected to be less than 5%, this may lead to lower premium rates, making the product more attractive to future policyholders. [½]

Company A's existing and future policyholders' perspective:
A fixed rate of 5% per annum may not provide the required protection against inflation, unless the expected long-term average inflation rate happens to be 5% per annum. [½]
This is in particular that if the inflation forecast for Country X is expected be over 5% per annum. [½]
Country X's price inflation index could be a reasonable match to the expected increase in living costs, which helps reduce the risk of under insurance. [½]

Disadvantages: Applicable to all three new product features
Company A's perspective:
Increasing the product feature options will add operational complexities [½]
There could be problems obtaining suitable or relevant experience data for pricing purposes, which could increase the risk of mis-pricing. [½]
If higher margins are included in the pricing assumptions, this could lead to an increase in premiums. [½]
Additional product features could increase the risk of mis-selling because the sales channels may not be sufficiently trained to explain the additional features to potential customers adequately. [½]
Upfront development costs could be significant. [½]
The increased level of options/ guarantees could lead to higher level of reserving / capital requirements. [½]
There will also be the additional expenses to upgrade the IT system for incorporating these new features, and staff training costs [½]
The cost of reinsurance could increase, or suitable reinsurance may not be available. [½]
If actual new business volume ends up lower than expected, Company A may not be able to recover the development costs [½]
There is the potential risk of lapse and re-entry and anti-selection. [½]

Company A's existing and future policyholders' perspective

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Additional product features could increase the risk of the potential customers selecting the wrong product features due to lacking the knowledge to understand the implications of the new features correctly. [½]
Inappropriate product feature selection could lead to customer dissatisfaction. [½]

Applicable to Deferred Period only: Company A's perspective
Policies with shorter deferred period is likely to be more expensive than the existing products, and this could discourage customers from choosing the shorter deferred period options even though they may be more suitable [½]

Applicable to Replacement Ratio only: Company A's perspective
There is higher risk of customers choosing a level that is not appropriate for their circumstances, in particular if they choose a lower replacement ratio simply because of the lower premium rates. [½]
Some customers may rely on their brokers / sales agents for advice, which could lead to higher commission rates required by the brokers / sales agents [½]

Company A's existing and future policyholders' perspective:
A maximum of 75% may still be too low for some customers. [½]

Applicable to Benefit Escalation only: Company A's perspective:
Potential customers may not appreciate the inflation-linked benefit if this product feature change leads to an increase in premium rates, especially if there is generally low inflation expectation in the economy. [½]
Customers may not like uncertain (nominal) increases in benefits. [½]
Company A will have additional work in monitoring, recording and implementing indexed values. [½]
Company A will need to change its investment strategy / asset liability management and may not be able to find suitable index-linked assets. [½]

Company A's existing and future policyholders' perspective:
Country X's price inflation index may not be the best match for the expected increase in living costs, as it may not include the increasing costs of mortgage / rental payments. [½]
Earnings inflation may be a better match for some customers. [½]

[Marks available 22, maximum 4]

(iii)
Process in arriving at a set of suitable premium rates:
There are usually two key stages involved in the determination of a set of suitable premium rates, namely the pricing / profit testing stage and the commercial / competition consideration stage. [½]
The pricing / profit testing stage involves the selection of a set of appropriate model points, pricing methodology and assumptions, so that a set of premium rates can be derived to meet the company's desired profit criteria. [½]

The commercial / competition consideration stage factors into the market conditions and the company's market strategy and risk appetite, so that the set of premium rates derived from the pricing / profit testing stage can be adjusted to become a set of competitive / commercially viable premium rates. [½]

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Factors to consider in arriving at a set of suitable premium rates: Model points:
An appropriate set of model points will need to be determined to represent the expected profile of polices / product mix to be written. [½]
The model point should cover policies with deferred periods of 13, 26 and 52 weeks, and a suitable range of benefit amounts of up to 75% of expected policyholders' basic (net of tax) income. [½]

Pricing methodology:
Company A will need to consider whether the existing pricing methodology will remain appropriate as a result of the proposed changes in product features. [½]
In theory, either the inception/disabled life annuity approach or multi-state modelling approach could remain appropriate. [½]
However, given the higher level of complexity relating to multi-state modelling, the lack of experience data relating to the new product features may make the multi-state modelling approach less suitable. [½]

Pricing assumptions: Inception and termination/annuity rates:
Company A will need to consider the implications of the different deferred periods on expected inception and terminate/annuity assumptions. [½]
The different replacement ratios may also affect future claim experience, although its implications are likely to be less direct. [½]
For policies with deferred periods other than 52 weeks, Company A is unlikely to have sufficient credible internal data for setting its inception and termination / annuity assumptions accurately. As such, it may need to source data externally, such as population data. [½]
Data sources based on Country X's industry / insurance market, e.g., industry data, are likely to be based on the 52-week deferred period design, so are unlikely to be useful. [½]
However, other external data sources, such as data from abroad and medical journals may have information relating to IP with different deferred periods, [½]
but would need to be adjusted to reflect differences in target market, underwriting method, claims control procedures, product design, etc. [½]
In the case of data from abroad, adjustments would also be needed for external factors such as differences in State benefits, levels of wealth and their impact on general levels of health. [½]

Reinsurance
Given the of lack of credible data/experience in the new product features, Company A will need to assess whether its existing reinsurance strategy (e.g., retention level, quota share or surplus, level or risk reinsurance premiums etc.) remains appropriate. [½]
Company A will need to incorporate the revised reinsurance strategy and premium rates in the pricing of its new premium rates. [½]
Any potential implications on the allowance for reinsurers' default as a result of changes in reinsurers / reinsurance arrangements will need to be incorporated in the pricing exercise. [½]

Benefit escalation:

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As benefit escalation is now linked to Country X's price inflation index, the pricing assumptions should be switched from the previously fixed rate of 5% p.a. to Company A's best estimate of Country X's future price inflation. [½]
Company A's best estimate price inflation assumption should be consistent with its best estimate expense inflation assumption, or at least the price related component of Company A's expense inflation assumptions. [½]
Company A might use Country X's historic price inflation indices, adjusted for the current (and expected future) economic conditions. [½]

Lapses:
Company A will need to consider the implications of the new product features on expected lapse assumptions. [½]
The enhancements in product features which serve to better meet customers' needs may help to improve future lapse experience. [½]
However, the lack of credible experience data relating to the new product features would make it difficult for Company A to set the new lapse assumptions accurately, [½]
therefore Company A may need external help such as reinsurers, brokers / intermediaries, industry data and consulting firms. [½]
Company A will also need to consider the implications of the potential lapse and re-entry of existing policyholders who seek to replace their existing policies with product features that better suit their needs. [½]

Commission:
Company A will need to consider the implications of the additional product features on the commission rates it currently offers to its brokers / intermediaries / sales force. [½]
If the additional product features are going to increase the sales effort, higher commission rates may need to be offered which should be allowed for in pricing accordingly. [½]
Any potential changes to the commission clawback arrangements should also be incorporated in the pricing exercise. [½]

Expenses:
Company A will need to consider how to factor the development costs in its initial expense assumptions, which would include: [½]

The total estimated cost of developing the new product features [½]
Pricing model development,
New admin/IT system development,
New underwriting / claims management processes,
Marketing / product literature costs,
Staff / Brokers / Intermediaries / Sales force training
(½ mark for any two examples)

