# EXAMINATIONS

September 1999

## Subject 402 — UK Fellowship Life Insurance

*Paper Two*

EXAMINERS' REPORT

**1** (i) The reduction in interest rates on government fixed interest securities will have implications for the statutory valuation bases because of the close matching of the assets and liabilities - and because the valuation interest rate for the liabilities is dependent on the yield on those backing assets.

If the yield on government fixed interest securities have fallen it is likely that the yield on other fixed interest securities will have dropped also.

It may be that the differential between these assets and the government securities will also be different – depending on the relative demand for these assets – and the reason for the fall – which could have implications for the security and hence the risk element of the yield.

The current valuation basis would be less than the actual yield that was being earned on those investments to allow for this.

**Term Insurance**

The term insurance contracts have guaranteed benefits and so will be backed principally by fixed investments.

The reduction in interest rates will tend to increase the reserves – the impact on surplus should not be great because they should be fairly well matched.

However, the extent will depend on the terms of the contracts and the relationship between the net and gross premiums will also be relevant.

If the reduction in interest rates means that the net premium hits the maximum percentage of the office premium permissible (to maintain an adequate reserve for future expenses) then there will be a gearing effect on the reserve increase.

If the reserve is held as a multiple of premiums and this still exceeds the minimum using a net premium valuation basis, then the reserve will be unchanged.

**With profits and Unit linked pension plans**

The reserves on unit linked products are in two parts – the unit liabilities themselves, and any additional non-linked reserves required for other benefits and in particular expenses.

The impact on the unit liabilities will depend on the assets in which the unit funds are invested.

The fixed interest investments will have increased in value – but it is not obvious what the impact will have been on the equities. However it is likely that they will also have increased in value to reduce yields if it is expected that the reduction in interest rates will continue. Overall the unit liabilities will probably have increased.

The impact on the non-linked reserve also is not obvious as the reduction in the interest rate will tend to increase the reserves but to the extent that there are charges related to the size of the fund then these will also probably have increased.

The change in unit funds will impact the surplus directly if there are shareholder funds invested in units (they will not be under-invested because of the close matching)

The potential impact on the unit-linked charges is likely to be greater than the impact of the discount rate and so the change in the non-linked reserves will increase the surplus.

The with profits pension contracts will be valued using the net premium method.

The benefit will be taken either as the guaranteed cash fund and reversionary bonuses at retirement or as the deferred annuity that these amounts can secure on the annuity rates guaranteed in the policy document, whichever gives the higher result.

Depending on the valuation basis adopted by the company, it may already have been valuing the contract as a deferred annuity, although this is unlikely with interest rates at 10%.

If not following the fall in fixed interest yields to a level below the interest rate underlying the annuity guarantee, the company will now be forced to switch to such an approach.

This will be reinforced by improvements in annuitant mortality since the basis for the annuity guarantee was set. Current mortality levels may be lighter than those assumed in the basis, increasing the difference between the guaranteed annuity rates and those currently available in the market.

In addition, allowance will have to be made in the statutory valuation for the impact on the value of the guarantees of future improvements in mortality and for the expenses of setting up and paying the annuities, both on a prudent basis.

The reduction in fixed interest yields will have caused the valuation reserves for the contracts to have risen sharply. This is because of the long average term of the contracts when viewed as deferred annuities.

There will have been some capital appreciation from any fixed interest securities backing the contracts. However, this will have been significantly lower than the rise in the liabilities as the mean term of the available investments is too short, to match the corresponding liabilities.

A specific additional sterling reserve will be required for the annuity guarantee under the unit-linked contracts.

The company should already have been holding an additional reserve for the annuity guarantee, even when fixed interest yields were above the interest rate underlying the guarantee. This is to allow for the costs arising from a possible future fall in yields

This will probably be calculated using stochastic methods. The principal variables will be the investment return each year on the funds to which the contracts are linked and the fixed interest yields available when each policy matures.

The starting point for fixed interest yields in the stochastic model will be reduced to reflect the fall in actual yields.

In addition, the fall in yields may well have been accompanied by a rise in the value of the unit-linked funds. Both these will result in the additional reserve rising.

Other changes may be required to the assumptions underlying the model. For example, it may be reasonable to assume a lower future investment return on the unit-linked funds, given the fall in yields. This will reduce the increase required to the additional reserve.

