Subject SA2 — Life Insurance Specialist Applications

EXAMINERS' REPORT

April 2008

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. The questions and comments are based around Core Reading as the interpretation of the syllabus to which the examiners are working. They have however given credit for any alternative approach or interpretation which they consider to be reasonable.

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Chairman of the Board of Examiners

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Comments

Individual comments are shown after the solutions to each part question that follow.

1 (i) Whilst not all policies have an MVR being applied, the proposal may result in an increase in sales of new business.

However, consideration should be given to whether this is actually the case. Market research of customers and distributors could be undertaken to investigate whether removing them would increase sales or whether their introduction is understood as a part of the risk of the contract.

What are other companies doing? Do they have MVRs? Are they of similar size? Being the only company without an MVR may result in more new business.

Before making any decision, the company should perform a cost benefit analysis to assess if the loss on surrender outweighs the benefits of gaining new business.

The MVRs will have been introduced to ensure that the surrender value is in line with the Principles and Practices of Fund Management (PPFM), and the need to treat policyholders in line with their expectations. Any change in practice or principle would require a need to revisit the PPFM. This could also set a dangerous precedent for the future and could set expectations.

It is likely that the PPFM will indicate that the surrender value should be related to Earned Asset Share (EAS). In the normal course of events, paying more or less than EAS is not a problem and is a fundamental part of the smoothing process, but the cost of smoothing needs to be monitored to ensure it is neutral over time. MVRs aim to ensure that all policyholders are treated fairly.

The removal of MVRs could lead to anti-selection e.g. policyholders may be more likely to surrender when it goes against the company and take their money to invest in a unit-linked fund elsewhere, especially if the contract has been sold by (smart) IFAs. This anti-selection risk exacerbates the risk to (and is a drain on) the estate.

However, policies bought just prior to the crash will have EAS significantly below the face value of units. The imposition of MVRs ensures that continuing policyholders are not penalised by the exit of these policies.

To remove them will mean that the estate will be reduced, losses will be made and solvency could be threatened. The company should consider how much free estate is available and how long it can support this approach.

However, for the fund to continue, it needs to attract new business. It may be seen as an appropriate use of the estate in order to attract new business. This would depend on the number of the policies affected, and the expected losses versus the potential gain.

The peak 1 and realistic balance sheet reserves would increase as the removal of MVRs would lead to losses within this calculation. The capital requirements would also increase.

A sudden removal of the MVRs is likely to lead to a significant increase in exits. This will place pressure on the administration departments who are not used to high levels of exits, and will have an impact on profit.

There could be adverse press and analyst comments if it is felt that the remaining policyholders will be adversely affected. It could also be seen as an act of desperation.

A gradual reduction is likely to be more manageable, with a communication being sent to the affected policyholders and distributors setting out:

- the reasons for the MVRs
- emphasising that they only affect surrendering policies

Comment: This question was answered reasonably well by many candidates. More marks could have been achieved if candidates had explained the points made in some more detail.

(ii) Policyholders like investment contracts with guarantees. Especially in periods of stock market volatility, and so depending on how this compares to other products in the market, this could expect to sell well. Therefore this could be a good idea if it brings forward profit or gives a competitor advantage.

It is likely that sales of the existing product will suffer as a result. The launch could be a precursor to the company closing to new with profits business. If the new bond is successful and new with profits business falls the with profits fund could suffer from a tontine effect and the fund could be difficult to manage.

The company will have to assess whether the increase in overall sales will compensate for the fact that the new contract has lower profitability. For example more sales help to support overheads on declining with profits business.

In addition, there may be an element of lapse and re-entry. This is bad if it encourages more lapses than would otherwise occur, but this could actually be a good thing if the company retains the old with profits business which is leaving anyway.

Lapses and re-entry might be exacerbated if the MVRs are removed as those policyholders might be expected to move to a more risk averse contract if they choose to re-invest.

There could be a conflict of interest between the company and the with profits fund. A decision should be made as to which fund the product is written in. If written in the shareholder fund, the company might benefit from policies leaving the with profits funds and moving to the shareholder fund, creating more conflict.

A product with significant investment guarantees will be very capital intensive. The company should assess whether there is enough capital available to support the new business strain.

