

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

September 2011 examinations

Subject SA2 — Life Insurance Specialist Applications

Purpose of Examiners' Reports

The Examiners' Report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and who are 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. Although Examiners have access to the Core Reading, which is designed to interpret the syllabus, the Examiners are not required to examine the content of Core Reading. Notwithstanding that, the questions set, and the following comments, will generally be based on Core Reading.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report. Other valid approaches are always given appropriate credit; where there is a commonly used alternative approach, this is also noted in the report. For essay-style questions, and particularly the open-ended questions in the later subjects, this report contains all the points for which the Examiners awarded marks. This is much more than a model solution – it would be impossible to write down all the points in the report in the time allowed for the question.

T J Birse
Chairman of the Board of Examiners

December 2011

General comments on Subject SA2

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 within the marking scheme. Whilst candidates are expected to show knowledge of the relevant content of the Core Reading, it is much more important in this exam to tailor answers and apply that knowledge to the specifics of the question than it is in earlier exams.

Comments on the September 2011 paper

In general, candidates showed good knowledge of the core reading, although, in some cases, knowledge of TAS was poor.

Questions 1 (iii), (iv), (v) and 2 (ii) served as good differentiators, with the better candidates applying their knowledge to question. Question 2 (iv) was poorly answered. Given the number of marks available, candidates should have focussed on more than the most obvious of points. Candidates approaching the subject for the first time should use this Report, and previous Examiners' Reports, to practice the application of knowledge.

- 1** (i) Methodology of capital resources assessment. Requirement to base the ICA assessment on a 99.5%, or 1-in-200 year event, one-year survival probability, or equivalent comparable basis over a longer term. Adequacy of documentation/increased documentation in ICA submissions.

This question was bookwork and was generally well answered by many candidates.

- (ii) Board member comment:

We are required by the FSA to determine the capital required to meet the 99.5% one year survival probability from all the stresses combined. The overall ICA is not the sum of all the individual 99.5% risks as this would result in an event with a different probability than 99.5%.

This is mainly because it is very unlikely that every individual “1-in-200 year” adverse event will happen at the same time. The overall probability of all of these events happening simultaneously would be much lower than 0.5%, and so would give a much higher survival confidence level than 99.5%, and thus would require the company to hold what would be considered an unnecessarily high amount of capital.

However, acting against this, we do know that when some stresses occur they are highly likely to lead to other stresses, which is known as the stresses being correlated. Some stresses will be highly correlated, for example the equity shock with other market stresses, whilst other stresses will have minimal, or zero, or negative correlations, such as equity and mortality. Such stresses are well diversified.

We consider the correlations between all the stresses when we determine the combined scenario which will result in a 99.5% one year survival probability overall. Adding up all the individual stresses assumes that they are fully correlated. But this is not the case in reality, so the use of the correlation matrix allows for there being only partial (or no) correlation between some risks, and hence allows for diversification.

However it is correct that when certain stresses are combined together they may result in more capital being required. This is due to non-linearity, and non-separability of some events, i.e. interaction between the risks.

However, it is also the case that the interaction may result in lower capital being required. For example, a persistency stress (higher lapses) combined with an expenses stress may result in a lower combined capital requirement than the sum of the two, since the persistency stress could dampen the impact of the expenses stress.

Overall, it is unlikely that any non-linearity increase in capital will outweigh the diversification benefit. Therefore combining the stresses will result in less capital required

Most candidates demonstrated they understood the basic concept and impact of correlations. Those who were able articulate the different types of correlations and give examples scored better.

(iii) (a) **Equity and persistency**

The positive correlation means that there is assumed to be a connection between equity risk (the risk of equity market falls) and persistency risk (the risk of higher than expected lapses).

The fact that the correlation is 50% means that the company has assumed that lapse rates will be impacted to an extent, but not fully, by an equity shock.

As equity markets fall some people can lose confidence and be more likely to surrender their policies if they are invested in volatile funds and move into safer investments such as cash and investments with more stable returns, particularly if there is a guaranteed surrender value.

