

REPORT OF THE BOARD OF EXAMINERS ON THE EXAMINATIONS HELD IN

April 2002

Subject 402 — UK Fellowship Life Insurance

Paper Two

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. The examiners are mindful that a number of interpretations may be drawn from the syllabus and Core Reading. 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.

The report does not attempt to offer a specimen solution for each question — that is, a solution that a well prepared candidate might have produced in the time allowed. For most questions substantially more detail is given than would normally be necessary to obtain a clear pass. There can also be valid alternatives which would gain equal marks.

K Forman
Chairman of the Board of Examiners

25 June 2002

EXAMINERS' COMMENT

Question 1

Parts (i) and (ii) were largely bookwork and in general were answered well.

In part (iii), most candidates discussed the use of a reduction to bonus rates to meet the cost of the additional claims, but few addressed the alternative approaches to allocating the cost by policyholder.

Answers to parts (iv) and (v) were generally reasonable, if somewhat superficial in places.

Question 2

Few candidates addressed parts (i) and (ii) in any depth.

Part (iii) was mostly bookwork and was answered well.

Candidates generally made a reasonable attempt at the numerical example in part (iv), though few arrived at the correct answer.

1 (i) The possible sources of policyholders' reasonable expectations are:

- Marketing literature
- Policy documentation
- Press releases and public statements
- Benefit quotations at outset and during the course of the policy
- With Profits Guide
- Report & Accounts
- Bonus notice mailings
- Established internal practice and documented principles
- Past practice
- Policyholder correspondence

(ii) The asset share under a policy is the accumulation of the premiums paid less "deductions" plus "allocations" at the investment return earned.

It is not possible to attribute directly particular assets to particular policies for with profits business so the calculation of the investment return will need to involve a notional hypothecation of assets to policies within the fund.

The investment return will then reflect the proportion of assets in each asset category together with the return on that asset category.

Deductions would include commission, expenses, tax, and the cost of life cover.

A deduction may also be made in respect of the cost of providing guarantees and smoothing in order to provide an appropriate return on capital employed or to build up the capital base of the company.

There may be an allocation in respect of profits from without profit business or surrender profits.

Terminal Bonus

The company would calculate asset shares for a range of sample policies maturing in the next year for its main classes of business.

This range would include policies of different original terms.

These asset shares would then be compared with the basic benefit plus declared reversionary bonus under the policies.

If the company wanted to pay out asset share under the policy, it would set terminal bonus so as to equate these two amounts.

However, asset shares are only a guide to help in setting bonus rates — they are not what the policyholder is entitled to.

Policyholders will expect the benefits under the contracts to be smoothed.

Otherwise they would have taken out a unit-linked policy.

One element of this smoothing is smoothing out peaks and troughs in investment markets from year to year.

The company will therefore calculate the changes in payouts and asset shares in recent years and the projected change in asset shares for a policy of a given term over the next few years.

For instance, if the asset share is projected to decrease over the next few years then the company is likely to set terminal bonus rates which are lower than they would otherwise have been. This is so that it is possible to keep payouts broadly in line with asset shares in the future without requiring large changes in future payouts.

The extent to which payouts are smoothed from year to year should be consistent with past practice and policyholder reasonable expectations.

Payouts will also be smoothed between contracts of different terms.

In practice, for admin simplicity, the company is likely to have one terminal bonus scale for policies of different premium sizes.

Since the terminal bonus required to equate asset shares with payouts will vary with premium size, payouts are also effectively smoothed between policies of different size.

Reversionary Bonus

The reversionary bonus depends more on expected future returns than returns over the last year.

In setting it one of the main aims is to ensure that the level of guaranteed benefits under the policies do not become too onerous.

If they did then the company would be forced to invest a higher % of its assets in fixed interest securities which would probably have an adverse impact on the investment returns achieved.

When setting reversionary bonus rates, the company will therefore take into account a comparison of projected asset shares with the projected basic benefit plus declared bonus for sample policies maturing in future years on a given reversionary bonus rate assumption.

It may aim to set reversionary bonus rates so that the proportion of final benefits which are made up of terminal bonus remains similar over time and will vary the reversionary bonus rate assumption until it is comfortable about the level of projected terminal bonus.