Overall, the additional reserve is likely to have risen sharply. Unlike the with profits case, there will be no offset from the increase in the value of the assets backing the basic liabilities. This will have accrued to policyholders through a rise in the value of their units. Hence, surplus will have fallen sharply.

However, there will probably have been some benefit from the increase in the value of the assets backing the additional reserve. The latter should have been invested in the funds to which the contracts are linked.

For similar reasons the resilience test reserves will also increase significantly.

(ii) Because the embedded value (EV) is being calculated for profit reporting purposes, the company will need to take into account the change in investment conditions because it is likely that the basis used will be published and therefore would be questioned if it were not reviewed.

The principal impact of the reduction in interest rates will be on the valuation of assets, the assumptions regarding future investment returns and expense inflation and the discount rate.

The extent of the change will depend on whether the company uses an active or a passive approach to setting its EV basis.

An active basis would result in the basis directly reflecting the current investment conditions, whereas a passive basis would require a review of the current long term investment yields. Given the extent of the change it is likely that some reduction in yields is required but probably not necessarily to the current low levels.

The reduction in interest rate on government fixed interest investments will be replicated in the yield on other fixed interest investments, although the additional yield will probably not remain at 0.5%. Consideration would need to be given of how much of the additional return should now be allowed for in the EV basis.

The assumed return on equities will also need to be reviewed. This needs to be considered in two parts – the current valuation of equities and their future yield.

The company may smooth the value of equities if it is using either the active or the passive method. Thus the company needs to consider whether the current smoothed value is appropriate.

The future yield is made up of the dividend yield and the future capital growth. Both elements will need to be reviewed in the new investment conditions

The rate of return on equities would be consistent with the assumed returns on fixed interest investments and would continue to reflect the greater risk involved. However, the company would need to consider whether the margin of 2.5% over government securities was appropriate.

The change in the economic conditions may also have implications for other elements of the basis such as persistency, e.g. because of redundancies/lower salary growth affecting affordability and competitiveness of alternative products.

The expense inflation rate will need to be reviewed – it is likely that lower investment returns will lead to lower inflation rates.

The discount rate must be convenient with other economic assumptions and will reduce proportionately.

(iii) **Term Insurance**

The EV for a term insurance policy is primarily driven by the difference between the annual and expected future mortality.

Thus the reduction in the discount rate on the value of these future margins will have a bigger impact than the reduction in interest rate.

The impact will therefore be to increase the embedded value for this product – unless there are large statutory reserves.

**Unit linked Pensions plan**

The main embedded value profit driver on a unit linked pension plan with a level allocation rate will be the difference between the office and allocated premiums.

There will be other profits arising from the differences between the annual management and other expense charges and the actual expenses.

There may also possibly be a small amount of mortality profits.

The biggest impact will be the increase in the value of the margins in the premiums from the reduction in the discount rate.

There will be a lesser impact from the decrease in the value of fund management charges due to the reduction in the yield on the unit funds.

There may also be a small increase due to the reduction in expense inflation, particularly if there is a fixed policy fee, and this may also result in an increase in surplus due to lower sterling reserves.

Overall it would be expected that the embedded value would increase for this product.

For the with profits contracts the lower interest rates will lead to lower bonuses and hence shareholder transfers. This may be offset by the lower statutory valuation increasing the value of the shareholders' transfer and by the lowering of the discount rate.

The EV of both the with-profits and unit linked products will both be decreased by the increase in the reserves for the guaranteed annuity.

(iv) For the with profits contracts, the fall in fixed interest yields will have resulted in the benefits under the contracts changing from cash to annuities. As a result the mean term of the liabilities will have risen.

The company should therefore consider increasing the mean term of the assets backing the contracts. This will entail switching to longer-dated fixed interest securities.

Even after such a switch, the mean term of the company's fixed interest portfolio is likely to remain below that of the liabilities, leaving the company vulnerable to a further fall in yields. It may therefore wish to consider alternative investments such as interest rate swaps.

The precise action will depend on the size of the company's free assets relative to that of its liability for annuity guarantees, and on its view of future changes in fixed interest yields — in particular, whether the fall is permanent or likely to be reversed in the near future.

The company may wish to explore ways of alleviating the rise in its statutory reserves. For example, switching from government to other fixed interest securities in order to increase the yield of the fund. The effectiveness of this would depend on the extent to which allowance could be taken in the valuation for the higher yield.