Company A will need to consider the time horizon over which the development costs will be recouped. [½]
Company A will need to consider the implications of administering the additional product features on its ongoing maintenance expense assumptions, as well as the expected future new business volume for the derivation of the per policy expense assumptions. [½]

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If Company A's expense inflation is a blend of price and earnings / staff related inflation, it should consider whether the additional product features may have any implications on the split between price related and earnings related inflation. [½]

New business volume:
Company A will need to consider the implications of the additional product features on its future new business sales. [½]

The considerations will need to further split into business mix by: [½]
Distribution channels
Deferred periods
Replacement ratios
Gender
Age bands
Smoker status
Occupational classes
(½ mark for any two examples)

Reserving and capital requirements:
Company A will need to consider whether any reserving and capital requirements changes will also be introduced by Country X's regulator as a result of removing the IP product restriction. [½]
Even if no changes were proposed by Country X's regulator, Company A will still need to consider the implications of the additional product features / reinsurance strategy / business mix on its liability and asset risk profiles, [½]
Which could mean Company A's existing reserve and capital requirements methodology and assumptions may no longer be appropriate. [½]
Any expected changes in reserving and capital requirements could also have implications on investment strategy, investment returns on assets and future asset / liability and liquidity positions. [½]

Tax:
Company A will need to consider whether any taxation changes will also be introduced by Country X's regulator as a result of removing the IP product restriction. [½]
Even if no changes were proposed by Country X's regulator, Company A will Still need to consider the implications of the new premium rates / reinsurance strategy / commission/ expenses on its overall tax profile, and hence tax assumptions for pricing. [½]

Profit criteria:
Company A will need to consider whether the existing measures of profit criteria will remain appropriate for the additional product features. [½]
This will include the considerations of the implications of the additional product features on Company A's risk profile and policy, which should be reflected appropriately in Company A's Risk Discount Rate / Internal Rate of Return / Return on Equity etc. [½]

Commercial / Competition considerations:

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A set of premium rates that are purely based on Company A's best estimate assumptions and desired profit criteria may not be immediately marketable / commercially viable, [½]
Company A will need to consider further commercial / competition factors to decide whether further adjustments will be needed before offering the final set of premium rates to the market. [½]
Company A may need to perform market research to assess the potential level of demand for the different product features. [½]
It will also need to consider the suitability of existing distribution channels for the target market and obtain opinions from its distribution channels the acceptable range of premium rates. [½]
Company A should check whether its competitors are currently offering these product features and compare the competitiveness of its premium rates. [½]
If none of Company A's competitors are currently offering these product features, it should ensure that the different sets of premium rates between different product features are reasonable, in particular in relation to the following aspects: [½]
product features that are the same as the old design (i.e., 52 weeks deferred period, 75% replacement ratios) should have premium rates that are comparable / explainable against the old premium rates. [½]
policies with shorter deferred period should have higher premium rates than those with longer deferred period. [½]
Company A may consider whether it is appropriate / desirable to incorporate cross-subsidies in the prices charged to different policies. [½]
Consider any regulatory restrictions on pricing, e.g., limits on prices that can be charged or limits on the rating factors that might be used (bearing in mind that Company A might now want to use different rating factors to reflect new risks arising from offering a choice of deferred periods / replacement ratios). [½]

[Marks available 27, maximum 10]

[Total 22]

Part (i) - This question was generally well answered by most candidates. The better prepared candidates were able to structure their answers with clear headings and covered a wide range of topics.

Part (ii) - This question was mainly well answered with many candidates scoring highly. The better prepared candidates managed to articulate their answers clearly between advantages and disadvantages and provide specific considerations from the perspective of Company A and Company A's existing and future policyholders respectively.

Part (iii) - This question was not well answered by those candidates who simply regurgitated a generic response about pricing rather than answering the specific question asked by the examiners. Well prepared candidates were able to demonstrate their understanding of the question by addressing the specific circumstances of setting a set of suitable premium rates for the amended IP product in the question.

Part (iii) of this question differentiated the stronger candidates from the weaker candidates.

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Q2

(i)

Reasons for a decline in Company B's market share:

As Company B has been experiencing a decline in its market share relative to its competitors, this is unlikely to be caused by any economy wide issues as such issues are likely to affect the entire PMI insurance sector as a whole. [½]

On the other hand, Company B's group PMI might have targeted a certain section of the market and all of those customers are now being affected by certain issues, e.g., it might have targeted the mining industry, and these may now be declining as greener energy sources are used. [½]

Both products are renewable annually, Company B could be losing market share as a result of higher than expected lapses (non-renewals) at renewal, [½]

and /or not winning new business from its competitors to compensate for the lapses (non-renewals) of in-force business. [½]

These could be caused by the following reasons:

Product design

Customer needs may have changed over time and Company B's product design may no longer be suitable. [½]

The change in customer needs may be caused by a change in state benefit provisions, or general social trends. [½]

Certain product features on Company B's PMI products may have become unpopular, for example: [½]

Inappropriate level of excess / deductible

Inappropriate policy exclusions

Inappropriate level of cover

Limited policy options

Inappropriate premium guarantee period

(½ mark for any two examples)

For group PMI, Company B might not be providing a flexible offering (just offering the same option to all companies). [½]

Premium rates:

Company B's premium rates may have become uncompetitive. [½]

This could be the result of:

Poor claims experience

Poor lapse expense

Poor expense control / rising costs of third-party admin providers

Increase in per policy loading as a result of the decline in in-force business

Rising costs of reinsurance

Increasing costs of reserving and capital requirements

Rising costs of medical service providers

Higher risk / profit margins being incorporated in the premium rates

(½ mark for any two examples)

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Higher premium rates may lead to a reduction in new business sales which may result in the overall premium income being lower than that under a lower premium rates with correspondingly higher new business sales scenario. [½]

Marketing
Company B may have reduced its marketing activities in the market, which could include: [½]
TV advertising
Promotions on social network
Sponsoring events / celebrities
Giving out free gifts
(½ mark for any two examples)

Reputational
Company B's brand name could have been damaged as a result of: [½]
Mis-selling
Unfair (or perceived to be unfair) claim declinatures
Frauds / crimes committed by management / intermediaries
Regulatory penalties / fines
Association with social network scandals
Data protection issues / loss of confidential customer data
Bad press
(½ mark for any two examples)

Customer services:
Company B's customer services may have declined which resulted in customer dissatisfaction. These could include inefficient / inappropriate: [½]
Underwriting process
New business onboarding process
Customer enquiry / policy management / admin process
Claims management process
(½ mark for any two examples)

Hospital network:
Company B may have lost the arrangements / contracts with a major / popular hospital network. [½]
The quality of services provided by the hospital network to which Company B is linked may have deteriorated. [½]

Distribution channels:
Company B may have lost the arrangements / contracts with a major / popular broker / intermediary. [½]
This would particularly be relevant to the large corporate schemes of the group PMI business. [½]
The quality of services provided by Company B's sales force may have deteriorated [½]

Financial / Solvency position:
Company B's financial / solvency position may have deteriorated, which led to customers losing their confidence in Company B. This could be the result of: [½]

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Downgrade by external credit assessment institutions / rating agencies
Default by reinsurers
Default by brokers / intermediaries
System failures
Data errors
Investment default / downgrade
(½ mark for any two examples)

Competition
Company B may have maintained the same standards but its competitors may have made significant improvements to attract customers away from Company B. These could include: [½]
Innovative product design
Cheaper premium rates
Higher level of marketing activities
Better customer services
Better hospital network
Better distribution channels
Stronger financial / solvency position
(½ mark for any two examples)

