

# INSTITUTE AND FACULTY OF ACTUARIES

## EXAMINERS' REPORT

April 2022

### **SP2 - Life Insurance Specialist Principles**

#### **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 Life Insurance Specialist Principles subject is to instil in successful candidates the principles of actuarial planning and control, and mathematical and economic techniques, relevant to life insurance companies. The candidate should gain the ability to apply the knowledge and understanding, in simple situations, to the operation, on sound financial lines, of life insurance companies. The life insurance products covered by this subject exclude health and care insurance products covered by the Health and Care Specialist Principles subject.

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. The Examiners may also award marks for valid points that are not included in the marking schedule.

Candidates are expected to show knowledge of the relevant content of the Core Reading and be able to apply this knowledge where appropriate.

### **B. Comments on *candidate performance in this examination.***

The limited elements of the paper which required direct application of the core reading were generally answered very well. Examples of this were question 1, 2 and 5 (i) and (ii).

Stronger candidates were also able to generate a good range of points in places where the question required a broad response covering a number of areas, such as 6 (i) and 7 (i), and these provided some differentiation between candidates.

Differentiation between candidates was also clear where the question required candidates to demonstrate a greater depth of understanding of the subject area, such as 3 (ii), 4 (v) and 6 (ii). Only stronger candidates performed well in these parts.

### **C. Pass Mark**

The Pass Mark for this exam was 53  
423 presented themselves and 157 passed.

## Solutions for Subject SP2 - April 2022

### Q1

(i)

The check of sum assured at start year - sum assured left in the year + sum assured written in the year = sum assured at end of year should be performed [1]

Here it would be expected that sum assured at end of year is equal sum assured at start of following year [1/2]

The check of sum assured lapsed could be checked against the persistency assumptions or recent lapse experience investigations [1/2]

e.g. expected persistency rate x start of year sum assured [1/2]

The check of sum assured paid out could be checked against the mortality assumptions or recent mortality experience investigations [1/2]

e.g. expected mortality rate x start of year sum assured [1/2]

Sum assured written could be checked against previous years' new business. [1/2]

The sum assureds for both paid out and lapsed could also be compared year to year for consistency [1/2]

[Marks available 5½, maximum 3]

(ii)

Sum assured in-force

$5,400 - 195 - 220 + 256 = 5,241$  expected to be in-force at start of current year [1/2]

This compares to 5,295 in the table which is 54 higher [1/2]

Sum assured lapsed was  $195/5400 = 3.6\%$  in prior year and  $210/5295 = 4.0\%$  in current year [1/2]

This looks fairly consistent year on year [1/2]

Sum assured paid out was  $220/5400 = 4.1\%$  for prior year and  $122/5295 = 2.3\%$  [1/2]

This seems like a significant movement year on year [1/2]

Sum assured from new policies was  $256/5400 = 4.7\%$  prior year and  $432/5295 = 8.2\%$  in current year [1/2]

The percentage of start year in force for new business is potentially not as relevant. [1/2]

The increase year on year is 69% [1/2]

[Marks available 4½, maximum 3]

(iii)

The sum-assured in-force discrepancy could be due to a data correction discovered in the current year [1/2]

Or it could be due to additional claims paid out in the current year but that were incurred in the prior year and not allowed for in the prior year movements [1/2]

Or the difference could be due to adjustments to sums assured from any options [1/2]

The reduction in sum-assured paid out may be because the current year was a light year for mortality, or the previous year was heavier [1/2]

e.g. current year with an easier winter or medical developments [1/2]

e.g. or previous year was a heavier mortality year with a hard winter [1/2]

Alternatively claims underwriting may have tightened up or become stricter in the last year reducing the claims paid out [1/2]

The increase in new business sum-assured seems a high increase and could be due to targeting a new area segment of the market [1/2]

or using a new distribution channel to access a wider market	[½]
Or from a different business mix written, e.g. higher average sum assured per policy	[½]
There could be errors in the data	[½]
Any suitable example of data errors	[½]
	[Marks available 6, maximum 3]
	<b>[Total 9]</b>

*This question was well answered. Most candidates were able to outline the year-on-year consistency check of sum assured, and performed some appropriate additional consistency checks and highlight reasons for discrepancies. Stronger candidates also linked data checks back to the underlying assumptions made in part (iii).*