The increase in liabilities will probably have reduced the company's free asset ratio, although the precise position will depend on the extent of any rise in asset values. The company should therefore review the asset mix of its with profits fund, possibly with a view to reducing its exposure to equities.

The company will also need to decide how to apportion the cost of the annuity guarantee amongst its with profits policyholders and shareholders.

It may decide to continue to pay retirement benefits equal in value to asset share, provided this is sufficient to secure the annuity obtained by applying the guaranteed rate to the guaranteed cash benefits under the policy. If so, the cost of the guarantee, in terms of the excess over asset share, may not be significant.

At the other extreme, it may decide to set the retirement fund equal to the asset share and apply the guaranteed rate to this amount. Here, the cost may be substantial and would have to be apportioned amongst:

- Those policies with the guarantee, through a reduction in bonus rate.
- Other with profit policies, through a general reduction in bonus rates.
- The company's inherited estate.
- Shareholder funds.

The precise choice of approach will depend on the terms and conditions of the relevant policy documents, past communications by the company on the subject, the amounts involved and the company's wider bonus philosophy.

Whatever the choice, the company may include a charge for the guarantee in the calculation of asset shares for the contracts concerned

It will probably also reduce reversionary bonus rates for the contracts, in order to reduce the rate at which the policy guarantees accumulate.

The company will have no discretion as to how to operate the guarantee under the unit-linked contracts, as the rate clearly has to apply to the value of the units at retirement.

As a result, most of the cost will be met from the with profits fund or from the shareholders' fund, or from a combination of the two. The factors influencing the choice are similar to those for the with profits contracts.

The reasonable expectations of the with profits policyholders will need to be carefully considered if the cost is to be met from the with profits fund.

The company may seek to obtain a contribution to the cost by increasing the variable charges being levied under the contracts. Again, the reasonable expectations, this time of the unit-linked policyholders, will need to be considered.

The company may wish to protect itself from the cost of the guarantee rising through a further fall in fixed interest yields. This can be achieved through

purchasing suitable derivative instruments. Consideration will have to be given to the admissibility of the resulting asset.

The company is also vulnerable to the cost of the guarantee rising through the growth of the funds to which the contracts are linked. Again, some protection can be obtained from this through the use of derivatives.

If the guarantee is still present under the contracts being marketed, it should be removed. This applies equally to increases under existing policies, although such action may be precluded by the terms of the policy document.

The company may look for financial assistance through financial reinsurance to convert part of the present value of future profits expected to arise on a specified block of its in-force business to cash.

*Comments:*

*(i) Generally well answered, although some candidates did not go into enough detail on the effects of annuity guarantees.*

*(ii) Most answers did not deal with the effect on non-gilt fixed interest returns and equity returns.*

*(iii) Generally well answered.*

*(iv) Not well answered. Many candidates did not give enough detail about the effect on investment strategy, or the possible ways of reducing the additional liabilities.*

## 2

(i) The bank may be cash rich and looking for strategic development in the life assurance field.

The acquisition target may be cheap.

Bancassurers typically have cost effective distribution but are limited to their existing current account holders as a target market. So expansion of their target market may be the reason for the acquisition.

The bank may see the customers of the insurance company as a potential cross-sale opportunity into the banks products e.g. current account, loans etc.

Expansion of the distribution channels available to the bank i.e. IFA or Direct Sales. Increasing market share without expansion into new distribution channels will simply increase the costs to the bancassurer and therefore dilute any cost advantages it may have.

Typically Bancassurers have simple products, so the rationale may be to extend its product range. Examples of such product gaps are With-Profits policies, Healthcare policies etc. [Marks available for any sensible examples].

The Bancassurer may have products which it could really sell into say the IFA market. But without the infrastructure or Brand to sell into the IFA market.

Bancassurers typically offer lots of derivative-based single premium products the difficulty of purchasing derivatives in the current market may force such companies to look to selling other types of policies.
The Bank may feel that it is the simplest and most cost effective way of expanding life insurance expertise in any of the following areas:

- Actuarial skill
- Marketing skills
- Sales force (e.g. Pensions expert or Corporate salesmen)
- Product experience (e.g. Healthcare)
- Systems (IT staff)
- Asset management expertise

Geographically the fit of the bank and the insurance company may be very good. For example the traditional big four have a low presence in Scotland so purchase of a Scottish life company may give good synergy.

