

Assignment X4 Solutions

Solution X4.1

Comment

Analysis of surplus is covered in [Chapter 17](#).

(i) *Reasons to analyse the change in surplus*

- To reconcile the opening and closing surplus ... [½]
- ... and break this down into its contributory factors. [½]
- To show the financial effect of divergences between the valuation assumptions and the actual experience ... [½]
- ... and in particular to determine the assumptions that are the most financially significant. [½]
- To show the financial effect of writing new business ... [½]
- ... which may change sales plans or lead to products being redesigned and/or re-priced. [½]
- The analysis of surplus provides a check on the valuation data and process, if carried out independently ... [½]
- ... particularly if any “unexplained” item of surplus is investigated thoroughly, *eg* to minimise the chance that offsetting errors in the balance sheet remain undetected as their aggregate effect is a small “unexplained” item. [½]
- Auditors and any other reviewers of the balance sheet calculations may focus some attention on the analysis. [½]
- To identify non-recurring components of surplus ... [½]
- ... and new items of surplus that may highlight new risks that can be incorporated in the company’s wider risk management processes. [1]
- To provide management information, *eg* explaining changes to the Board ... [½]
- ... and data for use in executive remuneration schemes. [½]
- To provide information for publication in financial statements. [½]
- To understand changes in its Solvency II balance sheet. [½]
- If a company is an internal model firm then performing a profit and loss attribution is one of the requirements for model approval [½]

[Maximum 5]

(ii) *Explanation of sources of surplus*

Investment return – immediate annuities

The investment return item is –£5m for the immediate annuities, *ie* a loss as experience has been less favourable than expected. [½]

The immediate annuities are likely to be backed by a variety of bonds, so it is the bond market movements rather than the equity market falls that are likely to have caused this element of loss. [1]

A fall in bond yields at all durations implies an increase in bond values over the year. [½]

The discount rate for determining the BEL in respect of the annuities would be the risk-free rates, determined by EIOPA ... [½]

... with the possible application of a matching adjustment or volatility adjustment. [½]

A fall in government bond yields suggests that the risk-free rate has fallen, and so it is likely that the valuation discount rates have fallen ... [½]

... and, as a result, that the BEL for the annuities has increased. [½]

If the assets and BEL were perfectly matched, the two values would have increased by the same amount. [½]

However, as there is an investment loss on the annuities, liability values must have increased more than asset values. [½]

This may have occurred because the company has invested in bonds with shorter average duration than its liabilities. [½]

This may have been a deliberate choice of the insurance company (*eg* to choose attractively priced bonds despite a duration mismatch) ... [½]

... but may also partly be a result of a lack of availability of sufficiently long-dated bonds. [½]

The EIOPA risk-free rates underlying the BEL are derived from swap rates. [½]

However, the company is invested in bonds, and yields on bonds may have moved differently from swap rates over the year. [½]

For longer dated cashflows, the risk-free yield curve is extrapolated to a defined long term equilibrium rate. [½]

Finding a market asset to hedge this may be difficult and may be a further source of variance between the company's assets and its BEL. [½]

The existence of a surplus of this size suggests that the company was mismatching its annuity portfolio and it is therefore unlikely that it was meeting the conditions to apply a matching adjustment to the valuation discount rate. [1]

However, if it was applying a matching adjustment, then some of the surplus arising may be due to actual spread movements on the company's bond holdings being different from those underlying the matching adjustment (which are specified by EIOPA). [½]

If the company is not using the matching adjustment, then it could be applying the volatility adjustment to its BEL discount rate. [½]

In this case, some of the surplus may be due to differences between the spreads on the company's assets changing differently from the spreads on EIOPA's representative portfolio of assets. [½]

Investment return – unit-linked policies

The investment surplus is negative for the unit-linked policies, *ie* the experience has been less favourable than assumed. [½]

Less favourable investment experience in this case is likely to mean both the falls in equity markets and the falls in bond yields (increases in bond prices). [½]