It will also take into account the projected future statutory solvency position of the company under various future investment scenarios and ensure that it is comfortable with this

It has to check that there is sufficient surplus available in the fund to finance the intended reversionary bonus rate

Any changes in reversionary bonus from that declared in the previous year will have to be consistent with policyholders' reasonable expectations

This will limit the extent to which reversionary bonus can be changed from that declared the previous year

This means that it may not be possible to keep the proportion of total benefits which are made up of terminal bonus stable over time as asset shares can move more quickly than the basic benefit plus declared bonus

The company will want to ensure that the reversionary bonus rate for life contracts is consistent with that for pension contracts taking into account any differences in experience and differences in product terms.

In doing this it will want to ensure that the projected % of final benefits which are made up of terminal bonus is consistent for life and pension contracts.

Competitive Position

The life company will want to ensure, as far as possible, that its payouts are high relative to its competitors.

Past performance tables appear in the trade press which will enable advisors to see the level of maturity payouts compared with those of other companies.

Members of the public may also be aware of this from articles in the national press.

Better past performance is likely to lead to higher new business levels.

As a mutual company, one of its aims will be to maximise the returns for its with profits policyholders.

However, the company will be limited in the extent to which it can pay more than asset share by the level of its free assets.

Continuing to pay more than asset share over a sustained period will erode the free assets with a potentially adverse impact on its future investment freedom and its ability to write significant volumes of new business.

If there are not many policies maturing in the following year then the financial impact of paying more than asset share will be less.

However, artificially increasing payouts due to low volumes of maturing policies so as to improve the position in the past performance league table may be considered mis-leading to potential policyholders if it does not give an accurate guide as to future potential performance and may set unreasonable policyholder expectations.

Terminal bonus rates will have a bigger impact on the level of maturity payouts.

This is because the impact on changes in reversionary bonus levels on total payouts only builds up slowly over time.

However, there may also be competitive pressures to maintain reversionary bonus rates at their current level (or to increase it).

Other

The company will want to consider whether there have been any one off events over the last year which will have impacted on the surplus earned and which it should take into account in its bonus declaration.

An example might be significant mis-selling provisions (mark for any other reasonable example).

It will need to take into account any relevant court judgements or professional guidance,

If there is a significant one-off profit the company may want to distribute this as a special bonus rather than reversionary again so as not to impact PRE.

- (iii) One approach would be to write off the cost to the free estate.

The extent to which this would be possible would depend on the size of the estate relative to the losses.

As a mutual, the estate is its main supply of capital so using it in this way may restrict its investment freedom or the levels of future new business which it can write.

On the other hand, if the estate is large enough to bear the cost, this approach would improve the payouts which can be made on its policies compared with

what would otherwise be the case, and would therefore be beneficial to those policyholders whose policies are about to mature.

If there is no end in sight to the epidemic, then the ultimate losses will not be known so a final decision to be followed in all future years may not be possible at this stage.

If it is decided to reflect the losses in the bonus declaration, a decision is also required as to whether this will impact on the bonus rates of all with profits policies or only the life policies which have given rise to the losses.

On the one hand it may be felt fairer to reflect it only in the bonus rates for life assurance policies since the experience relates to those policies.

At the other end of the spectrum, the company may take the view that the only difference in the bonus rates between the life and pension policies should reflect the different tax treatments of the business, and that all other experience should be shared over all policies.

It needs to consider whether there have been any comparable occasions in the past where it has reflected the experience of one line of business in the bonus rates for that line of business only.

If there have not been any such occasions then it might be difficult to justify such an approach on this occasion.

It also needs to consider what it has said in its marketing literature about how it will treat such losses.

If this literature is unclear, then it again might be difficult to justify reflecting the experience in the bonus rates of the life policies only.

If the life and pension business is written in the same fund then it is more likely that the experience will have to be spread over both lines of business.

The company would also need to consider whether there was any standard industry practice or guidelines or any relevant legal opinions.

The next decision is whether to reflect the experience in the reversionary or terminal bonus rates.

