

J.I.A. 120, 111, 415-469

UNITISED WITH PROFITS—GAMALIEL'S ADVICE

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(Presented to the Institute of Actuaries, 26 April 1993)

ABSTRACT

The paper deals with the development of unitised with-profits business in the United Kingdom. The authors trace the recent history of these products and comment on the main reasons for their development. They also deal with corporate issues, including implications for policyholders and shareholders of different fund structures and different types of life office. Pricing and product development issues are also covered. Reserving issues including the range of valuation methods, statutory requirements and policyholders' reasonable expectations are explored. Finally the paper considers the actuary's contribution to the management of unitised with-profits policyholders' expectations.

KEYWORDS

Unitised With Profits; Product Design; Policyholders' Reasonable Expectations; Valuation

Gamaliel's advice:

And now I say unto you, Refrain from these men, and let them alone; for if this counsel or this work be of men, it will come to nought.

But if it be of God, ye cannot overthrow it; lest haply ye be found even to fight against God.

Acts of the Apostles, Chapter 5, Verses 38 and 39

1. INTRODUCTION

1.1.1 Unitised With Profits (UWP) is a relatively new type of insurance contract. In its short history it has provoked considerable controversy. Business volumes have grown rapidly. This, in turn, has raised a number of actuarial issues where use of established approaches call on us to recognise the questions, but not necessarily to confirm the answers. Actuaries have had to review, and often revise, their stance on a whole range of issues, from the theoretical question of what is with profits to the practical problems of determining surrender value bases for use in volatile investment markets.

1.1.2 The authors have considered some of these issues. The purpose of this paper is to provide an opportunity for the profession to discuss actuarial and other aspects of UWP contracts. The only previous Institute paper on the subject⁽¹⁾ dealt with just one particular form of the contract. There have been, in addition, a limited number of other papers.

1.2 Definition

1.2.1 It is useful to attempt a definition of the concept of a UWP policy as dealt with in this paper. Such a definition might be:

A policy under which units of benefit are allocated for each premium paid, and under which discretionary bonuses are added out of disclosed surplus. The benefit added as each premium is paid is determined using an allocation scale. This contrasts with a conventional with-profits contract, for which the initial guaranteed benefit is calculated at inception, taking into account future premiums and using a premium rate table.

1.3 Issues

1.3.1 There are a number of issues which can be identified when looking at the range of UWP policies in the market. Some of these are:

- (1) are the contracts genuinely with-profits?
- (2) sales methods and LAUTRO concerns, and
- (3) differences in the method and apparent strength of the valuation of UWP compared to valuation of conventional with-profits contracts.

1.4 Joint Working Party

1.4.1 The Institute/Faculty, through LAJC (Life Assurance Joint Committee), have encouraged research into UWP by setting up a UWP working party. The working party sent out a questionnaire to offices asking for details of UWP contracts and valuation methods/bases. Results of analysing the replies were not available at the date of writing this paper. The report on the survey was published on 26 April 1993⁽⁴⁾.

1.5 Structure

1.5.1 We have set out our thoughts on the issues involved under five general headings.

Section 2 *Observation*. Here we set out our understanding of the with-profits concept and how UWP has evolved or departed from the main tenets. We also list and comment on the main reasons for offices entering the UWP market. This provides the background and the starting point for the subsequent discussion of the actuarial issues involved.

Section 3 *Corporate Issues*. Here we deal with the relative interests of shareholders and policyholders. We discuss how these might be reconciled by adopting different fund structures in different offices.

Section 4 *Pricing and Product Development*. Here we consider some features common to UWP design, and their relative importance in different markets.

Section 5 *Reserving Issues*. Here we consider a range of valuation methods and issues, including statutory requirements and policyholders' reasonable expectations (PRE).

Section 6 *Managing Unitised With-Profits Policyholders*. Here we consider a number of UWP issues where the actuary has a contribution to make to the dialogue between policyholder and life office.

2. OBSERVATION

You see, but you do not observe.

Sir Arthur Conan Doyle, *Scandal in Bohemia*

2.1 *History of With Profits*

2.1.1 The with-profits concept is some 200 years old. For many decades the basic operation of the with-profits contract underwent little change. The main sources of surplus were (implicit or explicit) loadings for bonus in the premiums and excess investment income. Surplus was distributed using the reversionary bonus method. Capital values of life office investments were seen as being stable or subject to gradual change. The reversionary bonus distribution method added to the stability of the office. This, in turn, enabled the office to continue distributing bonus in the same way. The method was readily adapted to the investment conditions that emerged in the 1960s, with greater exposure to equity investment and capital growth in equity values. The concept of terminal or final bonus was introduced, and payouts increased to reflect the rise in investment markets, subject to some smoothing, at the date of a claim. Against this background many of the pricing and reserving issues associated with conventional with-profits business had established solutions.

2.2 *The With-Profits Concept*

2.2.1 The with-profits concept that has developed in the United Kingdom has a number of features, some of which are:

- (1) restricted guarantees,
- (2) policyholders share in the profits and risks of:
 - (a) investment,
 - (b) mortality and morbidity,
 - (c) expenses,
 - (d) discontinuances
 - (e) experience of non-profit business, and
 - (f) taxation.
- (3) a degree of pooling and smoothing of profits and losses on investment, mortality and other risks,
- (4) sharing in the performance of a mixed portfolio of assets, most often with the majority of the investments being in ordinary shares and property, and
- (5) a capability for the with-profits business to, at least in part, finance itself, and perhaps also provide finance for non-profit business.

2.2.2 Conventional with-profits policies will exhibit most if not all of the

above features. There can be exceptions. An example would be a proprietary office which writes all non-profit business in a fund, the profits of which go 100% to shareholders. For such an office (2)(c) would not apply to its with-profits business.

2.2.3 Also, some essentially non-profit contracts may exhibit at least one of the features. Non-profit unit-linked business, for example, participates contractually in (2)(a) (investment profits and risks).

2.2.4 The extent to which a UWP policy is truly with-profits depends on which of the foregoing features it exhibits and to what extent.

2.3 Unitised With Profits

2.3.1 In contrast to conventional business, the UWP business is in its infancy. Product designs are many and varied. Many of the issues associated with pricing and reserving are new. This means inevitably that definitions and analyses of UWP are incomplete. UWP in its current form emerged in the mid 1980s. UWP products were developed in response to market changes which, in turn, were triggered by changes in regulations and in legislation. Their development was made possible by the considerable freedom U.K. life offices still retain in designing products.

2.3.2 The current regime controlling the selling of life insurance dates back to the Financial Services Act 1986, with regulations coming into force in 1988. In the same year there were changes in pensions legislation.

2.3.3 As a result, the structure of the life insurance market changed. To understand the changes that occurred, it is helpful to look at the activities of typical companies in the early 1980s and before. At the risk of gross over simplification, the market could be represented in terms of the activities of two groups of typical companies.

2.3.4 The first group were established, often with a history going back over 100 years. Many of the mutuals are included in this group. Many derived business from independent financial advisers or brokers, as they then styled themselves, and there was a strong emphasis on mortgage business. This reflected relationships established with other financial institutions such as banks and building societies. It also reflected the dominance of group schemes in the pensions market.

2.3.5 The second group were new companies or new subsidiaries of established companies. They tended to be proprietary—very few new mutuals had been established (although there were some prominent transfers to mutual status). Many operated through direct sales forces. Those companies did not have a history of with-profits performance to promote their contracts, and their products were almost exclusively unit linked.

2.3.6 The majority of established companies had accumulated significant free reserves. The existence of this capital backing, or cushion, allowed these companies to take a very long-term view in averaging performance, including

investment performance. These offices sold conventional with-profits contracts. These offered modest initial guaranteed benefits, calculated from premium rate formulae assuming a low rate of investment return and/or specific loadings for future bonuses. These ample premium rates, coupled with use of net premium valuations using low interest rates, all but ensured an emergence of surplus each year. The emerging surplus was distributed via the reversionary bonus method. The capital requirements of conventional with-profits business are not insignificant, but the existence of large free reserves resulted in capital considerations assuming less importance.

2.3.7 The new companies introduced new products. They lacked both the track record of performance and the capital backing to copy the established range of products. Their products were unit-linked. The benefits were linked directly to the investment performance of the underlying funds.

2.3.8 Many commentators saw the market as split between with profits and unit linked. The two groups argued the merits of their respective movements. Market surveys commented on the relative success of one contract type over the other. The best past-performance results swung backwards and forwards between unit linked and with profits. There is greater spread in unit-linked results, as values move up and down in line with stock market movements. In contrast, the results from with profits are more stable, reflecting a smoothing process which averages out 'peaks and troughs' in investment values.

2.3.9 The past-performance comparisons were not conclusive. Unit-linked results were better in rising markets, as with-profits results were lagged due to both the averaging process and a relatively slow response in adapting with-profits bonus structures. In falling markets these effects were reversed.

2.3.10 During the 1960s and 1970s there were contract developments which anticipated UWP. Deposit administration and recurrent single premium with-profits contracts have much in common with UWP, and were successfully sold by a number of the established offices. Some of the newer offices introduced some elements of profit sharing into their unit-linked contracts, and also offered deposit administration contracts.

2.4 Reasons for Entry into the Unitised With Profits Market

2.4.1 *Market background.* The 1980s were a period of rising markets. This favoured unit-linked products. In consequence, unit-linked sales grew and with-profits offices lost market share, particularly in pensions business. With-profits performance lagged investment returns. With-profits product design lagged market developments. This development, together with a perception that with-profits offices needed much capital, and concerns as to the timing of return on capital, prompted offices to consider new designs. These trends are illustrated in Appendix 1.

2.4.2 *Variable premiums.* Pensions business had been increasing steadily throughout the period. In 1988 legislation was introduced which increased the

opportunities for personal pension provision. The large increase in pensions business that followed added to the difficulties for with-profits offices. It also introduced new procedures in the administration of traditional with-profits designs. Pensions premiums tend not to be regular or level. They are as likely to be related to other factors such as earnings, company profits or refunds from state scheme contributions. The traditional with-profits contract presumes a level premium payable throughout the term. Administration systems had been developed around this feature. Variable premiums, together with increased volumes of business, placed these systems under considerable strain, and added to the commercial pressure for redesign.

2.4.3 *Stock Market crash.* The Stock Market crash in 1987 and fall in 1990 also put companies under pressure. Here the greatest impact in sales was on unit-linked business. Individual sales of unit-linked business, particularly single premium, suffered. Policyholders seemed to switch their attention to obtaining an assured level of return, either in the unit-linked investment itself or through the option of transferring into with-profits or other funds with capital guarantees.

2.4.4 *Capital needs.* In addition to the effect on sales, the Stock Market crash also had an impact on available capital for life offices. Potentially the non-linked business may have been more adversely affected. Implementing the provisions of the Financial Services Act has also proved an expensive operation. It has involved considerable fixed costs. Offices have come into direct competition with other financial service organisations such as the banks and building societies. Although the sales process is heavily regulated, market barriers have been reduced, allowing those competing organisations to market a wide range of products. These factors and measures have increased the cost of writing business. This, together with the substantially increased volumes of business being written, led to more urgent consideration of product designs with lower capital requirements.

2.4.5 *Bonus costs.* Increased competition, falling investment returns and possible lethargy and false hopes have put bonus rates under pressure. Many offices have a long history of maintaining bonus rates. UWP provided an opportunity to introduce contracts on which the immediate cost of declaring bonus could be lower.

2.4.6 *Managing bonus rate changes.* An established high bonus paying conventional with-profits office may find its new business volumes affected by a reduction in bonus rates, which reduces its competitiveness as measured by position in league tables of 'payouts'. By introducing a new with-profits contract such as UWP (or by introducing a new series of units), the office can separate and deal differently with past and future generations of policyholders.

2.4.7 *Product development activity.* Even in the absence of new development, it may be justifiable to re-package or revitalise an existing product in UWP form. This may allow an office to update sales effort with limited impact on costs and systems.

2.5 Range of Designs

2.5.1 UWP is not a homogeneous product. Illustrations of the range of design features are:

- (1) *Price of units*. Constant price, or daily price increases.
- (2) *Bonus*. Addition of bonus units or bonus increments to the price of units (or both!), or no guaranteed rate of future bonus, or 4%, say, guaranteed minimum rate of future bonus.
- (3) *Premiums*. Future level premiums, or any amount of future premium acceptable.
- (4) *Market value adjuster*. Regularly applied, or almost never applied.

2.5.2 The consequence of these variations is that it is not safe to generalise about UWP in areas such as the strength of valuation basis; rather it is necessary to consider such matters in the light of the characteristics of a particular UWP contract.

2.6 Checklists

2.6.1 There are a large number of items to be considered by an office planning to introduce UWP. A checklist of many of the items that may need to be covered appears in Appendix 2.

3. CORPORATE ISSUES

Cui bono?

Cicero, Pro Molone

3.1 Shareholder v Policyholder

3.1.1 Shareholder interests are not normally directly relevant within a mutual office (unless perhaps it is thinking of demutualising). However, with-profits policyholders may have similar rights to shareholders in respect of profits from non-profit business. Shareholder interests are very relevant within a proprietary company.

3.1.1.1 The objectives of life office shareholders might be expressed in terms of 'profits', earnings, dividends, embedded value, appraisal value. All these items involve present or future transfers, from the long-term business fund to shareholders' funds, which restrict the amounts directly available for policyholders from the long-term business fund. The transfers are the reward to shareholders for any capital or other support which they have provided.

3.1.1.2 The objectives of policyholders might include security and good payouts (either at maturity/vesting or on surrender). The achievement of such good results would usually require good investment performance and low expenses (which from a policyholder's perspective could include transfers to shareholders). Service standards, meeting needs (lower level met by product design) and security or acceptable risk levels are other elements very likely to feature in policyholders' expectations.

3.1.1.3 There are significant differences between the way in which shareholders' profits are derived for a pure unit-linked office and the way in which they arise in a conventional with-profits office.

- (a) *Pure unit-linked offices.* Under unit-linked contracts written in a company solely writing unit-linked business, policyholders suffer set charges, which provide the office's margins to cover expenses and the costs of items such as mortality strains, but are entitled to all the (remaining) investment performance. The difference between the set charges and the costs mentioned above can produce surpluses which would usually be transferred to the profit and loss account for shareholders.
- (b) *Conventional with-profits offices.* Under conventional with-profits contracts, total distributed surplus is shared between policyholders and shareholders, usually in the ratio of nine to one. In other words, shareholders get one-tenth of distributed surplus. There are complications concerning whether this is before or after tax. There may also be profits from non-profit business.

3.1.1.4 A number of companies write both unit-linked and with-profits business. For some such offices all business is written in a 90/10 fund (for which surplus is distributed 90% to policyholders and 10% to shareholders). For others the long-term business fund may be partitioned. In the simplest case, this could take the form of a with-profits 90/10 subfund and a non-profit 0/100 subfund (for which surplus is distributed 100% to shareholders).

3.1.1.5 UWP has features of both unit-linked and conventional types of contract. The unit-linked features are consistent with transfers to shareholders' funds which are related to charges net of costs. In this case the with-profits components of UWP could well be restricted to investment items. The with-profits features suggest a 90/10 structure. It might be possible to have both. This could happen if the unit linked and UWP were written in a separate company from the rest of an office's business, and the UWP reinsured back into the main company.

3.1.1.6 A similar situation could arise within a partitioned long-term business fund if the charges, expenses, etc. of a UWP product were directed, along with the rest of the unit-linked business, into the 0/100 part of the fund, and the unitised with-profits allocations into the 90/10 part. Clearly there could be a double take for shareholders, which provides an opportunity to produce a more flexible charging structure, but which would have implications for policyholders' reasonable expectations.

3.1.2 *Effect on results*

3.1.2.1 Contracts can be designed under the two possible modes of shareholder participation, to have similar profitability levels under a single set of assumptions about future conditions. Two such contracts (UWP(a) and (b)), together with the set of assumptions used, are included in Appendix 3. The two

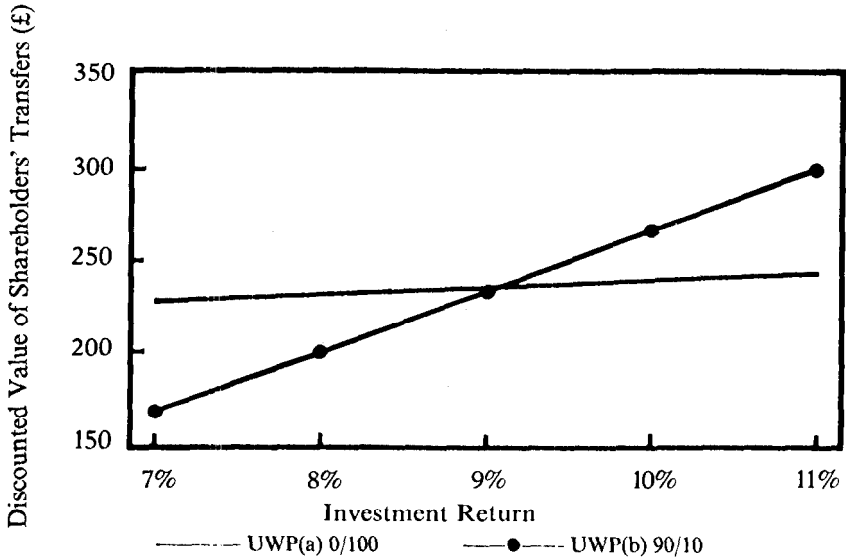


Figure 1. Value to shareholders at 12% Risk Discount Rate.
Effect of change in investment return.

contracts have equal profitability at outset, assuming an investment return of about 9.2% under the assumed expenses, charges, etc. However, profitability diverges if the conditions are altered. Figure 1 shows the effect on UWP shareholder profitability of changes in the investment return assumption under the two modes. As expected, the profitability changes much more under the 90/10 mode than under the 0/100 mode. The underlying numbers for Figure 1 and subsequent figures appear as tables in Appendix 4.