Of all the non-zero items in the table, this one has the smallest absolute size, indicating that investment return is relatively unimportant for the unit-linked policies. [½]

As the company holds assets to cover the face value of the units, the changes in equity and bond values will be reflected in both asset values and the unit reserves and so not explain the loss. [½]

The loss arises from the non-unit reserves being increased. [½]

Lower unit fund values as a result of equity market falls will result in any unit-related charges generating lower cash inflows to the non-unit fund, thus increasing the non-unit reserves. [½]

If there are guaranteed death benefits that are expressed as monetary amounts, then these lower unit funds will also increase the cost of these benefits (*ie* amount in excess of the unit fund). [½]

As noted for the annuities, a fall in government bond yields suggests that the risk-free rate has fallen, and so it is likely that the EIOPA valuation discount rates have fallen. This would further increase the non-unit reserves. [1]

Deaths – immediate annuities

The variance in respect of deaths is positive (+£1m) for the immediate annuities, *ie* the experience has been more favourable than assumed, ... [½]

... *ie* more annuitants than assumed have died during the year. [½]

Possible causes of this include:

- random fluctuations especially if portfolio is relatively small [½]
- catastrophe, *eg* pandemic event [½]
- severe weather conditions, *eg* more people die in harsh winters [½]
- normal experience, with the difference being due to a poor mortality assumption being used in the BEL calculation. [½]

Deaths – unit-linked policies

The variance in respect of deaths is negative (a loss of £0.2m), *ie* the experience has been less favourable than assumed. [½]

This item has relatively small absolute size, indicating that death rates are relatively unimportant for the unit-linked policies ... [½]

... which is to be expected as they are primarily savings rather than protection contracts. [½]

Assuming the death benefit under these policies is greater than the unit fund, ... [½]

... then less favourable experience for the company means a higher than expected number of deaths during the year. [½]

As with the annuities, this could be due to random fluctuations or a poor underlying best estimate assumption. [½]

It could also be due to poor mortality controls, *eg* inadequate underwriting, ... [½]

... but this is unlikely on this essentially savings policy. [½]

Surrenders – Immediate annuities

There is no surplus from this item. Presumably this is because surrender of immediate annuities is not permitted. [1]

Surrenders – unit-linked policies

The variance in respect of surrenders is a loss of £3m for the unit-linked pensions, *ie* the experience has been less favourable than assumed. [½]

The surrender benefit is the value of the unit fund with no surrender penalties, so it is likely that the company makes a loss on early withdrawals. [1]

In this case, less favourable experience for the company may mean that there have been more early surrenders than expected. [½]

Even for withdrawals later in the policy term, a withdrawal probably results in a loss for the company (assuming the expected value of future charges exceeds projected expenses and any guaranteed benefit outgo). [1]

So, again less favourable surrender experience for the company means that more policyholders than expected have surrendered over the year. [½]

This might have happened because of, for example:

- bad publicity for this company [½]
- bad publicity for this product generally [½]
- poor performance by the company leading to customer dissatisfaction, *eg* poor investment performance, poor customer service or pricing and product features being less attractive than those of competitors' products. [1]

Expenses (both products)

There is an expense loss of £1m for the annuities and of £0.4m for the unit-linked policies. This indicates that expenses on both classes of business over the year have been higher than assumed in the BEL calculations. [1]

Possible causes of this include:

- unexpected one-off or exceptional expenses, *eg* high costs incurred from the transitional arrangements to Solvency II implementation, dealing with customer queries in light of latest pension freedoms [1]
 - higher than expected salary costs, *eg* after annual salary negotiation [½]
 - higher than expected costs associated with supplies of goods and services, *eg* increase in fees under an outsourcing or software licensing contract [½]
 - normal experience, with the difference being due to a poor expense assumption being used in the BEL. [½]
- [Maximum 21]