It may be possible to mitigate the extra investment risks of the new contract by investing in appropriate assets. If not the company should decide if it is happy to stop writing the old product in favour of one with significantly more risk. Depending on the size of the estate, the with profits fund may be able to write this business provided that the return on the capital is acceptable. The question then should be asked as to whether the risk and profit profile represents as suitable investment for what may be a declining with profits fund, as this is likely to further dilute the already low level of profit to the shareholders.

Launching the new product early is unlikely to be a sensible idea for a number of reasons:

- The system may not be fully developed, and even if it has, it may not have been fully tested.

- The company needs to assess if it is ready for an early launch, for example, the selling and administration processes need to be rolled out to staff, hedging strategies may need to be put in place, investment strategies may need to be decided on, the product needs to be fully profit tested.

- In addition, the product and marketing literature may not be in place yet.

- Distributors may not have been told about the new product yet.

At least one of these concerns is likely to apply, otherwise the product would have an earlier launch date. An early launch would be, therefore, fraught with problems.

Distributors are likely to take time to familiarise themselves with the product and so an early launch may gain no advantage. If there were sales, error rates in sales and admin procedures are likely to be high as staff are not fully trained. This will lead to:

- brand damage
- regulator involvement with possible/probable fines
- customer dissatisfaction

Comment: This was tackled reasonably well by many candidates. The better answers covered the pros and cons of both key considerations in turn: launching this particular product and launching early.

(iii) The surrender value calculation will be described in the PPFM, and so the PPFM may need changing. However, if the PPFM indicates that surrender values (SV) will be based on EAS, then it will not need to be changed.

Paying EAS on average on surrender is in line with treating customers fairly to all policyholders including those who stay.

The higher level of exits now means that a more rigorous approach needs to be taken, especially if there are significant lapses at early durations. However, there may not be many policyholders who are affected as there may not be many left at early durations given recent new business volumes.

If the company has overpaid on early surrender in the past, this practice is likely to be too much of a burden in the current climate and is inequitable, and results in losses being made.

However, the problem may be that past practice may make it difficult to change the methodology, and this will depend heavily on what information such as point of sale illustrations have been given to the policyholder, and on what the PPFM says.

It may be that the illustrations were given using a generic retrospective method in the knowledge that in practice any SV would exceed this, and so this may not be such an issue.

Any revision to the SV basis may mean a two level calculation:

- Early in the policy the surrender value would be based on EAS or using a formula that approximates to EAS.

- This would then blend in to a prospective formula to ensure that SV tends to MV as the policy approaches maturity.

The company will have EAS capability, as it will be required for bonus setting. However whether it is possible to transfer this capability to producing individual EAS calculations for SVs is less obvious. Some development is therefore likely either to build that capability or to develop a proxy method. Neither is likely to be a trivial exercise and so this could be costly.

Then there is the transition to consider. Surrender values after the change are likely to be significantly lower. The handling of this will be important to avoid bad publicity.

It is not realistic to pay EAS at very early durations as this may be negative.

Comment: Generally, candidates were able to answer this question part well.

(iv) If it is felt that the long term viability of with profits is in doubt, then the Board has to decide what is the best course of action for the with profits fund.

The possible courses of action would be:

- close to new business and manage as a closed book

- close to new business and sell the book

- develop a range of new without profits products for new business and then either manage the with profits as a closed book or sell the book as above

The company is large and so it is unlikely that it would wish to close the with profits funds immediately. Also, this could lead to bad publicity and so impact other new business sales.

The current mood of the distributors could be temporary, or there could be other distributors who may wish to sell with profits business so it may not be the right time to close.

Developing new products to replace the existing ones will take time. A possible replacement for the bond is in the process of development, but a regular savings plan may also be required.

If and when it is decided to close the with profit fund there is the issue of economies of scale. At some point the overheads of the company will become disproportionate, investment policy may be constrained and the returns to the policyholders will suffer. If the company is able to substitute without profits for with profits then the economies of scale can be maintained, even if the new business is not written in the with profits fund.

If the with profits fund were to be closed, the equitable distribution of the estate would become increasingly difficult. There would be the danger of a "tontine effect" whereby the last few surviving with profits policy holders benefit to a disproportionate effect, or they take on a disproportionate amount of risk This would be especially true if any without profits business were written into the with profits fund after closure.