Economic circumstances which give rise to equity falls may also lead to higher lapses if customers have to cash in their policies to meet short term needs. However, as equities are intended as a longer-term investment the correlation is less than 100% as some policyholders will try to 'ride out the bad times'.

(b) **Annuitant longevity and non annuitant mortality**

The negative correlation assumption means that longevity risk is expected to improve (annuitants are less likely to live for longer) at the same time as there is an increase in mortality rates. This makes sense if there is a cross-over between the population of lives, i.e. the same lives who are exposed to the mortality stress shock are also exposed to the longevity shock. Or, if the reason for the mortality shock will impact all lives, for example due to an epidemic.

However, the two sets of lives are generally not linked and so a mortality shock is unlikely to fully impact longevity assumptions, since the non annuitant lives are likely to be mainly younger policyholders who are saving prior to retirement.

Events which lead to fewer young people dying are often different from those which lead to fewer older people dying. Therefore a slightly negative correlation is not unreasonable.

(c) **Persistency and operational**

Higher surrenders will be a stretch on the operational area and so increase the risks within this area. Such as the customer service area dealing with surrenders, or the IT systems, which may be unable to cope with large volumes of surrenders at the same time. Equally it may be that operational issues such as processing failures may lead to dissatisfied customers and higher surrenders.

In addition, management may be distracted by operational problems leading to a lack of focus on the business which in turn leads to surrenders.

Therefore a positive correlation of 50% is sensible, but as there are many other drivers behind both persistency and operational risks, it is only partial rather than full.

(d) **Persistency and mortality**

The company is assuming that the stresses are completely independent, which is reasonable as an increase in lapses does not have a direct impact on future mortality assumptions for most types of business.

There can be a selective withdrawal affect on mortality for some protection products, but this is unlikely for unit-linked business.

A good differentiator, with the better prepared candidates scoring well by spending time explaining the links between the stresses, and the impact on the size and direction of the correlation assumption. A surprising number of candidates did not understand correlations. For example some students discussed how higher mortality meant fewer policies in force, and hence lower lapse rates. This is not correct as it is the lapse rates as opposed to number of lapses that is being considered.

- (iv) When equity markets fall a Market Value Reduction is often applied to unitised with profits business to reduce the value of the policy close to its asset share in order to protect the remaining policyholders.

Policyholders view this as a reduction in the value of their policy and therefore often choose not to surrender when MVRs are applying, thus reducing lapse rates. They instead may be more inclined to continue their policies until the date, at which point a guarantee will apply and no MVR can be used, eg MVR free date or maturity.

Another good differentiator question: stronger candidates recognised that an MVR may be applied and the impact this would have on customer behaviour, thus reducing the lapse rates.

- (v) The company could reduce its exposure by purchasing appropriate derivatives to hedge against the risk of an equity market fall. For example, equity put options which the company will gain from if the equity market falls, which

will be used to offset against the loss on surrender. The strike price of the put option will be based on the total premium.

The company could stop writing new business or change the terms on new business to reduce the value of the guarantee. For example, place a maximum on the individual premium allowed or reduce the level of the guarantee to (say) 75% of the premium. Alternatively they may reduce the duration for which the guarantee applies, for example make it a spot guarantee at say the tenth policy anniversary.

The company may limit the choice of funds available to this policy to those with more stable returns.

They may introduce a retention policy to encourage policyholders who are planning on surrendering explaining that their investment is long-term and that by surrendering they are sacrificing future growth potential.

Securitising and/or selling the existing portfolio of business.

This question was generally well answered but only the better prepared candidates explored a variety of options. A number of candidates did not recognise that terms could only be changed on new business.

- (vi) The professional guidance relevant for the current ICA submission are:

The Actuaries' Code

TAS D (Data)

TAS R (Reporting)

GN39 – General responsibilities of and relationships between Actuarial Function Holders, With-Profits Actuaries, Appropriate Actuaries and Reviewing Actuaries

GN40 – The Role of the Actuarial Function Holder

GN46 – Individual Capital Assessment

GN47 – Stochastic Modelling of Economic Risks in Life Insurance

A bookwork question with most students scoring well, but a surprising number did not mention the TASs, despite the prompt in the next part of the question.