The acquisition target may be a significant player in a niche market which the bank expects to be a development area. E.g. Healthcare, Annuities (unit linked, With-Profit), Group market (post Stakeholder)

With government intervention and increased regulation companies may currently be cheaper than the costs of an acquisition. Pensions mis-selling may have also artificially reduced the market value of some companies.

The economies of scale within this labour intensive industry may be the reason for acquisition. It may give both companies critical mass within the current competitive market.

The acquisition target may be a composite insurer which may be a key acquisition criterion for the bank.

Considerable savings/improvements may be available in the asset management area. Only one asset management company will be needed and the new company could "cherry pick" the best fund managers within each segment of the market, giving significantly improved investment performance.

The revised company would only require one management structure saving significant costs.

(ii) Target companies may be too expensive

The economies of scale may not be available

If economies are available the cost of attaining them (i.e. management cost or "redundancy cost") is prohibitive

The capital requirements of an acquisition are too high

The bank may believe it has more efficient use for its capital

The brand of the acquisition target may not fit with that of the bank

The massive compliance and regulatory requirements and associated risk are considered too high

The newly acquired distribution channel (e.g. IFA) may not react positively to the purchase

The purchase will involve buying many legacy issues which may not be known at the time of purchase

Legacy issues which may surround such an acquisition include:

- Systems (which may be poorly maintained, documented, be obsolete, be non Y2k compliant)
- Some of the products may contain guarantees etc which cause problems e.g. Annuity Guarantee on many pension products

If the acquisition target is a with profits provider the new company will be locked into the bonus philosophy created in the past. Due to the PRE created. This may mean that there is poor use of capital.

The presence of small product line sold in the past by the life company will potentially mean that key individuals with historic knowledge may need to be retained to manage the run off of these products.

This implies the company is highly exposed to losing these key individuals.

Investigation into a potential acquisition target is complicated and expensive and any detailed investigation may become public knowledge which may artificially inflate the price.

If a mutual life company is to be purchased the issues surrounding any take-over become more complex, with the establishment of how to deal with the "owners" clearly difficult to establish and agree.

Recently some mutual companies have been hit by equity market volatility exposing a potential lack of capital. Because of this acquisition opportunities may arise BUT this may mean the bank has to inject more capital than hoped or it has available.

The bancassurer may require a high return on capital because of the risks involved. A company with experience of such acquisitions may value the target company more highly because it is not as worried by the risks.

The new government proposals such as Stakeholder pensions may be a significant blow to the IFA sector and because of this uncertainty it may not be the right time to make an acquisition.

The target company may also reject the bid.

(iii) Alternative

(A) DO NOTHING

The simplest alternative is to do nothing leaving both companies in exactly the same positions as they were before any take-over was considered.

This may be a sensible alternative if no suitable companies are available.

(B) DEVELOP THE NEW DISTRIBUTION CHANNELS OR PRODUCTS IN HOUSE

The positives of this approach are:

- The bank can proceed at is own pace
- You can test ideas and approaches without incurring significant expense
- Avoid any legacy issues
- Allows the company management to focus on areas it feels add most value

The negatives of this approach are:

The bank may lack the expertise

It is a slow way of penetrating a new distribution channel

The basic infrastructure required to say launch an IFA distribution network may be massive and highly inefficient for a small launch

The bank brand may not be considered credible in the market place.

(C) PARTNERSHIP

The polarisation rules make the setting up of partnerships very difficult if not impossible.

(D) JOINT VENTURE COMPANY

Positives of this approach are:

- This would be an excellent way to fill a product gap and use another companies expertise in say a niche market.

- No legacy issues would be created.

Could use the expertise of both the two companies without the risks inherent in a take-over.

The negatives of this approach are:

No ready made distribution
No ready made brand
Set up cost may be high but would be shared with partner.

Would lose some element of control

(E) MERGER

- This is very similar in outcome to a take-over and the same issues as in a take-over will occur
- A merger is likely to be on a more friendly basis
- Mergers are likely to be viewed by the market as a take-over so care is required
- The initial cost on a merger are likely to be lower
- On a merger the decision makers are less clearly defined.

*Comment:*

*(i) Generally well answered.*

*(ii) Not well answered. Most answers did not contain enough material to gain a good mark.*

*(iii) Not well answered. Many candidates concentrated on internally generated growth, and did not deal with other alternatives in enough detail or at all.*