3.1.2.2 The reverse side of this picture is the effect on policyholder results, and this is indicated in Figure 2. In this case there is greater sensitivity to a change in investment return under the 0/100 mode (under which the policyholder is obtaining all the investment return less fixed charges).

3.1.2.3 If changes in expense levels are considered, a different picture emerges. Figure 3 shows the effect of altering the future expense assumptions. The 0/100 mode profitability is more sensitive in this case (assuming that the charges remain fixed), as any change in the expenses flows directly through to shareholders' transfers.

3.1.2.4 Figure 4 shows the corresponding picture for policyholder results which are unchanged under the 0/100 mode, but significantly affected in the 90/10 mode.

3.1.2.5 The timing of statutory surpluses can also be very different under the two modes of shareholder participation. Figure 5 compares the profit profiles of

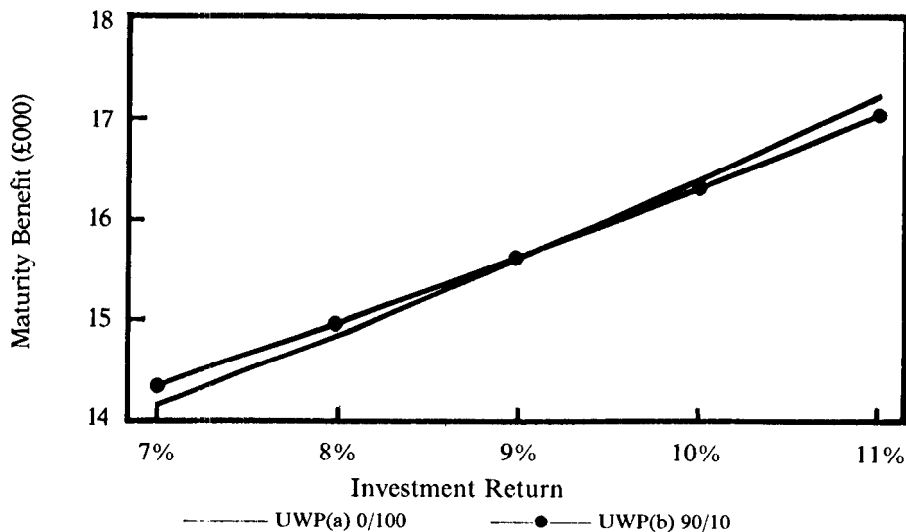


Figure 2. Policyholder's benefit.
Effect of change in investment return.

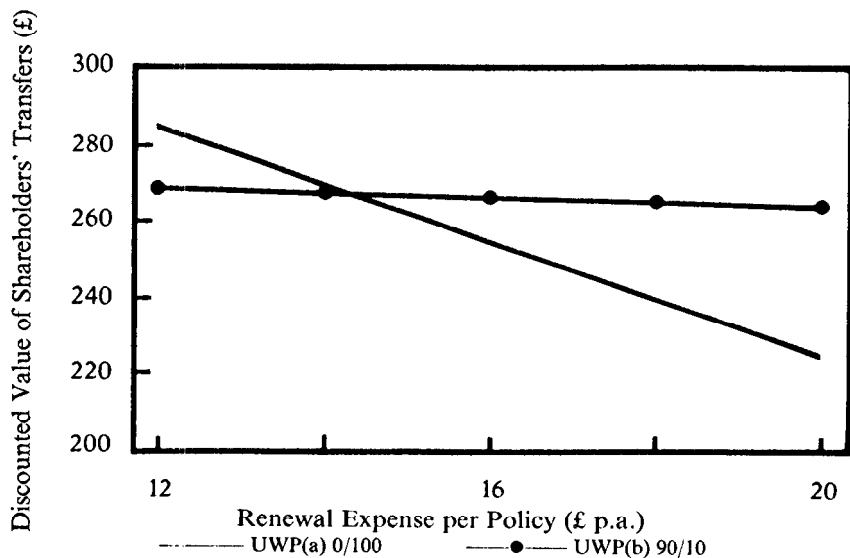


Figure 3. Value to shareholders at 12% Risk Discount Rate.
Effect of change in renewal expense levels.

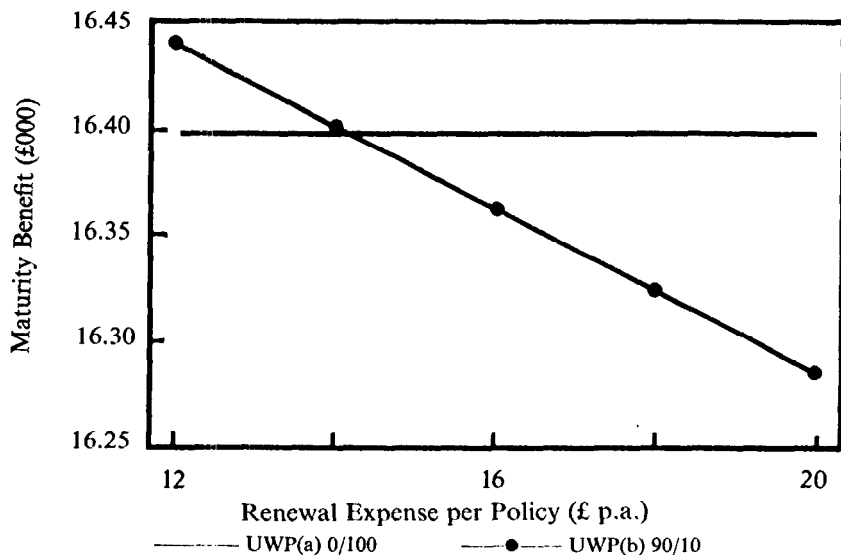


Figure 4. Policyholder's benefit.
Effect of change in renewal expense levels.

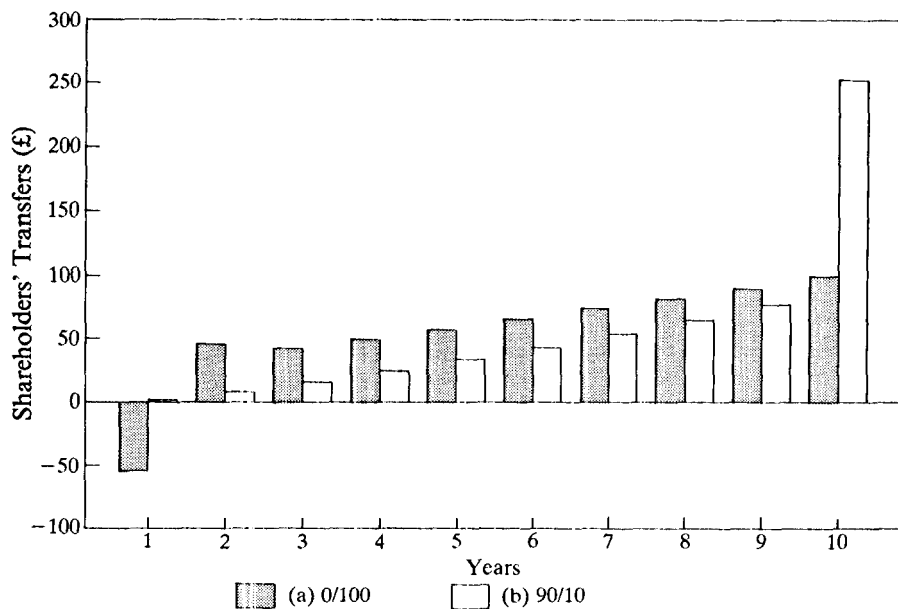


Figure 5. Shareholders' transfers.

the two modes for contracts of equal profitability under a set of standard assumptions.

3.1.2.6 Although not obvious from a comparison of Figures 1 and 2 or Figures 3 and 4, equal profitability under the two modes occurs under slightly different conditions to those which produce equal results for policyholders. The reason for this is the timing differences shown in Figure 5 and use of a discount rate for shareholders' transfers higher than the investment return.

3.1.2.7 Under the 90/10 mode, a large part of the surplus distributed can be considered to arise from the investment return. The larger the investment return distributed, the larger the shareholder transfers. Contracts under which all the investment return is treated as surplus can provide large shareholders' returns. However, if there are guaranteed minimum bonuses, these may lead to lower transfers if the guaranteed amounts are deemed not to be payable out of surplus. As indicated elsewhere in the paper, guaranteed bonuses would also increase the capital requirements of the office.

3.1.3 The arguments from a shareholder perspective for having a conventional 90/10 profit-sharing formula can be summarised as:

- (a) shareholders and policyholders have a common interest in achieving good investment and expense performance,
- (b) there is less dependency on expense performance, and
- (c) it is easy to justify the financing of the UWP from the conventional with-profits fund.

3.1.4 Arguments for using a unit-linked type 0/100 profit-sharing formula (policyholders take all the investment return) can be summarised as:

- (a) it eases the changes in profitability which can occur on switching between ordinary unit-linked funds and a UWP fund,
- (b) it restricts the dependency of shareholder profits on investment return levels, which might be particularly important if such levels are volatile or expected to fall, and
- (c) it is possible to provide a full return on any shareholder funding, because repayments can be taken from surplus without having to be shared 90% with policyholders; repayment of any financing would not have to flow through the '90/10 gate'.

3.2 Discontinuing v Full-Term Policyholders

3.2.1 *Historical background.* Actuarially calculated non-guaranteed surrender values are normally paid on conventional with-profits business. In contrast, unit-linked policies pay a value of units (number of units times price, often modified as specified in a policy document, but essentially a guaranteed formula related to number and prices of units). It is common for surrender values to be less than asset shares on with-profits policies which have been in force for a long time. However, depreciation of asset values on more recent policies, including the majority of UWP policies, meant that asset shares on many UWP policies stood

below their face value for much of 1992. The level of surrender profits generated by many offices on their conventional with-profits business may, therefore, not arise for the foreseeable future under UWP policies. This means that a source of surplus, which might have been used for supplementing maturity payouts or for other purposes, may be much reduced or cease.

3.2.2 Market value adjuster (MVA). Unit prices under UWP policies are ordinarily not directly related to market values of assets, and are, in effect, nominal. If the unit-linked surrender value rules (e.g. number of units times price) were applied to UWP without modification, this would effectively introduce guaranteed surrender values. There would be consequential reserving and investment implications. What is needed is the ability to reduce the surrender values to the level of, or below, the market value of assets supporting a UWP contract, when this is lower. Such a provision is essential when market values are severely depressed. The MVA meets this need. The application of an MVA is also appropriate in other circumstances, such as a switch to unit linked or early retirement.

3.2.3 Non-use of MVA. As far as the authors are aware, few offices would, until recently, claim to have applied an MVA. Bearing in mind the drops in asset values which occurred at the end of 1987, during 1990 and in the middle of 1992, policyholder expectations may well be being built up that an MVA will not be used except in very extreme circumstances, e.g. worse than in 1987. There may also be valuation implications (see later) to the extent that it is thought appropriate to set mathematical reserve levels taking account of the current level of surrender values.

3.2.4 Surrender profits. It is currently perceived that many offices make profits on surrender of conventional with-profits business by not including any allowance for terminal bonus in surrender value calculations, and paying values significantly less than asset shares. Such profits can be substantial, and can be used for supporting the payouts of those policies which mature or for other purposes. The profits may reduce, both because of pressures to pay increased surrender values and the development of the market for second hand policies, which could reduce the numbers of large surrenders. Currently, it appears that such substantial profits will not be made on UWP contracts. The extent to which an office feels it appropriate to subsidise (or deplete) maturity values is a matter of bonus philosophy and equity. An office might, however, take into account the impact which it considers relatively high maturity values compared to surrender values (or vice versa) have on sales.

3.3 Bonus Philosophy—Corporate Issues

3.3.1 The distinctive feature of UWP bonus is that it is much more closely linked to investment return, because the bonus is related to the face value of allocated units rather than to prospective benefits, such as the guaranteed benefits at maturity. Consequently, UWP bonus rates tend to be higher than reversionary bonus rates on conventional with-profits business. However, the

absolute amount of bonus allocated in the early years of a regular premium contract is often smaller, and it can be less costly to declare. This is one factor in allowing weaker valuation reserves to be set up under certain designs of regular premium UWP contracts than for equivalent conventional contracts, an issue explored further in Section 5.

3.3.2 The lower costs of bonus in the early years of a UWP contract mean that under the 90/10 mode of participation, shareholders' transfers are deferred relative to a conventional with-profits contract. If conventional with-profits business is being replaced by UWP, transfers to shareholder funds and dividend payments may reduce temporarily. Alternatively, temporary increases may result from an office switching its new business efforts to UWP for which the 0/100 mode of participation applies.

3.3.3 The company, advised by its Appointed Actuary, will need to determine a bonus philosophy. Following revisions to GN1, 'Policyholders' Reasonable Expectations' (PRE) are likely to form an integral part of the philosophy, and are covered in more detail in Section 6.

3.3.4 Asset share calculation results will usually be considered in attempting to meet PRE. Defining the calculations identifies a number of standard questions in relation to bonus philosophy. In effect assumptions are required, in order to make the calculations, on:

- investment allocation,
- investment performance,
- allocation of expenses,
- degree of pooling/distortion,
- other sources of surplus (if any),
- smoothing,
- cost of financing valuation strains,
- reward for providing finance,
- taxation, and
- shareholders' transfers.

3.3.5 Under the 0/100 approach to shareholder participation, it is likely that the asset shares would be built up using just investment performance and the contracts charging structure. These points apart, most matters to be considered in setting the assumptions for asset share calculations are no different in principle to those arising under the calculation of asset shares for conventional with-profits business, and will not be considered further in this paper. It may also be possible to make use of the unit-linked systems of the office to calculate asset shares, by setting up dummy records or shadow funding, using unit prices based on the actual or notional assets allocated to the UWP business.

3.3.6 If the total payouts under the policy are based on asset share calculations, the split between basic benefit, declared bonus and terminal bonus is important to the office. The lower it can keep the guaranteed benefits at any point in time, the less the valuation requirements. The lower capital requirements

then allow greater investment freedom or higher growth rates of business (or both). Current bonus interest rates for a number of offices' UWP contracts do not seem to allow any margin for future terminal bonuses under the sort of future investment returns now thought likely, thus potentially jeopardising their future growth and investment performance.

3.3.7 The extent to which an office attempts to smooth payouts is a further important item of bonus philosophy, and affects the way in which it might decide to convert its asset share calculations into a practical terminal bonus scale.

3.4 *Switching*

3.4.1 An important issue is the extent to which, and the terms on which, any switching between UWP and ordinary unit-linked contracts is allowed. For life business such switching is often not allowed, and is therefore not a problem. However, for pensions business the UWP may be presented as just another fund with unrestricted switching facilities. This has a number of implications.

3.4.2 Switching provides potential options to policyholders either against the office or against other policyholders. For example, UWP policyholders might think of switching into ordinary unit linked when market values are low, and back again when market values are high.

3.4.3 The profitability of the UWP and the ordinary unit-linked contracts may be different. This may apply part way through the term of the contracts, even if initial profitability is the same. This problem is eased for a proprietary company if the UWP is written under the 0/100 mode of participation.

3.4.4 Valuation requirements may differ after the switch, leading to either a release of capital or further capital requirements.

3.4.5 Solvency margin requirements will differ, as normally ordinary unit-linked business is written with a minimal solvency requirement, but UWP requires 4% of mathematical reserves.

3.4.6 There may be tax implications for the office arising from the switch (e.g. if unrealised gains have to be brought into account to fund part of a switch value from UWP).

3.4.7 It follows that arrangements need to be in place to control strictly the terms on which switching in and out of UWP take place.

3.5 *Capital Requirements*

3.5.1 References have already been made to capital requirements and the possibly lower capital requirements of UWP. The office will, therefore, need to bear in mind, in relation to UWP, factors such as:

- (a) the effect of guarantees and bonus interest levels,
- (b) new business and in force expansion rates,
- (c) policy design/market pressures,
- (d) strains and losses from not using, or any delay in implementing, an MVA,
- (e) strains and losses from smoothing, and
- (f) capital requirements of any preferred investment strategy.

3.6 *Valuation*

3.6.1 The strength of the UWP valuation affects the capital requirements. On the other hand, comparisons are made of the comparative strength of offices' reserving for some contracts. Consequently, an office will have to decide how strong a valuation basis it wishes to (or can) publish, and then considers the consequences. The requirements of the regulations and other valuation issues are discussed in Section 5.

3.7 *Investment Philosophy*

3.7.1 An office will need to set out its investment philosophy in relation to UWP. This need not be very different from the philosophy for conventional with-profits business. Questions of interest would be whether the assets are pooled with the rest of the with-profits business (if any), whether notional or actual assets are allocated to the UWP, and the extent to which bonus philosophy and structure justify different investment strategies for UWP.

3.8 *Taxation*

3.8.1 Following the recent changes in tax legislation, there are differences between the taxation treatment of linked and non-linked business. The tax calculations are now based, at least in part, on the information appearing in the DTI returns. To the extent that UWP is a hybrid contract, offices may include it under either linked or non-linked categories (or possibly split between the two). This potentially has implications for the allocation of investment income and chargeable gains.

