Faculty of Actuaries **Institute of Actuaries**

EXAMINATIONS

April 2004

Subject 402 — UK Fellowship Life Insurance

Paper Two

EXAMINERS' REPORT

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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1 (i) The decision is likely to have been driven by a lack of capital. As a mutual the company has no ready access to additional capital. Albeit limited additional capital is available through sub-ordinated debt or financial reassurance arrangements.

The statutory free assets are made up of the estate (total assets less realistic liabilities) plus the difference between realistic liabilities and statutory liabilities (essentially asset share less reserves for wp contracts)

Writing new business causes new business strain since initial expenses plus commission plus the reserves that need to be set up exceed the premiums paid. This will act to reduce the free assets of the company

The recent increase in new business will have acted to increase new business strain and reduce free assets. The company is likely to have carried out financial projections of estate and of statutory free assets based on a set of financial scenarios and predicted new business volumes. These may have shown that the future free assets will be reduced to the extent that investment freedom will be restricted. This would lead to a higher proportion of fixed interest assets and lower potential returns to with profits policyholders

The alternative to this reduced investment freedom would be restricting new business volumes. This might lead to dis-economies of scale, reduced profitability, and reduced enhancements to with profits asset shares in respect of the profits on the UL business.

The company may expect the recent reduction in volumes of with profits business to continue. Since part of the free assets essentially relate to the difference between with profits asset shares and statutory reserves, reduced volumes of with profits business would cause this part of the free assets to reduce. There would also be fewer and fewer with profits policies to benefit from the profits from the UL business ; as a mutual there is little point in writing without profits business if there are no with profits policies to benefit from the profits

There will also be a mismatch between those providing the capital to write the UL business (the more mature with profits policies) and those who would benefit from the profits (the recent with profits business). The change in mix between with profits and unit-linked business will make it difficult to equitably distribute the profits between different generations of with profits policies.

The increased volumes of UL business written might have resulted in too high a proportion of the with profits policyholders assets being invested in the UL business i.e. too high a concentration of risk.

Recent falls in equity markets will have led to a reduction in free assets and hence reduced the ability of the company to write large volumes of new business. Whereas reductions in interest rates may have significantly increased the value of guarantees and options (such as guaranteed annuity rates) hence reducing the free assets

Past reversionary bonus declarations may have been high relative to the investment returns earned. This is a risk when moving from to a low interest rate environment as has recently happened. This will reduce the difference between asset shares and statutory reserves and hence the free assets.

The past enhancements to asset shares of 0.5% pa may have been more than was justified by the profits from UK business causing a reduction in the estate. Also, past policy payouts may have exceeded asset shares over an extended period, causing a reduction in the estate.

The company may have already raised all the capital it can via sub-ordinated debt or may already be using financial reassurance as far as is possible

It may feel that it cannot write profitable UL business longer term and that the future margins from this business will reduce from current levels. The value of this business may therefore be maximised by selling now. This might be because it cannot obtain the volumes of business necessary to achieve economises of scale without access to more capital.

Generally well answered, with several candidates scoring good marks. The better candidates identified that a mutual company exists to provide benefits to its members, who also provide the capital (free assets), developed arguments as to why free assets may have been depleted and the implications of this.

(ii) The first thing to consider is which bid offers the greatest compensation to the existing members. Since A and B are offering to purchase difference future cashflows, £X will differ from £Y and this comparison will not be straightforward. Both A and B are also likely to set out the expenses that they will charge to the with profits fund so this should also be allowed for when comparing bids

The bid from A is more valuable if X – Y > value of transfers to A shareholders iro with profits business plus present value of in-force UL business plus expenses charged to fund by A – expenses charged to fund by B. Since both companies are purchasing the future new business, this can be left out of the comparison.

