

SUBMISSION TO SIR DEREK MORRIS

29 August 2004

By D. O. Forfar, MA, FFA, FSS, FIMA, CMath.

1. Introduction

I understand that your Inquiry is asking for submissions from individual actuaries as part of your remit to look at the actuarial profession. In responding to your request, I hope the views below will be helpful.

I was employed by the Scottish Widows Fund and Life Assurance Company for twenty-seven years. I was the Appointed Actuary of the company from 1992-1995.

Details of my experience are on my web-site at <http://uk.geocities.com/doforfar@btopenworld.com/index.html>

I am writing in a purely personal capacity. As a matter of courtesy, however, I am sending a copy of this submission to the President of the Faculty of Actuaries.

2. Valuation of Life Office Liabilities and the scope of the actuarial role

Q1.1. (A) What do you see as the main value provided by actuaries and, conversely, what are their weaknesses?

(B) In general, are actuaries properly equipped for the roles that they perform?

Q2.6 Do you have any other concerns about the role of actuaries working in life assurance?

I refer particularly to questions Q1.1 and Q 2.6 (as quoted above) of your Consultative Document.

The attached submission to the *British Actuarial Journal* may be of interest.

It seems that actuaries are felt by the public to be lacking in professional competence. In particular they are being accused of not valuing realistically, and accounting for realistically, life office liabilities such as *constructive obligations* (e.g. *accrued terminal bonus*) and *cash guarantees or annuity guarantees*. Actuaries are therefore felt to be not employing the 'best trade' to which their professional competence and training has been geared. According the Press (see below), actuarial science is felt to be esoteric and antiquated.

For example, the Sunday Times of 28 March 2004 reported,

"The Equitable Life disaster and the government's scrutiny of opaque accounting methods have undermined the credibility of actuaries, who are not viewed in the City as suitable plc material because their science is seen as esoteric and antiquated."

Without doubt events over the last few years, and Press reports such as quoted above, have damaged the reputation of the actuarial profession in the eyes of the public.

In my view, it is important for your Inquiry to distinguish, on the one hand, between the *Regulatory Valuation* and the published *Statutory Accounts* of a life office and, on the other hand, the *Internal Valuation* and *Internal Accounting* for of the liabilities of a life office.

3. Regulatory Valuation done for the purposes of the Annual Return to the Regulator

Q2.43 Do regulators make appropriate use of actuarial expertise to supervise the work of actuaries?

I refer to Q2.43 (as quoted above) of your Consultative Document.

The will of Parliament, under the Insurance Companies Acts from 1973 onwards (see for example Sections 37(2)(a) and Section 45(1) of the 1982 Insurance Companies Act), was to protect *Policyholders Reasonable Expectations* (PRE).

The Faculty and Institute Joint Working Party on PRE reported over ten years ago (between 1990 and 1993) and concluded that (*British Actuarial Journal* (2002) Vol. 8 para.2.6.3):-

“in normal day-to-day actuarial management of a life office PRE is virtually synonymous with equity and the almost universal method for measuring it is asset share calculations.....”

Asset share calculations means the retrospective accumulation of premiums (less expenses) at the rate of investment return achieved.

In its implementation of the 1994 Regulatory Valuation Regulations the DTI, as Regulator of the life industry, did not require valuation of *constructive obligations* such as *accrued terminal bonus*.

However the 1994 Regulatory Valuation Regulations (Section 64(1) of SI 1994/1516) stated that:-

The determination of long term liabilities ...shall be made on actuarial principles which have due regard the reasonable expectations of policyholders...

It is my view (and I understand that it is also legal opinion) that, to give any meaning to the phrase ‘*actuarial principles which have due regard the reasonable expectations of policyholders*’, the words of the 1994 Regulatory Valuation Regulations required a realistic valuation to be made of *constructive obligations* (such as *accrued terminal bonus*).

This view is shared by the Financial Services Authority (FSA). The FSA’s Valuation of Liabilities requires a *realistic value of liabilities*, including the valuation of *constructive obligations* (such as *accrued terminal bonus*), *guarantees* and *options* and comes into effect from end-2004.

Asset shares are virtually synonymous with PRE, which includes *accrued terminal bonus*. Accordingly, unless it was done by the DTI in another way, the monitoring of PRE required valuation of *constructive obligations*. There seems to have been no monitoring by the DTI of PRE in another way.

Thus lawyers have therefore said that what was required by Law and Parliament to be valued and monitored by the DTI, namely PRE, was not valued or monitored.