(iii) *Actions the company might take in respect of the items showing losses*

General

The company should review its experience investigations to ensure that its best estimate assumptions are actually realistic and not unduly optimistic ... [½]

... and consider changing relevant assumptions. [½]

In part, this will depend on the extent to which each loss is evidence of a trend in the experience or a one off. [½]

The company should adopt good general systems and management controls, *eg* frequent monitoring and management information, good checks on data and on systems and processes. [½]

If the company is not able or chooses not to reduce its exposure to particular items of loss, it should ensure it is happy that it holds sufficient capital against that item, and consider raising more capital if required. [½]

Investment return – immediate annuities

To manage this item, the company could move to a more closely matched position. [1]

If its bonds mismatch its liabilities by term, it could move into bonds with longer average duration. [1]

To manage losses due to bond yields moving differently from swap yields, the company could consider holding interest rate swaps rather than bonds. [½]

To reduce any element of the variance caused by the matching or volatility adjustments, the company could make its actual asset holdings more similar to those underlying the EIOPA specified adjustments. [½]

However, any improved matching of the Solvency II balance sheet may mean the company is less well matched by some other metric, *eg* internal economic capital, IFRS, cashflows ... [½]

... because of the particular features of the Solvency II BEL liabilities, *eg* specification of risk-free, matching adjustment *etc.* [½]

Investment return – unit-linked policies

The company could take actions to try to improve the investment performance of the unit funds. [½]

For example:

- consider a change in investment managers [½]
- review its investment strategy and decision-making processes [½]
- outsource investment function to an external manager. [½]

It may try to reduce its exposure to poor investment returns by increasing variable fund management charges where it is possible to do so ... [1]

... and moving to variable charges in future for new business where such charges are currently guaranteed. [½]

Any such changes to charges will need to consider constraints, *eg* policy conditions, TCF, competition. [1]

Deaths – unit-linked policies

To the extent that the losses are due to the existence of guaranteed death benefits greater than the unit fund and a higher than expected number of deaths, the company could:

- remove or reduce the guaranteed death benefits [½]
- do more stringent underwriting [½]
- consider using more reinsurance [½]
- increase any variable mortality charge [½]
- move to variable charges for future new business if mortality charges are currently guaranteed. [½]

Again, constraints on charge related actions will apply. [½]

Surrenders – unit-linked

The company should consider actions that might improve policy retention levels. [½]

For example:

- The sales process could be reviewed ... [½]
- ... *eg* remuneration structures could be amended to incentivise persistency ... [½]
- ... and/or product literature may be amended to improve customer understanding. [½]
- If individual advisers can be identified as the source of poor sales, the company could stop selling business through them. [½]
- The possibility of changing or adding to the distribution channels employed may also be considered especially if a particular mis-selling problem or churning is occurring. [½]
- The company could review and invest in systems and processes to improve service standards. As part of this review, it may consider outsourcing some functions. [½]
- The company could introduce a “customer retention team” to contact all policyholders who request to surrender their policy, *eg* reminding customers of flexibility to reduce premium levels. [1]
- The company could attempt to mitigate the effects of any poor publicity by briefing the financial press and analysts and possibly by communication with its customers. [½]
- The company could change the product design and/or charges to be in line with or better than other products available in the market. [½]
- The company could enhance the level of benefits or offer some flexibility, *eg* a wider choice of investment funds and the flexibility to vary premiums. [1]
- The company could change the product to directly encourage persistency, *eg* reducing any annual management charges with duration in-force. [½]

For future new business, the company could introduce surrender penalties. [½]

Surrender penalties would reduce the loss to the company on a policy that was surrendered early in the policy term. [½]

Expenses – both products

The company should consider actions to reduce expenses. [½]

For example:

- reduce salary costs, possibly by reducing staff numbers [½]
 - improve efficiencies, eg by improving systems and processes [½]
 - outsource more functions to fix outgo, giving more certainty about expense levels, but also increased counterparty risk. [½]
- [½ per good example, maximum 1]
[Maximum 16]