## Q2

(i)

A company's investment strategy will be influenced by:

The level of free assets they have	[½]
as high free assets allow greater investment freedom as they can absorb more losses if required	[½]
The investments should be selected to maximise the overall return on the assets	[½]
taking account the company's appetite for risk	[½]
e.g. whether they would seek to mismatch investments to pursue a higher return	[½]
e.g. or reduce investment in investments with poor credit rating	[½]
The liabilities they have would influence the investment strategy	[½]
the nature, e.g. guaranteed, discretionary or unit-linked	[½]
the term of the liabilities	[½]
And the currency of the liabilities	[½]
The company may consider reputational issues	[½]
e.g. investing in ethical investments	[½]
Regulations will need to be considered, which may restrict certain assets	[½]
Liquidity requirements/constraints may also influence the assets chosen	[½]
Practical constraints - any suitable example (e.g. availability of assets, suitability of valuation)	[½]
	[Marks available 7½, maximum 4]

(ii)

Similarities:

Both companies are likely to invest in long-term fixed interest bonds to match the annuities	[½]
or index-linked bonds for annuities with an inflation linked benefit.	[½]
with term matching the term of the annuities where possible	[½]
Both are likely to match the unit-linked liabilities with the underlying investments in the relevant funds	[½]
The associated non-unit liabilities are likely to be invested in cash and bonds.	[½]
Both are also likely to invest in index-linked bonds to match the expenses	[½]
Both companies would have to consider cashflow and liquidity constraints	[½]
And both would have to ensure there is sufficient assets held in case of liquid assets to meet short term liabilities	[½]

Differences:

As Company A has higher free surplus, they could afford to take more investment risk.	[1/2]
This could be investing more heavily in corporate bonds for the fixed interest bonds backing the annuities, instead of government bonds	[1/2]
to target a higher expected return but with higher risk	[1/2]
Or potentially mis-matching the unit-linked liabilities to seek a higher return depending on regulation allowing this	[1/2]
As Company A is larger it may also be able to offer a wider range of unit linked funds.	[1/2]
Company A could also look to invest in equities to match the expense liabilities increasing risk but increasing potential return	[1/2]
Company's A's larger size and so larger liabilities and investment potential may open up property as an investment option subject to illiquidity risk	[1/2]
As company A has significant free assets and is less likely to be constrained from a cashflow and liquidity point of view	[1/2]
In contrast, company B will have limited freedom to take more investment risk due to its limited free assets	[1/2]
and will match assets more closely to liabilities	[1/2]
It would be expected to invest mostly in government bonds to back the annuity book. and to have limited or no direct investment in equity or property outside of the assets matching unit-linked liabilities	[1/2]

[Marks available 11, maximum 6]

**[Total 10]**

*Both parts of this question were generally well answered and provided the fewest problems for most candidates on the paper. In particular, part (i) was very well answered, as should be expected reflecting the knowledge based nature of this part of the question.*

### Q3

(i)

The asset share is the accumulation of premiums less the deductions associated with the contract	[1/2]
accumulated at the actual rate of return earned on investments	[1/2]
So, a reduction indicates that the total deductions have been greater than the premium income	[1/2]
and/or investment returns have been negative	[1/2]
E.g. equity and/or property values could have fallen, or interest rates could have increased reducing bond values	[1/2]
Or if it is aggregate asset shares that have reduced rather than individual ones then the number of policies may be reducing fairly rapidly due to the profile of policies and run-off.	[1/2]
or due to a higher than expected number of maturities, surrenders and deaths	[1/2]
or a reduction in new business	[1/2]
Premiums could also have reduced due to policies being made paid up.	[1/2]
Expenses could have been high	[1/2]
e.g. the cost of improvements required to systems	[1/2]
Mortality could have been higher than expected	[1/2]

particularly for those policies with a short term where the excess of benefit over asset share is larger	[½]
Tax could have been higher than expected	[½]
e.g. due to a forced sale of assets (any suitable example)	[½]
If payment on surrender is higher than asset share, then there could have a high number of surrenders	[½]
If there is without profits business in the same fund, then there may have been losses on this business	[½]
There may have been a mistake in the calculations	[½]
The company may have changed calculation of asset shares	[½]
e.g. may have used actual not smoothed interest rate, or changed cost of capital charge (any suitable example)	[½]