The value of transfers to shareholders in respect of with profits business is the present value of $1/9^{th}$ of the future bonus declarations. The future reversionary bonus assumption should be consistent with PRE and the expected future investment returns. The cost of this reversionary bonus should be calculated on the assumed published valuation basis which should be contain margins consistent with the current basis and be consistent with the assumed future investment conditions

The assumed future terminal bonus should be based on the projected asset shares where these are calculated so as to distribute the current estate by the time the last with profits policy goes off the books. It is appropriate to allow for the distribution of the estate since, under the alternative bid from B, this would be distributed to the existing with profits policies in full

The discount rate used should be the expected long term return on the assets (i.e. a risk margin is not appropriate). The value of the existing UL business should be the present value of the expected future monetary cash flows discounted at a risk discount rate appropriate for the risk taken by the with profits policies when they are entitled to the profit

It may be at this stage that one bid is markedly more valuable than the other in which case it is likely to be accepted. However, the company will want to minimise the risks to the with profits policyholders receive lower benefits than expected as far as possible. If the bids are close in monetary value, then this may be the decisive factor.

Even if they are not close then if the more valuable contains greater risks than are felt acceptable, it may be rejected. If the bids are still difficult to separate then other, less tangible, issues may determine which is accepted. These might include likely service standards, cultural synergy between the companies and prospects for existing staff, future planned strategy for new business and continuation of brand name, or experience and past performance of suggested investment managers for with profits assets.

It is possible that the constitution of the mutual may set out the factors that must be considered, and their relative priority, in the event of a demutualisation.

Although most candidates wrote at some length about how to value the mutual company's cash-flows, most did not directly answer the question which was asking how to compare two (unknown) bids, rather than calculate the price.

(iii) The % of with profits assets invested in equities may be reduced post demutualisation from what it would have been if the company remained a mutual. This would reduce the potential returns for the with profits policyholders. Company A may do this so as to reduce the sensitivity of free assets to equity levels which may be a desirable feature for its shareholders (it would reduce the potential need for future capital injections)

If company A also had with profits business in a fund with lower free assets then by reducing the equity % for the mutual, it could boost free assets for the company as a whole. The with profits policyholders in the mutual would be giving implicit capital support to those in company A without receiving any payment for this.

Company A could look to transfer the with profits business of the mutual into its own weaker with profits fund but this could not be done without reports from appointed and independent actuaries certifying that, in their opinion, transferring policyholders would be no worse off

Reversionary bonus levels may be increased above the level assumed in calculating the amount paid by A. These are more valuable than terminal bonus to the shareholders of A since the cost is calculated on a valuation basis that contains prudent margins. This would increase the transfers out of the fund and hence reduce the potential benefit to policyholders.
B

The margins in the valuation basis may be increased above those assumed when calculating the value of the transfers to shareholders in respect of with profits business. This would again increase the transfers out of the fund and reduce the potential benefits to with profits policyholders

The smoothing applied to the with profits policies may be reduced so as to minimise the sensitivity of free assets to market values. This may be undesirable to policyholders who would have expected a certain level of smoothing when effecting their policies

If the investment managers change as a result of the demutualisation, the performance of the new managers may be markedly worse than those who managed the assets when it was a mutual. This could have a significant adverse impact on policyholder returns

Although no new with profits business is being accepted, increases to existing policies might still be allowed. If so, company A could significantly worsen the terms for these

If the future expenses chargeable to the with profits fund are not explicitly set out in the demutualisation scheme then company A may charge more expenses to this fund than are actually being incurred in managing the with profits business since expense analysis is not an exact science

Tax on a proprietary company is higher than that on a mutual due to the higher rate paid on the shareholders chare of the profits. Unless the demutualisation scheme sets out that the tax charged to the wp fund should be the same as if it remained a mutual, then this extra tax could be charged to the fund, hence reducing potential returns.

Company A may be more inclined than the mutual to pay money out of the with profits fund to meet policyholder complaints even if these are not justified, so as to avoid potential bad publicity. This will reduce the potential return to the remaining policies

Service standard may be significantly lower than when the company was a mutual meaning delays on claim settlements, more errors, less information to with profits policyholders. This will save company A money.