- (vii) **TAS M (Models)**

Applies to models used in the preparation of reports completed on or after 1 April 2011.

The aim is to ensure that actuarial models sufficiently represent the issues on which decisions will be based, and are fit for purpose, both as theoretical concepts and as practical tools.

Models must be properly documented and significant limitations and their implications reported

Insurance TAS

Intended to apply to work used in reports completed on or after 1 October 2011. *[Note: April 2011 was correct at the time of production of the Core Reading. It has since been put back to October 2011, so either date would be acceptable.]*

The aim is to ensure management and governing bodies can understand and rely on the information supplied by the actuaries and understand the limitations. It also requires that information provided to policyholders is relevant, comprehensible and sufficient for their needs.

The key principles include requirements to use appropriate assumptions derived from relevant information, and to explain uncertainty around any figures.

This question part was generally poorly answered with many students not attempting the part on Insurance TAS. Well prepared students were able to pick up the bookwork marks available.

(viii) Solvency II comparison

The Solvency II framework consists of three pillars; the ICA is just one of the FSA's regulatory pillars. Solvency II Pillar 1 sets out the minimum capital requirements.

Assets will be valued at market value, which is consistent with the ICA.

Technical provisions are calculated on a market consistent basis, which is consistent with the starting point for the ICA stresses. However, the Solvency II technical provisions also include an explicit risk margin based on the cost of holding required capital in respect of non-hedgeable risks.

There are two capital requirements under Pillar 1, the Solvency Capital Requirement (SCR) and the Minimum Capital Requirement (MCR). The MCR is the level below which the SCR cannot fall and is defined as a simple factor based formula. There is no such equivalent in the Pillar 2 ICA.

The SCR is similar to the ICA as it is also based on a 99.5% confidence interval over a year, or 1-in-200 year event. In addition, both regimes allow for correlations between risks. It can be calculated using a standard formula which has prescribed stresses and correlations or it can be calculated using an internal model, but this must be approved by the FSA.

The standard formula in particular differs from the ICA approach where it is up to the company to decide both the stresses to use and the correlations between the stresses, and then the FSA reviews this at a later date and applies an ICG (Individual Capital Guidance) if they deem it inappropriate or insufficient.

Pillar 2 under Solvency II is the supervisory review process where additional capital may be required to be held if the FSA feels risks haven't been covered

in Pillar 1. This is similar to the ICG review currently performed by the FSA on the ICA.

Each company will be required to calculate an Own Risks and Solvency Assessment (ORSA). The company has to identify risks to which it is exposed to, and the risk management techniques and controls to enable it to still meet the requirements from Pillar 1 in the future. The ORSA has similarities with the ICA, which also needs to take into account all risks to which the company is exposed. However, the need to continue to meet the Pillar 1 requirements over the business planning horizon is not required under the ICA regime.

Under Solvency II Pillar 3 companies are required to disclose a report on Pillar 1 and Pillar 2 to the public, although items which are deemed to be of a confidential nature do not have to be included. However the ICA is not publically available.

Solvency II is a European wide regime whereas the ICA regime was applicable in the UK only.

This question was generally well answered and most students showed a good knowledge of Solvency II requirements. However many candidates just listed the features of Solvency II rather than comparing the two regimes and so missed key marks.

- 2** (i) Outcome 1: Consumers can be confident that they are dealing with firms where the fair treatment of customers is central to the corporate culture.

Outcome 2: Products and services marketed and sold in the retail market are designed to meet the needs of identified consumer groups and are targeted accordingly.

Outcome 3: Consumers are provided with clear information and are kept appropriately informed before, during and after the point of sale.

Outcome 4: Where consumers receive advice, the advice is suitable and takes account of their circumstances.

Outcome 5: Consumers are provided with products that perform as firms have led them to expect, and the associated service is of an acceptable standard and as they have been led to expect.