If it is thought that the effect of the epidemic is likely to have a significant long term impact then it is more likely that the reversionary bonus will be adjusted.

Otherwise the level of guarantees under the policies may become too high relative to the asset shares, eroding the company's free assets.

On the other hand, if it is expected that the impact will be short term, then it may decide to reduce terminal bonus rates as the reduction in free assets will be a temporary feature and not significant.

At this stage the company is unlikely to know how long the impact will last so it may choose to adjust terminal bonus rates initially and then subsequently adjust reversionary bonus rates if it lasts a long time.

The final decision is how much it should reduce its payouts by in order to reflect the losses.

Immediately reducing the payout levels by the extent of the losses is unlikely to be consistent with policyholders' expectations of the smoothing of benefits under with profits policies.

In deciding on this, the company will need to take into account its past practice in respect of changing terminal bonus levels.

- (iv) Under a conventional with profits contract there is no direct correlation between investment return earned and reversionary bonus rates.

The structure of a conventional with profits contract therefore makes it very difficult to explain to a policyholder how their policy is performing during the duration of that contract.

This causes problems in the current environment where it is important to demonstrate that a with profits policy is providing good value.

To this extent, regular reporting of asset shares would make it easier to demonstrate the performance over the last year to a policyholder.

An explanation of how payouts are derived from asset shares will also demonstrate to a policyholder that they are not being "ripped off" by the company,

This should help improve the marketability and persistency of with profits contracts.

Also, without such consumer friendly practices, it may be difficult to convince the regulators of the benefits of with profits policies.

This, in turn, may lead to undesirable regulations on the levels of guarantees and greater reserving requirements.

However, disclosure of individual asset shares may give policyholders the impression that they are entitled to the asset share under the contract.

Asset shares are only a guide to help set bonus rates which should also take into account other factors such as the smoothing of payouts.

If asset shares are going to be disclosed on an individual level it will be very important to ensure that policyholders appreciate the importance of other factors in setting bonus rates.

In particular, it will be necessary to demonstrate to policyholders the benefits they get from smoothing, particularly since a charge will have to be taken from asset shares for the cost of this.

A particular risk is that policyholders view asset shares as a minimum payout under their contract.

Whilst they will be happy with the smoothing of payouts in an upwards direction, they are likely to complain if payouts are smoothed in a downwards direction.

If the company only smoothed returns in an upwards direction then there would be an erosion of the free assets of the company which may eventually endanger its ongoing solvency.

They also may complain if reversionary bonus rates are reduced when asset shares have shown an increase over the year.

This is possible if future investment returns are expected to be lower than past returns but policyholders are unlikely to appreciate this.

Policyholders' expectations need to be carefully managed.

Very clear marketing literature would be required to explain how benefits are related to asset shares.

Particular care would be needed if communicating asset shares close to the maturity date if current maturity payouts differ significantly from asset share.

Although it is likely that no matter how well the letters are drafted, a large proportion of policyholders will not understand the information given to them.

Whilst it is probably possible to disclose current smoothing rules, it is not possible to guarantee that these will always apply in the future.

If this was guaranteed then policyholders could select against the company if they had any choice about the date on which they took the benefits under their contracts.

A guarantee of smoothing rules would also significantly increase the reserving requirements since the company would effectively be guaranteeing what it would be paying under the contracts in particular circumstances.

This would reduce the free assets of the company and may restrict the investment freedom and hence the potential returns under the policy.

There would also be a risk of anti-selection if surrender values exceeded asset share and policyholders were aware of this.

The company will need to ensure that its administration systems are capable of calculating the asset shares on an individual policy basis for all its policies,

Otherwise, the suggestion may involve significant systems development costs.

There will also be costs involved in mailing the policyholders on an annual basis to inform them of their asset share and in answering the questions which this mailing is likely to generate.

The final decision on whether to proceed with the suggestion is likely to depend on the practice of other companies.

If other companies are adopting this approach then the company is likely to have to do so as well, notwithstanding the difficulties.

If not, they are likely to come under increasing pressure from the marketplace and the regulators.

- (v) Under the proposal there is no attempt to reflect the impact of smoothing in the projections.