3.8.2 Transfers to shareholders' funds produce either a tax charge or an increase in tax charge. It follows that, for the 0/100 mode of shareholder participation under which transfers are made earlier to shareholders, tax is payable earlier.

3.9 *Single Premium Business*

3.9.1 True single premium with-profits life business has been relatively unusual until recently. Single premium with-profits pension business had been common, but often associated with regular (or at least recurrent single premium) contracts. Some offices have written substantial volumes of single premium UWP business over relatively short periods of time. The concentration of purchase money received and to be invested within such a short period of time makes the investment results particularly sensitive to stock market levels during the period. If the single premiums are also for a single term (or limited number), there is similar sensitivity during the short period that the full-term claims will be paid. These features may create problems in smoothing the results of these contracts, if other contracts are not to be unduly affected.

3.9.2 To the extent that an office has reserved the right to adjust bonus rates and surrender terms to reflect the special situation that applies, it may be successful in protecting the return and interest of other policyholders and of shareholders. Where an office does not have discretion to differentiate UWP

single premium bonus rates and surrender terms from the rates and terms applicable to other with-profits policyholders, it runs the risk of adversely affecting the position of other policyholders with distortion to bonus rates, investment returns and investment strategy.

4. PRICING AND PRODUCT DEVELOPMENT

People of the same trade seldom meet together but the conversation ends in a conspiracy against the public, or in some diversion to raise prices.

Adam Smith, *Wealth of Nations*

4.1 In some respects UWP contracts are not new, in that many of the product features are found in earlier contracts. To identify and consider product development issues it may be helpful to present UWP, not as a product, but as a unifying concept that covers a range of insurance and related financial services products.

4.2 We can identify at least four segments of the long-term insurance and savings market where very different products have been developed to reflect differences in sales process and in the company's cost structure.

4.3 These might loosely be associated with the following UWP providers and have main characteristics as listed.

| | |
|---------------------------------|---|
| Industrial Business (IB) Office | <ul style="list-style-type: none"> --- high volume, low premium, --- high persistency, --- simplified sales process, --- limited systems requirement, and --- emphasis on regular premium payable. |
| Bancassurer | <ul style="list-style-type: none"> --- high volume, low cost, --- simplified sales process, --- extensive systems support, and --- bank culture and savings plan with emphasis on total premiums paid, and annual rates of interest (or bonus). |
| Unit-Linked Office | <ul style="list-style-type: none"> --- low volume, high premium, --- complex sales process, --- extensive systems requirement, and --- emphasis on current value of premiums invested, short-term investment performance. |
| With-Profits Office | <ul style="list-style-type: none"> --- high premiums, --- complex sales process, --- significant systems requirement, and --- emphasis on sums assured, projected values and long-term payments. |

These might be characterised by some common versions of the contracts sold. These are 'home service' for industrial offices, 'savings accounts' for bancas-

surers, 'investment plans' for unit-linked offices and 'protection plans' and 'defined benefit schemes' for with-profits offices.

4.4 For the 'home service' plan sold by the industrial office the main item is the collectable premium. Although unit costs may be high, both the sales process and administration cost structure are designed and required to be simple. The collectable premium is fixed, and used to determine benefit with as few variations as possible. There is minimal underwriting. Benefits are often per unit of premium, varied for sex, occupation or other conditions, such as smoker status. In administration, unless some recorded event takes place, it is assumed that this week's premium has been paid and that the amount to be collected was the same as the amount due in the previous week. (In practice a UWP contract with an IB office would be an ordinary branch policy.)

4.5 The 'savings account' issued by the bancassurance, in contrast, highlights the total amount of premiums paid. The contracts may be associated with typical accounts with banks or building societies. In the insurance field, a well established product is deposit administration. Under these arrangements, the measurement of value in the contract is the total premium paid. There is an implied (or assumed) guarantee of maintenance of performance in capital value. Contracts are competitive if they offer a high annual return—akin to the rate of interest. The emphasis in cost and administration structures is on recording and controlling sums received.

4.6 The third variant of UWP contract types is the 'investment plan' issued by the unit-linked office. The sales process concentrates on the advantages of good investment performance. Results are dependent on investment selection, either by policyholder or fund manager, together with the timing and amount of premium payments. The record structure reflects this. There is an emphasis on the current value of the contract with premiums paid, premiums payable and projected benefits assuming less importance.

4.7 The 'protection plan' or 'defined benefits scheme' presents the value of the contracts in terms of the benefit secured. A small premium secures a high benefit. There is a need for the benefit to be high in the sales process and, if variable, to be steadily increased. This is reflected in administration, where an important task is to ensure that the premium due is collected. Where such a contract is issued by a with-profits office, the emphasis is on current claim value and projected cover—both increasing with bonus additions.

4.8 To the extent that UWP designs can approximate to any one of a number of existing contracts, there is a wide range of possible product designs. Where an office wants to take advantage of the substitution effect (in sales) and the mimicking of existing contracts (in systems) the range of appropriate designs can be narrowed down. An office moving from conventional with profits to UWP might not be expected to replace per-policy processing with the benefit-per-unit-premium tables used by an office issuing high volume low premium high persistency business.

4.9 The office will have to consider the effect of options. These may include

options to vary maturity dates and to switch between UWP and unit-linked funds. Options are a potential source of selection against the office. They may reduce policyholders' returns, by requiring the office either to follow a more conservative investment policy or to charge for the additional capital required to meet the risk.

4.10 Even where adequate provision is made for potential costs of selection, the effect of switching between UWP and unit linked will change both the level and pattern of emerging surplus. The office may limit this uncertainty in managing surplus, and limit the risk of investment selection associated with transfers into UWP from unit-linked contracts in falling markets by restricting options.

4.11 It is usual for an office, in these circumstances, to seek to protect the fund and the position of continuing UWP policyholders. On investment, this involves reserving the right to change switching terms at short notice, or reviewing guaranteed benefits for large premiums for amounts invested over short periods. On claims, other than those by death or maturity, it involves reserving the right to adjust unit prices (by applying an MVA).

4.12 For life, as opposed to pension, UWP contracts, switching restrictions are more common. One reason for this is that the switch is often regarded as a material change for qualifying policy purposes.

4.13 There are also solvency margin considerations. For example, a unit-linked contract may be deemed to have an investment guarantee if switching from unit linked into UWP is not restricted.

4.14 An early decision is required on whether the price of units is fixed or variable. Again, there may be sales or systems considerations. One option is a fixed unit price, typically 100 pence, together with a unit holding which is increased by the addition of further units at each bonus declaration. The alternative is a variable unit price, which is increased, from time to time, by bonus additions, with the unit holding determined at the time units are allocated from premiums.

4.15 The sales and systems considerations are such that it is possible that the industrial office and the bancassurance might fix the unit price on the grounds that variable unit processing at policy level was not justified. Equally, the unit-linked office might opt for variable price processing. For with-profits offices the variable price is more widely used. From the policyholder's point of view the presentation is consistent with a unit-linked contract.

4.16 The office can guarantee the accumulation to the maturity date of all or part of premiums paid or payable. The greater the guarantee the greater the implication for capital and solvency requirements. It is usual to guarantee that the price of units will not fall (or change). A common guarantee is that the value of investments made from premiums paid-to-date will accumulate at rates up to 4% p.a. up to the scheduled maturity date. By reserving the right to reduce or withdraw the guarantee for future premiums (including on existing contracts) the office limits its capital requirements.

4.17 Expense and mortality guarantees usually reflect the underlying structure of the contracts. For the conventional office's UWP explicit guarantees are usually not given. For the unit-linked version of UWP minimal guarantees would be granted.

4.18 The bonus philosophy will determine the extent to which surplus is distributed by means of reversionary and terminal bonus additions, the allocation surplus from investment and other sources, together with the provisions for servicing and repaying any capital used to finance the business. It also deals with the degree of smoothing to be adopted. The bonus structure should implement these decisions.

4.19 Where UWP is marketed with unit-linked contracts, it is not unusual for the charges to cover expense and mortality and other risk charges to be stated explicitly. The complex charging structures from unit-linked product design are easily replicated in UWP. These include bid/offer spread or initial charge, policy fees and administration charges, annual management charges, capital units with higher annual charge, and a range of unit allocation schemes. The office may also pay a lower or 'capital' bonus on units purchased in the early years. Many offices appear to 'profit test' UWP as if they were unit-linked contracts. This may be satisfactory, provided the results are interpreted appropriately. Particular areas are the differences in volatility and impact at company level for proprietary offices.

4.20 The investment philosophy that the office follows will determine the way in which MVA is included in product design. The office may seek to be active in applying MVA—so that, subject to some smoothing procedures and the operation of some minimum adjustment, the office will automatically adjust for MVA. The alternative is to seek to make MVA as a last resort—so that, subject to active use where trustees have investment discretion, MVA would only apply where actual (or potential) accumulation of surrenders or other exits would prejudice interests of continuing policyholders. The approach adopted affects both capital requirements and investment freedom.

5. RESERVING ISSUES

Down went the owners—greedy men whom hope of gain allured: Oh, dry the starting tear, for they were heavily insured.

W. S. Gilbert, *The Bab Ballads*

5.1 *Strength of UWP Bases*

5.1.1 There is a general perception that weaker valuation bases are in use for UWP contracts than for regular premium conventional with-profits products. This is illustrated by the reduced valuation reserves in the early years of contracts, as shown in Figure 6 for a UWP contract with no guarantees (e.g. UWP(a)) and for a conventional contract.

5.1.2 However, some of the UWP product designs appear to have significantly reduced levels of guarantee for which it ought to be appropriate to have a lower valuation standard. Section 2 indicated the range of different types of UWP

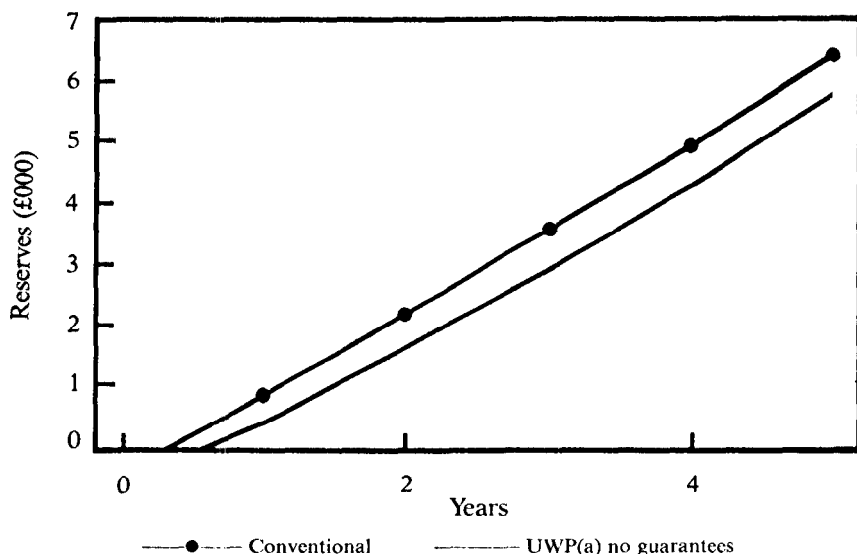


Figure 6. Reserves.

product. A valuation basis for a particular product needs to reflect the characteristics of that product. These can range from:

- (1) a product with no guarantees of future bonuses, expense charges or future premium allocation rates, and the possibility of completely irregular future premiums, to
- (2) a product with guaranteed minimum rates of future bonuses (perhaps applying to future premiums), fixed charges, level premiums and guaranteed terms on which the future premiums will be allocated; there might even be some surrender guarantees as well.

5.1.3 Figure 7 shows the way in which the guarantees under these two extremes alter over the term of the policies as premiums are paid, and compares them with similar figures for a conventional with-profits contract. Policies based on the assumptions for UWP(a) (no guarantees), UWP(c) (4% guaranteed bonus) and the conventional contract described in Appendix 3 were used for the figure.

5.2 Insurance Companies Regulations 1981

5.2.1 UWP, in terms of the volume of business and the range of contracts, is a post-1981 development. We do not have an appropriate reserve structure. We have to adapt what regulations and guidance are available. The position is unsatisfactory and the omission should be attended to while there is still time.

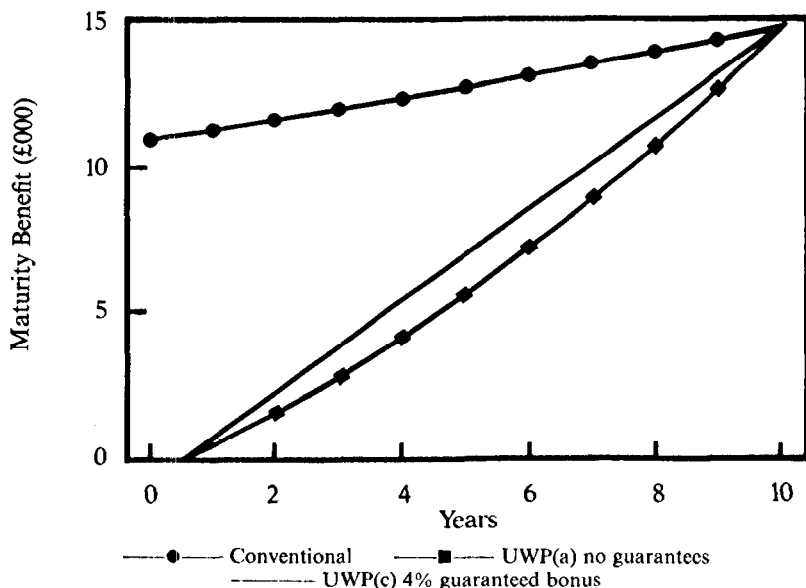


Figure 7. Guaranteed maturity benefit.

5.2.2 *Linked or non linked*

5.2.2.1 The minimum statutory valuation basis is specified for non-linked business in the above regulations. The definition of linked business derives from the description of Class III in Schedule 1 of the Insurance Companies Act 1982, namely:

‘... where the benefits are wholly or partly to be determined by reference to the value of, or the income from, property of any description (whether or not specified in the contract) or by reference to fluctuations in, or in an index of, the value of property of any description (whether or not so specified).’

The guaranteed benefits of most of the UWP contracts we are aware of would not fit the description, and are, therefore, non linked. (If determining payouts by reference to asset shares rendered a UWP contract ‘linked’, it would do the same for most conventional with profits, which cannot have been intended.)

5.2.2.2 A less clear situation is where premiums under a policy are split between UWP and ordinary linked units. If this policy is deemed to be a single contract, the whole would appear to fall within the ‘linked’ definition. If the policy can be treated as two contracts, the UWP would seem not to be linked. The exact wording in policy documents may be relevant, as is the attitude of the DTI/GAD.

5.2.3 *Net premium valuation method or face value*

5.2.3.1 For non-linked business, Section 57 of the Regulations specifies a net premium valuation if future specified premiums are payable, and benefits are determined from outset in relation to the total premiums payable. A regular premium UWP contract, under which the allocation rates of future premiums were guaranteed, would certainly fall into this category. At the other extreme, a contract under which the amounts of any future premiums are uncertain and for which future allocation rates are not guaranteed (and for which the allocation rates would not result in valuation strains), would appear to satisfy Regulation 57(3)(b). In this case the future premiums and the corresponding liability can be left out of account.

5.2.3.2 Most UWP contracts fall between the two extremes described above. Many are set up with direct debits to pay regular premiums, even though there may be no specific requirement under the policy to do this. The charging structure and allocation rates may be stable. In such cases it is clearly possible to use a net premium approach based on the reasonable assumptions that premiums, charges and allocation rates remain unchanged over the future lifetime of the contracts.

5.2.3.3 Most offices use the value of UWP units, possibly discounting initial units. Additional liabilities may be held (similar to the sterling reserves under unit-linked policies) particularly for single premium or paid up policies.

5.2.4 *Valuation rates of interest*

5.2.4.1 Regulation 59 lays down maximum valuation rates of interest for valuing non-linked business. These would seem to apply to the rates of interest used to discount any initial or other UWP units. If the assets allocated to UWP for this purpose are mainly equities and property, the maximum permitted interest rate could be quite low. This could have a particular effect if there are capital units to be valued.

5.2.5 *The Government Actuary's Department (GAD) resilience test*

5.2.5.1 The GAD resilience test needs to be applied. If equity-type assets (or even long-dated fixed-interest stocks) are allocated to UWP for purposes of the test, there will be a substantial drop in the asset values to be considered. An office may well wish to reduce its liabilities by discounting UWP units, arguing that its immediate liabilities would reduce, and that it would apply a suitable MVA. This may justify holding no additional resilience reserve for UWP business with many years to run. However, discounting of units which have only 1 or 2 years to run will require the use of a high rate of interest to reduce the liability by, say, 25%. This implies that an additional reserve for resilience purposes may be needed in respect of UWP business which is close to maturity or vesting. In addition, it is necessary to consider cashflow mismatching to comply with the regulations.

5.2.6 *Policyholders' reasonable expectations (PRE)*

5.2.6.1 PRE may have an impact on the valuation. Policyholders may well be expecting, in circumstances when an MVA is not being applied, that they will be getting the investment return (via ordinary and terminal bonus) on the nominal value of their units. For ordinary units, they would, therefore, be surprised if they realised that an office was holding less than the face value of the units.

5.2.7 *Mathematical reserves to cover surrender values?*

5.2.7.1 The question of whether the mathematical reserves held should be at least equal to the current surrender value of a contract is sometimes raised in connection with UWP and other contracts. At first sight this seems a good idea. However, a fair surrender value might contain an allowance for terminal bonus or capital appreciation. It is now common to provide for terminal bonus on a contract which is close to maturity. In fact, if it became necessary to include allowance for possible terminal bonus in the statutory valuation, this could embarrass a number of offices and remove from with-profits business its current ability to provide a source of finance. Alternatively, it would discourage them from setting surrender value scales which approached asset share levels when the asset shares contain significant undistributed surplus arising from capital appreciation (or other sources).