Surrender rates may change after the fund is closed to new business. They might increase if there is a lack of confidence in the company, or they may decrease if policyholders expect to receive special distributions from the estate.

Shareholders and policyholders may get a windfall from a release of capital.

Governance

Note that in all of the above situations, appropriate governance should be observed:

- This will almost certainly require the Board being advised by the With Profits Actuary and the With Profits Committee.

- These advisors will need to be satisfied that any actions are in the interests of the with profits policyholders. In particular if they are considering a reattribution of the estate.

- The company may need to write to customers if it is to close to new business.

- The company should consider additional regulatory requirements of a closed fund.

Comment: Most candidates made a reasonable attempt at this question part.

2 (i) The APM method allows for risk by:

- including risk margins in future experience or
- including a margin for risk in the discount rate

Criticisms of this approach are:

- The allowance for risk is subjective, and the method fails to recognise the market value for different baskets of risk. EEV does allow for this.

- Some believe that it is inappropriate to allow for investment risk premia (ie the higher return expected from riskier assets) unless the risk discount rate clearly allows for the risks involved.

- Some do not believe that the results should be dependent on the choice of asset mix.

- The allowance for the cost of guarantees and options is not transparent or adequate and the full time value of the options is not allowed for.

- It is difficult to compare results since the methodologies and assumptions can vary significantly between companies.

The EEV principles were developed to address the criticisms in the following way:

- They aim to give sufficiently credible and robust guidance to ensure consistent application.

- They explicitly allow for the time value of options and guarantees.

- They prescribe a minimum level of disclosure including sensitivity analysis to address the concerns about comparability of results in adopting different assumptions, but there is still some way to go.

Despite the guidance provided, key questions that still need to be addressed by companies when adopting the EEV framework include:

- how to set the appropriate risk discount rate
- how to calculate the cost of options and guarantees (e.g. duration match)
- how to adjust for the cost of capital

An increasing move by companies towards an adoption of a market consistent approach may help to address some of these questions.

Comment: This was a bookwork question which well-prepared candidates were able to answer well. Many assumed that EEV meant market consistent which is not necessarily the case, but they were not penalised for making this assumption.

(ii) The EEV profit on the in-force business can be written as:

$PVIF1 + T - PVIF0$,

Where T = profit made in the year

T = premium income + investment income – claims – expenses – change in reserves

Premium income =	102,000
Investment income = 0.05*(1,202+102,000-6,120) - (1.05^0.5 - 1)*100,000 =	2,385
Claims = 0.01*10,000,000 =	(100,000)
Expenses = 6%*102,000 =	(6,120)
Change in reserves = 1202 - 940 =	262

T = (1,473)

$PVIF1 - PVIF0$ = 2346 - 3023 = (677)

Contribution from new business = 100

Total EEV profit = (1473) + (677) + 100 = (2,050)

Comment: This question differentiated well those who could put the theory into practice from those who may have learned Core Reading without thorough understanding of the underlying principles. Unfortunately, many candidates did not seem able to apply the principles to the given scenario, *although the minority who did so managed to gain high marks. A few candidates attempted to calculate the surplus arising over the year rather than the embedded value profit.*

(iii) The analysis of change in EEV movement over the year can be shown as follows:

Opening EEV

Expected return on free surplus

Return on in-force:

Expected Return
Experience variances
Operating assumption changes

New Business Contribution
Development costs
Operating return before tax and exceptional items

Investment return variances
Effect of currency movements
Effect of economic assumption changes
Exceptional items

Return on EEV before tax

Attributable tax

Post Tax EEV

Capital raised
Less capital distributed

Closing EEV

Note for an internal EEV, items such as "unexplained, model corrections, change in methodology" may be reported

Comment: This was a standard bookwork question which was answered well by well-prepared candidates. Items which were equivalent to but expressed differently from the above were given the relevant marks.

(iv) ***Expected Return on Free Surplus*** *= 0 as there is no free surplus*

Expected Return on in-force = discount rate * *PVIF*0
= .05*3023 = **151**

Experience Variances = $({}^{O}T_0^a - T_0^0) + \sum_{t=1} \frac{({}^{O}T_t^1 - T_t^0)}{(1+r)^t}$

The first term in the formula represents the difference between the actual shareholders profit before any impact of changes to the reserving basis, assumed made at the end of the year, and that expected to be made in the calculation of *PVIF*0.