Thus, the projections issued after a very good investment year will be markedly higher than those issued the previous year.

It is probably unrealistic for the policyholder to assume that the eventual maturity payouts will fully reflect the impact of a very high return in the previous year.

This is particularly true for single premium policies where the projected asset shares are much more sensitive to the investment returns earned in individual years than is the case for regular premium policies.

Since the projections would be issued annually, the volatility in them from year to year might give the policyholders a misleading impression of the potential volatility of their final payout.

Clear communication of the smoothing methods would be required — even then a large proportion of policyholders probably will not understand them.

The proposals will also give mis-leading projections for policies close to their maturity date where maturity values are currently significantly different from

asset shares and are expected to remain so by the time the policies mature due to the company's approach to smoothing.

There is also no attempt to ensure that the projections for policies of similar original terms and terms gone will be consistent.

There may be considerable variation in the current asset share of these policies, and hence in the projected benefits, but the smoothing of with-profits payouts means that their final payouts are likely to be similar.

There is also no attempt to reflect any cross-subsidies by size which are inherent in the bonus declaration methods.

Policies of different premium amounts may get the same bonus rates in practice but under the proposal, the future bonus rates implied by the projected benefits would be different.

Even if companies attempted some sort of smoothing of the projected amounts, it is unlikely that all companies would adopt a similar approach unless detailed guidance was issued.

It is also unrealistic to expect that the company will be able to calculate the exact asset share under a particular policy on its policy anniversary.

It may only calculate the investment return earned on its with profits assets on a quarterly or annual basis.

This is likely to be the case if the calculation requires a notional split of the assets in the fund across different product categories as this requires a valuation of the without profits business which is time-consuming.

It is possible that the company could devise an approximate approach for calculating the investment return since the previous year end.

Even then, it is by no means certain that the admin systems will be capable of calculating individual policy asset shares and significant development work may be required.

The company may have an intention to target payouts on less than asset share (for example, as a charge for use of capital). There is no allowance for this in the proposals which will show projected asset share as the projected benefits.

The projections would then systematically overstate the likely maturity payouts.

The proposals set out a specified investment return. There is no allowance for the fact that the asset mix may vary significantly between companies.

Equity-type investments tend to produce higher long term returns than fixed interest investments, so the basis may be more realistic if the investment return used reflected the expected asset mix.

Also, only showing the projected benefits on one investment return assumptions may lead the policyholder to think that they will get a payout close to the illustrated amount whatever the actual return achieved were to be.

In reality, the future payouts may be very sensitive to the investment return earned if the outstanding term of the policy is long.

The policyholder would get a better indication of this sensitivity if figures were shown on two alternative investment return assumptions.

The proposal to reflect expected future charges in respect of guarantees makes sense if the company intends to make such deductions from its asset share calculations.

However, the proposal to allow for future profits from without profits business could be problematic.

It is very difficult to predict the volumes of and profit from future new business.

Further detailed guidance would be required to ensure consistency of approach between companies.

Consistency is important so as to remove the possibility of manipulating the figures which should be one of the prime aims of the regulators.

It is likely that any such guidance would have to be based on recent levels of profits and it may not be reasonable to assume that these will continue into the future.

More guidance would also be required on the calculation of the expense levels to be assumed.

Otherwise, this may be another way for companies to manipulate the figures since any expense allocation is necessarily a subjective decision.

The regulators should try to ensure consistency between the expenses used in the projection and those which will ultimately be used in the asset share calculation.

An assumption will also have to be made about future renewal expense inflation levels which should be consistent with the investment return assumption.

An assumption will also be required about future mortality experience.

- 2 (i) The purpose of a resilience test is to increase the probability that the assets backing the mathematical reserves established by the insurance company together with future premiums if appropriate are sufficient to meet the expected outgo on future expenses and benefits in all reasonable circumstances without recourse to further finance.

The supervisory valuation basis establishes mathematical reserves that will be adequate for this purpose in the investment conditions that persist at the valuation date.

This is largely because the minimum statutory valuation basis depends on either a gilt yield index at the valuation date (for investment of future premiums or reinvested income) or on the actual yield of the company's assets (where there is no future investment).