(iv) ***Other components that might be included in an analysis of Solvency II surplus***

With the company's current definition of surplus (*ie* assets in excess BEL) other possible components of the surplus are:

Opening adjustments: these usually reflect changes to the model or data used to calculate the surplus. [½]

Examples include:

- corrections [½]
- changes to any model point grouping [½]
- methodology changes, ... [½]
- ... eg changes the company makes to its economic scenario generators or to any proxy modelling approach. [½]

Return on opening surplus: this results from investment returns on the opening surplus. [½]

This may be expressed as the actual return on opening surplus ... [½]

... or as the expected (*ie* risk-free) return only with any actual difference being recorded as part of the economic variance. [½]

Changes in economic assumptions, eg risk-free rates, inflation, exchange rates. [1]

If the economic assumptions change, the effects may be shown separately from the economic experience variance items. [½]

Changes in non-economic (insurance) assumptions: eg mortality, withdrawals, expenses. [1]

If the non-economic assumptions change, the effects may be shown separately from the non-economic experience variance items. [½]

New business: this item shows the impact on surplus if the BEL differs from the assets accrued in respect of new policies (premiums less initial outgo, plus investment return to the valuation date). [1]

Other variances: these might include, eg capital injected into or paid out of the fund ... [½]

... or tax changes. [½]

Unexplained movements: these arise since it is unrealistic to expect the entire movement in surplus to be fully explained. [½]

Ideally, a company's management should specify the level of unexplained movement which is acceptable (eg as a percentage of total liabilities) so that the analysis can be performed to the required level, ... [½]

... whilst being mindful that a small residual unexplained amount could be masking material errors which happen to broadly offset each other. [½]

In addition, further items of surplus will arise if a company adopts a different definition of surplus. [½]

In particular, the definition of surplus may be extended to assets in excess of technical provisions. [½]

In this case, factors that cause movements in the risk margin should be included (in addition to the sources already included), ... [½]

... for example:

- changes in the size of the SCR components used [½]
- assumptions relating to the projected run-off of the SCR subset [½]
- changes to allowances for diversifications within the risk margin calculations. [½]

If the definition of surplus is extended further to “own funds” (*ie* assets in excess of technical provisions and solvency capital requirement) ... [½]

... then factors that cause movements in the SCR should additionally be included in the analysis. [½]

Example of possible such components of the surplus are:

- changes in correlations between risk factors [½]
- changes in approach taken (*eg* if switching from standard formula to internal model) [½]
- changes in “1 in 200 year” calibrations [½]
- identification and inclusion of different risk factors (if an internal model is used). [½]

[Maximum 11]

Solution X4.2**Comment**

Embedded values are covered [Chapter 19](#).

(i) ***Inclusion of a VIF element in the embedded value (EV) calculation under Solvency II***

Reasons not to include the VIF element

Under Solvency I the present value of in-force (VIF) component of the embedded value simply represented the emergence of the prudential margins included in the supervisory valuation basis. [½]

Under Solvency II, the basic liability (the BEL) is determined on a best estimate basis ... [½]

... and so there are no such prudential margins, *eg* in the mortality, withdrawal or expense experience, to be released into profit. [1]

For unit-linked business, the non-unit reserves may well be negative ... [½]

... essentially, the VIF is already recognised as part of the net assets on the Solvency II balance sheet ... [½]

... *ie* the VIF has already been deducted from the liabilities by the use of best estimate assumptions. [½]

To include a VIF in the EV as well would be double counting. [½]

The investment return assumption used in a market-consistent EV and the discount rate assumption used under Solvency II are both based on risk-free rates. [1]

This suggests that there would also be no profit arising on investment experience. [½]

This all supports the view that to include the VIF element is unnecessary. [½]

The release of the risk margin could be considered as an element of VIF. [½]