It may be that new PMI providers have entered the market and are taking market share off established providers. [½]

[Marks available 10½, maximum 8]

(ii)
Marketing Director's proposal:
In general, the Marketing Director's proposal is targeting to address the decline in market share caused by product design, premium rates and marketing and competition issues. [½]
It is therefore unlikely to be suitable to address the decline in market share problem if it was caused by issues relating reputation, customer services, hospital network, distribution channels and financial / solvency position. [½]
This is also only being offered to individual customers, so it is unlikely to help with group PMI market share. [½]
If the decline in market share was caused by not winning new business rather than high lapses (low renewals) of existing business, this could be an expensive strategy to gain market share as there could be cheaper alternatives to target new customers only. [½]

Product design:
If none of Company B's competitors are currently offering such product features, the innovative features may be attractive to the customers, but this advantage would be lost if competitors subsequently offer something similar. [½]
The addition of a new rating factor would add to the complexity of the product features, where some customers may find it confusing, [½]
which would require further efforts from the brokers / intermediaries / sales force to explain to the customers during the sales process. [½]
Some customers may not appreciate and find it intrusive that their health are being monitored by an insurance company. [½]

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This could be particularly the case for those customers who do not currently have any obvious medical conditions but are being categorised with a heath score of below "average". [½]
If Company B's competitors are already offering such product features, the proposal would enable Company B to catch up with its competitors, [½]
this is in particular that such new product features are popular in the market, which could be a result of the social trends of promoting a healthier lifestyle. [½]
Either of these scenarios should help Company B increase future new business sales and hence regain market share. [½]

Premium rates:
The proposed premium rates will eventually be cheaper for the healthier lives as they will more accurately reflect the risk of each individual, so it should help Company B to become more competitive. [½]
The proposal could potentially encourage policyholders to adopt a healthier lifestyle, which should help reduce claims, reduce premiums and so increase sales. [½]
However, as all existing policyholders will be defaulted to the "average" rating at initial launch, the potential reduction in premium rates and hence lapses will not be immediate. [½]
It is unclear whether new policyholders will also be defaulted to the "average" rating, if that is also the case then Company B's premium rates are unlikely to be more competitive than before. [½]
Company B's premium rates will only become competitive if the policyholders stay with Company B and remain healthy. [½]
This could be resolved by enhancing the underwriting process so that new policyholders can be categorised into each of the five "health score" rating groups accordingly. [½]
The same health / underwriting assessment may also be applied to existing policyholders at initial launch, so that they too can be categorised into each of the five "health score" rating groups accordingly. [½]
The set of premium loadings are based on Company B's own market research, it is unclear how reliable these factors are, [½]
and how accurate they are to reflect the results of the wearable device and hence individual policyholder's health. [½]
It is also unclear whether the reduction factor, which stands at a maximum of 20% for "very good" health, is sufficient to make Company B's existing premium rates more competitive than its competitors. [½]
There is also the risk of anti-selection if all the policyholders are defaulted to the "average" rating group initially, as the less healthy lives are more likely to renew or take up a new policy with Company B. [½]
The issue will be exacerbated if Company B's "average" premium rates remain uncompetitive, and healthier lives are likely to renew or take up a new policy elsewhere. [½]

Marketing:
The proposal is likely to increase market's awareness of Company B, which should help encourage new business sales. [½]
The idea of a free gift is likely to be welcome by customers, [½]
in particular that the value of the wearable device is likely to be relatively high, [½]

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and it is fashionable / popular in general which might appeal to certain demographic groups that follow the social trends closely. [½]
For customers that welcome the offer, it might generate loyalty that persists for years. [½]
Company B will need to consider its target market carefully, as not all customers will find the offer attractive. [½]
Some customers may already have a wearable device [½]
while some may prefer a better / more expensive version if Company B only offers a basic version of the device. [½]
Some customers may feel that they are trading their own private / personal data with a free gift, which may not be desirable for Company B from a marketing perspective. [½]
From a marketing perspective, the descriptions defining each category could seem harsh in particular some policyholders may be offended by being labelled as having poor or very poor health. [½]

Costs:
The proposal is likely to incur a significant amount of upfront and ongoing expenses. [½]
The costs of providing the device at initial launch, as well as for all future customers are likely to be significant. [½]
There will also be upfront marketing costs to promote the initiatives, [½]
as well as project / development costs to update product literature and upgrading the admin / pricing / quotation systems. [½]
the device provider may also require additional costs for Company B to use its product for this proposal. [½]
These additional costs will affect both the initial / acquisition cost and maintenance cost. [½]
These costs will need to be incorporated in the premium rates, [½]
but it is unclear whether the proposed loadings already have these additional costs factored in. [½]
If additional costs have not been factored in the proposed loadings, then Company B will either increase the base premium rates which will reduce the competitiveness of the new premium rates, [½]
or accept a lower profit margin which will reduce future expected profits. [½]

Risks:
The additional risks that are likely to be introduced by this proposal will need to be considered carefully. [½]
If this proposal is unsuccessful to attract sufficient new customers, all the costs will still have to be met which could put more pressures on Company B to increase future premium rates. [½]
The proposal may cause a change in policyholder profile which could be detrimental to Company B if it ends up attracting the less healthy lives, [½]
or customers that are only interested in the free gift and lapse shortly after taking up the policies. [½]
Company B will also need to consider any potential foul plays that could be committed by the policyholders, such as getting someone else (who is healthier than the policyholder) to wear the device, [½]
or deliberately damage and tamper with the device. [½]

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It is unclear what the proposal is in relation to damaged / lost device, [½]
if the proposal is to replace them due to accidental damage / thief / loss, then there could be an increase in moral hazard risk. [½]
It is also unclear whether there is a minimum amount of time that a policyholder must wear the device on a daily basis. [½]

Regulatory / Legal issues:
The device will be collecting personal / confidential health data from the policyholders, and Company B will need to check whether this is legal or ethically / socially acceptable. [½]
Company B will also need to consider the security of the new data source / storage. [½]
There will be added risk as policyholders' health data will be transmitted to Company B continuously via the device. [½]
Company B will need to check with the device provider whether it is legally / contractually allowed to use the device in such proposal / pricing purpose. [½]
Company B need to consider whether using health score as a rating factor is legal or ethically / socially acceptable. [½]

Customer services:
Company B will need to consider the additional services it may have to provide to its policyholders. [½]
Some policyholders may complain because they disagree with the health loadings given by the device. [½]
Company B will need to consider whether the maintenance of the device is with Company B or the device provider. [½]
Company B will need to consider whether it will replace damaged / lost device. [½]
If policyholders are required to meet the costs of replacement device, they are unlikely to renew their policies with Company B. [½]
If policyholders are not required to meet the costs of replacement device, that will add to Company B's costs and efforts of customer services. [½]
Even if the devices remain workable, they are likely to become outdated eventually, and Company B will need to find a suitable solution to provide a device upgrade. [½]

Reinsurance:
Company B will need to consider the implications of this proposal on its reinsurance arrangements, in particular whether the current retention levels remain suitable, and the potential changes in reinsurers' premium rates. [½]

[Marks available 33, maximum 12]

[Total 20]

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Part (i) – This question was not well answered by those candidates who simply provided a generic answer relating to decline in business sales. Many candidates provided reasons which would affect the industry as a whole, e.g., economy wide issues, and failed to address the question specifically about Company B's declining market share within the industry. Candidates need to appreciate that if the market share had fallen, this must be due to a specific circumstance for Company B. This limited those candidates' ability to score highly.