Outcome 6: Consumers do not face unreasonable post-sale barriers imposed by firms to change product, switch provider, submit a claim or make a complaint.

A bookwork question which was generally well answered.

- (ii) In all decisions, the company will need to assess the conflicts of interest that exist. These would generally be between shareholder and customer but could

also occur between blocks of customers, either between cohorts or between product types.

TCF is considered in determining the reversionary bonus rates payable. The company would consider rates declared in previous years as well as its view of sustainable rates going forward. It would also consider what degree of change to apply to the rates again based on previous practice.

The company would also consider TCF in determining terminal bonuses. It would consider what rate payable would equate to the asset share of the policy as a reference for a fair amount payable. It would also consider what deviations from this may be reasonable and what target ranges have been declared. For example a lower target level may be deemed reasonable to build up free capital to protect the fund's policyholders.

In addition it will consider the extent to which it should apply smoothing and whether to limit the change in payout amounts for a given policy or payout as a percentage of asset share.

The split between RB and TB will also be relevant; policyholders are likely to prefer receiving bonuses as RB since this amount is guaranteed, so companies should consider TCF if changing the ratio materially.

The company will also consider TCF in the use of its estate and how it is invested. It will need to consider whether this can be distributed to policyholders and/or shareholders and under what conditions it can be released from the fund rather than retained to protect solvency. Additionally it will need to consider any run-off plans and closure approaches

TCF is also relevant in the consideration of payouts on surrender and options to convert or extend policies. Consideration is given to the level of investment made by investors leaving and also the value of the policy at the time they leave such that remaining policyholders are not disadvantaged.

The company would consider the fairness implications of adopting a different smoothing approach to surrenders compared to maturities, and comparisons against premiums paid at early durations. They will also need to consider TCF when setting Market Value Reductions (MVRs).

TCF is also considered in the calculation of asset shares used to underpin both bonus decisions and surrender value calculations. This includes the allocation of investment returns, expenses and other variables. TCF will be important for the more discretionary deductions, for example, charges for guarantees and cost of capital.

TCF is also considered in setting the investment policy for the fund. This includes considering how the expected return and variability of return have been described (e.g. in marketing material) and ensuring the mix of assets used is consistent with this. It also includes consideration of the types of assets used against impressions given.

The company would have to consider the impact on different generations of customers when changing investment mix. For example, increasing the risk of the asset portfolio may be reasonable for customers with a long outstanding duration, but may be an unacceptable risk for those maturing in the next couple of years.

TCF is also considered in the allocation of profits from without profits business including the timing and methodology used e.g. through reversionary or terminal bonus.

TCF is also considered in writing new business. Firstly the company needs to consider the capital requirements and any risks associated with the business and how these may impact existing customers. This may limit the volume that can be written or influence the terms.

It may be appropriate to introduce a new bonus series to reduce the impact of new policies on existing customers.

In addition the company needs to consider the profitability of business and the extent to which any cross subsidies between policyholders are deemed reasonable.

The extent to which terminal bonus scales are simplified for administrative purposes must be considered, as this will result in some cross-subsidy and smoothing between individuals.

The company will also want to ensure that any risks to the policyholders associated with taking out the policy are clearly explained such that the customer understands them before committing.

The company will consider these issues in the light of communications to customers, such as PPFM, and any expectations that may have been set, for example through marketing literature. These issues will need to be considered when dealing with customer complaints.

This question was a good differentiator. Most candidates explored areas such as bonus setting, investment strategy and use of the estate, but given the number of marks available some did not provide enough discussion of the different approaches and considerations in these areas to score well. In addition only well prepared candidates thought wider and considered areas such as complaints. A number of candidates also detailed the sections of the PPFM without adequately drawing out the TCF considerations.

- (iii) The value of assets will fall in line with the fall in the value of securities so the total value of assets, assuming all else unchanged, could fall by around 24%. There may be some offset in Peak 1 if some assets which had been admissible become admissible, as their value as a proportion of the fund no longer exceeds a prescribed limit, or vice-versa.