However, this is already allowed for in the proposed definition by including the risk margin less the cost of holding it ... [½]

... therefore to include any VIF in respect of the release of the risk margin would be double counting. [½]

Reasons to include the VIF element

The insurance company may believe that the VIF it recognises under Solvency II is not the same as the profits it would choose to recognise in its EV. [1]

The Solvency II VIF is constrained by the Solvency II regulations, but the EV provides the company with more discretion in recognising VIF. [½]

For example, under Solvency II a company may be making use of either the matching adjustment... [½]

...or the volatility adjustment. [½]

As this company sells unit-linked savings policies it is unlikely it meets the requirement to be applying a matching adjustment on this business [½]

... as it is exposed to the liquidity risk of unexpected surrenders. [½]

In the calculation of the market-consistent embedded value a “liquidity premium” may be added to the risk-free rate. [½]

Therefore there may be differences between the Solvency II and MCEV discount rates ... [½]

... and so profits (or losses) will emerge over time which should be included in the EV calculation. [½]

Future profits can only be taken credit for up to any contract boundaries under Solvency II. [1]

In its EV, the company might wish to hold an element of VIF in relation to future profits arising beyond such boundaries, if they apply. [½]

This may be the case for this company as it sells flexible premium unit-linked business and may not be able to recognise profits in respect of expected, non-contractual future premiums on in-force policies under Solvency II. [1]

Therefore, it would be appropriate to include VIF in the calculation. [½]
[Maximum 8]

(ii) ***Publishing embedded value in future***

The company should consider how many other companies are not publishing. [½]

If most companies are not going to publish embedded values, it strengthens the argument for not doing so ... [½]

... although the circumstances and underlying business of different companies will be different, so there are valid reasons for them to reach different conclusions. [1]

An important factor will be the other information that the company is publishing and intends to publish and how well this other information informs the shareholders, analysts, *etc* of the company's performance. [1]

Previously, the embedded value was useful as neither Solvency I nor the accounts showed the VIF and so neither provided information on the profitability of new business written over the year. [½]

However, under Solvency II, the sale of profitable new business is reflected, and so stakeholders will get this information. [½]

All companies will be complying with Solvency II disclosure requirements. [½]

How well these disclosures reflect the company's view and performance depends on, for example, the extent to which the results are constrained by Solvency II rules, *eg* in recognising returns in excess of risk-free rate and premiums beyond contract boundaries. [1]

So, companies that have, for example, significant annuity business or, as this company does, flexible premium unit-linked contracts, may have a stronger argument to publish embedded value results. [½]

The incentive to publish EV results may also depend on the company's risk appetite and the value measure used within the company. [½]

If management decisions are made based on an embedded value measure, then publishing those results may be helpful. [½]

The decision will also depend on what information the company is providing in its primary accounts. [½]

For example, a company that has continued to follow UK GAAP until there is greater clarity about future IFRS developments may feel the accounting information it is publishing is not as indicative of the company's performance as it would like ... [1]

... whereas a company that has moved to a more fair-value approach in their primary accounts may see less value in continuing to publish embedded values as well. [½]

There is a significant cost to performing multiple sets of reporting in terms of staff time and expertise, systems requirements, audit controls and processes, *etc.* [1]

These may be made more onerous by the standards and timescales necessary for public disclosure. [½]

The tighter reporting timescales and more onerous requirements of Solvency II may themselves use additional company resources, and so may make the company less able to report on an embedded value basis, even if it has had sufficient resources to do so in the past. [½]

Any change, and in particular a reduction, in the company's published information will need to be justified to the users of that information. [½]

Ceasing to publish embedded value will reduce external analysts' ability to compare the company's performance with that of prior years. [½]

The company should consult with analysts and major shareholders to find out whether they find the EV useful and their reaction if it was withdrawn. [½]

The company should consider how to manage any transition, *eg* when to give notice of its intention not to publish embedded value, provision of a reconciliation between former embedded values and the new equivalent. [1]