I understand that Equitable Life monitored internally its *aggregate policy values* including *accrued terminal bonus*. However the company’s figure for its *aggregate policy values* was, apparently, not monitored or sought by the DTI or compared by the DTI with the *value of the company’s assets*. So the Equitable situation of a negative *Estate* (see below for definition of *Estate*) seems to have been allowed to develop unmonitored by the DTI as Regulator of the life industry. (see Penrose Report, Chapter 6 paras 48, 49, 56, 84 and Tables H.1 and Table H.2 where the Equitable’s *Estate* in respect of ‘*already matured*’ policies is put at minus £1.8bn.)

4. Internal Life Office Valuation

In the *Internal Valuation and Accounting* (done internally in a life office by the Appointed Actuary, as opposed to a *Regulatory Valuation*) most actuaries valued *constructive obligations* like *accrued terminal bonus*, had an office model for their with-profits funds, valued policies at their *asset share* (i.e. including *accrued terminal bonus*), ran many so-called *stochastic scenarios* (Monte-Carlo simulations) to examine the performance of their with-profits funds under a variety of possible financial futures and were fully aware of all their liabilities in respect of smoothing, guarantees and options, including the liabilities for *accrued terminal bonus*. They were internally employing the best techniques of their ‘trade’ to make the most realistic valuation of life office liabilities.

For example, the Scottish Widows had been running realistic simulations of its with-profits fund under many different possible future financial scenarios, including all *constructive obligations*, since simulations of assets and liabilities on a consistent basis was first possible in the late 1980s i.e. for more than 20 years. (see Penrose Report, Chapter 6/paragraph 102 and Chapter 13/paragraph 37.)

The FSA’s new Rules come into effect at the end of 2004, requiring a *realistic valuation of all liabilities* including *constructive obligations*.

This only brings into effect the practice adopted by good life offices over the past twenty years.

5. The Penrose Inquiry into Equitable Life

Q2.5 (A) Do you think that the FSA's proposals to change the appointed actuary regime address the concerns that Lord Penrose raised in this regard?

(B) Is there a need to do anything further to address Lord Penrose's concerns?

In Q2.5 (quoted above) your Review asks certain questions which arise from the Penrose Report so I feel it is not inappropriate to include certain views relating to this Report.

The terms of reference which Lord Penrose accepted from the Treasury included the condition that he could not comment on the House of Lords judgment.

Possibly for this reason, the Inquiry Report did not say anything about the manner in which the case was presented to the Law Lords by the relevant lawyers. Nor did it explain why this judgment is causing so much anxiety in the life industry, the actuarial profession and among those Equitable Life policyholders without guaranteed annuity rates and those with with-profits annuities.

Because Equitable Life had no spare financial resources (called an *Estate* by actuaries) the 'cake' available to all policyholders could not be made any bigger. Neither the Law Lords nor the Penrose Report addressed the issue of those policyholders without guaranteed annuity rates (non-GARs) and those policyholders with with-profits annuities (WPAs) now feeling that an injustice has been done to them. Their 'cake' has been 'raided' to pay for those policyholders with guaranteed annuity rates (GARs). They could never reasonably have expected this to happen.

The judgment of the Law Lords was inevitably and crucially dependent on the quality of the information presented to them by the relevant lawyers. It has to be asked whether the Law Lords were fully informed by the relevant lawyers.

The Penrose Report did not explain that the Law Lords judgment, while making good sense in relation to annuity guarantees under unit-linked policies, went totally against the views of the DTI, the Treasury, the life offices and the actuarial profession in relation to annuity guarantees under with-profits policies. All these bodies understood that with-profits policies had some flexibility in the terminal bonus which unit-linked policies did not have. (See, for example, the Treasury's letter to Managing Directors of life companies of 18 December 1998, extracts from which are quoted below.)

This last point is crucial to the situation in which the industry now finds itself.

The Law Lords may have thought that guaranteed annuity rates would be rendered worthless if they were not given on the full pension fund but this is not so. If the guaranteed annuity rate had been applied only to the guaranteed part of the pension fund (i.e. excluding terminal bonus), the guarantee would not have been rendered worthless. It would have cut in, at least, at the level of the guaranteed annuity rate applied to the guaranteed part of the pension fund.

The Law Lords made have thought that a differential terminal bonus rate rendered any guaranteed annuity rate worthless but this is not so, as the terminal bonus could not be negative and so the guaranteed annuity rate had, at the least, to apply to the guaranteed part of the fund.

(A differential terminal bonus rate is a different terminal bonus rate applying under case (1) as described below as compared with case (2):-

- (1) all the benefits are transferred as a lump sum to another office under a so called *open market option* but the guaranteed annuity rate is then lost -called '*taking the benefits in cash form*': the policy then becomes the same as a policy without any guaranteed annuity rates,
- (2) advantage is taken of Equitable's guaranteed annuity rate and all benefits are taken as a pension - called '*taking the benefits in annuity form*'.)