The impact on Pillar 1 Peak 1 liabilities will depend on the impact that the fall in equities has on the dividend or earnings yield used to discount liabilities. As

the fall in equity values was sudden it may be there has been no impact in dividend payments or earnings. In this case the yield will rise and liabilities will fall as they are discounted at a higher rate. If however equity value falls are triggered by companies starting to declare lower dividends or reporting lower earnings, the yield used to value liabilities and their values may not be much changed.

Further, liabilities cannot be reduced by as much as the fall in asset values due to the 97.5% prudential margin included in the interest rate and the liabilities will be of shorter term than the equities.

Overall, the solvency impact will also depend on the extent to which the equities are hypothecated to the with profits liabilities when setting the valuation rate of interest. Because there is no requirement to reserve for future bonuses under Peak 1, the company may assume that the equities largely back surplus assets, in which case there would be little or no change in liabilities.

The LTICR is likely to move in line with the underlying mathematical reserves.

It is likely that overall the Peak 1 surplus assets will fall considerably.

Peak 2 capital will be impacted in a number of ways. Base reserves (WPBR) will be based on asset shares and will fall in line with assets. The fall will depend on the extent to which equities are hypothecated to policies rather than to the estate. To the extent that equities are hypothecated to policies the net impact will be zero. To the extent they are hypothecated to the estate this will reduce the surplus capital.

Future policy related liabilities (FPRL) will also be impacted, but depends on any management actions, for example changes to the equity backing ratio or changes to planned enhancements.

Future reversionary bonuses may be reduced as a result of the fall which would reduce the cost of guarantees. There will be a secondary impact if future policyholder lapses change.

However maturity guarantees would be more likely to bite as a result of lower asset shares. This effect is likely to be greater than the effect of lower reversionary bonuses; therefore, overall the cost of guarantees would be expected to increase thus causing FPRL to increase.

In addition, the company may calculate an explicit cost of smoothing and this may be increased if payout smoothing increases as a result of the asset value fall, since there will be a delay in smoothing the benefits back down

In addition it is likely that the sudden fall in equities changes the level of volatility shown in investment markets. This may cause the company to reconsider the volatility assumptions in its market consistent stochastic modelling. This would also impact the liability valuation, e.g. increasing the cost of guarantees in the FPRL.

However, if the company writes guaranteed annuity options then the cost of options component of the FPRL might reduce as these will be applied to a smaller fund.

Also, there will be also an impact on the RCM. The equity stress to be applied is likely to be reduced, since it will be based on the average level of equity markets over a previous period rather than just on the current low level. However, there could be some offset from a higher volatility assumption. Overall, the impact is not clear but it seems likely that the equity value fall would also reduce Peak 2 available capital.

The overall impact on Pillar 1 will depend on whether Peak 1 or Peak 2 was biting. The Pillar 1 surplus capital position is based on the more onerous of the two peaks.

The equity market impact may be more significant for Peak 1, since the liabilities are not market consistent and therefore can be less sensitive to market movements. This could result in the company no longer needing to hold a WPICC.

Overall this question was answered reasonably well with most candidates being able to identify a number of impacts for both Peaks. Candidates who were able to clearly explain reasons for the movements expected tended to score better. For example most candidates identified that the RCM would be impacted but did not explain how the recent equity fall or possible changes in volatilities might change its size.

- (iv) Depending on the size of the fall in capital the company may need to immediately communicate the impact to regulators to highlight the impact and actions that will be taken by management. It may also wish to discuss the position with distributors, credit agencies and analysts in order to demonstrate its capability in managing the situation.

The company may also choose to communicate to customers to explain any impacts or as appropriate provide reassurance that their investments remain secure.

In response the company may choose to cut bonus rates on its policies either through lower reversionary or terminal bonuses. Lower terminal bonus would help minimise the strain on the fund from maturities. Lower reversionary bonus would reduce the level of guarantees and reduce liabilities. In doing so it would need to consider what approach has been specified in the PPFM in response to market falls. It may be that there are maximum percentage falls that can be applied to bonuses or payouts.