The second term represents the outcome of divergences between the contracts assumed to be in force at the end of the year and the actual policies in force at the end of the year.

Death experience = 0 since deaths were as expected.

Lapse Experience:

Lapses were higher than expected and the impact on profits was due to a release of reserves less a reduction in the VIF due to fewer policies being in force

The expected reserves at the year end was 940/(1 - .15)*(1 - .1) = 995

Hence the release of reserves due to additional lapses was = 995 – 940 = 55

The impact of lapses on the VIF at the year end can be measured by comparing the expected VIF at the year end with that assuming the lapses had been as expected (but before any changes to the basis)

We are told that *VIF* at the year end = 2,346 and this allows for actual business in force and a deduction in value of 3%. So *VIF* at the year end (before change to basis) = 2346/.97 = 2419

The expected VIF at the year end assuming lapses had been as expected
= 2419/.85*.9 = 2561

Therefore the impact on the value in force at the year end
= 2419 – 2561 = (142)

So the total impact of lapses was 55 - 142 = (87)

Expenses experience:

The impact of expenses on profit was due to the difference between actual and expected expenses rolled up with interest.

The actual expenses were 6% of premium and expected was 4%. Therefore the impact on profit was -2%*102,000*1.05 = (2,142)

The total impact of experience variances is then (87) - 2142 = **(2,229)**

Operating assumption changes is the effect of changes to the EEV basis which from the above calculations = 2346 – 2419 = **(73)**

Contribution from New Business = 100

Development costs = 0

Check total profit is the same as calculated in (ii) above after rounding

Expected return on in-force	**151**
Experience variances	**(2,229)**
Operating assumption changes	**(73)**
New business	**100**
Total	**(2051)**

Comment: Most candidates seemed more comfortable with this question than with earlier parts, even those who had not completed part (ii) and so did not know how much profit they were analysing. Marks were given accordingly for correct calculations. Most candidates got a selection of the items in the analysis correct but few considered all the areas comprehensively. Very few candidates explained their calculations, as was requested by the question. Few candidates managed to calculate the release of reserves on lapses but more included the loss of VIF due to lapses.

(v) The company is recently established and this can often lead to an excess E position because expenses are likely to be higher than income in the early years.

However the company was on an "I-E" basis last year and so this is unlikely to be the only reason.

We know that expenses have increased; this could be a contributing factor.

However, another reason could potentially be due to a weakening of the valuation basis. We know that the term assurance basis was unchanged so this cannot be a reason.

Another potential reason could be if there is a release of reserves due for example to more lapses than expected.

We know that on the EEV basis there were more lapses than expected for term assurance, and so it is likely that there were more than expected in the valuation assumptions as well. The EEV showed a profit of 55 due to a release of reserves which could be part of the reason for moving to "excess E".

Another potential reason is if there were significant capital falls in the bond market so that the net return from gilts and bonds is negative. The analysis does not suggest this is the case.

The company could have sold significant volumes of new BLAGAB business this year which has high expenses relative to investment income.

Comment: This question part was looking to see how candidates could relate the known experience of the company to the taxation rules. The question was poorly answered by the majority of candidates and only a few related the experience seen by the company from the previous question parts to what had happened to the tax position of the company. Most candidates simply repeated the course material without applying it to the specific scenario described.

3 (i) The company would base its assessment on the future profits it expected to emerge from the business. This would take into account the income it would receive from any management charges from the business. From this it would subtract the expected costs associated with managing the business.

The cost of administering the business may be based on estimated unit costs. Before buying the business the company is likely to want to have some understanding of the costs incurred by the selling company. Its administration expense assumption would also need to make an allowance for inflation.

The company would need to understand the impact of the purchase on the existing investment management of the unit-linked funds the customers invest in. If the selling company has internal managers it may be wanting to pass the responsibility for this to the buying company. It would need to consider if it had the expertise in the asset classes invested in.

Alternatively the existing managers may remain in post in particular if they are external to the selling company. Either way the buying company will need to understand what the investment management fees are as this will reduce the income retained.

The future income assumption would allow for any future contributions on existing business and top-ups on either regular or single contributions. There would also need to be allowance for commission on these top-ups.