[Marks available 10, maximum 5]

(ii)

The company should check the calculation for errors	[½]
If individual asset shares have reduced, then the action to be taken will depend on the cause of this so the company should determine what this is	[½]
If expenses have been high, then ways to reduce these should be investigated	[½]
e.g., possibly even outsourcing if it is being driven by a reducing number of policies overall	[½]
If the surrender pay-out is higher than asset share the company could investigate whether there is the ability to change this or charge for it	[½]
If there have been losses on without profits business in the fund, then the cause of this should be investigated and appropriate action considered	[½]
If investment return has not been positive, then this should be considered against the overall market	[½]
If investment return is out of line with market, then the underlying asset approach should be considered for change	[½]
If the investment return is in line with market movements, then the asset class allocations should be considered for reasonableness and stability against the profile of the business	[½]
May need to match guarantees more closely if asset share has fallen to a point where there is a danger that the guarantees will bite	[½]
Depending on the driver for the reduction the company could consider reducing reversionary bonus	[½]
or more likely terminal bonuses	[½]
Or the company could consider whether it needs to adjust its smoothing approach	[½]
Dependent on policyholder expectations	[½]
and ensuring actions are taken that treat all policyholders fairly	[½]
and are in line with regulations	[½]
And possibly competitor practice if it is market driven	[½]
It may be appropriate to take no action (with suitable justification e.g. reduction is in line with expectations, or not material, or assumed to be a one-off)	[½]

[Marks available 9, maximum 5]

**[Total 10]**

*Most candidates were able to break down the calculation of the asset share in part (i) to identify reasons why it may have reduced for the line of business in question. Many*

*candidates were then able to suggest some possible actions the company could take in part (ii), but answers here were more limited in general, with only stronger candidates scoring well in the second part.*

**Q4**

(i)

The company may want to monitor the maximum that the company could pay without making a loss. [½]

However, the EAS does not say anything about the profit the company would have made if the contract were not surrendered. [½]

By deducting the premium excluding profit margin, the profit adjusted EAS represents the maximum that the company could pay allowing for profits made to date. [1]

This does not capture the total profits the company could have made. [½]

but the company may want to just measure the profits it would have made to date. [½]

[Marks available 3, maximum 2]

(ii)

$SV = SA * Abar + e * adue - premium * adue$  [½]

In this case all expenses are included in e [½]

So  $SV = 100000 * 0.839868 + 100 * 8.166749 - 6292 * 8.166749$  [1]

$= 33,418$  [½]

[Marks available 2½, maximum 2]

(iii)

The revised PA EAS =  $36,127 - 30 * 1.02 = 36,096$  [1]

The revised SV =  $100000 * 0.839868 + 130 * 8.166749 - 6292 * 8.166749 = 33,663$  [1]

(iv)

The SV has increased by 245 [½]

The PA EAS has decreased by 30.6 (full marks for "31") [½]

The SV has increased whereas the PA EAS has decreased [½]

[Marks available 1½, maximum 1]

(v)

It seems inconsistent for the two values to move in opposite directions [½]

The PA EAS has reduced due to the allocation of additional overhead expenses [½]

Whereas the SV has increased [½]

significantly [½]

The increase in SV assumes the present value of the increase in expenses will be saved if the policy surrenders. [1]

and so passes this onto the policyholder via the SV [½]

This is not a suitable outcome [½]

because in reality, the overheads will not change if this policyholder surrenders and the overheads will still be incurred [1]

meaning the company will make a loss [½]

as it cannot recoup the increase in surrender value from the other policies as they are without profits [½]