The company would need to consider its approach to smoothing and what level of cross-subsidy between customers against asset share is reasonable. It may decide to apply less smoothing provided still within permitted range.

In addition the company would need to consider past bonus rates and expectations that had been set in its marketing materials and any actions that

had been taken in the past under similar economic circumstances. The company would also consider current or previous competitor responses to this situation as these may also give rise to customer expectations.

The company may also change the asset mix in its fund or rebalance the assets back to the original stated objective. It may choose to move to a position that better matched its guaranteed liabilities to reduce the risk from future adverse investment returns. It would however need to consider the return potential and whether this fits what was previously described to customers.

It may also want to increase the yield on its assets in order to increase the yield used in Peak 1 solvency calculations in order to reduce the value of liabilities in Peak 1.

The company would also want to ensure it maximised its admissible assets. To improve its Peak 1 position it may wish to remove any excess holdings in admissible asset classes whose full value cannot be utilised and it may wish to divest from any asset classes that are wholly inadmissible.

In making any changes the company would need to consider how the objectives of the fund were described to customers in marketing materials or fund factsheets, any breakdowns shown in the types of assets used. It would not want to depart too much from these. It would also need to consider the transaction costs of purchasing, or selling, assets and the crystallisation of any losses etc

The company is likely to reflect the impact of the equity fall on surrender values given. In doing so it would need to think about fairness between those staying in the fund and those leaving. If it did not act there may be insufficient left in the fund to pay remaining customers. It would however also have to consider if it had acted in a similar manner in the past and what it has published about its surrender value basis in the PPFM or other documents.

The company may consider raising capital in order to protect its solvency. It may re-insure some of the risks out of the fund or securitise a future profit stream to improve the Peak 1 position. In doing so it would need to consider the price it would have to pay and what profit transfer it was giving up.

Similarly the company may choose to use derivative positions to mitigate the impact of further falls in the value of equities, but it would need to consider the costs of purchasing derivatives vs the benefits.

The company may choose to increase/introduce a charge to asset shares for the cost of capital and guarantees.

The company will want to ensure that all decisions receive suitable scrutiny and an effective governance structure should be in place. This may include some level of independent oversight, for example via a With Profits Committee.

This question was generally poorly answered. Most candidates identified changes in bonuses or asset mix but provided limited depth around the considerations in implementing such changes and how they may be communicated. Few candidates considered other capital management tools such as securitisation.

- (v) Should point out that it is reasonable that the amount paid out is not the same as that paid previously as the customers' investments have not earned the same returns from the fund. The period his investment was in the fund was not the same as his neighbour and that over the period he was invested the fund earned less, particularly due to the equity market fall.

Additionally the customer may have missed strong growth that his neighbour enjoyed at the start of their policy. In particular since the first maturity equity markets have fallen by 40% and the overall fund by 24%.

Explain that with profits policies are designed to provide a positive return associated with returns from a range of investment markets.

Agree that there is smoothing in with profits policies. Point out this is designed to protect from the full impact of conditions but not such that everyone gets the same. Clarify that it is not possible to hold payout values the same at all times. Doing so could mean there is not sufficient left in the fund to pay remaining policyholders and thus would not be fair to them.

Clarify that smoothing has been applied to their policy in line with the company's approach in its PPFM, and is consistent with any past projections provided to the policyholder. In this circumstance, the customer is very likely to have benefited from smoothing.

Check whether the policies are exactly the same, e.g. amounts of premiums paid, amounts of guaranteed life cover; there could be other reasons for the difference in maturity value.

Point out that they can go to the ombudsman if still not satisfied, and give details about how to do so.

Have checked the underlying calculations and confirm that the figures provide to the policyholder are correct.

Answers to this question were varied. Some candidates barely attempted the question while others were able to articulate the limits to smoothing and impacts of the different investment performance over the relevant periods. It was also noticeable that stronger candidates used language and explained concepts in a way that would be suitable for a non actuary. Some candidates suggested explaining asset shares and actuarial aspects of their calculation to the customer and gained little credit.