5.2.7.2 The conclusion to be drawn from this is that, whilst in principle the mathematical reserves should be at least as great as the non-guaranteed surrender values, in practice it should be possible to ignore a terminal bonus or capital appreciation component in the surrender values. Otherwise many offices may find that they are not able to afford to pay fair surrender values. Any guaranteed surrender values need to be covered, at an individual policy level, in full under the regulations. Equally, under UWP, it is arguable that good practice would be to cover the policyholders' perception of the minimum surrender value, namely the face value of units adjusted by the current MVA.

5.2.8 *Solvency margin requirements*

5.2.8.1 Normal non-linked solvency margin requirements apply to UWP (namely 4% of mathematical reserves and 0.3% of any death strain at risk). The situation of a contract offering both ordinary unit-linked and UWP benefits as options is interesting. Normally, unit-linked contracts are designed so that they require minimal solvency margins. However, a contract which had some part of its liabilities in UWP would usually be providing an investment guarantee. It can then be argued that the whole of the policy, not just the UWP, should attract a 4% solvency margin.

5.2.8.2 It is possible to argue further that, if there is an option to switch into UWP, then this, in effect, provides a guarantee and, therefore, that a unit-linked contract with a switching option to UWP should attract a full solvency margin.

5.2.8.3 There are some counter arguments available, e.g. in the case of an office which reserves the right to withdraw switching facilities (altering the terms

on which switches are made might not be strong enough). It may be that the DTI/GAD may be persuaded to accept solvency margins which are just calculated on the UWP component of the liability.

5.3 European Community Requirements

5.3.1 The regulations will need to meet the requirements of the Third Life Directive. This refers to using a prospective valuation method. It appears, therefore, that if the face value of units (adjusted by MVA) is to be used for a published valuation, it will have to be at least as great as an NPV liability (assuming that this is still specified in the regulations), where full prospective benefits are known, or as the present value of benefits purchased to date if there are no guarantees of benefits to be purchased by future premiums. Normally this would be the case. However, if the MVA is in use (for example in resilience testing) a face-value-based figure may be insufficient.

5.4 Reasons for Lower Unitised With-Profits Reserves

5.4.1 The lower UWP reserves illustrated in Figure 7 can be attributed to the following factors:

- (1) the lower cost of bonus in early years, because a bonus is calculated on the face value of allocated units rather than on full prospective basis,
- (2) the absence under the illustrated UWP contract of any guarantees in relation to future premiums,
- (3) the front end loading for UWP is larger than can be incorporated into the NPV for a conventional contract using the maximum permitted Zillmer adjustment of 3.5% of the basic benefits, and
- (4) the UWP is treated more leniently for resilience test purposes than the conventional contract is under an NPV; the stringency in the case of the NPV arises from use of the NPV method with market value of assets (the NPV liability is relatively insensitive to a change in market value of assets, even if the assets are cash flow matched to the liability).

5.5 Department of Trade and Industry Returns

5.5.1 A number of offices show some with-profits business in the linked sections of their DTI returns. For at least some offices this with-profits business is UWP. Reasons for its inclusion in the linked sections may include:

- (1) UWP is treated as being linked to a with-profits fund of assets,
- (2) the UWP is part of a policy on which there are ordinary linked benefits and the office treats such policies as wholly linked, and
- (3) the UWP is so integrated into their unit-linked computer systems that it is not possible to extract the UWP part of a contract, even where there are no ordinary unit-linked fund allocations.

6. MANAGING UNITISED WITH-PROFITS POLICYHOLDERS

The growing generosity of the faithful permitted him to make more optimistic calculations.

Marquez, One Hundred Years of Solitude

6.1 Policyholders' Reasonable Expectations

6.1.1 PRE is receiving increasing attention, and is now referred to in Institute guidance. The issues have been discussed at Institute and Faculty events, such as the 'Current Issues in Life Assurance' Seminar, held on 12 November 1992. It is not appropriate to go over the same ground. Therefore, this paper tries to concentrate on PRE issues which may be more specifically relevant to UWP.

6.1.2 UWP has features of unit-linked contracts as well as conventional with profits. Unit-linked contracts are known to produce volatile results when linked to equity or managed funds. It is, therefore, possible that reasonable expectations of UWP policyholders would be consistent with more volatile results. This would be encouraged by the relative volatility of UWP bonus rates, which, for at least one office, were cut before its reversionary bonus rates.

6.1.3 Quotations and the method of sale create expectations. UWP bonus interest rates can be directly compared with building society interest rates. UWP rates were set in the early days of the contract at levels comparable with building society rates. The easy comparability and frequent references as to how with-profits results have beaten money kept in building societies is likely to have formed expectations that, not only will UWP results beat returns from building societies, but also that the UWP bonus interest rate alone will match building society returns. While offices have managed this in the past, care is needed to avoid virtually guaranteeing this for the future. Also, some margin is needed between the office's earned investment return and the bonus interest rate, so as to provide a terminal bonus cushion to finance investment freedom or other capital requirements.

6.1.4 Policyholders have expectations about surrender values as well as final payouts. The natural expectation of a policyholder on surrender of a UWP policy would be to receive the face value of units, because, for an ordinary unit-linked contract, he would usually get the price of the units. There might also be an expectation of some allowance for terminal bonus. Clear reference to the MVA is needed to create any reasonable expectations lower than this.

6.1.5 A number of offices have the ability to apply MVAs, but have not done so, even through some quite extreme changes in market values. What sort of expectations about the use of the MVA result from this? It could well be that a reasonable policyholder will conclude that the MVA would only be used in the most extreme circumstances. If so, the surrender values become perilously close to being guaranteed. To avoid this danger, an office needs not only to use its MVA appropriately, but also to make sure that its policyholders are aware of the use. In addition, there may be elements of PRE in relation to mix of investments supporting the UWP contract, and any discretionary unit-linked type charges.

6.2 *Equity*

6.2.1 As a with-profits product, all the usual equity problems associated with bonus distribution arise. Asset share calculation can be an appropriate tool to assist in setting bonus levels. There needs to be equity between the UWP contracts and any conventional with-profits contracts, taking into account any differences between the two contracts in terms of guarantees or benefits.

6.2.2 The unit-linked charging structure, which is often part of a UWP contract, is a further area in which equity needs to be considered. The charges may need to be comparable with those applied to ordinary unit linked and those assumed for bonus distribution purposes. Any alterations to the charges during the currency of a policy will need to be seen to be equitable to avoid upsetting PRE.

6.2.3 The respective interests of continuing and surrendering policyholders is another topic in which equity considerations arise, and has already been discussed in Section 2.

6.3 *Appropriateness of Sales*

6.3.1 There have been well-publicised cases of offices being reprimanded by LAUTRO for improper selling of single premium UWP bonds. The complaints included:

- (1) lack of mention that bonus rates can reduce, and
- (2) no mention of MVA.

6.3.2 As a result of LAUTRO investigations, some offices have been asked to amend literature and to write to policyholders clarifying the contracts. Policyholders wishing to withdraw from the contracts would be entitled to be put back into the position they would have been in had they not taken out the UWP contract.

6.3.3 UWP contracts are used for mortgage business. In common with conventional low-cost with-profits endowment contracts, their proceeds will only repay the mortgage if future bonuses match the rates assumed when the contract is sold. Falling bonus rates make it likely that many will not. Policyholders will not be pleased, particularly if this possibility was not mentioned at the time of sale, or if the office makes no efforts to warn them beforehand.

6.4 *Sales Volumes*

6.4.1 A number of offices have entered the market for a limited period with single premium UWP bonds. After selling significant volumes of business, the products have, in many cases, been withdrawn.

6.4.2 Reasons put forward for the withdrawal have included valuation strain, dilution of free reserves and free asset ratios.

6.4.3 The effect of these actions has been to attract adverse comment in the press, and concern about the financial strength of life offices.

6.4.4 A future consequence may be to speed up the reductions in bonus rates currently taking place, the increased cost of bonus, as a result of writing the single premium business, being even less affordable. For fixed-term bonds there could be a very large peak in claim payments when the majority mature in, say, 10 years time. This may restrict the extent to which an office can smooth payouts at that time.

6.4.5 If the money has been taken in at what proves to be high market levels, there will be an adverse effect of bonus prospects.

7. CONCLUSIONS

I never think of the future. It comes soon enough.

Albert Einstein, Interview 1930

7.1 UWP is here to stay.

7.2 It is potentially a more transparent and open contract, with its disclosed charges for expenses and mortality.

7.3 With careful restriction of unnecessary guarantees, lower reserving and capital requirements can apply, and the disadvantages of using the NPV valuation method avoided.

7.4 Areas of concern relate to the extent to which policyholders understand the contract they are getting, e.g. Has the contract been sold properly? Are unrealistic expectations being created?

7.5 The actuary has important roles in checking that the reserves adopted are appropriate in relation to the guarantees provided, bonus philosophy, policyholder shareholder issues, discontinuance values, application of MVA and PRE issues.

7.6 Future developments may include convergence of product design, use of option pricing to determine investment strategy and charges for guarantees.

8. ACKNOWLEDGEMENTS

We are grateful for the considerable help and advice we have received from peers and colleagues in preparing this paper. We owe particular thanks to Marshall Field and Tony Fine for encouraging and allowing the authors to explore the subject in the way we have. Valuable help was also given by Amish Desai in preparing the tables and Betty Relf in preparing the manuscript.

Any errors and omissions are, of course, the responsibility of the authors.

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APPENDIX 1

**COMPARISON OF INVESTMENT VALUES AND
NEW BUSINESS VOLUMES DURING THE 1980s**

| Year | FT-SE750 at 31 Dec | New regular premiums (£m) | |
|------|-----------------------|---------------------------|--------|
| | | Non linked | Linked |
| 1980 | 292.22 | 397 | 159 |
| 1981 | 313.12 | 473 | 234 |
| 1982 | 382.22 | 517 | 282 |
| 1983 | 468.89 | 923 | 375 |
| 1984 | 589.74 | 833 | 423 |
| 1985 | 682.94 | 840 | 497 |
| 1986 | 835.48 | 1,107 | 533 |
| 1987 | 870.22 | 1,161 | 742 |
| 1988 | 926.59 | 1,595 | 988 |
| 1989 | 1,204.70 | 1,365 | 1,171 |
| 1990 | 1,032.25 | 1,411 | 1,343 |

Notes:(1) Source *ABI Statistics*.

(2) The table shows non-linked regular premium new business. The majority of this business would be with-profits business.

APPENDIX 2

CHECKLISTS

A.2 An office planning to introduce UWP would consider the following issues.

A.2.1 Memorandum and Articles

The office should have freedom to issue participating policies and to distribute surplus in a manner consistent with UWP.

A.2.2 Supervision

The position of DTI and GAD—the need to demonstrate that with-profits policyholders' interests are protected. Separate accounts and separate funds may be necessary.

A.2.3 Business Planning

Capital requirements should be assessed and any constraints on new business volumes identified.

A.2.4 Benefit Structure

- bonus philosophy—division between reversionary and terminal bonus components, and
- sources of surplus to be distributed, provision for cost of capital:
 - (a) rate of guaranteed accumulation of invested components of premiums, guarantee to apply to premiums paid, or all future premiums,
 - (b) contingencies for which unit price is guaranteed,
 - (c) expense and charging structure including right to review,
 - (d) life cover, risk benefits—level premiums or unit cancellation, right to review rates,
 - (e) reversionary bonus—distributing all or part of surplus, crediting in advance or arrear, and
 - (f) terminal bonus—scale and whether payable on surrender; distribution of investment surplus only or surplus from all sources.

A.2.5 Unit Pricing

- bonus adding to the value or the size of unit holding,
- smoothing, annually at bonus declarations or over shorter periods,
- averaging periods for unit allocation during the contract,
- averaging periods for units realised to pay claim values,
- administration of price calculation; controls, use of several prices, and
- application of MVA.

A.2.6 Reserving

- whether future premiums are left out of account and a recurrent single premium method used,
- valuation interest rate to discount guaranteed benefits, and
- adequacy of reserves—expense provision.

A.2.7 Administration

- separate or notional accounts for UWP business,
- records for allocated notional or actuarially funded units,
- systems for classes for tranches and alterations, and
- reinsurance systems.

A.2.8 Investment

- objectives, guidelines and monitoring,
- mismatching risks, and
- managing emerging costs of guarantees.

APPENDIX 3

**POLICY ASSUMPTIONS FOR PROFITABILITY
SENSITIVITY EXAMPLES****A.3.1 *Unitised With-Profits Plan***

| | |
|---------------------------------|---|
| Age at entry | 30 |
| Policy term | 10 years |
| Premium paying term | 10 years |
| Annual premium | £100 per month |
| Sum assured | Greater of £9000 and value of units and bonuses |
| Annual bonus rate | UWP (a)—8% non-guaranteed } (7% for Figure 5 UWP (b)—8% non-guaranteed } and Table A.5) UWP (c)—4% guaranteed —4% non-guaranteed |
| Nil allocation period | 7 months |
| Allocation % | 100 |
| Bid offer spread | 5% of annual premium |
| Annual fund charge | 0.75% |
| Policy fee | £18 p.a. |
| Mortality charge | 100% A67/70 on sum at risk |
| Valuation basis | Valuation of units. No positive sterling reserves required. Possibility of negative sterling reserves ignored. |
| Earned interest rate | 10% (9% for Figure 5 and Table A.5) |
| Tax | Nil |
| Commission—Initial | 46.5% of premium |
| —Renewal | 2.5% of premium |
| Expenses—Initial | £225 |
| —Renewal | £18 p.a. |
| —Inflation | 6% p.a. |
| Shareholders' share of surplus | |
| —UWP (a) | 0% of investment return 100% of other surplus |
| —UWP (b) | 10% of all surplus |
| Policyholders' share of surplus | |
| —UWP (a) | 100% of interest return 0% of other surplus |
| —UWP (b) | 90% of all surplus |
| Mortality experience | 75% A67/70(2) Sel |
| Lapse rate | Nil |

A.3.2 Conventional Plan

| | |
|---------------------------------|-------------------------------|
| Age at entry | 30 |
| Policy term | 10 years |
| Premium paying term | 10 years |
| Premium | £100 per month |
| Sum assured | £11,000 plus bonuses |
| Bonus on sum assured | 3·03% p.a. |
| Bonus on bonus | 3·03% p.a. |
| Valuation interest rate | 2·5% |
| Mortality | A67/70(2) Ult |
| Zillmer | 3·5% of sum assured at outset |
| Net premium restriction | 95% of office premium |
| Earned interest | 9% |
| Shareholders' share of surplus | 10% of all surplus |
| Policyholders' share of surplus | 90% of all surplus |
| Tax | Nil |
| Commission—Initial | 46·5% of premium |
| —Renewal | 2·5% of premium |
| Expenses—Initial | £225 |
| —Renewal | £18 p.a. |
| —Inflation | 6% p.a. |
| Mortality experience | 75% A67/70(2) Sel |
| Lapse rate | Nil |

APPENDIX 4

**COMPARISON OF PROFITABILITY, RESULTS, RESERVING
AND GUARANTEED BENEFITS**

Figures 1 to 5 in Section 3.1.2 illustrate the effect of changes in assumptions on policyholders' benefits and value to shareholders. Figures 6 and 7 in Section 5.1 illustrate potential differences between contracts on reserving and on the build up of guaranteed benefits. The policies illustrated are as set out in Appendix 3. The figures are based on the following tabulated values.