There are other areas where the method is unsuitable	
The expense loadings do not take account of the difference between types, such as claims, surrender and overhead expenses	[1]
Claims expenses should be a deduction from the SV	[½]
as opposed to being included in the total expenses and therefore increasing the SV.	[½]
it may be more suitable to only allow for variable costs to be an addition to the SV	[½]
As these are the only future costs that are saved into the future	[½]
As the surrender value is calculated prospectively using best estimate assumptions then the insurer makes the full expected profit from the contract	[½]
this might be considered unfair for the policyholders as the insurer hasn't been exposed to the risk for the full term	[½]
this may appear particularly unfair for surrenders at early durations	[½]
The calculation will give a negative surrender value at early durations	[½]
as the profit margin in the future premiums is a deduction to the prospective value	[½]
The company may feel that the current approach is not deemed to be treating customers fairly	[½]
There may be pressure from policyholders/distributors/regulators to amend the terms on surrender as they feel the terms are unfair	[½]
The current approach may be out of line with market practice	[½]
Therefore the surrender value may also be low compared to competitors' surrender values	[½]

[Marks available 13½, maximum 8]

**[Total 15]**

*Many candidates found this question challenging, with a limited number of candidates able to fully articulate a reason for the company to monitor the revised asset share as required in part (i).*

*The calculations in part (ii) and (iii) were managed well by those who attempted the question, and some commentary in part (iv) was produced.*

*The answers to part (v) were generally focused on exploring the approach with relation to alteration principles, rather than in relation to the movements noted in parts (ii) to (iv), though candidates could score reasonably well here using this approach, without having performed the calculations in earlier parts.*

## Q5

(i)

Age of annuitant	[½]
Sex	[½]
Size of premium/initial annuity	[½]
Joint Life/single life/Joint Life last survivor	[½]
Level of indexation (e.g. Level/RPI/CPI)	[½]
There may be model points for any options	[½]
e.g. guaranteed period	[½]
Distribution Channel	[½]
Region or postcode	[½]

Occupation/ socio-economic status	[½]
Smoker status	[½]
Impaired life status	[½]

[Marks available 6, maximum 3]

(ii)

Mortality	[½]
A lower mortality rate will result in more lives assumed to be living longer leading to reduced profit due to more annuity payments and more expenses	[½]
If the annuity has a guaranteed period or return of premium option, a higher mortality rate in the option period will reduce profit	[½]
An increase in the rate of mortality improvement rate could be considered, as well as a flat change in the mortality rate.	[½]
Investment Return	[½]
The annuity has a guaranteed benefit which relies on a certain level of investment return	[½]
A reduction in the investment return will reduce expected profit	[½]
Sensitivities may also be carried out on the impact of increasing credit spreads, taking into account probability of default	[½]
New Business Volumes	[½]
The level of new business will determine the aggregate profit for the product if assumed new business is too low then the development and initial expenses will not be recovered	[½]
and potentially regular expenses will not be covered by premium loadings.	[½]
Mix of new business	[½]
The expected split of policies between risk factors will influence profit	[½]
If there are assumed to be more smaller policies, then the fixed expenses may not be covered by charges	[½]
Depending on the age/sex split and the target market, more new business in certain categories may reduce profit	[½]
e.g. - older/younger policyholders, male/female (any example)	[½]
Expenses	[½]
A higher level of regular administration expenses will reduce profit	[½]
as will an increase in initial set up expenses/development expenses	[½]
Inflation	[½]
A higher level of inflation will reduce profit through increased expenses	[½]
and potentially increasing the rate at which indexed annuities grow	[½]

Other

A change in distribution channel costs (e.g. commission) may reduce profits	[½]
Changes in tax rates or regime	[½]

[Marks available 14½, maximum 9]

(iii)

The analysis will help identify the key risk factors that may require more of a margin in the assumptions	[½]
the key factors are likely to be mortality and investment return	[½]
Margins could be applied to different assumptions at different levels	[½]

Additional margins in the assumptions may make certain model points unattractive in the market	[1/2]
hence this may lead to the company deciding to introduce a minimum or maximum age or adjusting its target market to encourage new business from those profitable segments	[1/2]
The company may introduce a minimum size of initial premium	[1]
to ensure initial expenses are covered	[1/2]
and reduce sensitivity to increasing maintenance expenses	[1/2]
The company may decide to adjust the initial expense assumption in the pricing basis	[1/2]
The company may remove or adjust options	[1]
e.g. guaranteed period	[1/2]
e.g. adjust indexed option to be a fixed rate rather than inflation linked	[1/2]
The investment sensitivity may help the company decide on its investment return assumption for matching the annuity liabilities	[1]
including any margin for default if corporate bonds are assumed to back the annuity liabilities.	[1/2]