Possibly because those presenting the case may never have explained the matter to them, the Law Lords may not have appreciated, that, even with a differential terminal bonus, the guarantee was not rendered worthless.

An example of how this works is given below.

A differential terminal bonus had been implemented by the life industry since at least 1995. This differential in the rate of terminal bonus had been stated every year since then in offices' Annual Returns to the DTI. By not

intervening, the DTI had implicitly approved this differential. The DTI had agreed that the guarantee under with-profits policies was to apply the guaranteed annuity rate on a minimum of at least the guaranteed part of the pension fund (i.e. excluding terminal bonus). If that had not been the interpretation of the DTI, they would have been obliged to intervene on PRE grounds under various Insurance Company Acts. The DTI did not intervene.

To say the guaranteed annuity rate had to apply to the full pension fund (i.e. including full terminal bonus) when guaranteed annuity rates (GARs) were typically 11.11% and market annuity rates were 7.0% would have added about 60% to the pension fund liabilities in respect of GAR policies. (as $11.11/7.00$ is about 1.60). There is no U.K. life office that can afford this unless the guaranteed annuity rate policies were only a small part of its portfolio or the office was very strong i.e. had a large *Estate* like the Scottish Widows when it was a mutual company.

The Law Lords may never have realised the consequences of their judgment – namely it would bring the once proud life industry virtually to its knees and lead to further stepwise litigation of increasing, even crippling, cost. This has arisen simply because the relevant lawyers may never have pointed out the consequences to the Law Lords.

The annuity rate guarantee, as interpreted by the Law Lords, is '*un-hedgeable*' in the sense that a life office cannot immunise itself against all the risks of such a guarantee. This means that without a differential terminal bonus a life office cannot adequately protect itself. The Law Lords may never have realised the risk was '*un-hedgeable*' simply because the relevant lawyers did not understand this point.

Example:-

We may suppose a guaranteed annuity rate (GAR) of 11.72% and a market annuity rate (MAR) of 8.37% (the July 2000 MAR level when the House of Lords case took place) and an accumulated pension fund of £1,000 on both unit-linked policies with guaranteed annuity rates (ULGAR) and with-profit policies with guaranteed annuity rates (WPGAR), made up of a guaranteed pension fund of £750 (i.e. the pension fund guaranteed at inception plus the additional declared, and therefore guaranteed, pension fund bonuses) and an additional terminal bonus pension fund, and therefore not guaranteed, of £250 ($1000=750+250$). The full terminal bonus rate is 33.33% since $250/750=33.33\%$. Policies without guaranteed annuity rates are referred to as UL non-GAR and WP non-GAR.

The ULGAR would expect a pension of £117.20 per annum, $1000 \times \text{maximum}(0.1172, 0.0837)$. The pay-off from a unit-linked guaranteed annuity option (GAO) is thus £400.24 (as $117.20/0.0837=1400.24$). The unit-linked pension fund is £1000 but the life office has to find £1400.24, a 40% addition to the pension fund as $11.72/8.37=1.40$. This is the pay-off from a Quanto Option and thus a guaranteed annuity option on a unit-linked policy corresponds to a Quanto Option. The terminal bonus would remain at 33.33% whether the benefits were taken in '*cash form*' or '*annuity form*'. There would be no differential terminal bonus because if the benefit is taken in '*cash form*' under the open *market option* (OMO), the OMO would be £1,000 as it would be in respect of a similar policy without any guaranteed annuity rate. If the benefit is taken in '*annuity form*' the full pension fund (of £1,000) would be applied at the guaranteed annuity rate of 11.72% (not the market annuity rate of 8.37%).

Under a UL non-GAR the pension is only £83.70 per annum (not £117.20 p.a.) as 1000×0.0837 is only £83.70. UL non-GARs are '*hostages to fortune*' as to what the MAR will be when they retire.

The DTI, Treasury, life offices and actuarial profession had interpreted WP guaranteed annuity options as granting a pension of $\text{maximum}(750 \times 0.1172, 1000 \times 0.0837) = £87.90$ per annum so the minimum pension (the 'floor' pension) would have been of at least £87.90 per annum no matter how far market annuity rates had fallen. The policyholder *exchanges* his pension fund of £1000 for a pension fund of £1050.17. (as $87.90/0.0837=1050.17$.) The pay-off from the with-profits guaranteed annuity option (GAO) is £50.17. This is the pay-off from an *Exchange Option* and thus a guaranteed annuity option on a with-profits policy is an *Exchange Option*. If '*annuity form*' benefits are taken at maturity by the policyholder, the terminal bonus would be, in this example, reduced to 0% (from 33.33%) so the differential in terminal bonus would be 33.33%. The OMO would still be £1,000 but the pension under the policy would be a minimum of at least the guaranteed annuity rate of 11.72% applied to the guaranteed pension fund (£750) (i.e. £87.90 per annum as $750 \times 0.1172 = £87.90$) no matter how low market annuity rates had fallen.