If investment conditions change immediately following the valuation, the value of the company's assets will alter. Changes in interest yields will also alter the minimum statutory liability valuation basis, and hence will alter the value of the company's liabilities.

It is necessary to ensure that the value of assets is greater than the value of liabilities in the changed investment conditions (although no new resilience reserves are required under the new conditions).

If this is not the case then sufficient additional assets need to be earmarked to cover the liabilities in the event of a change in investment conditions.

The regulations prescribe that the valuation should be resilient to changes in investment conditions.

Until late 2001, the Government Actuary suggested to Appointed Actuaries the sort of change that he considered reasonable to test against. Subsequently Appointed Actuaries have been expected to use their own judgment, taking into account relevant features of the assets and liabilities.

If the main supervisory basis contains margins, these can be removed when the resilience scenarios are considered, provided that the basis used in the resilience scenarios still meets the regulatory requirements. Thus a supervisory basis with considerable margins may not require any additional resilience reserve.

The necessary additional assets are earmarked by establishing a resilience reserve on the liability side of the balance sheet, or by strengthening the valuation basis.

The Examiners were aware that this concept is not too easy to explain in words, and hence marks were also awarded for well-constructed diagrams.

- (ii) For regular premium contracts, the fall in equity markets will lead to a rise in equity yields. This will lead to an increase in the valuation rate of interest for contracts which are notionally backed by equities and hence a reduction in the size of reserves. This reduction in reserves is unlikely to be as large as the reduction in the market value of the assets backing the contracts.

The extent to which the valuation rate of interest can be increased for regular premium contracts is limited by the fact that the maximum rate of interest which can be assumed for premiums invested in the future reflects fixed interest yields.

Falls in fixed interest yields will cause the valuation basis for without profits regular premium contracts to be strengthened as these are notionally backed by fixed interest investments.

The falls will also limit the possible reduction in reserves for with profits contracts, due to the restriction on the yield for the investment of future premiums.

For single premium contracts, a strengthening may also be required, as fixed interest yields will have fallen. The fall in equity prices will have increased yields, however, and this might reduce or even cancel out the need to strengthen the basis, depending on the assets backing the particular contracts. This is more likely than for regular premium contracts as there is no restriction relating to the investment of future premiums.

Rises in fixed interest yields will enable the valuation basis for regular premium contracts to be weakened. However Regulations prescribe a maximum valuation rate for reinvestment of future premiums or other income. Thus the liability basis may not be able to be weakened enough to match the fall in asset values.

For single premium contracts there may be scope to weaken the liability valuation basis sufficiently to match the fall in asset values.

Finally the reduction in equity market values will reduce future annual management charges for linked contracts, thereby tending to increase the non-unit reserves needed.

It is thus necessary to test these scenarios, because it is not obvious that asset and liability values will move in step. Whether a resilience reserve is needed will depend on how well assets and liabilities are matched.

- (iii) Regulations require that the valuation basis is set with a prudential margin for adverse deviation in each element.

For expenses, an adverse result will occur if expenses exceed valuation allowances.

It is normally clear in which direction a mortality margin should be taken in order to be prudent, depending on the type of contract.

Margins need to be taken in each element of the basis. It is not possible, within the regulations, to assume that margins in one element can offset adverse experience in other elements.

(iv)	Main Valuation	Resilience Scenario
Asset yield (half yearly)	5.2%	4.1706% (from line below)
Asset yield (annually)	5.2676%	4.21408% (= 5.2676 × 0.8)
Max liability valuation rate	5.14%	4.11%
Valuation rate used	5%	4%
Value of assets	$250\text{m} \times [0.035 a_{28} (@2.6\%) + v^{28}]$	
a_{28}	19.715886	21.04796
v^{28}	0.487387	0.561087
Value of assets	£294,360,757	£324,441,392
Annual outgo	$23,700,000 + 10,000 \times 25 = 23,950,000$	
Value of liabilities	279,783,900	317,553,050
Value of matching assets	279,783,900	308,374,920
Asset shortfall		£9,178,130
Resilience reserve	$9178130 \times \frac{294360757}{324441392} = £8,327,000$	