**Table A.1. Value to shareholders at 12% Risk Discount Rate
Effect of change in Investment Return**

| Investment return % | Discounted value of shareholders' transfers | | | | |
|---------------------|---|-----|-----|-----|-----|
| | 7 | 8 | 9 | 10 | 11 |
| UWP(a) | 227 | 231 | 235 | 240 | 244 |
| UWP(b) | 169 | 200 | 232 | 265 | 300 |

**Table A.2. Policyholder's Benefit
Effect of change in Investment Returns**

| Investment return (%) | Maturity benefit (£) | | | | |
|-----------------------|----------------------|--------|--------|--------|--------|
| | 7 | 8 | 9 | 10 | 11 |
| UWP(a) | 14,163 | 14,869 | 15,614 | 16,399 | 17,225 |
| UWP(b) | 14,322 | 14,958 | 15,625 | 16,324 | 17,056 |

**Table A.3. Value to Shareholders at 12% Risk Discount Rate
Effect of change in Renewal Expense Levels**

| Renewal expense per policy (£ p.a.) | Discounted value of shareholders' transfers | | | | |
|-------------------------------------|---|-----|-----|-----|-----|
| | 12 | 14 | 16 | 18 | 20 |
| UWP(a) | 285 | 270 | 255 | 240 | 225 |
| UWP(b) | 270 | 268 | 267 | 265 | 264 |

**Table A.4. Policyholder's Benefit
Effect of change in Renewal Expense Levels**

| Renewal expense per policy (£ p.a.) | Maturity benefit (£) | | | | |
|-------------------------------------|----------------------|--------|--------|--------|--------|
| | 12 | 14 | 16 | 18 | 20 |
| UWP(a) | 16,399 | 16,399 | 16,399 | 16,399 | 16,399 |
| UWP(b) | 16,440 | 16,401 | 16,363 | 16,324 | 16,286 |

Table A.5. Shareholders' Transfers

| Year | Shareholders' transfers (£) | | | | | | | | | |
|--------|-----------------------------|----|----|----|----|----|----|----|----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| UWP(a) | (55) | 47 | 43 | 50 | 57 | 65 | 73 | 81 | 90 | 100 |
| UWP(b) | 1 | 7 | 15 | 24 | 33 | 43 | 53 | 64 | 76 | 253 |

Table A.6. Reserves

| End year | Reserves (£) | |
|----------|----------------------|--------------|
| | UWP(a) no guarantees | Conventional |
| 1 | 461 | 862 |
| 2 | 1,654 | 2,162 |
| 3 | 2,931 | 3,518 |
| 4 | 4,299 | 4,933 |
| 5 | 5,766 | 6,410 |
| 6 | 7,338 | 7,951 |
| 7 | 9,022 | 9,560 |
| 8 | 10,828 | 11,241 |
| 9 | 12,761 | 12,997 |
| 10 | 14,832 | 14,832 |

Table A.7. Guaranteed Maturity Benefit

| End year | Guaranteed Maturity Benefit (£) | | |
|----------|---------------------------------|-------------------------------|--------------|
| | UWP(a) no guarantees | UWP(c) 4% guaranteed bonus | Conventional |
| 1 | 461 | 656 | 11,334 |
| 2 | 1,654 | 2,263 | 11,678 |
| 3 | 2,931 | 3,857 | 12,032 |
| 4 | 4,299 | 5,441 | 12,397 |
| 5 | 5,766 | 7,017 | 12,773 |
| 6 | 7,338 | 8,586 | 13,161 |
| 7 | 9,022 | 10,153 | 13,560 |
| 8 | 10,828 | 11,716 | 13,972 |
| 9 | 12,761 | 13,278 | 14,395 |
| 10 | 14,832 | 14,832 | 14,832 |

ABSTRACT OF THE DISCUSSION

Mr H. W. Froggatt (introducing the paper): Unitised With Profits is a wide topic. It encompasses most aspects of running non-linked long-term business, plus some aspects of linked business as well. In the paper we have not attempted to cover the subject in depth, but rather to provide a broad overview of issues arising from UWP, and to bring out some of the differences, real or apparent, between this and more conventional contracts.

There have been two developments since the paper was written:

- (1) the fairly general year-end bonus rate-cuts, both for UWP and conventional with-profits contracts, and
- (2) further offerings of single premium UWP contracts by a number of offices that had withdrawn from the market during 1992.

Valuation is an area in which the paper could have been expanded. Particular issues are: the classification of UWP for purposes of the insurance regulations and the extent to which it is subject to linked and non-linked requirements; apparent differences in valuation requirements between UWP and conventional with-profits. We did not expand the paper in this area for two reasons:

- (1) because of the information being collected by the UWP Working Party, and
- (2) because the Third E.C. Life Directive has given an opportunity for all statutory valuation standards to be reconsidered. I understand that working parties have now been set up for this purpose.

Investment would also have been a fruitful area in which to expand. Future investment prospects affect all with-profits business. Lower returns have all sorts of implications, and also the guarantees associated with UWP suggest that it is possible to use derivatives in the investment policy for the contract.

Mr M. R. H. Lay (opening the discussion): This paper is a valuable contribution to the actuarial literature on the subject of unitised with-profits business (UWP). Past actuarial literature on the subject has been more to do with product design than with the issues of the on-going portfolio management, which this paper seeks to address.

UWP business has grown from virtually nothing about 10 years ago, and is now a major class of new business for many life offices. For some life offices it is the only class of new with-profits business. In my company, which has been in existence for nearly 200 years, it is over 20% of our total with-profits liabilities. As the Government moves us and the industry more towards the personal provision of pensions, UWP may be the only way that the life insurance industry can meet the demand for flexible products with a stable investment return, and finance the capital requirements of writing that business.

In the same way that unit-linked policies emerged and came of age during the 1970s and 1980s, we are now witnessing the maturing of the UWP contract, and this paper and the discussion are vital parts of this process.

Section 2 is a useful retrospective look at the development of UWP contracts. These contracts arose in response to a need from the marketplace. It is said to be demand led and not supply led, and this is a view with which I agree. Pensions legislation required the development of variable premium products, the consumer wanted the stable investment returns of with-profits business, and companies needed capital efficient products so that they could cope with the volumes of business; all good points for the future of the UWP market in the United Kingdom.

Section 3 ranges over a variety of issues from a company perspective. I now pick out four points:

- (1) Section 3.1 contains a good discussion of the different approaches to shareholders' and policyholders' rights. Are there any other views, or have the authors written the definitive text?
- (2) The market value adjustment (MVA) is the technique for having non-guaranteed surrender values. If the MVA has not been used in 1992, it appears that companies are getting very close to having guaranteed surrender values on these products. Was this the intention at the outset of

these policies, or has this just happened because of the high investment returns and high annual bonus rates of the late 1980s, which have led to the face value of units being a much higher proportion of asset shares than we anticipated? Do we have almost guaranteed surrender values by design or by accident?

- (3) Annual bonus rates still seem very high when compared to the yield we can obtain on Government stocks or the running yield on the with-profits fund. Can these bonus rates be sustained as the volume of UWP business grows? Are there some senior members of the profession, independent of commercial pressures, who can relate their experience with the lower interest rates that we saw in the 1960s and the early 1970s, and who have lived through the Stock Market crashes? Is the world any different now?
- (4) Should the investment strategy for UWP business be truly the same as for conventional with-profits business, or was this a marketing statement to launch a new series of with-profits policies? Does the ready availability of switching between the unit-linked portion and the UWP portion change the strategy for investment, or is this switching option something that can be ignored in practice?

Section 4 describes current product design. Is this the last word on product design, in the same way as there is little controversy these days as to what constitutes a good unit-linked product design, or are we likely to see the emergence of the next generation of UWP contracts, perhaps prompted by a product review which has been inspired by the new requirements from the regulatory authorities, disclosure of commission, etc.?

Section 5, on reserving, is an area where I would have liked to have seen the authors develop the content further. However, it may be that the subject of reserving for UWP business is just not that developed yet. I agree with the authors, in § 5.2.1, that there should be more guidance on reserving whilst there is still time. The increased emphasis on Form 9 ratios, the difficulty of establishing precisely the basis a company is using for valuing UWP business in the DTI return, the increasing volumes of this business, and hence the significance of this business, are all good arguments for some agreed standards within the profession. Is there, for example, a company that is holding reserves less than the face value of units?

Section 6 deals with the issue of policyholders' reasonable expectations, and Section 7 with areas that the authors think are worthy of further study. Clearly policyholders' reasonable expectations are at the heart of much of the controversy that has surrounded these products in the recent past.

I think that UWP business is reaching a level of maturity. Is this view shared? Can we go on to consider the use of option pricing to determine the investment strategy or to determine the charges for guarantees, as the authors describe in Section 7, or do we, as a profession, need to consolidate some or all of what we have developed already in the field of UWP business?

Mr D. E. Purchase: In Section 1.4 the authors remind us that the Life Assurance Joint Committee established a working party to gather information about UWP. I am the chairman of that working party, which was set up about 18 months ago. We hoped initially to report in time to enable the results to be used by the authors in their work, but unfortunately that did not prove possible, and so they and we continued our work independently of each other. It was agreed that the results of our survey would be published to coincide with this discussion. I am pleased to report briefly at this stage on some of our more important findings, which have been published today⁴⁰.

The working party analysed the replies from the 29 traditional with-profits life offices that responded. A handful of pure unit-linked offices also responded, but, for reasons that we set out in our report, we did not include them in the analysis. The total with-profits reserves of the 29 offices at the end of 1991 were £81.5 billion, and their with-profits fund reserves £17.5 billion, or over 20% of the total—I am sure that this percentage is already greater and growing rapidly, but it was significant even 18 months ago.

Section 4 deals with product design, which was a major part of the survey. As we had anticipated, the survey showed that the design of UWP products followed that of linked products very closely, except that a fund management charge was not usually made, because it was reflected implicitly in the bonus. All but one of the offices allowed investment in either a linked fund or the with-profits fund (and usually a split of investment between the two as well). Most allowed switching between unit-

linked and with-profits funds, except sometimes for regular premium life contracts because of qualification constraints, and there was little evidence of the control identified as needed by the authors in §3.4.7.

We asked about bonus structure and unit prices. Looking at the check list in §2.5 of the paper, we found the following. Two-thirds of the offices were using the increasing unit price method. A similar proportion (not necessarily the same offices) gave a guarantee of a minimum bonus rate, or an equivalent. These guarantees were tightly bunched around 3% for life contracts and 4% for pensions contracts. To the working party they now seem quite onerous, even if they were not so regarded when introduced 3 or 4 years ago—six offices offer this guarantee even on units to be secured by future premiums, which, as the authors mention in §4.16, can increase the capital requirements quite considerably.

On MVAs, we found—and this is the only finding that does not quite accord with the authors' impression in §3.2.3—that half of the offices replying had, at some time, applied an MVA. As many offices had launched their with-profits funds after October 1987, we thought this response was fairly satisfactory. However, more worryingly, over half the offices had various guarantees to the effect that MVAs could not be applied at various specified times—and by that I mean specified times other than at a maturity date or a normal retirement date. Sometimes these guarantees appeared quite onerous—for example, those that apply throughout a 'decade of retirement'—and we think this area needs considerable further study.

Paragraphs 3.3.5–7 are also important. We found, first, that nearly all offices' UWP policies participated in the same overall profits as their conventional with-profits ones—only 1 of our 29 had a separate pool of assets. Half of the remainder operated a 'shadow' fund, and asset share techniques were used by all except one brave, or perhaps more honest, responder. Two-thirds of offices stated that they expected the volatility of UWP and conventional with-profits payouts to be very similar, and most of the rest did not expect the volatility of the former to be greatly in excess of that under the conventional payout. The apparent absence of much, if any, terminal bonus cushion for UWP is surely going to present problems in meeting that expectation in due course.

The opener mentioned the basis of split of profits for proprietary offices, and I report that, whatever the merits of the alternative approach set out in the paper, we found that nearly all the proprietary offices had adopted the 90/10 structure for UWP business as well.

The last section of our survey turned to reserving issues, which are here in Section 5. Paragraph 5.2.3 looks at net premium valuations versus face value of units. We found that two-thirds favoured face value and that half of these offices added an expense or mortality reserve equivalent to a unit-linked sterling reserve—which, although not essential, certainly reduces any problem of changes in reserve when policyholders switch between them. The other eight offices used a net premium approach, sometimes applying a minimum of the face value of units. Offices seemed to make no explicit allowance for the 3% or 4% guarantees, that I mentioned earlier, when setting reserves, and the majority appeared not to assess the investment return needed to cover all accrued guaranteed benefits as they fall due. Having regard to those guaranteed rates of growth, and to the constraints on the application of MVAs, the working party feels that there is a potentially serious reserving issue to be addressed here. We agree with the authors that this needs much further study.

Finally, we asked about the need for guidance. I do not necessarily mean formal guidance notes, but guidance from the profession in one form or another. Offices would support the authors' call for more specific guidance in a number of areas. This survey has identified a number of issues which need to be considered further, some of which I have mentioned in this summary. To the topics listed in our written report, I would add that of policyholders' reasonable expectations, as mentioned in the paper. I hope that our work, and this paper, will jointly provide the impetus to that further research, which is clearly needed.

Mr M. R. Kipling: I rise to the opener's very first challenge. Four chapters earlier than the text in which Gamaliel proffers his sage advice, the Acts of the Apostles contains the well-known description of the first Christian Pentecost. "They were amazed and wondered, saying, 'Are not all of these who are speaking Galileans? Yet how is it that we hear, each of us in his own native language?'" This was the first example of what we now know of as customer-oriented marketing—where a company produces what the customer needs, rather than what it finds easiest to manufacture.

Sadly, I see little in this paper that suggests that the development of UWP business has been carried out with the interests of potential purchasers in mind. Indeed, to the contrary, many of the attributes of UWP contracts described in the paper appear positively detrimental to the interest of the individual policyholder; for example: reduced guarantees; slower bonus accrual; and greater risk transference to policyholders.

As the authors state in §2.4.4, competition from other financial service providers has increased significantly in recent years, particularly with regard to savings and investment business. It must surely be questionable whether we should be reacting to this development by degrading the unique selling points of one of our mainstay products.

A conventional with-profits endowment can be placed fairly centrally in the risk spectrum between deposit-based savings on the one hand and market-related investments on the other. In most cases, like a deposit account, it offers a guaranteed return of the amount invested, if not more, although, admittedly, only on a specified date rather than at any time. At the same time, the underlying investments offer the prospect of a real return. For many policyholders this with-profits 'compromise' presents the best of both worlds. The conventional with-profits contract also shares with deposit-based investments a lack of transparency with regard to the underlying expenses. Arguably, in the consumer-dominated 1990s, the perpetuation of this obscurity will become increasingly indefensible. However, at least until the disclosure playing fields have been levelled, we should be careful not to shut ourselves off from those markets and customers who are best approached by the traditional implicit approach.

The life assurance industry has embraced the explicit charging approach to UWP with surprising alacrity. I suspect, as the authors hint in §2.4.7, that this is because treating UWP as just 'one more unit fund' tends to reduce development costs significantly; yet another manifestation of product rather than customer orientation.

It is perfectly possible to develop a UWP product which has no explicit policy charges whatsoever, should you want to, all expenses being met from the investment return before the rate of bonus is determined for the policy. It is also possible to design a product which bears a guaranteed minimum maturity payment expressed in pounds rather than merely as a guaranteed bonus rate. In §2.4.2, the authors' argument implies that such a guarantee renders it difficult to operate a variable premium product. My experience is that a greater barrier lies, these days, in the need to process the payment and clawback of indemnity commission. If a system can be devised to do this correctly on each premium variation, I am sure that it requires relatively little additional effort for the system to appropriately revise a guaranteed minimum payout as well.

It can hardly fail to be noticed that banks and building societies are beginning to introduce accounts which offer, on a single investment, a rate of interest linked to stock market growth. If they are ever able to offer these accounts for regular premium investment, will we live to regret the decline of the reversionary bonus policy, I wonder, despite the short-term financial benefits gained?

I hope that the developers of UWP will turn out to have been more than mere mortals, for otherwise Gamaliel's advice would appear to be that their works, and presumably their new business figures, will come to nought.

Mr B. H. Shaw: The reasons for entry into the UWP market, as set out in §2.4.1, are too defensively expressed. At my office, when, in 1987, we were faced with the need to design a personal pension contract, we clearly had to cope with variable premiums, and we wanted to offer with-profits contracts. Hence this led us down the UWP path. Also, we wanted to offer investment choice, and we saw that a unitised approach enabled us to design a contract where the policyholder could allocate his premiums between the with-profits fund and our unit-linked funds in proportions of his choice. Our twin objectives, therefore, were premium and investment flexibility.

More recently, we have extended this product design into life contracts, notably a single premium investment bond and two regular premium contracts, one for mortgage repayment and the other for 10/15 years' investment with life cover. These offer the same two features of increasing premiums and investment fund choice. Traditional contracts cannot be designed with these features, and so they are distinguished from the traditional contracts which we continue to offer.

The other principal feature of the unitised approach is its openness to the customer. This should be

listed in Section 2.4 as a positive reason for entry to the market. It is not, but is briefly referred to in § 7.2 as one of the conclusions. Like it or not, the obfuscation of the traditional with-profits policy has been attacked by regulators—especially the Office of Fair Trading. I believe that we can see the UWP approach as a positive step to meet some of these criticisms, because there is a much clearer picture of the expenses, the value of bonus additions, and a value of the fund to date.

That there is a figure for the fund to date leads to the debate on surrender values. We should recognise here that one of the UWP advantages, that is openness, causes the difficulty. The policyholder will receive a fund or bonus statement showing a value of his fund including bonuses. Logically, this is the normal surrender value, but it is not guaranteed, and an MVA can be applied. I do not see any difficulty in this, so long as this is understood, and I would argue that the policyholder's position is better than for a traditional contract. Here the policyholder receives a bonus statement, showing that the promise to pay, say, £1000 sum assured in 10 years, has now become a promise of a payment of £1050. He has no clue at all about the current value. We can see with clarity the fundamental point that the traditional endowment is all about maturity values. It was designed that way—if you ceased premiums you broke the contract. Indeed, it is within my working lifetime that surrender values on industrial branch contracts at my office were not readily granted at all.

When we started our UWP business our attitude to surrender values was not specifically defined. One of the advantages of developing these new contracts is that they require modern computer systems. We have now developed the ability to hold shadow units, that is an asset share held for each contract and updated weekly. Our current attitude to surrender values is to have a smallish buffer-zone where there is no reduction in the normal value, and then smooth in the application of an MVA rather than bring it in at once. This leads to a position where the full application of reduction in the surrender value to the asset share does not take place until the asset share has fallen to, say, 85% of the nominal fund value. This smoothing in seems consistent with a with-profits approach. We declare a reasonably conservative annual bonus, and there will also be policies leaving the fund with less than their asset share. Again using computer systems, we are able to keep records, for all cases leaving the fund, of both profits and losses to the fund, and be fully in touch with the position.

The issue is this—is the UWP policy the modern with-profits contract, set to replace the traditional contract because it is more flexible, offers more investment choice and is more open? Will the policyholder accept the more fluctuating rates of annual bonus that may be inherent in the contract? Time will tell by way of its acceptance or otherwise by the customer, which is the real test.