Under a WP non-GAR the pension is £83.70 per annum (not £87.90 p.a.) as 1000×0.0837 is only 83.70 . WP non-GARs are again 'hostages to fortune' as to what the MAR will be when they retire.

The difference between a guaranteed annuity rate on a unit-linked policy as compared with a guaranteed annuity rate on a with-profits policy is the difference between a pension of £117.20 per annum and a pension of £87.90 per annum (a pay-off difference of £29.30 per annum equivalent to a pay-off difference in lump sum terms of £350.06). This makes an enormous difference to the solvency of life offices in the UK.

A pension under a with-profits policy (or unit-linked policy) with no guaranteed annuity rate has no minimum pension (i.e. no 'floor' on the pension). The pension could be as low as £55.50 per annum ($1000 \times 0.0555 = 55.50$) if market annuity rates were to fall to 5.55% as in Japan. There is no 'floor' and therefore no protection for the pension.

6. Importance of Financial Economics

I am not alone in thinking that it is unfortunate that the Report of the Penrose Inquiry did not address the question of guaranteed annuity rates from the standpoint of financial economics.

I offered to provide the Penrose Inquiry with a full analysis of annuity rate guarantees from the perspective of financial economics. Such an analysis, which requires the application of stochastic calculus, clearly brings out the difference between an annuity rate guarantee on a unit-linked policy and similar guarantee on a with-profits policy. My offer of this analysis was not taken up by Inquiry.

I have already indicated that, without the right of a differential in the terminal bonus, the risks of guaranteed annuity options are too dangerous for any life office to offer.

The Treasury appear to have realised this fact (as is borne out by their letter of 18 December 1998 to all life office Managing Directors). The Treasury also realised the distinction between guaranteed annuity rates on unit-linked policies as opposed to guaranteed annuity rates on with-profits policies. The following are extracts from the Treasury's letter of 18 December 1998:-

In respect of guaranteed annuity rates on unit-linked policies

Any cost arising to the office in respect of meeting the guarantees over and above the accumulated charges would therefore have to be covered by the insurer from other available assets.

In respect of guaranteed annuity rates on with-profits policies

This could be achieved in cases though some reduction in the terminal bonus that would be payable if there were no such guarantee (or option) over the duration of the contract.

.....any guarantee or annuity option is applicable to at least the guaranteed initial benefit under the policy and any attaching declared bonuses. As a consequence, we would expect that for most companies the present guaranteed cash benefits (including declared bonuses) would be converted, as a contractual minimum to the annuity on guaranteed terms.

However it would appear possible ...that the terminal bonus added at maturity may be somewhat lower than for contracts without such options or guarantees...

The Treasury is saying that under with-profits contracts there can be a differential in the terminal bonus (but the terminal bonus can never go below zero).

As far back as 1980, the actuarial profession recommended dropping guaranteed annuity rates on unit-linked policies because these policies did not have the flexibility of terminal bonus which was afforded to with-profits policies.

It is being asked whether, in the Equitable case, the lawyers made the Law Lords aware that:-

- (i) in relation to guaranteed annuity rates under with-profits policies, the DTI, the Treasury, the life offices and the actuarial profession, had concluded that with-profits policies had some flexibility in the terminal bonus which unit-linked policies did not have and that a differential terminal bonus

could be allowed. That was also the view of the learned counsel consulted by Equitable Life. Lord Scott and Lord Morritt, both experts in contract law, judged that the legal contract (the policy document) permitted this. Because of this extra degree of freedom, guaranteed annuity rates, which had been withdrawn by life offices on unit-linked policies, could safely be offered under with-profits policies,