Part (ii) – This question was only well answered by well prepared candidates as they were able to consider many different aspects of the situation and were able to develop a wider range of points and consequently score very well. Candidates needed to cover both positive and negative aspects of the proposal in order to achieve high marks. For a long question such as this one, candidates who used headings to structure their answer tended to score higher marks than those who did not.

Parts (i) and (ii) of this question differentiated the stronger candidates from the weaker candidates.

Q3

(i)

Reason 1 – Matching:

Cash is required to meet on going liquidity requirements to pay claims for IP claimants who receive regular income and also lump sum claims from critical illness claims. [½]

Certain technical liabilities like outstanding claim reserves and incurred but not reported claim reserves may need settling in the near term as claims are resolved and claims are reported to the insurer, hence adequate cash availability / liquidity is important. [½]

Both government and corporate bonds pay income which can used to pay ongoing claim payments. [½]

CI benefits are usually guaranteed in monetary, so fixed interest bonds can be used to match the benefit payments. [½]

IP benefits are typically linked to an index, and hence index-linked bonds can be used to match the benefit payments. [½]

Index-linked bonds might also be a good match for expenses / expense inflation. [½]

Free assets which are not required to match any liabilities and hence there is more freedom / flexibility on investment strategy, so long term equity and property investments are suitable. [½]

Government and corporate bonds are marketable and can be liquidated / realized readily to meet any liquidity shortfalls and meet immediate claim payments. [½]

Reason 2 - Risk Appetite:

The company's risk appetite may require that assets backing liabilities provide guaranteed returns. [½]

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Government bonds and corporate bonds issued by blue chip companies have less credit and market risk hence minimising the risk of insolvency to levels within the company's risk appetite. [½]
The company is able to accept higher risk for its free assets since any underperformance will not threaten the company's solvency status. [½]
Equities and properties have market values that tend to increase with inflation over the long term which should provide hedging capabilities for shareholder equity. [½]

Reason 3 – Return:
Corporate bonds enable the company to earn additional return above the returns that can be earned from government bonds. [½]
This would enable the company to generate more investment returns and boost performance of the company. [½]
For their higher risk, equities and properties provide higher returns for the company thus improve investment performance. [½]

Other reasons:
Matching liabilities with bonds and cash reduces the company's solvency capital requirements to acceptable levels. [½]
Regulatory requirements may require insurers to hold government bonds to support the government fiscal spending and strategic national projects. [½]
Regulators may specify the type of assets that should be used to match technical liabilities. [½]
Diversifying assets across three asset types enable the company to optimize risk-adjusted returns. [½]
Company C might invest in local equities and properties because they are more likely to have the expertise and thus find them more familiar and easier to manage than overseas equities and properties. [½]

[Marks available 10, maximum 5]

(ii)
Property is on average expected to yield relatively higher return compared to asset types of fixed interest nature. [½]
Income is earned through rental income and [½]
rental income gives a low running yield but tends to increase in line with inflation in the long run thus providing real returns. [½]
Property investment is considered secure though rental income can suffer disruptions when the property is not occupied. [½]
Market values can be volatile and vary significantly over long periods of time, [½]
although capital values tending to increase in line with (house price) inflation over the long term. [½]
Investors might be taxed differently on rental income and capital gains. [½]
It is a very illiquid asset. [½]
Dealing costs for buying and selling are high, so selling in the short term is generally viewed to be inefficient. [½]
Maintenance costs are high and incurred even without occupation of the property. [½]
Property is a long-term investment and can be thought of as a perpetuity. [½]
Direct property investments require significant capital outlay and hence relatively small investors may find it challenging to achieve a well-diversified property portfolio. [½]

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Due to the unique features of each property, valuations can be infrequent, challenging and prone to being contested by stakeholders like auditors and tax authorities. [½]

[Marks available 6½, maximum 3]

(iii)
Matching:
The gold bonds pay zero coupon and hence will not generate periodic income for the insurer to meet on-going liquidity needs. [½]
The insurer will only rely on capital redemption to meet liability outgo. [½]
This may be acceptable if the central bank has the facility to buy back the sovereign gold bonds at short notice. [½]
It may therefore be acceptable to match the liability outgo relating to lump sum CI claims in terms of timing / cash flow matching, but less likely to be a suitable match for the regular liability outgo of IP claims in payment. [½]
in terms of nature, the gold bonds should provide a real return (as gold should provide a real return), which makes them more appropriate for index-linked IP benefits if suitable index-linked bonds are not available. [½]

Return:
Capital gains will be earned if the price of gold increases compared to the price of gold when the bonds were bought. [½]
Hence the insurer will only rely on capital gains as return which increases the risk profile of the gold bonds. [½]
However, gold tends to do well in inflationary periods and hence provides an option for the insurer to hedge against inflation. [½]
If the price of gold reduces over the short to medium term, the insurer will incur losses and be forced to sell at a loss if it needs to meet emergency cash / liquidity requirements. [½]
Given the ability of the gold to match inflation in the long term, the gold bonds can be a long-term investment option for the insurer especially for its free assets. [½]
It is unlikely that gold will ever be worthless, so the bonds should always have a positive redemption value, [½]
the return to Company C is thus directly related the price of gold at the time of disposal and the price of gold at the time of purchase. [½]

Security:
The issuer of the bonds (the local government) is secure thus the bonds can be considered secure / low risk of credit default, [½]
or even risk-free if that is the credit rating given to Country Y by international credit assessment institutions / rating agencies. [½]
It is worth noting that as there is no authorised secondary market for the gold bonds, it will not be as secure as holding gold directly. [½]
The volatility of the price of gold will make the market value of the bonds volatile thus reducing the security of the market value of the gold bonds. [½]
Gold is a globally recognised precious metal and would be considered to be more secure internationally than the gold bonds. [½]
This is in particular that the only link between the gold bonds and gold is their market prices, where the gold bonds are not a substitute of holding gold physically. [½]

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Marketability:
If the government allows the issue of bonds for small quantities of gold, the gold bonds will have acceptable levels of divisibility and thus reducing the need to make significant capital outlays in purchasing the bonds. [½]
The insurer is supposed to hold the bonds for at least 180 days thus the company will not be able to liquidate them if a need arises within 180 days of purchase. [½]
There is currently no authorised secondary market for the bonds which further impacts the limited marketability of the bonds. [½]
It can be argued that under normal investment conditions the government is liquid and will be able to redeem the bonds at the time of need which helps the insurer to meet liquidity requirements at the time of need. [½]
However, this may not always be the case under exceptional investment conditions where a significant proportion of the bond holders are trying to liquidate their holdings simultaneously. [½]

Expenses:
The insurer will not have the need to physically hold gold which could be expensive to store, secure and insure. [½]
Traditionally, government issued securities have low dealing expenses. [½]
The company will still incur selling costs of its existing assets in order to make the switch into the gold bonds. [½]

Currency:
The gold bonds are likely to be denominated in the currency of Country Y which is likely to be the currency that the company's liabilities for its products. [½]
However, as the prices of the gold bonds follow the gold prices on the international commodity markets which could be dominated in a different currency, the overall return may therefore expose to a currency mismatching risk. [½]

Term:
CI and IP are generally long-term products and gold being a long-term investment can be considered to be a matching asset to liabilities. [½]