In general, company A is likely to take a shorter term view when making decisions, focusing on the short term impact on share price rather than the longer term benefit to policyholders. Although the impact is intangible, this is likely to tend to reduce potential returns

Discretionary charges on UL business may be increased by more than they would have been if the company had remained a mutual so as to maximise shareholder value. This will reduce the returns on this UL business.

The mutual will minimise these risks as far as possible through the wording in the demutualisation scheme that has to be sanctioned by courts. Before this sanction is given, the court will consider reports from appointed and independent actuaries stating that, in their opinion, no group of policyholders is likely to receive lower benefits as a result of the demutualisation

Many candidates correctly identified that the key risk to the members was that their payout expectations may not be met. However, the development of answers into reasons why this may be the case was generally superficial and candidates generally didn't score very highly. The question was asking specific reasons in the context of the proposal and hence no credit was given for making general "state of the world" comments about the future solvency of Company A. Similarly, some candidates gave many reasons why the calculated price could be wrong which was only given limited credit.

(iv). The members of the mutual will have to be compensated for loss of voting rights, for the loss of the right to participate in profits from UL business, and for the fact that shareholders will now receive 1/9th of the cost of future bonus. The split of this compensation between different policyholders should, as far as possible, be equitable. Any compensation distributed as future enhancements to asset shares will give more compensation to policies with a long term to run. Compensation distributed this way will also tend to give more compensation to larger policies (i.e. those with larger premiums)

A cash amount can either be a fixed amount for all pensions or an amount that varies with policy size, or a mixture. Older policies will tend to get more than newer policies since any measure of policy size will tend to be larger.

All members will have voting rights and should receive compensation for loss of these rights. Since all members are losing the same right to vote, a fixed cash amount would seem most appropriate for this. If UL policyholders are members then they will also need compensated for loss of these voting rights ; the only way to do this would be through a fixed cash amount. So, the minimum amount distributable as cash if effectively set as number of members * cash amount per member

However, there will also effectively be an upper limit on the total amount that can be distributed as cash. The company will not want to distribute so much as cash that it would restrict future investment freedom. For example, by keeping more money in the with profits fund, the company may be able to invest a higher proportion of assets in equities and hence increase potential returns.

At the very least, it is likely to want to keep the compensation in respect of future transfers of 1/9th of cost of bonus in the fund. Otherwise the financial strength of the fund will start to reduce from its current level over time. The regulators would be unlikely to agree to a demutualisation that effectively weakened the strength of the fund

The mutual is also likely to want to ensure that potential payouts are not materially reduced as a result of the demutualisation and will want to leave enough money in the fund to do this, so it will need to decide on what payouts would have been in the absence of demutualisation. For example, it will need to decide on whether the current enhancement of 0.5% pa was likely to continue. This is subjective so, for presentational reasons, it is probably easier to assume that it would continue at its current level

It will therefore carry out a series of projections of the estate and free assets on a range of future scenarios to consider the above issues and decide on the maximum amount that can be distributed as cash. Between the minimum and maximum cash amount, the split between cash and deferred benefits is, to some extent, subjective.

The company may take the view that policyholders are losing the value of future profits that would otherwise have been used to enhance future asset shares. Those losing out by most would therefore be the newer policies. This would suggest that most of the compensation should be paid as enhancements to asset shares. On the other hand, the fact that newer policies are benefiting more might appear unfair to the majority of existing policyholders

An alternative view would be that those who should be compensated most are those who provided the capital for writing new business and who took on the risk. These would be the more mature policies. This would suggest that most should be distributed as cash amounts. Although it could be argued that the existing policyholders have already been compensated for this through the historic enhancements to asset share returns

The company may take the view that newer policies are already gaining from the fact that enough money is being left in the fund to permit the continuation of the current 0.5% pa enhancement to asset shares as the risk of this reducing to a lower level will be less post demutualisation as it is no longer dependent on the future profits from UL business. This would suggest distributing more as cash.