- (ii) the PRE of the Equitable's non-GAR policies (i.e. those without annuity rate guarantees) and with-profits annuity policies (WPA) would immediately be adversely affected by such a judgment as the Law Lords came to in the Equitable case as there was no *Estate* and therefore only a fixed financial 'cake' for all policyholders. The non-GARs and WPAs would immediately feel an injustice had been done to them by such a judgment,
- (iii) a GAR policy is subject to the four risks mentioned in the above submission to the *British Actuarial Journal* (namely interest rate risk, stock-market risk, longevity risk and the risk arising from freedom over the exercise date of the option) and no insurance company can adequately protect itself (hedge out) all these four risks. Swaptions are financial instruments of only recent origin and only help hedge out the interest rate risk on a fixed amount of cash. They are ineffective against the other three risks. As swaptions are *over-the-counter* instruments they have to be valued at nil in the Regulatory Returns and they would have cost Equitable £4-5bn, so buying them (even if swaptions can protect against falling interest rates) would have rendered Equitable insolvent
- (iv) unless GAR policies form a relatively small part of a life office's with-profits business, or the life office has a very large *Estate*, there is no insurance company in the U.K. that can bear a 40% addition to liabilities (Equitable's guaranteed annuity rate was 11.72% when market annuity rates in July 2000 were 8.37% and $11.72/8.37=1.40$). Market annuity rates have now fallen to 7.00% and as $11.72/7.00=1.67$ and there is no insurance company in the U.K. which can bear a 67% addition to its GAR liabilities without affecting the PRE of other policies (the with-profits non-GARs the WPAs and the Endowments). The addition to GAR liabilities would have been 111% if market annuity rates had fallen the 5.55% as they have done in Japan (as $11.72/5.55=2.11$) and the affect on the PRE of other policies would have been catastrophic. The number of legal cases and cases referred to the Financial Ombudsmen Service (FOS) concerning infringement of PRE is high now but, if there had been a further fall in interest rates, the number of legal cases and references to the FOS would have become a plethora,
- (v) the Treasury in their letter of 18 December 1998 had allowed discretion over terminal bonus in respect of with-profits policies,
- (vi) it is assumed the DTI had done their duty under the Law (Insurance Companies Act 1973 onwards which stated the DTI should intervene if PRE infringed), and therefore the DTI had considered, since 1994, a differential terminal bonus policy (DTBP) compatible with the PRE of the GARs as the DTI had approved a differential terminal bonus policy for the 5-6 years prior to 2000 without any demur or intervention.

7. Interpretation of annuity rate guarantees

The Law Lords judgment has placed the actuarial profession in an invidious and illogical position. As long ago as 1980 the profession had recommended to life offices the dropping of all guarantees under unit-linked policies, while retaining such guarantees under with-profits policies. (see *Report of the Maturity Guarantees Working Party* in *Journal of the Institute of Actuaries*, **107**, pp 103-237 and *Transactions of the Faculty of Actuaries*, **37**, pp213-236). If annuity guarantees had meant the same under both types of policy that would have been illogical (see attached submission to the *British Actuarial Journal* refers). The judgment and reputation of the actuarial profession would have been called into question.

There is a great difference in the consequences, between an interpretation:-

- (1) that the full accumulated pension fund (the basic part of the fund plus reversionary bonus - all guaranteed - plus the non-guaranteed part i.e. including terminal bonus) is to be applied on a guaranteed annuity rate, say 11.72%p.a. at age 65 (market annuity rates at 65 being now 7% p.a.) – No differential terminal bonus applies whether a policyholder exercises his right to transfer his full pension fund to another life office under the *open market option* (takes the benefits in 'cash form') or applies the guaranteed annuity rate to the full pension fund (takes the benefits in 'annuity form'). In financial economic terms this is a type of *Quanto Option*,
- (2) that the pension payable must be at least as great as the guaranteed part of the accumulated pension fund (i.e. excluding terminal bonus) applied at the guaranteed annuity rate (11.72%p.a. at age 65 in Equitable's case) i.e. the pension has a 'floor' below which it cannot fall no matter what may happen to the stock-market or market annuity rates. Thus there may be a differential between the terminal bonus which applies when the benefits are taken in 'cash form' (when the full terminal bonus

applies) and the lower (or differential) terminal bonus which applies when benefits taken in 'annuity form' (when the guaranteed annuity rate applies to only part of the pension fund, not the full pension fund, but this part cannot be less than the guaranteed part of the pension fund). Although there may be a lower terminal bonus applying to 'annuity form' the protection to the policyholder is that the lower terminal bonus cannot go below zero and the annuity rate cannot go below the guaranteed annuity rate. In financial economic terms this is a type of *Exchange Option*.

The consequences of a judgment which adopts the first interpretation is that it is causing and continues to cause a major disruption of the life industry and damages to the reasonable expectations of policyholders without annuity rate guarantees. It has threatened the solvency of certain offices in the life industry. The reason is that the risks of offering such a guarantee are enormous. As stated above, in Japan, market annuity rates have fallen to 5.55% p.a. (therefore, compared with Japan, a typical U.K guaranteed annuity rate of 11.11% p.a. is 100% better than Japanese market annuity rates). If the same had happened in the U.K. as in Japan and the first interpretation had applied, either every life office in the UK with guaranteed annuity rates on its with-profits policies would have been rendered insolvent or the PRE of with-profits policies without guaranteed annuity rates would have had to have been infringed leading to a plethora of legal cases and many references to the Financial Ombudsman Service. The actuarial profession recommended that annuity rate guarantees on unit-linked policies be withdrawn for just this reason.