Other considerations:
There are no limitations or restrictions on holding the gold bonds, so all holdings regardless of the amount are admissible for solvency reporting purposes. [½]
Given that the gold bonds are issued by Country Y's government, the regulator is unlikely to impose material capital charges for meeting solvency capital requirements. i.e. the solvency capital requirement is likely to be low. [½]
In periods of high inflation, gold tends to outperform equities and properties and hence may cushion free assets from significant losses. [½]
The gold bonds, therefore, provide a diversification option for the company as they can now have an additional asset type for their free assets. [½]
The bonds could be used for the free assets if the company wishes to speculate on the price of gold. [½]
Insurer's risk department will need to be consulted to assess if the gold bonds fit into the company's risk appetite. [½]
Alternatively, the company's risk appetite and policy may need to be re-assessed / reviewed so as to open up additional investment opportunities. [½]

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Company C may want to carry out research on whether there is precedence in terms of countries that have issued gold bonds and how such bonds have performed. [½]
Company C should consult with its external and independent investment advisors to assess the risks and returns of such investment. [½]
This gives scope to ensure that the level of diversification achieved is acceptable / optimal, and that the company is not overly reliant on any specific asset types in order to meet its liabilities. [½]

[Marks available 19½, maximum 8]

(iv)
General reasons:
Alternative asset types enable the insurer to seek above normal returns especially if there are sufficient free assets to undertake more risk. [½]
Alternative asset types also enable the insurer to diversify their risk exposure beyond traditional asset types. [½]
A more diversified asset portfolio may enable Company C to hold lower solvency capital requirement. [½]

Overseas equities:
The insurer may be seeking to match liabilities that are denominated in foreign currency. [½]
The insurer may be able to increase the expected returns for the company's investment fund, [½]
in particular the oversea markets / economies under consideration are expected to grow rapidly. [½]
Inefficiencies in the global market may allow the insurer's fund managers to find individual countries whose markets are undervalued and hence have significant return potential. [½]
The performance of local equities may be significantly lagging behind the performance of overseas markets. [½]
The insurer may want to reduce equity risk by increasing the level of diversification across markets or geographical locations. [½]

Pooled Investment Funds:
To obtain specialist expertise that the insurer does not have within their internal investment teams. [½]
To obtain instant diversification by getting exposure to a wider pool of investments or investment risks. [½]
To save on the costs associated with direct investment management. [½]
Holdings in pooled investment funds are divisible which may enable Company C to gain exposure to particular asset types (e.g., property, infra-structure projects) without significant capital outlay. [½]
There may be tax advantages associated with particular pooled investment funds.
The company may be able to track returns of a specific index that is difficult to track as an individual investor. [½]
Units of pooled investment funds may be more liquid / marketable than their underlying assets. e.g., property. [½]

Inflation Swaps:
Inflation swaps would enable the company to hedge / mitigate against inflation risk [½]

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at a cost which could be high if the general market / economy is uncertain about future inflation. [½]
Company C may have in-house expertise on predicting future inflation movements and wish to maximise returns through speculation. [½]

Currency Swaps:
Company C may have a currency mismatch between assets and liabilities and may want to used currency swaps to hedge / mitigate against currency mismatch risk. [½]
Company C may have in-house expertise on predicting future currency movements and wish to maximise returns through speculation. [½]

[Marks available 10, maximum 5]
[Total 21]

Part (i) – This question was generally well answered by most candidates. Better prepared candidates linked the features of investment assets with the aims of investment. Less prepared candidates simply stated the aims of investments and failed to notice that equities and property were used for backing the free assets which were explicitly mentioned in the question.

Part (ii) - This question is a very standard knowledge question and was well answered by most candidates.

Part (iii) - This question was not well answered by most candidates. This was a challenging question but very achievable for well prepared candidates who checked the detail in the question thoroughly. Stronger candidates were able to consider the features of the bonds that would be the same as gold, and those that would be different, and thereby cover a broader range of points in their solution. Candidates who did not pay sufficient attention to the detail given in the question scored badly on this question.

Part (iv) - This question was generally well answered, and most candidates gave a decent attempt.

Part (iii) of this question differentiated the stronger candidates from the weaker candidates.

Q4
(i)
As both PMI products are short-term insurance contracts, reserves applicable to short-term insurance contracts are expected to be held by Company A.
This may include:
Unearned premium reserve - This represents the balance of premiums received in respect of periods of insurance not yet expired. [1]
Unexpired risk reserve - This is a reserve held in excess of the unearned premium reserve where it is felt that the premium basis is inadequate to meet future claims and expenses in respect of these periods of insurance not yet expired. [1]

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Outstanding claims reserve - This is in respect of claims notified to the insurer but not yet fully settled. [1]
Incurred but not reported - This is in respect of claims that have arisen but that have yet to be notified to the insurer. [1]
Incurred but not enough reported - This is as above but where it is felt that not all detail has yet been submitted and a provision needs to be established for the remainder. [1]
Equalisation or catastrophe reserves - These are reserves where it is felt that the current year is atypical and amounts will have to be held back for abnormal events. [1]
Claims in transit - This is reserve in respect of claims reported but not assessed, or not recorded. [1]
Investment mismatching reserve - This is to allow for the extent to which the assets held do not match the liabilities. [1]
(Only award the 1 mark if both the "name" and "definition" are correct, no ½ mark to be awarded)

[Marks available 8, maximum 4]

(ii)
System Weaknesses:
Keeping of data records in hard-copy format resulting in loss of customer records over time. [½]
Lack of end-to-end automation of capturing policyholder and other data thus allowing human error to be introduced in the process of capturing data. [½]
Lack of inbuilt system validation of data as it is captured to check for reasonability. [½]

Types of validations that may be missing include: [½]
Age / Date of Birth
Gender
Policy type
Smoker status
Address
Occupation / Industry
Asset type
Credit rating / coupon / redemption date / any other asset related information
Market value of assets
(½ mark for any two examples)

Susceptibility of systems to breaches and manipulation of data by external parties including hacking. [½]
System may not be able to keep previous records after policy amendments, this results in loss of important historical / claim data about the client. [½]
Lack of portal that enables customers to update their data on their own, for example, customers could adjust marital status online without adequate validation. [½]
Systems being too old / outdated / legacy systems. [½]

Operational / Process Flow:
Proposal form and administration system input screens do not have the same format(s) thus increasing the risk of errors by data capturers. [½]

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Digital onboarding systems may have weaknesses, for example lack of identity check / face comparisons and hence susceptible to identity theft, fraud or customer inputting incorrect data. [½]
Lack of compulsory fields creating gaps in client records and eventual gaps in valuation or pricing data. [½]
Lack of checks on whether data have been manipulated when data is transferred From one system to another within the company. [½]
Errors in the process that create the policy / data extract. [½]
Errors in the process that obtain market information for assets. [½]
Financial data – data obtained from inconsistent or untrustworthy sources. [½]

Inadequate / Poor Controls:
Lack of regular and random comparisons of electronic data and the physical copies of customer data. [½]
Lack of effective user access rights documentation and implementation such that individuals who are not supposed to have access to systems can make changes to data without consequences. [½]
Lack of effective access control mechanisms including strong and fluid (requirement to change passwords consistently) password systems. [½]
Lack of maker-checker system to ensure that all data is checked and validated by an independent party before being approved for final storage. [½]
Lack of regular independent auditing of data records and systems to ensure quality is maintained consistently. [½]
Lack of comprehensive data reconciliations (Analysis of movement / change) before commencement of valuations including ensuring that data from last valuation plus new business data and exit data is equivalent to current valuation data. [½]
Lack of consistent updating of policy forms and systems to reflect any changes to valuation methodologies and statutory requirements. [½]
Lack of checks / reconciliation between policy and claims data. [½]
Lack of reasonableness data checks. e.g., checks on averages. [½]