Also include contributions from new members joining existing schemes. In these assessments the company would need to consider expected rates at which existing regular contributors would make their policies paid up. They would also need to consider the rate of transfers out of funds or schemes to alternative providers.

As part of this assessment the company would consider past experience for the business and also the likelihood of any increase in outflows relating to any customers or their advisors reacting adversely to the change in ownership.

As part of its overall assessment the company would also need to consider any one off costs. These may include the costs of the purchase process (e.g. legal costs) and the cost of any post transfer activity which may include systems integration costs and or staff recruitment or training.

All costs and future revenues would be discounted at a risk discount rate. This would be based on the risk free rate plus a suitable margin for risk and should take into account the shareholders' required rate if return.

The company would also add to its assessment of the value of the existing business an assessment of the value of future sales.

It will consider the likely future volume of business and net present value from it. This will be based on a similar assessment of future costs and revenues from this business as set out above.

The volume assessment should be based on market analysis. In developing this it is likely to consider how its own distribution capability compares to that of the selling company and others in the market. Ultimately it may simplify its estimate down to a simple multiple of the last year's new business value

It may also be possible to sell existing products to the new customer base.

The company may also take into account any potential legacy issues, these might include unit pricing errors, mis-selling, GAOs. The company should see if warranties can be obtained for these.

The overall assumptions would be based on best estimate with an allowance for prudence (from the buyer's point of view).

The price should also take account of the following:

- synergies (such as economies of scale, capital)
- change in tax position
- additional risk from lack of data
- the reason for the sale
- how competitive the bidding is
- prices in recent deals

Comment: This question was reasonably well answered by the majority of candidates. However, few candidates explained the need to allow for future contributions/top-ups from the existing book of business and few went into any detail on how to determine the volumes of new business.

(ii) Any such risk may form part of the regulatory capital assessment; for example it forms part of the UK Pillar 2 requirement. As part of this an internal capital assessment would be performed, and this would be a risk based assessment that looks at all areas of risk.

The impact of service problems would form part of the operational risk assessment. In this assessment a level of capital would be calculated that is deemed sufficient to cover the risk of various adverse events.

In the case of service problems the capital assessment would be derived from estimates of the increased staff costs associated with dealing with complaints, the cost of any compensation due and the cost of any systems upgrades.

The assessment would cover both an assessment of the amount of the cost associated with the problem and the probability of its occurrence.

Capital requirements would need to be calculated such that they cover an adverse scenario tail event. This probability is incorporated into the judgement of the severity of the occurrence. The overall operational risk assessment accumulates the capital required from all the different risk events identified. This allows for diversification across all operational issues in line with assessed correlations between events.

Similarly the calculations would accumulate the overall operational risk assessment with all other risk types, again allowing for correlations.

Capital requirements could be reduced by appropriate mitigating management actions.

Comment: This question was poorly answered by the majority of candidates, who tended to concentrate on what the risks are, rather than how they might affect the capital requirements.

(iii) The first step would be for the firm to understand and document all its processes, for example new business processing, change of details etc. It would then identify or introduce controls for the management of these processes.

For example for new business processing this may include training standards for staff, checking procedures for systems inputs, testing of systems outputs.

Each process and control would have an assigned owner within the company.

The company could set up a risk committee and would periodically assess the effectiveness of such controls. It would need to ensure there was independent challenge to the process and control owners (e.g. from internal auditors), who would review the documented controls and the effectiveness of those controls.

It would try to use data to assist in this, such as systems performance statistics or complaint levels.

As a result of the challenge a number of actions may be taken with defined timescales for delivery. For example these may include training initiatives or systems development work. The company would ensure that senior management had visibility of the key risks identified. The company could set up a risk register, and suitable summaries may be developed assessing the severity and likelihood of the risks occurrence.

The company will not necessarily be aiming to remove all risks as this may restrict some potentially value adding activities.

As part of the senior management review the company may define risk tolerances or an acceptable risk appetite. This will help it assess when risks have been reduced to levels that the company is comfortable with operating with.

Comment: This question was generally answered poorly, with relatively few candidates able to explain how a risk management process would be implemented, and even fewer being able to apply it to the specific situation described in the question.

END OF EXAMINERS' REPORT