[Maximum 7]

(iii) ***Determining each item in the analysis of change in EV***

When rolling the model forward to the end of the valuation period, there will be a change in VIF and net assets. [½]

Expected return on free surplus

The risk-free investment return assumption at the start of the year is applied to the free surplus at the start of the year. [1]

The free surplus under Solvency II is assets less the BEL less the RM less the SCR. [½]

Return on in-force business – expected return

This is the risk-free rate applied to the opening VIF. [½]

It is sometimes called the “unwind of the discount rate”. [½]

It represents the value of the expected future profits being closer in time at the end of the analysis period, and thus being discounted by less and so having a higher value. [1]

The size of this element is likely to be small given the small VIF under Solvency II. [1]

Return on in-force business – experience variances

The basic approach to determining the effect of experience variances on the net assets would be to:

- Roll forward the assets backing the BEL and the BEL to the end of the year using the beginning of the year BEL assumptions as the expected experience over the year. [½]
- As this roll forward is performed using best estimates of the experience, the assets and the BEL should still be equal at the end of the year. [½]
- Repeat the roll forward process but change one of the items of experience from the expected value to its actual value. [1]
- The change in the surplus at the end of the year gives the contribution from the item of experience. [½]
- Repeat this process changing each item of experience in turn to identify its contribution to the change in net assets. [½]

Under this approach the experience variance from each source depends on the order in which each source is analysed. [½]

The process for performing this analysis is the same as that carried out for the analysis of surplus, *ie* starting from the opening position and changing one item at a time. [½]

The company will also need to consider the impact of experience variances on the other components of the EV. [½]

If actual experience is different from expected, then the VIF, RM and SCR components of the EV will also change. [1]

So, an experience variance item will also be required for any difference in the actual releases of profit and capital to those expected. [½]

Return on in-force business – operating assumption changes

These will emerge if the BEL assumptions have changed. [½]

There will be separate operating assumption changes to consider for the EV experience (projection) basis. [1]

Assumptions underlying the risk margin or capital requirement calculations might also change (eg correlation coefficients), which could also impact the embedded value. [1]

The assumed “cost of capital” factor might also change (ie the parameters used to determine the cost of holding the RM and SCR), the impact of which would also need to be analysed. [½]

New business contribution

This is calculated as an increase in VIF plus an increase in net assets at the point of sale (assuming the new business is written on terms that are expected to be profitable). [1]

This could be assessed by simply taking the difference between the embedded value with and without the inclusion of model points that relate to new business written over the year. [1]

Investment return variances

In respect of the own funds, this item will include the difference in the change in assets backing the own funds over and above the assumed risk-free returns. [1]

Another component will be the impact of the assets moving differently to the movement in BEL. [½]

The actual return must be analysed against the risk-free rate plus any matching adjustment or volatility adjustment. [1]

There may also be an impact on the cost of holding the risk margin and additional capital. [½]

For example, the capital requirements may change due to actual investment returns being different from expected. [½]

In addition, there could be a contribution to the investment return variance if the risk-free yield curve moves differently to the asset yields. [½]

Investment return variance on the VIF will reflect the actual investment return differing from the discount rate being used to discount the future profits being taken credit for in this component. [½]

Effect of currency movements

This will include economic variances resulting from differences between actual and expected currency exchange rates. [½]

Effect of economic assumption changes

This will be determined in a very similar way to the investment return variance but will consider the impact of changing the assumptions for future economic experience (whereas the investment return variance considers the impact of having different economic experience than expected last year). [1]

Changes in economic assumptions may be shown separately or may be combined with investment return variances. [½]

[Maximum 13]

(iv) ***Impact on the embedded value of the marketing campaign and anticipated sales increase***

There will only be any impact if the company's expectation that the marketing campaign will significantly boost sales is borne out in reality. [1]