Human Issues:
Lack of adequate training of personnel / incompetent staff involved in capturing of data records resulting in high rate of errors. [½]
Lack of measurement of data quality such that staff lacking accountability and there are no consequences for capturing data incorrectly. [½]
Lack of performance objectives and consequences to senior management and personnel involved in maintaining data quality. [½]
Presence of a poor data culture that does not recognise data as a key asset within the organisation. [½]

[Marks available 14, maximum 5]

(iii)
System Weaknesses:
Stop keeping data records in hard-copy format. [½]
Ensure data capturing process have an end-to-end automation to reduce possibility and quantum of human error in capturing data. [½]
In addition, the process should have checks at each key stage of capturing data. [½]
Build self-validation capabilities to ensure data is validated before being approved for storage. [½]

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Implement policyholder data validations [½]
Validate that the age of policyholders must be above the minimum age and below the maximum age at entry.
Validate identity details including national identity number/social security number against the national registry/home office records.
Validate addresses by requesting multiple sources of evidence.
Validate that the occupation / industry provided is on the validation list.
(½ mark for any two examples)

Obtain and validate asset market value/ credit rating / coupon / redemption date / any other asset related information from multiple sources. [½]

Operational / Process Flow:
Align the proposal form and administration system input structure / formats to minimise the risk of errors by data capturers. [½]
Identify and remediate any weaknesses within the existing digital onboarding systems. [½]
Impose system functionality where all the fields in client records must be populated. [½]
Identify and enforce compulsory fields in line with the data requirements for valuations and other processes. [½]
When data are transferred / migrated from an existing system to a new system, implement end-to-end data reconciliation / validation controls where all identified discrepancies should be investigated and explained. [½]
Regular audits / assessments of policy / data extract production process to ensure its ongoing appropriateness. [½]
Implement comprehensive and up-to-date data risk validation policies which conform to best market practice. [½]
Ensure a process flow for allowing exceptions to any invalid data is in place and implemented correctly. [½]
Financial data – obtain from consistent and trustworthy sources. [½]

Inadequate / Poor Controls:
User access rights should only be granted to personnel who have responsibilities and deliverables relating to data. [½]
Maker-checker system should be implemented on all systems to ensure that all records are checked independently before approval. [½]
Protect sensitive / confidential data files with sophisticated password systems. [½]
Implement regular independent auditing of data records and systems to ensure quality is maintained consistently. [½]
Implement comprehensive data reconciliations (Analysis of movement / change) before commencement of valuations including ensuring that data from last valuation, plus new business data and exit data is equivalent to current valuation data. [½]
Implement regular inspection of random samples policies to test for data integrity and compare against actual physical copies of the same data. [½]
Implement comprehensive data quality reconciliations before data is then utilized for valuations and other purposes / tasks. [½]
Implement checks / reconciliation between policy and claims data. [½]
Implement reasonableness data checks. e.g., checks on averages. [½]
Ensure overall responsibility for data is allocated to a data manager. [½]

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Human Issues:
Training of staff and ensure that competent staff are involved in capturing, maintaining and utilising data must be carried out including refresher courses which enable employees to identify errors and input data speedily and efficiently. [½]
Build a supporting data culture among employees so that employees value the accuracy of data. [½]
Build feedback mechanisms which enable software developers involved in the data system and staff to interact and share insights on how to improve automation and controls. [½]
Build portals which enable customers to update their data on their own within a controlled environment without involvement of internal staff. [½]
Ensure management has appropriate objectives / incentives to improve data quality including consequences for poor data quality. [½]
Ensure data quality measurement metrics are part of management reporting / management information (MI) and adequate oversight is provided by the Board. [½]

[Marks available 15½, maximum 5]

(iv)
Poor quality valuation date could lead to incorrect financial results (reserves, capital requirements, solvency capital requirements, solvency / liquidity positions). [½]
Underestimating reserves and capital requirements may lead to overstatement of profits. [½]
This may lead to higher than optimal tax being paid by the company. [½]
This may lead to excessive dividends being distributed. [½]
The company may end up having insufficient financial resources to meet future claims or being insolvent. [½]
On the other hand, overestimating reserves and capital may lead to inefficient use of capital / financial resources. [½]
The company may have qualified financial statements if auditors find material data discrepancies. [½]
The regulator may impose fines on the company [½]
and in the worst-case scenario this could lead to the withdrawal of Company A's authorisation. [½]
This may also result in negative assessments by credit rating agencies / financial press / stock market operators etc. [½]
This could lead to damage to Company A's brand name / reputation and cause negative impact on its share prices. [½]
Reputational damage could affect Company A's future lapses and new business sales. [½]
Poor quality valuation date could also lead to incorrect premium rates if they are also being used for pricing purposes [½]
The consequence could be worse for the group business as it has a longer premium guarantee period (i.e., 2 years) than the individual business (i.e., 1 year). [½]
If premium rates are much higher than intended, this could lead to high lapse at renewals and loss in new business leading to higher per policy expenses / financial losses. [½]

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If premium rates are much lower than intended which are not sufficient to cover underlying risks, Company A may end up with significant financial losses / capital strain. [½]

[Marks available 8, maximum 3]

[Total 17]

Part (i) - This question is a very standard knowledge question and was well answered by most candidates.

Part (ii) - This question was not well answered by most candidates. Candidates who addressed their solution towards the data referenced in the question scored well. Candidates who simply wrote down everything they knew that contained the word "data" did not.

Part (iii) - This question was generally well answered where covering a broad range of possible controls was the best way to score highly in this question.
Part (iv) - This question was generally well answered by most candidates.

Part (ii) of this question differentiated the stronger candidates from the weaker candidates.

Q5

(i)

Morbidity Risk:

Group IP will have higher pooling of risk due to higher number of lives being insured as part of the scheme, such that claims experience may be more stable. [½]

Group IP also has reduced anti-selection given that members of the schemes are employees of the same employer who do not normally be able to choose their own individual benefits. [½]

A reduced level of anti-selection would also be expected if group scheme membership is compulsory. [½]

On the other hand, under individual IP, customers can select the insurer of their choice and chose benefits which increases anti-selection against the insurer. [½]

Under group IP, members with benefits that are below the free cover limits are not underwritten while all the individual IP policyholders would go through some forms of underwriting process. [½]

Group IP tends to expose to higher level of concentration / accumulation of risk due to the employees working in the same premises / locations which expose group IP to higher catastrophe risk. [½]

Individual IP premiums are all age dependent, while unit costs (i.e., not age dependent) are generally used for group IP on larger schemes, there is therefore an additional risk that the unit costs may not be representative of the underlying scheme's age / membership profile. [½]

For group IP, book rates are normally used for smaller schemes while larger schemes are generally experienced rated. As such, risk of mispricing the larger schemes could be considered as lower than individual IP. [½]

The premium rates for individual IP may be guaranteed for a longer time period (e.g., the first 5 years of a contract) or throughout the entire policy term.