The consequences of adopting the second interpretation are that, if the life office is sensible with the reversionary (and therefore guaranteed) bonus, it protects the reasonable expectations of policyholders without annuity rate guarantees, policyholders with with-profits annuities and policyholders with endowments, does not threaten the solvency of the industry and was the interpretation of the life industry, the Treasury (see extracts given above from their letter), the DTI, learned counsel and of the actuarial profession.

8. The law and the public

It is being asked whether the law has failed the public in the following respects:-

(1) The Penrose Inquiry did not comment on the feeling of injustice felt by those policyholders of the Equitable without annuity guarantees (non-GARs) and those policyholders with with-profits annuities (WPAs). As explained above, the injustice arises because the non-GAR and WPA policyholders could never have reasonably expected their fund to be 'raided' to pay for those with annuity guarantees (GARs). (This happened because there was only one financial 'cake' for all policyholders which could not be made any bigger as there was no *Estate* in Equitable Life.)

(2) The law has not addressed this feeling of injustice. The issue remains unresolved and the law seems powerless to address (or redress) this injustice,

(3) The Penrose Inquiry did not comment on the manner in which the case was put to the Lords, or explain why this judgment is causing so much anxiety in the life industry, the actuarial profession and among the Equitable Life non-GARs and WPAs,

(5) The critical point is whether or not the lawyers bringing the case explained to the Law Lords the difference between an annuity guarantee on a with-profits policy and an annuity guarantee on a unit-linked policy. It is being said that if the Law Lords had been fully informed they might have backed the judgment of Lord Scott and Lord Morritt. (see, for example, the letter to the Times of 28/2/2002 by Professor Zander, Q.C., the Professor of Law at the London School of Economics.)

The law seems powerless to examine, or even address these issues.

It is very unsatisfactory that the UK life industry should have been brought virtually to its knees by an unexpected legal judgment, which was contrary to the views of the DTI, the Treasury, life offices and the actuarial profession.

For this reason, I feel that it is essential for your Inquiry to consider whether some of the disapprobation which has been heaped on the actuarial profession should more properly be directed at the legal profession.

9. The importance of financial economics (financial mathematics)

Q1.18 Has actuarial education and training kept up with developments, particularly in the financial markets and in financial economics?

Your Review asks in Q1.18 whether actuarial education has paid enough attention to developments in financial economics.

Ever since Fisher Black and Myron Scholes published their Nobel Prize winning paper in 1973, the subject of financial mathematics has taken large strides forward.

In my view, it is probably true that, until some ten years ago, the majority of actuaries paid insufficient attention to developments in financial economics (financial mathematics).

This has changed dramatically over the past decade. This is reflected in the syllabus of the professional examinations set by the Faculty and Institute of Actuaries. It is also reflected by the introduction by the profession of a further qualification, the *Certificate in Derivatives*, and in the various professional papers which have appeared in the British Actuarial Journal (BAJ) on the subject of financial economics. As an example of the increased awareness of financial economics, I cite two papers:-

(1) Smith A. D. (1996), *How Actuaries can use Financial Economics*, BAJ, **2**, pp1057-1193

(2) Whelan S.F., Bowie D.C., and Hibbert A. J. (2002), *A primer in Financial Economics*, BAJ, **8**, pp27-74,

I feel that it is essential that actuaries, and the Boards of life companies and legislators, are aware of which guarantees/options can safely be offered either because the financial markets supply the necessary assets/instruments to hedge out the risk or because any residual risk (which cannot be hedged out) can be safely borne by the financial strength (the *Estate*) of life offices which has been built up over many generations.

Although actuarial education now includes the basics of financial economics, in my view, it could usefully include more. Developments in financial economics (financial mathematics) are going forwards apace and actuaries should try to keep abreast of the latest developments in this important field where these are relevant to actuarial practice.

10. The Regulator of the Life Industry

Q2.29 Who should provide the guidance: the Profession, the regulators or the government?

Q2.42 Should discipline be undertaken by the Profession or by regulators?

Q2.43 Do regulators make appropriate use of actuarial expertise to supervise the work of actuaries?

In view of the questions Q2.29, Q2.42 and Q 2.43 (quoted above) asked by your Review, I think it is appropriate to comment as below.

The DTI as Regulator of the life industry

In the view of many people, after the Law Lords judgment in July 2000, the DTI should immediately have approached the Chancellor of the Exchequer or the Prime Minister and indicated that an impossible situation had been created for it (as Regulator of the life industry) and for U.K. life offices. The DTI and the Treasury had approved since 1995, a differential terminal bonus on with-profits policies with guaranteed annuity rates. It is hard to understand why such an approach does not seem to have been made.