Leaving more money in the fund to be distributed over time would reduce the possibility of mortgage endowment policies failing to repay their mortgage, which might appear attractive (although the decision should not be driven by this is if is treating these policies more favourably than a different group). Holding back more to distribute over time makes it more likely that there will be too much or too little left in the fund when the last policies start to mature, making equity between policies more difficult to achieve.

The final decision may be driven by presentational issues. Distributing more as cash may appear better to policyholders and make them more likely to vote in favour of the demutualisation. Recent demutualisations have tended to focus on cash windfalls so following this approach will make policyholders more likely to feel that they are getting a good deal.

Similarly, distributing as cash means that the benefits from the demutualisation are readily demonstrable. It is difficult to actually demonstrate the benefit obtained from that part of the compensation distributed over time as enhancements to asset shares i.e. whether payouts are really higher than they would otherwise have been.

Not well answered. Very few candidates actually identified what the members were giving up and hence how that should best be compensated. There was hardly any discussion of compensation for members voting rights. The better answers discussed equity aspects of compensation packages in terms of rewarding those members who were providing more capital.

(v). In general the approach suggested will distribute most cash to policies that have paid bigger premiums and been in-force for longest. This would seem equitable as these policies will have tended to contribute most capital to the business. In particular, it is likely to appear fair to policyholders, and perception is important. Although, if surrender values are not close to asset share then compensation amounts may not appear fair relative to surrender values and apparent inconsistencies might arise which could lead to bad press.

The exception to the point about the approach giving most to policies that have provided most capital is recently paid large single premiums. These will have large asset shares but will have contributed little capital

Some more recent policies may have negative asset shares due to high initial expenses. The company may feel that it cannot reasonably distribute nothing to these policies or very low amounts to new policies with very low asset shares. The company may therefore want to adjust the proportion of asset share paid to some policies

Since the company will have to calculate the cash windfalls for all policies, it will want to automate this calculation. This will not be possible if asset shares are not held on the system. In this case, it might use surrender value, or existing declared bonus, or declared bonus plus basic sum assured as an alternative. By varying the proportion of declared bonus or sum assured plus declared bonus by term gone and original term then the result may be a suitable proxy to asset share

A further practical problem might exist for paid up or altered contracts. There may be no data held on the date of alteration or the premium size before alteration making calculation of asset share impossible. This may also be a problem if the proxy of using declared bonus is used if, for example, declared bonus is not reduced on alteration. Some sort of approximate approach will have to be adopted for these policies.

In addition to paying out a proportion of asset share, a fixed amount per policy may need to be paid as compensation for loss of voting rights

1(v) Well answered. Most candidates got most of the marks available for correctly identifying where asset share was and wasn't a fair basis for compensation. The better candidates also considered practical aspects such as availability of data and use of suitable proxies to asset share.

2

General:
Some responses have been received on the appropriateness of Q2, which was very similar to a question set on a recent paper. In particular, some concerns have been raised that candidates may have been able to attain a pass mark by revising recent pass papers alone. The examiners have paid close attention to this point and have satisfied themselves that across the paper as a whole, there was a sufficiently broad spread of marks to ensure that the primary objective of ensuring candidates' fitness to proceed and assume professional responsibilities was fully satisfied.

(i) PRE is relevant where there are areas in the financial management of insurance business where the company is given discretion over variable charges and benefits. Regulation requires that such discretions be exercised in accordance with PRE. The primary expectation of policyholders is that the promised benefits will be paid, and therefore that the company will still be solvent when a claim arises.

At a lower level PRE is driven by three factors - comments made in marketing literature, the past practice of the company and general practices in the insurance industry

For a company writing only unit-linked business the areas where discretion can be exercised are limited to investments and the determination of unit prices, appropriate deductions for taxation in the fund pricing and the circumstances under which variable charges might be altered

Generally well answered although few candidates got full marks. Some candidates made points that were actually relevant to part (ii) in their answers and were awarded the relevant marks.