Mr J. A. Jenkins: My comments concern the MVA, covered mainly in Section 3.2, and most are based on the results of a survey in which I have been involved, and which will be published later this week by one of the main publications for independent financial advisers.

An investigation of the history of offices applying MVAs over the past 5 years reveals a variety of different practices. For example, some offices appear not to have applied these factors at all over this period. On the other hand, some offices appear to have had them in force on a more or less continuous basis over this period. Clearly, different offices are following different practices. From the UWP literature which I have seen, such differences in practice are not at all apparent.

In the cases where MVAs have been in force for a period as long as 5 years, one is bound to ask why the bonus rates, terminal bonus rates in particular, have not been reduced to levels implied by asset shares, thereby enabling the factors to be removed. I suspect that marketing pressures to keep bonus rates up is possibly a major reason. If this practice were to become commonplace, it might seriously impair policyholders' trust in UWP contracts, particularly in the case of single premium bonds, where many products give no guaranteed future date at which MVAs will not apply.

Sometimes offices have MVAs in force for life UWP funds, but not for pensions UWP funds. This situation can also occur the other way around. Clearly there can be good reasons for this. For example, an adjustment factor may apply to pensions monies received only in a particular year, during which life UWP products did not exist. However, generally speaking, policyholders should be able to expect reasonably consistent treatment as between life UWP and pensions UWP, particularly, as in most cases, these funds are both part of the same main with-profits fund.

Another area where different practices exist is that of the application of MVAs to switches back to unit-linked, and pensions early retirement. Some offices reserve the right to have different adjustment

factors for switches and different adjustment factors for early retirement, as compared with the normal adjustment factors for surrenders or transfers. My own view is that such discretions are unnecessary, and that one set of adjustment factors for all purposes should give an office sufficient protection, and give its policyholders less uncertainty. A few offices do not apply adjustment factors for pensions early retirement, if such early retirement is due to ill health, or if certain other conditions are met.

Returning to the subject of single premium with-profits bonds, most offices say that adjustment factors would not apply to regular withdrawals, provided that the withdrawal does not exceed a certain level, for example $\frac{7}{8}\%$ of the single premium. A few offices do, however, say that all withdrawals will be subject to any adjustment factor that exists.

It is clear that there are a variety of approaches to the application of the MVA for unitised with-profits business. As time goes on, I suspect that there will be some greater convergence of approach, but it is likely that some differences will always exist. I suspect, also, that policyholders and independent financial advisers will demand greater information from offices as to what their practices are. Interestingly, one office has voluntarily included a significant additional section in its with-profits guide, covering unitised with-profits in general and the MVA in particular.

Mr A. E. M. Fine: Offices will come at UWP business from two directions. Linked offices that do not write with-profits business at present might still be interested in UWP from a marketing point of view, and might wish to set up such a contract with a designated with-profits fund. The contract will look very similar to a linked contract, the only differences being in levels of guarantee and smoothing of investment returns. A with-profits office coming to UWP will effectively be treating UWP as a new bonus series, and this office will need to have regard to existing bonus practices and existing corporate structures.

Take the case of a 90/10 proprietary office writing conventional with-profits business. A decision is taken to start writing UWP, for the usual reasons of reducing strain, managing bonuses downwards, and marketing flexibility. It could simply write the UWP business in its existing 90/10 fund. Alternatively, it could engage in some sort of restructuring, subject to dealing with a number of regulatory, legal, PRE marketing and systems points. The restructuring could involve a new shareholder-owned company, which could write the UWP business and reinsure the with-profits element back to the 90/10 company. Alternatively, it could write the UWP business in the 90/10 company and reinsure the non-profit part with the new company. Alternatively, it could have just one company with a partitioned fund and have cross reinsurance across the partition.

Tax implications and capital efficiency would need to be looked at, and, of course, this restructuring might lead, as mentioned in the paper, to double charging. The paper is silent on what are the policyholders' reasonable expectation implications of this, but there are clear marketing implications.

A further, even more complex, alternative is to have a triple partition with the 90/10 fund carrying on as present, a 0/100 fund taking the non-profit part of the UWP (basically charges less expenses), and a 100/0 fund taking the with-profits part of the UWP.

From a shareholder's point of view, there is a need to compare potential shareholders' transfers on the various structures, in particular, the incidence and potential volatility thereof. Had shareholders' transfers on the conventional policy been shown in Table A.5, they would have shown a much higher shareholder transfer than UWP(b) in the early years of the contract. In embedded value or appraisal work, the shareholders' transfer needs to be discounted at a shareholders' risk discount rate, which, other things being equal, clearly favours the higher early transfers. From a shareholder's perspective, the UWP contract with no guarantee (or 0% guarantee, because there is always a guarantee at maturity or pensions vesting date) is better than one with a 4% guarantee, in that larger bonuses are declared, and hence higher transfers.

Under conventional with-profits business, because the valuation interest rate is lower than the earned rate, the shareholders' effective take is recognised to be greater than 10%, because reserves, set up to support bonus declared, themselves generate interest surplus. In embedded value or appraisal value work for with-profits offices, we are all aware of how sensitive the value is to the form of bonus. Whether the bonus is declared in reversionary or terminal form is a sensitive and important feature.

On UWP this effect is also present, because, if there is 0% guarantee, and if the reverse is a simple retrospective face value of units, this is equivalent to a prospective reserve at 0%. The shareholder will still share in any specific future interest surplus (the excess of future earned rate over 0%).

Considering reserving matters, although the paper suggests that general practice is to publish on a retrospective basis, apart from initial units, these contracts do all have guarantees of one sort or another, and a prospective approach (if appropriate, indeed a net premium approach) should be used, albeit internally, to test the prospective reserve against the retrospective reserve. This applies to resilience testing as well. With a 0% guarantee the prospective approach is not likely to cause a problem. With a 4% guarantee it might well do. It would be helpful to have a specific statement in the DTI returns that this cross-testing has been done.

The comparison of prospective with retrospective reserves does not have to be made on a policy-by-policy basis and, in my view, can be made for the portfolio overall, and margins on some contracts at some durations can be used to support deficits on other contracts. However, individual reserves must cover minimum guaranteed surrender values, and I accept the use of the MVA to justify lower reserving, provided that the MVA, as described to policyholders, can be used in this way. A similar point applies with regard to the ability to switch from with-profits to linked and vice versa, and the need for reserving to cover any potential switching strains.

Mr T. W. Hewltson, F.F.A.: The paper raises a number of interesting issues, both in relation specifically to UWP policies and also in a wider sense. Many of these may well need to be addressed before too long by the relevant authorities.

In §2.4.6 there is reference to offices with closed series of with-profits contracts, which provide minimal publicity to policyholders and advisers of the actual payouts and effective rates of return to consumers. This seems a highly undesirable practice, and I can see a requirement for greater disclosure in the future. This would tie in with the U.K. insurance philosophy of freedom with publicity and responsibility.

There are a number of references in the paper to the allocation of any profits arising between policyholders and shareholders, and also for the development of the company's business. This is a very topical area which does need further careful consideration. There are a number of offices which have built up large estates as a result of conservative payouts to past generations of policyholders on both surrenders and maturities. The introduction of UWP policies is only one development, along with others such as the accruals method of accounting, which have hastened the need to consider how these estates should be utilised properly. The solution will have to be one that can be demonstrated to be equitable to all existing and future generations of policyholders. Possibly this may mean developing new methods of reporting, including asset share calculations, to show to regulators and to consumers that policyholders are being fairly treated, and that any conflicts of interest have been properly resolved.

The reserving requirement for UWP contracts is discussed in Section 5. In particular, many single premium bonds have been issued with significant guarantees of repayment at intervals often as short as 5 years, or even, in a few cases, 1 year apart. Meanwhile, the premiums are largely invested in equities and property. When these guaranteed benefits are valued on a prospective basis, at a conservative valuation rate of interest, the minimum reserve will often be only a small percentage below the face value of units. If the value of assets has fallen since the premium was received or, additionally, as a result of any resilience test applied, there may be a substantial strain on each policy, and, of course, the volume of these bonds sold is often quite high. Moreover, it is questionable in any case whether a significant valuation rate of interest applied to discount the benefits for these policies would be consistent with the policyholders' reasonable expectations for future bonuses and the E.C. Directive requirement that profits should be recognised for valuation purposes in an appropriate way over the duration of each contract. Therefore, careful consideration will need to be given by the profession and others to an appropriate valuation standard for UWP business, including application of the resilience test.

Mr A. K. Gupta, F.F.A.: My own office introduced UWP business in 1984, and has now switched almost totally to this type of business. The reasons for doing so were two-fold. First, because of the

more efficient financial structure of such products, and secondly, because of the ability to develop products which are more attractive to our consumers.

Considering the financial structure, my experience is that our new unitised contracts have similar initial new business strains compared to traditional with-profits contracts. The new contracts have a faster circulation of capital, but the real benefit of the new contracts lies in the fact that their reserves are far more responsive to changes in interest rates and reflect more closely changes in the value of assets. If the market values of equities and gilts were to change from those of the end of March 1993 to those of the end of July 1992, the impact for a traditional with-profits contract halfway through its 10-year term could be for asset values to fall by 16%, whereas liabilities would fall by only 2%—in other words, additional capital of 14% would be required. For an equivalent UWP contract, the additional capital required could be only 4% depending on how the company applies its MVA. These calculations are based upon an investment mix of 60% equities and 40% gilts. This difference would narrow if an investment mix were chosen which included a higher proportion of equities, but it does indicate the unsatisfactory effect of combining market values of assets with the net premium valuation method, particularly if we write traditional with-profits business.

Turning to the increased consumer flexibility, the definition of a UWP contract in Section 1.2 neatly contrasts the inflexible nature of conventional with-profits contracts compared to the flexible nature of unitised ones. Our own experience is that unitising with-profits contracts has enabled us to add in features which are considered attractive to policyholders, such as: flexible premiums; contribution holidays; critical illness; flexible mortality cover; and so on.

In §6.1.3 the authors highlight the concern that UWP bonus rates can be compared with building society interest rates, and I think that it is essential that we avoid the problems which can be associated with this. For example, if companies do not apply an MVA, then they can create the expectation that surrender values will never fall, and yet the policyholder can expect to earn bonus interest rates comparable with building society interest rates. If companies do this, then they are effectively in the banking business, but, more significantly, offering banking products backed by equities. I would hate to think what reserves would be required if the company was to operate in this way, particularly taking into account the current resilience test. Clearly, it is essential that a company's use of its MVA and surrender value bases are consistent with its reserving.

I am not convinced that the actuary needs to be too concerned with equity between unit-linked policyholders and UWP policyholders, this is more of a marketing issue. I would expect a traditional with-profits contract to provide a higher payout than a traditional non-profit contract. However, under a UWP contract, all other things being equal, I would expect the payout on a unit-linked contract to be greater than that on a UWP contract, because of the greater guarantees under the UWP contract. This could be compensated for by the with-profits contract sharing in miscellaneous sources and earnings from the estate. Within a mutual office the UWP contract should provide a greater payout than the traditional with-profits contract, because of the more efficient financial structure of the UWP contract, which would result in less capital being tied up in inefficient and costly reserves.

As actuaries, given the diversity of UWP contracts available on the market, there is clearly some need for standardisation of reserving approaches, MVA approaches, and so on. The experience that the profession currently has with these products is patchy, partly because of the current state of development of the market, so it is important that the industry recognises, as early as possible, the full range of issues associated with such products. It is essential that we, as actuaries, do not position ourselves as obstacles to progress because of the lack of understanding of these issues, but act constructively to resolve any problems associated with the progress, and by doing so benefit consumers.

Mr S. F. Elliott: In their definition in Section 1.2, the authors avoid any reference to an option to switch to a non-participating link of some sort. UWP, in that sense, has been on the market in concept, without explicit unitisation or automatic switch options, for several decades. However, in §6.1.2, the authors raise the subject of policyholders' reasonable expectations because of the perceived volatility of unit-linked contracts. It does not follow, even if an office has an integrated product allowing free switching between funds, that policyholders should expect more volatile results from the with-profits element. They should expect something broadly consistent with statements

made by the office regarding smoothing of investment returns, woolly though these may necessarily be. However, the financial advice industry needs to get away from assuming that 'unit-linked' means 'volatile', particularly when fund links available might well include deposits or a guaranteed equity fund. It is the nature of the fund link that determines the degree of risk, not the mechanics of the contract.

Policyholders have expectations, but offices have responsibilities. An example, based on § 6.1.4, illustrates how expectations can work both ways. It is up to each office to make the nature of its products clear in its product literature. If it does this it should not be afraid to use an MVA in moderately adverse conditions, just because it has not done so in similar conditions before. Outgoing policyholders may complain that their expectations are being dashed, but if an office fails to do this, when it is fair to do so, continuing policyholders may complain that *their* expectations are being threatened. Surely this is what is meant by balancing expectations of all our policyholders in a reasonable and consistent manner. It does mean making it clear at the outset that we will do whatever is financially sensible, and then be financially sensible.

In § 6.2.2, the authors also see a possible policyholders' reasonable expectations problem if charges are altered. For an integrated product, one which combines the usual fund links provided by the office, and treating with-profits as just another fund link, it is natural, and very desirable, to have a uniform charging structure. The office can then monitor its business in the usual way. If it considers that charges should, and can, be increased, then it should go ahead and do so. It should be made clear that, so far as with-profits is concerned, the charging structure at any time is a contribution towards meeting expenses and any other pricing aspects. Quite separately, the office can form its requirements for such matters as return on capital employed for the with-profits business. This might be a higher rate of return than on investments generally, or a quite different view. Whether the charging structure produces a surplus or deficit in relation to both actual experience and the office's requirements for with-profits business, such surpluses or deficits can be fed through the bonus system, just like any other miscellaneous source. I, therefore, see no policyholders' reasonable expectations problem with this.

Mr P. D. Needleman: It is clear from Mr Purchase's remarks that, in terms of profit sharing, bonus philosophy, asset backing and payout levels, many offices attempt to treat UWP in a similar fashion to their conventional business. So, why are we discussing a product that, on the face of it, is no different, in many respects, from conventional with-profits business? The answer is a result of two key differences between UWP and conventional with-profits, namely UWP's flexibility and its greater transparency. These have both contributed to UWP's great success as a product, but make the financial management of the product and the task of achieving equity between policyholders much more difficult. They also raise some very important questions as to appropriate reserving bases for these contracts, and comparability of reserves with those of equivalent conventional contracts.

As a member of the UWP Working Party, I found the most difficult area to deal with in the survey was in relation to reserving practices. With hindsight, it is an area where we could have attempted to find out a great deal more. I was struck by the very wide variation in the level of reserves held for regular premium contracts at the early stages of the contract, ranging from approximately 20% of the average to 250% of the average in some cases. Whilst some differences are to be expected as a result of genuine differences in contract design and the levels of guarantees, I suspect that many of these differences are because of differences in valuation approach. It was also significant that a number of respondents sought further guidance on reserving for UWP, and it clearly is an area where further research would be fruitful.

On the question of reserves, about two-thirds of the survey respondents used the face value of the units as the published reserve, possibly with an additional 'sterling' reserve for expenses. However, it appears that the majority of companies move away from this, to some form of discounted value of units approach, in deriving the minimum reserve for resilience purposes. It is this minimum reserve which needs consideration. If we start from the premise that this business is non-linked, then the first question, which is discussed in Section 5.2, is whether it is necessary to bring into account future premiums, or whether it is sufficient to value only benefits secured to date on a paid-up basis.

Most life contracts are of a form which require future premiums to be valued. Future premiums are

usually specified, and benefits can be determined from the outset in relation to the total premiums paid, since the guaranteed growth rate usually applies to future premiums as well as to those paid to date. However, many pensions contracts give greater flexibility, and are effectively run on a recurring single premium basis. In some cases the allocation rates are applicable to future premiums, and these are effectively guaranteed. Guaranteed growth rates apply to future premiums in about one-third of the cases surveyed.

It is difficult to generalise, but where the growth rate is not guaranteed, then, even if future premiums and allocation rates are specified, the benefits purchased are not known in advance and therefore need not be valued. It could be argued that there is an implicit guarantee of 0% on all future premiums, but in this case the increase in the liability in respect of future premiums will not normally exceed the premiums paid, so no additional provision is required under Regulation 57(3).

Where the future premiums are valued, a net premium method is appropriate, and this will generally give a higher minimum reserve than the paid-up approach, except in the early years, where the impact of zillmer adjustment reduces the net premium reserve. However, for most offices the minimum net premium reserve will still be below the face value of the units—typically starting at about 75% of the fund value for a 25-year contract and increasing to about 90% after 10 years or more. If the resilience reserve is added, then the total reserve is still well below the fund value in the first 5 years, equal to the fund value by about year 10, and above the fund value thereafter.

The net premium to be valued can be determined in the same way as for a conventional product, with a zillmer determined as a percentage of the guaranteed benefit at maturity, not exceeding 3.5%. The zillmer should also not exceed the loading in the premium rates for acquisition expenses—which is not necessarily the same as the front end load.

The authors suggest, in Section 5.4, that one of the reasons for lower reserves on UWP compared with conventional with-profits is that the front end load for UWP is larger than can be incorporated into the net premium valuation for a conventional contract. If a true prospective net premium reserve were calculated, then, for a given guaranteed maturity benefit and office premium, the reserve should be independent of the shape and size of the front end loading. The latter will affect the surrender value, but should not directly affect the reserves. In practice, however, the most commonly used method for determining the so-called net premium reserve does take into account the front end load, as reflected in the accumulated fund value. The most appropriate method to use for these contracts certainly needs further consideration, and this is one area in which the paper could have been developed further.