The FSA as Current Regulator

Other offices did not, but the Equitable did, allot accrued terminal bonus as the policy went along. Other offices had therefore not created the same PRE as the Equitable.

Despite other offices not having created the same PRE as Equitable Life, the Regulator now appears to require, under with-profits policies, the guaranteed annuity rate to be applied to the full pension fund. The guaranteed annuity rate is now looking exceptionally generous yet the Regulator is not apparently asking offices to make any charge, differential or deduction for this guarantee.

To me, the Regulator seems in danger of causing a vicarious degree of dislocation within life offices which is prejudicial to the interests of those policyholders (particularly non-GARs and WPAs) whom it is the purpose of the Regulator to protect.

12. Actuaries and the Future

Q1.7 (A) To what extent should actuaries accept some responsibility for their role in designing financial services products that have subsequently turned out not to be fit for purpose, for consumers?

(B) Why were these issues not brought to light by the profession earlier and therefore perpetuated to the detriment of consumers?

(C) What lessons can be drawn from these experiences for the future?

In relation to the design of financial services products (see Q1.7 above), a huge 'savings gap' is opening up, estimated to be of the order of £28bn per annum, in savings for pension provision. The Government is very concerned about this and asked Mr. Sandler for a Report.

More and more final salary schemes are closing to new entrants so the only choices for the young is defined contribution schemes providing a cash sum at retirement. Some 75% of this cash sum at retirement has, by law, to be used to buy an annuity before age 75 and most retirees have to buy an annuity when they retire in order to have a steady income throughout retirement. These contracts therefore have the profound drawback that the person is a *hostage to fortune* as to the level of market annuity rates at retirement.

In order not to be totally at the mercy of the market annuity rates at retirement, the policy design should, in my view, be that of a with-profits pension policy, providing a guaranteed basic annuity from retirement. This basic annuity should increase with (guaranteed) reversionary bonuses (a rising 'floor' annuity) but there would have to be flexibility (i.e. a differential) in the (non-guaranteed) terminal bonus at retirement for any life office to be able to offer the contract.

Thus the Law Lords interpretation of annuity guarantees on with-profits policies has killed off the very design that is likely to best meet the twin needs namely (1) the need of consumers not to be totally *hostages to fortune* in respect of market annuity rates at retirement and (2) the need for life offices to have a differential terminal bonus rate in order to be able to offer the contract at all. This is the compromise that must be reached and is the very design that Lord Scott, Lord Morritt, the Equitable, the DTI, the Treasury, the life offices, leading counsel and the actuarial profession thought Equitable were offering.

A retirement contract of the above product design would seem to be in line with the requirements of the Sandler Report for the Treasury.

Thus the Law Lords interpretation kills off a product design that would be admirable for the future and highly desirable for the Government to encourage.

13. Estate

Q2.7 Do non-executive directors in life insurers have sufficient expertise and information available to them to enable them to challenge the actuarial calculations of the value of the insurer's assets and liabilities or whether policyholders are being treated fairly?

The Penrose Inquiry into Equitable Life emphasised the importance, in the with-profits fund of a mutual life office, of having a strong *Estate* which is held in perpetuity for all policyholders both current and future i.e. the *Estate* belongs to no one generation of policyholders.

In regard to Q2.7 (quoted above), a with-profits fund, in my view, is not viable without a strong *Estate* whether the with-profits fund is in a proprietary life office or in a mutual life office, if policyholders are to be treated fairly.

(The *Estate* is the 'financial strength' of the with-profits fund and has been built up by prudent management of the life office over 100 years, or more. The *Estate* has been build up slowly and steadily from profits from non-profit business and/or from taking a tiny slice out of the maturity pay-outs of maturing with-profits policies and letting compound interest over 100 years, or more, do the rest.)

This matter touches very much on what I have submitted to the Myners Review.

At separate meetings of the Faculty of Actuaries (held on 19 February 1990) and the Institute of Actuaries (on 20 March 1989) to discuss the paper '*With-Profits without Mystery*' clear doubts were expressed (within the

normal standards of professional etiquette) that it was possible to run a with-profits fund fairly without an *Estate*. (see discussion on the above paper in *Transactions of the Faculty of Actuaries*, **42**, pp139-186 and *Journal of the Institute of Actuaries*, **116**, pp301-345.).