(ii) Investments and the determination of unit prices

Contract literature usually includes brief descriptions of the types of investment that each internal fund will hold. There is thus a clear expectation that investment will only be in the asset types disclosed.

The guidelines given to investment managers need to be unambiguous in this area, and there needs to be an established procedure for reporting breaches of them.

Discretion exists whether to price units on a bid (selling) or an offer (buying) basis. The former is appropriate for an expanding fund and the latter for a contracting fund. The objective is to ensure that the creation or liquidation of units is at a price that does not disadvantage other policyholders in the fund. A decision need to be taken at what point it is appropriate to switch from one basis to another and this is often an area that is not covered at all in published literature.

A change in basis may generate a price movement very different from the market movement on the day of the change. Thus changes need to be relatively infrequent. Clearly considering the cash flow on a daily basis is inappropriate: premiums are not paid evenly through a month (they are concentrated on the first and last days), while claims are more even. So a rolling four-weekly period should be considered as to whether each fund is in a net cash inflow or outflow position, and set the pricing basis appropriately every week.

Generally well answered, although some candidates went into too much detail on how to calculate unit prices and failed to discuss the issues posed by moving the pricing basis between expanding and contracting.

(iii) Appropriate deductions for taxation in the fund pricing

This is another that is not usually covered in detail in published information about the contracts, other than to state that tax will be deducted from the funds "appropriately". The deduction of tax on income and realised gains is generally uncontroversial in the market: the full rates of income and CGT are used.

In order to be strictly fair it is necessary to use a slightly discounted rate of tax to reflect the time between the transaction and the date the company would pay the tax, or to retain the tax deducted in the fund as a creditor.

Unrealised investment gains and losses generate more difficulty in determining PRE. If no provision is made, an investment decision to trade a particular security generates a change in price. This is an undesirable feature.

This will also be the case if a discounted rate of tax on unrealised gains is used, with the discount reflecting the mean time taken to turnover the portfolio. However, using the full rate of tax does not mirror the position that would exist if running the fund were the only activity carries out by the company. A similar situation arises regarding funds where there are net realised or unrealised losses. On a stand-alone basis no tax relief would be appropriate, but if there are other funds in a net gain position the company would achieve tax relief as it is assessed in aggregate. In both cases there are arguments for and against each course of action.

To meet PRE, the company need to define its policy and apply it consistently over time and across all funds.

2(iii) This part of the question was generally well answered.

(iv) The circumstances under which variable charges might be altered

Some of the older contracts are genuine non-profit contracts: they have no variable charges that can be altered. More modern contracts have at least one way charges can be increased: either by increasing the expense deduction or the annual management charge.

Where allowed by the contract terms, the variability of expense deductions is clearly mentioned in published literature. Furthermore, increases have been implemented from time to time. Hence PRE exists of the likelihood of further increases. The past uneven timing of such increases should be replaced by regular annual or biennial increases to clarify expectations.

The deductions are specified as expense charges so there is an expectation that increases will be limited by the company's expense experience. However, it is likely that the expense inflation might fall between price and earnings inflation. If this is the case then the increase in the deduction should be limited to the company's expense inflation rate.

It is not within PRE to use the greater flexibility of deductions linked to earnings to subsidise those policies with no increases or with increases limited to price inflation. Furthermore, no changes have been made in the past to the annual management charge, although this charge has been increased in the past elsewhere in the industry.

The charge is also stated to be variable in all literature. This does not necessarily imply that PRE has been established that the charge will be increased in normal circumstances. There is, however the overriding expectation of continued solvency mentioned above.

If solvency is threatened, an increase in the annual management charge is acceptable, but any such increase in these circumstances should not increase the profitability of any contract above the level assumed when the contract was issued.

2(iv) Reasonably well answered. The most common mistakes were to assume:-

a) in the case of the annual management charge, the lack of past increases had irrevocably set PRE for the future and

b) in the case of the policy fees, there was insufficient discussion as to the rate of inflation that it would be reasonable to assume.

END OF EXAMINERS' REPORT