- 3** The proposed 5.5% per annum assumption is not consistent with the experience over the last 3 years, when lapse rates significantly in excess of 6% p.a. have been experienced.

Principle 9 of the EEV Principles states that the assessment of appropriate assumptions for future experience should have regard to the past, current and expected future experience and to any other relevant data.

Changes in future experience should be allowed for in the value of in-force when sufficient evidence exists and the changes are reasonably certain. The assumptions should be actively reviewed and on a best estimate basis. As the data may be fairly sparse additional consideration should be given when setting the long-term assumption. Hence the director is correct to suggest that the assumption should be reviewed since this is in line with the principles.

It is also allowable to consider the extent to which past experience is relevant as a guide to the future – and hence the director is also correct to question the extent to which the past lapse rates experienced when the financial crisis was going on are relevant for the future.

However, it is questionable to include future expected improvements in lapse rates, especially when, even though there has been an improvement in the lapse rate in the most recent year to 7.5%, the lapse rates experienced in the most recent year have still not reached the long term assumed level of 6%.

Another approach would be to leave the assumption unchanged, with a view to actively reviewing the lapse experience over the next year on a more frequent basis (e.g. quarterly) to assess whether the lapse experience is moving towards the 6% rate currently assumed in the basis. If the lapse rate improves sufficiently and falls below 6%, then perhaps the director's suggestion could be acted upon in one year's time.

Another approach may be to argue that the long term rate is 5.5% or 6% and then have a temporary allowance for higher lapses for as long as the aftermath of the financial crisis are expected to be felt.

It should be noted that most companies have their EEV formally reviewed or audited by a third party independent consultant, with the consultant making a formal statement regarding the compliance with the EEV principles. A reviewer is likely to be very uncomfortable with the director's suggestion to lower the lapse assumption when there is no supporting experience to back up this suggested change.

EEV guidance from the CFO Forum requires that an analysis of return on embedded value is published each year and within this analysis there should be separate identification of experience variances. Most insurance companies publish a further breakdown of these experience variances, showing mortality/morbidity variances, lapse variances and expense variances, as well as other variances.

The company may publish results for each of its major subsidiaries separately within its EEV disclosure document. The director may be suggesting the change to enhance the published results, i.e. make them look good. In particular, over the past three years

it would have been showing negative lapse experience variances for this subsidiary as a result of lapse experience being worse than that the 6% assumed rate in its EEV basis.

Market analysts and rating agencies pay attention particularly to negative experience variance coming through the analysis of return on embedded value table.

Also within the analysis of return disclosure table should be a line relating to operating assumption changes. If the company were to amend its lapse assumption from 6% pa to 5.5% then there may be a significant positive impact from this change that would come through the operating assumption change line in the disclosure table, due to the positive impact on the VIF as a result of assumed future lower lapses. The impact will depend on the extent to which the excess of the reserve held over the surrender value given exceeds the VIF of the policy.

Hence overall we would have a negative lapse experience variance item and a positive operating assumption change item due to lapses. This pattern would be viewed very dimly by market analysts, since the changing of an operating assumption in a positive way when there is overwhelming evidence to the contrary in terms of experience over the last few years, would lead them to question the integrity of the whole of the EEV calculation and may lead to them discounting the EEV calculation altogether.

The company could review the lapse experience for the product in the light of other products it offers or parent has experienced, or, where available, competitor experience/external data. This may indicate whether the past experience is related to the economic conditions or some other factors. If the latter, the company needs to consider whether there are any mitigating management actions that could be implemented, and if so whether it would be appropriate to take advance credit for the expected benefits.

The company will want to consider if any of the factors behind the experience will continue in the future, or were they one-offs. They may also want to consider setting assumptions which vary by policy duration.

Overall this question was reasonably well answered with many candidates discussing the inappropriateness of the suggestion given the experience to date and evidence available. Many gained marks for articulating principles associated with EEV calculation but few considered the analysis of return and the possible adverse market reaction to changes that would cause the embedded value to rise whilst ongoing experience was adverse and as such missed the marks available.

END OF EXAMINERS' REPORT