Mr. A. Shedden, one of the most respected figures in the U.K. life industry a former President of the Faculty of Actuaries, then the Appointed Actuary of Standard Life (a major with-profits office) said:-

“Most actuaries today are still likely to subscribe to the entity theory of mutual company operations under which the Estate is deemed to belong to no-one”

i.e. Mr. Shedden was indicating that most actuaries subscribed to the theory that you needed a strong *Estate* which is held for policyholders in perpetuity and belongs to no one generation of policyholders.

Mr. M. Ross, then the Appointed Actuary of Scottish Widows (another major with-profits office) said:-

“Free Assets (i.e. an Estate) are likely to be required over and above the unconsolidated terminal bonus element”.

Mr. P. Kilgour, Appointed Actuary of Scottish Life (another life office with a large portfolio of with-profits business), said:-

“.....this excess (by which he meant the Estate) being a dowry which is passed on by each generation of policyholders to the next ...The existence of this dowry adds extra security....”

It could not have been clearer that actuaries with a wealth of experience of running with-profits funds were saying that you need an *Estate*. But it was up to the DTI to take this on board. It does not seem to have done so. The DTI did not intervene to prevent the Equitable continuing to transact business with a negative *Estate*. (see Penrose Report, Chapter 6 paras 48, 49, 56, 84 and Tables H.1 and Table H.2 where the Equitable's *Estate* in respect of 'already matured' policies is put at minus £1.8bn.).

It is being asked whether the DTI, despite its legal duty to monitor PRE, realised that Equitable were operating with a negative *Estate*.

The Scottish Widows needed to release some 40% of its *Estate* to comply with the Law Lords judgment. The strength of Scottish Widows was that they had an *Estate* of about £4bn so, even after the 40% release (worth about £1.5bn), they still had £2.5bn left in the *Estate*. The Scottish Widows could withstand the Law Lords judgment even although they may not have agreed with it. In contrast, the Equitable had a negative *Estate* in July 2000 and so immediately were rendered insolvent by the Law Lords judgment.

14. Statutory Accounts of a Life Office and Constructive Obligations

Q2.32 Does the Profession work closely enough with other professions e.g., accountancy, to ensure that its standards are widely recognised and to influence other profession's standards where appropriate, and to ensure that there are no regulatory gaps or overlaps in standards?

I have indicated above that the value of *constructive obligations* (such as *accrued terminal bonus*) was included in the liabilities for the purposes of the Appointed Actuary's internal valuation and internal accounts. This has been the position for the past twenty years.

This value was not, however, included in the value of the *long term business provision* (LTBP) shown in the published *Statutory Accounts* of a life office. (In the *Statutory Accounts* of a life office, the *long term business provision* (LTBP) and is part of the *technical provisions* and is taken by those reading the *Accounts* as the value of the liabilities to policyholders)

Up to end-2003, the value of *constructive obligations* appeared in life office accounts only as part of a balancing item - the *Fund for Future Appropriations* (FFA).

The Accounting Standards Board (ASB) have recently published Exposure Draft No 34 (FRED 34). The ASB say in paragraph 4.52 on page 116 of FRED 34 that:-

For those reasons the conclusion has been reached that if an amount has been identified as involving a liability the law requires it to be recognised in the technical provision rather than the FFA.

As stated above, under the new *realistic* FSA Regulations, *constructive obligations* (such as *accrued terminal bonus*) are, from end-2004, to be valued as part of the liabilities of a life office.

The ASB propose that, from end-2004 in the published *Statutory Accounts* of a life office, *constructive obligations* are to be included, for the first time, in the *long term business provision* (LTBP) (and not in the *Fund for Future Appropriations*).

15. Failure to implement the existing Law

It is the belief of many that if the will of Parliament, in the form of the existing Law, had been properly implemented by the DTI, the Equitable Life situation would never have been allowed to happen.

16. Expanding the horizons of actuarial knowledge and promoting innovation

Q1.12 Has the Profession successfully expanded the horizons of actuarial knowledge and promoted innovation?

Although it is my view that, ten years ago, insufficient attention was paid by actuaries to financial economics this has changed significantly over the past decade.

Your inquiry asks (in Q1.12 above) whether the Profession has successfully expanded the horizons of actuarial knowledge and promoted innovation. The programme for the attached seminar may be relevant to this question. The seminar has been organised by the Faculty of Actuaries in conjunction with the International Centre for Mathematical Sciences (founded by Edinburgh University and Heriot-Watt University). The seminar covers the most up-to-date actuarial and financial economic techniques for valuing life office liabilities taking account of *accrued terminal bonus*, any *smoothing* of surrender or maturity payouts, all *guarantees* and all *options*.

But this is only a continuation of what has been the practice of many offices for many years, not something new.

D. O. Forfar, MA, FFA, FSS, C Math, FIMA.
29 August 2004.