[Marks available 9, maximum 6]

**[Total 18]**

*Most candidates scored very well in part (i), and many well-prepared candidates also scored well in part (ii).*

*Part (iii) was less well answered, with many candidates not going into sufficient detail on how the company might respond to the sensitivity analysis, and often not including a sufficient breadth of points.*

## Q6

(i)

Supervisory valuation assumptions are long term assumptions	[1]
and hence need to reflect expectation of long-term future	[1/2]
they may also include an element of prudence	[1/2]
Before any changes are made further information would be needed	[1]
As this is a large company there will be sufficient data on which to set assumptions	[1/2]
e.g. split of experience by risk factors	[1/2]
e.g. term/age/gender/smoker status [give mark for any two sensible risk factors]	[1/2]

However based on the information given:

Mortality is a key assumption for term assurance	[1/2]
The longer-term experience would appear to be in line with the assumptions	[1/2]
and the long-term experience is slightly better than the assumption, indicating a degree of prudence	[1/2]
which may indicate that there is no need to change the assumption	[1/2]
But there has been a one-off increase over one year	[1/2]
in which case the company may not want to change anything but monitor	[1/2]
or it could be a rising trend over recent years from a low base	[1/2]
in which case company may want to look at whether to change the long-term assumption for future years	[1/2]
Surrenders is a key assumption for term assurance	[1/2]
a lower number of policies in force than expected may mean that overhead expenses are	

not covered by charges	[½]
The longer-term experience appears to be higher than the assumption	[½]
in which case the company may wish to review the assumptions	[½]
it could be a general economic downturn which may not be repeated in future	[½]
but it could indicate a long-term trend	[½]
The short-term experience is significantly ahead of assumption	[½]
and when combined with long term experience it would make sense to review this assumption	[½]
A low lapse assumption will be more prudent if reserves are positive, as will be the case later in the term	[½]
but a high lapse assumption could be more prudent if reserves are negative early in the term	[½]
Expenses are key assumptions for term assurance	[½]
The long-term experience is significantly above assumptions	[½]
although the short-term experience is in line	[½]
The company may have reduced expenses over the 5-year period	[½]
and the results are now only just coming through in the short-term experience	[½]
We would expect the actual expenses to be higher than the assumptions if the basis was prudent	[½]
Given the long term experience the company will probably want to review these assumptions	[½]
Investment Return is not a key assumption for term assurance	[½]
given the level of supervisory reserves are low	[½]
The experience is well below the assumptions used in both the short and long term	[½]
We would expect the actual investment returns to be lower than the assumptions if the basis was prudent	[½]
so the company may want to review the assumption	[½]
although given the materiality of this assumption it will probably not be a priority	[½]

[Marks available 20, maximum 12]

(ii)

The Board of Directors has a responsibility to impose proper systems of management and controls on the financial operations of the company	[1]
And the actuary will make recommendations as to how it should operate so that its risk profile stays within the resources available to it.	[½]
The Board will usually follow the actuary's recommendations, but it does not have to	[½]
Any failure of controls may lead to financial losses for the insurer	[½]
or regulatory intervention	[½]
or reputational damage	[½]
The Board has received information on the experience analysis	[½]
albeit in very summarised form	[½]
This summary information indicates the possibility of assumptions needing to be changed in some situations	[½]
e.g. expenses and possibly withdrawals	[½]
And assumptions haven't been changed for 5 years	[½]
Therefore they have probably increased the risk of financial losses to the company	[½]
But it could be that the term assurance portfolio is not a material portfolio	[½]
and hence resources could be used elsewhere on more significant products	[½]
Hence the board may be making a decision to concentrate on more significant risks	[½]
and to recognise that the risk associated with term assurances exists	[½]

and will be monitored	[½]
In which case the Board is maintaining appropriate management systems and controls	[½]
If the product is significant to the company, then there could be regulatory intervention if financial losses arise	[½]
which in turn would lead to reputational damage	[½]
particularly if competitors are changing assumptions	[½]
and hence the Company appears out of line	[½]
The Board may have assessed that the risk for this year is not significant	[½]
and suggest reviewing over a given time period in the future	[½]