On the other hand, premium rates for group IP are generally guaranteed for shorter

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period of time (e.g., to 2 years) which reduces the extent to which the morbidity risk could be misestimated. [½]

Lapse Risk:
Individual IP tends to experience higher lapse risk at the end of the commission clawback period, while commission clawback arrangement is not common on group IP. [½]
However, the policy term for individual IP is normally much longer than that of group IP so ongoing lapse risk is expected to be lower than group IP. [½]
This is in particular that as group IP is generally renewable after a short period of time (e.g., 1 to 2 years), it is exposed to regular lapse (non-renewal) risk each time the underlying schemes reach their policy renewal dates. [½]

Reserving and Capital Risk:
Group IP is annually renewable / reviewable compared to individual IP which is usually longer term with longer premium guarantee period. The reserving and capital requirements risk is thus higher for individual IP. [½]
For individual IP, lapse risk capital requirement is likely to be higher than group IP. [½]
For individual IP, expense risk capital requirement is also likely to be higher than group IP. [½]
For Group IP, catastrophe risk capital requirement is likely to be higher than individual IP. [½]

Investment Risk:
Individual IP being longer term will require long term investments which increase investment risk for the insurer. [½]
While the above is likely to be the case for pre-claim policies, once the policyholders / members start claiming benefits, the investment risk relating to assets backing claims in payment reserves should be similar between group IP and individual IP. [½]

Expense Risk:
Group IP is arranged by employers and premiums paid by the employer through The HR division, expenses risk related to collection of premiums are lower. [½]
Under individual IP, premiums are lower and collected across a large number of separate individual customers which increases the premium collection / remittance risk. [½]
Individual IP requires more staff to manage customer experience, attend to queries, onboard customers and monitor claims which then increases expense ratios for individual IP. [½]
Individual IP may also incur higher underwriting expenses. [½]
Risk of misestimating maintenance expenses may be higher for group IP due to the ongoing changes of the scheme membership profiles as a result of members exiting and new member joining. [½]

[Marks available 11½, maximum 4]

(ii)
Consequence 1 - Demand for Products / Lapses / Policy Renewal:
Decline in GDP growth will reduce productivity and earnings for group IP business clients of the insurer including pressure on their revenue. [½]

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Such clients will aim to cut discretionary expenses arising from items that they deem as a luxury. [½]
They may reduce their workforce to further reduce operational costs, reducing the group scheme size and hence premium income for Company B. [½]
It can be argued that insurance is sold rather than bought and hence the clients may cancel their group income protection policies thus reducing revenue for the insurer. [½]
This is likely to hit the smaller or medium size group IP customers harder than the large corporate customers. [½]
However, if there is a statutory requirement for companies to provide group income protection, demand will remain stable as companies seek to comply. [½]
On the other hand, instead of cancelling policies, customers may seek better / lower premiums to reduce the cost of insurance. [½]
Customers may also seek to reduce the benefits by reducing replacement ratios or extending the deferred periods to manage costs. [½]
Competition in terms of cutting premium rates may therefore escalate thus reducing profit margins for the insurer. [½]
Individual IP customers may find IP premiums become unaffordable as a result of reduced real incomes caused by reductions in GDP, high levels of inflation and higher levels of unemployment, which would lead to: [½]
individual IP customers lapsing their policies, [½]
decline in the demand for new policies from individual customers. [½]
On the other hand, the less heathy individual IP customers are likely to remain on the book, this selective lapsing scenario is likely to result in higher overall claims experience for Company B. [½]
If the benefit escalation rates are not directly linked to Country X's inflation rates and are lagging behind the forecasted inflation rates, such IP products may no longer meet customers' needs and hence result in higher lapses. [½]

Consequence 2 - Expenses / Costs:
Increase in lapses by individual customers and cancellations by corporate customers will reduce economies of scale for the insurer. [½]
Expense per policy will increase creating pressure on profit margins and reducing overall profits generated by the insurer. [½]
Due to the pressure to keep premium rates affordable / competitive market, the insurer may also be forced to reduce expense margins thus exacerbating the problems. [½]
Inflation will lead to general increase in expenses including need to adjust salaries to reflect cost of living. [½]
In a bid to adjust to high inflation, financial intermediaries may also request higher level of commission rates which increases business acquisition costs. [½]
The expense issues would be worse if a significant proportion of Company B's expenses are fixed / overheads, as property / utility / IT costs are all likely to increase in line with inflation. [½]
To manage costs, the company may need to reduce its workforce through redundancies which would have negative impacts on its employees' morale. [½]
If the cost savings exercise also involve cutting down on system maintenance projects, this is likely to result in reductions in systems uptime, efficiency and reliability of systems for the company. [½]
Increase vulnerability of systems may increase breaches which would attract stricter scrutiny and possibly penalties / fines from the regulator. [½]

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Consequence 3 – Claims:
Concerns over unemployment may provide policyholders / members more incentives to fake disability / incapacity so as to claim for income protection benefits. [½]
Some employers may also encourage employees with borderline disability / incapacity to claim for income protection benefits instead of paying out redundancy payments. [½]
Customers who are currently claiming the IP benefits may avoid rehabilitation and return to work thus lengthening the period of claims and the ultimate total claims cost. [½]
The after-effects of the pandemic may have caused significant strains on Country X's national / public health services, thus prolonging the recovery time of customers and lead to higher claims inception rates and lower recovery rates. [½]
The higher interest rates may incentivise customers with income protection as part of their mortgage / loans protection policies to fake disability so that loan repayments can be taken care of by the insurer. [½]
Overall, claims experience is expected to increase leading to losses for the company. [½]
For policies with escalating benefits that are directly linked to Country X's inflation rates, higher inflation will increase Company B's claim costs [½]

Consequence 4 - Investment returns:
Higher yields would reduce the market value of fixed interest securities / bonds. [½]
The reduction in market value would not be a real problem if Company B's investment strategy on fixed interest securities / bonds is buy to hold until redemption. [½]
Interest rate increases may result in higher returns for the insurer for its cash and deposit investments. [½]
However, if the insurer had any form of debt, its interest expense would increase thus offsetting improved interest income. [½]
Recession and higher interest rates threaten earnings for companies and result in lower equity prices. [½]
Property prices in recessions also tend to reduce at least in the short term due to depressed demand. [½]
Hence the insurer may incur losses from its equity and property portfolios thus reducing its overall investment income. [½]

Consequence 5 - Reserves and Capital Requirements:
Increasing morbidity rates and higher expenses may lead to increase in reserves and capital requirements especially if the regulator requests that all insurers increase margins in their reserving assumptions. [½]
Discount rates may also be affected due to the increase in interest rates, this will lead to a reduction in the value of liabilities. [½]
On the other hand, higher yields and economic uncertainties are likely to reduce market value of assets. [½]
The net impact on Company B's financial statement / balance sheets will therefore depend on the relative level of reduction in its asset and liability values. [½]
Solvency capital requirements for market risk may increase reflecting the weakening equity and property markets. [½]
Credit risk for counterparties such as reinsurers and issuers of corporate bonds may increase thus increasing solvency capital requirements for the insurer. [½]

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The uncertainties over counterparty defaults may lead to concerns over Company B's future liquidity positions, which may result in higher capital requirements or the need to hold more liquid assets. [½]
Due to recession and economic pressures, the regulator may consider there is a need to strengthen / increase the operational risk capital requirement. [½]
[Marks available 22½, maximum 8]