Using a true net premium basis, the basic reserve for UWP will be very similar, if not identical, to a conventional contract. Any differences would arise only as a result of the lower cost of bonuses under UWP. Resilience reserves are also very similar as a proportion of the basic reserves, if a net premium valuation is used.

The real differences emerge when comparing the paid-up basis against the net premium basis for a UWP contract. These differences can be obscured in the first year or two by the use of a zillmer, but generally the minimum reserves under a paid-up basis can be considerably less than under a net premium reserve. As with any single premium contract, the implicit bonus loading can be released. This raises the question as to whether such reserves provide adequately for policyholders' reasonable expectations, both in respect of surrender values and future bonuses.

The differences between a paid-up basis and a net premium basis get bigger when resilience reserves are included. So, where the authors state, in Section 5.4, that UWP is treated more leniently for resilience purposes, this is not strictly true if a net premium valuation is used for UWP, but it is true if a paid-up basis is used. All these results can be affected by subtle differences in contract design and guarantees.

We should not lose sight of the need for prudence and reasonable expectations. There is an increasing tendency to focus on minimum reserves without addressing the underlying prudence of the reserving basis. Analyses of ruin probabilities using stochastic methods give some very interesting results, but that is a whole subject in itself.

Mr M. N. Urmston: It seems to me that, as actuaries, we need to be much more open to our policyholders in the way that we describe MVAs, in the way that we intend to apply them, and the

circumstances in which they will be employed. In being more open we bring ourselves into conflict on reasonable expectations, and hence, potentially, the published valuation basis. Therefore, we need to have great care in what we say and how we say it, but we need to be very clear that the message has been properly communicated.

There appear to be two attitudes to MVAs: one is that you actively apply it; the other that you apply it only in very exceptional circumstances. We need to be clear that we make our policyholders aware of which attitude we are taking.

My own office has found that early redemption charges, or surrender value penalties, can ease MVA problems considerably—particularly in the early years—because the ups and downs of the investment cycle will impact most strongly at that time. If you have an early redemption charge or a penalty, then you find that your policyholder is anticipating a penalty, and he will actually consider the policy to be longer term. That is beneficial, and it is also beneficial to the extent that you will have lower numbers of surrenders, and, therefore, the MVAs will not be so critical in the first 2 or 3 years of the contract.

In the longer term, I would expect that the bonus rates will be closer to the actual investment performance achieved. In that connection, I agree with previous speakers that current bonus rates are generally higher than actuaries would feel comfortable with, and do not afford us the terminal bonus cushion. I am glad to see that they are gradually reducing.

Some offices use scales to determine their MVAs, or make flat reductions in the cash value on their policies. That approach is unacceptable. There needs to be, as Mr Shaw said, a comparison between the actual investment performance from a shadow fund with the movement in unit price. It is only on that basis that you can justify to your policyholder the application of any adjustment at all. In dealing with an MVA, we found it helpful to explain before the policy is surrendered that we are going to apply one. The policyholder then has no surprises and, indeed, in many circumstances may well decide not to surrender, but leave it until a later date.

I would welcome some research on MVAs, perhaps in a stochastic investment environment. I would like to feel much more comfortable about my own office's methodology, and whether it will be suitable in many different investment scenarios in the future.

Mr R. J. Squires: This paper raises some interesting issues in relation to policyholders' reasonable expectations and shareholders' profits. Section 30 of the 1982 Insurance Companies Act provides a useful control mechanism in the context of conventional with-profits business, but it cannot be relied upon to do so with some of the modern contracts.

The authors mention the fact that switching new regular premium business from conventional to UWP may result in the amount of profit distributed in the short term being reduced. If this switch is expected to lead to greater profits because of the more economic use of capital, it seems ironic that it should result in smaller transfers of profit to shareholders. It would be unfortunate if the management of an office failed to take appropriate action because of the effect it would have on the transfers to shareholders. On the other hand, the change could mean that ultimately the shareholders will take a larger profit margin, because less of the benefit will be paid as guaranteed sum assured and more as bonus. As offices move increasingly to recognising profit through embedded values or accruals accounting, the total may become more important than the timing, although the market is still likely to see dividends as an important factor in supporting share values. So, it is not a clear question. There is much to be considered.

The position on surrender values is interesting. If offices choose to increase surrender values at the longer durations to reflect asset shares, they will implicitly include an element of terminal bonus. If they identify it as such, there is, presumably, a corresponding transfer of profit to shareholders. I am aware that one or two offices do this at present, but it does not appear to be a universal practice. It is a reasonable thing to do, as, if the surrender value scale is adapted to provide a smooth transition to the maturity value, it seems illogical that there should be a discontinuity in the associated transfer to shareholders. However, the question of how much of the surrender values relates to guaranteed benefits and how much to terminal bonus is not an easy one.

I have one criticism of the paper. In Appendix 3, which sets out the assumptions for the probability sensitivity analysis, the authors specify an earned interest rate, but do not break it down between

capital growth and investment income. If the fund is predominantly invested in equity stocks, which I take to be the usual position, the income yield will constrain the valuation rate severely, as Mr Fine was suggesting, and, with a 4% guaranteed bonus, I would expect some additional reserve to be required. It would have been interesting to see the effect on the sensitivity tests of assuming an income yield on the fund only a little higher than the guaranteed rate of bonus.

Mr G. J. M. Shaw: The UWP policy requires us to examine our principles with regard to smoothing. Terminal bonus scales for conventional with-profits policies have usually been the same for annual and single premium contracts, and are likely to have been set primarily based upon regular premium contracts—although single premium contracts have been important for pensions business—and equity between regular and single premiums is an issue.

With benefits being built up by the addition of premium payments under a unitised contract, which may vary in amount, UWP terminal bonus scales are more likely to be developed from an underlying single premium approach. The single premium approach, however, does not have the automatic smoothing which regular investments provide. A typical result of an unsmoothed terminal bonus scale linked to duration could be a terminal bonus, justified at short durations, deficiencies at longer durations, and, perhaps, even a terminal bonus justified at the very longest durations. Smoothing will, therefore, need to become an even more deliberate process with UWP than it has been with conventional with-profits.

It will be necessary to resolve how deficits will be met on maturity or retirement, but the aim should be to reduce annual bonuses so that such deficiencies become less likely. It is easier to smooth through fluctuations in the terminal bonus scale if all units justify some terminal bonus, rather than by having to meet deficits by other policyholders. On surrender, transfer or switch, a decision is, of course, necessary as to whether an MVA should be applied where there is a deficit.

The single premium approach also makes us more conscious that smoothing is taking place on the way into, as well as on the way out of, a contract. Typically, units purchased in the same year are given the same terminal bonus, although this may be applied to values which reflect an accumulation at the annual bonus rate, so there is some difference between units purchased early in the year and those purchased towards the end of the year. It is, perhaps, also appropriate to consider the period over which inward smoothing applies when we consider how often terminal bonuses should be reviewed at the outward stage. Too short a period and too frequent a review means that we are not dealing with a with-profits contract, but we have more of the features of a managed fund contract.

Mr D. E. Purchase: I do like the authors' definition in § 1.2, but, if it is to be adopted for future use, the final sentence should be excluded. I also noted that the authors have carefully, and absolutely rightly, avoided referring to UWP bonuses as 'reversionary', but one slipped through in § 4.18.

In Section 2.4, the authors summarise the reasons for the development of the UWP market. I agree with all of their reasons, and would add a further one: that traditional offices sought a way of enabling policyholders to switch between unit-linked and with-profits funds. This seemed, and still does seem, a worthwhile benefit, but it was also perceived as giving those offices a competitive edge over their linked rivals. It is this need that naturally led to the common product design that we now see.

I now have a few words about shareholder issues, mentioned several times in the paper, particularly in Sections 3.1 and 3.3. If the authors' 0/100 approach were used, it would be necessary to have a fund management charge on the with-profits fund if you wish to achieve profitability for shareholders broadly equivalent to that they receive from unit-linked products. In the more common 90/10 situation, I used to think that, best of all for the proprietors, were policyholders who started in the unit-linked fund and switched to UWP near maturity—which is not an unlikely thing for a sensible policyholder to do. This may indeed be so, but unit-linked policies nearing maturity also generate large transfers to shareholders from the fund management charge, and so there may be a reasonable balance. Therefore, the statement at the end of § 3.4.3 may not be entirely correct in practice.

The reduction in transfers, mentioned in § 3.3.2, and referred to by the last speaker and others, was for many 90/10 offices reversed by a very simple expedient of writing single premium with-profits bond business.

Unit prices are discussed in §§ 4.14–16. I still believe that there are significant advantages in a fixed

unit price and the addition of bonus units. This makes it much easier to have bonus rates which do vary by term, by year of entry or by date of payment of premium, and I am sure that some, if not all of these, will be found necessary. Also, the bonus units can then be identified separately, which may well be needed in determining the amount of terminal bonus, and, perhaps, in then justifying the arithmetic to the policyholder. Fixed unit prices may, at least, avoid the fate of being turned into spurious growth rates, as seems to have occurred in one recently published survey!

MVAs and policyholders' reasonable expectations are referred to, particularly in §6.1.5. Professionally, it is clearly most desirable that, as emerged from our survey⁽⁴⁾ too, actuaries have wide discretion in the fixing of MVAs. However, when this is carried to the extent of fixing MVAs individually for each exit that comes along, or applying one at all times, I think it a dangerous practice, and one which may lead us into some disrepute. What expectations is the policyholder left with? If he had wanted a linked contract, presumably he would have been in a linked fund. I am also concerned by the approach which says, "We ought to have an MVA, but there are not many surrenders at the moment, so we will not." This may be alright for a very new with-profits fund indeed, but, except in that situation, this attempt to help the sales process at the expense of equity will create expectations, reasonable or otherwise, which could cause severe strains as the business grows even more significant. Let there be no doubt, the authors are right in §7.1, UWP is here to stay.

Mr R. Frankland: There are enormous commercial benefits in the presentation of with-profits business in the unitised form. These help the understanding of the client, albeit allowing for the potential misunderstanding over issues such as MVAs and the non-guaranteed nature of future allocations, which can effectively distort competition in comparison with other savings media.

Section 5 is the area in which I have greatest involvement with UWP, and also tends to be the area in which the major financial divergences occur between unitised and conventional business. It is largely from these divergences that differences in profitabilities flow. My main observation is that the comparisons made in Section 5.1 and §5.2.1 appear extreme. In particular, the comparison of a conventional annual premium contract with a UWP contract, where there is no guarantee applying on either future expense loadings or future allocation rates, appears to be at the limits of what is possible. I would suggest that a more relevant comparison is between a regular premium conventional contract with a unitised contract which does contain a guarantee of future allocation rates, with or without any guarantee about future bonus rates as appropriate. Alternatively, if a UWP contract without future allocation guarantees is to be considered, a more relevant comparison is with a series of recurrent conventional single premium contracts. Although this type of contract has never been popular as a life policy, for obvious reasons; for a pension policy such a series of recurrent single premiums is an available and, indeed, popular option.

The limited amount of research which I and my colleagues have undertaken in this field suggests that the unit valuation approach on a UWP contract produces results which tend to be quite similar to the net premium results for a conventional product providing similar levels of guarantees. It is, thus, not a fundamental quality of the UWP contract which produces a more efficient financing structure, but rather the lower progression of guaranteed benefits built up under a unitised contract compared to those under a conventional contract.

The convergence of net premium reserves for a conventional contract and unit reserves for a unitised contract is more obvious when taking account of the resilience requirements, in which it is found that, in reality, a net premium approach is generally required under a unitised contract— at least under the range of contracts considered. The key determinant between the contracts then becomes the build up of guarantees within those contracts, and not how the contracts themselves are designed. Clearly, this does depend on the extent to which investments can be matched against liabilities—as in any resilience calculation. The tests which I and my colleagues have undertaken have assumed a high equity hypothecation to these contracts, consistent with the assumption made by the authors in Section 5.2.5, in which they say that there is likely to be an additional reserve for resilience purposes in respect of UWP business which is close to maturity or vesting.

This resilience issue highlights one of the fundamental flaws within the hypothecation provisions of the resilience testing. We require, as I understand it, to hypothecate assets only at the level of contract. In reality, in managing a with-profits fund, whether unitised or conventional, if taking account of

emerging cash flow, we will be implicitly holding higher percentages of gilts in respect of those contracts near to maturity, where the implications of large falls in equity values would otherwise be most severe. Thus, if a term-dependent hypothecation were permitted, the element of mismatching could be reduced, and the resilience problems mentioned in the paper could be largely overcome in normal circumstances.

The effect of slowing down the build up of guarantees within the contract is mentioned in § 5.1.2. With the high level of new business strain and the high value of declared bonus of a conventional product, there is a large implicit margin within our reserve calculations which can be used to support reversionary bonuses in years when only limited surplus is available. Perhaps, unlike the authors' New Testament quotation, this is akin to storing up the surplus crops in the 7 years of plenty so that there is food to eat in the 7 years of drought. If two offices show the same published free asset ratios, the office having all its liabilities in traditional with-profits contracts will tend to be stronger in relation to policyholders' reasonable expectations, although not to guaranteed benefits, than the office with all UWP business, although it can only realise that strength by closure to new business or by switching to some less capital hungry new business. This may seem at variance with what I have said about equivalence of reserves, but it is actually based on the different rates of build up of guarantees relative to a given level of payout. We would thus be deceiving ourselves as a profession if we believed that the stability of traditional with-profits bonus rates can be expected within the types of UWP contracts currently available, unless specific reserves are held back.

I draw your attention to the quotation at the head of Section 6, that "the growing generosity of the faithful permitted him to make more optimistic calculations". I suggest that, if we are to resolve fully the many issues raised, we require rather that "the growing generosity of the actuarial encouraged him to make more realistic calculations".

Mr S. P. Deighton: The authors describe two possible scenarios for profit participation: in one the shareholders take 10% of all forms of surplus, and in the other they take 100% of surplus, except that arising from investment performance, from which they take none. Not surprisingly, as shown in the paper, the effect of varying investment returns and expenses on shareholders and policyholders is quite different under these two extreme methods. However, as with most things actuarial, the reality is not quite so black and white, as demonstrated by a couple of examples.

First, the contract charging structure would most probably include a regular administration charge, expressed as a deduction from units. Under the 90/10 approach, the level of this charge, and whether or not there are any guarantees attaching to it, is, in theory, unimportant. If the office takes a bigger charge, the policyholders' fund is smaller, but the expense surplus emerging at the end of the year will be bigger, enabling a larger bonus to be paid. The impact is largely presentational. Under the 0/100 approach, it would, at first, appear that the level of the charge has a clearly defined impact on the policyholder's benefit, which is not related to the actual expenses. However, in emulating unit-linked contracts, it is likely that the office will retain considerable freedom to vary the charge. If expense performance is poor, shareholder profits will be squeezed, and the reaction is likely to be an increase in administration charges, so the unsuspecting policyholder has shared in expense profits after all!

Another grey area is lapse experience. Under the 0/100 approach, as described, each individual policyholder should presumably be unaffected by overall lapse experience. I am not sure that this would be the case in practice. For surrenders at later durations, if the policyholder is to get all of his investment return, then the office must pay an individually calculated terminal bonus for each case. If not, either it is taking some investment return for itself or, alternatively, some part of the terminal bonus element will be retained for the benefit of other policyholders, but then they are getting something other than investment surplus, which is supposed to be against the rules!

I give these examples purely to illustrate the blurring of the two concepts, and to warn against assuming that the 0/100 route is necessarily simpler and clearer. I am particularly concerned when it arises in conjunction with a joint venture agreement, where the unit funds are reassured into another with-profits fund. Careful analysis is needed if the accepting fund also includes UWP, or, indeed, conventional business which is run under the 90/10 principle.

The authors indicate that asset share techniques would be used to aid bonus decisions under either

approach. Under the 90/10 version a traditional asset share would be calculated, and, indeed, the result at any point would be fairly close to that for a similar conventional contract, differing only because of the different shape of shareholder transfers. For the 0/100 version, the authors suggest using an asset share which is based on the contract's actual charging structure. This seems to be sensible, but the approach should be adapted to take account of the grey areas I have mentioned, and others.

The asset shares calculated give the office an idea of the realistic level of reserves needed to meet policyholders' expectations under the contract, but they are not the complete answer, because of the prudence required to reserve for the guaranteed benefits. No doubt others will consider the appropriateness of holding the fund as a reserve as compared with a statutory net premium reserve, when looking at the guaranteed benefits, but I was interested to find how the fund relates to a possible realistic reserve. So, I managed to recreate the examples in the paper in order to take a look at how the asset shares build up. Incidentally, in doing so it appeared that the pattern of shareholder transfers in the Appendix for UWP(b), actually relates to UWP(c), but with the guaranteed interest and bonus reversed.

The relationship between the asset shares and the reserves for the examples was interesting. For both contracts the asset share is initially less than the reserve, rises to meet it during the term of the contract, and ends up somewhere above it, leading to a terminal bonus of between 6% and 7%. However, the timing is quite different. For the conventional contract, the asset share starts at only 40% of the reserve and does not equal it until year 8, whereas for the UWP contract, it starts out at 82% of the reserve and crosses by year 3. If the office is broadly paying out asset shares on claims, the excess of asset shares over reserves at any time is earmarked for terminal bonuses, but is available, at least in the current environment, as a source of finance for other business or projects. These results seem to suggest that more 'finance' is available under the UWP contract—which surprised me, but it may be a feature of the examples or the assumptions chosen. The existence of a reasonable gap between asset share and the fund is useful for UWP, as it would allow a buffer before the MVA had to kick in when asset values fall. This should be remembered when temptation exists to quote the highest possible annual bonus.