There will be no impact on the current embedded value as that does not take account of new business. [1]

Assuming that the business is normally written to be profitable on a best estimate basis, as would be expected to be the case, the future embedded value would be higher than otherwise. [1]

This will increase the new business contribution in the analysis of change in embedded value ... [½]

... although the affect of the marketing campaign specifically would not be separately identified. [½]

An increase in sales will not directly affect in-force business experience. [½]

However, if future new business is expected to increase then the company may reduce the per policy expense assumptions. [1]

This would increase the embedded value ... [½]

... and would come through in the analysis as an operating assumption change. [½]

It is unlikely that there will be a material impact on the experience variances, ... [½]

... although a small expense surplus may occur due to higher policy numbers to cover expenses. [½]

It is possible that the future mix of business will change, ... [1]

... for example, the average policy size and the choice of unit funds may change ... [½]

... but it will take some while before the full impact on the target market will be known. [½]

The cost of the marketing campaign may be included in the embedded value. [½]

This would reduce the embedded value. [½]

This may be treated as an exceptional item or a development cost in the analysis. [½]

The company may have to spend on systems and staff to deal with the increased business volumes. [½]

This spending would also reduce the embedded value and would partially offset the expense surplus items described above. [½]

[Maximum 8]

(v) ***Block of business for sale***

The first thing to consider is the assets allocated in respect of the business concerned. [1]

If the two calculations were based on different assets, the values would be different for this reason. [½]

For example, if the embedded value were based on £100 million assets and £105 million were transferred to the new insurer, this fact alone would lead you to expect a payment in respect of the business bigger than the embedded value by £5 million.) [½]

Consider how the sale price will be negotiated. It is likely that the purchaser and seller will both agree to use embedded value calculations to determine how much should be paid for the business ... [½]

... but if the sale price is agreed by some other means, it is not possible to comment on its likely size in comparison with the embedded value. [½]

If the embedded value is to be used, then need to consider the basis for the calculations. [½]

The sale basis is a question of negotiation. The purchaser (seller) will favour a basis that produces a lower (higher) embedded value. [1]

Whether this results in a higher or lower embedded value than one using the published embedded value basis will depend on the strength of the negotiating parties. [½]

Some of the features that may affect this are as follows:

- The sale of the business is not a “forced” sale. The seller is therefore not in a weak position and may be able to achieve a reasonable price for the business. Following this logic, the sale price may exceed the component of the embedded value. [1]
- Conversely, if the withdrawal from the market has a specific driver, *eg* changing capital requirements of this class of business under Solvency II, the seller may be in a weaker position and not achieve as good a price. [½]
- The published embedded value is market-consistent so should in principle give values achievable when selling a block of business. [1]
- The purchaser may base the negotiations on their own expense levels rather than the seller’s ... [1]

...so if the sale is achieved to a very low expense company, a price higher than the embedded value may be achieved because of the lower expenses expected to be incurred by the purchasing company. [½]

It is likely that any such synergy would be shared. [½]

- On the other hand, the sale price will need to allow for transaction costs ... [½]

... and the costs of the new company taking the business on board. [½]

- It may be argued in negotiations that the event of selling the business will cause a surge of lapses/surrenders. [1]

The purchasing company may insist on a very cautious (*ie* big) allowance for lapses in the sale price. [½]

This might make the sale price lower than the published embedded value. [½]

- There may be an argument from the purchaser that there will be greater uncertainty regarding the experience of the business post-sale. [1]

The purchaser may therefore push for greater allowances for risk margins and required capital, resulting in a lower embedded value. [1]

- Another issue is that the published embedded value will be based on assumptions set at a single point in time each year. The sale price is a one-off that may be determined between annual reporting dates. [½]

The sale price may therefore be higher or lower because of unusual current conditions (*eg* unusually high or low interest rates). [1]

Overall, with factors going in different directions, it is not possible to say which of the figures will be larger. [½]

[Maximum 11]

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