(iii)
Action 1 - Demand for Products / Lapses / Policy Renewal:
The company may introduce budget or low cost options under the income protection product which may be more affordable to customers. [½]
This may include reducing replacement ratios for various group schemes to levels that can be affordable to customers. [½]
This may enable the company to increase policy sales and thereby protect its market share. [½]
Company B may introduce premium holiday period so that policyholders can temporarily suspend their policies and take a break from paying premiums, thus help reduce lapses. [½]
Alternatively, Company B may allow its policyholders to reduce their premiums with corresponding reduction in benefits temporarily until the economic conditions start improving. [½]
For group schemes, the insurer may consider premium refund or profit share arrangements with customers so that employers will be incentivised to renew their policies. [½]
For group schemes, the insurer may also consider offering renewal discounts to encourage corporates to renew their schemes with the insurer. [½]
Ensure that the product design relating to benefit escalation rates are directly linked to Country X's inflation rates so that it meets customers' needs which should help new business sales. [½]
Company B may also consider introducing this new product feature to its existing policyholders, but the existing premium rates may no longer be adequate. [½]
Increasing the premium rates on existing policyholders even though the policies are now linked directly linked to Country X's inflation rates may have limited effect on improving lapses. [½]
An alternative is to reduce the replacement ratio to compensate for changing the inflation linked index rather than increasing the premium rates, [½]
this may help keep the costs for the policyholders down while providing them with a product feature that meets their needs. [½]
However, some policyholders may not like the idea of a reduction in their benefits, in particular that the initial replacement ratio may have been chosen to provide the minimum level of income to meet expenditure during the sickness period. [½]
Company B could also increase marketing of its brand and/or its IP products. [½]
It could target specific customers (e.g., specific professional groups such as teachers, nurses, police force, fire services etc.) / employers (e.g., specific industries, small to medium entities, large corporates etc.) to increase sales. [½]
Company B could consider diversifying / extending its product range / business portfolio through adding / selling other health and care insurance products (e.g., Private Medical Insurance) and/or selling IP products in other territories. [½]

Action 2 - Expenses / Costs:

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Management should manage expenses in a very disciplined manner to ensure expense ratios do not increase beyond sustainable levels. [½]
The company may consider outsourcing services to third party service providers to leverage on their economies of scale benefits. [½]
Outsourced services should be based on utilisation or consumption of the services instead of being fixed so that the company can reduce fixed overheads. [½]
Company B could try to negotiate fixed price contracts with third party service providers to protect against future unanticipated inflation but may encounter difficulties finding providers that are willing to enter such a contract at an acceptable level of price. [½]
Furthermore, the company may be able to offer certain employees flexible working to reduce hours, [½]
or hours based remuneration instead of fixed salary / remuneration. [½]
To further reduce costs, the company may also consider buying certain services in bulk so as to increase efficiencies and negotiate discounts. [½]
Service providers may be requested to send their invoices at particular times of the month or the year so that the insurer is able to plan and manage its liquidity efficiently. [½]
Automating certain processes including digitally onboarding customers instead of face-to-face onboarding will also help to reduce expenses. [½]
The company must ensure that payments from third parties such as reinsurers and intermediaries are on time to ensure that it can further support its liquidity requirements. [½]
The company must also encourage customers to pay on time. [½]
Provide training to staff so that there is a culture of being conscious of the need to manage expenses and reduce wastage. [½]

Action 3 – Claims:
Strengthen claims management / assessment processes so as to identify any fraudulent claims. [½]
However, Company B should ensure that the level of claims management is commensurate with the level of risk, materiality and size of claims. [½]
Strengthen rehabilitation and monitoring services so that individuals who are currently receiving benefits can be helped to return to work as soon as possible. Linked-claim periods and rehabilitation benefits can also be enhanced to further incentivise claimants to return back to work. [½]
Carry out periodic audits of claimants to ensure that payments are being made to valid claimants, which should help to further manage fraudulent claims. [½]
Claim payment process flows should be embedded with sufficient maker-checker processes to reduce fraud and other operational risk issues. [½]
Strengthen underwriting procedures to reduce anti-selection for new entrants. [½]
For policies with escalating benefits that are directly linked to Country X's inflation rates, ensure that the escalation rates used in pricing reflect the expected persistency of high inflation. [½]
Alternatively, modify the product design (e.g., fixed benefit escalation rates, shorter premium guarantee period) to mitigate its exposure to inflation risk. [½]
Ensuring tight policy wordings (possibly only possible for new business) to help mitigate the risk of paying out invalid claims (e.g., borderline ones that are being pushed through as an alternative to redundancy). [½]

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Action 4 - Investment returns:
Prioritise investments in blue chip corporate bonds so as to reduce risk of default by the issuers. [½]
Increase holding in government / sovereign bonds may also help reduce credit risk. [½]
Company B may also consider increase its holding in index linked bonds to maintain real earnings. [½]
The insurance company may also consider investing in industries / companies that tend to do better in recession periods especially those from companies which sell products (e.g., food, water, utility etc.) that are considered as essential by consumers. [½]
Company B may consider using derivatives to hedge / mitigate inflation risk, [½]
but the costs of derivatives in particular under uncertain economic conditions are likely to be high. [½]
Ensure that assets and liabilities are closely matched in terms of nature, term and currency, so as to reduce the volatility of financial results in the company's financial statements / balance sheets. [½]

Action 5 - Capital Management:
The company should review its reinsurance strategy to ensure that it is efficient to reduce capital requirement. [½]
In addition, it may want to assess each reinsurer's credit rating so as to reduce capital charges relating to counterparty risk. [½]
If the company's products are of a guaranteed nature, the company may consider introducing reviewable products so as to reduce reserving and capital requirements. [½]

[Marks available 23½, maximum 8]

[Total 20]

Part (i) - This was generally not well answered by most candidates. Candidates who had a strong understanding of group business found it easier to identify the differences between group and individual business and therefore the implications on the relative risks. Many candidates appeared to have little knowledge about group business and candidates should ensure they have a strong understanding of all the product types in the curriculum in order to score highly in this subject.

Part (ii) - This question was not very well answered by most candidates. Most of candidates' answers were too generic in nature with no specific references to the four economic consequences mentioned in the question. Some candidates' lack of knowledge about group business also hindered their ability to score well.

Part (iii) - This question was also not very well answered by most candidates, particularly those who scored badly in part (ii) as the two question parts were clearly linked. It also appears that some candidates had simply ran out of time, which resulted in offering little elaboration or breath of points. The better prepared candidates were able to address each of the four economic consequences comprehensively with specific considerations on group and individual business respectively.

Parts (i), (ii) and (iii) of this question differentiated the stronger candidates from the weaker candidates.

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[Paper Total 100]

END OF EXAMINERS' REPORT

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Institute and Faculty of Actuaries

Beijing

14F China World Office 1 · 1 Jianwai Avenue · Beijing · China 100004
Tel: +86 (10) 6535 0248

Edinburgh

Level 2 · Exchange Crescent · 7 Conference Square · Edinburgh · EH3 8RA
Tel: +44 (0) 131 240 1300

Hong Kong

1803 Tower One · Lippo Centre · 89 Queensway · Hong Kong
Tel: +852 2147 9418

London (registered office)

7th Floor · Holborn Gate · 326-330 High Holborn · London · WC1V 7PP
Tel: +44 (0) 20 7632 2100

Oxford

1st Floor · Belsyre Court · 57 Woodstock Road · Oxford · OX2 6HJ
Tel: +44 (0) 1865 268 200

Singapore

5 Shenton Way · UIC Building · #10-01 · Singapore 068808
Tel: +65 8778 1784

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