The corollary of this finance existing is that the reserves might be considered less adequate in a realistic sense. My suspicion is that reserving the fund does not provide the same sort of automatic provision for future bonus expectations which arose naturally from the large interest margins included in net premium valuations. I believe that studying the relationship between asset shares, policyholders' reasonable expectations and statutory reserves is fundamental to an office writing this business. I would suggest that the old tools of deterministic actuarial liability valuations are not sufficient to answer these kinds of questions, and that, to gain a full understanding of UWP, we need to model the assets as well, and eventually take the leap to stochastic modelling.

Mr R. A. Humble: The authors draw attention, in Section 3.9, to the prevalence of single premium bond business, with the resultant concentration of maturity values. This is reinforced in Section 6.4, where they note that a number of offices have issued significant volumes of business and subsequently withdrawn the offer of those contracts. Where these are accompanied by fixed terms with no option to apply an MVA, this leads naturally, as they note, to large peaks in maturities in, say, 5 or 10 years' time. While peaks can occur on traditional with-profits business, I think that the scale of this is a particular feature of UWP business, particularly in view of the single premium business noted in the paper.

Such peaks can occur under pension business as well, and the timing of them can be very unfortunate for the office. Mr Purchase mentioned instances of declarations that no MVA would be applied for a decade of retirement. That carries with it the potential implication that, for example, in times of an economic downturn, with depressed market values, there may be a concentration of early retirements. The combination of peaks of maturities and an inability to apply MVAs faces offices with difficult choices. They can match with fixed-interest securities, thereby reducing exposure to risk, but this may have adverse effects for a long-term investment performance. Alternatively, they can match with equities. However, if losses arise because of low market values at maturity, these must be met by other with-profits policyholders. While these principles are not new or particular to UWP business,

the scale of the liabilities and the rate of growth of this business gives them a new priority and urgency for some offices at least. Traditional actuarial techniques are insufficient to provide all the answers to the questions that are raised by these issues. If we consider, for example, the question of the appropriate level of equity backing for bond business, and the probability and potential for the extent of loss at maturity, this question is clearly of huge relevance in deciding on an investment strategy.

Stochastic investment techniques, as mentioned by Mr Urnston, are needed, in order to enable the actuary to quantify the risks and benefits of alternative strategies. Such projections can have uses for UWP business other than choosing the appropriate investment mix to meet substantial guarantees under maturity.

The question of minimum guaranteed bonuses is discussed in the paper and has been mentioned by a number of speakers. Clearly, higher guaranteed bonuses may lead, from solvency considerations or a desire to protect other policyholders, to a higher investment in fixed-interest securities. This may, in turn, imply an expectation of lower actual bonuses in the long term. Stochastic techniques are the best way of enabling the actuary to quantify this, when considering, from a product development point of view, the appropriate level of guaranteed bonus to apply.

Solvency considerations strongly affect a number of offices' investment matching in respect of this business. Stochastic projections can enable the office to consider the likelihood of solvency problems arising prior to maturity, even if a strategy is satisfactory for meeting maturity benefits.

Mr S. Thompson: Policyholders' reasonable expectations have received considerable attention recently, because of changes in Guidance Notes, increasing the responsibilities of the Appointed Actuary in this area. The authors correctly identify policyholders' expectations as a key issue to be considered in the design and marketing of UWP contracts, and in determining appropriate actuarial reserves. In § 6.1.3 they comment that the UWP bonus interest rates can be directly compared with building society rates. A number of IFAs commented on this comparison during some research which was done by the Policyholders' Reasonable Expectations Working Party. Their perception was that policyholders expected that they would do better through an insurance contract than if they had left their money with a building society or a bank. This was applied to life insurance business generally. The apparently transparent nature of UWP contracts particularly emphasises the comparison, especially for with-profits bonds.

This offers both opportunities and dangers to insurance companies. There is clearly an opportunity to market the higher returns which can be expected from a typical with-profits life fund, compared with those to be expected from cash deposits. However, there is a danger that the risks which are being taken to obtain these higher returns will not be understood by policyholders. The failure to communicate some of these seems to lie at the heart of some of LAUTRO's criticisms of the selling of with-profits bonds. A well-managed with-profits fund will seek to control the risk by an appropriate investment policy, but there will always be the possibility that circumstances will arise when, in order to protect other policyholders or shareholders, the benefits to some UWP policyholders will need to be reduced. Hence the need for an MVA.

The authors state, in Section 5.2.5, that many companies do not hold an explicit mismatch reserve for UWP business, since they argue that the MVA would be applied to reduce liabilities in the circumstances which are assumed in the mismatch test. However, in § 6.1.5, it is pointed out that some companies have not applied an MVA in circumstances of quite extreme changes in market values. A number of earlier speakers have commented on practice in this area, and also upon the extent to which companies guarantee that MVAs will not be applied at certain times. Is there a conflict here? Policyholders' expectations are very much conditioned by the actions of companies, both companies individually and also by the actions of the life insurance industry as a whole. If actions in not applying MVAs are creating expectations that they will not be applied generally, then it seems to me that the actuary needs to be fairly cautious in assuming that he can use an MVA in his valuation whenever it seems appropriate, especially having regard to the changes in GN1, requiring him to pay attention to policyholders' reasonable expectations in determining his actuarial liabilities. At the very least, the assumption used as to the application of an MVA in the statutory valuation should be consistent with an agreed policy as to how the company will use such an MVA in practice. The suggestion in Section 5.2.7, that statutory reserves should cover the face value of units adjusted by the current MVA, is, perhaps, one way to ensure a consistent use of MVAs.

UWP seeks to offer a compromise between the security of deposits and the risk of equity-linked business. Different companies can place their UWP contracts at different points between these two extremes. It is essential that there is consistency between the expectations created with policyholders, the investment policy of the company and the actuarial valuation methods adopted by the Actuary of the company.

Mr P. G. Scott: I agree with other speakers that further analysis of the valuation bases for UWP contracts is required, and that there is need for bonuses to come down to realistic levels. I agree with the authors' point, in § 6.3.3, that relates to the use of UWP contracts for endowment mortgages. We are now in a situation where falling bonus rates make it likely that many of these contracts will not, under quite likely scenarios, repay the mortgages. Surely we should return to some of the standards that we had previously, whereby, for conventional with-profits contracts, 80% of reversionary bonuses and no additional bonus allowance were assumed; much lower than at present. There are great dangers if the market does not respond quickly to this situation.

Mr P. W. Wright: I found Section 4 very disappointing. I doubt if the different groups of offices identified in § 4.3 have chosen to design their products differently, particularly in the choice of whether to have a fixed or variable unit price.

On the historical development of these products, one factor which had some influence in the rise of UWP was the requirement, under personal pensions legislation, to offer transfer values. This requirement effectively killed off the old deferred annuity type retirement annuity product, where the death benefit was often below any reasonable surrender value. A UWP contract is not the only alternative product that could have been designed, but, given the requirement for a transfer value, it was an obvious one.

Paragraph 5.2.4.1 implies that a valuation rate of interest comes into the calculation of the statutory reserves only where initial units are discounted. They come in much more generally, as a valuation at current bid price is effectively rolling up units at the guaranteed accumulation rate and discounting back at this same rate, which may be zero. Where initial units are subject to cancellation rather than an additional charge, then Regulation 59 is not applicable. Cancellations take place irrespective of achieved yields. The point made in the paper about the initial fund charge presumes that there is a guarantee that the initial unit price will not fall.

I agree strongly with the comments in Section 5.2.7 regarding the lack of need to cover the terminal bonus element of surrender values. We must resist pressure for this at all costs, for the reasons set out in § 5.2.7.1. I also agree with the last sentence in § 5.2.7.2, and this should be the guiding principle when setting reserves in the mismatched conditions.

Quite rightly, attention is drawn to the inadequacies of Schedule 4 of the DTI Returns, but Schedule 5 does not cover UWP products either. There are also some particular problems for these products when performing the reductions in yield (RIY) calculations required by LAUTRO. The contract is frequently a hybrid, and the calculation of the RIY for the unit-linked and with-profits elements are very different and emphasise the anomaly in the LAUTRO regulations in this particular area.

Mr B. J. Brindley (closing the discussion): Many speakers have said what an important subject this is. Mr Purchase gave us a figure of £17 billion for the amount of the liabilities that we had on our books. Quite independently, I have obtained an approximate figure of £25 billion. Whichever figure is right, the point is an obvious one; we have a tiger by its tail. The genesis of UWP comes at a point in the industry's development where we are going through a period of major change. We have had the very high returns of the 1980s, and suddenly the 1990s seem different. It is quite possible that we will look back with the perspective of the year 2000 and will see that our UWP was a reaction to those changes of the markets that have been identified in the paper, and also of the lower investment return which I think many people are expecting.

One of the features of the paper is that it does not have many answers in it. It has many questions that we are all trying to answer. It invites a Part 2, where the authors, instead of sitting on the fence asking all the questions, should start telling us some answers.

Product design has received some attention in the profession. One point from the discussion is that

the guarantees we are giving are at the centre of the product design. Mr Scott made the important point about where the guarantees may, and perhaps more important, may not, lead us. There was a contrast between Mr Gupta and Mr Kipling. Mr Kipling seemed to be looking backwards and rather hankering after the past; whereas Mr Gupta thought it was attractive and much better in the brave new world of UWP.

The section of the paper on shareholders leads to a need for a new expression in our profession which is 'shareholders' reasonable expectations'. The paper deals well with variability, and that point was underlined by a good many speakers, in particular the way in which the shareholders' return is sensitive to the different way in which the contract is constructed. However, no-one has raised the issue of the quantum of that shareholders' share. It is a surprising situation in our industry, where expenses, and the disclosure of them, attract enormous attention, whereas substantial amounts going to shareholders receive no disclosure attention. Also, I was surprised that there was little discussion on valuation. I expected valuation to be a centre of the debate, because it is so much to do with our day-to-day work.

One important point brought out in the paper, and several people reinforced it, is that there is still time to change our practices, even though £17 billion or £25 billion, whatever the number is, is a large figure. This, however, will be small and modest compared with the future; and in 5 or 10 years' time it will be extraordinarily difficult to make changes. It places enormous responsibilities on us, and gives opportunities for the GAD. The points about the inadequacies of the current regulatory arrangements indicate that we have concentrated too much on rules over the last period and not enough on principles. Would it be easier to deal with UWP if there were more clearly defined principles?

The variety of UWP contracts creates another potential difficulty. The principle that we are all used to in DTI Returns is that the returns give sufficient information for outsiders to value and form a view about the business themselves. The complexity of UWP and the subtleties of the distinctions between different contracts are going to jeopardise that principle in a way that we have seen in the past in group contracts. It is very difficult to work out from DTI Returns what the company's obligations are.

There are two particular valuation issues that have been underlined by many speakers. One is the relationship between the surrender value and the reserve. Where the surrender values are intended not to be guaranteed, they may change from being technically not guaranteed to being guaranteed because of practice. Then, the question of how the reserve should take that into account was made by a number of speakers. The resilience test is becoming infamous as the most divergently interpreted test in the profession, and came under scrutiny yet again. I suggest that this test is not standing up too well under that scrutiny.

We have heard the expression 'policyholders' reasonable expectations' mentioned many times in the discussion. Several speakers, Mr B. H. Shaw among them, said what a clear contract the UWP was. On the surface it appears a clear contract, but after the remarks about MVAs and so on, you begin to wonder. However, to quote Humpty Dumpty from *Alice Through the Looking Glass*:

"When I use a word, I mean it to mean precisely what I mean--no more and no less."

I think that we are in danger of doing that with UWP.

Policyholders' reasonable expectations are underlined by GN1, and require us to state whether or not we have complied with it. In GN1 there are quite onerous responsibilities on Appointed Actuaries for making sure that these policyholders' reasonable expectations are clear.

Mr Jenkins gave a very clear exposition of the situation we are in on MVAs. There are all sorts of MVAs. I would guess that most of our policyholders do not know which sort they have. There was some discussion about bonus rates. Several people observed that they thought the current bonus rates were rather high when you look at expectations of investment earnings. Again, that feeds back into policyholders' reasonable expectations.

This paper gives us an agenda for matters that we, as a profession, have to address. The GAD has a particular responsibility, and we, as professionals, ought to be working together with the GAD, as we are, to try to deal with some of these principles or rules, whichever we choose. Internally, companies have obligations to their shareholders to make sure that they realise what is going on, and quite openly we all have obligations to our policyholders.

The President (Mr L. J. Martin): The paper that we have been discussing is a good one, and the number attending (it is a full house) speaks for itself to the authors.

Gamaliel was a teacher of law. His advice was simple and clear, and we too must simplify and not complicate matters in all that we do. It seems that UWP's are moving towards what policyholders want. We must ensure that our explanation of these policies is clear, and that the end product is understood by policyholders.

As the authors say, the product is here to stay, and I am sure that, over the years to come, we will have many papers on subjects allied to this. Product design is now certainly an actuarial issue, whereas many years ago it used not to be. This is one of the developing fields within our main normal classical field of operation of life assurance. A few months ago we had a paper on distribution channels. That, again, is another issue indicating the extension of our work in life assurance.

The paper is much to be welcomed. I thank you all for having spoken this evening, and all our thanks are particularly due to the authors on this timely, useful and interesting paper.

Mr J. E. O'Neill (replying): There are two points I would like to refer to. First, we recognise the need for additional work. We look forward to seeing a Part 2 as organised by Mr Brindley. Secondly, we welcome the publication of the survey. As with all other UWP watchers, we are looking forward to doing the analysis, seeing what we got right, and also where we went wrong.

WRITTEN CONTRIBUTIONS

Mr D. I. W. Reynolds: It is clear from the discussion that those who hold the view that UWP is a product that is 'simple and transparent' to the policyholder are mistaken. I believe that the complexity of the product is most clearly shown by asking the simple question, "what happens to a UWP bond bonus rate if the stock market doubles in value?" I have asked this question of a number of intermediaries and life salesmen, who would be expected to be more knowledgeable than the public. Actuaries would expect to be even more knowledgeable. In no case is the simple and straightforward answer, "that the bonus rate drops", forthcoming. It is clear, in such circumstances, that the expectation of return for a new entrant to the UWP fund is lower than for someone who invested in the fund some time ago. This implies a lower bonus rate.

It is in considering the existing bond holder that one discovers the complexity of the contract. His asset share has risen in value, and yet we are cutting his future bonus rate. The only way to solve this paradox is to pay a special bonus or to confirm a higher terminal bonus for such an existing policyholder. I am not sure that the bond holder would be content with the benefit of a promise of a higher terminal bonus. He or she would be much more comfortable with a special bonus added at the time that the underlying assets double in value. The implication is for an even more complex product than is currently on the market. Not only is there a bonus that accrues daily, but, in addition, there is the prospect of a special bonus and, eventually, a terminal bonus. All of these will be subject to the possibility of an MVA should the market decline thereafter.

I am concerned that the discussion did not clearly attend to such a simple matter. It is of concern that the profession may bring itself into disrepute if it is not much clearer in its thinking on UWP policies. They are not simple and, at present, they are certainly not transparent.

The authors subsequently wrote: We make no claim that our retrospective look at UWP was definitive. We agree with some of the speakers that the list of reasons for entry given in Section 2 could be extended to include: greater transparency; the sale of integrated products by with-profits offices looking to write unit-linked business; and the need to offer pensions transfer values.

We welcome the publication of the results of the survey by the UWP Working Party. We were particularly interested in the prevalence of integrated life products, and that as many as six offices were giving guarantees on future premiums.

The flexibility available under the UWP concept means that reduced guarantees, lower bonus accruals, greater risk transference to policyholders and increased volatility of payouts are all features which can be incorporated into the design and operation of a UWP contract or not, as an office thinks fit. Thus, UWP allows an office to design a product on the risk spectrum between deposit savings and

market sensitive products, as it feels appropriate. Volatility of policyholder benefit and level and volatility of return to shareholders can be pitched at selected levels within the flexibility allowed. Volatility of payouts can be managed both by the choices of fund link and the smoothing adopted in setting payout levels.

There were a number of comments concerning valuation. The survey report indicated large differences in the UWP reserves held by different offices at early durations, but, regrettably, did not attempt to relate these to the extent of guarantees of the individual contracts, which might have been quite different. We agree that reserving needs to be tested against a prospective valuation when guarantees provided under a contract make this appropriate. Comparisons with net premium valuation reserves of conventional with-profits contracts are of interest when the UWP and conventional contracts have similar guarantees. However, the net premium valuation method has shortcomings when used with market value of assets, and, in particular, when used in the current resilience test. It would be a retrograde step if the shortcomings of a net premium valuation were imposed on UWP contracts, particularly on those whose level of guarantees did not warrant it.

MVAs also attracted several comments. The UWP survey suggested to us that offices had become more ready to utilise their MVA facilities. We noted the prevalence of a guarantee that no MVA would be applied throughout a decade of retirement ages. We agree that this is a matter of concern, to the extent that the distribution of early retirements cannot be predicted. A rather different situation occurs if a contract is set up with a pre-determined rate of withdrawals, such as 7.5% p.a. Here the case for use of an MVA is weaker, because the future benefit can be accurately predicted and treated as part of normal maturities.

We certainly agree that policyholders should know whether or not an MVA would be applied before they have irrevocably surrendered. Also, the idea of having a small buffer zone within which an MVA would not apply seems attractive.