[Marks available 12½, maximum 6]

**[Total 18]**

*In part (i), a considerable level of detail was required on each of the four subject areas covered in the experience investigation. Many candidates were able to produce some commentary on the results, and produce a limited discussion, but a wider range of points was generally required to get close to full marks.*

*Answers to part (ii) were mostly limited in scope, and often swiftly concluded that this was a control breach without considering the Board's position as a stakeholder and the considerations they might make, plus the control systems already in place.*

## Q7

(i)

Insurance company:

Mortality risk	[½]
whenever deaths occur when premiums paid exceed the unit fund	[½]
so the risk is that investment returns have been lower than the policy charge	[½]
this risk is increased as there is no specific mortality charge relate to the sum at risk.	[½]
Expense risk	[½]
higher expenses will reduce the profit from the excess of charges over expenses	[½]
Investment risk	[½]
charges received may not cover the expenses	[½]
due to the charges being a percentage of the fund value which will vary as the unit fund varies	[½]
Poor investment returns may also lead to reputational risk	[½]
and will increase the likelihood of the premium guarantee biting early in the contract	[½]
Expense inflation risk	[½]
Anti-selection risk due to the death benefit	[1]
as a policyholder in poor health is unlikely to surrender their policy if the unit value is less than the premiums paid.	[½]
Lapse risk	[½]
lapses leading to a loss of future income	[½]
and losses where expenses incurred are higher than the charges received	[½]
Business volumes may be higher or lower than expected.	[½]
Premium size may be lower than expected resulting in additional per policy expense	[½]
Regulatory/Tax Change	[½]
Operational Risks in processing surrender value	[½]

[Marks available 11, maximum 6]

(ii)

Policyholders:

Investment Risk	[½]
the risk that the value of the units held is lower than expected/required at maturity which could leave the policyholder short on pay-out compared to what they were originally planning to use the proceeds for.	[1]
or the value on surrender is less than the premiums paid.	[1]
Charge may be increased in the future	[½]
if they are variable	[½]
Not able to pay future premiums and lapsing the policy	[1]
e.g. if they have been made redundant	[½]
The risk of company insolvency/default	[½]

[Marks available 6, maximum 4]

(iii)

The insurance company now has additional investment risk in the first five years due to the return of premium guarantee	[1]
which means the insurance company is bearing the risk that the fund value falls below the value of the premiums paid at the point of surrender	[½]
Lapse risk for the insurance company may increase in the first five years as more policies may lapse	[1]
potentially due to anti-selection	[½]
Equally the policyholders' investment risk is reduced over the first five years	[½]

[Marks available 4, maximum 3]

(iv)

Lapses may be higher in the first five years than previously	[½]
and there is a danger of very large withdrawals at the same point in time (mass lapse risk) following a stock market crash in the first five years	[½]
Policyholders who previously held off from surrendering may be more inclined to surrender now	[1]
as the surrender value may now be higher	[½]
But there may be fewer lapses at the five-year point than previously	[½]
As policyholders may no longer hold off surrendering until no penalty applies	[½]

[Marks available 3½, maximum 3]

(v)

The company will need to consider the impact on surrender experience of the new guarantee	[½]
and allow for a best estimate view in the pricing of the policy	[½]
The insurer will want to price the contract so that the required level of profit is still made	[1]
As the surrender penalty doesn't apply to the return of premiums then the value of the guarantee is even greater	[½]
so other charges on the contract may have to change to pay for the guarantee	[1]
such as the initial allocation rate may reduce (if there is one)	[½]
or other charges such as the AMC may increase	[½]
Addition of guarantee is likely to increase reserving requirements	[½]
Overall, the cost to the policyholder is likely to increase due to the inclusion of the guarantee	[1]

Business volumes may change as a result

[1/2]

[Marks available 6½, maximum 4]

**[Total 20]**

*Answers to the first two parts of this question were generally good, with a sensible range of risks being identified for both the company and policyholders. Parts (iii) to (v) were answered less well, with only stronger responses picking up the additional marks available for providing a sufficient breadth of points and a clear enough understanding of the implications of adding the guarantee.*

**[Paper Total 100]**

**END OF EXAMINERS' REPORT**